State of Wisconsin
Department of Natural Resources
P.O. Box 7921, Madison, WI 53707-7921

GIS REGISTRY (Cover Sheet)
Form 4400-280 (R 6/13)

Source Property Information

CLOSURE DATE: 06/11/2014

BRRTS #: **02-57-561617**

FID #: 157005530

ACTIVITY NAME: BAAP PARCEL M1 & T1

DATCP #: NA

PROPERTY ADDRESS: S7560 STH 12

PECFA#: NA

MUNICIPALITY: NORTH FREEDOM

PARCEL ID #: M1 & T1

***WTM COORDINATES:**

X: **541156** Y: **317689**

** Coordinates are in WTM83, NAD83 (1991)*

WTM COORDINATES REPRESENT:

○ Approximate Center Of Contaminant Source

◉ Approximate Source Parcel Center

Please check as appropriate: (BRRTS Action Code)

CONTINUING OBLIGATIONS

Contaminated Media for Residual Contamination:

☐ Groundwater Contamination > ES *(236)*

- ☐ Contamination in ROW
- ☐ Off-Source Contamination

*(**note:** for list of off-source properties see "Impacted Off-Source Property Information, Form 4400-246")*

☒ Soil Contamination > *RCL or **SSRCL *(232)*

- ☐ Contamination in ROW
- ☐ Off-Source Contamination

*(**note:** for list of off-source properties see "Impacted Off-Source Property Information, Form 4400-246")*

Site Specific Obligations:

☐ Soil: maintain industrial zoning *(220)*

*(**note:** soil contamination concentrations between non-industrial and industrial levels)*

☐ Structural Impediment *(224)*

☐ Site Specific Condition *(228)*

☐ Cover or Barrier *(222)*

- ☐ Direct Contact
- ☐ Soil to GW Pathway

☐ Vapor Mitigation *(226)*

☐ Maintain Liability Exemption *(230)*

*(**note:** local government unit or economic development corporation was directed to take a response action)*

Monitoring Wells:

Are all monitoring wells properly abandoned per NR 141? *(234)*

○ Yes ◉ No ○ N/A

** Residual Contaminant Level*
***Site Specific Residual Contaminant Level*

State of Wisconsin
DEPARTMENT OF NATURAL RESOURCES
3911 Fish Hatchery Road
Fitchburg WI 53711-5397

Scott Walker, Governor
Cathy Stepp, Secretary
Telephone 608-266-2621
Toll Free 1-888-936-7463
TTY Access via relay - 711

June 11, 2014

Ms. Joan Kenney – Commander's Representative
Badger Army Ammunition Plant
S7560 Highway 12
North Freedom, WI 53951

KEEP THIS DOCUMENT WITH YOUR PROPERTY RECORDS

SUBJECT: Final Case Closure with Continuing Obligations
BAAP Parcels M1& T1, S7560 Highway 12, North Freedom, WI; Sauk County
DNR BRRTS Activity #: 02-57-561617

Dear Ms. Kenney:

The Department of Natural Resources (DNR) considers the Parcels M1 and T1 case closed, with continuing obligations. No further investigation or remediation is required at this time. However, you and future property owners, and occupants must comply with the continuing obligations as explained in the conditions of closure in this letter. Please read over this letter closely to ensure that the Army complies with all conditions and other on-going requirements. Provide this letter to anyone who purchases, rents or leases this property from you.

This final closure decision is based on the correspondence and data provided, and is issued under chs. NR 726 and 727, Wisconsin Administrative Code. The South Central Region (SCR) Project Manager began reviewing the request for closure on January 29, 2014. The project manager reviewed this environmental remediation case for compliance with state laws and standards.

Only soil was contaminated in these two parcels, primarily at shallow depths. The following are the primary contaminants that necessitated remediation by soil excavation: dinitrotoluene, nitroglycerine, lead, and chromium. The conditions of closure and continuing obligations required were based on: the Parcel T1 property being used for industrial purposes, in a general sense, by the Bluffview Sanitary District (owner); and the Parcel M1 property being used for recreational purposes by the Wisconsin Department of Natural Resources (owner).

Monitoring wells are located within these two parcels that were installed to primarily monitor source areas in other areas of BAAP. These wells will remain for current and future monitoring of groundwater for contaminants from these other areas. These wells remain the responsibility of the Army until they are properly abandoned after DNR approval.

Continuing Obligations

The continuing obligations for this site are summarized below. Further details on actions required are found in the Closure Conditions section.

- Residual soil contamination exists that must be properly managed should it be excavated or removed.
- One or more monitoring wells were approved to be kept for further monitoring other source areas. Annual inspections are required and the wells must be properly filled and sealed when monitoring has been completed.

The DNR fact sheet, "Continuing Obligations for Environmental Protection", RR-819, helps to explain a property owner's responsibility for continuing obligations on their property. The fact sheet may be obtained at http://dnr.wi.gov/files/PDF/pubs/rr/RR819.pdf.

GIS Registry

This site will be included on the Bureau for Remediation and Redevelopment Tracking System (BRRTS on the Web) at http://dnr.wi.gov/topic/Brownfields/rrsm.html, to provide public notice of residual contamination and of any continuing obligations. The site can also be viewed on the Remediation and Redevelopment Sites Map (RRSM), a map view, under the Geographic Information System (GIS) Registry layer, at the same web address.

DNR approval prior to well construction or reconstruction is required for all sites shown on the GIS Registry, in accordance with s. NR 812.09 (4) (w), Wis. Adm. Code. This requirement applies to private drinking water wells and high capacity wells. To obtain approval, complete and submit Form 3300-254 to the DNR Drinking and Groundwater program's regional water supply specialist. This form can be obtained on-line at http://dnr.wi.gov/topic/wells/documents/3300254.pdf.

All site information is also on file at the SCR DNR office at 3911 Fish Hatchery Road, Fitchburg, WI. This letter and information that was submitted with your closure request application can be found as a PDF in BRRTS on the Web.

Closure Conditions

Compliance with the requirements of this letter is a responsibility to which the Army and any subsequent property owners must adhere. If these requirements are not followed, the DNR may take enforcement action under s. 292.11, Wisconsin Statutes to ensure compliance with the specified requirements, limitations or other conditions related to the property.

Please send written notifications in accordance with the following requirements to:

Department of Natural Resources
Attn: Remediation and Redevelopment Program Environmental Program Associate
3911 Fish Hatchery Road
Fitchburg, WI 53711

Residual Soil Contamination (ch. NR 718, or ch. 289, Stats.; chs. 500 to 536, Wis. Adm. Code)

Soil contamination remains that was either detected only or is also above residential standards or screening levels but is below the revised soil remediation goals approved by the Department. The locations of this remaining contamination are identified in Table A.3 and on Figure B.2.b. of the revised Case Closure/GIS Registry form that was received by the Department on a CD on May 29, 2014. (This table and figure are too large to include with this letter.) If soil in the specific indicated locations is excavated in the future, the property owner at the time of excavation must sample and analyze the excavated soil to determine if contamination remains. If sampling confirms that contamination is present, the property owner at the time of excavation will need to determine whether the material is considered solid or hazardous waste and ensure that any storage, treatment or disposal is in compliance with applicable standards and rules.

In addition, all current and future owners and occupants of the property need to be aware that excavation of the contaminated soil may pose an inhalation or other direct contact hazard and as a result special precautions may need to be taken to prevent a direct contact health threat to humans.

Continued Monitoring Approved

Your request for continued monitoring of the monitoring wells most closely associated with this case is approved. These wells, used primarily to monitor other areas of the BAAP facility, are too numerous to list here; they are shown on Figure B.3.d. that is included in the May 29, 2014 revised submittal noted in the section above. Sampling results must be submitted to the DNR within 30 days of receipt of the results. An annual inspection of the well is required to verify the integrity of the monitoring well construction, starting one year after the date of this letter. The inspection log shall be maintained on site, and be made available to the DNR upon request.

You may be held liable for any problems associated with the monitoring wells if they create a conduit for contaminants to enter groundwater. Once monitoring of these wells ends, the owner of the property on which the wells are located is required to notify the DNR, to properly fill and seal each well, and to submit the required documentation to the DNR.

In Closing

Please be aware that the case may be reopened pursuant to s. NR 727.13, Wis. Adm. Code, for any of the following situations:

- if additional information regarding site conditions indicates that contamination on or from the site poses a threat to public health, safety, or welfare or to the environment,
- if the property owner does not comply with the conditions of closure, with any deed restrictions applied to the property, or with a certificate of completion issued under s. 292.15, Wis. Stats, or
- if a property owner fails to maintain or comply with a continuing obligation (imposed under this closure approval letter).

The DNR appreciates your efforts to restore the environment at this site. If you have any questions regarding this closure decision or anything outlined in this letter, please contact Hank Kuehling at 608.275.3286 or at Harlan.Kuehling@wisconsin.gov.

Sincerely,

Hank Kuehling, P.G.
Remediation & Redevelopment Program LTE Hydrogeologist

c (via e-mail): Mike Sitton – U.S. Army
Clair Ruenger – BTS, Inc.
Laura Olah - CSWAB

State of Wisconsin
Department of Natural Resources
PO Box 7921, Madison WI 53707-7921
dnr.wi.gov

Case Closure - GIS Registry

SUBMIT AS UNBOUND PACKAGE IN THE ORDER SHOWN

Notice: Pursuant to ch. 292, Wis. Stats., and chs. NR 726 and 746, Wis. Adm. Code, this form is required to be completed for case closure requests. The closure of a case means that the Department of Natural Resources (DNR) has determined that no further response is required at that time based on the information that has been submitted to the DNR. All sections of this form must be completed unless otherwise directed by the Department. Incomplete forms will be considered "administratively incomplete" and processing of the request will stop until required information is provided. Any section of the form not relevant to the case closure request must be fully filled out or explained on a separate page and attached to the relevant section of this form. DNR will consider your request administratively complete when the form and all sections are completed, all attachments are included, and the applicable fees required under ch. NR 749, Wis. Adm. Code, are included, and sent to the proper destinations. Personal information collected will be used for administrative purposes and may be provided to requesters to the extent required by Wisconsin's Open Records Law (ss. 19.31 - 19.39, Wis. Stats.).

Site Information

BRRTS No.	Parcel ID No. M1/T1		
BRRTS Activity (Site) Name	WTM Coordinates		
BAAP Parcels M1/T1	X 541156	Y 317689	
Street Address	City	State	ZIP Code
S7560 U.S. Highway 12	North Freedom	WI	53951
Responsible Party (RP) Name			
United States Army			
Company Name			
-			
Street Address	City	State	ZIP Code
S7560 U.S. Highway 12	North Freedom	WI	53951
Phone Number	Email		
(608) 643-3361	joan.m.kenney.civ@mail.mil		

☒ Check here if the RP is the owner of the source property.

Environmental Consultant Name			
Clair Ruenger			
Consulting Firm			
Badger Technical Services, LLC BAAP			
Street Address	City	State	ZIP Code
S7560 U.S. Highway 12	North Freedom	WI	53951
Phone Number	Email		
(608) 643-3361	clair.ruenger@specpro-inc.com		
Acres Ready For Use 308.07	Voluntary Party Liability Exemption Site? ○ Yes ◉ No		

Fees and Mailing of Closure Request

If any section is not relevant to the case closure request, you must fully explain the reasons why and attach that explanation to the relevant section of the form. All information submitted shall be legible. Providing illegible information may result in a submittal being considered incomplete until corrected.

1. **Send a copy of page one** of this form and the applicable ch. NR 749, Wis. Adm. Code, fee(s) to the DNR regional Environmental Program Associate at **http://dnr.wi.gov/topic/Brownfields/Contact.html**. Check all fees that apply:

   ☐ $1,050 Closure Fee

   ☐ $300 Database Fee for Soil

   ☐ $350 Database Fee for Groundwater or Other Condition (MW Not Abandoned)

   Total Amount of Payment $ Closure and GIS Registry fees are paid by the Army as part of an annual grant to the WDNR

2. **Send one paper copy and one e-copy on compact disk of the entire closure package** to the Regional Project Manager assigned to your site. Submit as *unbound, separate documents* in the order and with the titles prescribed by this form. For electronic document submittal requirements, see **http://dnr.wi.gov/files/PDF/pubs/rr/RR690.pdf.**

Site Summary

If any section is not relevant to the case closure request, you must fully explain the reasons why and attach that explanation to the relevant section of the form. All information submitted shall be legible. Providing illegible information may result in a submittal being considered incomplete until corrected.

1. General Site Information and Site History

A. **Site Location**: Describe the physical location of the site, both generally and specific to its immediate surroundings.
Located in the southern portion of the Badger Army Ammunition Plant (BAAP), Parcels M1 and T1 (Settling Ponds Area) are aeration and settling basins and is surrounded by open prairie grassland. The Settling Ponds Area consists of Final Creek, four Settling Ponds, and five Spoils Disposal Areas.

B. **Prior and current site usage**: Specifically describe the current and historic occupancy and types of use.
The Settling Ponds Area was constructed in 1942 to serve as aeration and settling basins for the installation's wastewater. Parcel M1 is scheduled for property transfer to WDNR for recreational purposes as part of an extension of Devil's Lake State Park. Parcel T1 is scheduled for property transfer to Bluffview Sanitary District for use as a wastewater treatment area.

C. Describe how and when site contamination was discovered.
In August 1994, BAAP issued the Final Feasibility Study, which addressed 11 sites on the installation and selected preferred remedies for each site. The Settling Ponds Area was one of these sites.

D. Describe the type(s) and source(s) or suspected source(s) of contamination.
The primary contaminants of concern in the Settling Ponds Area are 2,4-DNT, 2,6-DNT, nitroglycerin, chromium, and lead. During operations at BAAP, the Settling Ponds Area received pH-neutralized industrial wastewater from most areas of the installation and surface runoff from the Nitroglycerin, Rocket Paste, and Magazine Areas.

E. Other relevant site description information (or enter Not Applicable).
See the Badger Technical Services, LLC, October 5, 2012, Alternative Feasibility Study - Final Creek, Settling Ponds, and Spoils Disposal Areas, Badger Army Ammunition Plant report, Chapter 4.1, pg 5.

F. List BRRTS activity site name and number for all other BRRTS activities at this property, including closed cases.
BAAP - Parcels M1 and T1. There are no other BRRTS activities in this parcel.

G. List BRRTS activity/site name(s) and number(s) for all properties immediately adjacent to this site, and those impacted by contamination from this site.
See WDNR RR Sites Map at: http://dnrmaps.wi.gov/imf/imf.jsp?site=brrts2

H. **Current zoning** (e.g. industrial, commercial, residential) for the site and for neighboring properties, and how verified (Provide documentation in Attachment G).
The site and neighboring properties are zoned "governmental-agricultural conservation".

2. General Site Conditions

A. Soil/Geology

i. Describe soil type(s) and relevant physical properties, thickness of soil column across the site, vertical and lateral variations in soil types.
Soil-Medium brown silty sands/sandy silts, and sandy clay. Geology-Unconsolidated glacial sediments consisting of outwash sands, interlayered sand/gravel, with some inter-bedded till underlaid by sandstone bedrock at 150-200'.

ii. Describe the composition, location and lateral extent, and depth of fill or waste deposits on the site.
See the Badger Technical Services, LLC, October 5, 2012, Alternative Feasibility Study - Final Creek, Settling Ponds, and Spoils Disposal Areas, Badger Army Ammunition Plant report, Chapter 6.0, pgs 13 - 14.

iii. Depth to bedrock, bedrock type, and whether or not it was encountered during the investigation.
Approximately 150-200' - Cambrian sandstone (not encountered during investigation).

iv. Describe the nature and locations of current surface cover(s) across the site (e.g. natural vegetation, landscaped areas, gravel, hard surfaces, and buildings).
Natural vegetation.

B. Groundwater

i. **Discuss depth to groundwater and piezometric elevations**. Describe and explain depth variations, and whether free product affects measurement or water table elevation. Describe the stratigraphic unit(s) where water table was found or which were measured for piezometric levels.
See the Badger Technical Services, LLC, October 5, 2012, Alternative Feasibility Study - Final Creek, Settling Ponds, and Spoils Disposal Areas, Badger Army Ammunition Plant report Chapter 4.7, pg 10.

ii. Discuss groundwater flow direction(s), shallow and deep. Describe and explain flow variations, including fracture flow if present.

Groundwater flow direction is south/southeast. See the Badger Technical Services, LLC, October 5, 2012, Alternative Feasibility Study - Final Creek, Settling Ponds, and Spoils Disposal Areas, Badger Army Ammunition Plant report, Chapter 4.7, pg 10.

iii. Discuss groundwater flow characteristics: hydraulic conductivity, flow rate and permeability, or state why this information was not obtained.

Average flow velocity and hydraulic conductivity across the BAAP site are 0.72 ft/day and 4x10E-2 cm/sec. See the Badger Technical Services, LLC, October 5, 2012, Alternative Feasibility Study - Final Creek, Settling Ponds, and Spoils Disposal Areas, Badger Army Ammunition Plant report, Chapter 4.7, pg 10.

iv. Identify and describe locations/distance of potable and/or municipal Wells within 1200 feet of the site.

There are no potable or municipal wells within 1,200 feet of site.

3. Site Investigation Summary

A. General

i. Provide a brief summary of the site investigation history. Reference previous submittals by name and date. Describe site investigation activities undertaken since the last submittal for this project and attach the appropriate documentation in Attachment C, if not previously provided.

See the Badger Technical Services, LLC, October 5, 2012, Alternative Feasibility Study - Final Creek, Settling Ponds, and Spoils Disposal Areas, Badger Army Ammunition Plant report, Chapter 5.0, pgs 11 to 13 and Badger Technical Services, LLC, January 2014, Parcels M1 and T1 – Wisconsin Department of Natural Resources Closure Request report, pgs 6 to 16.

ii. Identify whether contamination extends beyond the source property boundary, describe the off-site media (e.g., soil, groundwater, etc.) impacted, and the vertical and horizontal extent of off-site impacts.

Soil contaminants do not extend beyond the boundaries of Parcels M1 and T1. Groundwater has not been impacted in these parcels.

iii. Identify any structural impediments to the completion of site investigation and/or remediation and whether these impediments are on the source property or off the source property. Identify the type and location of any structural impediment (e.g., structure) that also serves as the performance standard barrier for protection of the direct contact or the groundwater pathway.

Structural impediments were not encountered during investigation or remedial activities, and are not being used as a engineering control.

B. Soil

i. Describe degree and extent of **soil contamination** at and from this site. Relate this to known or suspected sources and known or potential receptors/migration pathways.

See the Badger Technical Services, LLC, October 5, 2012, Alternative Feasibility Study - Final Creek, Settling Ponds, and Spoils Disposal Areas, Badger Army Ammunition Plant report, Chapter 6.0, pgs 13 to 15 and Badger Technical Services, LLC, January 2014, Parcels M1 and T1 – Wisconsin Department of Natural Resources Closure Request report, pgs 3 to 5. Potential receptor - groundwater: not impacted.

ii. Describe the level and types of **soil contaminants** found in the upper four feet of the soil column.

All known soil contaminants found within the upper four feet have been removed. See the Badger Technical Services, LLC, October 5, 2012, Alternative Feasibility Study - Final Creek, Settling Ponds, Chapter 6.0, pgs 13 to 15 and Spoils Disposal Areas, Badger Army Ammunition Plant report and Badger Technical Services, LLC, January 2014, Parcels M1 and T1 – Wisconsin Department of Natural Resources Closure Request report, pgs 3 to 5.

iii. Identify the ch. NR 720, Wis. Adm. Code, method used to establish the soil cleanup standards for this site. This includes a soil performance standard established in accordance with s. NR 720.08, a Residual Contaminant Level (RCL) established in accordance with s. NR 720.10 that is protective of groundwater quality, or an RCL established in accordance with s. NR 720.12 that is protective of human health from direct contact with contaminated soil. Identify the land use classification that was used to establish cleanup standards. Provide a copy of the supporting calculations/ information in Attachment C.

See the Badger Technical Services, LLC, October 5, 2012, Alternative Feasibility Study - Final Creek, Settling Ponds, and Spoils Disposal Areas, Badger Army Ammunition Plant report, Chapter 7.0, pgs 15 to 18 and Chapter 9.0, pgs 22 to 27 and Badger Technical Services, LLC, January 2014, Parcels M1 and T1 – Wisconsin Department of Natural Resources Closure Request report, pg 4.

C. Groundwater

i. Describe degree and extent of groundwater contamination at or from this site. Relate this to known or suspected sources and known or potential receptors/migration pathways. Specifically address any potential or existing impacts to water supply wells or interception with building foundation drain systems.

See the Badger Technical Services, LLC, October 5, 2012, Alternative Feasibility Study - Final Creek, Settling Ponds,

and Spoils Disposal Areas, Badger Army Ammunition Plant report, Chapter 4.7, pg 10 and Chapter 7.0, pgs 15 to 18.

ii. Describe the presence of free product at the site, including the thickness, depth, and locations.
No free produce exists in the Settling Ponds Area.

D. Vapor

i. Describe how the vapor migration pathway was assessed, including locations where vapor or indoor air samples were collected. If the vapor pathway was not assessed, explain reasons why.
Vapor pathway was not assessed because the contaminants of concern are not volatile.

ii. Identify the applicable DNR action levels and the land use classification used to establish them. Describe where the DNR action levels were reached or exceeded (e.g., sub slab, indoor air or both).
Not Applicable.

E. Surface Water and Sediment

i. Identify whether surface water and/or sediment was assessed and describe the impacts found. If this pathway was not assessed, explain why.
See the Badger Technical Services, LLC, October 5, 2012, Alternative Feasibility Study - Final Creek, Settling Ponds, and Spoils Disposal Areas, Badger Army Ammunition Plant report, Chapter 4.5, pg 9.

ii. Identify any surface water and/or sediment action levels used to assess the impacts for this pathway and how these were derived. Describe where the DNR action levels were reached or exceeded.
See the Badger Technical Services, LLC, October 5, 2012, Alternative Feasibility Study - Final Creek, Settling Ponds, and Spoils Disposal Areas, Badger Army Ammunition Plant report, Chapter 4.5, pg. 9 and Chapter 7.0, pgs 15 to 18.

4. Remedial Actions Implemented and Residual Levels at Closure

A. General: Provide a brief summary of the remedial action history. List previous remedial action report submittals by name and date. Identify remedial actions undertaken since the last submittal for this project and provide the appropriate documentation in Attachment C.
See the Badger Technical Services, LLC, January 2014, Parcels M1 and T1 – Wisconsin Department of Natural Resources Closure Request report, pgs 5 to 16.

B. Describe any immediate or interim actions taken at the site under ch NR 708, Wis. Adm. Code.
See the Badger Technical Services, LLC, January 2014, Parcels M1 and T1 – Wisconsin Department of Natural Resources Closure Request report, pgs 5 to 16.

C. Describe the *active* remedial actions taken at the site, including: type of remedial system(s) used for each media impacted; the size and location of any excavation or in-situ treatment; the effectiveness of the systems to address the contaminated media and substances; operational history of the systems; and summarize the performance of the active remedial actions. Provide any system performance documentation in Attachment A.7.
See the Badger Technical Services, LLC, January 2014, Parcels M1 and T1 – Wisconsin Department of Natural Resources Closure Request report pgs 5 to 16.

D. Provide a discussion of the nature, degree and extent of residual contamination that will remain at the site or on off-site affected properties after case closure.
No residual contamination remains.

E. Describe the remaining soil contamination within four feet of ground surface (direct contact zone) that attains or exceeds Residual Contaminant Levels established under s. NR 720. 12 , the ch. NR720, Wis. Adm. Code, for protection of human health from direct contact.
All direct contact zone soil impacts have been removed.

F. Describe the remaining soil contamination in the vadose zone that attains or exceeds the soil standard(s) for the groundwater pathway.
No groundwater pathway residual contamination remains.

G. Describe how the residual contamination will be addressed, including but not limited to details concerning: covers, engineering controls or other barrier features; use of natural attenuation of groundwater; and vapor mitigation systems or measures.
No residual contamination remains.

H. If using natural attenuation as a groundwater remedy, describe how the data collected supports the conclusion that natural attenuation is effective in reducing contaminant mass and concentration, (e.g. stable or receding groundwater plume).
Groundwater contamination is associated with upgradient sources. No groundwater remedy using natural attenuation is associated with this site.

I. Identify how all exposure pathways were removed and/or adequately addressed by immediate and/or remedial action(s) described above in paragraphs, B, C, D, E and F.
Source removal (remedial excavation) of impacted soil limits potential migration of residual contaminants.

J. Identify any system hardware anticipated to be left in place after site closure, and explain the reasons why it will remain.
Not Applicable.

K. Identify the need for a ch. NR 140, Wis. Adm. Code, groundwater Preventive Action Limit (PAL) or Enforcement Standard (ES) exemption, and identify the affected monitoring points and applicable substances.
Not Applicable.

L. If a DNR action level for vapor intrusion was exceeded (for indoor air, sub slab, or both) describe where it was exceeded and how the pathway was addressed.
Not Applicable.

M. Describe the surface water and/or sediment contaminant concentrations and areas after remediation. If a DNR action level was exceeded, describe where it was exceeded and how the pathway was addressed.
Not Applicable.

5. Continuing Obligations: Situations where a maintenance plan(s) and inclusion on DNR's GIS Registry are required.

Directions: Check all that apply to this case closure request:

	This scenario Applies to this Case Closure		Case Closure Scenario: Maintenance Plans and GIS Registry	Maintenance Plan (s) Required in Attachment D	GIS Registry Listing
	A. On-Site	B. Off-Site			
i.	☐	☐	Engineering Control/Barrier for Direct Contact	✓	✓
ii.	☐	☐	Engineering Control/Barrier for Groundwater Infiltration	✓	✓
iii.	☐	☐	Vapor Mitigation - post closure passive system	✓	✓
iv.	☐	☐	Vapor Mitigation - post closure active system	✓	✓
v.	☒	☒	None of the above scenarios apply to this case closure	NA	NA

6. Continuing Obligations: Situations where inclusion on DNR's GIS Registry is required.

Directions: Check all that apply to this case closure request:

	This scenario Applies to this Case Closure		Case Closure Scenario: GIS Registry Only	GIS Registry Listing
	A. On-Site	B. Off-Site		
i.	☐	☐	Residual soil contamination exceeds ch. NR 720 generic or site-specific RCLs	✓
ii.	☐	☐	Sites with groundwater contamination equal to or greater than the ch. NR 140, enforcement standards (ES)	✓
iii.	☒	☐	Monitoring wells: lost, transferred or remaining in use	✓
iv.	☐	☐	Structural Impediment (not as a performance standard)	✓
v.	☒	☐	Residual soil contamination remaining at ch. NR 720 Industrial Use levels	✓
vi.	☐	☐	Vapor intrusion may be future, post-closure issue if building use or land use changes	✓
vii.	☐	☒	None of the above scenarios apply to this case closure	NA

7. Underground Storage Tanks

A. Were any tanks, piping or other associated tank system components removed as part of the investigation or remedial action? ○ Yes ◉ No

B. Do any upgraded tanks meeting the requirements of ch. SPS 310, Wis. Adm. Code, exist on the property? ○ Yes ◉ No

C. If the answer to question 7b is yes, is the leak detection system currently being monitored? ○ Yes ○ No

Data Tables (Attachment A)

If any section is not relevant to the case closure request, you must fully explain the reasons why and attach that explanation to the relevant section of the form.All information submitted shall be legible. Providing illegible information may result in a submittal being considered incomplete until corrected.

General directions for Data Tables:

- Use bold and italics font on information of importance on tables and figures. Use **bold font** for ch. NR 140, Wis. Adm. Code, groundwater enforcement standard (ES) attainments or exceedances, and *italicized font* for ch. NR 140, Wis. Adm. Code, groundwater preventive action limit (PAL) standard attainments or exceedances.
- Do not use shading or highlighting on the analytical tables.
- Include on Data Tables the level of detection for results which are below the detection level (i.e. do not just list as no detect (ND)).
- Include the units on data tables.
- Summaries of all data must include information collected by previous consultants.
- Do not submit lab data sheets unless these have not been submitted in a previous report. Tabulate all data required in s. NR 716.15 (3)(c), Wis. Adm. Code, in the format required in s. NR 716.15(4)(e), Wis. Adm. Code.
- Include in Attachment A all of the following tables, in the order prescribed below, with the specific Closure Form titles noted on the separate attachments (e.g., Title: A.1. Groundwater Analytical Table; A.2. Pre-remedial Soil Analytical Table, etc).
- For required documents, each table (e.g., A.1., A.2., etc.,) should be a separate PDF.

A. Data Tables

A.1. **Groundwater Analytical Table(s):** Table(s) showing the analytical results and collection dates, for all groundwater sampling points e.g. monitoring wells, temporary wells, sumps, extraction wells, any potable wells and any other wells, extraction wells and any potable wells for which samples have been collected.

A.2. **Pre-remedial Soil Analytical Table(s):** Table(s) showing the soil analytical results and collection dates - prior to conducting the interim and/or remedial action. Indicate if sample was collected above or below the all-time low water table (unsaturated verses saturated).

A.3. **Post-remedial Soil Analytical Table(s):** Table(s) showing the post-remedial action soil analytical results and collection dates. Indicate if sample was collected above or below the all-time low water table (unsaturated verses saturated).

A.4. **Pre and Post Remaining Soil Contamination Soil Analytical Table(s):** Table(s) showing only the pre and post remedial action soil analytical results that exceed a Residual Contaminate Level (RCL) or a Site-Specific Residual Level (SSRCL).

A.5. **Vapor Analytical Table**: Table(s) showing type(s) of samples, sample collection methods, analytical method, sample results, date of sample collection, time period for sample collection, method and results of leak detection, and date, method and results of communication testing.

A.6. **Other Media of Concern (e.g., sediment or surface water)**: Table(s) showing type(s) of sample, sample collection method, analytical method, sample results, date of sample collection, time period for sample collection, method and results sampling.

A.7. **Water Level Elevations:** Table(s) showing all water level elevation measurements and dates from all monitoring wells. If present, free product should be noted on the table.

A.8. **Other:** This attachment should include: 1) any available tabulated natural attenuation data; 2) data tables pertaining to engineered remedial systems that document operational history, demonstrate system performance and effectiveness, and display emissions data; and (3) any other data tables relevant to case closure not otherwise noted above. If this section is not applicable, please explain the reasons why.

Maps and Figures (Attachment B)

If any section is not relevant to the case closure request, you must fully explain the reasons why and attach that explanation to the relevant section of the form. All information submitted shall be legible. Providing illegible information may result in a submittal being considered incomplete until corrected.

General Directions for all Maps and Figures:

- If any map or figure is not relevant to the case closure request, you must fully explain the reason(s) why and attach that explanation (properly labeled with the map/ figure title) in Attachment B.
- Provide on paper no larger than 11 x 17 inches, unless otherwise directed by the Department. Maps and figures may be submitted in a larger electronic size than 11x17 inches, in a portable document format (pdf) readable by the Adobe Acrobat Reader. However, those larger-size documents must be legible when printed.
- Prepare visual aids, including maps, plans, drawings, fence diagrams, tables and photographs according to the applicable portions

of ss. NR 716.15(4), 726.09(2) and 726.11(3), (5) and (6), Wis Adm. Code.

- Do not use shading or highlights on any of the analytical tables.
- Include all sample locations.
- Contour lines should be clearly labeled and defined.
- Include in Attachment B all of the following maps and figures, in the order prescribed below, with the specific Closure Form titles noted on the separate attachments (e.g., Title: B.1. Location Map; B.2. Detailed Site Map, etc).
- For the electronic copies that are required, each map (e.g., B.1.a., B.2.a, etc.,) should be a separate PDF.

B.1. Location Maps

B.1.a. **Location Map:** A map outlining all properties within the contaminated site boundaries on a U.S.G.S. topographic map or plat map in sufficient detail to permit easy location of all impacted and/or adjacent parcels. If groundwater standards are exceeded, include the location of all potable wells, including municipal wells, within 1200 feet of the area of contamination.

B.1.b. **Detailed Site Map:** A map that shows all relevant features (buildings, roads, current ground surface cover, individual property boundaries for on-site and applicable off-site properties, contaminant sources, utility lines, monitoring wells and potable wells) within the contaminated area. This map is to show the location of all contaminated public streets, and highway and railroad rights-of-way in relation to the source property and in relation to the boundaries of groundwater contamination exceeding a ch. NR 140 Enforcement Standard (ES), and/or in relation to the boundaries of soil contamination exceeding a Residual Contaminant Level (RCL) established in accordance with the provisions contained in s. NR 720.10 or s. NR 720.12, Wis. Adm. Code.

B.1.c. **RR Site Map:** From RR Sites Map (http://dnrmaps.wi.gov/sl/?Viewer=RR Sites) attach a map depicting the source property, and all open and closed BRRTS sites within a half-mile radius or less of the property.

B.2. Soil Figures

B.2.a. **Pre-remedial Soil Contamination:** Figure(s) showing the sample location of all pre-remedial, unsaturated contaminated soil and a single contour showing the horizontal extent of each area of contiguous residual soil contamination that exceeded a Residual Contaminant Level (RCL) established in accordance with the provisions contained in s. NR 720.10 or s. NR 720.12, Wis. Adm. Code.

B.2.b. **Post-remedial Soil Contamination :** Figure(s) showing the sample location of all post-remedial, unsaturated contaminated soil and a single contour showing the horizontal extent of each area of contiguous residual soil contamination that exceeds a Residual Contaminant Level (RCL) established in accordance with the provisions contained in s. NR 720.10 or s. NR 720.12, Wis. Adm. Code. A separate contour line should be used to indicate the extent of residual direct contact exceedances.

B.2.c. **Pre/Post Remaining Soil Contamination:** Figure(s) showing the only location of all pre and post remedial residual soil sample location(s) where unsaturated contaminated soil remains after remediation and a single contour showing the horizontal extent of each area of contiguous residual soil contamination that exceeds a Residual Contaminate Level (RCL) established in accordance with the provisions contained in s. NR 720.10 or s. NR 720.12, Wis. Adm. Code. A separate contour line should be used to indicate the extent of residual direct contact exceedances.

B.3. Groundwater Figures

B.3.a. **Geologic Cross-Section Figure(s):** One or more cross-section diagrams showing soil types and correlations across the site, water table and piezometric elevations, and locations and elevations of geologic rock units, if encountered. Display on one or more figures all of the following:

- Source location(s) and vertical extent of residual soil contamination exceeding a Residual Contaminant Level (RCL) or a Site Specific Residual Contaminant Level (SSRCL).
- Source location(s) and lateral and vertical extent if groundwater contamination exceeds a ch. NR 140 Enforcement Standard (ES)
- Surface features, including buildings and basements, and show surface elevation changes.
- Any areas of active remediation within the cross section path, such as excavations or treatment zones.
- Include a map displaying the cross-section location(s), if they are not displayed on the Detailed Site Map (Map B.1b)

B.3.b. **Groundwater Isoconcentration:** Figure(s) showing the horizontal extent of the post-remedial groundwater contamination exceeding a ch. NR 140, Wis. Adm. Code, Preventive Action Limit (PAL) and/or an Enforcement Standard (ES). Indicate the date and direction of groundwater flow based on the most recent sampling data.

B.3.c. **Groundwater Flow Direction:** Figure(s) representing groundwater movement at the site. If the flow direction varies by more than 20° over the history of the site, submit two groundwater flow maps showing the maximum variation in flow direction.

B.3.d. **Monitoring Wells:** Figure(s) showing all monitoring wells, with well identification number. Clearly designate any wells that: (1) are proposed to be abandoned; (2) cannot be located; (3) are being transferred; (4) will be retained for further sampling, or (5) have been previously abandoned.

B.4. Vapor Maps and Other Media

B.4.a. **Vapor Intrusion Map:** Map(s) showing all locations and results for samples taken to investigate the vapor intrusion pathway, in relation to remaining soil and groundwater contamination, including sub-slab, indoor air, soil vapor,

ambient air, and communication testing. Show locations and footprints of affected structures and utility corridors, and/or where residual contamination poses a future risk of vapor intrusion.

B.4.b. **Other media of concern (e.g., sediment or surface water)**: Map(s) showing all sampling locations and results for other media investigation. Include the date of sample collection and identify where any standards are exceeded.

B.4.c. **Other:** Include any other relevant maps and figures not otherwise noted above. (This section may remain blank)

Documentation of Remedial Action (Attachment C)

If any section is not relevant to the case closure request, you must fully explain the reasons why and attach that explanation to the relevant section of the form. All information submitted shall be legible. Providing illegible information may result in a submittal being considered incomplete until corrected.

General Directions:

- Include in Attachment C all of the following documentation, in the order prescribed below, with the specific Closure Form titles noted on the separate attachments (e.g., Title: C.1. Site Investigation Documentation; C.2. Investigative Waste, etc).
- If the documentation requested below is "not applicable" to the site-specific circumstances, include a brief explanation to support that conclusion.
- If the documentation requested below has already been submitted to the Department, please note the title and date of the report for that particular document requested.

C.1. **Site investigation documentation,** that has not otherwise been previously submitted.

C.2. **Investigative waste** disposal documentation.

C.3. **Provide a description of the methodology used along with all supporting documentation if the Residual Contaminant Levels are different than those contained in the Department's RCL Spreadsheet available at: http://dnr.wi.gov/topic/Brownfields/Professionals.html.**

C.4. **Construction documentation** or as-built report for any constructed remedial action or portion of, or interim action specified in s. NR 724.02(1), Wis. Adm. Code.

C.5. **Decommissioning of Remedial Systems.** Include plans to properly abandon any systems or equipment upon receiving conditional closure.

C.6. **Photos.** For sites or facilities with a cover or other performance standard, a structural impediment or a vapor mitigation system. Include one or more photographs documenting the condition and extent of the feature at the time of the closure request. Pertinent features should be visible and discernible. Photographs must be labeled with the site name, the features shown, location and the date on which the photograph was taken.

C.7. **Other**. Include any other relevant documentation not otherwise noted above. (This section may remain blank)

Maintenance Plan(s) and Photographs (Attachment D)

If any section is not relevant to the case closure request, you must fully explain the reasons why and attach that explanation to the relevant section of the form. All information submitted shall be legible. Providing illegible information may result in a submittal being considered incomplete until corrected.

When one or more "maintenance plans" are required for a site closure, include in each maintenance plan all required information listed below, and attach the plan(s) in Attachment D. The following "model" maintenance plans can be located at: (1) Maintenance plan for a engineering control or cover: http://dnr.wi.gov/topic/Brownfields/documents/maintenance-plan.pdf; and (2) Maintenance plan for vapor intrusion: http://dnr.wi.gov/topic/Brownfields/documents/appendix5_606.pdf.

D.1. **Location map(s)** which show(s): (1) the feature that requires maintenance; (2) the location of the feature(s) that require(s) maintenance - on and off the source property; (3) the extent of the structure or feature(s) to be maintained, in relation to other structures or features on the site; (4) the extent and type of residual contamination; and (5) and all property boundaries.

D.2. **Brief descriptions** of the type, depth and location of residual contamination.

D.3. **Description of maintenance action(s)** required for maximizing effectiveness of the engineered control, vapor mitigation system, feature or other action for which maintenance is required.

D.4. **Inspection log**, to be maintained on site, or at a location specified in the maintenance plan or approval letter.

D.5. **Contact information,** including the name, address and phone number of the individual or facility who will be conducting the maintenance.

D.6 Photographs

D.6.a. For site or facilities with a cover or other performance standard, a structural impediment or a vapor mitigation system, include one or more photographs documenting the condition and extent of the feature at the time of the closure request. Pertinent features shall be visible and discernible.

D.6.b. Photographs shall be submitted with a title related to the site name and location, and the date on which it was taken.

Monitoring Well Information (Attachment E)

If any section is not relevant to the case closure request, you must fully explain the reasons why and attach that explanation to the relevant section of the form. All information submitted shall be legible. Providing illegible information may result in a submittal being considered incomplete until corrected.

General Directions:

Attach monitoring well construction and development forms (DNR FORM 4400-113 A and B: http://dnr.wi.gov/topic/groundwater/documents/forms/4400_113_1_2.pdf) for all wells that will remain in-use, be transferred to another party or that could not be located. A figure of these wells should be included in Attachment B.3.d.

Select One:

○ No monitoring wells were required as part of this response action.

○ All monitoring wells have been located and will be properly abandoned upon the DNR granting conditional closure to the site

◉ ***Select One or More:***

☐ Not all monitoring wells can be located, despite good faith efforts. Attachment E must include description of efforts made to locate the "lost" wells.

☐ One or more wells will be transferred to another owner upon case closure being granted. Attachment E should include documentation identifying the name, address and email for the new owner(s).

☒ One or more wells will remain in use at the site after this closure. Attachment E must include documentation as to the reason(s) the well(s) will remain in use.

Notifications to Owners of Impacted Properties (Attachment F)

If any section is not relevant to the case closure request, you must fully explain the reasons why and attach that explanation to the relevant section of the form. All information submitted shall be legible. Providing illegible information may result in a submittal being considered incomplete until corrected.

General Directions:

- State law requires that the responsible party provide a 30-day, written advance notice (i.e., a letter) to certain persons prior to applying for case closure. This requirement applies if: (1) the person conducting the response action does not own the source property; (2) the contamination has migrated onto another property; and/or (3) one or more monitoring wells will not be abandoned.
- Use of Form 4400-286, Notification of Residual Contamination and Continuing Obligations, is required under ch. NR 725 for notifying property owners and right-of-way holders about residual contamination affecting their properties, and of continuing obligations which may be imposed. This form can be downloaded at http://dnr.wi.gov/files/PDF/forms/4400/4400-286.pdf.

Check all that apply to the site-specific circumstances of this case closure:

	A. Impacted Source Property and Owner is not Conducting Cleanup	B. Impacted Right of Way	C. Impacted Off-Site Property Owner	Impacted Property Notification Situations: Ch. NR 726 Appendix A Letter
1.	☐	☐	☐	Residual groundwater contamination exceeds Ch. NR 140 Wis. Administrative Code enforcement standards.
2.	☐	☐	☐	Residual soil contamination that attains or exceeds standards is present after the remedial action is complete, and must be properly managed should it be excavated or removed.
3.	☐	☐	☐	An engineered cover or a soil barrier (e.g. pavement) must be maintained over contaminated soil for direct contact or groundwater infiltration concerns.
4.	☐	☐	☐	Industrial land use soil standards were used for the clean-up standard.
5.	☐	☐	☐	A vapor mitigation system (or other specific vapor protection) must be operated and maintained.
6.	☐	☐	☐	Vapor assessment needed if use changes.
7.	☐	☐	☐	Structural impediment.
8.	☐	☐	☐	Lost, transferred or open monitoring wells.
9.	☒	☒	☒	Not Applicable.

If any of the previous boxes in rows 1 thru 8 were checked, include the following as part of Attachment F:

- FORM 4400-246;
- Copy of each letter sent, 30 days or more prior to requesting closure; and
- Proof of receipt for each letter.
- For this site closure, _____ (number) property (ies) has/have been impacted, the owners have been notified, and copies of the letters and receipts are included in Attachment F.

Source Legal Documents (Attachment G)

If any section is not relevant to the case closure request, you must fully explain the reasons why and attach that explanation to the relevant section of the form.All information submitted shall be legible. Providing illegible information may result in a submittal being considered incomplete until corrected.

Include all of the following documents, in this order, in Attachment G:

G.1. **Deeds - Source Property and Other Impacted Properties:** The most recent deed with legal descriptions clearly labeled for (1) the **Source Property** (where the contamination originated) and (2) all **off-source** (off-site) properties where letters were required to be sent per the ch. NR 700, Wis. Adm. Code, rule series (e.g., off-site cover maintenance required, lost monitoring well, off-site cover property impacts to groundwater exceeding the ch. NR 140, Wis. Adm. Code.

Note: *If a property has been purchased with a land contract and the purchaser has not yet received a deed, a copy of the land contract which includes the legal description shall be submitted instead of the most recent deed. If the property has been inherited, written documentation of the property transfer should be submitted along with the most recent deed.*

G.2. ***Certified Survey Map:*** *A copy of the certified survey map or the relevant section of the recorded plat map for those properties where the legal description in the most recent deed refers to a certified survey map or a recorded plat map.* (Lots on subdivided or platted property (e.g. lot 2 of xyz subdivision)).

G.3. **Verification of Zoning**: Documentation (e.g., official zoning map or letter from municipality) of the property's or properties' current zoning status.

G.4. **Signed Statement:** A statement signed by the Responsible Party (RP), which states that he or she believes that the attached legal description(s) accurately describe(s) the correct contaminated property or properties.

Signatures and Findings for Closure Determination

If any section is not relevant to the case closure request, you must fully explain the reasons why and attach that explanation to the relevant section of the form. All information submitted shall be legible. Providing illegible information may result in a submittal being considered incomplete until corrected.

Check the correct box for this case closure request, and have either a professional engineer or a hydrogeologist, as defined in ch. NR 712, Wis. Adm. Code, sign this document.

☐ A response action(s) for this site addresses groundwater contamination (including natural attenuation remedies).

☒ The response action(s) for this site addresses media other than groundwater.

Engineering Certification

I _____ hereby certify that I am a registered professional engineer in the State of Wisconsin, registered in accordance with the requirements of ch. A-E 4, Wis. Adm. Code; that this case closure request has been prepared by me or prepared under my supervision in accordance with the Rules of Professional Conduct in ch. A-E 8, Wis. Adm. Code; and that, to the best of my knowledge, all information contained in this case closure request is correct and the document was prepared in compliance with all applicable requirements in chs. NR 700 to 726, Wis. Adm. Code. Specifically, with respect to compliance with the rules, in my professional opinion a site investigation has been conducted in accordance with ch. NR 716, Wis. Adm. Code, and all necessary remedial actions have been completed in accordance with chs. NR 140, NR 718, NR 720, NR 722, NR 724 and NR 726, Wis. Adm. Codes."

Printed Name	Title

Signature	Date	P.E. Stamp and Number

Hydrogeologist Certification

I Clair Ruenger hereby certify that I am a hydrogeologist as that term is defined in s. NR 712.03 (1), Wis. Adm. Code, and that, to the best of my knowledge, all of the information contained in this case closure request is correct and the document was prepared by me or prepared by me or prepared under my supervision and, in compliance with all applicable requirements in chs. NR 700 to 726, Wis. Adm. Code. Specifically, with respect to compliance with the rules, in my professional opinion a site investigation has been conducted in accordance with ch. NR 716, Wis. Adm. Code, and all necessary remedial actions have been completed in accordance with chs. NR 140, NR 718, NR 720, NR 722, NR 724 and NR 726, Wis. Adm. Codes."

