

To: Larry Lester, SCR

From: MARK F. PUTRA

Re: Groundwater Use Restriction
GIS Registry Data

Site Name/Address:

SOOLINE RAILROAD

WATERTOWN "WEST SITE"

BRRTS #:

03-14-000760

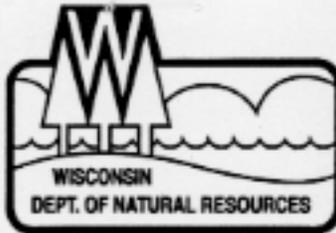
Date of Closure Decision:

03/31/98 CONDITIONAL

- Off-site Contamination
 Right-of-way Contamination

Packet Contains:

- ✓ 1. Closure Letter
2. Conditional closure letter
- ✓ 3. All property deeds with 140 ES exceedances
- ✓ 4. Metes/bounds legal description (certified survey)
5. Tax parcel number
6. GPS data for each affected property
- ✓ 7. General location map
- ✓ 8. Detailed location map, showing all parcels affected by 140 ES exceedances, property boundaries, buildings, etc.
- ✓ 9. Latest map showing gw flow direction, MW, potable wells. [optional: Isoconcentration maps of compounds - /> ES]
10. Latest map showing extent or outline of contamination plume and gw flow direction
- ✓ 11. Latest table of analytical results
12. Geologic cross section



State of Wisconsin \ DEPARTMENT OF NATURAL RESOURCES

Scott McCallum, Governor
George E. Meyer, Secretary
Ruthe E. Badger, Regional Director

Horicon Service Center
N7725 STH 28
Horicon, Wisconsin 53032
Telephone 920-387-7860
FAX 920-387-7888

February 5, 2001

Ms. LecAnn Thomas
CP Railway
105 South 5th Street
Minneapolis, MN 55440

Subject: Closure of Soo Line Railroad/CP Rail Watertown "West" Site
DNR ID # 03-14-000760

Dear Ms. Thomas:

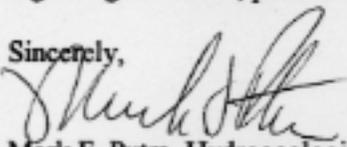
On March 31, 1998, the South Central Region Closure Committee reviewed your site for closure. This committee reviews environmental remediation cases for compliance with state laws and standards to maintain consistency in the closure of these cases. On March 31, 1998, you were notified that the Closure Committee had granted conditional closure to this case.

On January 26, 2001, the Department received correspondence indicating that you have complied with the conditions of closure, and they were abandonment of the monitoring wells and filing of a groundwater use restriction. Based on the correspondence and data provided, it appears that your site has been remediated to Department standards in accordance with s. NR 726.05, Wis. Adm. Code. The Department considers this case closed and no further investigation, remediation or other action is required at this time.

However, please be aware that this case may be reopened pursuant to s. NR 726.09, Wis. Adm. Code, if additional information regarding site conditions indicates that contamination on or from the site poses a threat to public health, safety or welfare, or the environment.

The Department appreciates your efforts to restore the environment at this site. If you have any questions regarding this letter, please contact me at the number below.

Sincerely,


Mark F. Putra, Hydrogeologist
Remediation & Redevelopment
Telephone: (920) 387-7867
Putram@dnr.state.wi.us

Cc: Braun Intertec, P.O. Box 39108, Minneapolis, MN 55439-0108

852958

Deed Affidavit

Document Number

Document Title

Office of Register of Deeds
Dodge County, WI
RECEIVED FOR RECORD

JAN 25 1999

at 10:40 o'clock A. M.

Chris Planasch

CHRIS PLANASCH - Registrar

14

Recording Area

Name and Return Address

Jacky Bendel

OLD REPUBLIC TITLE
400 SECOND AVE. SO.
MINNEAPOLIS, MN 55401

Parcel Identification Number (PIN)

Deed Affidavit

John P. Nail, being duly sworn on oath, states as follows:

That he is the Director, Real Estate Marketing, U.S. for Soo Line Railroad Company, the owner of railroad right of way located in the NE1/4, Sec. 31, T9N, R15E, in the County of Dodge, State of Wisconsin, a portion of which is described as:

Commencing at the intersection of the Railroad Company's westerly right-of-way line and the easterly right-of-way line of Welsh Road; thence southeasterly 970 feet along said Railroad westerly right-of-way to the point of beginning of the parcel of land to be described; thence continuing southeasterly along said Railroad right-of-way 130 feet; thence northerly at right angles to the last described line 82.5 feet to a point on the Railroad Company's easterly right-of-way line; thence northwesterly along said easterly right-of-way line 130 feet; thence southwesterly at right angles to the last described line 82.50 feet to the point of beginning.

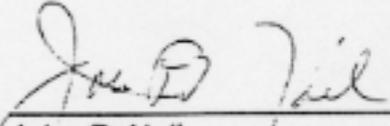
That approval has been given by the Wisconsin Department of Natural Resources for the close-out of an environmental contamination case involving the above-mentioned property, on the condition that notice of the existence of a groundwater use restriction on the property is recorded at the office of the Registrar of Deeds in the county where the property is located.

That prospective purchasers and other interested parties are hereby notified that a groundwater use restriction exists on the above-referenced property. Specifically, an underground storage tank (UST) was formerly located on a portion of the property. Based on evidence obtained during removal of the UST in 1989, petroleum leakage from the UST resulted in elevated concentrations of petroleum-related volatile organic compounds in shallow soils and the water table aquifer. Soo Line Railroad Company took action to investigate the magnitude and extent of these impacts, including the installation of groundwater monitoring wells. A groundwater quality monitoring program was completed in 1997, after demonstrating that groundwater impacts had not migrated off of the property.

Analytical results from samples of the groundwater on site indicated that contaminant concentrations in one well (MW-1) exceeded the established NR 140 groundwater standards for benzene and naphthalene within the boundaries of the referenced property.

The residual groundwater contamination in the shallow water table aquifer which exists on the property limits the use of the shallow water table aquifer for drinking water, given that NR 811 and NR 812 restrict well construction where NR 140 standards are exceeded. Anyone who proposes to construct a drinking water well on the referenced

property must contact the Wisconsin Department of Natural Resources to determine whether special requirements will be necessary.



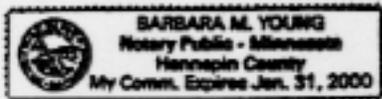
John P. Nail
Director, Real Estate Marketing, U.S.

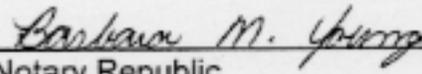
STATE OF MINNESOTA)

)SS

COUNTY OF HENNEPIN)

The foregoing was acknowledged before me this 20th day of January, 19 99, by John P. Nail, Director, Real Estate Marketing, U.S. of Soo Line Railroad Company, a corporation under the laws of Minnesota, on behalf of the corporation.