Clair Ruenger	Environmental Technical Services Manager
Printed Name	Title
	05.05.14
Signature	Date

Table A.1.a

Settling Pond 4 - Geoprobe Groundwater Analytical Results

Parcels M1 and T1 - WDNR Closure Request

Badger Army Ammunition Plant

Well ID	Date Sampled	2,4-DNT	2,3-DNT	2,6-DNT	2,5-DNT	3,4-DNT	3,5-DNT	Arsenic	Chromium	Lead
Tempwell 1	04/30/08	<0.010 (ML)	<0.010 (ML)	<0.010	<0.010 (ML)	<0.010 (ML)	<0.010 (ML)	NA	NA	<5.0
Tempwell 2	04/30/08	<0.010 (ML)	<0.010 (ML)	<0.010	<0.010 (ML)	<0.010 (ML)	<0.010 (ML)	NA	NA	<5.0
Tempwell 3	04/30/08	<0.010 (ML)	<0.010 (ML)	<0.010	<0.010 (ML)	<0.010 (ML)	<0.010 (ML)	NA	NA	<5.0
Tempwell 4	04/30/08	<0.010 (ML)	<0.010 (ML)	<0.010	<0.010 (ML)	<0.010 (ML)	<0.010 (ML)	NA	NA	<5.0
NR 140 Preventive Action Limit		0.005	0.005	0.005	0.005	0.005	0.005	1	10	1.5
NR 140 Enforcement Standard		0.05	0.05	0.05	0.05	0.05	0.05	10	100	15

DNT - Dinitrotoluene
Results expressed in micrograms per liter.
Bold text identifies regulatory exceedance.
ML - Matrix Spike and/or Matrix Spike Duplicate recovery was below the lower control limit
NA - not analyzed

Table A.1.b

Groundwater Analytical Results

Parcels M1 and T1 - WDNR Closure Request

Badger Army Ammunition Plant

Well ID	Date Sampled	Analyte	Result (ug/l)	Limit of Detection (ug/l)
S1104	6/5/2013	2,3-Dinitrotoluene	ND	0.014
	6/5/2013	2,4-Dinitrotoluene	ND	0.014
	6/5/2013	2,5-Dinitrotoluene	ND	0.014
	6/5/2013	2,6-Dinitrotoluene	ND	0.014
	6/5/2013	3,4-Dinitrotoluene	ND	0.014
	6/5/2013	3,5-Dinitrotoluene	ND	0.014
	6/5/2013	Dinitrotoluene, total	ND	0.014
	3/5/2013	2,3-DINITROTOLUENE	ND	0.014
	3/5/2013	2,4-DINITROTOLUENE	ND	0.014
	3/5/2013	2,5-DINITROTOLUENE	ND	0.014
	3/5/2013	2,6-DINITROTOLUENE	ND	0.014
	3/5/2013	3,4-DINITROTOLUENE	ND	0.014
	3/5/2013	3,5-DINITROTOLUENE	ND	0.014
	3/5/2013	DINITROTOLUENE, TOTAL	ND	0.014
	12/4/2012	2,3-DINITROTOLUENE	ND	0.014
	12/4/2012	2,4-DINITROTOLUENE	ND	0.014
	12/4/2012	2,5-DINITROTOLUENE	ND	0.014
	12/4/2012	2,6-DINITROTOLUENE	ND	0.014
	12/4/2012	3,4-DINITROTOLUENE	ND	0.014
	12/4/2012	3,5-DINITROTOLUENE	ND	0.014
	12/4/2012	DINITROTOLUENE, TOTAL	ND	0.014
	6/12/2012	2,3-DINITROTOLUENE	ND	0.014
	6/12/2012	2,4-DINITROTOLUENE	ND	0.014
	6/12/2012	2,5-DINITROTOLUENE	ND	0.014
	6/12/2012	2,6-DINITROTOLUENE	ND	0.014
	6/12/2012	3,4-DINITROTOLUENE	0.027	0.014
	6/12/2012	3,5-DINITROTOLUENE	ND	0.014
	6/12/2012	DINITROTOLUENE, TOTAL	*0.027*	0.014
	3/6/2012	2,3-DINITROTOLUENE	ND	0.014
	3/6/2012	2,4-DINITROTOLUENE	ND	0.014
	3/6/2012	2,5-DINITROTOLUENE	ND	0.014
	3/6/2012	2,6-DINITROTOLUENE	ND	0.014
	3/6/2012	3,4-DINITROTOLUENE	ND	0.014
	3/6/2012	3,5-DINITROTOLUENE	ND	0.014
	3/6/2012	DINITROTOLUENE, TOTAL	ND	0.014
	12/7/2011	2,3-DINITROTOLUENE	ND	0.014
	12/7/2011	2,4-DINITROTOLUENE	ND	0.014
	12/7/2011	2,5-DINITROTOLUENE	ND	0.014
	12/7/2011	2,6-DINITROTOLUENE	ND	0.014
	12/7/2011	3,4-DINITROTOLUENE	ND	0.014
	12/7/2011	3,5-DINITROTOLUENE	ND	0.014
	12/7/2011	DINITROTOLUENE, TOTAL	ND	0.014
	9/7/2011	2,3-DINITROTOLUENE	ND	0.015
	9/7/2011	2,4-DINITROTOLUENE	ND	0.015
	9/7/2011	2,5-DINITROTOLUENE	ND	0.015
	9/7/2011	2,6-DINITROTOLUENE	ND	0.015
	9/7/2011	3,4-DINITROTOLUENE	ND	0.015
	9/7/2011	3,5-DINITROTOLUENE	ND	0.015
	9/7/2011	DINITROTOLUENE, TOTAL	ND	0.015
	6/8/2011	2,3-DINITROTOLUENE	ND	0.015
	6/8/2011	2,4-DINITROTOLUENE	ND	0.015
	6/8/2011	2,5-DINITROTOLUENE	ND	0.015
	6/8/2011	2,6-DINITROTOLUENE	ND	0.015
	6/8/2011	3,4-DINITROTOLUENE	ND	0.015
	6/8/2011	3,5-DINITROTOLUENE	ND	0.015
	6/8/2011	DINITROTOLUENE, TOTAL	ND	0.015
	3/8/2011	2,3-DINITROTOLUENE	ND	0.015
	3/8/2011	2,4-DINITROTOLUENE	ND	0.015
	3/8/2011	2,5-DINITROTOLUENE	ND	0.015
	3/8/2011	2,6-DINITROTOLUENE	ND	0.015
	3/8/2011	3,4-DINITROTOLUENE	ND	0.015
	3/8/2011	3,5-DINITROTOLUENE	ND	0.015
	3/8/2011	DINITROTOLUENE, TOTAL	ND	0.015
	12/8/2010	2,3-DINITROTOLUENE	ND	0.015
	12/8/2010	2,4-DINITROTOLUENE	ND	0.015
	12/8/2010	2,5-DINITROTOLUENE	ND	0.015
	12/8/2010	2,6-DINITROTOLUENE	ND	0.015
	12/8/2010	3,4-DINITROTOLUENE	ND	0.015
	12/8/2010	3,5-DINITROTOLUENE	ND	0.015
	12/8/2010	DINITROTOLUENE, TOTAL	ND	0.015
	9/9/2010	2,3-DINITROTOLUENE	ND	0.015
	9/9/2010	2,4-DINITROTOLUENE	ND	0.015
	9/9/2010	2,5-DINITROTOLUENE	ND	0.015
	9/9/2010	2,6-DINITROTOLUENE	ND	0.015
	9/9/2010	3,4-DINITROTOLUENE	ND	0.015
	9/9/2010	3,5-DINITROTOLUENE	ND	0.015
	6/7/2010	2,3-DINITROTOLUENE	ND	0.012
	6/7/2010	2,4-DINITROTOLUENE	ND	0.014
	6/7/2010	2,5-DINITROTOLUENE	ND	0.013
	6/7/2010	2,6-DINITROTOLUENE	ND	0.018

Table A.1.b

Groundwater Analytical Results

Parcels M1 and T1 - WDNR Closure Request

Badger Army Ammunition Plant

Well ID	Date Sampled	Analyte	Result (ug/l)	Limit of Detection (ug/l)
	6/7/2010	3,4-DINITROTOLUENE	ND	0.031
	6/7/2010	3,5-DINITROTOLUENE	ND	0.015
	3/1/2010	2,3-DINITROTOLUENE	ND	0.012
	3/1/2010	2,4-DINITROTOLUENE	ND	0.014
	3/1/2010	2,5-DINITROTOLUENE	ND	0.013
	3/1/2010	2,6-DINITROTOLUENE	ND	0.018
	3/1/2010	3,4-DINITROTOLUENE	ND	0.031
	3/1/2010	3,5-DINITROTOLUENE	ND	0.015
	12/14/2009	2,3-DINITROTOLUENE	ND	0.012
	12/14/2009	2,4-DINITROTOLUENE	ND	0.014
	12/14/2009	2,5-DINITROTOLUENE	ND	0.013
	12/14/2009	2,6-DINITROTOLUENE	ND	0.018
	12/14/2009	3,4-DINITROTOLUENE	ND	0.031
	12/14/2009	3,5-DINITROTOLUENE	ND	0.015
	9/1/2009	2,3-DINITROTOLUENE	ND	0.012
	9/1/2009	2,4-DINITROTOLUENE	ND	0.014
	9/1/2009	2,5-DINITROTOLUENE	ND	0.013
	9/1/2009	2,6-DINITROTOLUENE	ND	0.018
	9/1/2009	3,4-DINITROTOLUENE	ND	0.031
	9/1/2009	3,5-DINITROTOLUENE	ND	0.015
	6/8/2009	2,3-DINITROTOLUENE	ND	0.006
	6/8/2009	2,4-DINITROTOLUENE	ND	0.009
	6/8/2009	2,5-DINITROTOLUENE	ND	0.014
	6/8/2009	2,6-DINITROTOLUENE	ND	0.007
	6/8/2009	3,4-DINITROTOLUENE	ND	0.011
	6/8/2009	3,5-DINITROTOLUENE	ND	0.009
	3/2/2009	2,3-DINITROTOLUENE	ND	0.006
	3/2/2009	2,4-DINITROTOLUENE	ND	0.009
	3/2/2009	2,5-DINITROTOLUENE	ND	0.014
	3/2/2009	2,6-DINITROTOLUENE	ND	0.007
	3/2/2009	3,4-DINITROTOLUENE	ND	0.011
	3/2/2009	3,5-DINITROTOLUENE	ND	0.009
	12/3/2008	2,3-DINITROTOLUENE	ND	0.006
	12/3/2008	2,4-DINITROTOLUENE	ND	0.009
	12/3/2008	2,5-DINITROTOLUENE	ND	0.014
	12/3/2008	2,6-DINITROTOLUENE	ND	0.007
	12/3/2008	3,4-DINITROTOLUENE	ND	0.011
	12/3/2008	3,5-DINITROTOLUENE	ND	0.009
	9/8/2008	2,3-DINITROTOLUENE	ND	0.006
	9/8/2008	2,4-DINITROTOLUENE	ND	0.009
	9/8/2008	2,5-DINITROTOLUENE	ND	0.014
	9/8/2008	2,6-DINITROTOLUENE	ND	0.007
	9/8/2008	3,4-DINITROTOLUENE	ND	0.011
	9/8/2008	3,5-DINITROTOLUENE	ND	0.009
	6/4/2008	2,3-DINITROTOLUENE	ND	0.01
	6/4/2008	2,4-DINITROTOLUENE	ND	0.01
	6/4/2008	2,5-DINITROTOLUENE	ND	0.01
	6/4/2008	2,6-DINITROTOLUENE	ND	0.01
	6/4/2008	3,4-DINITROTOLUENE	ND	0.016
	6/4/2008	3,5-DINITROTOLUENE	ND	0.01
	3/3/2008	2,3-DINITROTOLUENE	ND	0.01
	3/3/2008	2,4-DINITROTOLUENE	ND	0.01
	3/3/2008	2,5-DINITROTOLUENE	ND	0.01
	3/3/2008	2,6-DINITROTOLUENE	ND	0.01
	3/3/2008	3,4-DINITROTOLUENE	ND	0.016
	3/3/2008	3,5-DINITROTOLUENE	ND	0.01
	12/5/2007	2,3-DINITROTOLUENE	ND	0.01
	12/5/2007	2,4-DINITROTOLUENE	ND	0.01
	12/5/2007	2,5-DINITROTOLUENE	ND	0.01
	12/5/2007	2,6-DINITROTOLUENE	ND	0.01
	12/5/2007	3,4-DINITROTOLUENE	ND	0.016
	12/5/2007	3,5-DINITROTOLUENE	ND	0.01
	9/17/2007	2,3-DINITROTOLUENE	ND	0.01
	9/17/2007	2,4-DINITROTOLUENE	ND	0.01
	9/17/2007	2,5-DINITROTOLUENE	ND	0.01
	9/17/2007	2,6-DINITROTOLUENE	ND	0.01
	9/17/2007	3,4-DINITROTOLUENE	ND	0.016
	9/17/2007	3,5-DINITROTOLUENE	ND	0.01
	6/6/2007	2,3-DINITROTOLUENE	ND	0.01
	6/6/2007	2,4-DINITROTOLUENE	ND	0.01
	6/6/2007	2,5-DINITROTOLUENE	ND	0.01
	6/6/2007	2,6-DINITROTOLUENE	ND	0.01
	6/6/2007	3,4-DINITROTOLUENE	ND	0.016
	6/6/2007	3,5-DINITROTOLUENE	ND	0.01
	3/6/2007	2,3-DINITROTOLUENE	ND	0.005
	3/6/2007	2,4-DINITROTOLUENE	ND	0.006
	3/6/2007	2,5-DINITROTOLUENE	ND	0.004
	3/6/2007	2,6-DINITROTOLUENE	ND	0.005
	3/6/2007	3,4-DINITROTOLUENE	ND	0.006
	3/6/2007	3,5-DINITROTOLUENE	ND	0.007

Table A.1.b

Groundwater Analytical Results

Parcels M1 and T1 - WDNR Closure Request

Badger Army Ammunition Plant

Well ID	Date Sampled	Analyte	Result (ug/l)	Limit of Detection (ug/l)
	12/6/2006	2,3-DINITROTOLUENE	ND	0.006
	12/6/2006	2,4-DINITROTOLUENE	ND	0.008
	12/6/2006	2,5-DINITROTOLUENE	ND	0.005
	12/6/2006	2,6-DINITROTOLUENE	ND	0.005
	12/6/2006	3,4-DINITROTOLUENE	ND	0.013
	12/6/2006	3,5-DINITROTOLUENE	ND	0.011
	9/6/2006	2,3-DINITROTOLUENE	ND	0.005
	9/6/2006	2,4-DINITROTOLUENE	ND	0.005
	9/6/2006	2,5-DINITROTOLUENE	ND	0.005
	9/6/2006	2,6-DINITROTOLUENE	ND	0.008
	9/6/2006	3,4-DINITROTOLUENE	ND	0.009
	9/6/2006	3,5-DINITROTOLUENE	ND	0.004
	6/13/2006	2,3-DINITROTOLUENE	ND	0.005
	6/13/2006	2,4-DINITROTOLUENE	ND	0.005
	6/13/2006	2,5-DINITROTOLUENE	ND	0.005
	6/13/2006	2,6-DINITROTOLUENE	ND	0.008
	6/13/2006	3,4-DINITROTOLUENE	ND	0.009
	6/13/2006	3,5-DINITROTOLUENE	ND	0.004
	3/13/2006	2,3-DINITROTOLUENE	ND	0.005
	3/13/2006	2,4-DINITROTOLUENE	ND	0.005
	3/13/2006	2,4-DINITROTOLUENE	ND	0.019
	3/13/2006	2,6-DINITROTOLUENE	ND	0.022
	3/13/2006	2,6-DINITROTOLUENE	ND	0.008
	3/13/2006	3,4 DINITROTOLUENE	ND	0.009
	12/12/2005	2,4-DINITROTOLUENE	ND	0.019
	12/12/2005	2,6-DINITROTOLUENE	ND	0.022
	9/13/2005	2,4-DINITROTOLUENE	ND	0.019
	9/13/2005	2,6-DINITROTOLUENE	ND	0.013
	6/13/2005	2,4-DINITROTOLUENE	ND	0.019
	6/13/2005	2,6-DINITROTOLUENE	ND	0.013
	3/22/2005	2,4-DINITROTOLUENE	ND	0.038
	3/22/2005	2,6-DINITROTOLUENE	ND	0.037
	12/2/2004	2,4-DINITROTOLUENE	ND	0.038
	12/2/2004	2,6-DINITROTOLUENE	ND	0.037
	9/8/2004	2,4-DINITROTOLUENE	ND	0.038
	9/8/2004	2,6-DINITROTOLUENE	ND	0.037
	6/8/2004	2,3-DINITROTOLUENE	ND	0.005
	6/8/2004	2,4-DINITROTOLUENE	ND	0.005
	6/8/2004	2,6-DINITROTOLUENE	ND	0.005
	6/8/2004	3,4 DINITROTOLUENE	ND	0.006
	3/4/2004	2,3-DINITROTOLUENE	ND	0.01
	3/4/2004	2,4-DINITROTOLUENE	ND	0.01
	3/4/2004	2,6-DINITROTOLUENE	ND	0.01
	3/4/2004	3,4 DINITROTOLUENE	ND	0.01
	11/25/2003	2,3-DINITROTOLUENE	ND	0.01
	11/25/2003	2,4-DINITROTOLUENE	ND	0.02
	11/25/2003	2,6-DINITROTOLUENE	ND	0.02
	11/25/2003	3,4 DINITROTOLUENE	ND	0.01
	9/9/2003	2,3-DINITROTOLUENE	ND	0.01
	9/9/2003	2,4-DINITROTOLUENE	ND	0.02
	9/9/2003	2,6-DINITROTOLUENE	ND	0.02
	9/9/2003	3,4 DINITROTOLUENE	ND	0.01
	6/9/2003	2,3-DINITROTOLUENE	ND	0.01
	6/9/2003	2,4-DINITROTOLUENE	ND	0.02
	6/9/2003	2,6-DINITROTOLUENE	ND	0.02
	3/10/2003	2,3-DINITROTOLUENE	ND	0.01
	3/10/2003	2,3-DINITROTOLUENE	ND	0.01
	3/10/2003	2,4-DINITROTOLUENE	ND	0.01
	3/10/2003	2,4-DINITROTOLUENE	ND	0.01
	3/10/2003	2,6-DINITROTOLUENE	ND	0.01
	3/10/2003	2,6-DINITROTOLUENE	ND	0.01
	12/4/2002	2,3-DINITROTOLUENE	ND	0.02
	12/4/2002	2,4-DINITROTOLUENE	ND	0.03
	12/4/2002	2,6-DINITROTOLUENE	ND	0.04
	9/10/2002	2,3-DINITROTOLUENE	ND	0.03
	9/10/2002	2,4-DINITROTOLUENE	ND	0.03
	9/10/2002	2,6-DINITROTOLUENE	ND	0.03
	6/12/2002	2,3-DINITROTOLUENE	ND	0.03
	6/12/2002	2,4-DINITROTOLUENE	ND	0.03
	6/12/2002	2,6-DINITROTOLUENE	ND	0.03
	3/19/2002	2,3-DINITROTOLUENE	ND	0.03
	3/19/2002	2,4-DINITROTOLUENE	ND	0.03
	3/19/2002	2,6-DINITROTOLUENE	ND	0.03
	11/28/2001	2,3-DINITROTOLUENE	ND	0.03
	11/28/2001	2,4-DINITROTOLUENE	ND	0.03
	11/28/2001	2,6-DINITROTOLUENE	ND	0.03
	6/6/2001	2,3-DINITROTOLUENE	0.07	0.06
	6/6/2001	2,4-DINITROTOLUENE	**0.7**	0.07
	6/6/2001	2,6-DINITROTOLUENE	**1.06**	0.07
	3/12/2001	2,3-DNT	ND	0.06

Table A.1.b

Groundwater Analytical Results

Parcels M1 and T1 - WDNR Closure Request

Badger Army Ammunition Plant

Well ID	Date Sampled	Analyte	Result (ug/l)	Limit of Detection (ug/l)
	3/12/2001	2,4-Dinitrotoluene	ND	0.07
	3/12/2001	2,6-Dinitrotoluene	**0.24**	0.07
	11/30/2000	2,3-DNT	ND	0.06
	11/30/2000	2,4-Dinitrotoluene	ND	0.07
	11/30/2000	2,6-Dinitrotoluene	ND	0.07
	9/11/2000	2,3-DNT	ND	0.06
	9/11/2000	2,4-Dinitrotoluene	ND	0.07
	9/11/2000	2,6-Dinitrotoluene	ND	0.07
	6/5/2000	2,3-DINITROTOLUENE	ND	0.06
	6/5/2000	2,4-DINITROTOLUENE	ND	0.07
	6/5/2000	2,6-DINITROTOLUENE	ND	0.07
	3/7/2000	2,3-DINITROTOLUENE	ND	0.06
	3/7/2000	2,4-DINITROTOLUENE	ND	0.07
	3/7/2000	2,6-DINITROTOLUENE	ND	0.07
	12/7/1999	2,3-DINITROTOLUENE	ND	0.01
	12/7/1999	2,4-DINITROTOLUENE	ND	0.01
	12/7/1999	2,6-DINITROTOLUENE	ND	0.01
	9/8/1999	2,3-DINITROTOLUENE	ND	0.01
	9/8/1999	2,4-DINITROTOLUENE	ND	0.01
	9/8/1999	2,6-DINITROTOLUENE	ND	0.01
	6/8/1999	2,3-DINITROTOLUENE	ND	0.01
	6/8/1999	2,4-DINITROTOLUENE	ND	0.01
	6/8/1999	2,6-DINITROTOLUENE	ND	0.01
	3/10/1999	2,3-DINITROTOLUENE	ND	0.01
	3/10/1999	2,4-DINITROTOLUENE	ND	0.01
	3/10/1999	2,6-DINITROTOLUENE	ND	0.02
	12/10/1998	2,3-DINITROTOLUENE	ND	0.01
	12/10/1998	2,4-DINITROTOLUENE	ND	0.01
	12/10/1998	2,4-DINITROTOLUENE	ND	0.4
	12/10/1998	2,6-DINITROTOLUENE	ND	0.5
	12/10/1998	2,6-DINITROTOLUENE	ND	0.02
	9/22/1998	2,3-DINITROTOLUENE	ND	0.01
	9/22/1998	2,4-DINITROTOLUENE	ND	0.01
	9/22/1998	2,6-DINITROTOLUENE	ND	0.02
	6/10/1998	2,3-DINITROTOLUENE	ND	0.01
	6/10/1998	2,4-DINITROTOLUENE	ND	0.01
	6/10/1998	2,6-DINITROTOLUENE	ND	0.02
	6/10/1998	ARSENIC	ND	1.1
	6/10/1998	CHROMIUM	ND	2.8
	6/10/1998	LEAD, DISSOLVED	ND	1.4
	3/12/1998	CHROMIUM	ND	0.9
	12/9/1997	CHROMIUM	ND	0.9
	9/16/1997	CHROMIUM	ND	1.2
	6/16/1997	2,3-DINITROTOLUENE	ND	0.02
	6/16/1997	2,4-DINITROTOLUENE	ND	0.02
	6/16/1997	2,6-DINITROTOLUENE	ND	0.02
	6/16/1997	ARSENIC	ND	1.5
	6/16/1997	CHROMIUM	ND	13
	6/16/1997	LEAD, DISSOLVED	ND	2.1
	3/12/1997	CHROMIUM	ND	1.8
	6/12/1996	2,4-DINITROTOLUENE	ND	0.04
	6/12/1996	2,6-DINITROTOLUENE	ND	0.04
	6/12/1996	ARSENIC	ND	1.5
	6/12/1996	LEAD, DISSOLVED	ND	1.4
	12/12/1995	2,4-DINITROTOLUENE	ND	0.02
	12/12/1995	2,6-DINITROTOLUENE	ND	0.02
	6/13/1995	2,4-DINITROTOLUENE	ND	2
	6/13/1995	2,6-DINITROTOLUENE	ND	2
	6/13/1995	ARSENIC	ND	2
	6/13/1995	LEAD, DISSOLVED	ND	1
	6/9/1994	2,4-DINITROTOLUENE	ND	0.002
	6/9/1994	2,6-DINITROTOLUENE	ND	3
	6/9/1994	ARSENIC	ND	0.002
	6/9/1994	LEAD, DISSOLVED	ND	1
	6/10/1993	2,4-DINITROTOLUENE	ND	0.00004
	6/10/1993	2,6-DINITROTOLUENE	ND	0.005
	6/10/1993	ARSENIC	ND	0.01
	6/10/1993	LEAD, DISSOLVED	ND	0.002
	9/23/1992	2,4-DINITROTOLUENE	ND	0.00005
	9/23/1992	2,6-DINITROTOLUENE	ND	0.00005
	9/23/1992	LEAD, DISSOLVED	ND	0.002
	9/23/1992	LEAD, TOTAL	ND	0.002
	6/11/1992	2,4-DINITROTOLUENE	ND	0.01
	6/11/1992	2,4-DINITROTOLUENE	ND	0.005
	6/11/1992	2,6-DINITROTOLUENE	ND	0.01
	6/11/1992	2,6-DINITROTOLUENE	ND	0.005
	6/11/1992	LEAD, DISSOLVED	ND	0.002
	6/11/1992	LEAD, TOTAL	ND	0.002
	4/23/1992	2,4-DINITROTOLUENE	ND	0.006
	4/23/1992	2,4-DINITROTOLUENE	ND	0.00116

Table A.1.b

Groundwater Analytical Results

Parcels M1 and T1 - WDNR Closure Request

Badger Army Ammunition Plant

Well ID	Date Sampled	Analyte	Result (ug/l)	Limit of Detection (ug/l)
	4/23/1992	2,6-DINITROTOLUENE	ND	7
	4/23/1992	2,6-DINITROTOLUENE	ND	0.00111
	4/23/1992	ARSENIC	ND	0.00309
	4/23/1992	LEAD, DISSOLVED	ND	0.00474
	3/11/1992	2,4-DINITROTOLUENE	ND	0.01
	3/11/1992	2,4-DINITROTOLUENE	ND	0.005
	3/11/1992	2,6-DINITROTOLUENE	ND	0.01
	3/11/1992	2,6-DINITROTOLUENE	ND	0.005
	3/11/1992	LEAD, DISSOLVED	ND	0.002
	12/13/1991	2,4-DINITROTOLUENE	ND	0.0055
	12/13/1991	2,4-DINITROTOLUENE	ND	0.00116
	12/13/1991	2,6-DINITROTOLUENE	ND	0.0066
	12/13/1991	2,6-DINITROTOLUENE	ND	0.00111
	12/13/1991	ARSENIC	ND	0.00309
	12/13/1991	LEAD, DISSOLVED	ND	0.00474
	12/9/1991	2,4-DINITROTOLUENE	ND	0.005
	12/9/1991	2,6-DINITROTOLUENE	ND	0.005
	12/9/1991	LEAD, DISSOLVED	ND	0.002
	9/11/1991	LEAD, DISSOLVED	ND	0.002
	6/11/1991	LEAD, DISSOLVED	ND	0.002
	3/13/1991	LEAD, DISSOLVED	ND	0.002
	12/19/1990	LEAD, DISSOLVED	ND	0.002
	9/25/1990	LEAD, DISSOLVED	ND	0.002
	7/10/1990	LEAD, DISSOLVED	ND	0.002
	3/28/1990	LEAD, DISSOLVED	ND	0.002
	9/19/1989	LEAD, DISSOLVED	ND	0.1
	7/6/1989	LEAD, DISSOLVED	ND	0.1
S1107	6/8/2009	2,3-DINITROTOLUENE	ND	0.006
	6/8/2009	2,4-DINITROTOLUENE	ND	0.009
	6/8/2009	2,5-DINITROTOLUENE	ND	0.014
	6/8/2009	2,6-DINITROTOLUENE	ND	0.007
	6/8/2009	3,4-DINITROTOLUENE	ND	0.011
	6/8/2009	3,5-DINITROTOLUENE	ND	0.009
	3/2/2009	2,3-DINITROTOLUENE	ND	0.006
	3/2/2009	2,4-DINITROTOLUENE	ND	0.009
	3/2/2009	2,5-DINITROTOLUENE	ND	0.014
	3/2/2009	2,6-DINITROTOLUENE	ND	0.007
	3/2/2009	3,4-DINITROTOLUENE	ND	0.011
	3/2/2009	3,5-DINITROTOLUENE	ND	0.009
	12/3/2008	2,3-DINITROTOLUENE	ND	0.006
	12/3/2008	2,4-DINITROTOLUENE	ND	0.009
	12/3/2008	2,5-DINITROTOLUENE	ND	0.014
	12/3/2008	2,6-DINITROTOLUENE	ND	0.007
	12/3/2008	3,4-DINITROTOLUENE	ND	0.011
	12/3/2008	3,5-DINITROTOLUENE	ND	0.009
	9/8/2008	2,3-DINITROTOLUENE	ND	0.006
	9/8/2008	2,4-DINITROTOLUENE	ND	0.009
	9/8/2008	2,5-DINITROTOLUENE	ND	0.014
	9/8/2008	2,6-DINITROTOLUENE	ND	0.007
	9/8/2008	3,4-DINITROTOLUENE	ND	0.011
	9/8/2008	3,5-DINITROTOLUENE	ND	0.009
	6/4/2008	2,3-DINITROTOLUENE	ND	0.01
	6/4/2008	2,4-DINITROTOLUENE	ND	0.01
	6/4/2008	2,5-DINITROTOLUENE	ND	0.01
	6/4/2008	2,6-DINITROTOLUENE	ND	0.01
	6/4/2008	3,4-DINITROTOLUENE	ND	0.016
	6/4/2008	3,5-DINITROTOLUENE	ND	0.01
	3/4/2008	2,3-DINITROTOLUENE	0.013	0.01
	3/4/2008	2,4-DINITROTOLUENE	*0.011*	0.01
	3/4/2008	2,5-DINITROTOLUENE	ND	0.01
	3/4/2008	2,6-DINITROTOLUENE	ND	0.01
	3/4/2008	3,4-DINITROTOLUENE	ND	0.016
	3/4/2008	3,5-DINITROTOLUENE	ND	0.01
	12/5/2007	2,3-DINITROTOLUENE	ND	0.01
	12/5/2007	2,4-DINITROTOLUENE	ND	0.01
	12/5/2007	2,5-DINITROTOLUENE	ND	0.01
	12/5/2007	2,6-DINITROTOLUENE	ND	0.01
	12/5/2007	3,4-DINITROTOLUENE	ND	0.016
	12/5/2007	3,5-DINITROTOLUENE	ND	0.01
	9/17/2007	2,3-DINITROTOLUENE	ND	0.01
	9/17/2007	2,4-DINITROTOLUENE	ND	0.01
	9/17/2007	2,5-DINITROTOLUENE	ND	0.01
	9/17/2007	2,6-DINITROTOLUENE	ND	0.01
	9/17/2007	3,4-DINITROTOLUENE	ND	0.016
	9/17/2007	3,5-DINITROTOLUENE	ND	0.01
	6/6/2007	2,3-DINITROTOLUENE	ND	0.01
	6/6/2007	2,4-DINITROTOLUENE	ND	0.01
	6/6/2007	2,5-DINITROTOLUENE	ND	0.01
	6/6/2007	2,6-DINITROTOLUENE	ND	0.01
	6/6/2007	3,4-DINITROTOLUENE	ND	0.016

Table A.1.b

Groundwater Analytical Results

Parcels M1 and T1 - WDNR Closure Request

Badger Army Ammunition Plant

Well ID	Date Sampled	Analyte	Result (ug/l)	Limit of Detection (ug/l)
	6/6/2007	3,5-DINITROTOLUENE	ND	0.01
	3/6/2007	2,3-DINITROTOLUENE	ND	0.005
	3/6/2007	2,4-DINITROTOLUENE	ND	0.006
	3/6/2007	2,5-DINITROTOLUENE	ND	0.004
	3/6/2007	2,6-DINITROTOLUENE	ND	0.005
	3/6/2007	3,4-DINITROTOLUENE	ND	0.006
	3/6/2007	3,5-DINITROTOLUENE	ND	0.007
	12/6/2006	2,3-DINITROTOLUENE	ND	0.006
	12/6/2006	2,4-DINITROTOLUENE	ND	0.008
	12/6/2006	2,5-DINITROTOLUENE	ND	0.005
	12/6/2006	2,6-DINITROTOLUENE	ND	0.005
	12/6/2006	3,4-DINITROTOLUENE	ND	0.013
	12/6/2006	3,5-DINITROTOLUENE	ND	0.011
	9/6/2006	2,3-DINITROTOLUENE	ND	0.005
	9/6/2006	2,4-DINITROTOLUENE	ND	0.005
	9/6/2006	2,5-DINITROTOLUENE	ND	0.005
	9/6/2006	2,6-DINITROTOLUENE	ND	0.008
	9/6/2006	3,4-DINITROTOLUENE	ND	0.009
	9/6/2006	3,5-DINITROTOLUENE	ND	0.004
	6/13/2006	2,3-DINITROTOLUENE	ND	0.005
	6/13/2006	2,4-DINITROTOLUENE	ND	0.005
	6/13/2006	2,5-DINITROTOLUENE	ND	0.005
	6/13/2006	2,6-DINITROTOLUENE	ND	0.008
	6/13/2006	3,4-DINITROTOLUENE	ND	0.009
	6/13/2006	3,5-DINITROTOLUENE	ND	0.004
	3/13/2006	2,3-DINITROTOLUENE	ND	0.005
	3/13/2006	2,4-DINITROTOLUENE	ND	0.005
	3/13/2006	2,4-DINITROTOLUENE	ND	0.019
	3/13/2006	2,6-DINITROTOLUENE	ND	0.022
	3/13/2006	2,6-DINITROTOLUENE	ND	0.008
	3/13/2006	3,4 DINITROTOLUENE	ND	0.009
	12/12/2005	2,4-DINITROTOLUENE	ND	0.019
	12/12/2005	2,6-DINITROTOLUENE	ND	0.022
	9/13/2005	2,4-DINITROTOLUENE	ND	0.019
	9/13/2005	2,6-DINITROTOLUENE	ND	0.013
	6/14/2005	2,4-DINITROTOLUENE	ND	0.019
	6/14/2005	2,6-DINITROTOLUENE	ND	0.013
	3/8/2005	2,4-DINITROTOLUENE	ND	0.038
	3/8/2005	2,6-DINITROTOLUENE	ND	0.037
	12/7/2004	2,4-DINITROTOLUENE	ND	0.038
	12/7/2004	2,6-DINITROTOLUENE	ND	0.037
	9/7/2004	2,4-DINITROTOLUENE	ND	0.038
	9/7/2004	2,6-DINITROTOLUENE	ND	0.037
	11/30/2000	2,3-DNT	ND	0.06
	11/30/2000	2,4-Dinitrotoluene	ND	0.07
	11/30/2000	2,6-Dinitrotoluene	ND	0.07
	9/11/2000	2,3-DNT	ND	0.06
	9/11/2000	2,4-Dinitrotoluene	ND	0.07
	9/11/2000	2,6-Dinitrotoluene	ND	0.07
	6/5/2000	2,3-DINITROTOLUENE	ND	0.06
	6/5/2000	2,4-DINITROTOLUENE	ND	0.07
	6/5/2000	2,6-DINITROTOLUENE	ND	0.07
	3/8/2000	2,3-DINITROTOLUENE	ND	0.06
	3/8/2000	2,4-DINITROTOLUENE	ND	0.07
	3/8/2000	2,6-DINITROTOLUENE	ND	0.07
	12/2/1999	2,3-DINITROTOLUENE	ND	0.01
	12/2/1999	2,4-DINITROTOLUENE	ND	0.01
	12/2/1999	2,6-DINITROTOLUENE	ND	0.01
	9/8/1999	2,3-DINITROTOLUENE	ND	0.01
	9/8/1999	2,4-DINITROTOLUENE	ND	0.01
	9/8/1999	2,6-DINITROTOLUENE	ND	0.01
	6/8/1999	2,3-DINITROTOLUENE	ND	0.01
	6/8/1999	2,4-DINITROTOLUENE	ND	0.01
	6/8/1999	2,6-DINITROTOLUENE	ND	0.01
	3/15/1999	2,3-DINITROTOLUENE	ND	0.01
	3/15/1999	2,4-DINITROTOLUENE	ND	0.01
	3/15/1999	2,6-DINITROTOLUENE	ND	0.02
	12/10/1998	2,3-DINITROTOLUENE	ND	0.01
	12/10/1998	2,4-DINITROTOLUENE	ND	0.4
	12/10/1998	2,4-DINITROTOLUENE	ND	0.01
	12/10/1998	2,6-DINITROTOLUENE	ND	0.02
	12/10/1998	2,6-DINITROTOLUENE	ND	0.5
	9/22/1998	2,3-DINITROTOLUENE	ND	0.01
	9/22/1998	2,4-DINITROTOLUENE	ND	0.01
	9/22/1998	2,6-DINITROTOLUENE	ND	0.02
	6/15/1998	2,3-DINITROTOLUENE	ND	0.01
	6/15/1998	2,4-DINITROTOLUENE	ND	0.01
	6/15/1998	2,6-DINITROTOLUENE	ND	0.02
	6/15/1998	ARSENIC	ND	1.1
	6/15/1998	CHROMIUM	ND	2.8

Table A.1.b

Groundwater Analytical Results

Parcels M1 and T1 - WDNR Closure Request

Badger Army Ammunition Plant

Well ID	Date Sampled	Analyte	Result (ug/l)	Limit of Detection (ug/l)
	6/15/1998	LEAD, DISSOLVED	ND	1.4
	3/12/1998	CHROMIUM	ND	0.9
	12/9/1997	CHROMIUM	ND	0.9
	9/16/1997	CHROMIUM	ND	0.9
	6/16/1997	2,3-DINITROTOLUENE	ND	0.02
	6/16/1997	2,4-DINITROTOLUENE	ND	0.02
	6/16/1997	2,6-DINITROTOLUENE	ND	0.02
	6/16/1997	ARSENIC	ND	1.5
	6/16/1997	CHROMIUM	ND	13
	6/16/1997	LEAD, DISSOLVED	ND	2.7
	3/12/1997	CHROMIUM	ND	1
	6/12/1996	2,4-DINITROTOLUENE	ND	0.00004
	6/12/1996	2,6-DINITROTOLUENE	ND	0.00004
	6/12/1996	ARSENIC	ND	1.5
	6/12/1996	LEAD, DISSOLVED	ND	1.4
	6/13/1995	2,4-DINITROTOLUENE	ND	2
	6/13/1995	2,6-DINITROTOLUENE	ND	2
	6/13/1995	ARSENIC	ND	2
	6/13/1995	LEAD, DISSOLVED	ND	1
	6/9/1994	2,4-DINITROTOLUENE	ND	0.002
	6/9/1994	2,6-DINITROTOLUENE	ND	3
	6/9/1994	ARSENIC	ND	0.002
	6/9/1994	LEAD, DISSOLVED	ND	1
	8/3/1993	2,4-DINITROTOLUENE	ND	0.005
	8/3/1993	2,6-DINITROTOLUENE	ND	0.005
	6/10/1993	ARSENIC	ND	0.01
	6/10/1993	LEAD, DISSOLVED	ND	0.002
	9/23/1992	2,4-DINITROTOLUENE	ND	0.00005
	9/23/1992	2,6-DINITROTOLUENE	ND	0.00005
	9/23/1992	LEAD, DISSOLVED	ND	0.002
	9/23/1992	LEAD, TOTAL	ND	0.002
	6/11/1992	2,4-DINITROTOLUENE	ND	0.01
	6/11/1992	2,4-DINITROTOLUENE	ND	0.005
	6/11/1992	2,6-DINITROTOLUENE	ND	0.01
	6/11/1992	2,6-DINITROTOLUENE	ND	0.005
	6/11/1992	LEAD, DISSOLVED	ND	0.002
	6/11/1992	LEAD, TOTAL	ND	0.002
	4/25/1992	2,4-DINITROTOLUENE	ND	0.0055
	4/25/1992	2,4-DINITROTOLUENE	ND	0.00116
	4/25/1992	2,6-DINITROTOLUENE	ND	0.0066
	4/25/1992	2,6-DINITROTOLUENE	ND	0.00111
	4/25/1992	ARSENIC	ND	0.00309
	4/25/1992	LEAD, DISSOLVED	ND	0.00474
	3/12/1992	2,4-DINITROTOLUENE	ND	0.01
	3/12/1992	2,4-DINITROTOLUENE	ND	0.005
	3/12/1992	2,6-DINITROTOLUENE	ND	0.01
	3/12/1992	2,6-DINITROTOLUENE	ND	0.005
	3/12/1992	LEAD, DISSOLVED	ND	0.002
	12/13/1991	2,4-DINITROTOLUENE	ND	0.006
	12/13/1991	2,4-DINITROTOLUENE	ND	0.00116
	12/13/1991	2,6-DINITROTOLUENE	ND	7
	12/13/1991	2,6-DINITROTOLUENE	ND	0.00111
	12/13/1991	ARSENIC	ND	0.00309
	12/13/1991	LEAD, DISSOLVED	ND	0.00474
	12/9/1991	2,4-DINITROTOLUENE	ND	0.005
	12/9/1991	2,6-DINITROTOLUENE	ND	0.005
	12/9/1991	LEAD, DISSOLVED	ND	0.002
	9/12/1991	LEAD, DISSOLVED	ND	0.002
	6/12/1991	LEAD, DISSOLVED	ND	0.002
	3/20/1991	LEAD, DISSOLVED	ND	0.002
	1/10/1991	LEAD, DISSOLVED	ND	0.002
	9/26/1990	LEAD, DISSOLVED	ND	0.002
	7/10/1990	LEAD, DISSOLVED	ND	0.002
	3/29/1990	LEAD, DISSOLVED	ND	0.002
	9/18/1989	LEAD, DISSOLVED	ND	0.1
	7/10/1989	LEAD, DISSOLVED	ND	0.1
	9/26/1988	2,4-DINITROTOLUENE	ND	0.00145
S1147	10/21/2013	2,3-Dinitrotoluene	ND	0.014
	10/21/2013	2,4-Dinitrotoluene	ND	0.014
	10/21/2013	2,5-Dinitrotoluene	ND	0.014
	10/21/2013	2,6-Dinitrotoluene	ND	0.014
	10/21/2013	3,4-Dinitrotoluene	ND	0.014
	10/21/2013	3,5-Dinitrotoluene	ND	0.014
	10/21/2013	Dinitrotoluene, Total	ND	0.014
	6/10/1998	2,3-Dinitrotoluene	ND	0.01
	6/10/1998	2,4-Dinitrotoluene	ND	0.01
	6/10/1998	2,6-Dinitrotoluene	ND	0.02
	6/10/1998	Arsenic	ND	1.1
	6/10/1998	Chromium, Dissolved	ND	2.8
	6/10/1998	Lead, Dissolved	ND	1.4

Table A.1.b

Groundwater Analytical Results

Parcels M1 and T1 - WDNR Closure Request

Badger Army Ammunition Plant

Well ID	Date Sampled	Analyte	Result (ug/l)	Limit of Detection (ug/l)
	3/9/1998	Chromium, Dissolved	1.1	0.4
	12/8/1997	Chromium, Dissolved	1.4	0.4
	12/8/1997	Lead, Dissolved	ND	1.2
	9/15/1997	Chromium, Dissolved	2.9	0.4
	9/15/1997	Lead, Dissolved	ND	1.2
	6/11/1997	2,3-Dinitrotoluene	ND	0.02
	6/11/1997	2,4-Dinitrotoluene	ND	0.02
	6/11/1997	2,6-Dinitrotoluene	ND	0.02
	6/11/1997	Arsenic	ND	1.5
	6/11/1997	Chromium, Dissolved	*21*	0.4
	6/11/1997	Lead, Dissolved	*2.7*	1.4
	3/11/1997	Chromium, Dissolved	ND	0.4
	3/11/1997	Lead, Dissolved	ND	1.2
	12/11/1996	Chromium, Dissolved	*29*	0.4
	12/11/1996	Lead, Dissolved	1.4	1.4
	9/16/1996	Chromium, Dissolved	ND	0.9
	6/11/1996	2,4-Dinitrotoluene	ND	0.04
	6/11/1996	2,6-Dinitrotoluene	ND	0.04
	6/11/1996	Arsenic	ND	1.5
	6/11/1996	Chromium, Dissolved	ND	0.6
	6/11/1996	Lead, Dissolved	ND	1.4
	3/11/1996	Chromium, Dissolved	0.8	0.4
	12/11/1995	2,4-Dinitrotoluene	ND	0.02
	12/11/1995	2,6-Dinitrotoluene	ND	0.02
	12/11/1995	Chromium, Dissolved	1	1
	9/13/1995	Chromium, Dissolved	ND	1
	6/12/1995	2,4-Dinitrotoluene	ND	2
	6/12/1995	2,6-Dinitrotoluene	ND	2
	6/12/1995	Arsenic	ND	2
	6/12/1995	Chromium, Dissolved	ND	1
	6/12/1995	Lead, Dissolved	ND	1
	3/13/1995	Chromium, Dissolved	2	1
	12/12/1994	Chromium, Dissolved	ND	1
	8/31/1994	Chromium, Dissolved	ND	1
	6/8/1994	2,4-Dinitrotoluene	ND	2
	6/8/1994	2,6-Dinitrotoluene	ND	3
	6/8/1994	Arsenic	ND	2
	6/8/1994	Chromium, Dissolved	2	1
	6/8/1994	Lead, Dissolved	ND	1
	3/3/1994	Chromium, Dissolved	1	1
	12/6/1993	Chromium, Dissolved	ND	1
	9/13/1993	Chromium, Dissolved	ND	1
	6/9/1993	2,4-Dinitrotoluene	ND	5
	6/9/1993	2,6-Dinitrotoluene	ND	5
	6/9/1993	Arsenic	ND	10
	6/9/1993	Chromium, Dissolved	ND	1
	6/9/1993	Lead, Dissolved	ND	2
	3/1/1993	Chromium, Dissolved	ND	1
	12/9/1992	Chromium, Dissolved	ND	1
	9/22/1992	2,4-Dinitrotoluene	**0.05**	0.05
	9/22/1992	2,6-Dinitrotoluene	ND	0.05
	9/22/1992	Chromium, Dissolved	ND	1
	9/22/1992	Chromium, Total	ND	1
	9/22/1992	Lead, Dissolved	ND	2
	9/22/1992	Lead, Total	ND	2
	6/10/1992	2,4-Dinitrotoluene	ND	5
	6/10/1992	2,4-Dinitrotoluene	ND	10
	6/10/1992	2,6-Dinitrotoluene	ND	5
	6/10/1992	2,6-Dinitrotoluene	ND	10
	6/10/1992	Chromium, Dissolved	ND	1
	6/10/1992	Chromium, Total	ND	1
	6/10/1992	Lead, Dissolved	ND	2
	6/10/1992	Lead, Total	ND	2
	4/26/1992	2,4-Dinitrotoluene	ND	6
	4/26/1992	2,4-Dinitrotoluene	ND	1.16
	4/26/1992	2,6-Dinitrotoluene	ND	7
	4/26/1992	2,6-Dinitrotoluene	ND	1.11
	4/26/1992	Arsenic	ND	3.09
	4/26/1992	Chromium, Dissolved	ND	4.47
	4/26/1992	Lead, Dissolved	ND	4.74
	3/11/1992	2,4-Dinitrotoluene	ND	5
	3/11/1992	2,4-Dinitrotoluene	ND	10
	3/11/1992	2,6-Dinitrotoluene	ND	5
	3/11/1992	2,6-Dinitrotoluene	ND	10
	3/11/1992	Chromium, Dissolved	ND	1
	3/11/1992	Lead, Dissolved	ND	2
	12/6/1991	2,4-Dinitrotoluene	ND	5
	12/6/1991	2,6-Dinitrotoluene	ND	5
	12/6/1991	Chromium, Dissolved	ND	1
	12/6/1991	Lead, Dissolved	ND	2

Table A.1.b

Groundwater Analytical Results

Parcels M1 and T1 - WDNR Closure Request

Badger Army Ammunition Plant

Well ID	Date Sampled	Analyte	Result (ug/l)	Limit of Detection (ug/l)
	11/20/1991	2,4-Dinitrotoluene	ND	6
	11/20/1991	2,4-Dinitrotoluene	ND	1.16
	11/20/1991	2,6-Dinitrotoluene	ND	7
	11/20/1991	2,6-Dinitrotoluene	ND	1.11
	11/20/1991	Arsenic	ND	3.09
	11/20/1991	Chromium, Dissolved	8.11	1
	11/20/1991	Lead, Dissolved	*8.49*	2
	9/26/1991	Lead, Dissolved	ND	2
	9/10/1991	2,4-Dinitrotoluene	ND	5
	9/10/1991	2,6-Dinitrotoluene	ND	5
	9/10/1991	Chromium, Dissolved	ND	1
	6/12/1991	2,4-Dinitrotoluene	ND	10
	6/12/1991	2,6-Dinitrotoluene	ND	10
	6/12/1991	Chromium, Dissolved	1	1
	6/12/1991	Lead, Dissolved	ND	2
	3/20/1991	2,4-Dinitrotoluene	ND	10
	3/20/1991	2,6-Dinitrotoluene	ND	10
	3/20/1991	Chromium, Dissolved	1	1
	3/20/1991	Lead, Dissolved	ND	2
	1/14/1991	2,4-Dinitrotoluene	ND	10
	1/14/1991	2,6-Dinitrotoluene	ND	10
	1/14/1991	Chromium, Dissolved	1	1
	1/14/1991	Lead, Dissolved	ND	2
	9/27/1990	Chromium, Dissolved	ND	1
	9/27/1990	Lead, Dissolved	ND	2
	7/11/1990	Chromium, Dissolved	7	1
	7/11/1990	Lead, Dissolved	ND	2
	3/29/1990	Chromium, Dissolved	ND	10
	3/29/1990	Lead, Dissolved	ND	2
	9/18/1989	2,4-Dinitrotoluene	ND	10
	9/18/1989	2,6-Dinitrotoluene	ND	10
	9/18/1989	Chromium, Dissolved	*50*	1
	9/18/1989	Lead, Dissolved	ND	100
	7/10/1989	2,4-Dinitrotoluene	ND	10
	7/10/1989	2,6-Dinitrotoluene	ND	10
	7/10/1989	Chromium, Dissolved	*10*	1
	7/10/1989	Lead, Dissolved	ND	100
	9/29/1988	2,4-Dinitrotoluene	ND	0.61
	9/29/1988	2,6-Dinitrotoluene	ND	1.15
	7/20/1988	2,4-Dinitrotoluene	ND	4.5
	7/20/1988	2,4-Dinitrotoluene	ND	0.61
	7/20/1988	2,6-Dinitrotoluene	ND	1.15
	7/20/1988	2,6-Dinitrotoluene	ND	0.79
S1149	10/21/2013	2,3-Dinitrotoluene	ND	0.014
	10/21/2013	2,4-Dinitrotoluene	ND	0.014
	10/21/2013	2,5-Dinitrotoluene	ND	0.014
	10/21/2013	2,6-Dinitrotoluene	ND	0.014
	10/21/2013	3,4-Dinitrotoluene	ND	0.014
	10/21/2013	3,5-Dinitrotoluene	ND	0.014
	10/21/2013	Dinitrotoluene, Total	ND	0.014
	6/10/1998	2,3-Dinitrotoluene	ND	0.01
	6/10/1998	2,4-Dinitrotoluene	ND	0.01
	6/10/1998	2,6-Dinitrotoluene	ND	0.02
	6/10/1998	Arsenic	ND	1.1
	6/10/1998	Chromium, Dissolved	ND	2.8
	6/10/1998	Lead, Dissolved	ND	1.4
	3/12/1998	Chromium, Dissolved	ND	0.9
	12/9/1997	Chromium, Dissolved	ND	0.9
	9/16/1997	Chromium, Dissolved	ND	0.9
	6/16/1997	2,3-Dinitrotoluene	ND	0.02
	6/16/1997	2,4-Dinitrotoluene	ND	0.02
	6/16/1997	2,6-Dinitrotoluene	ND	0.02
	6/16/1997	Arsenic	ND	1.5
	6/16/1997	Chromium, Dissolved	*13*	1
	6/16/1997	Lead, Dissolved	*1.8*	1
	3/12/1997	Chromium, Dissolved	1.1	1
	12/11/1996	Chromium, Dissolved	0.9	0.9
	9/17/1996	Chromium, Dissolved	ND	0.9
	6/12/1996	2,4-Dinitrotoluene	ND	0.04
	6/12/1996	2,6-Dinitrotoluene	ND	0.04
	6/12/1996	Arsenic	ND	1.5
	6/12/1996	Chromium, Dissolved	ND	0.6
	6/12/1996	Lead, Dissolved	ND	1.4
	2/29/1996	Chromium, Dissolved	1.2	1
	12/12/1995	Chromium, Dissolved	1	1
	9/14/1995	Chromium, Dissolved	1	1
	6/13/1995	2,4-Dinitrotoluene	ND	2
	6/13/1995	2,6-Dinitrotoluene	ND	2
	6/13/1995	Arsenic	ND	2
	6/13/1995	Chromium, Dissolved	ND	1

Table A.1.b

Groundwater Analytical Results

Parcels M1 and T1 - WDNR Closure Request

Badger Army Ammunition Plant

Well ID	Date Sampled	Analyte	Result (ug/l)	Limit of Detection (ug/l)
	6/13/1995	Lead, Dissolved	ND	1
	3/13/1995	Chromium, Dissolved	1	1
	12/12/1994	Chromium, Dissolved	1	1
	8/31/1994	Chromium, Dissolved	1	1
	6/9/1994	2,4-Dinitrotoluene	ND	2
	6/9/1994	2,6-Dinitrotoluene	ND	3
	6/9/1994	Arsenic	ND	2
	6/9/1994	Chromium, Dissolved	1	1
	6/9/1994	Lead, Dissolved	ND	1
	3/7/1994	Chromium, Dissolved	ND	1
	12/7/1993	Chromium, Dissolved	1	1
	9/13/1993	Chromium, Dissolved	ND	1
	6/10/1993	2,4-Dinitrotoluene	ND	0.04
	6/10/1993	2,6-Dinitrotoluene	ND	0.04
	6/10/1993	Arsenic	ND	10
	6/10/1993	Chromium, Dissolved	1	1
	6/10/1993	Lead, Dissolved	ND	2
	3/2/1993	Chromium, Dissolved	2	1
	12/10/1992	Chromium, Dissolved	2	1
	9/23/1992	2,4-Dinitrotoluene	ND	0.05
	9/23/1992	2,6-Dinitrotoluene	ND	0.05
	9/23/1992	Chromium, Dissolved	ND	1
	9/23/1992	Chromium, Total	1	1
	9/23/1992	Lead, Dissolved	ND	2
	9/23/1992	Lead, Total	ND	2
	6/11/1992	2,4-Dinitrotoluene	ND	5
	6/11/1992	2,4-Dinitrotoluene	ND	10
	6/11/1992	2,6-Dinitrotoluene	ND	5
	6/11/1992	2,6-Dinitrotoluene	ND	10
	6/11/1992	Chromium, Dissolved	ND	1
	6/11/1992	Chromium, Total	ND	1
	6/11/1992	Lead, Dissolved	ND	2
	6/11/1992	Lead, Total	ND	2
	4/25/1992	2,4-Dinitrotoluene	ND	5.5
	4/25/1992	2,4-Dinitrotoluene	ND	1.16
	4/25/1992	2,6-Dinitrotoluene	ND	6.6
	4/25/1992	2,6-Dinitrotoluene	ND	1.11
	4/25/1992	Arsenic	ND	3.09
	4/25/1992	Chromium, Dissolved	ND	4.47
	4/25/1992	Lead, Dissolved	*11.8*	2
	3/11/1992	2,4-Dinitrotoluene	ND	5
	3/11/1992	2,4-Dinitrotoluene	ND	10
	3/11/1992	2,6-Dinitrotoluene	ND	5
	3/11/1992	2,6-Dinitrotoluene	ND	10
	3/11/1992	Chromium, Dissolved	ND	1
	3/11/1992	Lead, Dissolved	ND	2
	12/13/1991	2,4-Dinitrotoluene	ND	5.5
	12/13/1991	2,4-Dinitrotoluene	ND	1.16
	12/13/1991	2,6-Dinitrotoluene	ND	6.6
	12/13/1991	2,6-Dinitrotoluene	ND	1.11
	12/13/1991	Arsenic	ND	3.09
	12/13/1991	Chromium, Dissolved	5.35	1
	12/13/1991	Lead, Dissolved	ND	4.74
	12/9/1991	2,4-Dinitrotoluene	ND	5
	12/9/1991	2,6-Dinitrotoluene	ND	5
	12/9/1991	Chromium, Dissolved	2	1
	12/9/1991	Lead, Dissolved	ND	2
	9/11/1991	2,4-Dinitrotoluene	ND	5
	9/11/1991	2,6-Dinitrotoluene	ND	5
	9/11/1991	Chromium, Dissolved	ND	1
	9/11/1991	Lead, Dissolved	ND	2
	6/12/1991	2,4-Dinitrotoluene	ND	10
	6/12/1991	2,6-Dinitrotoluene	ND	10
	6/12/1991	Chromium, Dissolved	ND	1
	6/12/1991	Lead, Dissolved	ND	2
	3/20/1991	2,4-Dinitrotoluene	ND	10
	3/20/1991	2,6-Dinitrotoluene	ND	10
	3/20/1991	Chromium, Dissolved	1	1
	3/20/1991	Lead, Dissolved	ND	2
	1/14/1991	2,4-Dinitrotoluene	ND	10
	1/14/1991	2,6-Dinitrotoluene	ND	10
	1/14/1991	Chromium, Dissolved	1	1
	1/14/1991	Lead, Dissolved	ND	2
	9/27/1990	Chromium, Dissolved	2	1
	9/27/1990	Lead, Dissolved	ND	2
	7/11/1990	Chromium, Dissolved	ND	2
	7/11/1990	Lead, Dissolved	ND	2
	3/29/1990	Chromium, Dissolved	ND	10
	3/29/1990	Lead, Dissolved	ND	2
	9/18/1989	2,4-Dinitrotoluene	ND	10

Table A.1.b

Groundwater Analytical Results

Parcels M1 and T1 - WDNR Closure Request

Badger Army Ammunition Plant

Well ID	Date Sampled	Analyte	Result (ug/l)	Limit of Detection (ug/l)
	9/18/1989	2,6-Dinitrotoluene	ND	10
	9/18/1989	Chromium, Dissolved	*50*	10
	9/18/1989	Lead, Dissolved	ND	100
	7/10/1989	2,4-Dinitrotoluene	ND	10
	7/10/1989	2,6-Dinitrotoluene	ND	10
	7/10/1989	Chromium, Dissolved	ND	10
	7/10/1989	Lead, Dissolved	ND	100
	9/30/1988	2,4-Dinitrotoluene	ND	0.61
	9/30/1988	2,6-Dinitrotoluene	ND	1.15
	7/20/1988	2,4-Dinitrotoluene	ND	4.5
	7/20/1988	2,4-Dinitrotoluene	ND	0.61
	7/20/1988	2,6-Dinitrotoluene	ND	1.15
	7/20/1988	2,6-Dinitrotoluene	ND	0.79
SPN-0402A	6/6/2013	2,3-Dinitrotoluene	ND	0.014
	6/6/2013	2,4-Dinitrotoluene	ND	0.014
	6/6/2013	2,5-Dinitrotoluene	ND	0.014
	6/6/2013	2,6-Dinitrotoluene	ND	0.014
	6/6/2013	3,4-Dinitrotoluene	ND	0.014
	6/6/2013	3,5-Dinitrotoluene	ND	0.014
	6/6/2013	Dinitrotoluene, total	ND	0.014
	3/6/2013	2,3-DINITROTOLUENE	ND	0.014
	3/6/2013	2,4-DINITROTOLUENE	ND	0.014
	3/6/2013	2,5-DINITROTOLUENE	ND	0.014
	3/6/2013	2,6-DINITROTOLUENE	ND	0.014
	3/6/2013	3,4-DINITROTOLUENE	ND	0.014
	3/6/2013	3,5-DINITROTOLUENE	ND	0.014
	3/6/2013	DINITROTOLUENE, TOTAL	ND	0.014
	12/5/2012	2,3-DINITROTOLUENE	ND	0.014
	12/5/2012	2,4-DINITROTOLUENE	ND	0.014
	12/5/2012	2,5-DINITROTOLUENE	ND	0.014
	12/5/2012	2,6-DINITROTOLUENE	ND	0.014
	12/5/2012	3,4-DINITROTOLUENE	ND	0.014
	12/5/2012	3,5-DINITROTOLUENE	ND	0.014
	12/5/2012	DINITROTOLUENE, TOTAL	ND	0.014
	6/13/2012	2,3-DINITROTOLUENE	ND	0.014
	6/13/2012	2,4-DINITROTOLUENE	ND	0.014
	6/13/2012	2,5-DINITROTOLUENE	ND	0.014
	6/13/2012	2,6-DINITROTOLUENE	ND	0.014
	6/13/2012	3,4-DINITROTOLUENE	ND	0.014
	6/13/2012	3,5-DINITROTOLUENE	ND	0.014
	6/13/2012	DINITROTOLUENE, TOTAL	ND	0.014
	3/7/2012	2,3-DINITROTOLUENE	ND	0.014
	3/7/2012	2,4-DINITROTOLUENE	ND	0.014
	3/7/2012	2,5-DINITROTOLUENE	ND	0.014
	3/7/2012	2,6-DINITROTOLUENE	ND	0.014
	3/7/2012	3,4-DINITROTOLUENE	ND	0.014
	3/7/2012	3,5-DINITROTOLUENE	ND	0.014
	3/7/2012	DINITROTOLUENE, TOTAL	ND	0.014
	12/8/2011	2,3-DINITROTOLUENE	ND	0.014
	12/8/2011	2,4-DINITROTOLUENE	ND	0.014
	12/8/2011	2,5-DINITROTOLUENE	ND	0.014
	12/8/2011	2,6-DINITROTOLUENE	ND	0.014
	12/8/2011	3,4-DINITROTOLUENE	ND	0.014
	12/8/2011	3,5-DINITROTOLUENE	ND	0.014
	12/8/2011	DINITROTOLUENE, TOTAL	ND	0.014
	9/8/2011	2,3-DINITROTOLUENE	ND	0.015
	9/8/2011	2,4-DINITROTOLUENE	ND	0.015
	9/8/2011	2,5-DINITROTOLUENE	ND	0.015
	9/8/2011	2,6-DINITROTOLUENE	ND	0.015
	9/8/2011	3,4-DINITROTOLUENE	ND	0.015
	9/8/2011	3,5-DINITROTOLUENE	ND	0.015
	9/8/2011	DINITROTOLUENE, TOTAL	ND	0.015
	6/9/2011	2,3-DINITROTOLUENE	ND	0.015
	6/9/2011	2,4-DINITROTOLUENE	ND	0.015
	6/9/2011	2,5-DINITROTOLUENE	ND	0.015
	6/9/2011	2,6-DINITROTOLUENE	ND	0.015
	6/9/2011	3,4-DINITROTOLUENE	ND	0.015
	6/9/2011	3,5-DINITROTOLUENE	ND	0.015
	6/9/2011	DINITROTOLUENE, TOTAL	ND	0.015
	3/9/2011	2,3-DINITROTOLUENE	ND	0.015
	3/9/2011	2,4-DINITROTOLUENE	ND	0.015
	3/9/2011	2,5-DINITROTOLUENE	ND	0.015
	3/9/2011	2,6-DINITROTOLUENE	ND	0.015
	3/9/2011	3,4-DINITROTOLUENE	ND	0.015
	3/9/2011	3,5-DINITROTOLUENE	ND	0.015
	3/9/2011	DINITROTOLUENE, TOTAL	ND	0.015
	12/9/2010	2,3-DINITROTOLUENE	ND	0.015
	12/9/2010	2,4-DINITROTOLUENE	ND	0.015
	12/9/2010	2,5-DINITROTOLUENE	ND	0.015
	12/9/2010	2,6-DINITROTOLUENE	ND	0.015

Table A.1.b

Groundwater Analytical Results

Parcels M1 and T1 - WDNR Closure Request

Badger Army Ammunition Plant

Well ID	Date Sampled	Analyte	Result (ug/l)	Limit of Detection (ug/l)
	12/9/2010	3,4-DINITROTOLUENE	ND	0.015
	12/9/2010	3,5-DINITROTOLUENE	ND	0.015
	12/9/2010	DINITROTOLUENE, TOTAL	ND	0.015
	9/13/2010	2,3-DINITROTOLUENE	ND	0.015
	9/13/2010	2,4-DINITROTOLUENE	ND	0.015
	9/13/2010	2,5-DINITROTOLUENE	ND	0.015
	9/13/2010	2,6-DINITROTOLUENE	ND	0.015
	9/13/2010	3,4-DINITROTOLUENE	ND	0.015
	9/13/2010	3,5-DINITROTOLUENE	ND	0.015
	1/4/2010	2,3-DINITROTOLUENE	ND	0.012
	1/4/2010	2,4-DINITROTOLUENE	ND	0.014
	1/4/2010	2,5-DINITROTOLUENE	ND	0.013
	1/4/2010	2,6-DINITROTOLUENE	ND	0.018
	1/4/2010	3,4-DINITROTOLUENE	ND	0.031
	1/4/2010	3,5-DINITROTOLUENE	ND	0.015
	9/2/2009	2,3-DINITROTOLUENE	ND	0.012
	9/2/2009	2,4-DINITROTOLUENE	ND	0.014
	9/2/2009	2,5-DINITROTOLUENE	ND	0.013
	9/2/2009	2,6-DINITROTOLUENE	ND	0.018
	9/2/2009	3,4-DINITROTOLUENE	ND	0.031
	9/2/2009	3,5-DINITROTOLUENE	ND	0.015
	6/9/2009	2,3-DINITROTOLUENE	ND	0.006
	6/9/2009	2,4-DINITROTOLUENE	ND	0.009
	6/9/2009	2,5-DINITROTOLUENE	ND	0.014
	6/9/2009	2,6-DINITROTOLUENE	ND	0.007
	6/9/2009	3,4-DINITROTOLUENE	ND	0.011
	6/9/2009	3,5-DINITROTOLUENE	ND	0.009
	3/4/2009	2,3-DINITROTOLUENE	ND	0.006
	3/4/2009	2,4-DINITROTOLUENE	ND	0.009
	3/4/2009	2,5-DINITROTOLUENE	ND	0.014
	3/4/2009	2,6-DINITROTOLUENE	ND	0.007
	3/4/2009	3,4-DINITROTOLUENE	ND	0.011
	3/4/2009	3,5-DINITROTOLUENE	ND	0.009
	12/8/2008	2,3-DINITROTOLUENE	ND	0.006
	12/8/2008	2,4-DINITROTOLUENE	ND	0.009
	12/8/2008	2,5-DINITROTOLUENE	ND	0.014
	12/8/2008	2,6-DINITROTOLUENE	ND	0.007
	12/8/2008	3,4-DINITROTOLUENE	ND	0.011
	12/8/2008	3,5-DINITROTOLUENE	ND	0.009
	9/9/2008	2,3-DINITROTOLUENE	ND	0.006
	9/9/2008	2,4-DINITROTOLUENE	ND	0.009
	9/9/2008	2,5-DINITROTOLUENE	ND	0.014
	9/9/2008	2,6-DINITROTOLUENE	ND	0.007
	9/9/2008	3,4-DINITROTOLUENE	ND	0.011
	9/9/2008	3,5-DINITROTOLUENE	ND	0.009
	6/10/2008	2,3-DINITROTOLUENE	ND	0.01
	6/10/2008	2,4-DINITROTOLUENE	*0.014*	0.01
	6/10/2008	2,5-DINITROTOLUENE	ND	0.01
	6/10/2008	2,6-DINITROTOLUENE	ND	0.01
	6/10/2008	3,4-DINITROTOLUENE	ND	0.016
	6/10/2008	3,5-DINITROTOLUENE	ND	0.01
	3/4/2008	2,3-DINITROTOLUENE	ND	0.01
	3/4/2008	2,4-DINITROTOLUENE	ND	0.01
	3/4/2008	2,5-DINITROTOLUENE	ND	0.01
	3/4/2008	2,6-DINITROTOLUENE	ND	0.01
	3/4/2008	3,4-DINITROTOLUENE	ND	0.016
	3/4/2008	3,5-DINITROTOLUENE	ND	0.01
	12/10/2007	2,3-DINITROTOLUENE	ND	0.01
	12/10/2007	2,4-DINITROTOLUENE	ND	0.01
	12/10/2007	2,5-DINITROTOLUENE	ND	0.01
	12/10/2007	2,6-DINITROTOLUENE	ND	0.01
	12/10/2007	3,4-DINITROTOLUENE	ND	0.016
	12/10/2007	3,5-DINITROTOLUENE	ND	0.01
	9/12/2007	2,3-DINITROTOLUENE	ND	0.01
	9/12/2007	2,4-DINITROTOLUENE	ND	0.01
	9/12/2007	2,5-DINITROTOLUENE	ND	0.01
	9/12/2007	2,6-DINITROTOLUENE	ND	0.01
	9/12/2007	3,4-DINITROTOLUENE	ND	0.016
	9/12/2007	3,5-DINITROTOLUENE	ND	0.01
	6/11/2007	2,3-DINITROTOLUENE	ND	0.01
	6/11/2007	2,4-DINITROTOLUENE	ND	0.01
	6/11/2007	2,5-DINITROTOLUENE	ND	0.01
	6/11/2007	2,6-DINITROTOLUENE	ND	0.01
	6/11/2007	3,4-DINITROTOLUENE	ND	0.016
	6/11/2007	3,5-DINITROTOLUENE	ND	0.01
	3/7/2007	2,3-DINITROTOLUENE	ND	0.005
	3/7/2007	2,4-DINITROTOLUENE	ND	0.006
	3/7/2007	2,5-DINITROTOLUENE	ND	0.004
	3/7/2007	2,6-DINITROTOLUENE	ND	0.005
	3/7/2007	3,4-DINITROTOLUENE	ND	0.006

Table A.1.b

Groundwater Analytical Results

Parcels M1 and T1 - WDNR Closure Request

Badger Army Ammunition Plant

Well ID	Date Sampled	Analyte	Result (ug/l)	Limit of Detection (ug/l)
	3/7/2007	3,5-DINITROTOLUENE	ND	0.007
	12/11/2006	2,3-DINITROTOLUENE	ND	0.006
	12/11/2006	2,4-DINITROTOLUENE	ND	0.008
	12/11/2006	2,5-DINITROTOLUENE	ND	0.005
	12/11/2006	2,6-DINITROTOLUENE	ND	0.005
	12/11/2006	3,4-DINITROTOLUENE	ND	0.013
	12/11/2006	3,5-DINITROTOLUENE	ND	0.011
	9/11/2006	2,3-DINITROTOLUENE	ND	0.005
	9/11/2006	2,4-DINITROTOLUENE	ND	0.005
	9/11/2006	2,5-DINITROTOLUENE	ND	0.005
	9/11/2006	2,6-DINITROTOLUENE	ND	0.008
	9/11/2006	3,4-DINITROTOLUENE	ND	0.009
	9/11/2006	3,5-DINITROTOLUENE	ND	0.004
	6/14/2006	2,3-DINITROTOLUENE	ND	0.005
	6/14/2006	2,4-DINITROTOLUENE	ND	0.005
	6/14/2006	2,5-DINITROTOLUENE	ND	0.005
	6/14/2006	2,6-DINITROTOLUENE	ND	0.008
	6/14/2006	3,4-DINITROTOLUENE	ND	0.009
	6/14/2006	3,5-DINITROTOLUENE	ND	0.004
	3/14/2006	2,3-DINITROTOLUENE	ND	0.005
	3/14/2006	2,4-DINITROTOLUENE	ND	0.005
	3/14/2006	2,4-DINITROTOLUENE	ND	0.019
	3/14/2006	2,6-DINITROTOLUENE	ND	0.022
	3/14/2006	2,6-DINITROTOLUENE	ND	0.008
	3/14/2006	3,4 DINITROTOLUENE	ND	0.009
	12/13/2005	2,4-DINITROTOLUENE	ND	0.019
	12/13/2005	2,6-DINITROTOLUENE	ND	0.022
	9/14/2005	2,4-DINITROTOLUENE	ND	0.019
	9/14/2005	2,6-DINITROTOLUENE	ND	0.013
	6/14/2005	2,4-DINITROTOLUENE	ND	0.019
	6/14/2005	2,6-DINITROTOLUENE	ND	0.013
	3/8/2005	2,4-DINITROTOLUENE	ND	0.038
	3/8/2005	2,6-DINITROTOLUENE	ND	0.037
	12/6/2004	2,4-DINITROTOLUENE	ND	0.038
	12/6/2004	2,6-DINITROTOLUENE	ND	0.037
	11/22/2004	2,4-DINITROTOLUENE	ND	0.038
	11/22/2004	2,6-DINITROTOLUENE	ND	0.037
	9/28/2004	2,4-DINITROTOLUENE	ND	0.038
	9/28/2004	2,6-DINITROTOLUENE	ND	0.037
SPN-0403A	6/6/2013	2,3-Dinitrotoluene	ND	0.014
	6/6/2013	2,4-Dinitrotoluene	ND	0.014
	6/6/2013	2,5-Dinitrotoluene	ND	0.014
	6/6/2013	2,6-Dinitrotoluene	ND	0.014
	6/6/2013	3,4-Dinitrotoluene	ND	0.014
	6/6/2013	3,5-Dinitrotoluene	ND	0.014
	6/6/2013	Dinitrotoluene, total	ND	0.014
	3/6/2013	2,3-DINITROTOLUENE	ND	0.014
	3/6/2013	2,4-DINITROTOLUENE	ND	0.014
	3/6/2013	2,5-DINITROTOLUENE	ND	0.014
	3/6/2013	2,6-DINITROTOLUENE	ND	0.014
	3/6/2013	3,4-DINITROTOLUENE	ND	0.014
	3/6/2013	3,5-DINITROTOLUENE	ND	0.014
	3/6/2013	DINITROTOLUENE, TOTAL	ND	0.014
	12/5/2012	2,3-DINITROTOLUENE	ND	0.014
	12/5/2012	2,4-DINITROTOLUENE	ND	0.014
	12/5/2012	2,5-DINITROTOLUENE	ND	0.014
	12/5/2012	2,6-DINITROTOLUENE	ND	0.014
	12/5/2012	3,4-DINITROTOLUENE	ND	0.014
	12/5/2012	3,5-DINITROTOLUENE	ND	0.014
	12/5/2012	DINITROTOLUENE, TOTAL	ND	0.014
	6/13/2012	2,3-DINITROTOLUENE	ND	0.014
	6/13/2012	2,4-DINITROTOLUENE	ND	0.014
	6/13/2012	2,5-DINITROTOLUENE	ND	0.014
	6/13/2012	2,6-DINITROTOLUENE	ND	0.014
	6/13/2012	3,4-DINITROTOLUENE	ND	0.014
	6/13/2012	3,5-DINITROTOLUENE	ND	0.014
	6/13/2012	DINITROTOLUENE, TOTAL	ND	0.014
	3/7/2012	2,3-DINITROTOLUENE	ND	0.014
	3/7/2012	2,4-DINITROTOLUENE	ND	0.014
	3/7/2012	2,5-DINITROTOLUENE	ND	0.014
	3/7/2012	2,6-DINITROTOLUENE	ND	0.014
	3/7/2012	3,4-DINITROTOLUENE	ND	0.014
	3/7/2012	3,5-DINITROTOLUENE	ND	0.014
	3/7/2012	DINITROTOLUENE, TOTAL	ND	0.014
	12/8/2011	2,3-DINITROTOLUENE	ND	0.014
	12/8/2011	2,4-DINITROTOLUENE	ND	0.014
	12/8/2011	2,5-DINITROTOLUENE	ND	0.014
	12/8/2011	2,6-DINITROTOLUENE	ND	0.014
	12/8/2011	3,4-DINITROTOLUENE	ND	0.014
	12/8/2011	3,5-DINITROTOLUENE	ND	0.014

Table A.1.b

Groundwater Analytical Results

Parcels M1 and T1 - WDNR Closure Request

Badger Army Ammunition Plant

Well ID	Date Sampled	Analyte	Result (ug/l)	Limit of Detection (ug/l)
	12/8/2011	DINITROTOLUENE, TOTAL	ND	0.014
	9/8/2011	2,3-DINITROTOLUENE	ND	0.015
	9/8/2011	2,4-DINITROTOLUENE	ND	0.015
	9/8/2011	2,5-DINITROTOLUENE	ND	0.015
	9/8/2011	2,6-DINITROTOLUENE	ND	0.015
	9/8/2011	3,4-DINITROTOLUENE	ND	0.015
	9/8/2011	3,5-DINITROTOLUENE	ND	0.015
	9/8/2011	DINITROTOLUENE, TOTAL	ND	0.015
	6/9/2011	2,3-DINITROTOLUENE	ND	0.015
	6/9/2011	2,4-DINITROTOLUENE	ND	0.015
	6/9/2011	2,5-DINITROTOLUENE	ND	0.015
	6/9/2011	2,6-DINITROTOLUENE	ND	0.015
	6/9/2011	3,4-DINITROTOLUENE	ND	0.015
	6/9/2011	3,5-DINITROTOLUENE	ND	0.015
	6/9/2011	DINITROTOLUENE, TOTAL	ND	0.015
	3/9/2011	2,3-DINITROTOLUENE	ND	0.015
	3/9/2011	2,4-DINITROTOLUENE	ND	0.015
	3/9/2011	2,5-DINITROTOLUENE	ND	0.015
	3/9/2011	2,6-DINITROTOLUENE	ND	0.015
	3/9/2011	3,4-DINITROTOLUENE	ND	0.015
	3/9/2011	3,5-DINITROTOLUENE	ND	0.015
	3/9/2011	DINITROTOLUENE, TOTAL	ND	0.015
	12/9/2010	2,3-DINITROTOLUENE	ND	0.015
	12/9/2010	2,4-DINITROTOLUENE	ND	0.015
	12/9/2010	2,5-DINITROTOLUENE	ND	0.015
	12/9/2010	2,6-DINITROTOLUENE	ND	0.015
	12/9/2010	3,4-DINITROTOLUENE	ND	0.015
	12/9/2010	3,5-DINITROTOLUENE	ND	0.015
	12/9/2010	DINITROTOLUENE, TOTAL	ND	0.015
	9/13/2010	2,3-DINITROTOLUENE	ND	0.015
	9/13/2010	2,4-DINITROTOLUENE	ND	0.015
	9/13/2010	2,5-DINITROTOLUENE	ND	0.015
	9/13/2010	2,6-DINITROTOLUENE	ND	0.015
	9/13/2010	3,4-DINITROTOLUENE	ND	0.015
	9/13/2010	3,5-DINITROTOLUENE	ND	0.015
	1/4/2010	2,3-DINITROTOLUENE	ND	0.012
	1/4/2010	2,4-DINITROTOLUENE	ND	0.014
	1/4/2010	2,5-DINITROTOLUENE	ND	0.013
	1/4/2010	2,6-DINITROTOLUENE	ND	0.018
	1/4/2010	3,4-DINITROTOLUENE	ND	0.031
	1/4/2010	3,5-DINITROTOLUENE	ND	0.015
	9/2/2009	2,3-DINITROTOLUENE	ND	0.012
	9/2/2009	2,4-DINITROTOLUENE	ND	0.014
	9/2/2009	2,5-DINITROTOLUENE	ND	0.013
	9/2/2009	2,6-DINITROTOLUENE	ND	0.018
	9/2/2009	3,4-DINITROTOLUENE	ND	0.031
	9/2/2009	3,5-DINITROTOLUENE	ND	0.015
	6/9/2009	2,3-DINITROTOLUENE	ND	0.006
	6/9/2009	2,4-DINITROTOLUENE	ND	0.009
	6/9/2009	2,5-DINITROTOLUENE	ND	0.014
	6/9/2009	2,6-DINITROTOLUENE	ND	0.007
	6/9/2009	3,4-DINITROTOLUENE	ND	0.011
	6/9/2009	3,5-DINITROTOLUENE	ND	0.009
	3/3/2009	2,3-DINITROTOLUENE	ND	0.006
	3/3/2009	2,4-DINITROTOLUENE	ND	0.009
	3/3/2009	2,5-DINITROTOLUENE	ND	0.014
	3/3/2009	2,6-DINITROTOLUENE	ND	0.007
	3/3/2009	3,4-DINITROTOLUENE	ND	0.011
	3/3/2009	3,5-DINITROTOLUENE	ND	0.009
	12/8/2008	2,3-DINITROTOLUENE	ND	0.006
	12/8/2008	2,4-DINITROTOLUENE	ND	0.009
	12/8/2008	2,5-DINITROTOLUENE	ND	0.014
	12/8/2008	2,6-DINITROTOLUENE	ND	0.007
	12/8/2008	3,4-DINITROTOLUENE	ND	0.011
	12/8/2008	3,5-DINITROTOLUENE	ND	0.009
	9/9/2008	2,3-DINITROTOLUENE	ND	0.006
	9/9/2008	2,4-DINITROTOLUENE	ND	0.009
	9/9/2008	2,5-DINITROTOLUENE	ND	0.014
	9/9/2008	2,6-DINITROTOLUENE	ND	0.007
	9/9/2008	3,4-DINITROTOLUENE	ND	0.011
	9/9/2008	3,5-DINITROTOLUENE	ND	0.009
	6/10/2008	2,3-DINITROTOLUENE	ND	0.01
	6/10/2008	2,4-DINITROTOLUENE	ND	0.01
	6/10/2008	2,5-DINITROTOLUENE	ND	0.01
	6/10/2008	2,6-DINITROTOLUENE	ND	0.01
	6/10/2008	3,4-DINITROTOLUENE	ND	0.016
	6/10/2008	3,5-DINITROTOLUENE	ND	0.01
	3/4/2008	2,3-DINITROTOLUENE	ND	0.01
	3/4/2008	2,4-DINITROTOLUENE	ND	0.01
	3/4/2008	2,5-DINITROTOLUENE	ND	0.01

Table A.1.b

Groundwater Analytical Results

Parcels M1 and T1 - WDNR Closure Request

Badger Army Ammunition Plant

Well ID	Date Sampled	Analyte	Result (ug/l)	Limit of Detection (ug/l)
	3/4/2008	2,6-DINITROTOLUENE	ND	0.01
	3/4/2008	3,4-DINITROTOLUENE	ND	0.016
	3/4/2008	3,5-DINITROTOLUENE	ND	0.01
	12/10/2007	2,3-DINITROTOLUENE	ND	0.01
	12/10/2007	2,4-DINITROTOLUENE	ND	0.01
	12/10/2007	2,5-DINITROTOLUENE	ND	0.01
	12/10/2007	2,6-DINITROTOLUENE	ND	0.01
	12/10/2007	3,4-DINITROTOLUENE	ND	0.016
	12/10/2007	3,5-DINITROTOLUENE	ND	0.01
	9/12/2007	2,3-DINITROTOLUENE	ND	0.01
	9/12/2007	2,4-DINITROTOLUENE	ND	0.01
	9/12/2007	2,5-DINITROTOLUENE	ND	0.01
	9/12/2007	2,6-DINITROTOLUENE	ND	0.01
	9/12/2007	3,4-DINITROTOLUENE	ND	0.016
	9/12/2007	3,5-DINITROTOLUENE	ND	0.01
	6/11/2007	2,3-DINITROTOLUENE	ND	0.01
	6/11/2007	2,4-DINITROTOLUENE	ND	0.01
	6/11/2007	2,5-DINITROTOLUENE	ND	0.01
	6/11/2007	2,6-DINITROTOLUENE	ND	0.01
	6/11/2007	3,4-DINITROTOLUENE	ND	0.016
	6/11/2007	3,5-DINITROTOLUENE	ND	0.01
	3/7/2007	2,3-DINITROTOLUENE	ND	0.005
	3/7/2007	2,4-DINITROTOLUENE	ND	0.006
	3/7/2007	2,5-DINITROTOLUENE	ND	0.004
	3/7/2007	2,6-DINITROTOLUENE	ND	0.005
	3/7/2007	3,4-DINITROTOLUENE	ND	0.006
	3/7/2007	3,5-DINITROTOLUENE	ND	0.007
	12/11/2006	2,3-DINITROTOLUENE	ND	0.006
	12/11/2006	2,4-DINITROTOLUENE	ND	0.008
	12/11/2006	2,5-DINITROTOLUENE	ND	0.005
	12/11/2006	2,6-DINITROTOLUENE	ND	0.005
	12/11/2006	3,4-DINITROTOLUENE	ND	0.013
	12/11/2006	3,5-DINITROTOLUENE	ND	0.011
	9/11/2006	2,3-DINITROTOLUENE	ND	0.005
	9/11/2006	2,4-DINITROTOLUENE	ND	0.005
	9/11/2006	2,5-DINITROTOLUENE	ND	0.005
	9/11/2006	2,6-DINITROTOLUENE	ND	0.008
	9/11/2006	3,4-DINITROTOLUENE	ND	0.009
	9/11/2006	3,5-DINITROTOLUENE	ND	0.004
	6/14/2006	2,3-DINITROTOLUENE	ND	0.005
	6/14/2006	2,4-DINITROTOLUENE	ND	0.005
	6/14/2006	2,5-DINITROTOLUENE	ND	0.005
	6/14/2006	2,6-DINITROTOLUENE	ND	0.008
	6/14/2006	3,4-DINITROTOLUENE	ND	0.009
	6/14/2006	3,5-DINITROTOLUENE	ND	0.004
	3/14/2006	2,3-DINITROTOLUENE	ND	0.005
	3/14/2006	2,4-DINITROTOLUENE	ND	0.005
	3/14/2006	2,4-DINITROTOLUENE	ND	0.019
	3/14/2006	2,6-DINITROTOLUENE	ND	0.022
	3/14/2006	2,6-DINITROTOLUENE	ND	0.008
	3/14/2006	3,4 DINITROTOLUENE	ND	0.009
	12/13/2005	2,4-DINITROTOLUENE	ND	0.019
	12/13/2005	2,6-DINITROTOLUENE	ND	0.022
	9/14/2005	2,4-DINITROTOLUENE	ND	0.019
	9/14/2005	2,6-DINITROTOLUENE	ND	0.013
	6/14/2005	2,4-DINITROTOLUENE	ND	0.019
	6/14/2005	2,6-DINITROTOLUENE	ND	0.013
	3/8/2005	2,4-DINITROTOLUENE	ND	0.038
	3/8/2005	2,6-DINITROTOLUENE	ND	0.037
	12/6/2004	2,4-DINITROTOLUENE	ND	0.038
	12/6/2004	2,6-DINITROTOLUENE	ND	0.037
	11/22/2004	2,4-DINITROTOLUENE	ND	0.038
	11/22/2004	2,6-DINITROTOLUENE	ND	0.037
	9/28/2004	2,4-DINITROTOLUENE	ND	0.038
	9/28/2004	2,6-DINITROTOLUENE	ND	0.037
PBN-9402B	3/28/2013	2,3-DINITROTOLUENE	ND	0.014
	3/28/2013	2,4-DINITROTOLUENE	ND	0.014
	3/28/2013	2,5-DINITROTOLUENE	ND	0.014
	3/28/2013	2,6-DINITROTOLUENE	ND	0.014
	3/28/2013	3,4-DINITROTOLUENE	ND	0.014
	3/28/2013	3,5-DINITROTOLUENE	ND	0.014
	3/28/2013	DINITROTOLUENE, TOTAL	ND	0.014
	3/28/2012	2,3-DINITROTOLUENE	ND	0.014
	3/28/2012	2,4-DINITROTOLUENE	ND	0.014
	3/28/2012	2,5-DINITROTOLUENE	ND	0.014
	3/28/2012	2,6-DINITROTOLUENE	ND	0.014
	3/28/2012	3,4-DINITROTOLUENE	ND	0.014
	3/28/2012	3,5-DINITROTOLUENE	ND	0.014
	3/28/2012	DINITROTOLUENE, TOTAL	ND	0.014
	9/29/2011	2,3-DINITROTOLUENE	ND	0.015

Table A.1.b

Groundwater Analytical Results

Parcels M1 and T1 - WDNR Closure Request

Badger Army Ammunition Plant

Well ID	Date Sampled	Analyte	Result (ug/l)	Limit of Detection (ug/l)
	9/29/2011	2,4-DINITROTOLUENE	ND	0.015
	9/29/2011	2,5-DINITROTOLUENE	ND	0.015
	9/29/2011	2,6-DINITROTOLUENE	ND	0.015
	9/29/2011	3,4-DINITROTOLUENE	ND	0.015
	9/29/2011	3,5-DINITROTOLUENE	ND	0.015
	9/29/2011	DINITROTOLUENE, TOTAL	ND	0.015
	3/30/2011	2,3-DINITROTOLUENE	ND	0.015
	3/30/2011	2,4-DINITROTOLUENE	ND	0.015
	3/30/2011	2,5-DINITROTOLUENE	ND	0.015
	3/30/2011	2,6-DINITROTOLUENE	ND	0.015
	3/30/2011	3,4-DINITROTOLUENE	ND	0.015
	3/30/2011	3,5-DINITROTOLUENE	ND	0.015
	3/30/2011	DINITROTOLUENE, TOTAL	ND	0.015
	10/6/2010	2,3-DINITROTOLUENE	ND	0.015
	10/6/2010	2,4-DINITROTOLUENE	ND	0.015
	10/6/2010	2,5-DINITROTOLUENE	ND	0.015
	10/6/2010	2,6-DINITROTOLUENE	ND	0.015
	10/6/2010	3,4-DINITROTOLUENE	ND	0.015
	10/6/2010	3,5-DINITROTOLUENE	ND	0.015
	3/30/2010	2,3-DINITROTOLUENE	ND	0.012
	3/30/2010	2,4-DINITROTOLUENE	ND	0.014
	3/30/2010	2,5-DINITROTOLUENE	ND	0.013
	3/30/2010	2,6-DINITROTOLUENE	ND	0.018
	3/30/2010	3,4-DINITROTOLUENE	ND	0.031
	3/30/2010	3,5-DINITROTOLUENE	ND	0.015
	9/30/2009	2,3-DINITROTOLUENE	ND	0.012
	9/30/2009	2,4-DINITROTOLUENE	ND	0.014
	9/30/2009	2,5-DINITROTOLUENE	ND	0.013
	9/30/2009	2,6-DINITROTOLUENE	ND	0.018
	9/30/2009	3,4-DINITROTOLUENE	ND	0.031
	9/30/2009	3,5-DINITROTOLUENE	ND	0.015
	3/31/2009	2,3-DINITROTOLUENE	ND	0.006
	3/31/2009	2,4-DINITROTOLUENE	ND	0.009
	3/31/2009	2,5-DINITROTOLUENE	ND	0.014
	3/31/2009	2,6-DINITROTOLUENE	ND	0.007
	3/31/2009	3,4-DINITROTOLUENE	ND	0.011
	3/31/2009	3,5-DINITROTOLUENE	ND	0.009
	10/6/2008	2,3-DINITROTOLUENE	ND	0.006
	10/6/2008	2,4-DINITROTOLUENE	ND	0.009
	10/6/2008	2,5-DINITROTOLUENE	ND	0.014
	10/6/2008	2,6-DINITROTOLUENE	ND	0.007
	10/6/2008	3,4-DINITROTOLUENE	ND	0.011
	10/6/2008	3,5-DINITROTOLUENE	ND	0.009
	4/1/2008	2,3-DINITROTOLUENE	ND	0.01
	4/1/2008	2,4-DINITROTOLUENE	ND	0.01
	4/1/2008	2,5-DINITROTOLUENE	ND	0.01
	4/1/2008	2,6-DINITROTOLUENE	ND	0.01
	4/1/2008	3,4-DINITROTOLUENE	ND	0.016
	4/1/2008	3,5-DINITROTOLUENE	ND	0.01
	9/10/2007	2,3-DINITROTOLUENE	ND	0.01
	9/10/2007	2,4-DINITROTOLUENE	ND	0.01
	9/10/2007	2,4-DINITROTOLUENE	ND	0.019
	9/10/2007	2,5-DINITROTOLUENE	ND	0.01
	9/10/2007	2,6-DINITROTOLUENE	ND	0.022
	9/10/2007	2,6-DINITROTOLUENE	ND	0.01
	9/10/2007	3,4-DINITROTOLUENE	ND	0.016
	9/10/2007	3,5-DINITROTOLUENE	ND	0.01
	4/3/2007	2,3-DINITROTOLUENE	ND	0.005
	4/3/2007	2,4-DINITROTOLUENE	ND	0.006
	4/3/2007	2,5-DINITROTOLUENE	ND	0.004
	4/3/2007	2,6-DINITROTOLUENE	ND	0.005
	4/3/2007	3,4-DINITROTOLUENE	ND	0.006
	4/3/2007	3,5-DINITROTOLUENE	ND	0.007
	10/4/2006	2,3-DINITROTOLUENE	ND	0.005
	10/4/2006	2,4-DINITROTOLUENE	ND	0.005
	10/4/2006	2,5-DINITROTOLUENE	ND	0.005
	10/4/2006	2,6-DINITROTOLUENE	ND	0.008
	10/4/2006	3,4-DINITROTOLUENE	ND	0.009
	10/4/2006	3,5-DINITROTOLUENE	ND	0.004
	3/29/2006	2,3-DINITROTOLUENE	ND	0.005
	3/29/2006	2,4-DINITROTOLUENE	ND	0.005
	3/29/2006	2,4-DINITROTOLUENE	ND	0.019
	3/29/2006	2,6-DINITROTOLUENE	ND	0.022
	3/29/2006	2,6-DINITROTOLUENE	ND	0.008
	3/29/2006	3,4 DINITROTOLUENE	ND	0.009
	9/27/2005	2,4-DINITROTOLUENE	ND	0.019
	9/27/2005	2,4-DINITROTOLUENE	ND	0.019
	9/27/2005	2,6-DINITROTOLUENE	ND	0.022
	9/27/2005	2,6-DINITROTOLUENE	ND	0.013
	6/28/2005	2,4-DINITROTOLUENE	ND	0.019

Table A.1.b

Groundwater Analytical Results

Parcels M1 and T1 - WDNR Closure Request

Badger Army Ammunition Plant

Well ID	Date Sampled	Analyte	Result (ug/l)	Limit of Detection (ug/l)
	6/28/2005	2,6-DINITROTOLUENE	ND	0.013
	3/23/2005	2,4-DINITROTOLUENE	ND	0.038
	3/23/2005	2,6-DINITROTOLUENE	ND	0.037
	12/14/2004	2,4-DINITROTOLUENE	ND	0.038
	12/14/2004	2,6-DINITROTOLUENE	ND	0.037
	9/14/2004	2,4-DINITROTOLUENE	ND	0.038
	9/14/2004	2,6-DINITROTOLUENE	ND	0.037
	6/16/2004	2,3-DINITROTOLUENE	0.007	0.006
	6/16/2004	2,4-DINITROTOLUENE	*0.006*	0.006
	6/16/2004	2,6-DINITROTOLUENE	*0.006*	0.005
	6/16/2004	3,4 DINITROTOLUENE	0.008	0.006
	3/16/2004	2,3-DINITROTOLUENE	ND	0.01
	3/16/2004	2,4-DINITROTOLUENE	ND	0.01
	3/16/2004	2,6-DINITROTOLUENE	ND	0.01
	3/16/2004	3,4 DINITROTOLUENE	ND	0.01
	12/8/2003	2,3-DINITROTOLUENE	ND	0.01
	12/8/2003	2,4-DINITROTOLUENE	ND	0.02
	12/8/2003	2,6-DINITROTOLUENE	ND	0.02
	12/8/2003	3,4 DINITROTOLUENE	ND	0.01
	9/16/2003	2,3-DINITROTOLUENE	ND	0.01
	9/16/2003	2,4-DINITROTOLUENE	ND	0.02
	9/16/2003	2,6-DINITROTOLUENE	ND	0.02
	9/16/2003	3,4 DINITROTOLUENE	ND	0.01
	6/16/2003	2,3-DINITROTOLUENE	ND	0.01
	6/16/2003	2,4-DINITROTOLUENE	ND	0.02
	6/16/2003	2,6-DINITROTOLUENE	ND	0.02
	3/17/2003	2,3-DINITROTOLUENE	ND	0.01
	3/17/2003	2,4-DINITROTOLUENE	ND	0.01
	3/17/2003	2,6-DINITROTOLUENE	ND	0.01
	12/11/2002	2,3-DINITROTOLUENE	ND	0.02
	12/11/2002	2,4-DINITROTOLUENE	ND	0.03
	12/11/2002	2,6-DINITROTOLUENE	ND	0.04
	9/17/2002	2,3-DINITROTOLUENE	ND	0.02
	9/17/2002	2,4-DINITROTOLUENE	ND	0.03
	9/17/2002	2,6-DINITROTOLUENE	ND	0.04
	6/5/2002	2,3-DINITROTOLUENE	ND	0.03
	6/5/2002	2,4-DINITROTOLUENE	ND	0.03
	6/5/2002	2,6-DINITROTOLUENE	ND	0.03
	3/12/2002	2,3-DINITROTOLUENE	ND	0.03
	3/12/2002	2,4-DINITROTOLUENE	ND	0.03
	3/12/2002	2,6-DINITROTOLUENE	ND	0.03
	12/10/2001	2,3-DINITROTOLUENE	ND	0.03
	12/10/2001	2,4-DINITROTOLUENE	ND	0.03
	12/10/2001	2,6-DINITROTOLUENE	ND	0.03
	9/25/2001	2,3-DINITROTOLUENE	ND	0.03
	9/25/2001	2,4-DINITROTOLUENE	ND	0.03
	9/25/2001	2,6-DINITROTOLUENE	ND	0.03
	6/18/2001	2,3-DINITROTOLUENE	ND	0.06
	6/18/2001	2,4-DINITROTOLUENE	ND	0.07
	6/18/2001	2,6-DINITROTOLUENE	ND	0.07
	3/20/2001	2,3-DNT	ND	0.06
	3/20/2001	2,4-Dinitrotoluene	ND	0.07
	3/20/2001	2,6-Dinitrotoluene	ND	0.07
	12/5/2000	2,3-DNT	ND	0.06
	12/5/2000	2,4-Dinitrotoluene	ND	0.07
	12/5/2000	2,6-Dinitrotoluene	ND	0.07
	9/12/2000	2,3-DNT	ND	0.06
	9/12/2000	2,4-Dinitrotoluene	ND	0.07
	9/12/2000	2,6-Dinitrotoluene	ND	0.07
	6/14/2000	2,3-DINITROTOLUENE	ND	0.06
	6/14/2000	2,4-DINITROTOLUENE	ND	0.07
	6/14/2000	2,6-DINITROTOLUENE	ND	0.07
	3/20/2000	2,3-DINITROTOLUENE	ND	0.06
	3/20/2000	2,4-DINITROTOLUENE	ND	0.07
	3/20/2000	2,6-DINITROTOLUENE	ND	0.07
	1/3/2000	2,3-DINITROTOLUENE	ND	0.01
	1/3/2000	2,4-DINITROTOLUENE	ND	0.01
	1/3/2000	2,6-DINITROTOLUENE	ND	0.01
	9/21/1999	2,3-DINITROTOLUENE	ND	0.01
	9/21/1999	2,4-DINITROTOLUENE	ND	0.01
	9/21/1999	2,6-DINITROTOLUENE	ND	0.01
	6/29/1999	2,3-DINITROTOLUENE	ND	0.01
	6/29/1999	2,4-DINITROTOLUENE	ND	0.01
	6/29/1999	2,6-DINITROTOLUENE	ND	0.01
	3/8/1999	2,3-DINITROTOLUENE	ND	0.01
	3/8/1999	2,4-DINITROTOLUENE	ND	0.01
	3/8/1999	2,6-DINITROTOLUENE	ND	0.02
	12/31/1998	2,3-DINITROTOLUENE	ND	0.01
	12/31/1998	2,3-DINITROTOLUENE	ND	0.01
	12/31/1998	2,4-DINITROTOLUENE	ND	0.4

Table A.1.b

Groundwater Analytical Results

Parcels M1 and T1 - WDNR Closure Request

Badger Army Ammunition Plant

Well ID	Date Sampled	Analyte	Result (ug/l)	Limit of Detection (ug/l)
	12/31/1998	2,4-DINITROTOLUENE	ND	0.01
	12/31/1998	2,4-DINITROTOLUENE	ND	0.4
	12/31/1998	2,4-DINITROTOLUENE	ND	0.01
	12/31/1998	2,6-DINITROTOLUENE	ND	0.02
	12/31/1998	2,6-DINITROTOLUENE	ND	0.5
	12/31/1998	2,6-DINITROTOLUENE	ND	0.5
	12/31/1998	2,6-DINITROTOLUENE	ND	0.02
	6/2/1998	2,4-DINITROTOLUENE	ND	0.01
	6/2/1998	2,6-DINITROTOLUENE	ND	0.02
	6/2/1998	ARSENIC	ND	1.6
	6/2/1998	CHROMIUM	ND	4.3
	6/2/1998	LEAD, DISSOLVED	ND	1.3
	3/4/1998	CHROMIUM	ND	0.9
	12/2/1997	CHROMIUM	ND	0.9
	9/8/1997	CHROMIUM	ND	1.9
	6/3/1997	2,3-DINITROTOLUENE	ND	0.02
	6/3/1997	2,4-DINITROTOLUENE	ND	0.02
	6/3/1997	2,6-DINITROTOLUENE	ND	0.02
	6/3/1997	ARSENIC	ND	1.5
	6/3/1997	CHROMIUM	ND	30
	6/3/1997	LEAD, DISSOLVED	ND	3.8
	3/3/1997	CHROMIUM	ND	2.2
	6/4/1996	2,4-DINITROTOLUENE	ND	0.00004
	6/4/1996	2,6-DINITROTOLUENE	ND	0.00004
	6/4/1996	ARSENIC	ND	1.5
	6/4/1996	LEAD, DISSOLVED	ND	1.4
	6/6/1995	2,4-DINITROTOLUENE	ND	2
	6/6/1995	2,6-DINITROTOLUENE	ND	2
	6/6/1995	ARSENIC	ND	2
	6/6/1995	LEAD, DISSOLVED	ND	1
PBN-9902A	9/24/2013	2,3-Dinitrotoluene	ND	0.014
	9/24/2013	2,4-Dinitrotoluene	ND	0.014
	9/24/2013	2,5-Dinitrotoluene	ND	0.014
	9/24/2013	2,6-Dinitrotoluene	ND	0.014
	9/24/2013	3,4-Dinitrotoluene	ND	0.014
	9/24/2013	3,5-Dinitrotoluene	ND	0.014
	9/24/2013	Dinitrotoluene, Total	ND	0.014
	3/25/2013	2,3-Dinitrotoluene	ND	0.014
	3/25/2013	2,4-Dinitrotoluene	ND	0.014
	3/25/2013	2,5-Dinitrotoluene	ND	0.014
	3/25/2013	2,6-Dinitrotoluene	ND	0.014
	3/25/2013	3,4-Dinitrotoluene	ND	0.014
	3/25/2013	3,5-Dinitrotoluene	ND	0.014
	3/25/2013	Dinitrotoluene, Total	ND	0.014
	3/26/2012	2,3-Dinitrotoluene	ND	0.014
	3/26/2012	2,4-Dinitrotoluene	ND	0.014
	3/26/2012	2,5-Dinitrotoluene	ND	0.014
	3/26/2012	2,6-Dinitrotoluene	ND	0.014
	3/26/2012	3,4-Dinitrotoluene	ND	0.014
	3/26/2012	3,5-Dinitrotoluene	ND	0.014
	3/26/2012	Dinitrotoluene, Total	ND	0.014
	9/28/2011	2,3-Dinitrotoluene	ND	0.015
	9/28/2011	2,4-Dinitrotoluene	ND	0.015
	9/28/2011	2,5-Dinitrotoluene	ND	0.015
	9/28/2011	2,6-Dinitrotoluene	ND	0.015
	9/28/2011	3,4-Dinitrotoluene	ND	0.015
	9/28/2011	3,5-Dinitrotoluene	ND	0.015
	9/28/2011	Dinitrotoluene, Total	ND	0.015
	3/31/2011	2,3-Dinitrotoluene	ND	0.015
	3/31/2011	2,4-Dinitrotoluene	ND	0.015
	3/31/2011	2,5-Dinitrotoluene	ND	0.015
	3/31/2011	2,6-Dinitrotoluene	ND	0.015
	3/31/2011	3,4-Dinitrotoluene	ND	0.015
	3/31/2011	3,5-Dinitrotoluene	ND	0.015
	3/31/2011	Dinitrotoluene, Total	ND	0.015
	10/6/2010	2,3-Dinitrotoluene	ND	0.015
	10/6/2010	2,4-Dinitrotoluene	ND	0.015
	10/6/2010	2,5-Dinitrotoluene	ND	0.015
	10/6/2010	2,6-Dinitrotoluene	*0.018*	0.015
	10/6/2010	3,4-Dinitrotoluene	ND	0.015
	10/6/2010	3,5-Dinitrotoluene	ND	0.015
	3/25/2010	2,3-Dinitrotoluene	ND	0.012
	3/25/2010	2,3-Dinitrotoluene	ND	0.012
	3/25/2010	2,4-Dinitrotoluene	ND	0.014
	3/25/2010	2,4-Dinitrotoluene	ND	0.014
	3/25/2010	2,5-Dinitrotoluene	ND	0.013
	3/25/2010	2,5-Dinitrotoluene	ND	0.013
	3/25/2010	2,6-Dinitrotoluene	ND	0.018
	3/25/2010	2,6-Dinitrotoluene	ND	0.018
	3/25/2010	3,4-Dinitrotoluene	ND	0.031