Notary Republic

My commission expires: 1-31-2000

This Deed Affidavit was prepared by Soo Line Railroad Company

BRAUNSM

INTERTEC

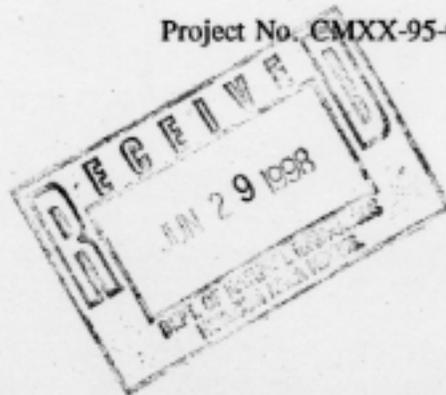
Braun Intertec Corporation
8585 West 78th Street
P.O. Box 39108
Minneapolis, Minnesota 55439-0108
612-946-6000 Fax: 946-6001

*Engineers and Scientists Serving
the Built and Natural Environments®*

June 24, 1998

Project No. **CMXX-95-0579**

Mr. Mark Putra
Wisconsin Department of Natural Resources
Horicon Flyway Center
N7725 Highway 28
Horicon, WI 53032



Dear Mr. Putra:

Re: Soo Line Railroad/Canadian Pacific Railway Watertown "West" Site, WDNR File Reference 760

As you directed during our telephone conversation on April 6, 1998, we have abandoned the groundwater monitoring wells at the referenced site and submitted the required well abandonment forms. In this letter, we provide a description of the real estate boundaries of the site, review the restrictions on groundwater use that are already in place, and make a recommendation on the need for additional institutional controls beyond those that are already protecting human health and the environment.

Site Description

The Real Estate Department of Soo Line Railroad Company, doing business as Canadian Pacific Railway (CPR) has, based on the location shown on the attached map, provided the following description of the referenced site:

Commencing at the intersection of the Railroad Company's westerly right-of-way line and the easterly right-of-way line of Welsh Road; thence southeasterly 970 feet along said Railroad westerly right-of-way to the point of beginning of the parcel of land to be described; thence continuing southeasterly along said Railroad right-of-way 130 feet; thence northerly at right angles to the last described line 82.5 feet to a point on the Railroad Company's easterly right-of-way line; thence northwesterly along said easterly right-of-way line 130 feet; thence southwesterly at right angles to the last described line 82.50 feet to the point of beginning.

This description covers that portion of railroad-owned right-of-way on which monitoring wells were located for the referenced project.

Status of Deed/Title

Please note that the property described above does not exist as a parcel which is separable from adjacent railroad owned property. This property is part of a main line railroad right-of-way that runs from Portal, North Dakota to Chicago, Illinois. This main line was obtained by CPR in 1985, with a single recording of sale covering all of the railroad property obtained in the State of Wisconsin on file at the Secretary of State's office in Madison. There is no separate deed or title held by CPR for the referenced parcel on file in the Dodge County Recorder's Office on which to place an institutional control. However, a number of institutional controls restricting land and groundwater use already exist at the site.

Current On-Site Land Use

The entire site is currently used as CPR's main line railroad right-of-way. The entire right-of-way extends from Portal, North Dakota to Chicago, Illinois. The site is used by CPR to move freight, and by Amtrak for passenger railroad service. There are no buildings, structures or other facilities on site, and no need for water supply within the right-of-way.

Future On-Site Land Use

It is reasonable to assume that the current land use as a railroad right-of-way will extend into the foreseeable future. Freight and passenger railroad operations have been conducted on this property for more than 100 years. CPR has no plans on selling this property in the near future; in fact, CPR is making a significant investment in this main line. As an example, in 1998 CPR will spend more than \$6 million on track and facility improvements alone on the Watertown subdivision, which runs from Portage to Milwaukee. These improvements are solely for the purpose of conducting railroad operations, and have little to no value for alternative land uses.

Given the significant investment in the railroad infrastructure and the intrinsic value of the right-of-way corridor, the most likely purchaser of the property (should CPR sell) would be another railroad. Future railroad operators would experience operating conditions similar to those that exist under the current land use.

Federal On-Site Land Use Restrictions

Whether or not CPR continues to own this property, railroad operations on site can not be terminated without approval of the federal government. In order to remove the track on the site and sell the property for some other land use, CPR or its successors would need to petition the

Surface Transportation Board (STB), a federal adjudicatory body administratively housed within the U.S. Department of Transportation, to abandon the track. The STB will only approve of such an abandonment if there is no longer a need for rail service along the track route. As the most direct main line railroad route between Milwaukee and Minneapolis, and the main line trackage used by Amtrak, it is improbable that it could be demonstrated that this railroad track will no longer be needed.

Adjacent Land Use

If this main line track was ever abandoned and the property sold and developed, the land usage on adjacent property would restrict the potential for groundwater use.

As a stand alone piece of property, the site has limited development potential. It is only 82.5 feet wide and currently located almost 1000 feet from the nearest street access. Only through combination of this property with adjacent parcels would a large enough parcel be developable and the potential for groundwater use be created.

The land south of the site is being developed for residential use. Individual lots adjacent to railroad right-of-way are approximately 100 feet by 120 feet in dimension. Each of the homes on these lots is serviced by a municipal water utility. Given the parcelling of this property, it is very unlikely that the site could, at some point in the future, be combined with property to the south to form a larger parcel on which development and groundwater usage could occur.

The land north of the site is a 15 foot wide utility right-of-way currently owned by the Wisconsin Electric Power Company. An electric utility line is buried under this right-of-way. On the ground surface of this right-of-way is a trail maintained by the City of Watertown Parks Department. Further north is land owned by the Parks Department. According to the Parks Department, this land is currently used as a gravel quarry and will at some point be developed for recreational use. These current and future land uses restrict development of the referenced site by limiting potential for combining parcels of property.

Municipal Restrictions on Private Wells

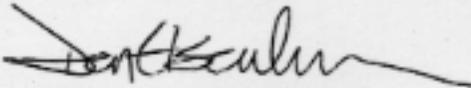
According to the City of Watertown Water Utility, a city ordinance prohibits the installation of private wells for local groundwater use when municipal water supply is accessible. Municipal water from the City of Watertown is supplied to the residential development immediately south of the site. Therefore, in the very unlikely event that the site land use changed into one which required a water supply, local restrictions would prohibit the utilization of local groundwater through use of a private well.

Summary

The current and likely future land use on site is railroad operations. These operations do not require use of groundwater. In order to develop the site for some other land use, the main line track would need to be abandoned, which is unlikely given the need for Federal approval and the significant investment in railroad infrastructure. Even if a need developed on site for a water supply, there is nearby access to a municipal water line and a local prohibition on construction of private wells. In short, there are a number of institutional controls already in place at this site which restrict utilization of local groundwater. Therefore, we submit that these controls are already protecting human health and the environment and that additional controls are not necessary.

Please contact me at (612) 833-4627 should you have any additional questions or need additional information.