Table A.1.b

Groundwater Analytical Results

Parcels M1 and T1 - WDNR Closure Request

Badger Army Ammunition Plant

Well ID	Date Sampled	Analyte	Result (ug/l)	Limit of Detection (ug/l)
	3/25/2010	3,4-Dinitrotoluene	ND	0.031
	3/25/2010	3,5-Dinitrotoluene	ND	0.015
	3/25/2010	3,5-Dinitrotoluene	ND	0.015
	9/30/2009	2,3-Dinitrotoluene	ND	0.012
	9/30/2009	2,4-Dinitrotoluene	ND	0.014
	9/30/2009	2,5-Dinitrotoluene	ND	0.013
	9/30/2009	2,6-Dinitrotoluene	ND	0.018
	9/30/2009	3,4-Dinitrotoluene	ND	0.031
	9/30/2009	3,5-Dinitrotoluene	ND	0.015
	3/31/2009	2,3-Dinitrotoluene	ND	0.006
	3/31/2009	2,4-Dinitrotoluene	ND	0.009
	3/31/2009	2,5-Dinitrotoluene	ND	0.014
	3/31/2009	2,6-Dinitrotoluene	ND	0.007
	3/31/2009	3,4-Dinitrotoluene	ND	0.011
	3/31/2009	3,5-Dinitrotoluene	ND	0.009
	10/6/2008	2,3-Dinitrotoluene	ND	0.006
	10/6/2008	2,4-Dinitrotoluene	*0.013*	0.006
	10/6/2008	2,5-Dinitrotoluene	ND	0.014
	10/6/2008	2,6-Dinitrotoluene	ND	0.007
	10/6/2008	3,4-Dinitrotoluene	ND	0.011
	10/6/2008	3,5-Dinitrotoluene	ND	0.009
	4/1/2008	2,3-Dinitrotoluene	ND	0.01
	4/1/2008	2,4-Dinitrotoluene	ND	0.01
	4/1/2008	2,5-Dinitrotoluene	ND	0.01
	4/1/2008	2,6-Dinitrotoluene	ND	0.01
	4/1/2008	3,4-Dinitrotoluene	ND	0.016
	4/1/2008	3,5-Dinitrotoluene	ND	0.01
	9/10/2007	2,3-Dinitrotoluene	ND	0.01
	9/10/2007	2,4-Dinitrotoluene	ND	0.019
	9/10/2007	2,4-Dinitrotoluene	ND	0.01
	9/10/2007	2,5-Dinitrotoluene	ND	0.01
	9/10/2007	2,6-Dinitrotoluene	ND	0.022
	9/10/2007	2,6-Dinitrotoluene	ND	0.01
	9/10/2007	3,4-Dinitrotoluene	ND	0.016
	9/10/2007	3,5-Dinitrotoluene	ND	0.01
	4/3/2007	2,3-Dinitrotoluene	ND	0.005
	4/3/2007	2,4-Dinitrotoluene	ND	0.006
	4/3/2007	2,5-Dinitrotoluene	ND	0.004
	4/3/2007	2,6-Dinitrotoluene	ND	0.005
	4/3/2007	3,4-Dinitrotoluene	ND	0.006
	4/3/2007	3,5-Dinitrotoluene	ND	0.007
	10/4/2006	2,3-Dinitrotoluene	ND	0.005
	10/4/2006	2,4-Dinitrotoluene	ND	0.005
	10/4/2006	2,5-Dinitrotoluene	ND	0.005
	10/4/2006	2,6-Dinitrotoluene	ND	0.008
	10/4/2006	3,4-Dinitrotoluene	ND	0.009
	10/4/2006	3,5-Dinitrotoluene	ND	0.004
	3/28/2006	2,3-Dinitrotoluene	0.017	0.005
	3/28/2006	2,4-Dinitrotoluene	ND	0.019
	3/28/2006	2,4-Dinitrotoluene	ND	0.005
	3/28/2006	2,6-Dinitrotoluene	*0.009*	0.005
	3/28/2006	2,6-Dinitrotoluene	ND	0.022
	3/28/2006	3,4-Dinitrotoluene	ND	0.009
	9/27/2005	2,4-Dinitrotoluene	ND	0.019
	9/27/2005	2,4-Dinitrotoluene	ND	0.019
	9/27/2005	2,6-Dinitrotoluene	ND	0.022
	9/27/2005	2,6-Dinitrotoluene	ND	0.013
	6/29/2005	2,4-Dinitrotoluene	ND	0.019
	6/29/2005	2,6-Dinitrotoluene	ND	0.013
	3/28/2005	2,4-Dinitrotoluene	ND	0.038
	3/28/2005	2,6-Dinitrotoluene	ND	0.037
	12/15/2004	2,4-Dinitrotoluene	ND	0.038
	12/15/2004	2,6-Dinitrotoluene	ND	0.037
	9/1/2004	2,4-Dinitrotoluene	ND	0.038
	9/1/2004	2,6-Dinitrotoluene	ND	0.037
	6/7/2004	2,3-Dinitrotoluene	0.007	0.005
	6/7/2004	2,4-Dinitrotoluene	*0.047*	0.005
	6/7/2004	2,6-Dinitrotoluene	**0.067**	0.005
	6/7/2004	3,4-Dinitrotoluene	0.007	0.005
	3/8/2004	2,3-Dinitrotoluene	ND	0.01
	3/8/2004	2,4-Dinitrotoluene	ND	0.01
	3/8/2004	2,6-Dinitrotoluene	*0.01*	0.01
	3/8/2004	3,4-Dinitrotoluene	ND	0.01
	11/25/2003	2,3-Dinitrotoluene	ND	0.01
	11/25/2003	2,4-Dinitrotoluene	*0.02*	0.01
	11/25/2003	2,6-Dinitrotoluene	ND	0.02
	11/25/2003	3,4-Dinitrotoluene	ND	0.01
	9/9/2003	2,3-Dinitrotoluene	ND	0.01
	9/9/2003	2,4-Dinitrotoluene	ND	0.02
	9/9/2003	2,6-Dinitrotoluene	ND	0.02

Table A.1.b

Groundwater Analytical Results

Parcels M1 and T1 - WDNR Closure Request

Badger Army Ammunition Plant

Well ID	Date Sampled	Analyte	Result (ug/l)	Limit of Detection (ug/l)
	9/9/2003	3,4-Dinitrotoluene	ND	0.01
	6/9/2003	2,3-Dinitrotoluene	ND	0.01
	6/9/2003	2,4-Dinitrotoluene	ND	0.02
	6/9/2003	2,6-Dinitrotoluene	ND	0.02
	3/4/2003	2,3-Dinitrotoluene	ND	0.01
	3/4/2003	2,4-Dinitrotoluene	ND	0.01
	3/4/2003	2,6-Dinitrotoluene	ND	0.01
	12/2/2002	2,3-Dinitrotoluene	ND	0.02
	12/2/2002	2,4-Dinitrotoluene	ND	0.03
	12/2/2002	2,6-Dinitrotoluene	ND	0.04
	9/10/2002	2,3-Dinitrotoluene	ND	0.03
	9/10/2002	2,4-Dinitrotoluene	ND	0.03
	9/10/2002	2,6-Dinitrotoluene	ND	0.03
	6/12/2002	2,3-Dinitrotoluene	ND	0.03
	6/12/2002	2,4-Dinitrotoluene	ND	0.03
	6/12/2002	2,6-Dinitrotoluene	ND	0.03
	3/20/2002	2,3-Dinitrotoluene	ND	0.03
	3/20/2002	2,4-Dinitrotoluene	ND	0.03
	3/20/2002	2,6-Dinitrotoluene	ND	0.03
	11/28/2001	2,3-Dinitrotoluene	ND	0.03
	11/28/2001	2,3-Dinitrotoluene	ND	0.03
	11/28/2001	2,4-Dinitrotoluene	ND	0.03
	11/28/2001	2,4-Dinitrotoluene	ND	0.03
	11/28/2001	2,6-Dinitrotoluene	ND	0.03
	11/28/2001	2,6-Dinitrotoluene	ND	0.03

ND - No Detection
ug/l - micrograms per liter
Bold font indicates groundwater enforcement standard attainments or exceedances, Wisconsin Administrative Code, Chapter NR 140, Register January 2012 No. 673
Italicized font indicates groundwater preventative action limit standard attainments or exceedances, Wisconsin Administrative Code, Chapter NR 140, Register January 2012 No. 673

Table A.2

Pre-Remedial (Removed) Soil Sample Analytical Results

Parcels M1 and T1 - WDNR Closure Request

Badger Army Ammunition Plant

Sample ID	Date Sampled	Sample Depth (feet bgs)	2,4-DNT (mg/kg)	2,6-DNT (mg/kg)	Arsenic (mg/kg)	Chromium (mg/kg)	Lead (mg/kg)	Nitroglycerin (mg/kg)
Final Creek Samples								
OF0-04-01.5	05/01/00	1.5	*12*	0.87	NA	NA	27	6.5
OF0-05-01.5	12/16/97	1.5	**180**	12	NA	NA	110	9.8
OF0-08-01.5	12/16/97	1.5	*23*	1.7	NA	NA	17	NA
OF0-15-1.5	04/26/00	1.5	NA	NA	NA	NA	NA	**90.8**
OF0-15-1.5~	12/17/97	1.5	*4.2*	0.26	NA	NA	25	NA
OQ2-29-03.0	04/26/00	3.0	NA	NA	NA	NA	NA	**80.4**
FC-2	07/01/84	1.1	*17*	2.04	NA	NA	14	NA
FC-2-D-2.0	04/12/10	2.0	*3.8*	0.26 (J)	NA	NA	NA	1.94
OF0-17-1.5	12/17/97	1.5	**280**	14	NA	NA	84	<0.53
FC-3	06/29/84	1.8	*6*	40	NA	NA	40	NA
FCB-03-03-1	01/29/03	1.0	*1.61*	ND	NA	NA	NA	ND
FCB-03-06-1	01/29/03	1.0	*14.2*	*1.5*	NA	NA	NA	59.6
FCB-03-06-5	01/29/03	5.0	*2.45*	0.21	NA	NA	NA	ND
FCB-03-07-1	01/29/03	1.0	*4.06*	0.4	NA	NA	NA	7.33
FCB-03-08-1	01/29/03	1.0	*17.9*	2.14	NA	NA	NA	3.55
FCB-03-09-1	01/29/03	1.0	*2.48*	0.2	NA	NA	NA	1.8
FCB-03-10-1 (S)	01/29/03	1.0	*2.3*	0.19	NA	NA	NA	0.62
FCB-03-10-5 (S)	01/29/03	5.0	*4.4*	0.3	NA	NA	NA	2.91
FCB-03-11-1	01/29/03	1.0	*1.69*	ND	NA	NA	NA	6.98
FCB-03-13-1	01/29/03	1.0	*2.55*	0.23	NA	NA	NA	2.98
FCB-03-14-1 (S)	01/29/03	1.0	*6.9*	0.61	NA	NA	NA	0.85
FCB-03-20-1	01/29/03	1.0	*17.6*	1.6	NA	NA	NA	37.4
FCB-03-21-1	01/29/03	1.0	**65.6**	6.97	NA	NA	NA	34.9
FC-3-A-2.0	04/14/10	2.0	**33** (D, SL)	2.7 (SL)	NA	NA	NA	15.4 (C)
FC-3-B-4.0	04/14/10	4.0	**42** (D, ML)	2.7 (ML, R)	NA	NA	NA	28.2 (C, D)
OF0-22-01.5	12/18/97	1.5	**660**	41	NA	NA	23	NA
FC-4-E-2.0	04/14/10	2.0	**53** (D)	3.8	NA	NA	NA	NA
OF0-23-01.5	12/18/97	1.5	**54**	4.3	NA	NA	10	NA
OF0-23-03.0	12/18/97	3.0	*5.4*	0.3	NA	NA	2.8	NA
FC-5	06/29/84	0.3	*1.9*	25	NA	NA	3.6	NA
FC-5-B-4.0	04/15/10	4.0	*2.4*	0.14 (J)	NA	NA	NA	NA
FC-5-E-2.0	04/15/10	2.0	**63** (D)	6.8	NA	NA	NA	NA
OF0-24-01.5	12/18/97	1.5	**42**	2.6	NA	NA	23	NA
FC-6-B-4.0	04/15/10	4.0	**37** (D)	2.6	NA	NA	NA	NA
OF0-26-01.5	12/18/97	1.5	**32**	2.1	NA	NA	48	NA
FC-7	06/29/84	0.6	*2.1*	22	NA	NA	27	NA
FC-7-B-4.0	04/19/10	4.0	**42** (D, SL)	2.2 (SL)	NA	NA	NA	NA
OF0-27-01.5	12/17/97	1.5	**33**	2.1	NA	NA	22	NA
OF0-27-03.0	12/17/97	3.0	*2.8*	0.15	NA	NA	180	53.8
FC-8A-2.0	06/01/10	2.0	*3.8*	NA	NA	NA	NA	NA
FC-9A-2.0	06/02/10	2.0	**61**	4.2	5.9 (J, D)	15.5 (D)	18.2 (D)	16.8
FC-9E-2.0	06/02/10	2.0	**450**	32	5.4 (D, J)	26.7 (D)	108 (D)	**70.6** (C, D, SL)
FC-9E2-2.0	11/16/10	2.0	11 (B)	1.3	5.5 (D, J)	32.5 (D)	97.6 (D)	**197** (D)
FC-9E3-2.0	07/14/11	2.0	**1,500** (D)	110 (D)	4.9 (D,J)	21.3 (D)	66.8 (D)	**150** (D)
FC-9G-3.5	08/30/11	3.5	<0.06	<0.06	**10.7** (D)	11.2 (D)	6.3 (D,J)	<0.342 (SL)
FC-9K-2.0	08/25/11	2.0	**63** (D)	6.3	**16.4** (D)	**1,200** (D)	**2,330** (B,D)	9.92
FC-9K1-2.0	02/06/12	2.0	**95** (D,MH,R)	7.0 (MH,ML,R)	3.7 (D, J)	23.7 (D)	47.7 (D)	37.8 (D)
FC-9M-4.0	08/25/11	4.0	**27** (D)	2.2	5.7 (D,J)	21.5 (D)	20.7 (B,D)	3.85
FC-9N-4.0	08/25/11	4.0	**190** (D)	13 (D)	4.7 (D,J)	28.0 (D)	47.6 (B,D)	33.8
FC-14A-2.0	07/08/10	2.0	24	2.3	6.2 (D, J)	19.3 (D)	24.6 (D)	0.914 (B)
FC-16-4.0	04/03/12	4.0	11	0.85	2.6 (D,J)	12.8 (D)	7.5 (D,J)	0.735
FPI-10	07/02/84	2.0	*2*	26	NA	NA	79	NA
Settling Pond 1 Samples								
SPA-W-10	07/01/96	0.5	NA	NA	8.5	**41**	28	NA
SPA-W-8	07/01/96	0.5	NA	NA	5.8	**41**	40	NA
SPA-W-9	07/01/96	0.5	NA	NA	6.4	**54**	95	NA
SPA-W-6	07/01/96	0.5	NA	NA	4.9	**52**	76	NA
OQ2-24-01.5	12/17/97	1.5	*2.5*	0.19	NA	NA	12	NA

Table A.2

Pre-Remedial (Removed) Soil Sample Analytical Results

Parcels M1 and T1 - WDNR Closure Request

Badger Army Ammunition Plant

Sample ID	Date Sampled	Sample Depth (feet bgs)	2,4-DNT (mg/kg)	2,6-DNT (mg/kg)	Arsenic (mg/kg)	Chromium (mg/kg)	Lead (mg/kg)	Nitroglycerin (mg/kg)
OP1-01-03.0	12/17/97	3.0	*5.7*	0.43	NA	NA	11	NA
OP1-04-01.5	12/11/97	1.5	*6.1*	0.61	NA	NA	37	NA
OP1-15-01.5	12/11/97	1.5	*1.6*	NA	NA	NA	65	2.1
OP1-34-01.5	12/11/97	1.5	*13*	1.2	NA	NA	94	NA
OP1-37-01.5	12/11/97	1.5	*6.1*	ND	NA	NA	9.6	NA
OP1-47-01.5	12/10/97	1.5	**110**	ND	NA	NA	170	NA
OP1-47-SS-06	unknown	0.5	**342**	11.5	NA	**95.5**	327	23
OP1-48-01.5	12/10/97	1.5	**52**	6.8	NA	NA	43	NA
FPI-2	07/02/84	2.0	*1.9*	18	NA	NA	31	NA
FPI-8	07/01/84	2.0	**94**	14	NA	NA	51	NA
SP1-8E-2.0	08/18/10	2.0	**67**	5.9	4.8 (D, J)	23.1 (D)	11.9 (D)	0.929
SP1-9A-2.0	06/03/10	2.0	**58** (R, MH, D)	7.6 (MH)	5.2 (D, J)	29.6 (D)	78.8 (D)	5.92 (C, SL)
SP1-9A2-2.0	11/16/10	2.0	**1,300** (B, D)	92 (D)	3.9 (D, J)	25.2 (D)	77.7 (D)	4.99
SP1-12A-2.0	08/11/10	2.0	0.33 (J)	<0.07	**12.3** (D)	24.7 (D)	11.0 (D)	<0.405
SP1-12A2-2.0	11/16/10	2.0	0.36 (J)	<0.07	**11.1** (D)	23.4 (D)	14.8 (D)	<0.415
SP1-12A3-2.0	07/14/11	2.0	1.5 (SL)	0.13 (J, SL)	**10.1** (D)	23.9 (D)	15.5 (D)	<0.393
SP1-12A4-2.0	08/22/11	2.0	0.1 (J)	<0.07	**22.1** (D)	31.1 (D)	21.9 (D)	<0.41
SP1-12A5-2.0	02/06/12	2.0	1.1 (SH)	0.10 (J,SH)	**15.9** (D)	31.3 (D)	17.8 (D)	<0.384
SP1-12A6-2.0	03/01/12	2.0	NA	NA	**13.7** (D)	NA	NA	NA
SP1-13C-2.0	08/18/10	2.0	12	2.4	8.5 (D, J)	**37.3** (D)	159 (D)	2.3
SP1-13C2-2.0	11/16/10	2.0	**30** (D)	3.7	7.7 (D, J)	22.0 (D)	51.2 (D)	15.3
SP1-13D-2.0	08/18/10	2.0	21	2.7	8.2 (D)	30.0 (D)	83.3 (D)	3.92
SP1-13D2-2.0	08/22/11	2.0	9.9	1.6	7.6 (D)	29.0 (D)	98.9 (D)	2.99
SP1-13D3-2.0	02/06/12	2.0	4.1 (H,SH,LH)	0.63 (H,SH,LH)	8.6 (D)	**35.8** (D)	85.5 (D)	1.42
SP1-13E-2.0	08/18/10	2.0	17	2.9	6.9 (D, J)	25.9 (D)	72.2 (D)	5.01
Settling Pond 2 Samples								
SPA-W-16	07/01/96	0.5	NA	NA	8	**95**	380	NA
SPA-W-16-SS-14	07/01/96	0.5	**257**	3.93	NA	34.2	126	NA
SPA-W-14	07/01/96	0.5	NA	NA	6.8	**110**	300	NA
SPA-W-17	07/01/96	0.5	NA	NA	5.8	**90**	290	NA
SPA-W-17-SS-12	07/01/96	0.5	18.6	0.654	NA	15.1	36	5.25
SPA-W-11	07/01/96	0.5	NA	NA	5.2	**39**	80	NA
SPA-W-15	07/01/96	0.5	NA	NA	6.7	**66**	300	NA
SPA-W-15-SS-13	07/01/96	0.5	*19*	0.497	NA	**49.6**	**830**	21.7
OP2-02-3.0	12/10/97	3.0	*16*	NA	NA	NA	79	NA
OP2-03-01.5	12/10/97	1.5	*7.7*	NA	NA	NA	150	NA
OP2-04-01.5	12/10/97	1.5	*5.9*	0.47	NA	NA	11	NA
OP2-04-03.0	12/10/97	3.0	*18*	1.3	NA	NA	30	NA
OP2-07-01.5	12/10/97	1.5	*13*	0.99	NA	NA	6	NA
SP2-7A-2.0	08/09/10	2.0	11	0.86	5.7 (D, J)	20.4 (D)	76.6 (D)	14.6
SP2-7A2-2.0	08/22/11	2.0	**41** (D,MH,ML)	2.9 (R)	8.0 (D)	23.0 (D)	21.7 (D)	32.4 (D)
SP2-7A3-2.0	02/06/12	2.0	12	0.90	7.2 (D,J)	22.9 (D)	19.0 (D)	4.48
SP2-7C-2.0	08/09/10	2.0	**51**	3.3	4.7 (D, J)	17.3 (D)	58.4 (D)	14.0
SP2-7C2-2.0	11/16/10	2.0	21 (D)	1.7	5.2 (D, J)	16.6 (D)	64.3 (D)	4.30
SP2-7C2-2.0~	08/22/11	2.0	**54** (D)	3.8	5.6 (D,J)	22.8 (D)	87.3 (D)	31.1 (D)
SP2-7E-2.0	08/09/10	2.0	**56** (SL)	3.7 (SL)	5.8 (D, J)	20.9 (D)	66.1 (D)	18.8 (SL)
SP2-7E2-2.0	11/16/10	2.0	**29** (D)	2.1	5.8 (D, J)	20.6 (D)	71.8 (D)	14.3
SP2-7E3-2.0	07/14/11	2.0	19 (D)	1.5	5.9 (D,J)	19.2 (D)	67.5 (D)	6.96
SP2-7E4-2.0	08/22/11	2.0	**26** (D)	1.9	6.9 (D)	20.7 (D)	33.4 (D)	2.73
SP2-7E5-2.0	02/06/12	2.0	11 (SL)	0.78 (SL)	6.2 (D,J)	19.7 (D)	117 (D)	9.20
SP2-8A-2.0	08/10/10	2.0	**38**	4.9	6.4 (D, J)	29.8 (D)	145 (D)	26.8 (SL)
SP2-8A2-3.0	11/16/10	3.0	**43** (D)	4.7	3.9 (D, J)	22.5 (D)	98.1 (D)	39.9 (D)
SP2-8A3-3.0	07/14/11	3.0	**42** (D,SL)	3.9 (SL)	4.1 (D,J)	22.1 (D)	72.9 (D)	**243** (D)
SP2-8B-4.0	08/10/10	4.0	**33**	3.4	4.6 (D, J)	20.5 (D)	56.6 (D)	44.6
Spoils Disposal Area I Samples								
OD1-06-1.5	12/15/97	1.5	**37**	2.7	NA	NA	10	**150**
OD1-06-3.0	12/15/97	3.0	**470**	32.0	NA	NA	140	**1,500**
OD1-06-SS-01	unknown	0.5	1.62	65.7	NA	18.4	87	**396**
OD1-07-1.5	12/15/97	1.5	**130**	NA	NA	NA	87	**800**
OD1-07-3.0	12/15/97	3.0	**33**	NA	NA	NA	370	47

Table A.2

Pre-Remedial (Removed) Soil Sample Analytical Results

Parcels M1 and T1 - WDNR Closure Request

Badger Army Ammunition Plant

Sample ID	Date Sampled	Sample Depth (feet bgs)	2,4-DNT (mg/kg)	2,6-DNT (mg/kg)	Arsenic (mg/kg)	Chromium (mg/kg)	Lead (mg/kg)	Nitroglycerin (mg/kg)
OD1-07-SS-02	unknown	0.5	7.8	0.215	NA	30.4	188	**781**
OD1-11-03.0	12/16/97	3.0	**390**	27	NA	NA	210	**380**
OQ2-13-03.0	12/16/97	3.0	**160**	18	NA	NA	100	**390**
SDI-5	unknown	2.0	12	1.0	NA	NA	210	NA
SSB-03-12-03	01/27/03	3.0	12.4	1.64	NA	NA	NA	NA
SSB-03-14-09	01/27/03	9.0	22	2.17	NA	NA	NA	3.74
SSB-03-17-05(S)	01/28/03	5.0	22	2.49	NA	NA	NA	2.66
SSB-03-18-05(S)	01/28/03	5.0	**240**	15	NA	NA	NA	NA
SSB-03-20-07	01/28/03	7.0	**41.9**	6.63	NA	NA	NA	NA
SSB-03-20-09	01/28/03	9.0	**31.8**	4.2	NA	NA	NA	2.3
SSB-03-24-01	01/27/03	1.0	**80.2**	13.2	NA	NA	NA	NA
SSB-03-24-03	01/27/03	3.0	22.6	4.3	NA	NA	NA	10.4
SSB-03-24-SS-08	unknown	0.5	16.3	0.4	NA	NA	31	12.7
SSB-03-24-05	01/27/03	5.0	9.7	13.2	NA	NA	NA	**66.1**
SSB-03-25-01	01/27/03	1.0	23.5	1.8	NA	NA	NA	**64.7**
SSB-03-25-05	01/27/03	5.0	**82.1**	11.3	NA	NA	NA	3.88
SSB-03-25-07	01/27/03	7.0	13.7	1.0	NA	NA	NA	2.76
SSB-03-25-SS-09	unknown	0.5	**33.7**	19.6	NA	30	180	**183**
SDAI-1A-2.0	07/13/10	2.0	1.0 (SL)	0.11 (SL, J)	**11.2** (D)	**51.9** (D)	269 (D, R)	1.91 (SL)
SDAI-1A2-2.0	11/16/10	2.0	1.0	0.12 (J)	**10.7** (D)	**47.7** (D)	254 (D, ML)	1.33
SDAI-1A3-2.0	07/14/11	2.0	22 (D)	1.9	5.5 (D,J)	28.1 (D)	113 (D)	**81.0** (D)
SDAI-1A4-2.0	08/18/11	2.0	0.98	0.11 (J)	**10.7** (D)	**51.2** (D, MH)	259 (D, ML)	<0.493
SDAI-1D-2.0	07/13/10	2.0	0.23 (SL, J)	<0.09 (SL)	9.3 (D, J)	**41.3** (D)	147 (D)	<0.496
SDA1-A-3.0	12/07/09	3.0	**383** (D)	20.4 (D)	1.6 (D, J)	4.7 (D, J)	14.4 (D)	**337** (D, SL)
SDA1-B-2.5	12/07/09	2.5	*7.94* (SH)	0.970 (SH)	8.2 (D)	34.5 (D)	114 (D)	31.9 (D, SL)
SDA1-C-5.0	12/07/09	5.0	14.6 (D, SH)	1.43 (SH)	<1.0 (D)	6.1 (D, J)	7.2 (D)	**71.3** (D, SL)
SDA1-D-4.0	12/07/09	4.0	**79.8** (D)	9.42	7.3 (D)	34.6 (D)	167 (D)	51.1 (D, SL)
SDAI-V-2.0	06/07/10	2.0	<0.07	<0.07	**10.4** (D)	24.6 (D)	12.9 (D)	<0.415 (SL)
SDAI-X-2.0	06/07/10	2.0	<0.07	<0.07	**11.5** (D)	24.8 (D)	14.1 (D)	<0.407 (SL)
Spoils Disposal Area II Samples								
OD2-01-01.5	12/16/97	1.5	*3.7*	NA	NA	NA	290	3.1
OD2-01-SS-03	unknown	0.5	*2.3*	0.0605	NA	**37.5**	255	4.13
OD2-02-SS-04	unknown	0.5	*2.69*	0.0674	NA	**46**	361	NA
OD2-06-01.5	12/16/97	1.5	*1.7*	NA	NA	NA	330	9.1
OD2-06-SS-05	unknown	0.5	*1.98*	0.0528	NA	1	367	3.15
SDAII-1C-2.0	05/26/10	2.0	NA	NA	NA	**54.9** (D)	300 (D)	NA
SDAII-1D-2.0	05/26/10	2.0	NA	NA	NA	**40.0** (D)	302 (D)	NA
SDAII-1E-2.0	05/26/10	2.0	NA	NA	NA	**45.6** (D)	245 (D)	NA
SDAII-2B-4.0	05/27/10	4.0	NA	NA	NA	**39.0** (D)	217 (D)	NA
SDAII-2C-2.0	05/27/10	2.0	NA	NA	NA	**37.1** (D)	169 (D)	NA
SDAII-3A-2.0	07/12/10	2.0	1.5 (SL)	0.14 (J, SL)	8.9 (D, J)	**52.6** (D)	343 (D)	0.712 (J, B)
SDAII-3B-4.0	07/12/10	4.0	0.59 (SL, ML)	<0.09 (SL)	6.0 (D, J)	**36.4** (D)	123 (D)	<0.501 (B)
SDAII-3C-2.0	07/12/10	2.0	1.2 (SL)	<0.11 (SL)	**12.4** (D)	**64.5** (D)	347 (D)	1.21 (B)
SDAII-3D-2.0	07/12/10	2.0	1.2 (SL)	<0.11 (SL)	**13.4** (D)	**69.7** (D)	422 (D)	<0.611 (B)
SDAII-3E-2.0	07/12/10	2.0	1.3 (SL)	<0.10 (SL)	**10.7** (D)	**56.4** (D)	382 (D)	<0.534 (B)
SDAII-R2-5.0	08/26/10	5.0	1.3	0.12 (J)	6.8 (D, J)	**36.8** (D)	155 (D)	2.86
SDAII-R4-3.0	08/26/10	3.0	1.1 (SL)	<0.12 (SL)	**10.2** (D, J)	**55.6** (D)	316 (D)	3.12
SDAII-R5-3.0	08/26/10	3.0	1.5 (SL)	0.12 (SL, J)	7.0 (D, J)	**40.6** (D)	211 (D)	0.925 (J)
SDAII-R6-3.0	08/26/10	3.0	2.0 (SL)	0.16 (SL, J)	8.6 (D, J)	**46.5** (D)	248 (D)	0.920 (J)
SDAII-R7-3.0	08/26/10	3.0	1.1	0.09 (J)	7.1 (D, J)	**47.6** (D)	221 (D)	2.3
SDAII-R8-3.0	08/26/10	3.0	2.3	0.16 (J)	**13.9** (D)	**75.7** (D)	398 (D)	<0.598
SDAII-R9-5.0	08/26/10	5.0	21	2.4	8.3 (D, J)	**42.6** (D)	208 (D)	39.0
SDAII-R14-3.0	09/07/10	3.0	0.95	<0.11	10.0 (D, J)	**49.7** (D)	302 (D)	1.65
SDAII-R15-3.0	09/07/10	3.0	1.9	0.18 (J)	8.5 (D, J)	**42.7** (D)	248 (D)	2.46
SDAII-R18-3.0	11/02/10	3.0	1.3 (SL)	0.15 (J, SL)	8.2 (D, J)	**38.7** (D)	180 (D)	0.737 (J)
SDAII-R23-6.0	11/08/10	6.0	**29** (D)	2.8	8.4 (D, J)	**38.3** (D)	201 (D)	40.5 (D)
SDAII-R24-6.0	11/08/10	6.0	**84** (D)	9.8	6.9 (D, J)	34.1 (D)	139 (D)	**62.3** (D)
SDAII-R28-6.0	11/08/10	6.0	1.6	0.13 (J)	**11.8** (D, J)	**66.2** (D)	444 (D)	0.943 (J)
SDAII-R29-3.0	11/08/10	3.0	2.3	0.21 (J)	7.4 (D, J)	**43.1** (D)	271 (D)	1.30
SDAII-R34-6.0	11/09/10	6.0	1.2	0.12 (J)	9.1 (D, J)	**49.0** (D)	279 (D)	<0.551
SDAII-R35-6.0	11/09/10	6.0	0.98 (SL)	<0.10 (SL)	7.8 (D, J)	**40.2** (D)	188 (D)	0.845 (J)

Table A.2

Pre-Remedial (Removed) Soil Sample Analytical Results

Parcels M1 and T1 - WDNR Closure Request

Badger Army Ammunition Plant

Sample ID	Date Sampled	Sample Depth (feet bgs)	2,4-DNT (mg/kg)	2,6-DNT (mg/kg)	Arsenic (mg/kg)	Chromium (mg/kg)	Lead (mg/kg)	Nitroglycerin (mg/kg)
SDAII-R36-3.0	11/09/10	3.0	1.5	0.13 (J)	6.5 (D, J)	**36.2** (D)	218 (D)	0.921
SDAII-R44-3.0	11/10/10	3.0	1.8	0.14 (J)	**10.5** (D, J)	**58.9** (D)	345 (D)	<0.519
SDAII-R45-6.0	11/10/10	6.0	1.6	0.14 (J)	9.4 (D, J)	**54.6** (D)	322 (D)	<0.496
Spoils Disposal Area III Samples								
OD3-01-3.0	12/17/97	3.0	*12*	0.85	NA	NA	23	7.9
OQ2-22-01.5	12/17/97	1.5	*4.1*	0.4	NA	NA	16	2.2
OD3-04-03.0	12/17/97	3.0	*7*	NA	NA	NA	43	NA
OD3-06-01.5	12/16/97	1.5	*4.7*	0.46	NA	NA	36	6.3
OD3-08-01.5	12/16/97	1.5	*3.2*	NA	NA	NA	28	2.8
OD3-08-03.0	12/16/97	3.0	*4.6*	0.42	NA	NA	29	3.7
SDAIII-3C-2.0	07/19/10	2.0	11 (SL)	1.8 (SL)	6.6 (D, J)	33.3 (D)	79.9 (D)	1.78 (H)
SDAIII-3E-2.0	07/19/10	2.0	12	1.7	4.6 (D, J)	19.1 (D)	46.4 (D)	10.7 (SL,H)
SDAIII-3E2-2.0	08/18/11	2.0	13 (D)	2.0	5.3 (D,J)	20.7 (D)	50.7 (D)	11.6
Spoils Disposal Area IV Samples								
OD4-04-01.5	12/17/97	1.5	*4.4*	0.42	NA	NA	72	0.26
OD4-04-03.0	12/17/97	3.0	*3.3*	0.35	NA	NA	130	0.95
SDAIV-1E-2.0	07/13/10	2.0	0.32 (SL, J)	<0.07 (SL)	5.9 (D, J)	**36.3** (D)	121 (D)	<0.413
SDAIV-1E2-2.0	11/16/10	2.0	1.9	0.21 (J)	4.6 (D, J)	22.4 (D)	63.5 (D)	**248** (D)
Spoils Disposal Area V Samples								
OD5-02-01.5	12/16/97	1.5	*1.9*	NA	NA	NA	180	1
SDAV-1B-4.0	07/14/10	4.0	<0.07 (SL)	<0.07 (SL)	**10.1** (D)	23.5 (D)	12.9 (D)	<0.412
SDAV-1C-2.0	07/14/10	2.0	0.90 (SL)	0.07 (SL, J)	**11.3** (D)	28.5 (D)	36.1 (D)	0.883
SDAV-1C2-3.0	11/16/10	3.0	5.5	0.66	8.2 (D, J)	**41.5** (D)	233 (D)	6.19
SDAV-1C3-3.0	07/14/11	3.0	2.6 (SL)	0.31 (J,SL)	9.8 (J,D)	**47.3** (D)	237 (D)	17.8 (C)
SDAV-1C4-3.0	08/18/11	3.0	3.9	0.42 (J)	8.4 (D,J)	**40.2** (D)	215 (D)	6.72
SDAV-1E-2.0	07/14/10	2.0	<0.08 (SL)	<0.08 (SL)	**10.2** (D)	24.3 (D)	13.6 (D)	<0.423
Cleanup Objective for Direct Contact*			24.7	620	10	35.5	500	62
			11.4					

bgs - Below ground surface
DNT - Dinitrotoluene
mg/kg - Milligrams per kilogram
Bold text identifies regulatory exceedance.
C - Confirmatory analysis did not confirm the presence of the analyte.
D - Elevated limit of detection (LOD) and limit of quantitation (LOQ) are due to dilution/volume of the sample.
J - Analytical result is between LOD and LOQ.
ML - Matrix Spike and/or Matrix Spike Duplicate recovery was below the lower control limit
R - Relative percent difference for the marix spike/matrix spike duplicate exceeded the upper control limit.
SL - Surrogate recovery was below the lower control limit. Analytical results for this parameter should be considered estimates.
* Based on Proposed Remediation Goals (site specific, United States Environmental Protection Agency Industrial Regional Screening Level or Badger Army Ammunition Plant background concentration.
Italicized value identifies exceedance of United States Environmental Protection Agency (USEPA) Residential Regional Screening Level of 1.6 mg/kg (cleanup level prior to SSRCL).
Underlined value identifies exceedance of 2,4-DNT and 2,6-DNT mixture Cleanup Objective for Direct Contact.
H - Hold time was exceeded.
B - Analyte was detected in associated Method Blank.
SH - Surrogate recovery exceeded the upper control limit. Analytical results for this parameter should be considered estimates.
MH - Matrix Spike and/or Matrix Spike Duplicate recovery exceeded the upper control limit.
LH - Laboratory Control Sample recovery exceeded the upper control limit.
~ - Denotes duplicate sample identifier, note sample collection date.

Table A.3

Post-Remedial (Remaining) Soil Sample Analytical Results

Parcels M1 and T1 -WDNR Closure Request

Badger Army Ammunition Plant

Sample ID	Date Sampled	Sample Depth (feet bgs)	2,4-DNT (mg/kg)	2,6-DNT (mg/kg)	Arsenic (mg/kg)	Chromium (mg/kg)	Lead (mg/kg)	Nitroglycerin (mg/kg)
Final Creek Soil Samples								
FC-1-A-2.0	04/13/10	2.0	0.16 (J)	<0.06	NA	NA	NA	<0.353
FC-1-B-4.0	04/13/10	4.0	<0.07	<0.07	NA	NA	NA	<0.372
FC-1-C-2.0	04/13/10	2.0	<0.07	<0.07	NA	NA	NA	<0.376
FC-1-D-2.0	04/13/10	2.0	<0.07	<0.07	NA	NA	NA	<0.395
FC-1-E-2.0	04/13/10	2.0	<0.07	<0.07	NA	NA	NA	<0.387
FC-2-A-2.0	04/12/10	2.0	0.10 (J)	<0.07	NA	NA	NA	<0.412
FC-2-B-4.0	04/12/10	4.0	0.27 (J)	<0.08	NA	NA	NA	<0.422
FC-2-C-2.0	04/12/10	2.0	<0.08	<0.08	NA	NA	NA	<0.429
FC-2D2-2.0	08/19/10	2.0	0.18 (SL, J)	<0.08 (SL)	5.6 (D, J)	17.2 (D)	11.4 (D)	<0.422
FC-2-E-2.0	04/12/10	2.0	0.45	<0.08	NA	NA	NA	1.86 (C)
FC-3A2-2.0	08/19/10	2.0	0.41 (SL)	<0.07 (SL)	5.8 (D, J)	16.0 (D)	19.7 (D)	<0.417
FC-3B2-6.0	08/19/10	6.0	<0.06	<0.06	<2.1 (D)	3.2 (D, J)	2.5 (D, J)	<0.355
FC-3-C-2.0	04/14/10	2.0	<0.07	<0.07	NA	NA	NA	<0.393
FC-3-D-2.0	04/14/10	2.0	0.88 [r]	<0.07 [r]	NA	NA	NA	<0.388
FC-3-E-2.0	04/14/10	2.0	0.8 [r]	<0.08 [r]	NA	NA	NA	0.508 (J)
FC-4-A-2.0	04/14/10	2.0	<0.07	<0.07	NA	NA	NA	NA
FC-4-B-4.0	04/14/10	4.0	1.0 [r]	<0.07 [r]	NA	NA	NA	NA
FC-4-C-2.0	04/14/10	2.0	0.32 (J)	<0.07	NA	NA	NA	NA
FC-4-D-2.0	04/14/10	2.0	7.9 [r]	0.6 [r]	NA	NA	NA	NA
FC-4E2-2.0	08/19/10	2.0	1.5 (SL) [r]	0.08 (J, SL) [r]	6.7 (D, J)	20.1 (D)	13.3 (D)	0.877
FC-5-A-2.0	04/15/10	2.0	<0.07	<0.07	NA	NA	NA	NA
FC-5B2-6.0	08/19/10	6.0	1.3	0.08 (J)	<2.1 (D)	5.6 (D, J)	3.1 (D, J)	<0.354
FC-5-C-2.0	04/15/10	2.0	<0.07	<0.07	NA	NA	NA	NA
FC-5-D-2.0	04/15/10	2.0	0.23 (J)	<0.07	NA	NA	NA	NA
FC-5E2-2.0	08/19/10	2.0	3.6 [r]	0.25 (J) [r]	2.2 (D, J)	13.5 (D)	8.4 (D)	0.377 (J)
FC-6-A-2.0	04/15/10	2.0	<0.06	<0.06	NA	NA	NA	NA
FC-6B2-6.0	08/19/10	6.0	0.31 (J, SH)	<0.06 (SH)	<2.1 (D)	2.3 (J, D)	<2.1 (D)	<0.353
FC-6-C-2.0	04/15/10	2.0	1.3 [r]	0.07 (J) [r]	NA	NA	NA	NA
FC-6-D-2.0	04/15/10	2.0	0.14 (J)	<0.07	NA	NA	NA	NA
FC-6-E-2.0	04/15/10	2.0	1.0 [r]	<0.08 [r]	NA	NA	NA	NA
FC-7-A-2.0	04/19/10	2.0	<0.06	<0.06	NA	NA	NA	NA
FC-7B2-6.0	08/19/10	6.0	<0.06	<0.06	<2.1 (D)	3.7 (D, J)	2.4 (D, J)	<0.358
FC-7-C-2.0	04/19/10	2.0	0.07 (J)	<0.07	NA	NA	NA	NA
FC-7-D-2.0	04/19/10	2.0	0.14 (J)	<0.07	NA	NA	NA	NA
FC-7-E-2.0	04/19/10	2.0	1.3 [r]	<0.07 [r]	NA	NA	NA	NA
FC-8A2-2.0	08/19/10	2.0	<0.07 (SL)	<0.07 (SL)	<2.2 (D)	6.2 (D, J)	3.2 (D, J)	<0.374
FC-8B-4.0	06/01/10	4.0	<0.07	NA	NA	NA	NA	NA
FC-8C-2.0	06/01/10	2.0	<0.07	NA	NA	NA	NA	NA
FC-8D-2.0	06/01/10	2.0	<0.07	NA	NA	NA	NA	NA
FC-8E-2.0	06/01/10	2.0	<0.07	NA	NA	NA	NA	NA
FC-9A2-2.0	11/16/10	2.0	2.7 (B) [r]	0.22 (J) [r]	6.0 (D, J)	17.5 (D)	25.9 (D)	5.30
FC-9B-4.0	06/02/10	4.0	1.6 [r]	0.13 (J) [r]	6.3 (J, D)	16.6 (D)	14.8 (D)	0.822 (J)
FC-9C-2.0	06/02/10	2.0	<0.06	<0.06	<2.1 (D)	5.0 (D, J)	3.0 (D, J)	<0.357
FC-9D-2.0	06/02/10	2.0	<0.07	<0.07	5.1 (D, J)	14.4 (D)	9.8 (D)	<0.401

Sample ID	Date Sampled	Sample Depth (feet bgs)	2,4-DNT (mg/kg)	2,6-DNT (mg/kg)	Arsenic (mg/kg)	Chromium (mg/kg)	Lead (mg/kg)	Nitroglycerin (mg/kg)
FC-9F-7.0	08/30/11	7.0	0.12 (J)	<0.06	<2.0 (D)	3.5 (D)	<2.0 (D)	<0.336
FC-9G-3.5	08/24/11	3.5	<0.07 (TR)	<0.07 (TR)	6.4 (D,J)	9.8 (D)	6.8 (B,D,J)	<0.348
FC-9H-3.0	08/30/11	3.0	<0.06	<0.06	5.7 (D,J)	18.3 (D)	11.5 (D)	<0.347
FC-9I-3.0	08/25/11	3.0	<0.06	<0.06	3.8 (D,J)	10.0 (D)	5.2 (B,D,J)	<0.340
FC-9J-3.0	08/25/11	3.0	<0.07	<0.07	6.8 (D)	19.0 (D)	11.6 (B,D)	<0.378
FC-9L-7.0	08/25/11	7.0	<0.06	<0.06	2.2 (D,J)	4.0 (D)	3.8 (B,D,J)	<0.343
FC-9M1-4.0	02/06/12	4.0	0.21 (J)	<0.07	7.8 (D)	23.4 (D)	11.8 (D)	<0.368
FC-9N1-4.0	02/06/12	4.0	<0.07	<0.07	5.3 (D,J)	18.3 (D)	9.2 (D)	<0.352
FC-10A-2.0	07/01/10	2.0	<0.07	<0.07	5.8 (D, J)	14.3 (D)	8.2 (D)	<0.373
FC-10B-4.0	07/01/10	4.0	0.09 (J)	<0.07	<2.2 (D)	10.3 (D)	5.4 (D, J)	<0.371
FC-10C-2.0	07/01/10	2.0	<0.07	<0.07	2.5 (D, J)	4.1 (D, J)	<2.3 (D)	<0.380
FC-10D-2.0	07/01/10	2.0	<0.06	<0.06	2.5 (D, J)	8.3 (D)	4.9 (D, J)	<0.360
FC-10E-2.0	07/01/10	2.0	2.6 [r]	0.17 (J) [r]	<2.1 (D)	3.0 (D, J)	<2.1 (D)	<0.351
FC-11A-2.0	07/06/10	2.0	<0.07	<0.07	5.2 (D, J)	17.8 (D)	14.2 (D)	<0.404
FC-11B-4.0	07/06/10	4.0	<0.07	<0.07	5.2 (D, J)	15.1 (D)	9.6 (D)	<0.390
FC-11C-2.0	07/06/10	2.0	0.76 (SL) [r]	<0.08 (SL) [r]	6.0 (D, J)	21.6 (D)	46.7 (D)	<0.421
FC-11D-4.0	07/06/10	4.0	1.7 [r]	0.13 (J) [r]	5.0 (D, J)	23.7 (D)	23.7 (D)	<0.404
FC-11E-2.0	07/06/10	2.0	<0.07	<0.07	7.2 (D, J)	19.0 (D)	10.2 (D)	<0.383
FC-12A-2.0	07/07/10	2.0	9.6 [r]	0.72 [r]	6.5 (D, J)	20.5 (D)	20.1 (D)	0.938 (J)
FC-12B-4.0	07/07/10	4.0	0.09 (J)	<0.08	4.9 (D, J)	15.1 (D)	10.6 (D)	<0.438
FC-12C-2.0	07/07/10	2.0	0.08 (J)	<0.07	4.8 (D, J)	14.1 (D)	12.3 (D)	<0.394
FC-12D-2.0	07/07/10	2.0	<0.06	<0.06	<1.9 (D)	4.6 (D, J)	3.0 (D, J)	<0.347
FC-12E-2.0	07/07/10	2.0	<0.07	<0.07	5.1 (D, J)	14.4 (D)	10.7 (D)	0.401 (J)
FC-13A-2.0	07/08/10	2.0	0.41	<0.07	5.4 (D, J)	15.5 (D)	15.0 (D)	<0.414 (B)
FC-13B-4.0	07/08/10	4.0	<0.06	<0.06	<1.8 (D)	5.8 (D, J)	2.8 (D, J)	0.366 (J, B)
FC-13C-2.0	07/08/10	2.0	<0.07 (SL)	<0.07 (SL)	4.6 (D, J)	12.9 (D)	8.4 (D)	0.407 (B, J)
FC-13D-2.0	07/08/10	2.0	<0.06	<0.06	<2.1 (D)	4.0 (D, J)	3.1 (D, J)	<0.355 (B)
FC-13E-2.0	07/08/10	2.0	0.63	<0.07	6.6 (D, J)	15.1 (D)	10.8 (D)	<0.406 (B)
FC-14A2-2.0	08/25/11	2.0	0.31 (J)	<0.07	6.2 (D,J)	17.5 (D)	15.4 (B,D)	<0.384
FC-14B-4.0	07/08/10	4.0	1.4 [r]	0.10 (J) [r]	3.5 (D, J)	10.1 (D)	7.3 (D, J)	1.38 (B, C)
FC-14C-2.0	07/08/10	2.0	<0.07	<0.07	4.1 (D, J)	11.6 (D)	8.3 (D)	<0.394 (B)
FC-14D-2.0	07/08/10	2.0	0.47	<0.07	4.5 (D, J)	11.7 (D)	7.9 (D)	<0.375 (B)
FC-14E-2.0	07/08/10	2.0	<0.07	<0.07	4.1 (D, J)	12.7 (D)	6.5 (D, J)	<0.381 (B)
FC-15-2.0	04/03/12	2.0	<0.07	<0.07	5.1 (D,J)	17.3 (D,MH)	9.1 (D)	<0.361
FC-15A-2.0	08/18/10	2.0	0.24 (J)	<0.08	5.7 (D, J)	18.8 (D)	12.0 (D)	<0.423
FC-15B-4.0	08/18/10	4.0	8.7 [r]	1.3 [r]	4.1 (D, J)	17.0 (D)	14.7 (D)	0.618 (J)
FC-15C-2.0	08/18/10	2.0	<0.07	<0.07	6.8 (D, J)	15.0 (D)	14.1 (D)	<0.379
FC-15D-2.0	08/18/10	2.0	<0.07	<0.07	3.4 (D, J)	12.4 (D)	6.6 (D, J)	<0.381
FC-15E-2.0	08/18/10	2.0	<0.07	<0.07	3.6 (D, J)	12.2 (D)	6.4 (D, J)	<0.379
FC-17-2.0	04/03/12	2.0	<0.07	<0.07	6.6 (D,J)	19.2 (D)	11.5 (D)	<0.361
FC-18-2.0	04/03/12	2.0	<0.07	<0.07	3.6 (D,J)	8.3 (D)	6.1 (D,J)	<0.331
FC-19-4.0	04/03/12	4.0	<0.06	<0.06	<2.2 (D)	3.7 (D)	3.5 (D,J)	<0.325
FC-20-2.0	04/03/12	2.0	<0.07	<0.07	3.7 (D,J)	9.9 (D)	6.8 (D,J)	<0.339
FC-21-2.0	04/03/12	2.0	<0.07	<0.07	5.2 (D,J)	8.9 (D)	8.6 (D)	<0.334
FC-22-5.0	04/03/12	5.0	<0.06	<0.06	3.1 (D,J)	3.5 (D)	4.0 (D)	<0.315
FC-23-2.5	04/03/12	2.5	<0.06	<0.06	5.9 (D,J)	12.3 (D)	8.4 (D)	<0.313
FC-24-2.0	04/03/12	2.0	<0.07	<0.07	7.2 (D,J)	20.0 (D)	12.8 (D)	<0.369
FC-25-4.0	04/03/12	4.0	<0.06	<0.06	<2.0 (D)	2.6 (D,J)	2.9 (D,J)	<0.306
FC-26-2.0	04/03/12	2.0	0.21 (J)	<0.06	2.0 (D)	4.4 (D)	4.7 (D,J)	<0.321

Sample ID	Date Sampled	Sample Depth (feet bgs)	2,4-DNT (mg/kg)	2,6-DNT (mg/kg)	Arsenic (mg/kg)	Chromium (mg/kg)	Lead (mg/kg)	Nitroglycerin (mg/kg)
FC-27-4.0	04/03/12	4.0	<0.06	<0.06	<2.1 (D)	2.9 (D,J)	3.8 (D,J)	<0.310
FC-28-2.0	04/03/12	2.0	<0.07	<0.07	8.4 (D)	17.3 (D)	9.9 (D)	<0.372
FC-29-2.0	04/03/12	2.0	0.73 [r]	0.08 (J) [r]	<2.1 (D)	5.5 (D)	6.1 (D,J)	<0.314
FC-30-2.0	04/03/12	2.0	<0.07	<0.07	4.2 (D,J)	12.1 (D)	7.5 (D)	<0.350
FC-31-4.0	04/03/12	4.0	4.5 [r]	0.19 (J) [r]	4.5 (D,J)	14.1 (D)	9.2 (D)	<0.363
FC-32-2.0	04/03/12	2.0	1.2 [r]	0.10 (J) [r]	6.1 (D,J)	18.2 (D)	60.5 (D)	<0.389
FC-33-6.0	04/25/12	6.0	1.0 (ML, R)	0.08 (J)	NA	NA	NA	NA
Settling Pond 1 Soil Samples								
SP1-1-A-2.0	04/19/10	2.0	<0.08	<0.08	NA	NA	NA	NA
SP1-1-B-4.0	04/19/10	4.0	0.17 (J)	<0.07	NA	NA	NA	NA
SP1-1-C-2.0	04/19/10	2.0	<0.07	<0.07	NA	NA	NA	NA
SP1-1-D-2.0	04/19/10	2.0	<0.06	<0.06	NA	NA	NA	NA
SP1-1-E-2.0	04/19/10	2.0	<0.07	<0.07	NA	NA	NA	NA
SP1-2-A-2.0	04/20/10	2.0	0.17 (J)	NA	NA	22.9 (D)	15.0 (D)	NA
SP1-2-B-4.0	04/20/10	4.0	<0.06	NA	NA	13.6 (D)	7.6 (D)	NA
SP1-2-C-2.0	04/20/10	2.0	0.19 (J)	NA	NA	19.6 (D)	44.8 (D)	NA
SP1-2-D-2.0	04/20/10	2.0	0.44	NA	NA	19.5 (D)	17.2 (D)	NA
SP1-2-E-2.0	04/20/10	2.0	0.11 (J)	NA	NA	8.5 (D)	7.7 (D)	NA
SPI-3-A-2.0	04/22/10	2.0	<0.07	<0.07	NA	NA	NA	NA
SPI-3-B-4.0	04/22/10	4.0	<0.06	<0.06	NA	NA	NA	NA
SPI-3-C-2.0	04/22/10	2.0	1.3 [r]	0.11 (J) [r]	NA	NA	NA	NA
SPI-3-D-2.0	04/22/10	2.0	0.30 (J)	<0.07	NA	NA	NA	NA
SPI-3-E-2.0	04/22/10	2.0	<0.07	<0.07	NA	NA	NA	NA
SP1-4A-2.0	05/25/10	2.0	NA	NA	NA	16.2 (D)	NA	NA
SP1-4B-4.0	05/25/10	4.0	NA	NA	NA	5.0 (D, J)	NA	NA
SP1-4C-2.0	05/25/10	2.0	NA	NA	NA	10.2 (D)	NA	NA
SP1-4D-2.0	05/25/10	2.0	NA	NA	NA	12.2 (D)	NA	NA
SP1-4E-2.0	05/25/10	2.0	NA	NA	NA	17.7 (D)	NA	NA
SPI-5-A-2.0	04/22/10	2.0	NA	NA	NA	16.6 (D)	NA	NA
SPI-5-B-4.0	04/22/10	4.0	NA	NA	NA	<1.9 (D)	NA	NA
SPI-5-C-2.0	04/22/10	2.0	NA	NA	NA	16.3 (D)	NA	NA
SPI-5-D-2.0	04/22/10	2.0	NA	NA	NA	21.4 (D)	NA	NA
SPI-5-E-2.0	04/22/10	2.0	NA	NA	NA	15.9 (D)	NA	NA
SP1-6A-2.0	05/24/10	2.0	NA	NA	NA	2.7 (D, J)	NA	NA
SP1-6B-4.0	05/24/10	4.0	NA	NA	NA	3.1 (D, J)	NA	NA
SP1-6C-2.0	05/24/10	2.0	NA	NA	NA	8.0 (D)	NA	NA
SP1-6D-2.0	05/24/10	2.0	NA	NA	NA	13.7 (D)	NA	NA
SP1-6E-2.0	05/24/10	2.0	NA	NA	NA	13.2 (D)	NA	NA
SP1-7A-2.0	05/25/10	2.0	NA	NA	NA	9.4 (D)	NA	NA
SP1-7B-4.0	05/25/10	4.0	NA	NA	NA	2.7 (D, J)	NA	NA
SP1-7C-2.0	05/25/10	2.0	NA	NA	NA	6.6 (D)	NA	NA
SP1-7D-2.0	05/25/10	2.0	NA	NA	NA	16.2 (D)	NA	NA
SP1-7E-2.0	05/25/10	2.0	NA	NA	NA	17.6 (D)	NA	NA
SP1-8A-2.0	08/18/10	2.0	2.1 [r]	0.13 (J) [r]	5.7 (D, J)	22.6 (D)	10.6 (D)	0.894
SP1-8B-4.0	08/18/10	4.0	5.0 [r]	0.36 [r]	4.3 (D, J)	8.4 (D)	3.4 (D, J)	<0.362
SP1-8C-2.0	08/18/10	2.0	10 [r]	0.99 [r]	4.6 (D, J)	12.9 (D)	7.3 (D, J)	1.05
SP1-8D-2.0	08/18/10	2.0	0.58	<0.07	4.4 (D, J)	19.4 (D)	7.1 (D, J)	<0.373
SP1-8E2-2.0	11/16/10	2.0	0.29 (B, J)	<0.07	8.7 (D)	22.6 (D)	16.8 (D)	<0.406
SP1-9A3-2.0	07/14/11	2.0	1.3 [r]	0.10 (J) [r]	4.2 (D,J)	17.5 (D)	15.2 (D)	17.3 (C) [r]

Sample ID	Date Sampled	Sample Depth (feet bgs)	2,4-DNT (mg/kg)	2,6-DNT (mg/kg)	Arsenic (mg/kg)	Chromium (mg/kg)	Lead (mg/kg)	Nitroglycerin (mg/kg)
SP1-9B-4.0	06/03/10	4.0	<0.06	<0.06	<2.1 (D)	3.5 (D, J)	<2.1 (D)	<0.351
SP1-9C-2.0	06/03/10	2.0	<0.07	<0.07	4.8 (D, J)	13.0 (D)	5.7 (D, J)	<0.378
SP1-9D-2.0	06/03/10	2.0	<0.06	<0.06	<1.9 (D, J)	4.2 (D, J)	2.1 (D, J)	<0.348
SP1-9E-2.0	06/03/10	2.0	<0.06	<0.06	<2.1 (D)	5.7 (D, J)	2.8 (D, J)	<0.358
SP1-10A-2.0	08/10/10	2.0	<0.08 (SL)	<0.08 (SL)	4.9 (J)	19.5	15.0	<0.454
SP1-10B-4.0	08/10/10	4.0	1.2 [r]	0.10 (J) [r]	3.2 (J)	11.1	12.3	1.22
SP1-10C-2.0	08/10/10	2.0	<0.07 (SL)	<0.07 (SL)	3.6 (J)	13.9	8.1	<0.392
SP1-10D-2.0	08/10/10	2.0	<0.07 (SL)	<0.07 (SL)	5.3 (J)	18.9	13.5	<0.401
SP1-10E-2.0	08/10/10	2.0	<0.08 (SL)	<0.08 (SL)	5.1 (J)	19.4	12.4	<0.455
SP1-11A-2.0	08/11/10	2.0	<0.07	<0.07	3.7	11.5	8.7	<0.395
SP1-11B-4.0	08/11/10	4.0	0.16 (SL, J)	<0.07 (SL)	4.9	16.0	31.0	0.447 (J)
SP1-11C-2.0	08/11/10	2.0	0.55	<0.07	4.2	13.6	19.2	0.444 (J)
SP1-11D-2.0	08/11/10	2.0	4 [r]	0.49 [r]	6.0	24.9	79.2	1.30
SP1-11E-2.0	08/11/10	2.0	1.2 [r]	0.12 (J) [r]	5.5	23.0	59.7	0.529 (J)
SP1-12A7-2.0	03/28/12	2.0	NA	NA	6.5 (J,D)	NA	NA	NA
SP1-12B-4.0	08/11/10	4.0	<0.07	<0.07	9.9 (D)	25.6 (D)	13.5 (D)	<0.406
SP1-12C-2.0	08/11/10	2.0	0.12 (J)	<0.07	6.0 (D, J)	19.3 (D)	10.4 (D)	<0.411
SP1-12D-2.0	08/11/10	2.0	<0.08	<0.08	6.4 (D, J)	17.7 (D)	13.5 (D)	<0.427
SP1-12E-2.0	08/11/10	2.0	0.09 (SL, J)	<0.08 (SL)	7.0 (D, J)	18.2 (D)	11.6 (D)	<0.420
SP1-13A-2.0	08/18/10	2.0	2.9 (SL) [r]	0.32 (J, SL) [r]	6.9 (D, J)	22.6 (D)	38.4 (D, ML)	1.21
SP1-13B-4.0	08/18/10	4.0	2.7 [r]	0.29 (J) [r]	5.7 (D, J)	19.3 (D)	18.9 (D)	<0.422
SP1-13C3-2.0	07/14/11	2.0	6.6 (ML,SL) [r]	0.86 (SL) [r]	8.0 (D,J)	26.7 (D)	45.4 (D)	2.71
SP1-13D4-2.0	03/01/12	2.0	NA	NA	NA	18.8 (D)	NA	NA
SP1-13E2-2.0	08/22/11	2.0	9.9 [r]	1.1 [r]	7.0 (D,J)	21.6 (D)	37.2 (D)	4.50
Settling Pond 2 Soil Samples								
SP2-1-A-2.0	04/20/10	2.0	<0.06	NA	NA	5.0 (D, J)	4.0 (D, J)	NA
SP2-1-B-4.0	04/20/10	4.0	0.33	NA	NA	9.3 (D)	9.2 (D)	NA
SP2-1-C-2.0	04/20/10	2.0	0.21 (J)	NA	NA	9.2 (D)	8.0 (D)	NA
SP2-1-D-2.0	04/20/10	2.0	<0.07	NA	NA	7.5 (D)	5.7 (D, J)	NA
SP2-1-E-2.0	04/20/10	2.0	0.81 (SL) [r]	NA [r]	NA	10.4 (D)	11.3 (D)	NA
SP2-2-A-2.0	04/21/10	2.0	0.19 (J)	NA	NA	8.4 (D)	4.6 (D, J)	NA
SP2-2-B-4.0	04/21/10	4.0	<0.06	NA	NA	9.4 (D)	4.2 (D, J)	NA
SP2-2-C-2.0	04/21/10	2.0	<0.06	NA	NA	8.6 (D)	4.9 (D, J)	NA
SP2-2-D-2.0	04/21/10	2.0	<0.06	NA	NA	6.9 (D, J)	3.9 (D, J)	NA
SP2-2-E-2.0	04/21/10	2.0	<0.06	NA	NA	8.9 (D)	19.6 (D)	NA
SP2-3-A-2.0	04/21/10	2.0	NA	NA	NA	15.9 (D)	32.6 (D)	NA
SP2-3-B-4.0	04/21/10	4.0	NA	NA	NA	3.7 (D, J)	9.0 (D)	NA
SP2-3-C-2.0	04/21/10	2.0	NA	NA	NA	2.5 (D, J)	<1.7 (D)	NA
SP2-3-D-2.0	04/21/10	2.0	NA	NA	NA	5.6 (D, J)	2.8 (D, J)	NA
SP2-3-E-2.0	04/21/10	2.0	NA	NA	NA	17.5 (D)	11.9 (D)	NA
SP2-4-A-2.0	04/21/10	2.0	NA	NA	NA	10.3 (D)	7.5 (D, J)	NA
SP2-4-B-4.0	04/21/10	4.0	NA	NA	NA	<1.9 (D)	<1.9 (D)	NA
SP2-4-C-2.0	04/21/10	2.0	NA	NA	NA	5.7 (D, J)	28.1 (D)	NA
SP2-4-D-2.0	04/21/10	2.0	NA	NA	NA	19.1 (D)	9.2 (D)	NA
SP2-4-E-2.0	04/21/10	2.0	NA	NA	NA	12.9 (D)	195 (D)	NA
SP2-5A-2.0	05/25/10	2.0	NA	NA	NA	24.3 (D)	28.2 (D)	NA
SP2-5B-4.0	05/25/10	4.0	NA	NA	NA	9.1 (D)	7.0 (D, J)	NA
SP2-5C-2.0	05/25/10	2.0	NA	NA	NA	20.4 (D)	12.6 (D)	NA
SP2-5D-2.0	05/25/10	2.0	NA	NA	NA	18.5 (D)	14.2 (D)	NA

Sample ID	Date Sampled	Sample Depth (feet bgs)	2,4-DNT (mg/kg)	2,6-DNT (mg/kg)	Arsenic (mg/kg)	Chromium (mg/kg)	Lead (mg/kg)	Nitroglycerin (mg/kg)
SP2-5E-2.0	05/25/10	2.0	NA	NA	NA	14.0 (D)	8.6 (D)	NA
SP2-6A-2.0	08/09/10	2.0	0.18 (J)	<0.08	6.7 (D, J)	20.9 (D)	13.5 (D)	<0.429
SP2-6B-4.0	08/09/10	4.0	<0.08 (SL)	<0.08 (SL)	9.0 (D)	25.2 (D)	10.0 (D)	0.829 (J)
SP2-6C-2.0	08/09/10	2.0	0.38	<0.07	5.2 (D, J)	16.5 (D)	10.1 (D)	<0.399
SP2-6D-2.0	08/09/10	2.0	3.9 [r]	0.58 [r]	5.5 (D, J)	16.9 (D)	28.7 (D)	0.717 (J)
SP2-6E-2.0	08/09/10	2.0	5.4 [r]	0.42 [r]	6.9 (D, J)	20.9 (D)	41.7 (D)	5.48
SP2-7A4-2.0	03/01/12	2.0	1.2 (MH,R,SL) [r]	0.10 (MH,R,J,SL) [r]	NA	NA	NA	NA
SP2-7B-4.0	08/09/10	4.0	0.10 (J)	<0.07	7.1 (D, J)	17.3 (D)	9.0 (D)	0.668 (J)
SP2-7C3-2.0	02/06/12	2.0	2.0 [r]	0.13 (J) [r]	5.9 (D,J)	17.5 (D)	19.5 (D)	<0.375
SP2-7D-2.0	08/09/10	2.0	<0.07 (SL)	<0.07 (SL)	5.6 (D, J)	18.0 (D)	10.2 (D)	<0.413
SP2-7E6-2.0	03/01/12	2.0	6.0 (SL) [r]	0.44 (SL) [r]	NA	NA	NA	NA
SP2-8A4-3.0	08/18/11	3.0	0.07	<0.07	3.1 (D,J)	11.1 (D)	9.7 (D)	4.6
SP2-8B2-6.0	11/16/10	6.0	<0.06	<0.06	<2.1 (D)	4.4 (D)	3.6 (D, J)	<0.344
SP2-8C-2.0	08/10/10	2.0	1.2 [r]	0.10 (J) [r]	2.1 (D, J)	14.8 (D)	9.7 (D)	3.82
SP2-8D-2.0	08/10/10	2.0	1.9 (SL) [r]	0.17 (SL, J) [r]	3.1 (D, J)	11.4 (D)	25.2 (D)	12.6 (MH, ML, R) [r]
SP2-8E-2.0	08/10/10	2.0	<0.06	<0.06	<2.1 (D)	3.4 (D, J)	2.2 (D, J)	<0.346
SP2-9A-2.0	08/10/10	2.0	<0.06	<0.06	<2.1 (D)	4.2 (D, J)	3.6 (D, J)	<0.342
SP2-9B-4.0	08/10/10	4.0	0.62 (SL)	<0.07 (SL)	2.9 (D, J)	12.5 (D)	9.8 (D)	<0.399
SP2-9C-2.0	08/10/10	2.0	<0.08	<0.08	4.4 (J)	17.0	12.7	<0.420
SP2-9D-2.0	08/10/10	2.0	0.48	<0.08	4.3 (J)	17.8	25.8	0.669 (J)
SP2-9E-2.0	08/10/10	2.0	<0.06	<0.06	<2.1	<2.1	3.3 (J)	<0.354
Spoils Disposal Area I Soil Samples								
SDAI-1A5-2.0	02/06/12	2.0	<0.07 (SL)	<0.07 (SL)	3.2 (D,J)	11.8 (D)	16.8 (D)	4.28 (C)
SDAI-1B-4.0	07/13/10	4.0	<0.06 (SL)	<0.06 (SL)	<2.1 (D)	2.3 (D, J)	<2.1 (D)	<0.346
SDAI-1C-2.0	07/13/10	2.0	3.0 (SL) [r]	0.32 (SL, J) [r]	6.8 (D, J)	26.1 (D)	73.7 (D)	5.17
SDAI-1D2-2.0	11/16/10	2.0	<0.06	<0.06	<1.8 (D)	3.1 (D)	3.5 (D, J)	<0.339
SDAI-1E-4.0	07/13/10	4.0	<0.06 (SL)	<0.06 (SL)	<1.9 (D)	4.6 (D, J)	3.0 (D, J)	<0.355
SDA1-E-3.5	12/07/09	3.5	0.122 (J)	<0.074	7.3 (D)	21.5 (D)	14.1 (D)	0.558 (J)
SDA1-F-4.0	01/19/10	4.0	<0.031 (SL)	<0.031 (SL)	<2.1 (D)	4.1 (J, D)	2.3 (J, D)	<0.345
SDA1-G-4.0	01/19/10	4.0	<0.032	<0.032	<2.1 (D)	<2.1 (D)	<2.1 (D)	<0.357
SDA1-H-5.0	01/19/10	5.0	<0.036	<0.036	2.5 (D, J)	6.1 (D, J)	4.9 (D, J)	<0.408
SDA1-I-5.0	01/19/10	5.0	<0.030	<0.030	<1.7 (D)	2.8 (D, J)	1.9 (D, J)	<0.336
SDA1-J-5.0	01/19/10	5.0	0.172	<0.031	<2.1 (D)	4.5 (D, J)	7.6 (D)	0.416 (J)
SDA1-K-5.0	02/11/10	5.0	<0.06	<0.06	2.6 (D, J)	6.1 (D, J)	6.0 (D, J, ML)	<0.358
SDA1-L-6.0	02/11/10	6.0	<0.06	<0.06	<2.1 (D)	4.5 (D, J)	6.6 (D, J)	0.355 (J)
SDA1-M-6.0	02/11/10	6.0	<0.08	<0.08	8.3 (D)	20.2 (D)	15.5 (D)	<0.471
SDA1-N-6.0	02/11/10	6.0	<0.07	<0.07	3.2 (D, J)	9.6 (D)	6.4 (D)	0.405 (J)
SDA1-O-5.0	02/11/10	5.0	<0.07	<0.07	<1.8 (D)	5.7 (D, J)	4.4 (D, J)	<0.367
SDA1-P-5.0	03/01/10	5.0	<0.06	<0.06	<2.1 (D)	5.9 (D, J)	5.0 (D, J)	0.356 (J)
SDA1-Q-5.0	03/01/10	5.0	<0.06	<0.06	2.8 (J, D)	9.4 (D)	8.6 (D)	0.556 (J)
SDA1-R-8.0	03/01/10	8.0	0.32 (J, SL)	<0.07 (SL)	6.2 (D, J)	16.1 (D)	20.6 (D)	2.96
SDA1-S-6.0	03/01/10	6.0	<0.06	<0.06	<2.1 (D)	5.0 (D, J)	4.1 (D, J)	0.408 (J)
SDA1-T-9.0	03/01/10	9.0	0.58	<0.06	<1.7 (D)	3.9 (D, J)	2.3 (D, J)	0.748 (J)
SDAI-U-8.0	06/07/10	8.0	0.53 (SL)	<0.08 (SL)	9.4 (D)	21.7 (D)	13.4 (D)	0.550 (J, SL)
SDAI-V2-4.0	11/10/10	4.0	NA	NA	2.8 (D, J)	NA	NA	NA
SDAI-W-2.0	06/07/10	2.0	<0.07 (SL)	<0.07 (SL)	6.4 (D, J)	19.4 (D)	13.7 (D)	<0.400
SDAI-X2-4.0	11/10/10	4.0	NA	NA	<2.0 (D)	NA	NA	NA
SDAI-Y-2.0	06/07/10	2.0	<0.07 (SL)	<0.07 (SL)	7.7 (D)	22.1 (D)	13.9 (D)	<0.417 (SL)
SDAI-Z-4.5	06/07/10	4.5	<0.07 (SL)	<0.07 (SL)	3.3 (D, J)	11.6 (D)	11.5 (D)	<0.377

Sample ID	Date Sampled	Sample Depth (feet bgs)	2,4-DNT (mg/kg)	2,6-DNT (mg/kg)	Arsenic (mg/kg)	Chromium (mg/kg)	Lead (mg/kg)	Nitroglycerin (mg/kg)
Spoils Disposal Area II Soil Samples								
SDAII-1A-2.0	05/26/10	2.0	NA	NA	NA	19.5 (D)	8.9 (D)	NA
SDAII-1B-4.0	05/26/10	4.0	NA	NA	NA	23.4 (D)	33.3 (D)	NA
SDAII-2A-2.0	05/27/10	2.0	NA	NA	NA	28.0 (D)	17.6 (D)	NA
SDAII-2D-2.0	05/27/10	2.0	NA	NA	NA	17.0 (D)	10.7 (D)	NA
SDAII-2E-2.0	05/27/10	2.0	NA	NA	NA	32.3 (D)	113 (D)	NA
SDAII-R1-5.0	08/26/10	5.0	0.690	<0.1	7.8 (D, J)	34.8 (D)	118 (D)	<0.538
SDAII-R3-3.0	08/26/10	3.0	2.1 [r]	0.20 (J) [r]	5.8 (D, J)	30.1 (D)	116 (D)	1.35
SDAII-R10-3.0	09/07/10	3.0	<0.06	<0.06	3.1 (D, J)	5.4 (D, J)	4.2 (D, ML, J)	<0.343
SDAII-R11-6.0	09/07/10	6.0	0.52	<0.07	6.0 (D, J)	18.3 (D)	10.3 (D)	<0.382
SDAII-R12-6.0	09/07/10	6.0	<0.06	<0.06	3.7 (D, J)	16.3 (D)	7.8 (D)	<0.361
SDAII-R13-3.0	09/07/10	3.0	<0.06	<0.06	2.0 (D, J)	6.8 (D)	4.0 (D, J)	<0.348
SDAII-R16-3.0	09/07/10	3.0	0.44	<0.07	5.3 (D, J)	19.4 (D)	45.8 (D)	0.883
SDAII-R17-6.0	09/08/10	6.0	<0.06	<0.06	<2.1 (D)	5.5 (D, J)	4.1 (D, J)	<0.351
SDAII-R19-3.0	11/02/10	3.0	0.72 [r]	<0.09 [r]	6.5 (D, J)	31.7 (D)	155 (D)	1.15
SDAII-R20-3.0	11/02/10	3.0	<0.07	<0.07	6.1 (D, J)	16.2 (D)	11.1 (D)	<0.386
SDAII-R21-3.0	11/02/10	3.0	<0.06	<0.06	4.9 (D, J)	16.2 (D)	10.1 (D)	<0.357
SDAII-R22-3.0	11/02/10	3.0	<0.07 (SL)	<0.07 (SL)	5.3 (D, J)	17.5 (D)	10.7 (D)	<0.390
SDAII-R25-3.0	11/08/10	3.0	<0.07	<0.07	6.7 (D, J)	18.6 (D)	11.3 (D)	<0.375
SDAII-R26-6.0	11/08/10	6.0	0.44 (J, SL)	<0.09 (SL)	6.2 (D, J)	27.6 (D)	103 (D)	<0.495
SDAII-R27-6.0	11/08/10	6.0	1.1 (SL)	0.09 (J, SL)	6.0 (D, J)	30.5 (D)	140 (D)	1.74
SDAII-R30-3.0	11/08/10	3.0	<0.07	<0.07	6.4 (D, J)	16.8 (D)	11.9 (D)	<0.377
SDAII-R31-3.0	11/08/10	3.0	<0.07	<0.07	7.2 (D, J)	19.8 (D)	13.3 (D)	<0.391
SDAII-R32-3.0	11/09/10	3.0	0.47 (SL)	<0.08 (SL)	5.9 (D)	29.8 (D)	193 (D)	1.27
SDAII-R33-6.0	11/09/10	6.0	0.40 (J)	<0.09	4.3 (D, J)	22.9 (D)	67.9 (D)	0.861 (J)
SDAII-R37-3.0	11/09/10	3.0	<0.07	<0.07	2.9 (D, J)	10.2 (D)	8.8 (D)	<0.365
SDAII-R38-6.0	11/09/10	6.0	0.15 (J, SL)	<0.09 (SL)	4.9 (D, J)	22.2 (D)	41.0 (D)	<0.486
SDAII-R39-6.0	11/09/10	6.0	0.12 (J, SL)	<0.08 (SL)	4.5 (D, J)	21.3 (D)	42.2 (D)	0.635 (J)
SDAII-R40-6.0	11/09/10	6.0	0.54	<0.08	6.5 (D, J)	20.8 (D)	64.0 (D)	0.473 (J)
SDAII-R41-3.0	11/09/10	3.0	1.1 [r]	0.09 (J) [r]	6.7 (D, J)	33.0 (D)	171 (D)	0.693 (J)
SDAII-R42-6.0	11/10/10	6.0	0.39	<0.07	3.3 (D, J)	14.3 (D)	65.6 (D)	<0.401
SDAII-R43-3.0	11/10/10	3.0	0.86 [r]	<0.08 [r]	4.9 (D, J)	28.5 (D)	142 (D)	0.652 (J)
SDAII-R46-8.0	07/07/11	8.0	0.18 (J)	<0.07	3.5 (D, J)	12.6 (D)	45.8 (D)	<0.371
SDAII-R47-3.0	07/07/11	3.0	0.38	<0.07	5.3 (D, J)	21.8 (D)	127 (D)	<0.407
SDAII-R48-3.0	07/07/11	3.0	<0.07	<0.07	6.4 (D, J)	16.4 (D)	11.5 (D)	<0.387
SDAII-R49-3.0	07/07/11	3.0	<0.06	<0.06	3.3 (D, J)	9.0 (D)	3.4 (D, J)	<0.352
SDAII-R50-12.0	07/07/11	12.0	<0.07	<0.07	<2.3 (D)	5.9 (D)	5.5 (D, J)	<0.384
SDAII-R51-8.0	07/11/11	8.0	1.4	0.14 (J)	4.6 (D)	17.8 (D)	44.0 (D)	8.30
SDAII-R52-10.0	07/12/11	10.0	<0.07	<0.07	<1.8 (D)	8.8 (D)	10.2 (D)	4.98 (C)
SDAII-R53-11.0	07/12/11	11.0	<0.07	<0.07	<2.2 (D)	4.6 (D)	4.7 (D, J)	<0.363
SDAII-R54-12.0	07/12/11	12.0	<0.07	<0.07	2.5 (D, J)	8.6 (D)	7.7 (D, J)	<0.380
SDAII-R55-3.0	07/13/11	3.0	2.1 (SL) [r]	0.24 (SL, J) [r]	7.4 (D, J)	33.7 (D)	127 (D)	2.96
Spoils Disposal Area III Soil Samples								
SDAIII-1A-2.0	07/14/10	2.0	2.0 [r]	0.18 (J) [r]	4.8 (D, J)	16.2 (D)	14.4 (D)	1.13
SDAIII-1B-4.0	07/14/10	4.0	<0.06	<0.06	<2.1 (D)	6.0 (D, J)	2.4 (D, J)	<0.344
SDAIII-1C-2.0	07/14/10	2.0	5.4 (SL) [r]	0.56 (SL) [r]	5.5 (D, J)	18.5 (D)	30.0 (D)	4.92
SDAIII-1D-2.0	07/14/10	2.0	0.30 (J, SL)	<0.07 (SL)	6.6 (D, J)	14.6 (D)	21.0 (D)	0.433 (J)
SDAIII-1E-2.0	07/14/10	2.0	0.46	<0.07	3.5 (D, J)	11.5 (D)	18.0 (D)	0.971
SDAIII-2A-2.0	07/14/10	2.0	2.8 [r]	0.30 (J) [r]	4.3 (D, J)	19.7 (D)	29.8 (D)	2.73

Sample ID	Date Sampled	Sample Depth (feet bgs)	2,4-DNT (mg/kg)	2,6-DNT (mg/kg)	Arsenic (mg/kg)	Chromium (mg/kg)	Lead (mg/kg)	Nitroglycerin (mg/kg)
SDAIII-2B-4.0	07/14/10	4.0	1.9 [r]	0.21 (J) [r]	4.9 (D, J)	14.0 (D)	26.3 (D)	2.31
SDAIII-2C-2.0	07/14/10	2.0	2.3 [r]	0.26 (J) [r]	5.0 (D, J)	15.5 (D)	31.4 (D)	2.31
SDAIII-2D-2.0	07/14/10	2.0	1.5 (SL) [r]	0.16 (J, SL) [r]	5.4 (D, J)	18.5 (D)	31.3 (D)	2.24
SDAIII-2E-2.0	07/14/10	2.0	2.2 [r]	0.25 (J) [r]	4.6 (D, J)	16.7 (D)	30.6 (D)	1.81
SDAIII-3A-2.0	07/19/10	2.0	2.0 (SL) [r]	0.21 (J, SL) [r]	3.7 (D, J)	14.1 (D)	19.7 (D)	1.17^
SDAIII-3B-4.0	07/19/10	4.0	2.1 [r]	0.25 (J) [r]	4.4 (D, J)	17.2 (D)	21.9 (D)	6.82^ [r]
SDAIII-3C2-2.0	08/18/11	2.0	7.7 [r]	1.2 [r]	5.3 (D,J)	22.7 (D)	44.0 (D)	5.16
SDAIII-3D-2.0	07/19/10	2.0	0.68 (SL) [r]	0.08 (J, SL) [r]	4.6 (D, J)	21.1 (D)	50.1 (D)	4.87^
SDAIII-3E3-2.0	02/06/12	2.0	0.60 (SL)	0.07 (J, SL)	4.5 (D,J)	16.4 (D)	34.0 (D)	7.61 [r]
SDAIII-4A-2.0	07/19/10	2.0	8.6 (SL) [r]	0.90 (SL) [r]	3.5 (D, J)	15.3 (D)	25.3 (D)	6.35^ [r]
SDAIII-4B-4.0	07/19/10	4.0	4.8 (SL) [r]	0.47 (SL) [r]	3.1 (D, J)	13.8 (D)	18.0 (D)	0.632 (J)^
SDAIII-4C-2.0	07/19/10	2.0	1.3 (SL) [r]	0.09 (SL, J) [r]	4.9 (D, J)	19.7 (D)	55.9 (D)	<0.388^
SDAIII-4D-2.0	07/19/10	2.0	0.39 (SL)	<0.07 (SL)	3.9 (D, J)	16.1 (D)	25.4 (D)	<0.371^
SDAIII-4E-2.0	07/19/10	2.0	1.7 [r]	0.14 (J) [r]	3.0 (D, J)	11.1 (D)	23.0 (D)	3.59^
Spoils Disposal Area IV Soil Samples								
SDAIV-1A-2.0	07/13/10	2.0	1.6 [r]	0.15 (J) [r]	5.3 (D, J)	24.8 (D)	58.8 (D)	<0.418
SDAIV-1B-4.0	07/13/10	4.0	0.62 (SL)	<0.08 (SL)	5.3 (D, J)	21.4 (D)	41.5 (D)	<0.428
SDAIV-1C-2.0	07/13/10	2.0	1.4 (SL) [r]	0.19 (SL, J) [r]	7.0 (D, J)	31.5 (D)	162 (D)	<0.449
SDAIV-1D-2.0	07/13/10	2.0	0.44 (SL)	<0.07 (SL)	4.9 (D, J)	20.6 (D)	56.5 (D)	<0.415
SDAIV-1E3-2.0	07/14/11	2.0	3.7 (SL) [r]	0.43 (SL) [r]	5.9 (D,J)	29.6 (D)	129 (D)	0.655 (J)
Spoils Disposal Area V Soil Samples								
SDAV-1A-2.0	07/14/10	2.0	0.59	<0.07	7.4 (D, J)	20.7 (D)	50.2 (D)	<0.405
SDAV-1B2-6.0	11/16/10	6.0	<0.07	<0.07	3.8 (D, J)	10.2 (D)	6.9 (D)	<0.379
SDAV-1C5-3.0	02/06/12	3.0	0.3 (J)	<0.08	4.2 (D,J)	15.9 (D)	28.8 (D)	<0.377
SDAV-1D-2.0	07/14/10	2.0	<0.06	<0.06	1.9 (D, J)	5.8 (D, J)	6.9 (D)	<0.350
SDAV-1E2-3.0	11/16/10	3.0	1.3 [r]	0.14 (J) [r]	5.0 (D, J)	19.3 (D)	75.2 (D)	1.19
Proposed Remediation Goal for Direct Contact*			24.7	620	10	35.5	500	62
			11.4					

bgs - Below ground surface
DNT - Dinitrotoluene
mg/kg - Milligrams per kilogram
mg/L - Milligrams per liter
B - Analyte was detected in associated Method Blank.
C - Confirmatory analysis did not confirm the presence of the analyte.
D - Elevated limit of detection (LOD) and limit of quantitation (LOQ) are due to dilution/volume of the sample.
H - Hold time was exceeded.
J - Analytical result is between LOD and LOQ.
LH - Laboratory Control Sample recovery exceeded the upper control limit.
MH - Matrix Spike and/or Matrix Spike Duplicate recovery exceeded the upper control limit.
ML - Matrix Spike and/or Matrix Spike Duplicate recovery was below the lower control limit.
R - Relative percent difference for the matrix spike/matrix spike duplicate exceeded the upper control limit.
SH - Surrogate recovery exceeded the upper control limit. Analytical results for the parameter should be considered estimates.
SL - Surrogate recovery was below the lower control limit. Analtycial results for the parameter should be considered estimates.
TR - Sample was received with improper preservation or temperature. Sampled again on 8/30/11 with similar results (all below cleanup objectives).
r - indicates result (depth of 4 ft or less) is above above a USEPA residential regional screening goals (DNT Mixture = 0.72 mg/kg and Nitroglycerin = 6.1 mg/kg).
*Based on Badger Army Ammunition Plant site specific or background concentration, or United States Environmental Protection Agency Industrial Regional Screening Level
^ SDAIII-3 and SDAIII-4 samples exceeded the laboratory hold-time for nitroglycerin; Sampled again on 12 August 2010 with similar results (all below cleanup objectives).

Data Tables Not Relevant To Case Closure Request

A.4. Pre and Post-Remedial Residual Soil Contamination Analytical Table

There were no exceedances of Cleanup Objectives for the direct contact exposure pathway in Parcels M1 and T1.

Data Tables Not Relevant To Case Closure Request

A.5. Vapor Analytical Table

Contaminants of concern are not volatile organic compounds that would create a vapor intrusion risk.

Data Tables Not Relevant To Case Closure Request

A.6. Other Media of Concern

Although the small ponds located at the outfall of Final Creek in Settling Pond 1 are not considered large enough to provide habitat or drinking water for the majority of wildlife under consideration within the 70-acre area, SpecPro to collected a surface-water sample from one of the small ponds and analyzed it for the COCs that were evaluated in the Baseline Ecological Risk Assessment (BERA). No organic Contaminants of Concern (COCs) were detected in the surface water. The only metal COC detected was lead, but it was at a trace concentration (6.8 micrograms per liter (µg/l)), which is close to the method detection limit (5.0 µg/l). For further details on the surface water sampling, please refer to Section 5.1.6 and Appendix C3 of the BERA. Based on these analytical results, the surface water within the small ponds is not considered a source of chemical exposure to wildlife in the site area.

Table A.7
Groundwater Elevation Data
Parcels M1 and T1 - WDNR Closure Request
Badger Army Ammunition Plant

S1104		S1107		S1147		S1149		SPN 0402A		SPN 0403A		PBN 9402B		PBN-9902A	
Date	Elevation	Date	Elevation	Date	Elevation	Date	Elevation	Date	Elevation	Date	Elevation	Date	Elevation	Date	Elevation
1/13/1988	765.41	1/13/1988	768.28	1/10/1988	765.44	1/20/1988	760.64	9/28/2004	765.88	9/28/2004	765.62	2/28/1996	767.11	3/13/2001	758.36
2/17/1988	765.31	2/17/1988	765.18	2/18/1988	765.54	2/18/1988	766.64	11/22/2004	766.19	11/22/2004	764.82	6/4/1996	766.18	9/10/2002	759.64
3/21/1988	765.41	3/24/1988	765.33	3/17/1988	766.49	4/19/1988	766.64	12/6/2004	766.21	12/6/2004	764.84	9/4/1996	766.9	12/2/2002	759.6
4/19/1988	765.41	4/19/1988	765.33	4/19/1988	766.49	7/20/1988	767.44	3/8/2005	767.6	3/8/2005	766.08	12/3/1996	766.33	3/4/2003	759.63
7/19/1988	767.21	7/20/1988	766.98	7/20/1988	767.54	8/3/1988	766.14	6/14/2005	766.53	6/14/2005	765.22	3/8/1999	762.32	6/9/2003	759.48
8/2/1988	765.26	8/2/1988	765.28	8/3/1988	765.94	9/12/1988	765.94	9/14/2005	766.11	9/14/2005	764.77	6/29/1999	762.23	9/9/2003	758.76
9/9/1988	765.11	9/9/1988	765.08	9/9/1988	765.69	9/30/1988	766.94	3/14/2006	764.83	3/14/2006	763.57	9/21/1999	762.6	11/25/2003	758.44
9/22/1988	766.41	9/26/1988	766.48	9/29/1988	766.94	11/15/1988	765.69	6/14/2006	764.75	6/14/2006	763.47	1/3/2000	762.14	3/8/2004	758.02
11/14/1988	764.76	11/14/1988	764.78	11/15/1988	765.44	12/13/1988	765.59	9/11/2006	764.83	9/11/2006	763.5	3/20/2000	762.08	6/7/2004	758.84
12/12/1988	764.76	12/12/1988	764.73	12/13/1988	765.34	12/21/1988	765.64	12/11/2006	764.73	12/11/2006	767.47	6/14/2000	763.3	9/1/2004	759.89
12/21/1988	764.72	1/5/1989	768.69	12/20/1988	765.41	2/16/1989	765.39	3/7/2007	764.68	3/7/2007	763.42	9/12/2000	762.71	12/15/2004	760.7
2/15/1989	764.51	2/15/1989	764.48	2/16/1989	765.24	3/18/1989	766.24	6/11/2007	765.36	6/11/2007	764.14	12/5/2000	762.54	3/28/2005	761.62
3/15/1989	764.88	3/18/1989	765.08	3/19/1989	765.35	4/11/1989	766.04	9/12/2007	766.11	9/12/2007	764.92	3/20/2001	762.31	6/29/2005	761.34
4/11/1989	765.36	4/11/1989	765.28	4/12/1989	765.49	6/7/1989	765.34	12/10/2007	766.38	12/10/2007	765.12	9/17/2002	763.85	9/27/2005	753.36
7/6/1989	764.48	6/7/1989	764.68	6/6/1989	765.04	7/10/1989	765.09	3/4/2008	766.48	3/4/2008	765.12	12/11/2002	763.9	3/28/2006	759.92
8/14/1989	764.21	7/10/1989	764.53	7/10/1989	764.84	8/15/1989	764.84	6/10/2008	769.62	6/10/2008	768.17	3/17/2003	763.77	10/4/2006	760.21
9/18/1989	763.96	8/14/1989	764.3	8/15/1989	764.44	9/18/1989	764.64	9/9/2008	771.29	9/9/2008	769.89	6/16/2003	763.68	4/3/2007	760.59
2/12/1990	763.31	8/15/1989	764.3	9/18/1989	764.29	2/13/1990	763.94	12/8/2008	771.93	12/8/2008	770.45	9/16/2003	763.28	9/10/2007	761.34
3/28/1990	763.71	9/18/1989	764.13	2/13/1990	763.54	3/29/1990	764.14	3/4/2009	771.38	3/3/2009	769.92	12/8/2003	762.78	4/1/2008	761.89
7/10/1990	763.36	2/13/1990	763.38	3/29/1990	763.54	7/11/1990	763.74	6/9/2009	770.94	6/9/2009	769.63	3/16/2004	762.46	10/6/2008	767.79
8/14/1990	763.36	3/29/1990	763.83	7/11/1990	763.19	8/14/1990	763.74	9/2/2009	770.17	9/2/2009	768.8	6/16/2004	763.14	3/31/2009	767.72
9/25/1990	762.86	7/10/1990	763.73	8/14/1990	763.19	9/27/1990	763.19	1/4/2010	768.95	1/4/2010	767.6	9/14/2004	763.73	9/30/2009	765.74
12/19/1990	762.51	8/14/1990	763.73	9/27/1990	762.74	1/14/1991	762.94	9/13/2010	768.6	9/13/2010	767.37	12/14/2004	764.43	3/25/2010	764.29
2/18/1991	762.36	9/26/1990	763.18	1/14/1991	762.59	2/20/1991	762.79	12/9/2010	768.93	12/9/2010	767.67	3/23/2005	765.43	10/6/2010	764.78
3/13/1991	762.36	10/22/1990	763.18	2/20/1991	762.48	3/20/1991	762.82	3/9/2011	769.05	3/9/2011	767.72	6/28/2005	764.65	3/31/2011	765.58
3/20/1991	762.36	1/10/1991	762.68	3/20/1991	762.45	4/9/1991	762.74	6/9/2011	769.52	6/9/2011	768.22	9/27/2005	764.33	9/28/2011	765.46
4/8/1991	762.46	2/18/1991	762.53	4/9/1991	762.41	6/12/1991	762.92	12/8/2011	768.83	9/8/2011	767.72	3/29/2006	763.04	3/26/2012	764.95
6/11/1991	761.64	3/20/1991	762.68	6/12/1991	759.74	9/11/1991	762.59	3/7/2012	768.86	12/8/2011	767.47	10/4/2006	763.1	9/25/2012	763.05
9/11/1991	762.43	4/9/1991	762.51	9/10/1991	761.07	12/9/1991	762.69	6/13/2012	768.44	3/7/2012	767.53	4/3/2007	763.62	3/25/2013	762.19
12/9/1991	761.24	6/12/1991	763.21	11/20/1991	762.14	12/13/1991	762.74	9/6/2012	767.74	6/13/2012	767.18	9/10/2007	764.41	9/24/2013	762.26
12/13/1991	762.41	9/12/1991	763.86	12/6/1991	761.09	3/11/1992	763.01	12/5/2012	766.91	9/6/2012	766.41	4/1/2008	764.84		
3/11/1992	762.56	12/9/1991	762.68	3/11/1992	762.52	4/25/1992	763.04	3/6/2013	766.3	12/5/2012	765.59	10/6/2008	770.51		
4/23/1992	762.01	12/13/1991	762.68	4/26/1992	762.44	6/11/1992	763.04	6/6/2013	766.73	3/6/2013	765.04	3/31/2009	770.24		
6/11/1992	762.79	3/12/1992	762.83	6/10/1992	762.47	9/23/1992	762.66	9/5/2013	766.83	6/6/2013	765.54	9/30/2009	768.56		
9/23/1992	762.34	4/25/1992	762.98	9/22/1992	762.11	12/10/1992	762.84			9/5/2013	765.6	3/30/2010	766.94		
9/23/1992	762.34	6/11/1992	763.05	12/9/1992	762.39	3/2/1993	762.29					10/6/2010	767.25		
12/10/1992	762.56	9/23/1992	762.75	3/1/1993	762.89	6/10/1993	764.89					3/30/2011	767.93		
12/10/1992	762.56	9/23/1992	762.75	6/9/1993	764.44	9/13/1993	766.74					9/29/2011	768.07		
3/2/1993	762.76	12/10/1992	762.86	9/13/1993	766.54	12/7/1993	768.09					3/28/2012	767.48		
6/10/1993	764.41	12/10/1992	762.86	12/6/1993	767.88	3/7/1994	769.49					9/27/2012	765.95		
9/14/1993	766.01	3/2/1993	762.94	3/3/1994	768.84	6/9/1994	768.88					3/28/2013	765.16		
12/7/1993	766.94	6/10/1993	764.76	6/8/1994	768.58	8/31/1994	768.22					9/26/2013	765.13		
3/7/1994	767.91	9/14/1993	766.12	8/31/1994	767.98	12/12/1994	767.46								
6/9/1994	767.49	12/7/1993	766.68	12/12/1994	767.22	3/13/1995	766.95								
8/31/1994	766.91	3/7/1994	767.63	3/13/1995	765.54	6/13/1995	766.36								
12/12/1994	766.31	6/9/1994	767.08	6/12/1995	766	9/14/1995	766.83								
3/13/1995	765.93	8/31/1994	766.64	9/13/1995	766.79	12/12/1995	766.58								
6/13/1995	765.48	12/13/1994	766.08	12/11/1995	766.43	9/17/1996	764.17								
6/13/1995	765.48	3/13/1995	765.86	9/16/1996	763.04	12/11/1996	762.86								
9/14/1995	766.24	6/13/1995	765.51	12/11/1996	762.49	10/21/2013	763.64								
9/14/1995	766.24	6/13/1995	765.51	10/21/2013	763.16										
9/14/1995	766.24	9/14/1995	766.64												
12/12/1995	766.03	9/14/1995	766.64												
12/12/1995	766.03	9/14/1995	766.64												
12/12/1995	766.03	12/12/1995	766.29												
12/12/1995	766.03	12/12/1995	766.29												
2/29/1996	774.29	12/12/1995	766.29												
2/29/1996	774.29	12/12/1995	766.29												
6/12/1996	774.23	9/17/1996	766.22												
9/17/1996	765.2	12/12/1996	765.48												
12/11/1996	764.41	12/12/1996	765.48												
12/11/1996	764.41	12/12/1996	765.48												
12/11/1996	764.41	12/12/1996	765.48												
12/11/1996	764.41	3/15/1999	762.1												
3/10/1999	761.84	6/8/1999	762.6												
6/8/1999	762.02	9/8/1999	762.76												
9/8/1999	762.46	12/2/1999	762.36												
12/7/1999	761.98	3/8/2000	762.2												
3/7/2000	761.32	6/5/2000	763.04												
6/5/2000	761.84	9/11/2000	762.84												
9/11/2000	762.01	11/30/2000	762.6												
11/30/2000	761.81	9/7/2004	763.68												
3/12/2001	761.64	12/7/2004	763.94												
9/10/2002	763	3/8/2005	764.64												
12/4/2002	763.4	6/14/2005	764.32												
3/10/2003	759.81	9/13/2005	763.83												
3/10/2003	763.12	3/13/2006	762.75												
6/9/2003	763.36	6/13/2006	762.67												
9/9/2003	763.02	9/6/2006	762.68												
11/25/2003	762.58	12/6/2006	762.76												
3/4/2004	762	3/6/2007	762.58												
6/8/2004	762.14	6/6/2007	763.39												
9/8/2004	762.92	9/17/2007	764												
12/2/2004	763.37	12/5/2007	764.13												
3/7/2005	762.69	3/4/2008	764.16												
6/13/2005	763.78	6/4/2008	765.41												
9/13/2005	763.35	9/8/2008	768.63												
3/13/2006	762.2	12/3/2008	768.83												

Table A.7
Groundwater Elevation Data
Parcels M1 and T1 - WDNR Closure Request
Badger Army Ammunition Plant

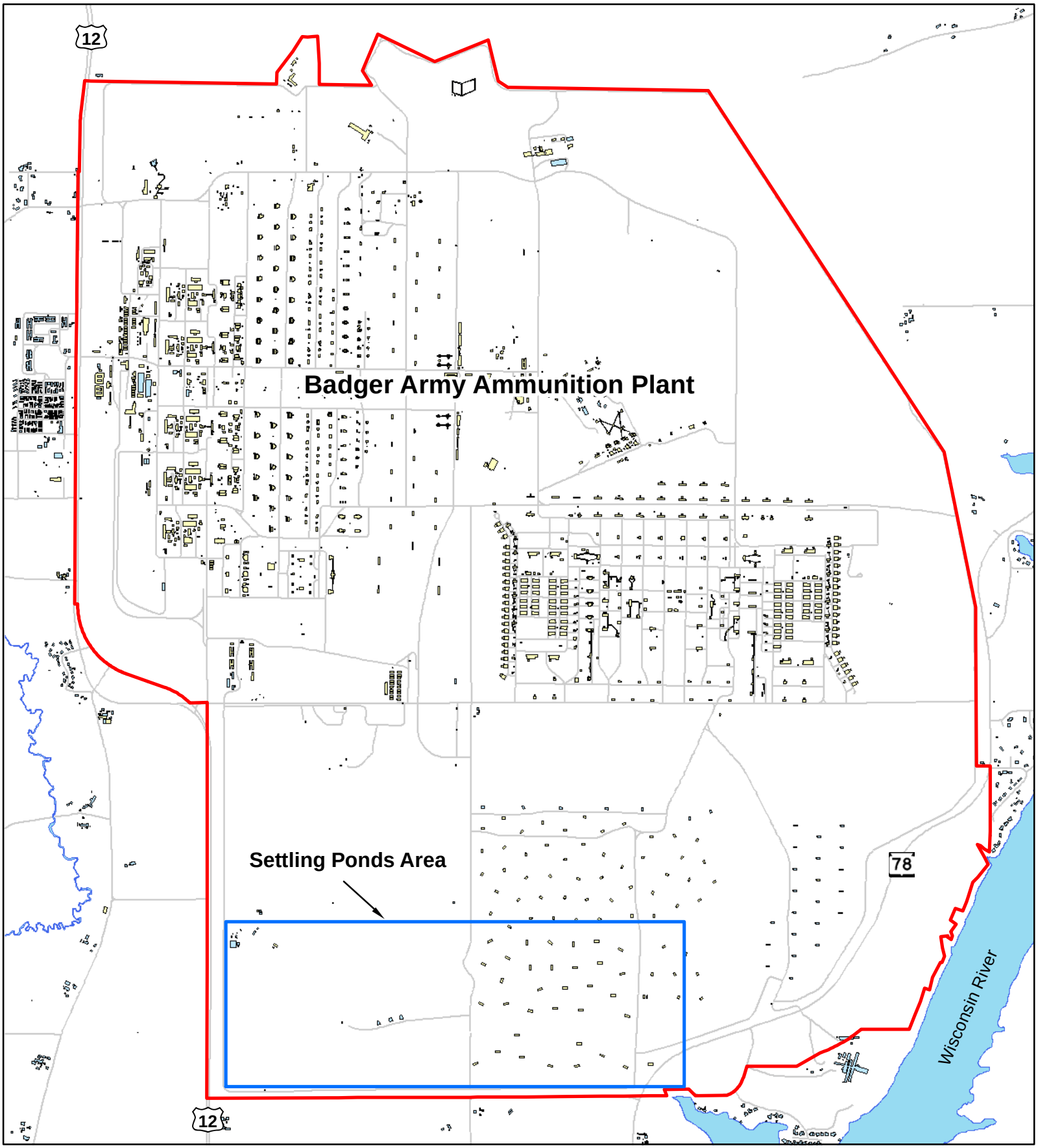
6/13/2006	761.99	3/2/2009	768.26
9/6/2006	761.97	6/8/2009	768.24
12/6/2006	761.95		
3/6/2007	761.97		
6/6/2007	762.75		
9/17/2007	763.37		
12/5/2007	763.72		
3/3/2008	763.72		
6/4/2008	764.77		
9/8/2008	768.51		
12/3/2008	768.97		
3/2/2009	768.37		
6/8/2009	768.17		
9/1/2009	767.27		
12/14/2009	766.37		
3/1/2010	765.65		
3/1/2010	765.65		
6/7/2010	765.36		
6/7/2010	765.36		
9/9/2010	765.97		
12/8/2010	766.27		
3/8/2011	766.29		
6/8/2011	766.95		
9/7/2011	766.03		
12/7/2011	766.48		
3/6/2012	766.13		
6/12/2012	765.76		
9/5/2012	764.97		
12/4/2012	764.09		
3/5/2013	763.55		
6/5/2013	764.16		
9/4/2013	764.17		

Elevations are expressed in mean sea level (msl).

Data Tables Not Relevant To Case Closure Request

A.8. Other

No other remedial actions beyond the soil excavations have taken place on this parcel. Long term groundwater monitoring will continue for the entire site, including wells located within Parcels M1 and T1. Currently, there is no natural attenuation data available. No additional remediation is anticipated.



Legend

- Badger Army Ammunition Plant Boundary
- Final Creek
- Paved Road
- Settling Pond
- Spoils Disposal Area
- Existing Building
- Former Building Footprint

Figure B.1.a.