Sincerely,

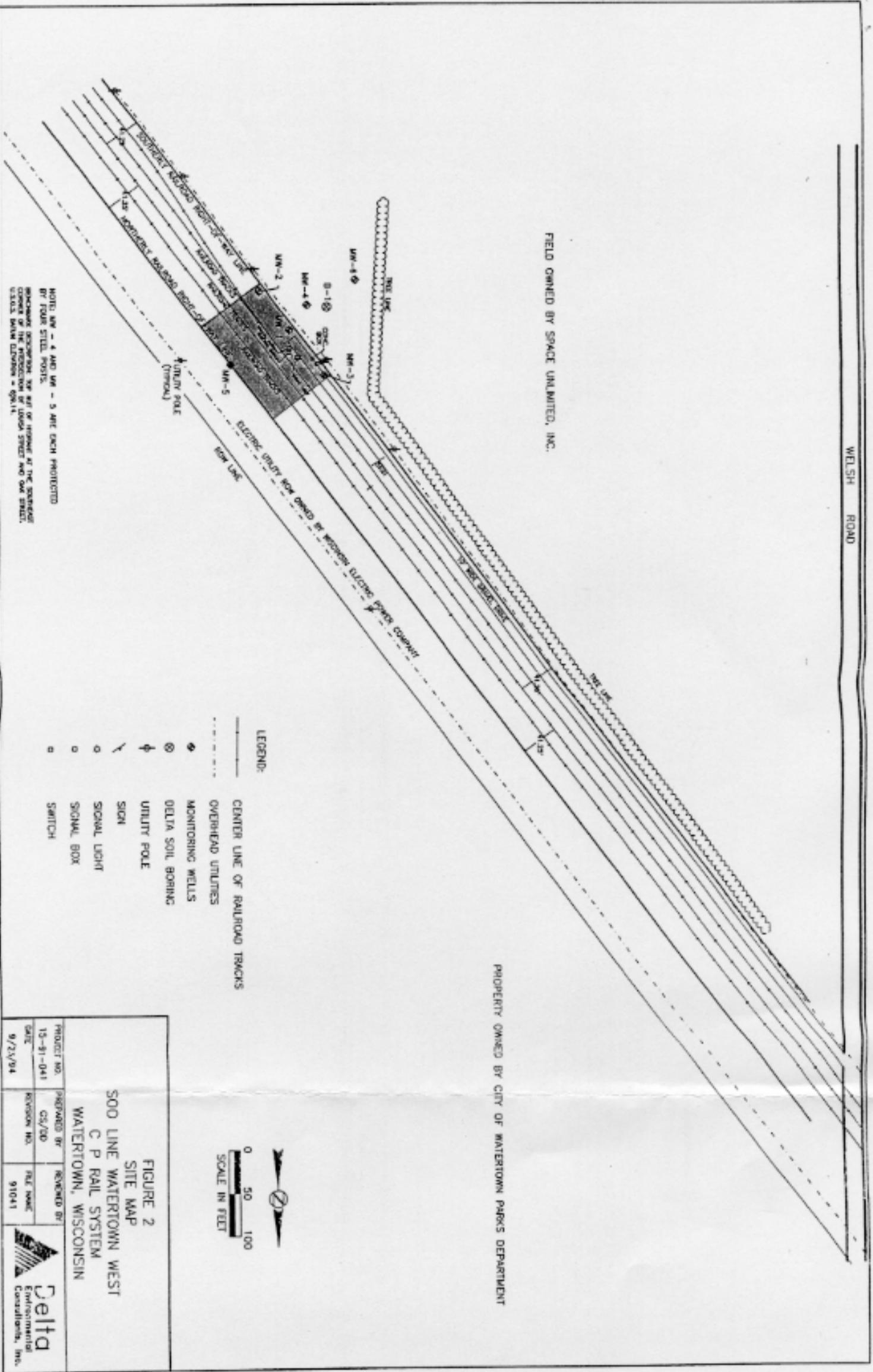


Donald Elsenheimer, Ph.D.
Project Manager

c: Ms. LeeAnn Thomas
Canadian Pacific Railway

FIELD OWNED BY SPACE UNLIMITED, INC.

PROPERTY OWNED BY CITY OF WATERTOWN PARKS DEPARTMENT



NOTE: MW - 4 AND MW - 5 ARE EACH PROTECTED BY FOUR STEEL PILES.
 MONITORING DEPTH: 30' WET OF CENTER OF THE TRACKS
 CENTER OF THE PROJECTION OF UNDER STREET AND ONE STREET.
 U.S.G.S. MAIN ELEVATION = 594.1'

LEGEND:

- CENTER LINE OF RAILROAD TRACKS
- OVERHEAD UTILITIES
- ⊗ MONITORING WELLS
- ⊗ DELTA SOIL BORING
- ⊕ UTILITY POLE
- ⊗ SIGN
- ⊗ SIGNAL LIGHT
- SIGNAL BOX
- SWITCH

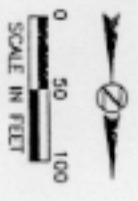
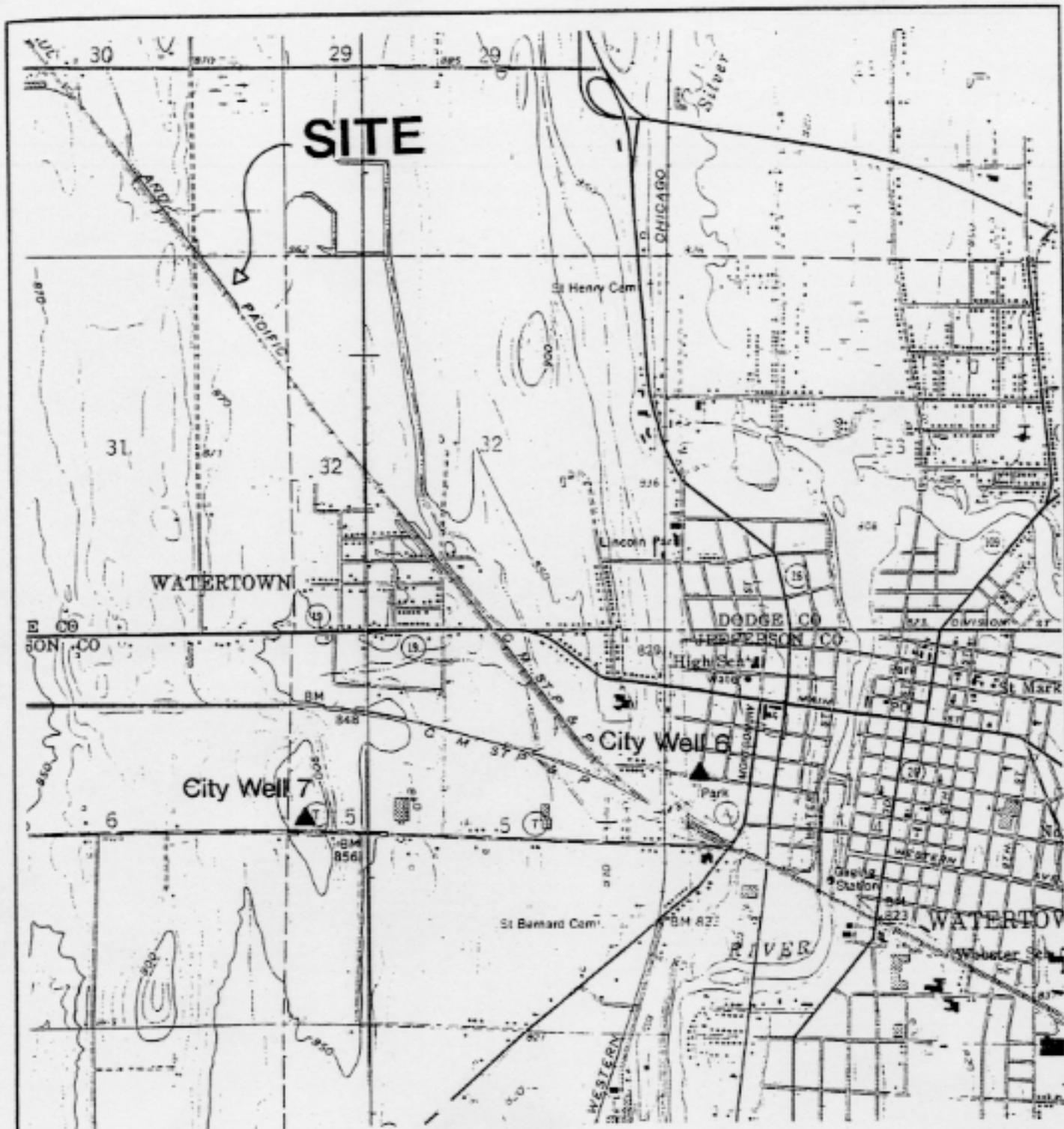


FIGURE 2 SITE MAP SOO LINE WATERTOWN WEST C P RAIL SYSTEM WATERTOWN, WISCONSIN		
PROJECT NO. 15-91-041	DESIGNED BY CS/DO	REVISION NO. 91041
DATE 9/25/94	REVISION NO. 91041	SCALE IN FEET 91041