Site Location Map
Parcels M1 and T1 - WDNR Closure Request
Final Creek, Settling Ponds, and Spoils Disposal Areas
Badger Army Ammunition Plant

1 inch = 2,500 feet

0 1,500 3,000 6,000 Feet

BTS
BADGER TECHNICAL SERVICES

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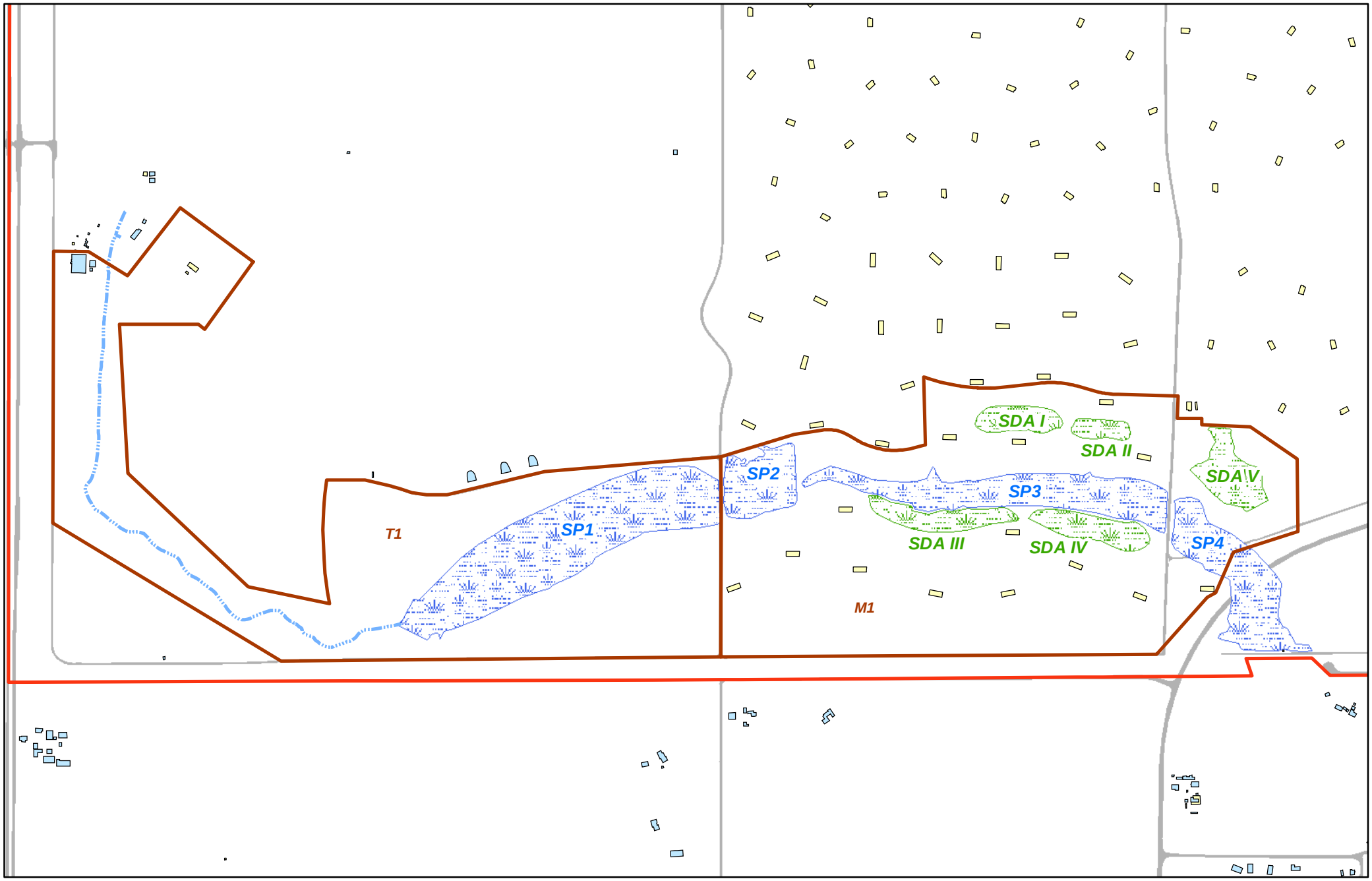
\\Pc-gis\maingis_disk\GIS_Projects\WDNR Closure Requests\
Parcel M1 and T1\Figure B1a Site Location Map



Legend

- Settling Pond (SP)
- Spoils Disposal Area (SDA)
- Badger Army Ammunition Plant Boundary
- Parcel Boundary
- Final Creek
- Existing Building
- Former Building Footprint
- Paved Road

Figure B.1.b.

Detailed Site Map
Parcels M1 and T1 - WDNR Closure Request
Badger Army Ammunition Plant

1 inch = 939 feet

0 1,050 2,100 4,200 Feet

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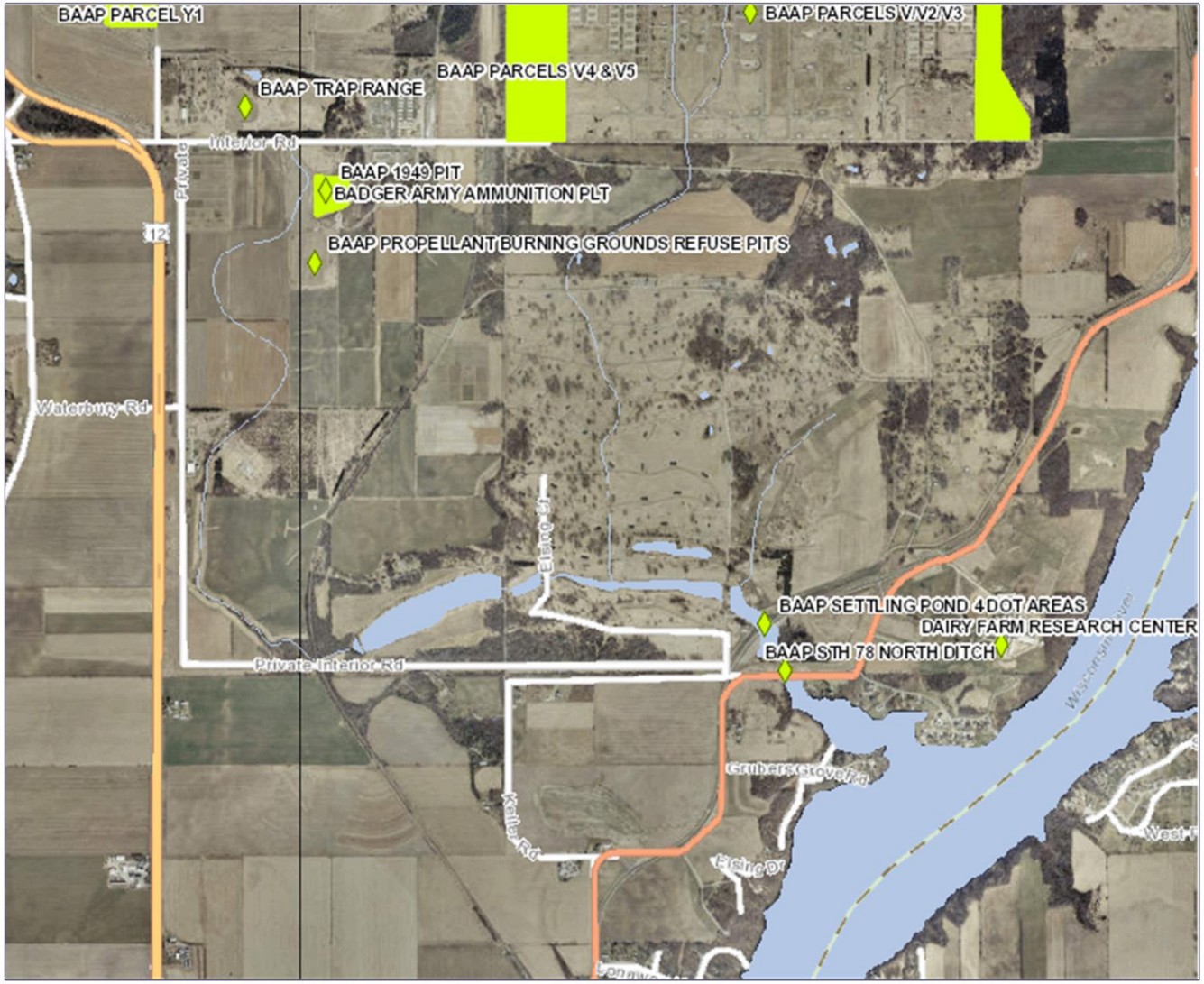
Parcel M1 & T1\B1b Detailed Site Map.mxd

Figure B1c - RR Site Map

Parcels M1 & T1-WDNR Closure Request



Legend

- Open Site (ongoing cleanup)
- Open Site Boundary
- Closed Site (completed cleanup)
- Closed Site Boundary
- Airport
- 2010 Air Photos (WROC)
- Cities
- Villages

0.9 0 0.43 0.9 Miles

NAD_1983_HARN_Wisconsin_TM

1: 27,434

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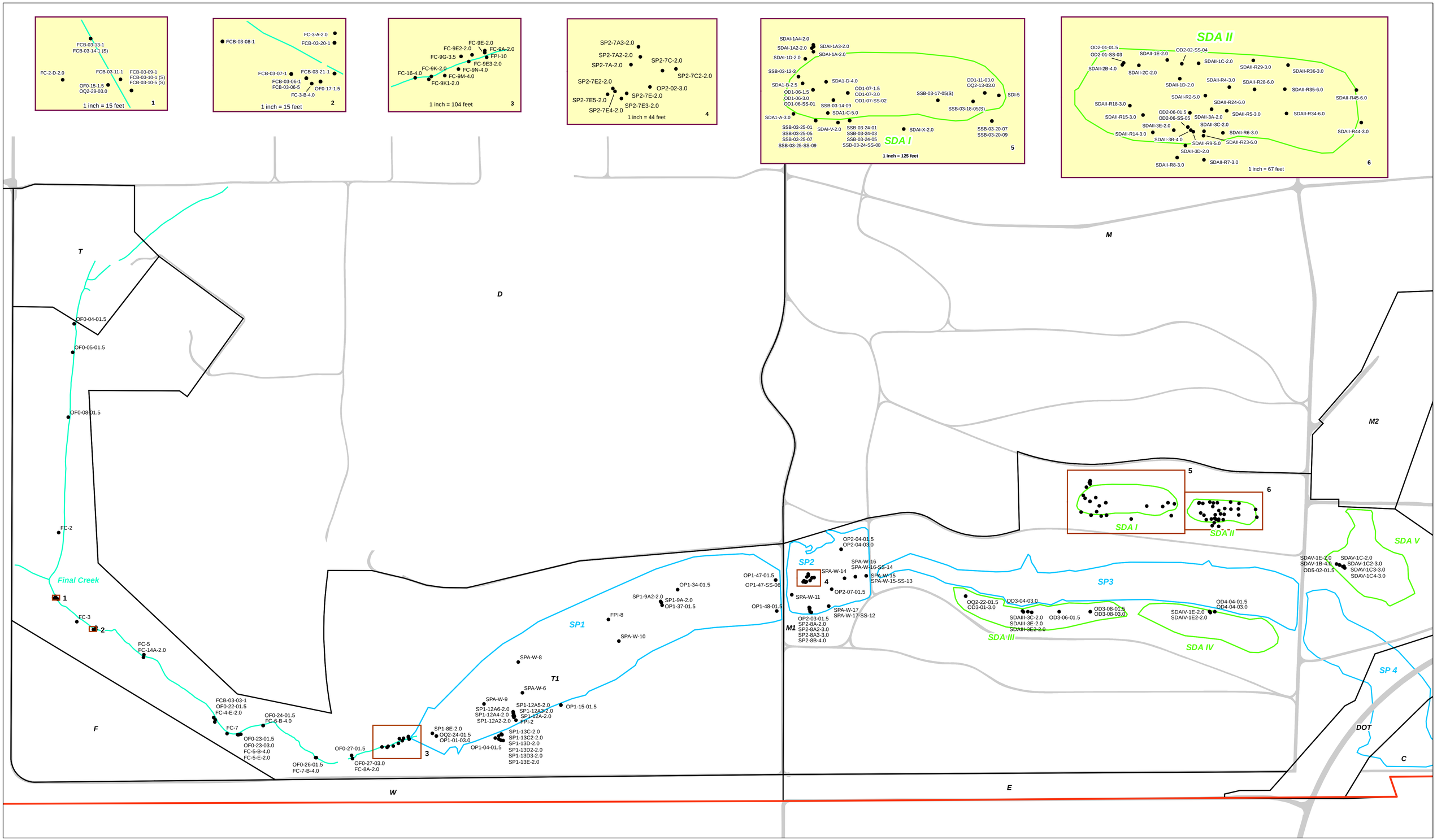
Note: Not all sites are mapped.

Notes



Legend

- Pre-Remedial Soil Sample Location
- Badger Army Ammunition Plant Boundary
- Investigation/Remedial Action Area
- Final Creek
- Paved Road
- Settling Pond (SP)
- Spoils Disposal Area (SDA)
- Parcel Boundary
- T1 Parcel

Figure B2a

Pre-Remedial Soil Contamination Sample Locations
Parcels M1 & T1 - WDNR Closure Request
Final Creek, Settling Ponds, and Spoils Disposal Areas
Badger Army Ammunition Plant

1 inch = 275 feet

0 600 1,200 2,400 Feet

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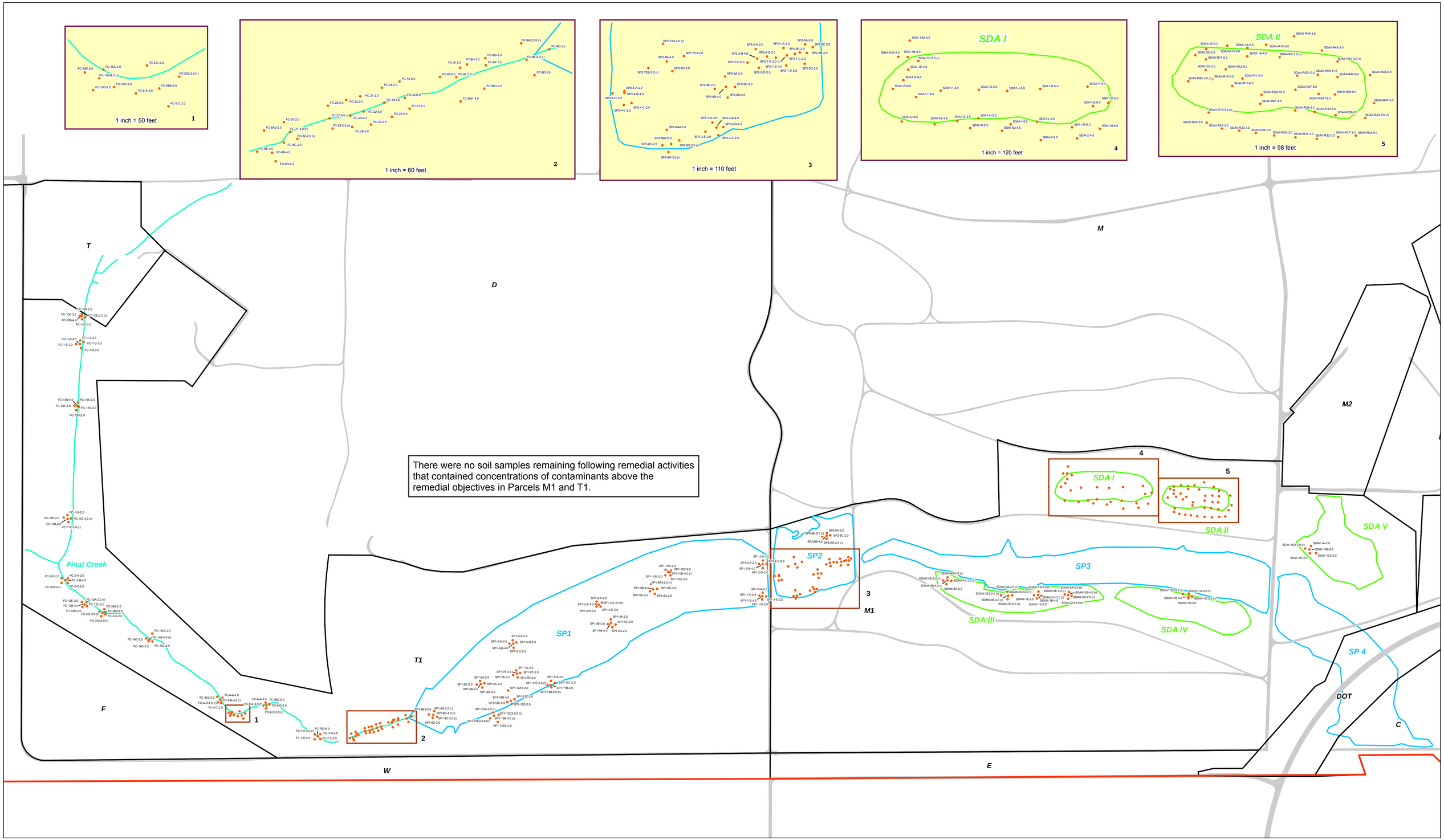
\\Pc-gis\maingis_disk\GIS_Projects\WDNR Closure Requests\Parcel M1 & T1\Figure B2a



Legend

- Post-Remedial Sample Location
- Badger Army Ammunition Plant Boundary
- Investigation/Remedial Action Area
- Final Creek
- Paved Road
- Settling Pond (SP)
- Spoils Disposal Area (SDA)
- Parcel Boundary
- T1 Parcel
- (r) Indicates result (depth of 4 ft or less) is above a USEPA residential regional screening goal

Figure B.2.b.

Post-Remedial Soil Sample Locations
Parcels M1 & T1 – WDNR Case Closure – GIS Registry
Final Creek, Settling Ponds, and Spoils Disposal Areas
Badger Army Ammunition Plant

1 inch = 286 feet

0 625 1,250 2,500 Feet

BTS
BADGER TECHNICAL SERVICES

\\Pc-gis\maingis_disk\GIS_Projects\WDNR Closure Requests\Parcels M1& T1\mxds\Figure B2b Post-Remedial

Figures Not Relevant To Case Closure Request

B.2.c. Pre/Post-Remedial (Remaining) Soil Contamination

There were no soil samples remaining following remedial activities that contained concentrations of contaminants above the remedial objectives in Parcels M1 and T1. See *Parcels M1 & T1 – Wisconsin Department of Natural Resources Case Closure Request* report.

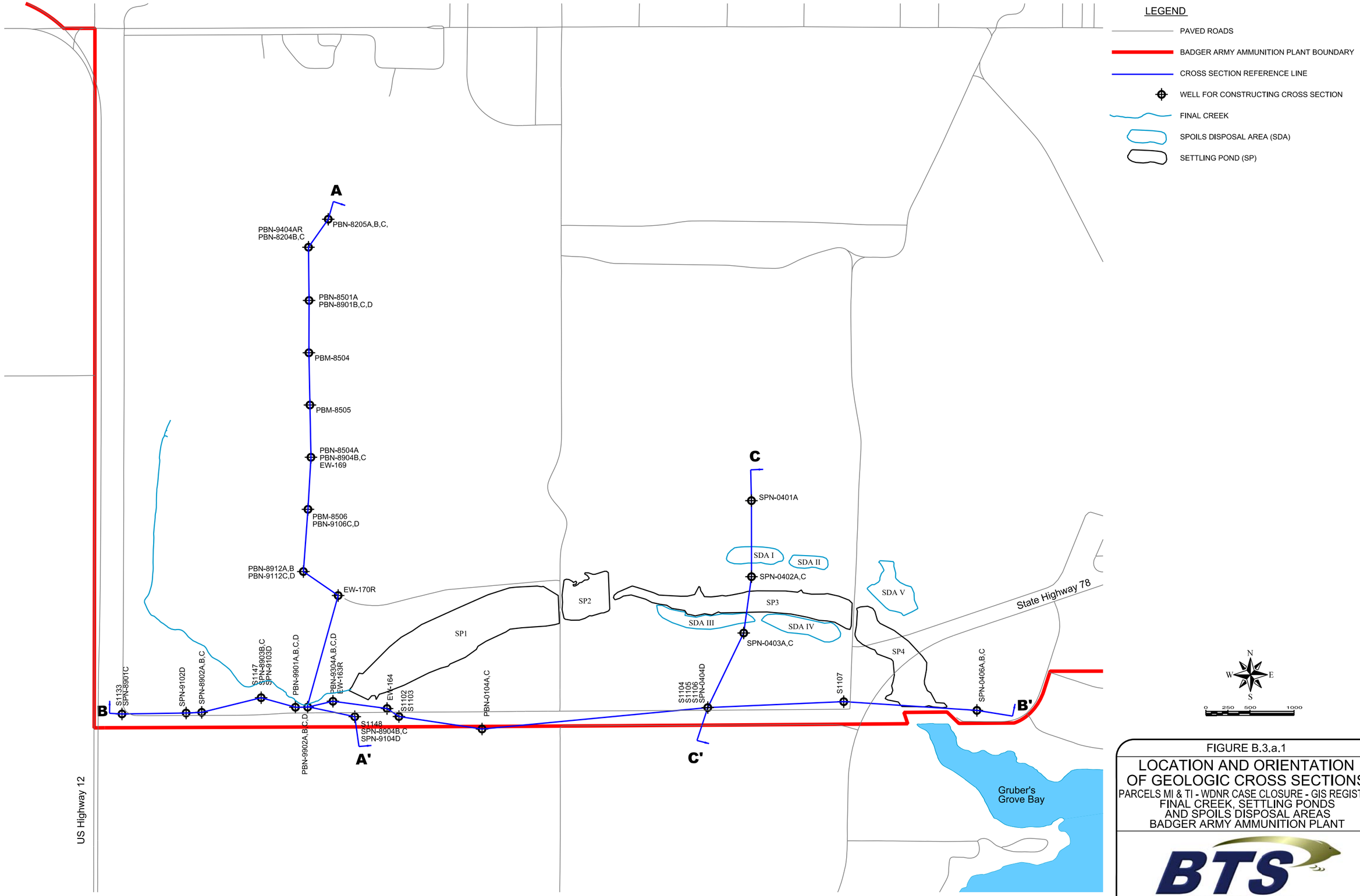
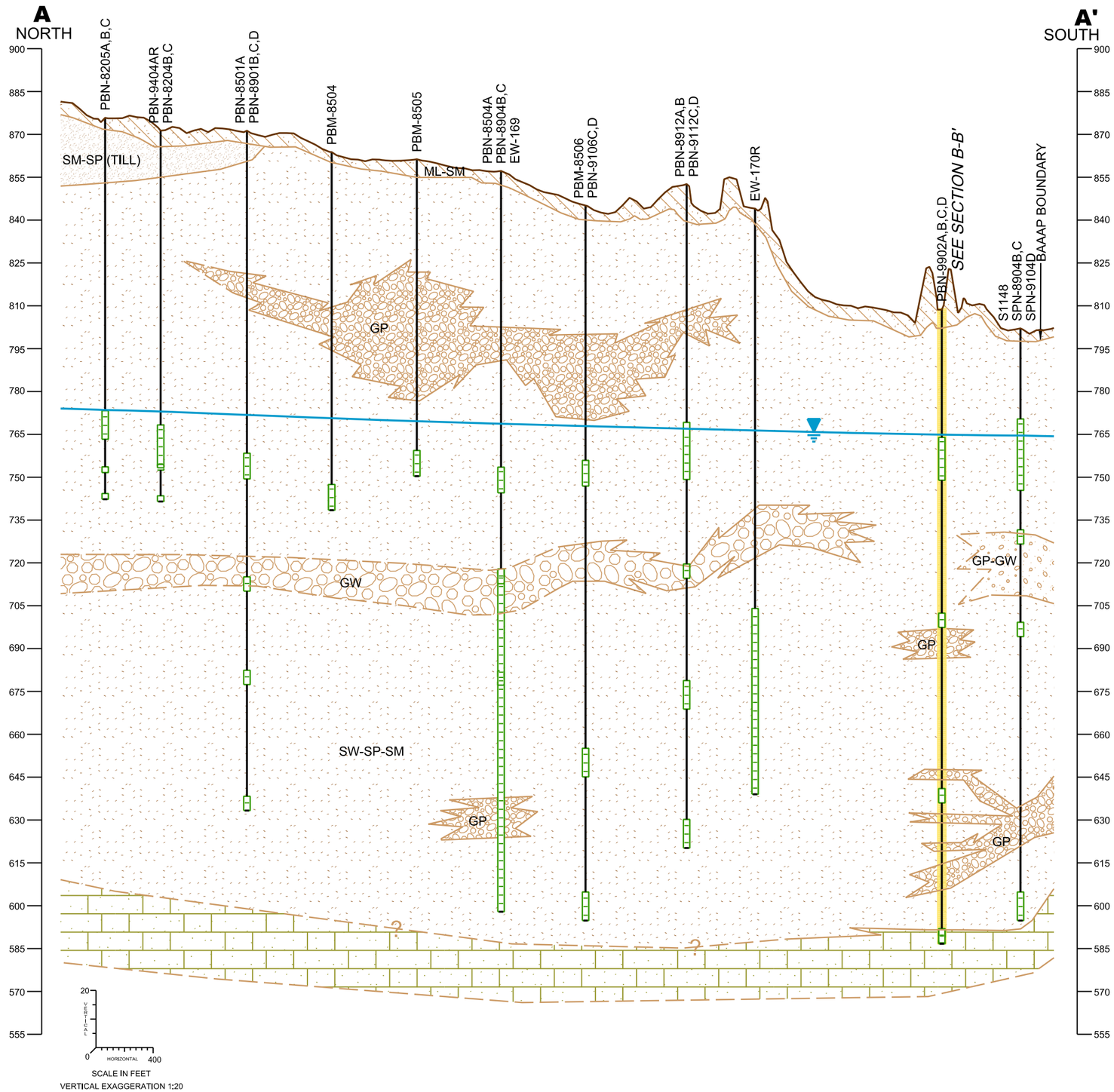


FIGURE B.3.a.1

LOCATION AND ORIENTATION OF GEOLOGIC CROSS SECTIONS

PARCELS MI & TI - WDNR CASE CLOSURE - GIS REGISTRY
FINAL CREEK, SETTLING PONDS
AND SPOILS DISPOSAL AREAS
BADGER ARMY AMMUNITION PLANT

BTS
BADGER TECHNICAL SERVICES



LEGEND

WELL DESIGNATION; SUFFIXES REFER TO WATER TABLE WELL (A) AND PIEZOMETER (B,C,D,E)

GROUND SURFACE

WATER TABLE ELEVATION

SCREENED INTERVAL

BOTTOM OF EXPLORATION

GEOLOGIC DESCRIPTIONS:

ML-SM	SILT AND SILTY SAND MIXTURE, LOESS
SM-SP	SAND, MIXTURE OF VARYING GRAIN SIZES, GLACIAL TILL
SW-SP-SM	SAND, MIXTURE OF VARYING GRAIN SIZES, GLACIAL OUTWASH
ML	SILT, GLACIAL OUTWASH
GP	GRAVEL, POORLY GRADED, GLACIAL OUTWASH
GW	GRAVEL, WELL GRADED, GLACIAL OUTWASH
GP-GW	GRAVEL, MIXTURE, GLACIAL OUTWASH
	BEDROCK, EAU CLAIRE FORMATION (SANDSTONE)

NOTES:

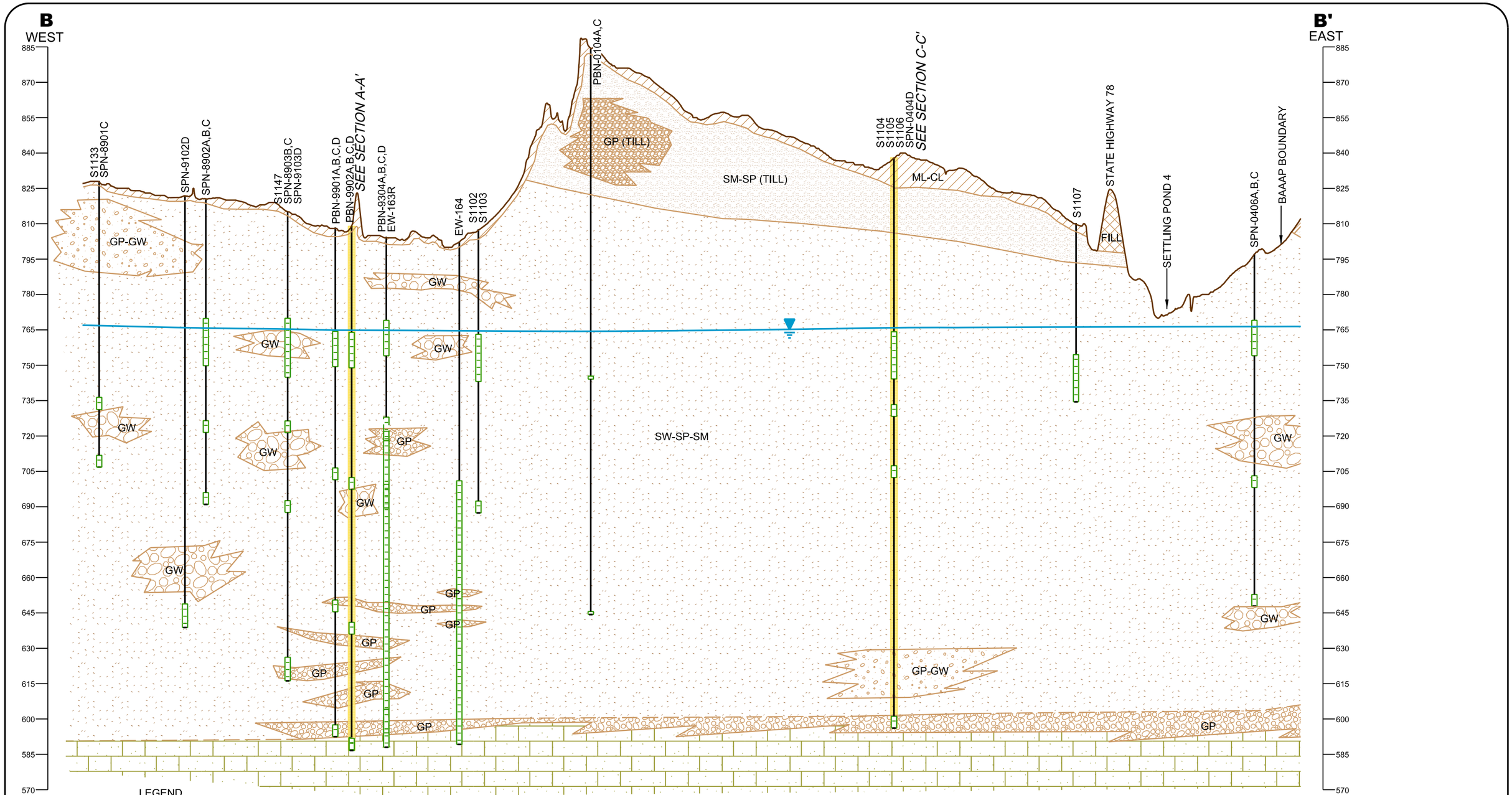
1. SEE FIGURE B.3.a.1 FOR LOCATION AND ORIENTATION OF PROFILES
2. PROFILES ARE BASED ON AN INTERPRETATION OF AVAILABLE SUBSURFACE DATA AND THE APRIL 1993 REMEDIAL INVESTIGATION REPORT PREPARED BY ABB ENVIRONMENTAL SERVICES, INC.
3. WATER LEVELS ARE BASED ON DATA COLLECTED DURING 8/10, 9/10, AND 10/10
4. MSL - MEAN SEA LEVEL
5. WELLS COMMON TO INTERSECTING CROSS SECTIONS ARE HIGHLIGHTED IN YELLOW

FIGURE B.3.a.2

GEOLOGIC CROSS SECTION A-A'

PARCELS MI & TI - WDNR CASE CLOSURE - GIS REGISTRY
FINAL CREEK, SETTLING PONDS
AND SPOILS DISPOSAL AREAS
BADGER ARMY AMMUNITION PLANT

BTS
BADGER TECHNICAL SERVICES



LEGEND

20 VERTICAL 0 HORIZONTAL 400

SCALE IN FEET

VERTICAL EXAGGERATION 1:20

DBM-8901 — WELL DESIGNATION; SUFFIXES REFER TO WATER TABLE WELL (A) AND PIEZOMETER (B,C,D,E)

GROUND SURFACE

WATER TABLE ELEVATION

SCREENED INTERVAL

BOTTOM OF EXPLORATION

GEOLOGIC DESCRIPTIONS:

FILL	FILL MATERIAL
ML-CL	SILT AND CL AY MIXTURE, LOESS
SM-SP	SAND, MIXTURE OF VARYING GRAIN SIZES, GLACIAL TILL
SW-SP-SM	SAND, MIXTURE OF VARYING GRAIN SIZES, GLACIAL OUTWASH
GP	GRAVEL, POORLY GRADED, GLACIAL TILL
GP	GRAVEL, POORLY GRADED, GLACIAL OUTWASH
GW	GRAVEL, WELL GRADED, GLACIAL OUTWASH
GP-GW	GRAVEL, MIXTURE, GLACIAL OUTWASH
	BEDROCK, EAU CLAIRE FORMATION (SANDSTONE)

NOTES:

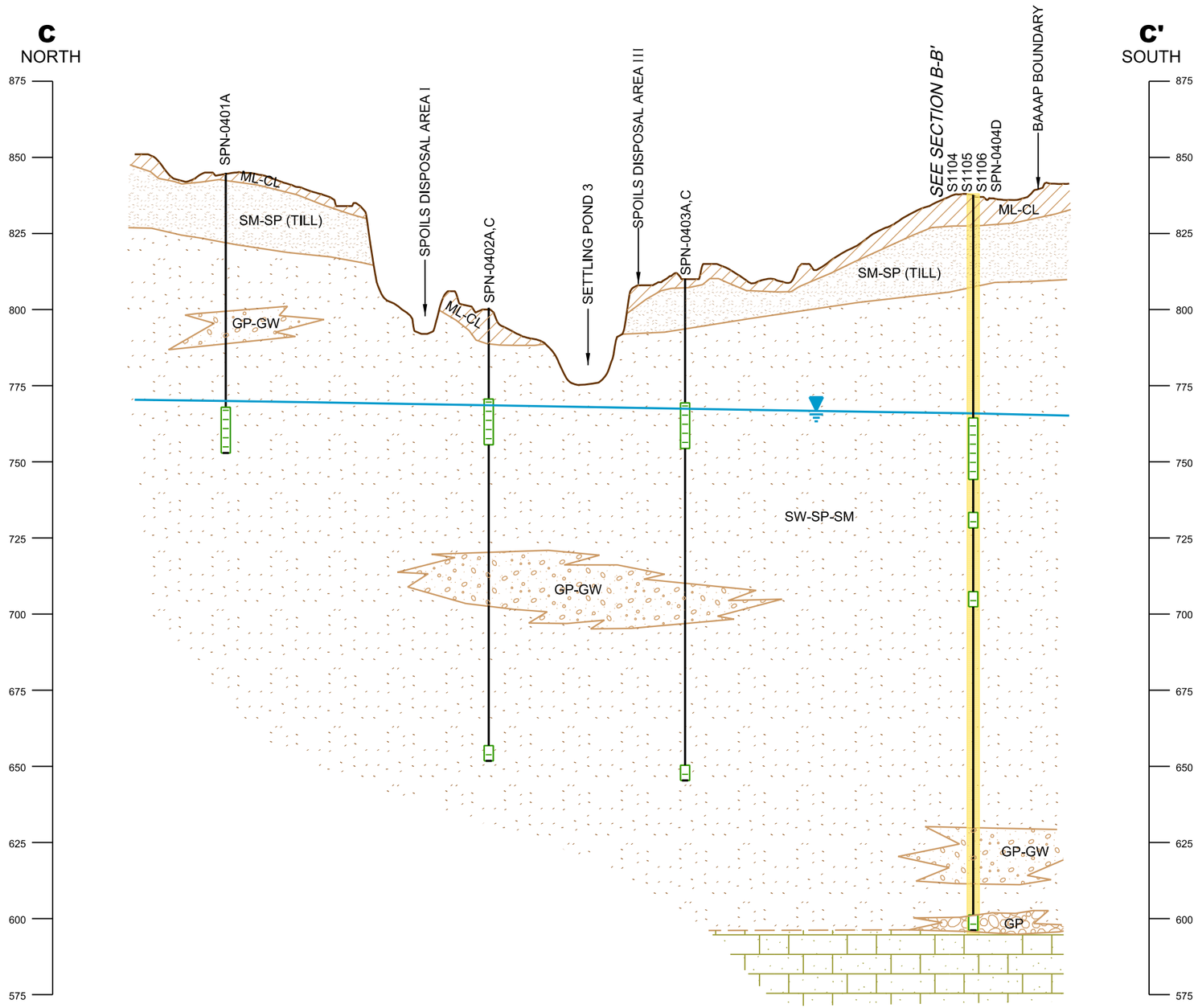
1. SEE FIGURE B.3.a.1 FOR LOCATION AND ORIENTATION OF PROFILES
2. PROFILES ARE BASED ON AN INTERPRETATION OF AVAILABLE SUBSURFACE DATA AND THE APRIL 1993 REMEDIAL INVESTIGATION REPORT PREPARED BY ABB ENVIRONMENTAL SERVICES, INC.
3. WATER LEVELS ARE BASED ON DATA COLLECTED DURING 8/10, 9/10, AND 10/10
4. MSL - MEAN SEA LEVEL
5. WELLS COMMON TO INTERSECTING CROSS SECTIONS ARE HIGHLIGHTED IN YELLOW

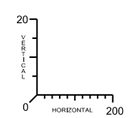
FIGURE B.3.a.3

GEOLOGIC CROSS SECTION B-B'

PARCELS MI & TI - WDNR CASE CLOSURE - GIS REGISTRY
FINAL CREEK, SETTLING PONDS
AND SPOILS DISPOSAL AREAS
BADGER ARMY AMMUNITION PLANT

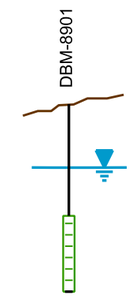
BTS
BADGER TECHNICAL SERVICES





SCALE IN FEET
VERTICAL EXAGGERATION 1:10

LEGEND



WELL DESIGNATION; SUFFIXES REFER TO WATER TABLE WELL (A) AND PIEZOMETER (B,C,D,E)

GROUND SURFACE

WATER TABLE ELEVATION

SCREENED INTERVAL

BOTTOM OF EXPLORATION

GEOLOGIC DESCRIPTIONS:

ML-CL	SILT AND CL AY MIXTURE, LOESS
SM-SP	SAND, MIXTURE OF VARYING GRAIN SIZES, GLACIAL TILL
SW-SP-SM	SAND, MIXTURE OF VARYING GRAIN SIZES, GLACIAL OUTWASH
GP	GRAVEL, POORLY GRADED, GLACIAL OUTWASH
GP-GW	GRAVEL, MIXTURE, GLACIAL OUTWASH
	BEDROCK, EAU CLAIRE FORMATION (SANDSTONE)

NOTES:

1. SEE FIGURE B.3.a.1 FOR LOCATION AND ORIENTATION OF PROFILES
2. PROFILES ARE BASED ON AN INTERPRETATION OF AVAILABLE SUBSURFACE DATA AND THE APRIL 1993 REMEDIAL INVESTIGATION REPORT PREPARED BY ABB ENVIRONMENTAL SERVICES, INC.
3. WATER LEVELS ARE BASED ON DATA COLLECTED DURING 8/10, 9/10, AND 10/10
4. MSL - MEAN SEA LEVEL
5. WELLS COMMON TO INTERSECTING CROSS SECTIONS ARE HIGHLIGHTED IN YELLOW

FIGURE B.3.a.4

GEOLOGIC CROSS SECTION C-C'

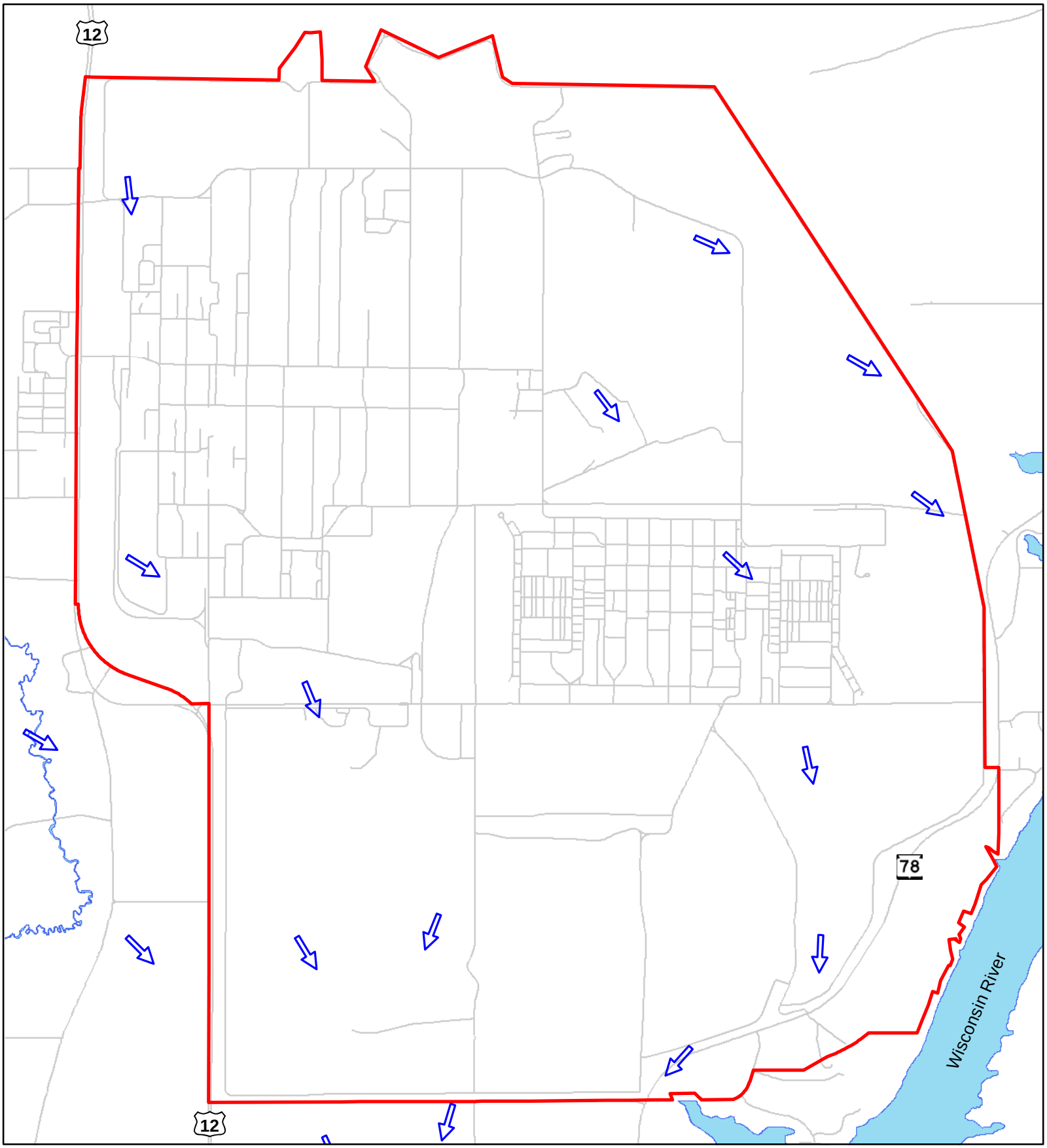
PARCELS MI & TI - WDNR CASE CLOSURE - GIS REGISTRY
FINAL CREEK, SETTLING PONDS
AND SPOILS DISPOSAL AREAS
BADGER ARMY AMMUNITION PLANT

BTS
BADGER TECHNICAL SERVICES

Figures Not Relevant To Case Closure Request

B.3.b. Groundwater Isoconcentration

Though groundwater contaminant concentrations exceed Chapter NR 140 Wisconsin Administrative Code Enforcement Standards, the source of these contaminants are former propellant production areas north and northwest of Parcels M1 and T1. See Revised Alternative Feasibility Study Groundwater Remedial Strategy.



Legend

- Badger Army Ammunition Plant Boundary
- Paved Road
- Groundwater Flow
- Wisconsin River

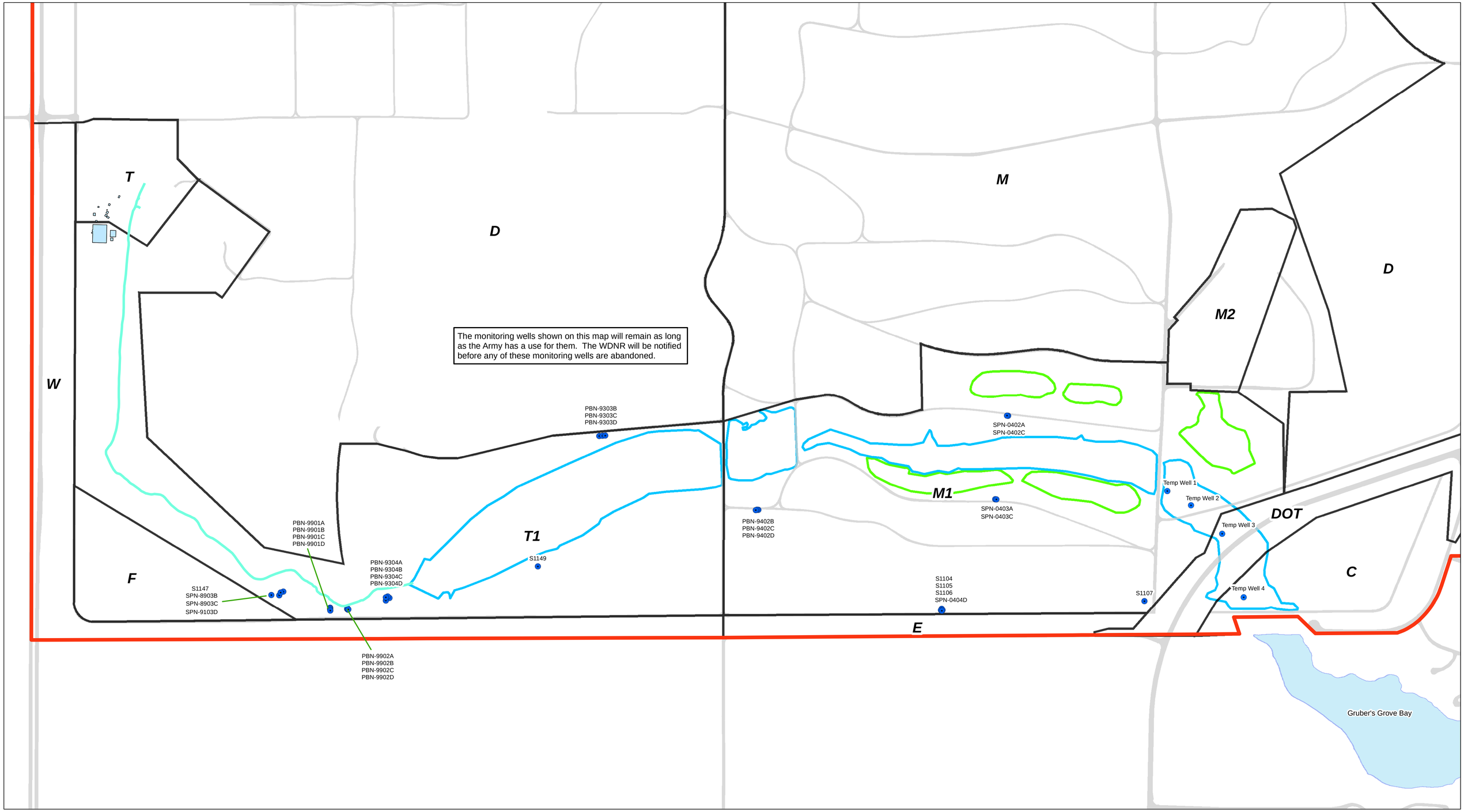
Figure B.3.c.

Groundwater Flow Map
Parcels M1 & T1 - WDNR Closure Request
Final Creek, Settling Ponds, & Spoils Disposal Areas
Badger Army Ammunition Plant

1 inch = 2,500 feet

0 1,800 3,600 7,200 Feet

\\Pc-gis\maingis_disk\GIS_Projects\WDNR Closure Request\Parcel M1 & T1\mxds\Figure B3c GW Flow Map



Legend

- Well Location
- Badger Army Ammunition Plant Boundary
- Paved Road
- Parcel Boundary
- *T1* Parcel
- Settling Pond (SP)
- Spoils Disposal Area (SDA)
- Final Creek
- Buildings

Figure B.3.d.
Locations of Wells
WDNR Case Closure - GIS Registry
Final Creek, Settling Ponds, and Spoils Disposal Areas
Badger Army Ammunition Plant

1 inch = 333 feet

0 700 1,400 2,800 Feet

BTS
BADGER TECHNICAL SERVICES

\\Pc-gis\maingis_disk\GIS_Projects\WDNR Closure Request\Parcel M1 & T1\mxds\B3d Monitoring Wells

Figures Not Relevant To Case Closure Request

B.4.a. Vapor Intrusion Map

Contaminants of concern are not volatile organic compounds that would create a vapor intrusion risk.

Figures Not Relevant To Case Closure Request

B.4.b. Other Media of Concern

Although the small ponds located at the outfall of Final Creek in Settling Pond 1 are not considered large enough to provide habitat or drinking water for the majority of wildlife under consideration within the 70-acre area, a surface-water sample was collected from one of the small ponds and analyzed for the COCs that were evaluated in the Baseline Ecological Risk Assessment (BERA). No organic Contaminants of Concern (COCs) were detected in the surface water. Lead was detected at a trace concentration (6.8 micrograms per liter (µg/l)), which is close to the method detection limit (5.0 µg/l). For further details on the surface water sampling, please refer to Section 5.1.6 and Appendix C3 of the BERA. Based on these analytical results, the surface water within the small ponds is not considered a pathway of chemical exposure to wildlife in the site area.

Figures Not Relevant To Case Closure Request

B.4.c Other

No other remedial actions beyond the soil excavations have taken place on this parcel. Long term groundwater monitoring will continue for the entire site, including wells located within Parcels M1 and T1. Currently, there is no natural attenuation data available. No additional remediation is anticipated.

Documentation of Remedial Action (Attachment C)

DISCLAIMER

Documents contained in Attachment C of the Case Closure – GIS Registry (Form 4400-202) are not included in the electronic version (GIS Registry Packet) available on RR Sites Map to limit file size.

For information on how to obtain a copy or to review the file, please contact the Remediation & Redevelopment (RR) Environmental Program Associate (EPA) at dnr.wi.gov/topic/Brownfields/Contact.html

WISCONSIN
DEPT. OF NATURAL RESOURCES

Maintenance Plan Not Relevant To Case Closure Request

D.1. Location map(s)

Maintenance plan not required for closure.

Maintenance Plan Not Relevant To Case Closure Request

D.2. NR720.19 Analysis

Maintenance plan not required for closure.

Maintenance Plan Not Relevant To Case Closure Request

D.3. Description of maintenance action(s)

Maintenance plan not required for closure.

Maintenance Plan Not Relevant To Case Closure Request

D.4. Inspection log

Maintenance plan not required for closure.

Maintenance Plan Not Relevant To Case Closure Request

D.5. Contact Information

Maintenance plan not required for closure.