RICHWOOD QUADRANGLE
 WATERTOWN QUADRANGLE
 WISCONSIN
 7.5 MINUTE SERIES (TOPOGRAPHIC)

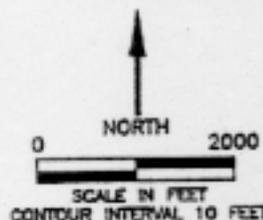
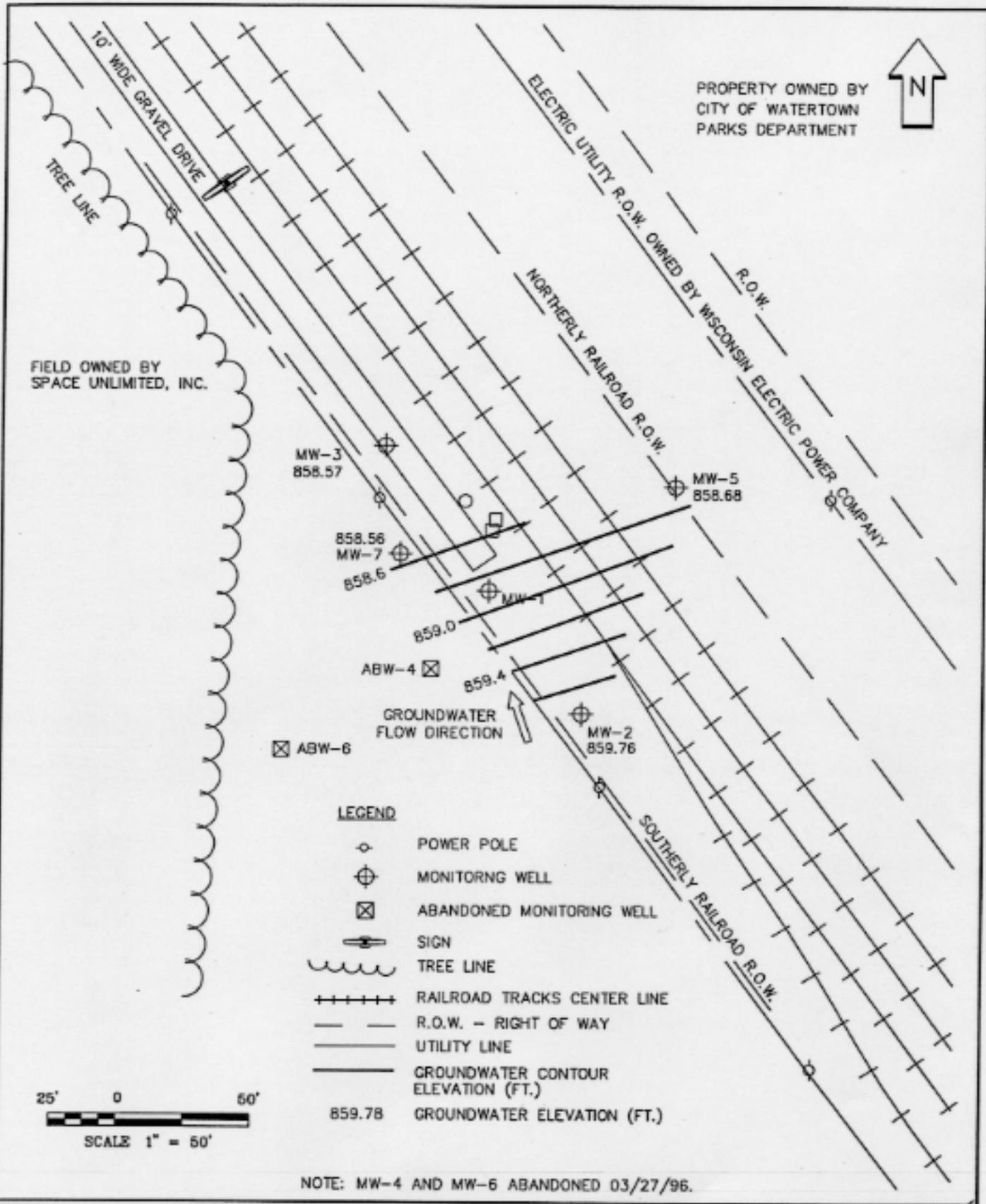


FIGURE 1
 SITE LOCATION MAP
 WATERTOWN WEST
 SOO LINE RAILROAD
 WATERTOWN, WISCONSIN

PROJECT NO. 15-91-041	PREPARED BY GS/SO	REVIEWED BY
DATE 3/1/93	REVISION NO.	FILE NAME





BRAUN
INTERTEC

GROUNDWATER CONTOUR MAP (12-3-97)
ADDITIONAL INVESTIGATION
CANADIAN PACIFIC RAILWAY - WATERTOWN WEST SITE
WATERTOWN, WISCONSIN

INT	REVISION	SHEET
DRAWN BY: LOL	8-24-95	
APP'D BY: DWE	1-14-98	OF
JOB NO. CMXX-95-0579		
DWG. NO. MX50579A	FIGURE NO.	
SCALE 1" = 50'		2

Table 2

Canadian Pacific Railway

Watertown West Site
Watertown, Wisconsin

MW-1 Groundwater Quality Data Summary

Parameter	Suburban	Suburban	Suburban	NET	Duplicate	Groundwater Limit							
	09/18/92	01/05/94	07/12/94	03/22/95	04/27/95	05/01/95	11/20/95	02/22/96	05/21/96	05/22/97	NET	ES	PAL
VOC (µg/L):													
Benzene	4.0	27.1	6.2	5.6	NA	9.5	19	22	24	15	17	5	0.5
n-Butylbenzene	<1.0	6.9	<0.48	5.1	NA	6.4	<25	<20	70	1.3	1.5		
sec-Butylbenzene	4.0	6.8	<0.80	3.9	NA	4.8	<25	<20	22	3.7	4.1		
tert-Butylbenzene	<1.0	2.5	<0.73	<1.0	NA	<1.0	<25	<20	<5.0	<0.38	<0.38		
Ethyl Benzene	52.0	69.9	36	40	NA	38	46	58	80	31	50	700	140
Isopropylbenzene (cumene)	8.0 MI	12.9	7.8	9.8	NA	10	<25	<20	18	10	12		
Isopropyltoluene	8.0	13.6	6.0	<1.0	NA	2.2	<25	<20	11	0.95	1.0		
Methylene Chloride	<1.0	<1.0	<1.0	NA	NA	<5.0	<120	180 (L)	<25	2.7 (L)	<0.87	150	15
Naphthalene	112.0	53.0	39	100	NA	66	66	<20	190	42	63	40	8
n-Propylbenzene	5.0	16.1	7.7	<1.0	NA	16	<25	20	49	12	14		
Styrene	<1.0	2.0	<0.56	<1.0	NA	<1.0	<25	<20	<5.0	<0.16	<0.16	100	10
Tetrachloroethylene	<1.0	<1.0	<0.069	<1.0	NA	<1.0	<25	<20	<5.0	<0.63	<0.63	5	0.5
Toluene	4.0	<1.0	0.41	<1.0	NA	<1.0	<25	<20	<5.0	<0.39	0.47	343	68.6
1,2,4-Trimethylbenzene	67.0	15.1	20	37	NA	26	26	42	70	11	23		
1,3,5-Trimethylbenzene	45.0	6.4	14	2.0	NA	3.6	<25	<20	34	1.7	3.6		
Total Xylenes	99.0	26.2	11.5	16	NA	19	<75	<60	41	6.5	26	620	124
Total VOCs (1)	401.00	259.50	150.41	219.40	NA	203.30	181.00	142.00	609.00	135.15	235.67		
PAH (µg/L):													
Acenaphthene	<18.0	<18.0	11.8	NA	<1.0	<1.0	NA	NA	NA	NA	NA		
Fluorene	<2.1	<2.1	0.781	NA	0.56	2.1	NA	NA	NA	NA	NA		
1-Methylnaphthalene	NA	<18.0	55.6	NA									
2-Methylnaphthalene	NA	<18.0	12.4	NA									
Naphthalene	<18.0	<18.0	63.4	NA	47	32	NA	NA	NA	NA	NA	40	8
Diesel Range Organics	1982	<100	9740	15000	NA	3900	NA	NA	NA	NA	NA		
Gasoline Range Organics	NA	NA	NA	NA	NA	700	NA	NA	NA	NA	NA		

MW-1 Groundwater Biogeochemical Data Summary (mg/L, except as indicated)

Parameter	02/20/93	03/17/93	05/25/93	07/01/93	01/06/94	05/17/94	07/12/94	03/22/95	04/27/95	09/01/95	11/20/95	02/22/96	05/21/96	05/22/97
Alkalinity (as CaCO3)	NA	NA	NA	NA	550	NA								
Ammonia, as N	NA	NA	NA	NA	<0.1	4	3.0	NA						
Biochemical Oxygen Demand	NA	NA	NA	NA	22	NA								
Chemical Oxygen Demand	NA	NA	NA	NA	81	NA	NA	NA	NA	58	NA	NA	NA	NA
Dissolved Oxygen	1	0.1	1	0.05	0	2	1	0.2	0.3	1.0	3.0	3.0	3.0	1
Eh (mV)	NA	8	NA	NA	NA	NA	NA	-93.8						
Hardness, total	NA	NA	NA	NA	530	NA								
Iron, dissolved	NA	NA	NA	NA	NA	>10	>10	>10	NA	NA	NA	NA	NA	38
Iron, total	NA	NA	NA	NA	NA	>10	>10	>10	NA	NA	NA	NA	NA	NA
Manganese, dissolved	NA	2.5												
Nitrate plus Nitrite	NA	NA	NA	NA	0.23	NA								
Nitrate	NA	NA	NA	NA	NA	0	0.4	NA	NA	NA	NA	NA	NA	0.18 (A)
pH (units)	NA	NA	NA	NA	6.9	6.8	6.8	6.9	NA	7.12	6.87	6.97	6.98	6.46
Orthophosphate	NA	NA	NA	NA	<0.02	NA								
Phosphate	NA	NA	NA	NA	NA	0.8	NA							
Total Phosphorus	NA	<0.10	NA	NA	NA	NA								
Specific Conductance (µmhos/cm)	NA	NA	NA	NA	NA	700	1100	800	NA	8220	2800	910	8110	874
Sulfate	NA	NA	NA	NA	<2	NA	86							
Temperature (°C)	NA	NA	NA	NA	4	8	23	7	NA	18.4	16.8	6.4	15.0	10.8
Total Kjeldahl Nitrogen, as N	NA	1.8	NA	NA	NA	NA								
Total Organic Carbon	NA	NA	NA	NA	13.7	NA								

NA = Not analyzed.

MI = Matrix interference.

(L) = Common laboratory contaminant.

(1) False positive values (laboratory contamination) not included in calculation.

(A) Analyzed/extracted past hold time.

Shading indicates exceedance of ES and/or PAL.

Note: Sulfate ES = 250 mg/L; PAL = 125 mg/L.

Table 3

Canadian Pacific Railway

Watertown West Site
Watertown, Wisconsin

MW-2 Groundwater Quality Data Summary

Parameter	Suburban	Suburban	Suburban	NET	NET	NET	NET	NET	Groundwater Limit	
	09/18/92	01/06/94	07/12/94	03/22/95	04/27/95	08/31/95	03/27/97	05/22/97	ES	PAL
VOC (µg/L):										
Benzene	<1.0	<1.0	<0.089	<1.0	NA	<0.50	<0.13	<0.31	5	0.5
n-Butylbenzene	<1.0	<1.0	<0.048	NA	NA	<1.0	<0.37	<0.44		
sec-Butylbenzene	<1.0	<1.0	<0.060	NA	NA	<1.0	<0.16	<0.45		
tert-Butylbenzene	<1.0	<1.0	<0.073	NA	NA	<1.0	<0.24	<0.38		
Ethyl Benzene	<1.0	<1.0	<0.070	<1.0	NA	<1.0	<0.12	<0.38	700	140
Isopropylbenzene (cumene)	<1.0	<1.0	<0.047	NA	NA	<1.0	<0.13	<0.36		
Isopropyltoluene	<1.0	<1.0	<0.035	NA	NA	<1.0	<0.30	<0.35		
Methylene Chloride	<1.0	<1.0	<1.0	NA	NA	<5.0	3.7 (L)	<0.87	150	15
Naphthalene	<1.0	<1.0	<0.10	NA	NA	<1.0	<0.46	<0.35	40	8
n-Propylbenzene	<1.0	<1.0	<0.19	NA	NA	<1.0	<0.16	<0.46		
Styrene	<1.0	<1.0	<0.058	NA	NA	<1.0	<0.42	<0.16	100	10
Tetrachloroethylene	<1.0	<1.0	0.19	NA	NA	<1.0	<0.35	<0.53	5	0.5
Toluene	<1.0	<1.0	0.21	<1.0	NA	<1.0 MI	<0.11	<0.39	343	68.6
1,2,4-Trimethylbenzene	<1.0	<1.0	<0.097	<1.0	NA	<1.0	<0.34	<0.32		
1,3,5-Trimethylbenzene	<1.0	<1.0	<0.039	<1.0	NA	<1.0	<0.48	<0.33		
Total Xylenes	<1.0	<1.0	<0.208	<3.0	NA	<3.0	<1.8	<1.1	620	124
Total VOCs (1)	0.00	0.00	0.40	0.00	NA	0.00	0.00	0.00		
PAH (µg/L):										
Acenaphthene	<18.0	<18.0	<0.1	NA	<1.0	<1.0	NA	NA		
Fluorene	<2.1	<2.1	<0.06	NA	<0.40	<0.40	NA	NA		
1-Methylnaphthalene	NA	<18.0	<0.4	NA	NA	NA	NA	NA		
2-Methylnaphthalene	NA	<18.0	<0.4	NA	NA	NA	NA	NA		
Naphthalene	<18.0	<18.0	<0.11	NA	<1.0	<1.0	NA	NA	40	8
Diesel Range Organics										
Diesel Range Organics	<100	<100	<15	<100	NA	<100	NA	NA		
Gasoline Range Organics										
Gasoline Range Organics	NA	NA	NA	NA	NA	<50	NA	NA		

MW-2 Groundwater Biogeochemical Data Summary (mg/L, except as indicated)