State of Wisconsin
Department of Natural Resources

MONITORING WELL CONSTRUCTION
Form 4400-113A 8-89

Facility/Project Name: BADGER ARMY AMMUNITION PLANT	Grid Location: ____ ft. ☐ N. ☐ S. ____ ft. ☐ E. ☐ W.	Well Name: BN 93 03 B
Facility License, Permit or Monitoring Number: ____		Wis. Unique Well Number: ____ DNR Well Number: ____
Type of Well: Water Table Observation Well ☒ 11; Piezometer ☐ 12	Section Location: NE 1/4 of NE 1/4 of Section 25, T 10 N, R 6 ☒ E ☐ W	Date Well Installed: 03 / 09 / 93 (mm dd yy)
Distance Well Is From Waste/Source Boundary: ____ ft.	Location of Well Relative to Waste/Source: ☐ Upgradient ☐ Sidegradient ☐ Downgradient ☒ Not Known	Well Installed By: (Person's Name and Firm): Kevin McCumber, Exploration Technology Inc.
Is Well A Point of Enforcement Std. Application? ☐ Yes ☐ No		

A. Protective pipe, top elevation 3.0 ft. MSL

B. Well casing, top elevation 2.5 ft. MSL

C. Land surface elevation 0.0 ft. MSL

D. Surface seal, bottom ____ ft. MSL or 4.0 ft.

12. USCS classification of soil near screen:
☐ GP ☐ GM ☐ GC ☐ GW ☒ SW ☐ SP
☐ SM ☐ SC ☐ ML ☐ MH ☒ CL ☐ CH
☐ Bedrock

13. Sieve analysis attached? ☐ Yes ☒ No

14. Drilling method used: Rotary ☒ 50; Hollow Stem Auger ☐ 41; Other ☐

15. Drilling fluid used: Water ☐ 02; Air ☐ 01; Drilling Mud ☒ 03; None ☐ 99

16. Drilling additives used? ☒ Yes ☐ No

Describe: Aqua Gold Bentonite

17. Source of water (attach analysis):

E. Bentonite seal, top ____ ft. MSL or 70.0 ft.

F. Fine sand, top ____ ft. MSL or 76.0 ft.

G. Filter pack, top ____ ft. MSL or 78.0 ft.

H. Well screen, top ____ ft. MSL or 81.0 ft.

I. Well screen, bottom ____ ft. MSL or 91.0 ft.

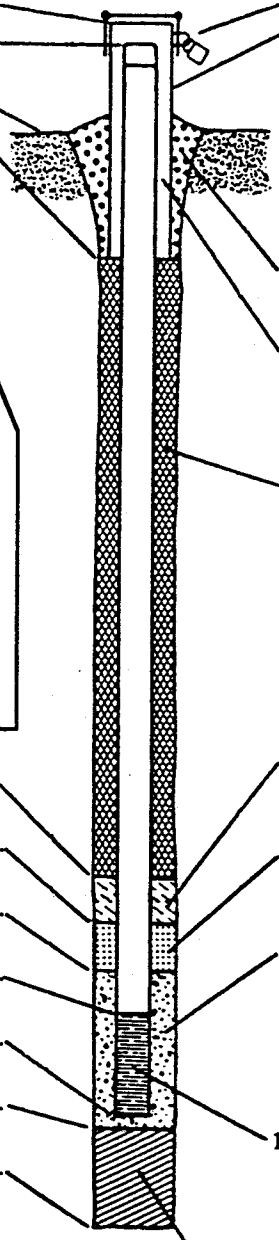
J. Filter pack, bottom ____ ft. MSL or 93.0 ft.

K. Borehole, bottom ____ ft. MSL or 93.0 ft.

L. Borehole, diameter 8.0 in.

M. O.D. well casing 4.5 in.

N. I.D. well casing 3.86 in.



1. Cap and lock? ☒ Yes ☐ No

2. Protective cover pipe:
a. Inside diameter: 8.0 in.
b. Length: 8.0 ft.
c. Material: Steel ☒ 04; Other ☐
d. Additional protection? ☒ Yes ☐ No
If yes, describe: Slip Cap

3. Surface seal: Bentonite ☐ 30; Concrete ☒ 01; Other ☐

4. Material between well casing and protective pipe: Bentonite ☐ 30; Annular space seal ☐; Other ☒ Best Sand

5. Annular space seal: Granular Bentonite ☐ 33
____ Lbs/gal mud weight . . . Bentonite-sand slurry ☐ 35
____ Lbs/gal mud weight . . . . . Bentonite slurry ☐ 31
2% % Bentonite . . . . . Bentonite-cement grout ☒ 50
15.64 Ft^3 volume added for any of the above
How installed: Tremie ☐ 01; Tremie pumped ☒ 02; Gravity ☐ 08

6. Bentonite seal: Bentonite granules ☐ 33
☐ 1/4 in. ☒ 3/8 in. ☐ 1/2 in. Bentonite pellets ☐ 32
Other ☐

7. Fine sand material: Manufacturer, product name and mesh size
Badger Sand 40-60
Volume added .47 ft^3

8. Filter pack material: Manufacturer, product name and mesh size
Best Sand
Volume added 3.55 ft^3

9. Well casing: Flush threaded PVC schedule 40 ☐ 23; Flush threaded PVC schedule 80 ☒ 24; Other ☐

10. Screen material: #80 PVC
Screen type: Factory cut ☒ 11; Continuous slot ☐ 01; Other ☐
Manufacturer Timco
Slot size: 0.010 in.
Slotted length: 10.0 ft.

11. Backfill material (below filter pack): None ☐; Other ☒ Best Sand

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature: [signature] Firm: Exploration Technology Inc.

Please complete and return both sides of this form as required by chs. 144, 147 and 160, Wis. Stats., and ch. NR 141, Wis. Adm. Code. In accordance with ch. 144, Wis Stats., failure to file this form may result in a forfeiture of not less than $10, nor more than $5,000 for each day of violation. In accordance with ch. 147, Wis. Stats., failure to file this form may result in a forfeiture of not more than $10,000 for each day of violation.
NOTE: Shaded areas are for DNR use only. See instructions for more information.

State of Wisconsin
Department of Natural Resources

MONITORING WELL CONSTRUCTION
Form 4400-113A 8-89

Facility/Project Name: BADGER ARMY AMMUNITION PLANT

Facility License, Permit or Monitoring Number: _____

Grid Location: _____ ft. ☐ N. ☐ S. _____ ft. ☐ E. ☐ W.

Well Name: 93030 PBN

Wis. Unique Well Number: _____ DNR Well Number: _____

Type of Well: Water Table Observation Well ☒ 11; Piezometer ☐ 12

Section Location: NE 1/4 of NE 1/4 of Section 25, T 10 N, R 6 ☒ E ☐ W

Date Well Installed: 03 / 14 / 93 (mm dd yy)

Distance Well Is From Waste/Source Boundary: _____ ft.

Location of Well Relative to Waste/Source: ☐ Upgradient ☐ Sidegradient ☐ Downgradient ☒ Not Known

Well Installed By: (Person's Name and Firm)
Kevin McCumber
Exploration Technology Inc.

Is Well A Point of Enforcement Std. Application? ☐ Yes ☐ No

A. Protective pipe, top elevation 3.0 ft. MSL

B. Well casing, top elevation 2.5 ft. MSL

C. Land surface elevation 0.0 ft. MSL

D. Surface seal, bottom _____ ft. MSL or 4.0 ft.

12. USCS classification of soil near screen:
☐ GP ☐ GM ☐ GC ☐ GW ☒ SW ☐ SP
☐ SM ☐ SC ☐ ML ☐ MH ☐ CL ☐ CH
☐ Bedrock

13. Sieve analysis attached? ☐ Yes ☒ No

14. Drilling method used: Rotary ☒ 50; Hollow Stem Auger ☐ 41; Other ☐

15. Drilling fluid used: Water ☐ 02; Air ☐ 01; Drilling Mud ☒ 03; None ☐ 99

16. Drilling additives used? ☒ Yes ☐ No

Describe: Aqua Gold Bentonite

17. Source of water (attach analysis):

E. Bentonite seal, top _____ ft. MSL or 140.0 ft.

F. Fine sand, top _____ ft. MSL or 142.5 ft.

G. Filter pack, top _____ ft. MSL or 149.5 ft.

H. Well screen, top _____ ft. MSL or 152.0 ft.

I. Well screen, bottom _____ ft. MSL or 162.0 ft.

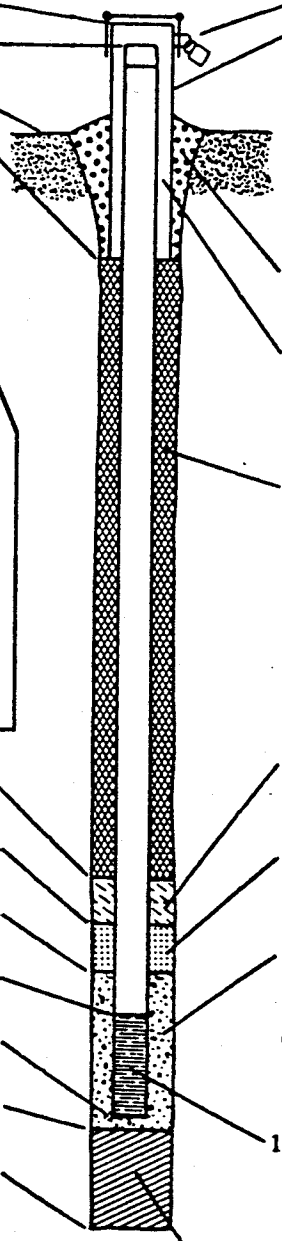
J. Filter pack, bottom _____ ft. MSL or 165.0 ft.

K. Borehole, bottom _____ ft. MSL or 165.0 ft.

L. Borehole, diameter 8.0 in.

M. O.D. well casing 4.5 in.

N. I.D. well casing 3.86 in.



1. Cap and lock? ☒ Yes ☐ No

2. Protective cover pipe:
a. Inside diameter: 8.0 in.
b. Length: 8.0 ft.
c. Material: Steel ☒ 04; Other ☐
d. Additional protection? ☒ Yes ☐ No
If yes, describe: Slip Cap

3. Surface seal: Bentonite ☐ 30; Concrete ☒ 01; Other ☐
Concrete

4. Material between well casing and protective pipe: Bentonite ☐ 30; Annular space seal ☐; Other ☒
Best Sand

5. Annular space seal: Granular Bentonite ☐ 33
_____ Lbs/gal mud weight . . . Bentonite-sand slurry ☐ 35
_____ Lbs/gal mud weight . . . . . Bentonite slurry ☐ 31
2 % Bentonite . . . . . Bentonite-cement grout ☒ 50
32.23 Ft^3 volume added for any of the above
How installed: Tremie ☐ 01; Tremie pumped ☒ 02; Gravity ☐ 08

6. Bentonite seal: Bentonite granules ☐ 33
☐ 1/4 in. ☒ 3/8 in. ☐ 1/2 in. Bentonite pellets ☐ 32
Other ☐

7. Fine sand material: Manufacturer, product name and mesh size
Badger Sand 40-60
Volume added .47 ft^3

8. Filter pack material: Manufacturer, product name and mesh size
Best Sand 20-40
Volume added 3.67 ft^3

9. Well casing: Flush threaded PVC schedule 40 ☐ 23; Flush threaded PVC schedule 80 ☒ 24; Other ☐

10. Screen material: #80 PVC
Screen type: Factory cut ☒ 11; Continuous slot ☐ 01; Other ☐
Manufacturer Timco
Slot size: 0.010 in.
Slotted length: 10.0 ft.

11. Backfill material (below filter pack): None ☐; Other ☒
Best Sand

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature: [signature] Firm: Exploration Technology Inc.

Please complete and return both sides of this form as required by chs. 144, 147 and 160, Wis. Stats., and ch. NR 141, Wis. Adm. Code. In accordance with ch. 144, Wis Stats., failure to file this form may result in a forfeiture of not less than $10, nor more than $5,000 for each day of violation. In accordance with ch. 147, Wis. Stats., failure to file this form may result in a forfeiture of not more than $10,000 for each day of violation.
NOTE: Shaded areas are for DNR use only. See instructions for more information.

State of Wisconsin
Department of Natural Resources

MONITORING WELL CONSTRUCTION
Form 4400-113A 8-89

Facility/Project Name: BADGER ARMY AMMUNITION PLANT

Facility License, Permit or Monitoring Number: _____

Well: Water Table Observation Well ☐ 11 / Piezometer ☒ 12

Distance Well Is From Waste/Source Boundary: ____ ft.

Is Well A Point of Enforcement Std. Application? ☐ Yes ☐ No

Grid Location: _____ ft. ☐ N. ☐ S. / _____ ft. ☐ E. ☐ W.

Section Location: NE 1/4 of NE 1/4 of Section 25, T 10 N, R 6 ☒ E ☐ W

Location of Well Relative to Waste/Source: ☐ Upgradient ☐ Sidegradient ☐ Downgradient ☒ Not Known

Well Name: PBN 9303 D

Wis. Unique Well Number: _____ DNR Well Number: _____

Date Well Installed: 03 / 11 / 93 (mm dd yy)

Well Installed By: (Person's Name and Firm)
Kevin McCumber
Exploration Technology Inc.

A. Protective pipe, top elevation 30 ft. MSL

B. Well casing, top elevation 25 ft. MSL

C. Land surface elevation 0.0 ft. MSL

D. Surface seal, bottom ____ ft. MSL or 4.0 ft.

12. USCS classification of soil near screen:
☐ GP ☐ GM ☐ GC ☐ GW ☒ SW ☐ SP
☐ SM ☐ SC ☐ ML ☐ MH ☐ CL ☐ CH
☐ Bedrock

13. Sieve analysis attached? ☐ Yes ☒ No

14. Drilling method used: Rotary ☒ 50 / Hollow Stem Auger ☐ 41 / Other ☐

15. Drilling fluid used: Water ☐ 02 / Air ☐ 01 / Drilling Mud ☒ 03 / None ☐ 99

16. Drilling additives used? ☒ Yes ☐ No

Describe: Aqua Gold Bentonite

17. Source of water (attach analysis):

E. Bentonite seal, top ____ ft. MSL or 202.0 ft.

F. Fine sand, top ____ ft. MSL or 202.0 ft.

G. Filter pack, top ____ ft. MSL or 209.0 ft.

H. Well screen, top ____ ft. MSL or 212.0 ft.

I. Well screen, bottom ____ ft. MSL or 222.0 ft.

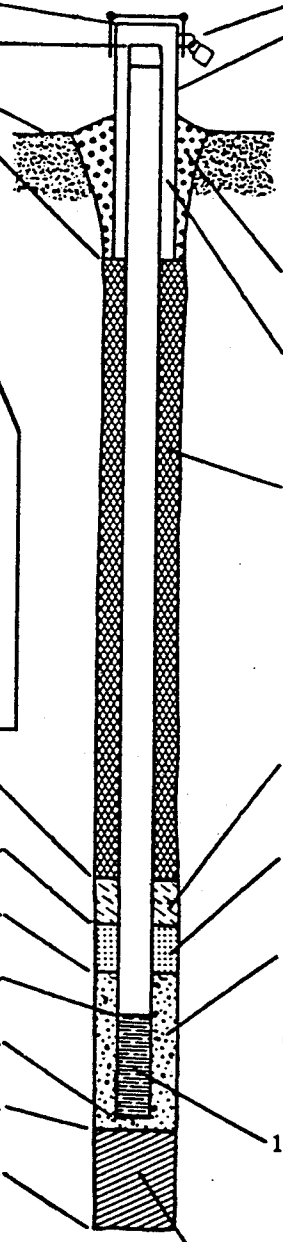
J. Filter pack, bottom ____ ft. MSL or 226.0 ft.

K. Borehole, bottom ____ ft. MSL or 226.0 ft.

L. Borehole, diameter 8.0 in.

M. O.D. well casing 4.5 in.

N. I.D. well casing 3.86 in.



1. Cap and lock? ☒ Yes ☐ No

2. Protective cover pipe:
a. Inside diameter: 8.0 in.
b. Length: 8.0 ft.
c. Material: Steel ☒ 04 / Other ☐
d. Additional protection? ☒ Yes ☐ No
If yes, describe: Slip Cap

3. Surface seal: Bentonite ☐ 30 / Concrete ☒ 01 / Other ☐

4. Material between well casing and protective pipe: Bentonite ☐ 30 / Annular space seal ☐ / Best Sand / Other ☒

5. Annular space seal: Granular Bentonite ☐ 33
____ Lbs/gal mud weight . . . Bentonite-sand slurry ☐ 35
____ Lbs/gal mud weight . . . . . Bentonite slurry ☐ 31
2 % Bentonite . . . . . Bentonite-cement grout ☒ 50
45.97 Ft^3 volume added for any of the above
How installed: Tremie ☐ 01 / Tremie pumped ☒ 02 / Gravity ☐ 08

6. Bentonite seal: Bentonite granules ☐ 33
☐ 1/4 in. ☒ 3/8 in. ☐ 1/2 in. Bentonite pellets ☐ 32
Other ☐

7. Fine sand material: Manufacturer, product name and mesh size
40-60 Badger Sand
Volume added .47 ft^3

8. Filter pack material: Manufacturer, product name and mesh size
Best Sand 20-40
Volume added 4.03 ft^3

9. Well casing: Flush threaded PVC schedule 40 ☐ 23 / Flush threaded PVC schedule 80 ☒ 24 / Other ☐

10. Screen material: #80 PVC
Screen type: Factory cut ☒ 11 / Continuous slot ☐ 01 / Other ☐
Manufacturer: Timco
Slot size: 0.010 in.
Slotted length: 10.0 ft.

11. Backfill material (below filter pack): None ☐
Best Sand Other ☒

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature: [signature] Firm: Exploration Technology Inc.

Please complete and return both sides of this form as required by chs. 144, 147 and 160, Wis. Stats., and ch. NR 141, Wis. Adm. Code. In accordance with ch. 144, Wis Stats., failure to file this form may result in a forfeiture of not less than $10, nor more than $5,000 for each day of violation. In accordance with ch. 147, Wis. Stats., failure to file this form may result in a forfeiture of not more than $10,000 for each day of violation.
NOTE: Shaded areas are for DNR use only. See instructions for more information.

e of Wisconsin
artment of Natural Resources

Route to: Solid Waste ☐ Haz. Waste ☐ Wastewater ☐
Env. Response & Repair ☐ Underground Tanks ☐ Other ☐ _____

MONITORING WELL CONSTRUCTION

Form 4400-113A Rev. 4-90

lity/Project Name: BADGER ARMY AMMUNITION PLANT	Local Grid Location of Well: 485559.0 ☒N ☐S 2069695.3 ☒E ☐W	Well Name: PBN9402B
lit ense, Permit or Monitoring Number	Grid Origin Location: Lat. _____ Long. _____ or St. Plane _____ ft. N, _____ ft. E.	Wis. Unique Well Number / DNR Well Number
e of Well: Water Table Observation Well ☐ 11; Piezometer ☒ 12	Section Location of Waste/Source: SE 1/4 of NW 1/4 of Sec. 14, T. 10 N., R. 6 ☒ E. ☐ W.	Date Well Installed: 8/24/94
ance Well Is From Waste/Source Boundary: 5484 ft.	Location of Well Relative to Waste/Source: u ☐ Upgradient s ☒ Sidegradient d ☐ Downgradient n ☐ Not Known	Well Installed By: (Person's Name and Firm) Lester Waddell, Layne-Northwest
Vell A Point of Enforcement Std Application? ☐ Yes ☒ No		

Protective pipe, top elevation: 816.87 ft. MSL

Well casing, top elevation: 816.40 ft. MSL

Land surface elevation: 813.9 ft. MSL

Surface seal, bottom: ft. MSL or 7.0 ft.

. USCS classification of soil near screen:
GP ☐ GM ☐ GC ☐ GW ☐ SW ☐ SP ☒
SM ☐ SC ☐ ML ☐ MH ☐ CL ☐ CH ☐
Bedrock ☐

. Sieve analysis attached? ☐ Yes ☒ No

. Drilling method used: Rotary ☒ 50; Hollow Stem Auger ☐ 41; Other ☐ __

. Drilling fluid used: Water ☐ 02; Air ☐ 01; Drilling Mud ☒ 03; None ☐ 99

. Drilling additives used: ☐ Yes ☒ No
Describe: _____

. S e of water (attach analysis):
BAAP Well #2

Bentonite seal, top: ft. MSL or 56.0 ft.

Fine sand, top: ft. MSL or 76.0 ft.

Filter pack, top: ft. MSL or 80.0 ft.

Screen joint, top: ft. MSL or 85.5 ft.

Well bottom: ft. MSL or 95.5 ft.

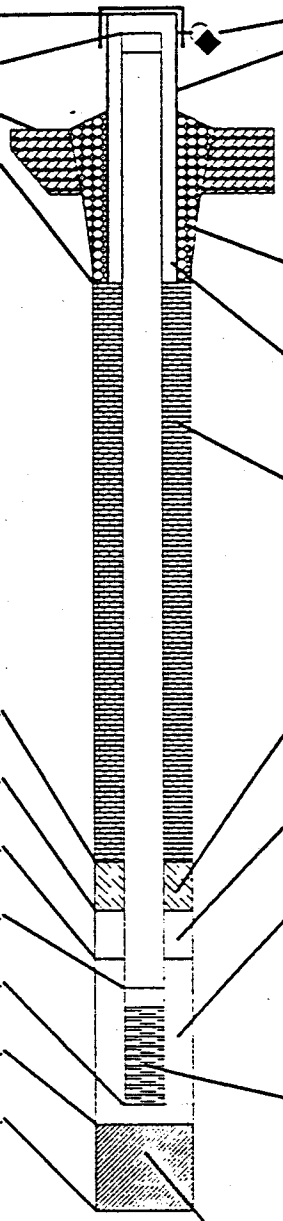
Filter pack, bottom: ft. MSL or 101.2 ft.

Borehole bottom: ft. MSL or 101.2 ft.

Borehole diameter: 8.5 in.

. O. D. well casing: 4.5 in.

. I. D. well casing: 3.8 in.



1. Cap and lock? ☒ Yes ☐ No
2. Protective cover pipe:
   a. Inside diameter: 8.2 in.
   b. Length: 7.0 ft.
   c. Material: Steel ☒ 04; Other ☐ __
   d. Additional protection? ☒ Yes ☐ No
      If yes, describe: 3-4 in. Bumper Posts
3. Surface seal: Bentonite ☐ 30; Concrete ☒ 01; Other ☐ __
4. Material between well casing and protective pipe: Bentonite ☐ 30; Annular space seal ☐ __; Other ☒ __
   Red Flint, Filter Sand
5. Annular space seal: a. Granular bentonite ☐ 33
   b. ____ Lbs/gal mud weight . . . . Bentonite-sand slurry ☐ 35
   c. ____ Lbs/gal mud weight . . . . Bentonite slurry ☐ 31
   d. 3.0 % Bentonite . . . . . Bentonite-cement grout ☒ 50
   e. 20.0 ft^3 volume added for any of the above
   f. How installed: Tremie ☐ 01; Tremie pumped ☒ 02; Gravity ☐ 08
6. Bentonite seal: a. Bentonite granules ☐ 33
   b. ☐ 1/4 in. ☐ 3/8 in. ☐ 1/2 in. Bentonite pellets ☐ 32
   c. Bentonite Slurry Other ☒ __
7. Fine sand material: Manufacturer, product name & mesh size
   a. Badger Mining Corp., Silica Sand #40-60 __
   b. Volume added: 1.1 ft^3
8. Filter pack material: Manufacturer, product name & mesh size
   a. Red Fint, Filter Sand #45-55 __
   b. Volume added: 5.4 ft^3
9. Well casing: Flush threaded PVC schedule 40 ☐ 23; Flush threaded PVC schedule 80 ☒ 24; Other ☐ __
10. Screen material: Sch 80 PVC __
    a. Screen type: Factory cut ☒ 11; Continuous slot ☐ 01; Other ☐ __
    b. Manufacturer: Timco Mfg., Inc.
    c. Slot size: 0.010 in.
    d. Slotted length 10.0 ft.
11. Backfill material (below filter pack): None ☒ __; Other ☐ __

nere ertify that the information on this form is true and correct to the best of my knowledge.

gna Kim Gerard

Woodward-Clyde Consultants
8383 Greenway Blvd, Middleton, WI 53562
Tel: (608) 836-5040

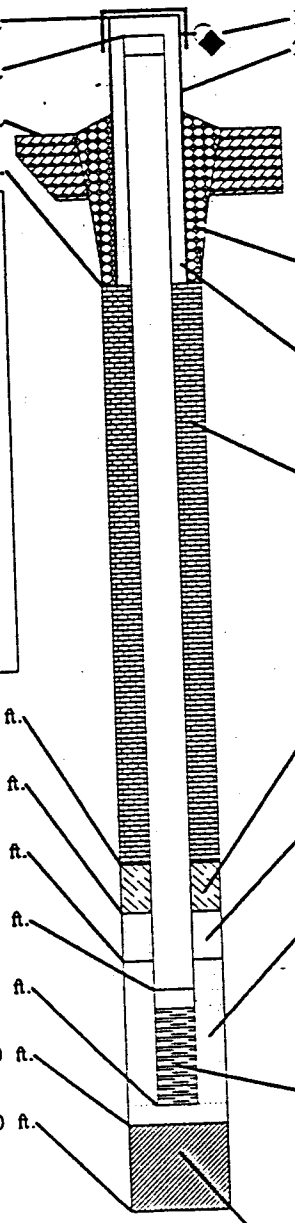
lease complete both sides of this form and return to the appropriate DNR listed at the top of this form as required by chs. 144, 147 and 160, Wis. Stats., and ch. R 141, Wis. Ad. Code. In accordance with ch. 144 Wis. Stats., failure to file this form may result in a forfeiture of not less than $10, nor more than $5000 for ach day of violation. In accordance with ch. 147 Wis. Stats., failure to file this form may result in a forfeiture of not more than $10,000 for each day of violation.
OTE: Shaded areas are for DNR office use. See instructions for more information including where the completed form should be sent.

Wisconsin
ıent of Natural Resources

Route to: Solid Waste ☐ Haz. Waste ☐ Wastewater ☐
Env. Response & Repair ☐ Underground Tanks ☐ Other ☐ _____

MONITORING WELL CONSTRUCTION
Form 4400-113A Rev. 4-90

P : Name: BADGER ARMY AMMUNITION PLANT	Local Grid Location of Well 485558.9 ☒N ☐S 2069685.0 ☒E ☐W	Well Name: PBN9402C
License, Permit or Monitoring Number	Grid Origin Location: Lat. _____ Long. _____ or St. Plane _____ ft. N, _____ ft. E.	Wis. Unique Well Number / DNR Well Number
Well: Water Table Observation Well ☐ 11 Piezometer ☒ 12	Section Location of Waste/Source SE 1/4 of NW 1/4 of Sec. 14, T. 10 N., R. 6 ☒ E. ☐ W.	Date Well Installed 8/22/94
e Well Is From Waste/Source Boundary 5484 ft.	Location of Well Relative to Waste/Source u ☐ Upgradient s ☒ Sidegradient d ☐ Downgradient n ☐ Not Known	Well Installed By: (Person's Name and Firm) Lester Waddell, Layne-Northwest
A Point of Enforcement Std Application? ☐ Yes ☒ No		



otective pipe, top elevation: 816.78 ft. MSL
ell casing, top elevation: 816.34 ft. MSL
nd surface elevation: 813.8 ft. MSL
rface seal, bottom: ft. MSL or 8.5 ft.

USCS classification of soil near screen:
GP ☐ GM ☐ GC ☐ GW ☐ SW ☐ SP ☒
SM ☐ SC ☐ ML ☐ MH ☐ CL ☐ CH ☐
edrock ☐
Sieve analysis attached? ☐ Yes ☒ No
Drilling method used: Rotary ☒ 50; Hollow Stem Auger ☐ 41; Other ☐ __
Drilling fluid used: Water ☐ 02; Air ☐ 01; Drilling Mud ☒ 03; None ☐ 99
D g additives used: ☐ Yes ☒ No
Des e: _____
Source of water (attach analysis): BAAP Well #2

Bentonite seal, top:	ft. MSL or	99.0 ft.
Fine sand, top:	ft. MSL or	119.0 ft.
Filter pack, top:	ft. MSL or	123.0 ft.
Screen joint, top:	ft. MSL or	125.0 ft.
Well bottom:	ft. MSL or	135.0 ft.
Filter pack, bottom:	ft. MSL or	142.0 ft.
Borehole bottom:	ft. MSL or	142.0 ft.
Borehole diameter:		8.5 in.
M. O. D. well casing:		4.5 in.
N. I. D. well casing:		3.8 in.

1. Cap and lock? ☒ Yes ☐ No
2. Protective cover pipe:
   a. Inside diameter: 8.2 in.
   b. Length: 7.0 ft.
   c. Material: Steel ☒ 04; Other ☐ __
   d. Additional protection? ☒ Yes ☐ No
      If yes, describe: 3-4 in. Bumper Posts
3. Surface seal: Bentonite ☐ 30; Concrete ☒ 01; Other ☐ __
4. Material between well casing and protective pipe: Bentonite ☐ 30; Annular space seal ☐ __; Other ☒ __
   Red Flint, Filter Sand
5. Annular space seal: a. Granular bentonite ☐ 33
   b. ____ Lbs/gal mud weight . . . . Bentonite-sand slurry ☐ 35
   c. ____ Lbs/gal mud weight . . . . Bentonite slurry ☐ 31
   d. 3.0 % Bentonite . . . . . Bentonite-cement grout ☒ 50
   e. 38.1 ft^3 volume added for any of the above
   f. How installed: Tremie ☐ 01; Tremie pumped ☒ 02; Gravity ☐ 08
6. Bentonite seal: a. Bentonite granules ☐ 33
   b. ☐ 1/4 in. ☐ 3/8 in. ☐ 1/2 in. Bentonite pellets ☐ 32
   c. Bentonite Slurry Other ☒ __
7. Fine sand material: Manufacturer, product name & mesh size
   a. Badger Mining Corp., Silica Sand #40-60 __
   b. Volume added: 1.1 ft^3
8. Filter pack material: Manufacturer, product name & mesh size
   a. Red Fint, Filter Sand #45-55 __
   b. Volume added: 8.7 ft^3
9. Well casing: Flush threaded PVC schedule 40 ☐ 23; Flush threaded PVC schedule 80 ☒ 24; Other ☐ __
10. Screen material: Sch 80 PVC __
    a. Screen type: Factory cut ☒ 11; Continuous slot ☐ 01; Other ☐ __
    b. Manufacturer: Timco Mfg., Inc.
    c. Slot size: 0.010 in.
    d. Slotted length 10.0 ft.
11. Backfill material (below filter pack): None ☒ __; Other ☐ __

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature: Ken Gerald

Woodward-Clyde Consultants
8383 Greenway Blvd, Middleton, WI 53562
Tel: (608) 836-5040

Please complete both sides of this form and return to the appropriate DNR listed at the top of this form as required by chs. 144, 147 and 160, Wis. Stats., and ch. NR 141, Wis. Ad. Code. In accordance with ch. 144 Wis. Stats., failure to file this form may result in a forfeiture of not less than $10, nor more than $5000 for ... with ch. 147 Wis. Stats., failure to file this form may result in a forfeiture of not more than $10,000 for each day of violation.

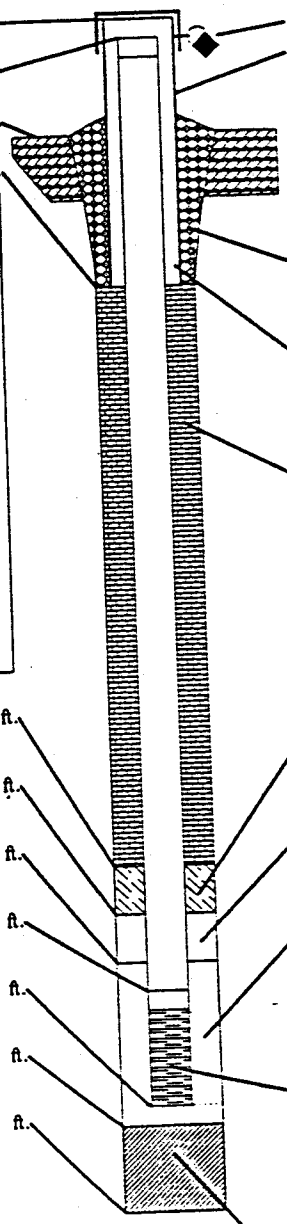
Wisconsin
ent of Natural Resources

Route to: Solid Waste ☐ Haz. Waste ☐ Wastewater ☐
Env. Response & Repair ☐ Underground Tanks ☐ Other ☐ _____

MONITORING WELL CONSTRUCTION

Form 4400-113A Rev. 4-90

Project Name: DGER ARMY AMMUNITION PLANT	Local Grid Location of Well: 485555.5 ☒N ☐S 2069674.2 ☒E ☐W	Well Name: PBN9402D
License, Permit or Monitoring Number	Grid Origin Location: Lat. _____ Long. _____ or St. Plane _____ ft. N, _____ ft. E.	Wis. Unique Well Number / DNR Well Number
Well: Water Table Observation Well ☐ 11; Piezometer ☒ 12	Section Location of Waste/Source: SE 1/4 of NW 1/4 of Sec. 14, T. 10 N., R. 6 ☒ E. ☐ W.	Date Well Installed: 8/18/94
e Well Is From Waste/Source Boundary: 5484 ft.	Location of Well Relative to Waste/Source: u ☐ Upgradient, d ☐ Downgradient, s ☒ Sidegradient, n ☐ Not Known	Well Installed By: (Person's Name and Firm) Lester Waddell, Layne-Northwest
A Point of Enforcement Std Application? ☐ Yes ☒ No		



tective pipe, top elevation:	816.34 ft. MSL	
ll casing, top elevation:	816.16 ft. MSL	
nd surface elevation:	813.7 ft. MSL	
rface seal, bottom:	ft. MSL or 6.5 ft.	
Bentonite seal, top:	ft. MSL or 187.0 ft.	
Fine sand, top:	ft. MSL or 207.0 ft.	
Filter pack, top:	ft. MSL or 211.0 ft.	
Screen joint, top:	ft. MSL or 215.0 ft.	
Well bottom:	ft. MSL or 225.0 ft.	
Filter pack, bottom:	ft. MSL or 229.0 ft.	
Borehole bottom:	ft. MSL or 229.0 ft.	
Borehole diameter:	8.5 in.	
M. O. D. well casing:	4.5 in.	
N. I. D. well casing:	3.8 in.	

USCS classification of soil near screen:
P ☐ GM ☐ GC ☐ GW ☐ SW ☐ SP ☒
M ☐ SC ☐ ML ☐ MH ☐ CL ☐ CH ☐
edrock ☐

Sieve analysis attached? ☐ Yes ☒ No

Drilling method used: Rotary ☒ 50; Hollow Stem Auger ☐ 41; Other ☐ __

Drilling fluid used: Water ☐ 02; Air ☐ 01; Drilling Mud ☒ 03; None ☐ 99

Drilling additives used: ☐ Yes ☒ No

Or he: _____

. Source of water (attach analysis): BAAP Well #2

1. Cap and lock? ☒ Yes ☐ No
2. Protective cover pipe:
   a. Inside diameter: 8.2 in.
   b. Length: 7.0 ft.
   c. Material: Steel ☒ 04; Other ☐ __
   d. Additional protection? ☒ Yes ☐ No
      If yes, describe: 3-4 in. Bumper Posts
3. Surface seal: Bentonite ☐ 30; Concrete ☒ 01; Other ☐ __
4. Material between well casing and protective pipe: Bentonite ☐ 30; Annular space seal ☐ __; Other ☒ __
   Red Flint, Filter Sand
5. Annular space seal:
   a. Granular bentonite ☐ 33
   b. ____ Lbs/gal mud weight .... Bentonite-sand slurry ☐ 35
   c. ____ Lbs/gal mud weight .... Bentonite slurry ☐ 31
   d. 3.0 % Bentonite ..... Bentonite-cement grout ☒ 50
   e. 49.5 ft^3 volume added for any of the above
   f. How installed: Tremie ☐ 01; Tremie pumped ☒ 02; Gravity ☐ 08
6. Bentonite seal:
   a. Bentonite granules ☐ 33
   b. ☐ 1/4 in. ☐ 3/8 in. ☐ 1/2 in. Bentonite pellets ☐ 32
   c. Bentonite Slurry Other ☒ __
7. Fine sand material: Manufacturer, product name & mesh size
   a. Badger Mining Corp., Silica Sand #40-60 __
   b. Volume added: 1.1 ft^3
8. Filter pack material: Manufacturer, product name & mesh size
   a. Red Fint, Filter Sand #45-55 __
   b. Volume added: 4.6 ft^3
9. Well casing: Flush threaded PVC schedule 40 ☐ 23; Flush threaded PVC schedule 80 ☒ 24; Other ☐ __
10. Screen material: Sch 80 PVC __
    a. Screen type: Factory cut ☒ 11; Continuous slot ☐ 01; Other ☐ __
    b. Manufacturer: Timco Mfg., Inc.
    c. Slot size: 0.010 in.
    d. Slotted length 10.0 ft.
11. Backfill material (below filter pack): None ☒ __; Other ☐ __

I y certify that the information on this form is true and correct to the best of my knowledge.

Signature: Kim Gerard

Woodward-Clyde Consultants
8383 Greenway Blvd, Middleton, WI 53562
Tel: (608) 836-5040

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State of Wisconsin
Department of Natural Resources

Route to: Solid Waste ☑ Haz. Waste ☒ Wastewater ☐
Env. Response & Repair ☒ Underground Tanks ☐ Other ☐ _____

MONITORING WELL CONSTRUCTION
Form 4400-113A Rev. 4-90

Facility/Project Name: Badger Army Ammunition Plant	Local Grid Location of Well: 484884.9 ft. ☒N ☐S, 2066877.3 ft. ☒E ☐W	Well Name: PBN-93-04 A
Facility License, Permit or Monitoring Number: _____	Grid Origin Location: Lat. NA Long. na or St. Plane 0 ft. N, 0 ft. E.	Wis. Unique Well Number / DNR Well Number
Type of Well: Water Table Observation Well ☒ 11; Piezometer ☐ 12	Section Location of Waste/Source: SW 1/4 of NE 1/4 of Sec. 23, T. 10 N, R. 06 ☒E ☐W	Date Well Installed: 10/12/93 (mm dd yy)
Distance Well Is From Waste/Source Boundary: 5250 ft.	Location of Well Relative to Waste/Source: u ☐ Upgradient s ☐ Sidegradient d ☒ Downgradient n ☐ Not Known	Well Installed By: (Person's Name and Firm) Jim Rech, Exploration Technology, Inc.
Is Well A Point of Enforcement Std. Application? ☐ Yes ☐ No		

A. Protective pipe, top elevation 805.68 ft. MSL
B. Well casing, top elevation 805.85 ft. MSL
C. Land surface elevation 804.0 ft. MSL
D. Surface seal, bottom _____ ft. MSL or 5.0 ft.

12. USCS classification of soil near screen:
GP ☐ GM ☐ GC ☐ GW ☐ SW ☐ SP ☒
SM ☐ SC ☐ ML ☐ MH ☐ CL ☐ CH ☐
Bedrock ☐

13. Sieve analysis attached? ☐ Yes ☒ No

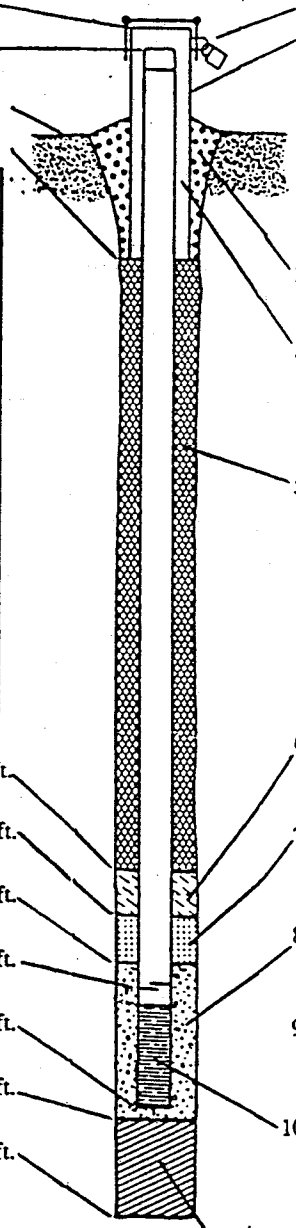
14. Drilling method used: Rotary ☒ 50; Hollow Stem Auger ☐ 41; Other ☐ ___

15. Drilling fluid used: Water ☐ 02; Air ☐ 01; Drilling Mud ☒ 03; None ☐ 99

16. Drilling additives used? ☒ Yes ☐ No
Describe 9 lb/gal bentonite mud

17. Source of water (attach analysis):
BAAP Well #2

E. Bentonite seal, top _____ ft. MSL or 5.0 ft.
F. Fine sand, top _____ ft. MSL or 26.5 ft.
G. Filter pack, top _____ ft. MSL or 31.2 ft.
H. Screen joint, top _____ ft. MSL or 35.2 ft.
I. Well bottom _____ ft. MSL or 50.2 ft.
J. Filter pack, bottom _____ ft. MSL or 65.3 ft.
K. Borehole, bottom _____ ft. MSL or 65.3 ft.
L. Borehole, diameter 8.3 in.
M. O.D. well casing 4.50 in.
N. I.D. well casing 3.75 in.



1. Cap and lock? ☒ Yes ☐ No
2. Protective cover pipe:
a. Inside diameter: ___ in.
b. Length: ___ ft.
c. Material: Steel ☒ 04; Other ☐ ___
d. Additional protection? ☒ Yes ☐ No
If yes, describe: 3 Bumper Posts
3. Surface seal: Bentonite ☐ 30; Concrete ☒ 01; Other ☐ ___
4. Material between well casing and protective pipe: Bentonite ☐ 30; Annular space seal ☐ ___; Other ☒ ___
Concrete
5. Annular space seal: a. Granular Bentonite ☐ 33
b. ____ Lbs/gal mud weight . . . Bentonite-sand slurry ☐ 35
c. ____ Lbs/gal mud weight . . . . . Bentonite slurry ☒ 31
d. ____ % Bentonite . . . . . Bentonite-cement grout ☐ 50
e. ____ Ft^3 volume added for any of the above
f. How installed: Tremie ☒ 01; Tremie pumped ☐ 02; Gravity ☐ 08
6. Bentonite seal: a. Bentonite granules ☐ 33
b. ☐1/4 in. ☐3/8 in. ☐1/2 in. Bentonite pellets ☐ 32
c. Thick Slurried Bentonite Powder Other ☒ ___
7. Fine sand material: Manufacturer, product name & mesh size
a. Badger Mining #40/60 Silica
b. Volume added 1.0 ft^3
8. Filter pack material: Manufacturer, product name and mesh size
a. Global Drilling Supplies #5 Quartz
b. Volume added 12 ft^3
9. Well casing: Flush threaded PVC schedule 40 ☐ 23; Flush threaded PVC schedule 80 ☒ 24; Other ☐ ___
4" Ø
10. Screen material: 4" Ø SCHED 80 PVC
a. Screen type: Factory cut ☒ 11; Continuous slot ☐ 01; Other ☐ ___
b. Manufacturer Timco
c. Slot size: 0.010 in.
d. Slotted length: 15.0 ft.
11. Backfill material (below filter pack): None ☐ 14; Other ☐ ___

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature: Don Hammerberg
Firm: Woodward-Clyde Consultants

Please complete both sides of this form and return to the appropriate DNR office listed at the top of this form as required by chs. 144, 147 and 160, Wis. Stats., and ch. NR 141, Wis. Ad. Code. In accordance with ch.144, Wis Stats., failure to file this form may result in a forfeiture of not less than $10, nor more than $5000 for each day of violation. In accordance with ch. 147, Wis. Stats., failure to file this form may result in a forfeiture of not more than $10,000 for each day of violation. NOTE: Shaded areas are for DNR use only. See instructions for more information including where the completed form should be sent.

State of Wisconsin
Department of Natural Resources

Route to: Solid Waste ☒ Haz. Waste ☒ Wastewater ☐
Env. Response & Repair ☒ Underground Tanks ☐ Other ☐ _____

MONITORING WELL CONSTRUCTION
Form 4400-113A Rev. 4-90

Facility/Project Name: Badger Army Ammunition Plant

Facility License, Permit or Monitoring Number: _____

Type of Well: Water Table Observation Well ☐ 11; Piezometer ☒ 12

Distance Well Is From Waste/Source Boundary: 5250 ft.

Is Well A Point of Enforcement Std. Application? ☐ Yes ☐ No

Local Grid Location of Well: 484895.6 ft. ☒ N. ☐ S. 2066863.7 ft. ☒ E. ☐ W.

Grid Origin Location: Lat. ___ - ___ Long. ___ - ___ or

St. Plane _____ ft. N, _____ ft. E.

Section Location of Waste/Source: SW 1/4 of NE 1/4 of Sec. 23, T. 10 N, R. 06 ☒ E. ☐ W.

Location of Well Relative to Waste/Source: u ☐ Upgradient s ☐ Sidegradient d ☐ Downgradient n ☐ Not Known

Well Name: PBN-93-04B

Wis. Unique Well Number: _____ DNR Well Number: _____

Date Well Installed: 10 / 19 / 93 (m m / d d / y y)

Well Installed By: (Person's Name and Firm)
Jim Rech
Exploration Technology, Inc.

A. Protective pipe, top elevation: 805.62 ft. MSL
B. Well casing, top elevation: 805.75 ft. MSL
C. Land surface elevation: 804.0 ft. MSL
D. Surface seal, bottom: _____ ft. MSL or 4.9 ft.

12. USCS classification of soil near screen:
GP ☐ GM ☐ GC ☐ GW ☐ SW ☐ SP ☒
SM ☐ SC ☐ ML ☐ MH ☐ CL ☐ CH ☐
Bedrock ☐

13. Sieve analysis attached? ☐ Yes ☒ No

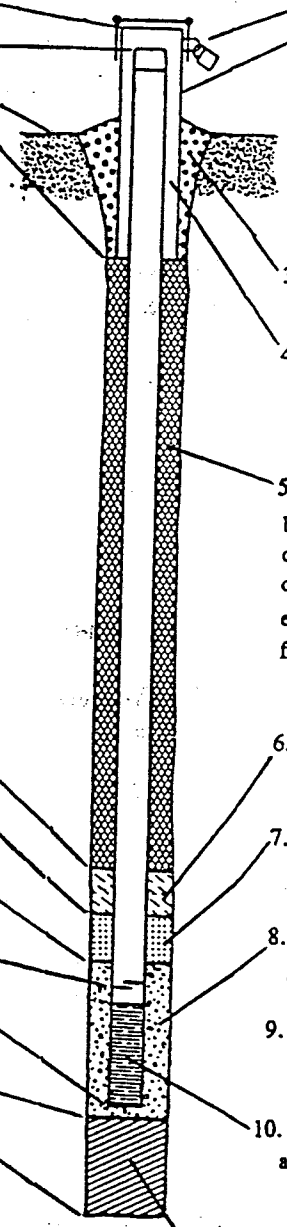
14. Drilling method used: Rotary ☒ 50; Hollow Stem Auger ☐ 41; Other ☐ _____

15. Drilling fluid used: Water ☐ 02; Air ☐ 01; Drilling Mud ☒ 03; None ☐ 99

16. Drilling additives used? ☒ Yes ☐ No
Describe: 9 lb/gal bentonite mud

17. Source of water (attach analysis):
BAAP Well #2

Bentonite seal, top: _____ ft. MSL or 45.3 ft.
Fine sand, top: _____ ft. MSL or 68.5 ft.
Filter pack, top: _____ ft. MSL or 73.0 ft.
Screen joint, top: _____ ft. MSL or 75.9 ft.
Well bottom: _____ ft. MSL or 85.9 ft.
Filter pack, bottom: _____ ft. MSL or 88.0 ft.
Borehole, bottom: _____ ft. MSL or 88.0 ft.
Borehole, diameter: 8.3 in.
O.D. well casing: 4.50 in.
I.D. well casing: 3.75 in.



1. Cap and lock? ☒ Yes ☐ No
2. Protective cover pipe:
a. Inside diameter: 8.0 in.
b. Length: 6.0 ft.
c. Material: Steel ☒ 04; Other ☐ _____
d. Additional protection? ☒ Yes ☐ No
If yes, describe: 3 Pumper Posts
3. Surface seal: Bentonite ☐ 30; Concrete ☒ 01; Other ☐ _____
4. Material between well casing and protective pipe: Bentonite ☐ 30; Annular space seal ☐ _____; Other ☒ Concrete
5. Annular space seal: a. Granular Bentonite ☐ 33
b. _____ Lbs/gal mud weight ... Bentonite-sand slurry ☐ 35
c. _____ Lbs/gal mud weight ..... Bentonite slurry ☒ 31
d. 3 % Bentonite ..... Bentonite-cement grout ☐ 50
e. 10 Ft^3 volume added for any of the above
f. How installed: Tremie ☒ 01; Tremie pumped ☐ 02; Gravity ☐ 08
6. Bentonite seal: a. Bentonite granules ☐ 33
b. ☐ 1/4 in. ☐ 3/8 in. ☐ 1/2 in. Bentonite pellets ☐ 32
c. 14 lb/gal Bentonite Slurry Other ☒ _____
7. Fine sand material: Manufacturer, product name & mesh size
a. Badger Mining #40-60 Silica
b. Volume added 1 ft^3
8. Filter pack material: Manufacturer, product name and mesh size
a. Global Drilling Supplies #5 Quartz
b. Volume added 4 ft^3
9. Well casing: Flush threaded PVC schedule 40 ☐ 23; Flush threaded PVC schedule 80 ☒ 24; Other ☐ _____
10. Screen material: 4" Ø SCHED 80 PVC
a. Screen type: Factory cut ☒ 11; Continuous slot ☐ 01; Other ☐ _____
b. Manufacturer: Timco
c. Slot size: 0.010 in.
d. Slotted length: 10.0 ft.
11. Backfill material (below filter pack): None ☐ 14; Other ☐ _____

I certify that the information on this form is true and correct to the best of my knowledge.

Signature: [signature]
Firm: Woodward-Clyde Consultants

Please complete both sides of this form and return to the appropriate DNR office listed at the top of this form as required by chs. 144, 147 and 160, Wis. Stats., ch. NR 141, Wis. Ad. Code. In accordance with ch.144, Wis Stats., failure to file this form may result in a forfeiture of not less than $10, nor more than $100 for each day of violation. In accordance with ch. 147, Wis. Stats., failure to file this form may result in a forfeiture of not more than $10,000 for each day of violation. NOTE: Shaded areas are for DNR use only. See instructions for more information including where the completed form should be sent.

State of Wisconsin
Department of Natural Resources

Route to: Solid Waste ☒ Haz. Waste ☒ Wastewater ☐
Env. Response & Repair ☒ Underground Tanks ☐ Other ☐ _____

MONITORING WELL CONSTRUCTION
Form 4400-113A
Rev. 4-90

Facility/Project Name: Badger Army Ammunition Plant	Local Grid Location of Well: 484864.8 ft. ☒ N. ☐ S. 2066850.0 ft. ☒ E. ☐ W.	Well Name: PBN-93-04C
Facility License, Permit or Monitoring Number: _____	Grid Origin Location: Lat. _____ Long. _____ or St. Plane _____ ft. N. _____ ft. E.	Wis. Unique Well Number / DNR Well Number: _____
Well: Water Table Observation Well ☐ 11; Piezometer ☐ 12	Section Location of Waste/Source: SW1/4 of NE1/4 of Sec 23, T. 10N, R 06 ☒ E. ☐ W.	Date Well Installed: 10 / 21 / 93 (m m / d d / y y)
Distance Well Is From Waste/Source Boundary: _____ ft.	Location of Well Relative to Waste/Source: u ☐ Upgradient s ☐ Sidegradient d ☐ Downgradient n ☐ Not Known	Well Installed By: (Person's Name and Firm) Jim Rech, Exploration Technology, Inc.
Is Well A Point of Enforcement Std. Application? ☐ Yes ☐ No		

. Protective pipe, top elevation 806.18 ft. MSL
. Well casing, top elevation 806.26 ft. MSL
. Land surface elevation 804.5 ft. MSL
. Surface seal, bottom _____ ft. MSL or 4.8 ft.