Parameter	02/20/93	03/17/93	05/25/93	07/01/93	01/05/94	05/17/94	07/12/94	03/22/95	04/27/95	08/31/95	03/27/97	05/22/97
Alkalinity (as CaCO ₃)	NA	NA	NA	NA	353	NA						
Ammonia, as N	NA	NA	NA	NA	<0.1	0.2	0.3	NA	NA	NA	NA	NA
Biochemical Oxygen Demand	NA	NA	NA	NA	<2	NA						
Chemical Oxygen Demand	NA	NA	NA	NA	5	NA	NA	NA	NA	6.9	6.9	NA
Dissolved Oxygen	2	2	2	2	1.5	5.6	4	5	5.3	3	NA	2
Eh (mV)	NA	167	NA	NA	NA	-85.1						
Hardness, total	NA	NA	NA	NA	430	NA						
Iron, dissolved	NA	NA	NA	NA	NA	0.6	1	0.2	NA	NA	0.56	1.5
Iron, total	NA	NA	NA	NA	NA	1	1	0.4	NA	NA	NA	NA
Manganese, dissolved	NA	0.013	0.070									
Nitrate plus Nitrite	NA	NA	NA	NA	4.28	NA	NA	NA	NA	NA	4.3	NA
Nitrate	NA	NA	NA	NA	NA	0.8	4.5	NA	NA	NA	NA	3.9 (A)
pH (units)	NA	NA	NA	NA	6.6	7.1	7.2	7.2	NA	7.36	5.20	6.69
Orthophosphate	NA	NA	NA	NA	0.00	NA						
Phosphate	NA	NA	NA	NA	NA	0.4	NA	NA	NA	NA	NA	NA
Total Phosphorus	NA	<0.10	NA	NA								
Specific Conductance (µmhos/cm)	NA	NA	NA	NA	NA	510	600	600	NA	6810	700	670
Sulfate	NA	NA	NA	NA	52	NA	NA	NA	NA	NA	31	53
Temperature (°C)	NA	NA	NA	NA	1	8	24	6	NA	21.8	10.0	11.7
Total Kjeldahl Nitrogen, as N	NA	<0.50	NA									
Total Organic Carbon	NA	NA	NA	NA	4.48	NA						

NA = Not analyzed.

MI = Matrix interference.

(L) = Common laboratory contaminant.

(1) False positive values (laboratory contamination) not included in calculation.

(A) Analyzed/extracted past hold time.

Note: Sulfate ES = 250 mg/L; PAL = 125 mg/L.

Table 4

Canadian Pacific Railway

Watertown West Site
Watertown, Wisconsin

MW-3 Groundwater Quality Data Summary

Parameter	Suburban	Suburban	Suburban	NET	NET	NET	NET	NET	Groundwater Limit	
	09/10/92	01/06/94	07/12/94	03/22/95	04/27/95	09/31/95	03/27/97	05/22/97	ES	PAL
VOC (µg/L):										
Benzene	<1.0	<1.0	<0.089	<1.0	NA	<0.50	<0.13	<0.31	5	0.5
n-Butylbenzene	<1.0	<1.0	<0.048	NA	NA	<1.0	<0.37	<0.44		
sec-Butylbenzene	<1.0	<1.0	<0.060	NA	NA	<1.0	<0.16	<0.45		
tert-Butylbenzene	<1.0	<1.0	<0.073	NA	NA	<1.0	<0.24	<0.38		
Ethyl Benzene	<1.0	<1.0	<0.070	<1.0	NA	<1.0	<0.12	<0.38	700	140
Isopropylbenzene (cumene)	<1.0	<1.0	<0.047	NA	NA	<1.0	<0.13	<0.38		
Isopropyltoluene	<1.0	<1.0	<0.035	NA	NA	<1.0	<0.30	<0.35		
Methylene Chloride	<1.0	<1.0	<1.0	NA	NA	<5.0	2.0 (L)	<0.87	150	15
Naphthalene	<1.0	<1.0	<0.10	NA	NA	<1.0	<0.46	<0.35	40	8
n-Propylbenzene	<1.0	<1.0	<0.19	NA	NA	<1.0	<0.16	<0.45		
Styrene	<1.0	<1.0	<0.056	NA	NA	<1.0	<0.42	<0.16	100	10
Tetrachloroethylene	<1.0	<1.0	<0.25	NA	NA	<1.0	<0.35	<0.63	5	0.5
Toluene	<1.0	<1.0	<0.30	<1.0	NA	<1.0	<0.11	<0.39	343	68.6
1,2,4-Trimethylbenzene	<1.0	<1.0	<0.097	<1.0	NA	<1.0	<0.34	<0.32		
1,3,5-Trimethylbenzene	<1.0	<1.0	<0.039	<1.0	NA	<1.0	<0.48	<0.33		
Total Xylenes	<1.0	<1.0	<0.208	<3.0	NA	<3.0	<1.8	<1.1	620	124
Total VOCs (1)	0.00	0.00	0.55	0.00	NA	0.00	0.00	0.00		
PAH (µg/L):										
Acenaphthene	<18.0	<18.0	<0.1	NA	<1.0	<1.0	NA	NA		
Fluorene	<2.1	<2.1	<0.06	NA	<0.40	<0.40	NA	NA		
1-Methylnaphthalene	NA	<18.0	<0.4	NA	NA	NA	NA	NA		
2-Methylnaphthalene	NA	<18.0	<0.4	NA	NA	NA	NA	NA		
Naphthalene	<18.0	<18.0	<0.11	NA	<1.0	<1.0	NA	NA	40	8
Diesel Range Organics	<100	<100	<15	<100	NA	<100	NA	NA		
Gasoline Range Organics	NA	NA	NA	NA	NA	<50	NA	NA		

MW-3 Groundwater Biogeochemical Data Summary (mg/L, except as indicated)

Parameter	02/20/93	03/17/93	05/25/93	07/01/93	01/05/94	05/17/94	07/12/94	03/22/95	04/27/95	08/31/95	03/27/97	05/22/97
Alkalinity (as CaCO ₃)	NA	NA	NA	NA	432	NA						
Ammonia, as N	NA	NA	NA	NA	<0.1	0.3	0.8	NA	NA	NA	NA	NA
Biochemical Oxygen Demand	NA	NA	NA	NA	<2	NA						
Chemical Oxygen Demand	NA	NA	NA	NA	7	NA	NA	NA	NA	<5.0	NA	NA
Dissolved Oxygen	3	4	3	5	2	5.1	4	5.4	6.1	3	NA	5
Eh (mV)	NA	189	NA	NA	93.2	59.4						
Hardness, total	NA	NA	NA	NA	470	NA						
Iron, dissolved	NA	NA	NA	NA	NA	0.8	1	0.2	NA	NA	0.82	5.0
Iron, total	NA	NA	NA	NA	NA	1	2	0.4	NA	NA	NA	NA
Manganese, dissolved	NA	0.018	0.53									
Nitrate plus Nitrite	NA	NA	NA	NA	1.93	NA	2.0	NA	NA	NA	5.6	NA
Nitrate	NA	NA	NA	NA	NA	0.4	NA	NA	NA	NA	NA	5.5 (A)
pH (units)	NA	NA	NA	NA	6.6	7.0	7.3	7.1	NA	7.71	6.50	6.67
Orthophosphate	NA	NA	NA	NA	0.09	NA						
Phosphate	NA	NA	NA	NA	NA	0.8	NA	NA	NA	NA	NA	NA
Total Phosphorus	NA	<0.10	NA	NA								
Specific Conductance (µmhos/cm)	NA	NA	NA	NA	NA	600	800	600	NA	7780	907	747
Sulfate	NA	NA	NA	NA	56	NA	NA	NA	NA	NA	50	73
Temperature (°C)	NA	NA	NA	NA	1	8	23	7	NA	19.9	9.8	9.6
Total Kjeldahl Nitrogen, as N	NA	<0.50	NA	NA								
Total Organic Carbon	NA	NA	NA	NA	3.09	NA						

NA = Not analyzed.

(L) = Common laboratory contaminant.

(1) False positive values (laboratory contamination) not included in calculation.

(A) Analyzed/extracted past hold time.

Note: Sulfate ES = 250 mg/L; PAL = 125 mg/L.

Table 5

Canadian Pacific Railway

Waterbury West Site
Waterbury, Wisconsin

MW-4 Groundwater Quality Data Summary

Parameter	Suburban	Duplicate	Suburban	Duplicate	Suburban	Duplicate	NET	Duplicate	NET	Duplicate	NET	Duplicate	NET	Groundwater Limit	
	05/15/92	05/15/92	01/05/94	01/05/94	07/12/94	07/12/94	03/22/95	03/22/95	04/27/95	04/27/95	05/31/95	05/31/95	02/28/96	ES	PAL
VOC (µg/L):															
Benzene	<1.0	<1.0	<1.0	<1.0	<0.080	<0.080	<1.0	2.8	NA	NA	<0.50	<0.50	<0.50	5	0.5
n-Butylbenzene	<1.0	<1.0	<1.0	<1.0	<0.048	<0.048	1.8	NA	NA	NA	1.0	1.8	<1.0		
sec-Butylbenzene	<1.0	3.0	<1.0	<1.0	1.4	1.5	2.0	NA	NA	NA	1.8	1.5	<1.0		
tert-Butylbenzene	<1.0	<1.0	<1.0	<1.0	0.19	0.17	<1.0	NA	NA	NA	<1.0	<1.0	<1.0		
Ethyl Benzene	<1.0	<1.0	<1.0	<1.0	<0.070	0.079	<1.0	40	NA	NA	<1.0	<1.0	<1.0	700	140
Isopropylbenzene (cumene)	<1.0	<1.0	<1.0	<1.0	0.81	0.40	1.5	NA	NA	NA	1.1	<1.0	<1.0		
Isopropyltoluene	4.0	6.0	<1.0	<1.0	0.42	0.37	<1.0	NA	NA	NA	<1.0	<1.0	<1.0		
Naphthalene	07.0	25.0	7.5	<1.0	<0.10	<0.10	0.11	NA	NA	NA	1.2	1.1	<1.0	40	8
n-Propylbenzene	<1.0	2.0	<1.0	<1.0	0.22	0.19	<1.0	NA	NA	NA	<1.0	<1.0	<1.0		
Styrene	<1.0	<1.0	<1.0	<1.0	<0.050	<0.050	NA	NA	NA	NA	<1.0	<1.0	<1.0		
Tetrahydrofuran	<1.0	<1.0	<1.0	<1.0	0.23	0.24	<1.0	NA	NA	NA	<1.0	<1.0	<1.0	100	10
Toluene	<1.0	<1.0	<1.0	<1.0	0.18	0.21	<1.0	<1.0	NA	NA	<1.0	<1.0	<1.0	5	0.5
1,2,4-Trimethylbenzene	10.0	10.0	<1.0	<1.0	0.28	0.28	<1.0	36	NA	NA	<1.0	<1.0	<1.0	343	68.0
1,3,5-Trimethylbenzene	10.0	10.0	<1.0	<1.0	0.23	0.23	<1.0	2.3	NA	NA	<1.0	<1.0	<1.0		
Total Xylenes	<1.0	<1.0	<1.0	<1.0	<0.208	<0.208	<1.0	18	NA	NA	<1.0	<1.0	<1.0	620	124
Total VOCs	41.00	57.00	7.50	0.00	3.72	3.65	16.30	110.80	NA	NA	4.90	4.40	0.00		
PAH (µg/L):															
Acenaphthene	<18.0	<18.0	<18.0	<18.0	<0.2	<0.1	NA	NA	<1.0	<1.0	<1.0	<1.0	NA		
Fluorene	<2.1	<2.1	<2.1	<2.1	<0.12	<0.06	NA	NA	<0.40	<0.40	<0.40	<0.40	NA		
1-Methylnaphthalene	NA	NA	<18.0	<18.0	<0.8	<0.4	NA	NA	NA	NA	NA	NA	NA		
2-Methylnaphthalene	NA	NA	<18.0	<18.0	<0.8	<0.4	NA	NA	NA	NA	NA	NA	NA		
Naphthalene	<18.0	<18.0	<18.0	<18.0	<0.22	<0.11	NA	NA	<1.0	<1.0	<1.0	<1.0	NA	40	8
Diesel Range Organics															
Diesel Range Organics	730	1010	<100	152	530	413	400	11000	NA	NA	190	260	NA		
Gasoline Range Organics															
Gasoline Range Organics	NA	NA	74	91	NA										

MW-4 Groundwater Biogeochemical Data Summary (mg/L, except as indicated)

Parameter	02/02/93	03/17/93	05/25/93	07/01/93	01/06/94	05/17/94	07/12/94	03/22/95	04/27/95	05/31/95	02/28/96
Alkalinity (as CaCO3)	NA	NA	NA	NA	448	NA	NA	NA	NA	NA	NA
Ammonia, as N	NA	NA	NA	NA	<0.1	0.2	0.3	NA	NA	NA	NA
Biochemical Oxygen Demand	NA	NA	NA	NA	<2	NA	NA	NA	NA	NA	NA
Chemical Oxygen Demand	NA	NA	NA	NA	25	NA	NA	NA	NA	NA	NA
Dissolved Oxygen	1	0.1	1	0.8	0	3	2	0.5	0.7	2	NA
Et (mV)	NA	73	NA	NA	NA						
Hardness, total	NA	NA	NA	NA	470	NA	NA	NA	NA	NA	NA
Iron, dissolved	NA	NA	NA	NA	NA	0.1	0.3	0.8	NA	NA	NA
Iron, total	NA	NA	NA	NA	NA	1	1	1.0	NA	NA	NA
Manganese, dissolved	NA										
Nitrate plus Nitrite	NA	NA	NA	NA	0.50	NA	NA	NA	NA	NA	NA
Nitrate	NA	NA	NA	NA	NA	0.1	0.8	NA	NA	NA	NA
pH (units)	NA	NA	NA	NA	6.9	7.3	7.5	7.1	NA	7.66	6.99
Orthophosphate	NA	NA	NA	NA	0.04	NA	NA	NA	NA	NA	NA
Phosphate	NA	NA	NA	NA	NA	0.6	NA	NA	NA	NA	NA
Total Phosphorus	NA										
Specific Conductance (µmhos/cm)	NA	NA	NA	NA	NA	600	900	600	NA	6000	696
Sulfate	NA	NA	NA	NA	3	NA	NA	NA	NA	NA	NA
Temperature (°C)	NA	NA	NA	NA	4	9	24	7	NA	NA	NA
Total Kjeldahl Nitrogen, as N	NA	21.5	3.8								
Total Organic Carbon	NA	NA	NA	NA	16.2	NA	NA	NA	NA	NA	NA

NA = Not analyzed.

Shading indicates exceedance of ES and/or PAL.

Note: Monitoring well MW-4 abandoned 03/27/96.

Note: Sulfate ES = 250 mg/L; PAL = 125 mg/L.

Table 6

Canadian Pacific Railway

Watertown West Site
Watertown, Wisconsin

MW-5 Groundwater Quality Data Summary

Parameter	Suburban	Suburban	Suburban	NET	NET	NET	NET	Groundwater Limit	
	09/18/92	01/06/94	07/12/94	03/22/95	04/27/95	08/31/95	05/22/97	ES	PAL
VOC (µg/L):									
Benzene	<1.0	<1.0	<0.089	<1.0	NA	<0.50	<0.31	5	0.5
n-Butylbenzene	<1.0	<1.0	<0.048	NA	NA	<1.0	<0.44		
sec-Butylbenzene	<1.0	<1.0	<0.060	NA	NA	<1.0	<0.45		
tert-Butylbenzene	<1.0	<1.0	<0.073	NA	NA	<1.0	<0.38		
Ethyl Benzene	<1.0	<1.0	<0.070	<1.0	NA	<1.0	<0.38	700	140
Isopropylbenzene (cumene)	<1.0	<1.0	<0.047	NA	NA	<1.0	<0.36		
Isopropyltoluene	<1.0	<1.0	<0.035	NA	NA	<1.0	<0.35		
Naphthalene	<1.0	<1.0	<0.10	NA	NA	<1.0	<0.35	40	8
n-Propylbenzene	<1.0	<1.0	<0.19	NA	NA	<1.0	<0.46		
Styrene	<1.0	<1.0	<0.056	NA	NA	<1.0	<0.16	100	10
Tetrachloroethylene	<1.0	<1.0	0.23	NA	NA	<1.0	<0.63	5	0.5
Toluene	<1.0	<1.0	0.22	<1.0	NA	<1.0	<0.39	343	68.6
1,2,4-Trimethylbenzene	<1.0	<1.0	<0.097	<1.0	NA	<1.0	<0.32		
1,3,5-Trimethylbenzene	<1.0	<1.0	<0.039	<1.0	NA	<1.0	<0.33		
Total Xylenes	<1.0	<1.0	<0.208	<3.0	NA	<3.0	<1.1	620	124
Total VOCs	0.00	0.00	0.45	0.00	NA	0.00	0.00		
PAH (µg/L):									
Acenaphthene	<18.0	<18.0	<0.1	NA	<1.0	<1.0	NA		
Fluorene	<2.1	<2.1	<0.06	NA	<0.40	<0.40	NA		
1-Methylnaphthalene	NA	<18.0	<0.4	NA	NA	NA	NA		
2-Methylnaphthalene	NA	<18.0	<0.4	NA	NA	NA	NA		
Naphthalene	<18.0	<18.0	<0.11	NA	<1.0	<1.0	NA	40	8
Diesel Range Organics	<100	<100	<15	<100	NA	<100	NA		
Gasoline Range Organics	NA	NA	NA	NA	NA	<50	NA		

MW-5 Groundwater Biogeochemical Data Summary (mg/L, except as indicated)

Parameter	05/25/93	07/01/93	01/06/94	05/17/94	07/12/94	03/22/95	04/27/95	08/31/95	05/22/97
Alkalinity (as CaCO3)	NA	NA	322	NA	NA	NA	NA	NA	NA
Ammonia, as N	NA	NA	<0.1	0.4	1.0	NA	NA	NA	NA
Biochemical Oxygen Demand	NA	NA	<2	NA	NA	NA	NA	NA	NA
Chemical Oxygen Demand	NA	NA	13	NA	NA	NA	NA	NA	NA
Dissolved Oxygen	3	1	1.5	3.4	1.0	5.8	5.5	1	2
Eh (mV)	NA	NA	NA	NA	NA	168	NA	NA	13.9
Hardness, total	NA	NA	350	NA	NA	NA	NA	NA	NA
Iron, dissolved	NA	NA	NA	0.8	0.4	0.0	NA	NA	0.27
Iron, total	NA	NA	NA	1	1	0.1	NA	NA	NA
Manganese, dissolved	NA	0.18							
Nitrate plus Nitrite	NA	NA	0.17	NA	NA	NA	NA	NA	NA
Nitrate	NA	NA	NA	0	0.1	NA	NA	NA	<0.10 (A)
pH (units)	NA	NA	6.8	7.2	7.2	7.2	NA	6.38	6.76
Orthophosphate	NA	NA	0.05	NA	NA	NA	NA	NA	NA
Phosphate	NA	NA	NA	0.3	NA	NA	NA	NA	NA
Specific Conductance (µmhos/cm)	NA	NA	NA	200	400	200	NA	3760	419
Sulfate	NA	NA	18	NA	NA	NA	NA	NA	40
Temperature (°C)	NA	NA	3	7	24	6	NA	19.4	12.3
Total Organic Carbon	NA	NA	3.37	NA	NA	NA	NA	NA	NA

NA = Not analyzed.

(A) Analyzed/extracted past hold time.

Note: Sulfate ES = 250 mg/L; PAL = 125 mg/L.

Table 7

Canadian Pacific Railway

Watertown West Site
Watertown, Wisconsin

ABW-6 Groundwater Quality Data Summary

Parameter	Suburban 01/06/94	Suburban 07/12/94	NET 03/22/95	NET 04/27/95	NET 08/31/95	Groundwater Limit	
						ES	PAL
VOC (µg/L):							
Benzene	<1.0	<0.089	<1.0	NA	<0.50	5	0.5
n-Butylbenzene	<1.0	<0.048	NA	NA	<1.0		
sec-Butylbenzene	<1.0	<0.080	NA	NA	<1.0		
tert-Butylbenzene	<1.0	<0.073	NA	NA	<1.0		
Ethyl Benzene	<1.0	<0.070	<1.0	NA	<1.0	700	140
Isopropylbenzene (cumene)	<1.0	<0.047	NA	NA	<1.0		
Isopropyltoluene	<1.0	<0.035	NA	NA	<1.0		
Naphthalene	<1.0	<0.10	NA	NA	<1.0	40	8
n-Propylbenzene	<1.0	<0.19	NA	NA	<1.0		
Styrene	<1.0	<0.056	NA	NA	<1.0	100	10
Tetrachloroethylene	<1.0	0.20	NA	NA	<1.0	5	0.5
Toluene	<1.0	0.23	<1.0	NA	<1.0	343	68.8
1,2,4-Trimethylbenzene	<1.0	<0.097	<1.0	NA	<1.0		
1,3,5-Trimethylbenzene	<1.0	<0.039	<1.0	NA	<1.0		
Total Xylenes	<1.0	<0.208	<3.0	NA	<3.0	620	124
Total VOCs	0.00	0.43	0.00	NA	0.00		
PAH (µg/L):							
Acenaphthene	<18.0	<0.1	NA	<1.0	<1.0		
Fluorene	<2.1	<0.06	NA	<0.40	<0.40		
1-Methylnaphthalene	<18.0	<0.4	NA	NA	NA		
2-Methylnaphthalene	<18.0	<0.4	NA	NA	NA		
Naphthalene	<18.0	<0.11	NA	<1.0	<1.0	40	8
Diesel Range Organics	<100	<15	<100	NA	<100		
Gasoline Range Organics	NA	NA	NA	NA	<50		

MW-6 Groundwater Biogeochemical Data Summary (mg/L, except as indicated)

Parameter	01/06/94	05/17/94	07/12/94	03/22/95	04/27/95	08/31/95
Alkalinity (as CaCO ₃)	1080	NA	NA	NA	NA	NA
Ammonia, as N	<0.1	0.5	2	NA	NA	NA
Biochemical Oxygen Demand	<2	NA	NA	NA	NA	NA
Chemical Oxygen Demand	6	NA	NA	NA	NA	NA
Dissolved Oxygen	2	NA	3	2.1	1.8	4
Eh (mV)	NA	NA	NA	181	NA	NA
Hardness, total	395	NA	NA	NA	NA	NA
Iron, dissolved	NA	NA	1	0.1	NA	NA
Iron, total	NA	NA	2	0.2	NA	NA
Nitrate plus Nitrite	6.96	NA	NA	NA	NA	NA
Nitrate	NA	0.4	4.0	NA	NA	NA
pH (units)	7.2	NA	7.3	7.2	NA	7.86
Orthophosphate	0.17	NA	NA	NA	NA	NA
Phosphate	NA	0.4	NA	NA	NA	NA
Specific Conductance (µmhos/cm)	NA	NA	800	500	NA	6380
Sulfate	46	NA	NA	NA	NA	NA
Temperature (°C)	3	NA	23	5	NA	21.3
Total Organic Carbon	15.3	NA	NA	NA	NA	NA

NA = Not analyzed.

Note: Monitoring well MW-6 abandoned 03/27/96.

Note: Sulfate ES = 250 mg/L; PAL = 125 mg/L.