2. USCS classification of soil near screen:
GP ☐ GM ☐ GC ☐ GW ☐ SW ☐ SP ☒
SM ☐ SC ☐ ML ☐ MH ☐ CL ☐ CH ☐
Bedrock ☐

3. Sieve analysis attached? ☐ Yes ☒ No

4. Drilling method used: Rotary ☒ 50; Hollow Stem Auger ☐ 41; Other ☐ _____

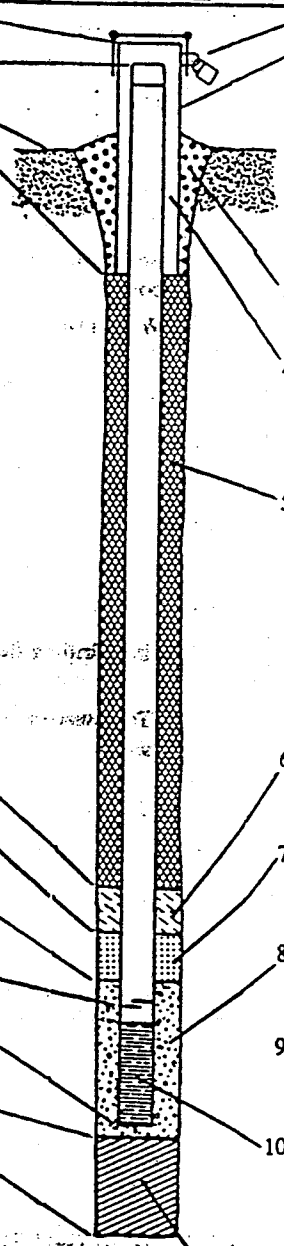
5. Drilling fluid used: Water ☐ 02; Air ☐ 01; Drilling Mud ☒ 03; None ☐ 99

6. Drilling additives used? ☒ Yes ☐ No

ribe 9 lb/gal bentonite mud

7. Source of water (attach analysis):
BAAP Well #2

Bentonite seal, top	_____ ft. MSL or	74.5 ft.
Fine sand, top	_____ ft. MSL or	97.3 ft.
Filter pack, top	_____ ft. MSL or	101.0 ft.
Screen joint, top	_____ ft. MSL or	105.2 ft.
Well bottom	_____ ft. MSL or	115.2 ft.
Filter pack, bottom	_____ ft. MSL or	118.1 ft.
Borehole, bottom	_____ ft. MSL or	118.1 ft.
Borehole, diameter	8.3 in.	
O.D. well casing	4.50 in.	
I.D. well casing	3.75 in.	



1. Cap and lock? ☒ Yes ☐ No
2. Protective cover pipe:
   a. Inside diameter: 8.0 in.
   b. Length: 6.0 ft.
   c. Material: Steel ☒ 04; Other ☐ _____
   d. Additional protection? ☒ Yes ☐ No
   If yes, describe: 3 Bumper Posts
3. Surface seal: Bentonite ☐ 30; Concrete ☒ 01; Other ☐ _____
4. Material between well casing and protective pipe: Bentonite ☐ 30; Annular space seal ☐ _____; Other ☒ Concrete
5. Annular space seal: a. Granular Bentonite ☐ 33
   b. _____ Lbs/gal mud weight . . . Bentonite-sand slurry ☐ 35
   c. _____ Lbs/gal mud weight . . . . . Bentonite slurry ☒ 31
   d. 3 % Bentonite . . . . . Bentonite-cement grout ☐ 50
   e. 18.5 Ft^3 volume added for any of the above
   f. How installed: Tremie ☒ 01; Tremie pumped ☐ 02; Gravity ☐ 08
6. Bentonite seal: a. Bentonite granules ☐ 33
   b. ☐ 1/4 in. ☐ 3/8 in. ☐ 1/2 in. Bentonite pellets ☐ 32
   c. 13 lb/gal Bentonite Slurry Other ☒ _____
7. Fine sand material: Manufacturer, product name & mesh size
   a. Badger Mining #40-60 Silica
   b. Volume added 1 ft^3
8. Filter pack material: Manufacturer, product name and mesh size
   a. Global Drilling Supplies #5 Quartz
   b. Volume added 4.8 ft^3
9. Well casing: Flush threaded PVC schedule 40 ☐ 23; Flush threaded PVC schedule 80 ☒ 24; Other ☐ _____
10. Screen material: 4" Ø SCHED 80 PVC
    a. Screen type: Factory cut ☒ 11; Continuous slot ☐ 01; Other ☐ _____
    b. Manufacturer Timco
    c. Slot size: 0.010 in.
    d. Slotted length: 10.0 ft.
11. Backfill material (below filter pack): None ☐ 14; Other ☐ _____

er certify that the information on this form is true and correct to the best of my knowledge.
na. Jon Hammerberg
Firm: Woodward-Clyde Consultants

ase complete both sides of this form and return to the appropriate DNR office listed at the top of this form as required by chs. 144, 147 and 160, Wis. Stats., ch. NR 141, Wis. Ad. Code. In accordance with ch.144, Wis Stats., failure to file this form may result in a forfeiture of not less than $10, nor more than 00 for each day of violation. In accordance with ch. 147, Wis. Stats., failure to file this form may result in a forfeiture of not more than $10,000 for each of violation. NOTE: Shaded areas are for DNR use only. See instructions for more information including where the completed form should be sent.

ate of) sconsin
epartment of Na ral Resources

Route to: Solid Waste ☒ Haz. Waste ☒ Wastewater ☐
Env. Response & Repair ☒ Underground Tanks ☐ Other ☐ _____

MONITORING WELL CONSTRUCTION
Form 4400-113A
Rev. 4-90

acility/Project Name: Badger Army Ammunition Plant	Local Grid Location of Well: 484889.0 ft. ☐N ☐S, 2066849.7 ft. ☒E ☐W	Well Name: PBN-93-04D
acility License, Permit or Monitoring Number: _____	Grid Origin Location: Lat. ___ Long. ___ or St. Plane 0 ft. N, 0 ft. E.	Wis. Unique Well Number / DNR Well Number
Well: Water Table Observation Well ☐ 11; Piezometer ☒ 12	Section Location of Waste/Source: SW 1/4 of NE 1/4 of Sec. 23, T. 10 N, R. 06 ☒E ☐W	Date Well Installed: 10/19/93 (m m / d d / y y)
istance Well Is From Waste/Source Boundary: 5250 ft.	Location of Well Relative to Waste/Source: u ☐ Upgradient, s ☐ Sidegradient, d ☐ Downgradient, n ☐ Not Known	Well Installed By: (Person's Name and Firm) Jim Rech, Exploration Technology, Inc.
Well A Point of Enforcement Std. Application? ☐ Yes ☐ No		

Protective pipe, top elevation 805.96 ft. MSL
Well casing, top elevation 806.97 ft. MSL
Land surface elevation 804.1 ft. MSL
Surface seal, bottom _____ ft. MSL or 5.0 ft.

2. USCS classification of soil near screen:
GP ☐ GM ☐ GC ☐ GW ☐ SW ☐ SP ☒
SM ☐ SC ☐ ML ☐ MH ☐ CL ☐ CH ☐
Bedrock ☐

3. Sieve analysis attached? ☐ Yes ☒ No

. Drilling method used: Rotary ☒ 50; Hollow Stem Auger ☐ 41; Other ☐

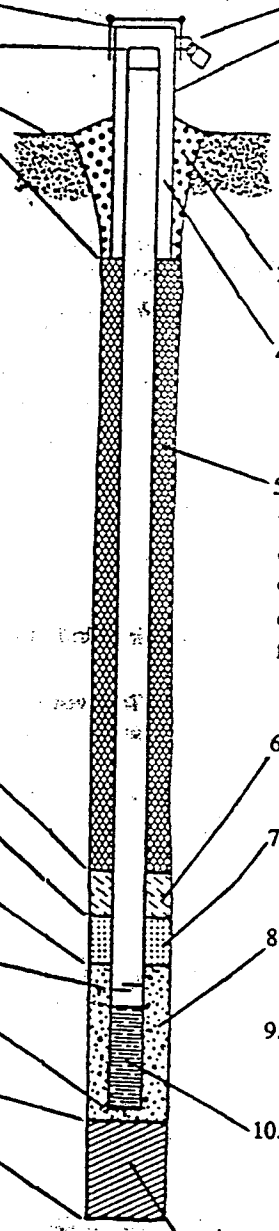
. Drilling fluid used: Water ☐ 02; Air ☐ 01; Drilling Mud ☒ 03; None ☐ 99

. Drilling additives used? ☒ Yes ☐ No

L ibe 9 lb/gal bentonite mud

. ource of water (attach analysis): BAAP Well #2

Bentonite seal, top _____ ft. MSL or 170.0 ft.
Fine sand, top _____ ft. MSL or 193.3 ft.
Filter pack, top _____ ft. MSL or 197.8 ft.
Screen joint, top _____ ft. MSL or 199.7 ft.
Well bottom _____ ft. MSL or 209.7 ft.
Filter pack, bottom _____ ft. MSL or 214.5 ft.
Borehole, bottom _____ ft. MSL or 214.5 ft.
orehole, diameter 8.3 in.
O.D. well casing 4.50 in.
.D. well casing 3.75 in.



1. Cap and lock? ☒ Yes ☐ No
2. Protective cover pipe:
a. Inside diameter: ___ in.
b. Length: ___ ft.
c. Material: Steel ☒ 04; Other ☐
d. Additional protection? ☒ Yes ☐ No
If yes, describe: 3 Bumper Posts
3. Surface seal: Bentonite ☐ 30; Concrete ☒ 01; Other ☐
4. Material between well casing and protective pipe: Bentonite ☐ 30; Annular space seal ☐; Other ☒ Concrete
5. Annular space seal: a. Granular Bentonite ☐ 33
b. ____ Lbs/gal mud weight . . . Bentonite-sand slurry ☐ 35
c. 9 Lbs/gal mud weight . . . . . Bentonite slurry ☒ 31
d. ____ % Bentonite . . . . . Bentonite-cement grout ☐ 50
e. 48 Ft^3 volume added for any of the above
f. How installed: Tremie ☒ 01; Tremie pumped ☐ 02; Gravity ☐ 08
6. Bentonite seal: a. Bentonite granules ☐ 33
b. ☐1/4 in. ☐3/8 in. ☐1/2 in. Bentonite pellets ☐ 32
c. 14 lb/gal Bentonite slurry Other ☒
7. Fine sand material: Manufacturer, product name & mesh size
a. Badger Mining #40-60 Silica
b. Volume added 1 ft^3
8. Filter pack material: Manufacturer, product name and mesh size
a. Global Drilling Supplies #50 Quartz
b. Volume added 4.9 ft^3
9. Well casing: Flush threaded PVC schedule 40 ☐ 23; Flush threaded PVC schedule 80 ☒ 24; Other ☐
10. Screen material: 4" Ø SCHED 80 PVC
a. Screen type: Factory cut ☒ 11; Continuous slot ☐ 01; Other ☐
b. Manufacturer Timco
c. Slot size: 0.010 in.
d. Slotted length: 10.0 ft.
11. Backfill material (below filter pack): None ☐ 14; Other ☐

ere certify that the information on this form is true and correct to the best of my knowledge.
an Jon Hammerberg
Firm: Woodward-Clyde Consultants

se complete both sides of this form and return to the appropriate DNR office listed at the top of this form as required by chs. 144, 147 and 160, Wis. Stats., ch. NR 141, Wis. Ad. Code. In accordance with ch.144, Wis Stats., failure to file this form may result in a forfeiture of not less than $10, nor more than 0 for each day of violation. In accordance with ch. 147, Wis. Stats., failure to file this form may result in a forfeiture of not more than $10,000 for each f violation. NOTE: Shaded areas are for DNR use only. See instructions for more information including where the completed form should be sent.

State of Wisconsin
Department of Natural Resources

Route to: Watershed/Wastewater ☐ Waste Management ☐ Remediation/Redevelopment ☒ Other ☐ _____

MONITORING WELL CONSTRUCTION
Form 4400-113A Rev. 7-98

Facility/Project Name: BAAP/Olin Corporation	Local Grid Location of Well: ____ ft. ☐N. ☐S. ____ ft. ☐E. ☐W.	Well Name: PBN 9902-A
Facility License, Permit or Monitoring No.	Local Grid Origin ☐ (estimated: ☐) or Well Location ☐ Lat. ___° ___' ___" Long. ___° ___' ___" or	Wis. Unique Well No.: JW373 / DNR Well ID No.: ___
Facility ID: ___	St. Plane 484,804.32 ft. N, 2,066,559.18 ft. E. S/C/N	Date Well Installed: 06/22/1999 (m m d d y y y y)
Type of Well: Well Code 11 / mw	Section Location of Waste/Source: ___1/4 of ___ 1/4 of Sec. ___, T. ___ N, R. ___ ☐E ☐W	Well Installed By: Name (first, last) and Firm: Dave Cruise / Badger State Drilling
Distance from Waste/Source ___ ft. / Enf. Stds. Apply ☐	Location of Well Relative to Waste/Source: u ☐ Upgradient s ☐ Sidegradient d ☐ Downgradient n ☐ Not Known	Gov. Lot Number: ___

A. Protective pipe, top elevation 811.87 ft. MSL

B. Well casing, top elevation 811.46 ft. MSL

C. Land surface elevation 808.91 ft. MSL

D. Surface seal, bottom ___ ft. MSL or ___ ft.

12. USCS classification of soil near screen:
GP ☐ GM ☐ GC ☐ GW ☐ SW ☐ SP ☒
SM ☒ SC ☐ ML ☐ MH ☐ CL ☐ CH ☐
Bedrock ☐

13. Sieve analysis performed? ☒ Yes ☐ No

14. Drilling method used: Rotary ☐ 50; Hollow Stem Auger ☒ 41; Other ☐ ___

15. Drilling fluid used: Water ☐ 02; Air ☐ 01; Drilling Mud ☐ 03; None ☒ 99

16. Drilling additives used? ☐ Yes ☒ No

Describe ___

17. Source of water (attach analysis, if required): ___

E. Bentonite seal, top ___ ft. MSL or 39 ft.

F. Fine sand, top ___ ft. MSL or 41 ft.

G. Filter pack, top ___ ft. MSL or 43 ft.

H. Screen joint, top ___ ft. MSL or 45 ft.

I. Well bottom ___ ft. MSL or 60 ft.

J. Filter pack, bottom ___ ft. MSL or 60 ft.

K. Borehole, bottom ___ ft. MSL or 61.6 ft.

L. Borehole, diameter 10.0 in.

M. O.D. well casing 4.5 in.

N. I.D. well casing 3.826 in.

1. Cap and lock? ☒ Yes ☐ No

2. Protective cover pipe:
a. Inside diameter: 6.0 in.
b. Length: 7.0 ft.
c. Material: Steel ☒ 04; Other ☐ ___
d. Additional protection? ☒ Yes ☐ No
If yes, describe: Steel Barrier Posts

3. Surface seal: Bentonite ☒ 30; Concrete ☐ 01; Other ☐ ___

4. Material between well casing and protective pipe: Bentonite ☐ 30; Other ☒ ___
Filter Sand

5. Annular space seal: a. Granular/Chipped Bentonite ☒ 33
b. ___ Lbs/gal mud weight . . . Bentonite-sand slurry ☐ 35
c. ___ Lbs/gal mud weight . . . . . Bentonite slurry ☐ 31
d. ___ % Bentonite . . . . . Bentonite-cement grout ☐ 50
e. 17.05 Ft^3 volume added for any of the above
f. How installed: Tremie ☐ 01; Tremie pumped ☐ 02; Gravity ☒ 08

6. Bentonite seal: a. Bentonite granules ☒ 33
b. ☐1/4 in. ☒3/8 in. ☐1/2 in. Bentonite chips ☐ 32
c. ___ Other ☐ ___

7. Fine sand material: Manufacturer, product name & mesh size
a. 40-60 Sidley
b. Volume added 0.87 ft^3

8. Filter pack material: Manufacturer, product name & mesh size
a. 1.0 - 1.3 Sidley
b. Volume added 8.08 ft^3

9. Well casing: Flush threaded PVC schedule 40 ☐ 23; Flush threaded PVC schedule 80 ☒ 24; Other ☐ ___

10. Screen material: Schedule 80 PVC
a. Screen type: Factory cut ☒ 11; Continuous slot ☐ 01; Other ☐ ___
b. Manufacturer Timco
c. Slot size: 0.010 in.
d. Slotted length: 15 ft.

11. Backfill material (below filter pack): None ☒ 14; Other ☐ ___

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature	Firm
[signature]	Badger State Drilling

Please complete both Forms 4400-113A and 4400-113B and return them to the appropriate DNR office and bureau. Completion of these reports is required by chs. 160, 281, 283, 289, 291, 292, 293, 295, and 299, Wis. Stats., and ch. NR 141, Wis. Adm. Code. In accordance with chs. 281, 289, 291, 292, 293, 295, and 299, Wis. Stats., failure to file these forms may result in a forfeiture of between $10 and $25,000, or imprisonment for up to one year, depending on the program and conduct involved. Personally identifiable information on these forms is not intended to be used for any other purpose. NOTE: See the instructions for more information, including where the completed forms should be sent.

State of Wisconsin
Department of Natural Resources

Route to: Watershed/Wastewater ☐ Waste Management ☐ Remediation/Redevelopment ☒ Other ☐ _____

MONITORING WELL CONSTRUCTION
Form 4400-113A Rev. 7-98

Facility/Project Name: BAAP/Olin Corporation	Local Grid Location of Well: _____ ft. ☐ N. ☐ S. _____ ft. ☐ E. ☐ W.	Well Name: PBN 9902-B
Facility License, Permit or Monitoring No.	Local Grid Origin ☐ (estimated: ☐) or Well Location ☐ Lat. ___ ° ___ ' ___ " Long. ___ ° ___ ' ___ " or	Wis. Unique Well No.: JW374 / DNR Well ID No.: ___
Facility ID: _____	St. Plane 484,801.60 ft. N, 2,066,554.72 ft. E. S/C/N	Date Well Installed: 07/08/1999 (mm dd yyyy)
Type of Well: Well Code 12 / pz	Section Location of Waste/Source: ___ 1/4 of ___ 1/4 of Sec. ___, T. ___ N, R. ___ ☐ E ☐ W	Well Installed By: Name (first, last) and Firm: Kevin McCumber / Badger State Drilling
Distance from Waste/Source ___ ft. Enf. Stds. Apply ☐	Location of Well Relative to Waste/Source: u ☐ Upgradient s ☐ Sidegradient d ☐ Downgradient n ☐ Not Known	Gov. Lot Number: _____

A. Protective pipe, top elevation 811.04 ft. MSL

B. Well casing, top elevation 810.64 ft. MSL

C. Land surface elevation 808.41 ft. MSL

D. Surface seal, bottom _____ ft. MSL or _____ ft.

12. USCS classification of soil near screen:
GP ☐ GM ☐ GC ☐ GW ☐ SW ☐ SP ☒
SM ☒ SC ☐ ML ☐ MH ☐ CL ☐ CH ☐
Bedrock ☐

13. Sieve analysis performed? ☒ Yes ☐ No

14. Drilling method used: Rotary ☒ 50
Hollow Stem Auger ☒ 41
Other ☐

15. Drilling fluid used: Water ☐ 02 Air ☐ 01
Drilling Mud ☒ 03 None ☐ 99

16. Drilling additives used? ☒ Yes ☐ No
Describe: Pure Gold Bentonite

17. Source of water (attach analysis, if required):

E. Bentonite seal, top _____ ft. MSL or 96.5 ft.

F. Fine sand, top _____ ft. MSL or 101.5 ft.

G. Filter pack, top _____ ft. MSL or 103.5 ft.

H. Screen joint, top _____ ft. MSL or 106 ft.

I. Well bottom _____ ft. MSL or 111 ft.

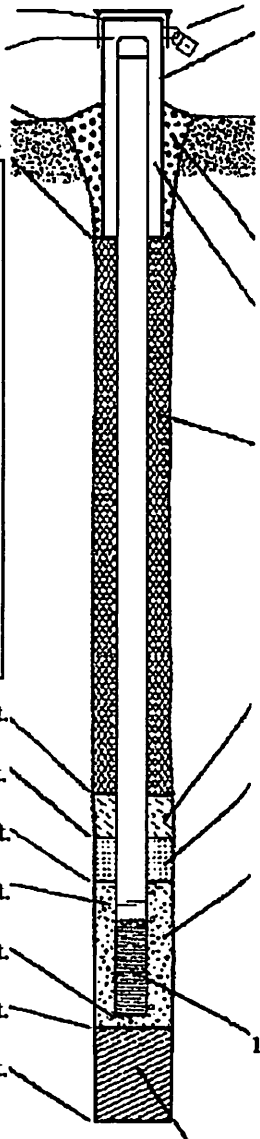
J. Filter pack, bottom _____ ft. MSL or 113 ft.

K. Borehole, bottom _____ ft. MSL or 113 ft.

L. Borehole, diameter 8.0 in.

M. O.D. well casing 4.5 in.

N. I.D. well casing 3.826 in.



1. Cap and lock? ☒ Yes ☐ No

2. Protective cover pipe:
a. Inside diameter: 6.0 in.
b. Length: 7.0 ft.
c. Material: Steel ☒ 04
Other ☐
d. Additional protection? ☒ Yes ☐ No
If yes, describe: Steel Barrier Posts

3. Surface seal: Bentonite ☒ 30
Concrete ☐ 01
Other ☐

4. Material between well casing and protective pipe:
Annular Space Seal
Bentonite ☐ 30
Other ☒

5. Annular space seal: a. Granular/Chipped Bentonite ☐ 33
b. ___ Lbs/gal mud weight . . . Bentonite-sand slurry ☐ 35
c. ___ Lbs/gal mud weight . . . . . Bentonite slurry ☐ 31
d. ___ % Bentonite . . . . . Bentonite-cement grout ☒ 50
e. 22.87 Ft^3 volume added for any of the above
f. How installed: Tremie ☐ 01
Tremie pumped ☒ 02
Gravity ☐ 08

6. Bentonite seal: a. Bentonite granules ☐ 33
b. ☐ 1/4 in. ☒ 3/8 in. ☐ 1/2 in. Bentonite chips ☒ 32
c. _____ Other ☐

7. Fine sand material: Manufacturer, product name & mesh size
a. 40-60 Sidley
b. Volume added 0.47 ft^3

8. Filter pack material: Manufacturer, product name & mesh size
a. #5 Sidley
b. Volume added 2.25 ft^3

9. Well casing: Flush threaded PVC schedule 40 ☐ 23
Flush threaded PVC schedule 80 ☒ 24
Other ☐

10. Screen material: Schedule 80 PVC
a. Screen type: Factory cut ☒ 11
Continuous slot ☐ 01
Other ☐
b. Manufacturer Timco
c. Slot size: 0.010 in.
d. Slotted length: 5.0 ft.

11. Backfill material (below filter pack): None ☒ 14
Other ☐

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature: [signature] Firm: Badger State Drilling

Please complete both Forms 4400-113A and 4400-113B and return them to the appropriate DNR office and bureau. Completion of these reports is required by chs. 160, 281, 283, 289, 291, 292, 293, 295, and 299, Wis. Stats., and ch. NR 141, Wis. Adm. Code. In accordance with chs. 281, 289, 291, 292, 293, 295, and 299, Wis. Stats., failure to file these forms may result in a forfeiture of between $10 and $25,000, or imprisonment for up to one year, depending on the program and conduct involved. Personally identifiable information on these forms is not intended to be used for any other purpose. NOTE: See the instructions for more information, including where the completed forms should be sent.

State of Wisconsin
Department of Natural Resources

Route to: Watershed/Wastewater ☐ Waste Management ☐
Remediation/Redevelopment ☒ Other ☐ _____

MONITORING WELL CONSTRUCTION
Form 4400-113A Rev. 7-98

Facility/Project Name: BAAP/Olin Corporation	Local Grid Location of Well: _____ ft. ☐N. ☐S. _____ ft. ☐E. ☐W.	Well Name: PBN 9902-C
Facility License, Permit or Monitoring No.	Local Grid Origin ☐ (estimated: ☐) or Well Location ☐ Lat. ___° ___' ___" Long. ___° ___' ___" or	Wis. Unique Well No.: JW375 / DNR Well ID No.: ___
Facility ID: ___	St. Plane 484,796.78 ft. N, 2,066,560.06 ft. E. S/C/N	Date Well Installed: 07/07/1999 (m m d d y y y y)
Type of Well: Well Code 12 / pz	Section Location of Waste/Source: ___1/4 of ___ 1/4 of Sec. ___, T. ___ N, R. ___ ☐E ☐W	Well Installed By: Name (first, last) and Firm: Kevin McCumber, Badger State Drilling
Distance from Waste/Source ___ ft. Enf. Stds. Apply ☐	Location of Well Relative to Waste/Source: u ☐ Upgradient s ☐ Sidegradient d ☐ Downgradient n ☐ Not Known	Gov. Lot Number: ___

A. Protective pipe, top elevation 811.57 ft. MSL

B. Well casing, top elevation 811.15 ft. MSL

C. Land surface elevation 809.16 ft. MSL

D. Surface seal, bottom ___ ft. MSL or ___ ft.

12. USCS classification of soil near screen:
GP ☐ GM ☐ GC ☐ GW ☐ SW ☐ SP ☒
SM ☒ SC ☐ ML ☐ MH ☐ CL ☐ CH ☐
Bedrock ☐

13. Sieve analysis performed? ☒ Yes ☐ No

14. Drilling method used: Rotary ☒ 50
Hollow Stem Auger ☒ 41
Other ☐

15. Drilling fluid used: Water ☐ 02 Air ☐ 01
Drilling Mud ☒ 03 None ☐ 99

16. Drilling additives used? ☒ Yes ☐ No

Describe Pure Gold Bentonite

17. Source of water (attach analysis, if required):

E. Bentonite seal, top ___ ft. MSL or 154 ft.

F. Fine sand, top ___ ft. MSL or 159 ft.

G. Filter pack, top ___ ft. MSL or 161 ft.

H. Screen joint, top ___ ft. MSL or 163 ft.

I. Well bottom ___ ft. MSL or 168 ft.

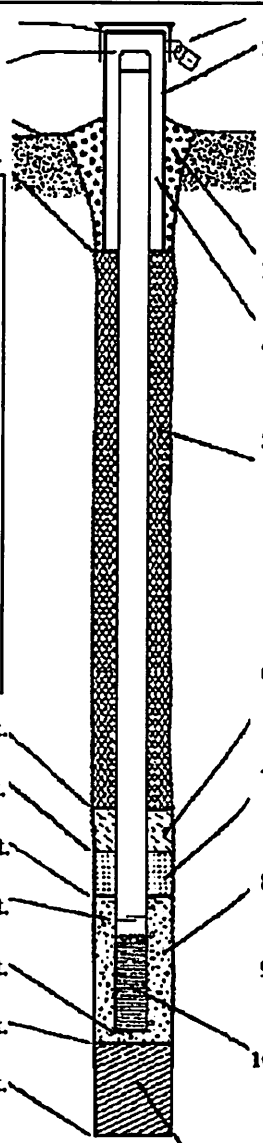
J. Filter pack, bottom ___ ft. MSL or 170 ft.

K. Borehole, bottom ___ ft. MSL or 170 ft.

L. Borehole, diameter 8.0 in.

M. O.D. well casing 4.5 in.

N. I.D. well casing 3.826 in.



1. Cap and lock? ☒ Yes ☐ No

2. Protective cover pipe:
a. Inside diameter: 6.0 in.
b. Length: 7.0 ft.
c. Material: Steel ☒ 04
Other ☐
d. Additional protection? ☒ Yes ☐ No
If yes, describe: Steel Barrier Posts

3. Surface seal: Bentonite ☐ 30
Concrete ☒ 01
Other ☐

4. Material between well casing and protective pipe:
Bentonite ☒ 30
Other ☐

5. Annular space seal: a. Granular/Chipped Bentonite ☐ 33
b. ___ Lbs/gal mud weight . . . Bentonite-sand slurry ☐ 35
c. ___ Lbs/gal mud weight . . . . . Bentonite slurry ☐ 31
d. ___ % Bentonite . . . . . Bentonite-cement grout ☒ 50
e. 36.5 Ft^3 volume added for any of the above
f. How installed: Tremie ☐ 01
Tremie pumped ☒ 02
Gravity ☐ 08

6. Bentonite seal: a. Bentonite granules ☐ 33
b. ☐1/4 in. ☒3/8 in. ☐1/2 in. Bentonite chips ☒ 32
c. ___ Other ☐

7. Fine sand material: Manufacturer, product name & mesh size
a. 40-60 Sidley
b. Volume added 0.47 ft^3

8. Filter pack material: Manufacturer, product name & mesh size
a. #5 Sidley
b. Volume added 2.13 ft^3

9. Well casing: Flush threaded PVC schedule 40 ☐ 23
Flush threaded PVC schedule 80 ☒ 24
Other ☐

10. Screen material: Schedule 80 PVC
a. Screen type: Factory cut ☒ 11
Continuous slot ☐ 01
Other ☐
b. Manufacturer Timco
c. Slot size: 0.010 in.
d. Slotted length: 5.0 ft.

11. Backfill material (below filter pack): None ☒ 14
Other ☐

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature: [signature] Firm: Badger State Drilling

Please complete both Forms 4400-113A and 4400-113B and return them to the appropriate DNR office and bureau. Completion of these reports is required by chs. 160, 281, 283, 289, 291, 292, 293, 295, and 299, Wis. Stats., and ch. NR 141, Wis. Adm. Code. In accordance with chs. 281, 289, 291, 292, 293, 295, and 299, Wis. Stats., failure to file these forms may result in a forfeiture of between $10 and $25,000, or imprisonment for up to one year, depending on the program and conduct involved. Personally identifiable information on these forms is not intended to be used for any other purpose. NOTE: See the instructions for more information, including where the completed forms should be sent.

State of Wisconsin
Department of Natural Resources

Route to: Watershed/Wastewater ☐ Waste Management ☐ Remediation/Redevelopment ☒ Other ☐ _____

MONITORING WELL CONSTRUCTION
Form 4400-113A Rev. 7-98

Facility/Project Name: BAAP/Olin Corporation	Local Grid Location of Well: _____ ft. ☐N. ☐S. _____ ft. ☐E. ☐W.	Well Name: PBN 9902-D
Facility License, Permit or Monitoring No.	Local Grid Origin ☐ (estimated: ☐) or Well Location ☐ Lat. ___° ___' ___" Long. ___° ___' ___" or	Wis. Unique Well No.: JW376 / DNR Well ID No.: ___
Facility ID: ___	St. Plane 484,798.69 ft. N, 2,066,563.31 ft. E. S/C/N	Date Well Installed: 07/01/1999 (m m d d y y y y)
Type of Well: Well Code 12 / pz	Section Location of Waste/Source: ___ 1/4 of ___ 1/4 of Sec. ___, T. ___ N, R. ___ ☐E ☐W	Well Installed By: Name (first, last) and Firm: Kevin McCumber / Badger State Drilling
Distance from Waste/Source ___ ft. Enf. Stds. Apply ☐	Location of Well Relative to Waste/Source: u ☐ Upgradient s ☐ Sidegradient d ☐ Downgradient n ☐ Not Known	Gov. Lot Number: ___

A. Protective pipe, top elevation 811.80 ft. MSL

B. Well casing, top elevation 811.39 ft. MSL

C. Land surface elevation 809.50 ft. MSL

D. Surface seal, bottom ___ ft. MSL or ___ ft.

12. USCS classification of soil near screen:
GP ☐ GM ☐ GC ☐ GW ☐ SW ☐ SP ☐
SM ☐ SC ☐ ML ☐ MH ☐ CL ☐ CH ☐
Bedrock ☒

13. Sieve analysis performed? ☐ Yes ☒ No

14. Drilling method used: Rotary ☒ 50; Hollow Stem Auger ☒ 41; Other ☐ ___

15. Drilling fluid used: Water ☐ 02; Air ☐ 01; Drilling Mud ☒ 03; None ☐ 99

16. Drilling additives used? ☒ Yes ☐ No

Describe: Pure Gold Bentonite

17. Source of water (attach analysis, if required): ___

E. Bentonite seal, top ___ ft. MSL or 202 ft.

F. Fine sand, top ___ ft. MSL or 207 ft.

G. Filter pack, top ___ ft. MSL or 209 ft.

H. Screen joint, top ___ ft. MSL or 217.5 ft.

I. Well bottom ___ ft. MSL or 222.5 ft.

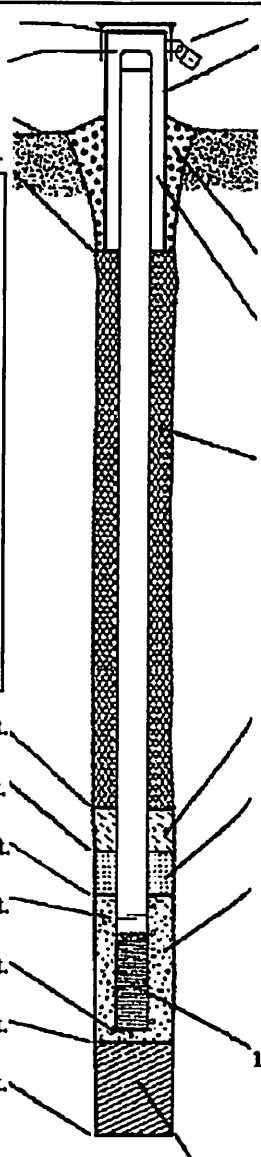
J. Filter pack, bottom ___ ft. MSL or 223 ft.

K. Borehole, bottom ___ ft. MSL or 223 ft.

L. Borehole, diameter 8.0 in.

M. O.D. well casing 4.5 in.

N. I.D. well casing 3.826 in.



1. Cap and lock? ☒ Yes ☐ No

2. Protective cover pipe:
a. Inside diameter: 6.0 in.
b. Length: 7.0 ft.
c. Material: Steel ☒ 04; Other ☐ ___
d. Additional protection? ☒ Yes ☐ No
If yes, describe: Steel Barrier Posts

3. Surface seal: Bentonite ☒ 30; Concrete ☐ 01; Other ☐ ___

4. Material between well casing and protective pipe: Annular Space Seal
Bentonite ☐ 30; Other ☒ ___

5. Annular space seal: a. Granular/Chipped Bentonite ☐ 33
b. ___ Lbs/gal mud weight . . . Bentonite-sand slurry ☐ 35
c. ___ Lbs/gal mud weight . . . . . Bentonite slurry ☐ 31
d. ___ % Bentonite . . . . . Bentonite-cement grout ☒ 50
e. 47.86 Ft^3 volume added for any of the above
f. How installed: Tremie ☐ 01; Tremie pumped ☒ 02; Gravity ☐ 08

6. Bentonite seal: a. Bentonite granules ☐ 33
b. ☐1/4 in. ☒3/8 in. ☐1/2 in. Bentonite chips ☒ 32
c. ___ Other ☐ ___

7. Fine sand material: Manufacturer, product name & mesh size
a. 40-60 Sidley
b. Volume added 0.47 ft^3

8. Filter pack material: Manufacturer, product name & mesh size
a. #5 Sidley
b. Volume added 3.3 ft^3

9. Well casing: Flush threaded PVC schedule 40 ☐ 23; Flush threaded PVC schedule 80 ☒ 24; Other ☐ ___

10. Screen material: Schedule 80 PVC
a. Screen type: Factory cut ☒ 11; Continuous slot ☐ 01; Other ☐ ___
b. Manufacturer Timco
c. Slot size: 0.010 in.
d. Slotted length: 5.0 ft.

11. Backfill material (below filter pack): None ☒ 14; Other ☐ ___

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature [signature] Firm: Badger State Drilling

Please complete both Forms 4400-113A and 4400-113B and return them to the appropriate DNR office and bureau. Completion of these reports is required by chs. 160, 281, 283, 289, 291, 292, 293, 295, and 299, Wis. Stats., and ch. NR 141, Wis. Adm. Code. In accordance with chs. 281, 289, 291, 292, 293, 295, and 299, Wis. Stats., failure to file these forms may result in a forfeiture of between $10 and $25,000, or imprisonment for up to one year, depending on the program and conduct involved. Personally identifiable information on these forms is not intended to be used for any other purpose. NOTE: See the instructions for more information, including where the completed forms should be sent.

State of Wisconsin
Department of Natural Resources

Route to: Watershed/Wastewater ☐ Waste Management ☐ Remediation/Redevelopment ☒ Other ☐ _____

MONITORING WELL CONSTRUCTION
Form 4400-113A Rev. 7-98

Facility/Project Name: BAAP/Olin Corporation	Local Grid Location of Well: _____ ft. ☐N. ☐S. _____ ft. ☐E. ☐W.	Well Name: PBN 9901-A
Facility License, Permit or Monitoring No.	Local Grid Origin ☐ (estimated: ☐) or Well Location ☐ Lat. ___° ___' ___" Long. ___° ___' ___" or	Wis. Unique Well No.: JW364 / DNR Well ID No.: ___
Facility ID: ___	St. Plane 484,811.30 ft. N, 2,066,423.87 ft. E. S/C/N	Date Well Installed: 06/22/1999 (mm dd yyyy)
Type of Well: Well Code 11 / mw	Section Location of Waste/Source: ___1/4 of ___1/4 of Sec. ___, T. ___ N, R. ___ ☐E ☐W	Well Installed By: Name (first, last) and Firm: Dave Cruise / Badger State Drilling
Distance from Waste/Source ___ ft. Enf. Stds. Apply ☐	Location of Well Relative to Waste/Source: u ☐ Upgradient s ☐ Sidegradient d ☐ Downgradient n ☐ Not Known	Gov. Lot Number: ___

A. Protective pipe, top elevation 810.77 ft. MSL

B. Well casing, top elevation 810.42 ft. MSL

C. Land surface elevation 808.39 ft. MSL

D. Surface seal, bottom ___ ft. MSL or ___ ft.

12. USCS classification of soil near screen:
GP ☐ GM ☐ GC ☐ GW ☐ SW ☐ SP ☒
SM ☒ SC ☐ ML ☐ MH ☐ CL ☐ CH ☐
Bedrock ☐

13. Sieve analysis performed? ☒ Yes ☐ No

14. Drilling method used: Rotary ☐ 50
Hollow Stem Auger ☒ 41
Other ☐

15. Drilling fluid used: Water ☐ 02 Air ☐ 01
Drilling Mud ☐ 03 None ☒ 99

16. Drilling additives used? ☐ Yes ☒ No

Describe _____

17. Source of water (attach analysis, if required):

E. Bentonite seal, top ___ ft. MSL or 38 ft.

F. Fine sand, top ___ ft. MSL or 40 ft.

G. Filter pack, top ___ ft. MSL or 42 ft.

H. Screen joint, top ___ ft. MSL or 44 ft.

I. Well bottom ___ ft. MSL or 59 ft.

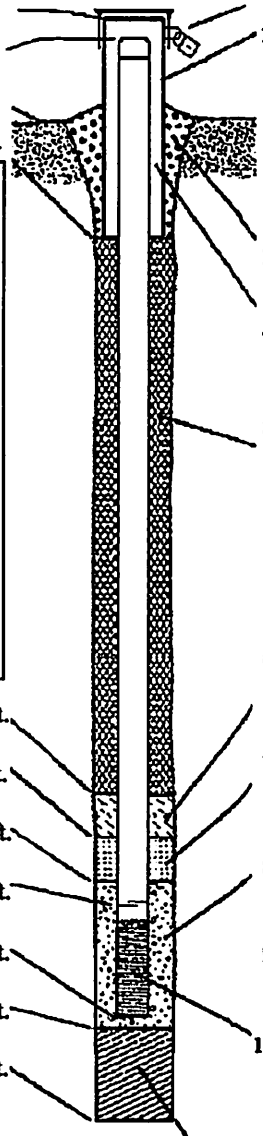
J. Filter pack, bottom ___ ft. MSL or 59 ft.

K. Borehole, bottom ___ ft. MSL or 61 ft.

L. Borehole, diameter 10.0 in.

M. O.D. well casing 4.5 in.

N. I.D. well casing 3.826 in.



1. Cap and lock? ☒ Yes ☐ No

2. Protective cover pipe:
a. Inside diameter: 6.0 in.
b. Length: 7.0 ft.
c. Material: Steel ☒ 04
Other ☐
d. Additional protection? ☒ Yes ☐ No
If yes, describe: Steel Barrier Posts

3. Surface seal: Bentonite ☒ 30
Concrete ☐ 01
Other ☐

4. Material between well casing and protective pipe:
Filter Sand
Bentonite ☐ 30
Other ☒

5. Annular space seal: a. Granular/Chipped Bentonite ☒ 33
b. ___ Lbs/gal mud weight . . . Bentonite-sand slurry ☐ 35
c. ___ Lbs/gal mud weight . . . . . Bentonite slurry ☐ 31
d. ___ % Bentonite . . . . . Bentonite-cement grout ☐ 50
e. 16.6 Ft^3 volume added for any of the above
f. How installed: Tremie ☐ 01
Tremie pumped ☐ 02
Gravity ☒ 08

6. Bentonite seal: a. Bentonite granules ☒ 33
b. ☐1/4 in. ☒3/8 in. ☐1/2 in. Bentonite chips ☐ 32
c. _____ Other ☐

7. Fine sand material: Manufacturer, product name & mesh size
a. 40-60 Sidley
b. Volume added 0.87 ft^3

8. Filter pack material: Manufacturer, product name & mesh size
a. 1.0 - 1.3 Sidley
b. Volume added 7.43 ft^3

9. Well casing: Flush threaded PVC schedule 40 ☐ 23
Flush threaded PVC schedule 80 ☒ 24
Other ☐

10. Screen material: Schedule 80 PVC
a. Screen type: Factory cut ☒ 11
Continuous slot ☐ 01
Other ☐
b. Manufacturer Timco
c. Slot size: 0.010 in.
d. Slotted length: 15 ft.

11. Backfill material (below filter pack): None ☒ 14
Other ☐

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature _____ Firm: Badger State Drilling

Please complete both Forms 4400-113A and 4400-113B and return them to the appropriate DNR office and bureau. Completion of these reports is required by chs. 160, 281, 283, 289, 291, 292, 293, 295, and 299, Wis. Stats., and ch. NR 141, Wis. Adm. Code. In accordance with chs. 281, 289, 291, 292, 293, 295, and 299, Wis. Stats., failure to file these forms may result in a forfeiture of between $10 and $25,000, or imprisonment for up to one year, depending on the program and conduct involved. Personally identifiable information on these forms is not intended to be used for any other purpose. NOTE: See the instructions for more information, including where the completed forms should be sent.

State of Wisconsin
Department of Natural Resources

Route to: Watershed/Wastewater ☐ Waste Management ☐ Remediation/Redevelopment ☒ Other ☐ _____

MONITORING WELL CONSTRUCTION
Form 4400-113A Rev. 7-98

Facility/Project Name: BAAP/Olin Corporation	Local Grid Location of Well: _____ ft. ☐N. ☐S. _____ ft. ☐E. ☐W.	Well Name: PBN 9901-B
Facility License, Permit or Monitoring No.	Local Grid Origin ☐ (estimated: ☐) or Well Location ☐ Lat. ___ ° ___ ' ___ " Long. ___ ° ___ ' ___ " or	Wis. Unique Well No.: JW365 / DNR Well ID No.:
Facility ID	St. Plane 484,806.55 ft. N, 2,066,423.69 ft. E. S/C/N	Date Well Installed: 06/29/1999 (m m d d y y y y)
Type of Well: Well Code 12 / pz	Section Location of Waste/Source: ___ 1/4 of ___ 1/4 of Sec. ___, T. ___ N, R. ___ ☐E ☐W	Well Installed By: Name (first, last) and Firm: Kevin McCumber / Badger State Drilling
Distance from Waste/Source ___ ft. Enf. Stds. Apply ☐	Location of Well Relative to Waste/Source: u ☐ Upgradient s ☐ Sidegradient d ☐ Downgradient n ☐ Not Known; Gov. Lot Number:	

A. Protective pipe, top elevation 810.45 ft. MSL

B. Well casing, top elevation 810.04 ft. MSL

C. Land surface elevation 808.46 ft. MSL

D. Surface seal, bottom ____ ft. MSL or ____ ft.

12. USCS classification of soil near screen:
GP ☐ GM ☐ GC ☐ GW ☐ SW ☐ SP ☒
SM ☒ SC ☐ ML ☐ MH ☐ CL ☐ CH ☐
Bedrock ☐

13. Sieve analysis performed? ☒ Yes ☐ No

14. Drilling method used: Rotary ☒ 50; Hollow Stem Auger ☒ 41; Other ☐

15. Drilling fluid used: Water ☐ 02; Air ☐ 01; Drilling Mud ☒ 03; None ☐ 99

16. Drilling additives used? ☒ Yes ☐ No

Describe: Pure Gold Bentonite

17. Source of water (attach analysis, if required):

E. Bentonite seal, top ____ ft. MSL or 92 ft.

F. Fine sand, top ____ ft. MSL or 97.6 ft.

G. Filter pack, top ____ ft. MSL or 99.6 ft.

H. Screen joint, top ____ ft. MSL or 102 ft.

I. Well bottom ____ ft. MSL or 107 ft.

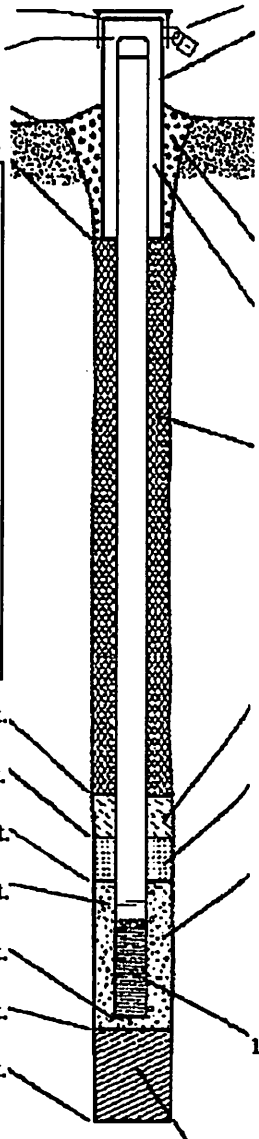
J. Filter pack, bottom ____ ft. MSL or 109 ft.

K. Borehole, bottom ____ ft. MSL or 109 ft.

L. Borehole, diameter 8.0 in.

M. O.D. well casing 4.5 in.

N. I.D. well casing 3.826 in.



1. Cap and lock? ☒ Yes ☐ No

2. Protective cover pipe:
a. Inside diameter: 6.0 in.
b. Length: 7.0 ft.
c. Material: Steel ☒ 04; Other ☐
d. Additional protection? ☒ Yes ☐ No
If yes, describe: Steel Barrier Posts

3. Surface seal: Bentonite ☒ 30; Concrete ☐ 01; Other ☐

4. Material between well casing and protective pipe: Annular Space Seal
Bentonite ☐ 30; Other ☒

5. Annular space seal:
a. Granular/Chipped Bentonite ☐ 33
b. ____ Lbs/gal mud weight . . . Bentonite-sand slurry ☐ 35
c. ____ Lbs/gal mud weight . . . . . Bentonite slurry ☐ 31
d. 3 % Bentonite . . . . . Bentonite-cement grout ☒ 50
e. 21.8 Ft^3 volume added for any of the above
f. How installed: Tremie ☐ 01; Tremie pumped ☒ 02; Gravity ☐ 08

6. Bentonite seal: a. Bentonite granules ☐ 33
b. ☐1/4 in. ☒3/8 in. ☐1/2 in. Bentonite chips ☒ 32
c. ____ Other ☐

7. Fine sand material: Manufacturer, product name & mesh size
a. 40-60 Ohio
b. Volume added 0.47 ft^3

8. Filter pack material: Manufacturer, product name & mesh size
a. #5 Ohio
b. Volume added 2.25 ft^3

9. Well casing: Flush threaded PVC schedule 40 ☐ 23; Flush threaded PVC schedule 80 ☒ 24; Other ☐

10. Screen material: Schedule 80 PVC
a. Screen type: Factory cut ☒ 11; Continuous slot ☐ 01; Other ☐
b. Manufacturer Timco
c. Slot size: 0.010 in.
d. Slotted length: 5.0 ft.

11. Backfill material (below filter pack): None ☒ 14; Other ☐

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature [signature] Firm: Badger State Drilling

Please complete both Forms 4400-113A and 4400-113B and return them to the appropriate DNR office and bureau. Completion of these reports is required by chs. 160, 281, 283, 289, 291, 292, 293, 295, and 299, Wis. Stats., and ch. NR 141, Wis. Adm. Code. In accordance with chs. 281, 289, 291, 292, 293, 295, and 299, Wis. Stats., failure to file these forms may result in a forfeiture of between $10 and $25,000, or imprisonment for up to one year, depending on the program and conduct involved. Personally identifiable information on these forms is not intended to be used for any other purpose. NOTE: See the instructions for more information, including where the completed forms should be sent.

State of Wisconsin
Department of Natural Resources

Route to: Watershed/Wastewater ☐ Waste Management ☐ Remediation/Redevelopment ☒ Other ☐ _____

MONITORING WELL CONSTRUCTION
Form 4400-113A Rev. 7-98

Facility/Project Name: BAAP/Olin Corporation	Local Grid Location of Well: _____ ft. ☐ N. ☐ S. _____ ft. ☐ E. ☐ W.	Well Name: PBN 9901-C
Facility License, Permit or Monitoring No.	Local Grid Origin ☐ (estimated: ☐) or Well Location ☐ Lat. ___° ___' ___" Long. ___° ___' ___" or	Wis. Unique Well No.: JW371 / DNR Well ID No.: ___
Facility ID: ___	St. Plane 484,797.48 ft. N, 2,066,424.31 ft. E. S/C/N	Date Well Installed: 06/28/1999 (m m d d y y y y)
Type of Well: Well Code 12 / pz	Section Location of Waste/Source: ___1/4 of ___ 1/4 of Sec. ___, T. ___ N, R. ___ ☐ E ☐ W	Well Installed By: Name (first, last) and Firm: Kevin McCumber, Badger State Drilling
Distance from Waste/Source ___ ft. / Enf. Stds. Apply ☐	Location of Well Relative to Waste/Source: u ☐ Upgradient s ☐ Sidegradient d ☐ Downgradient n ☐ Not Known	Gov. Lot Number: ___

A. Protective pipe, top elevation 810.27 ft. MSL

B. Well casing, top elevation 810.04 ft. MSL

C. Land surface elevation 808.45 ft. MSL

D. Surface seal, bottom ___ ft. MSL or ___ ft.

12. USCS classification of soil near screen:
GP ☐ GM ☐ GC ☐ GW ☐ SW ☐ SP ☒
SM ☒ SC ☐ ML ☐ MH ☐ CL ☐ CH ☐
Bedrock ☐

13. Sieve analysis performed? ☒ Yes ☐ No

14. Drilling method used: Rotary ☒ 50; Hollow Stem Auger ☒ 41; Other ☐

15. Drilling fluid used: Water ☐ 02; Air ☐ 01; Drilling Mud ☒ 03; None ☐ 99

16. Drilling additives used? ☒ Yes ☐ No

Describe: Pure Gold Bentonite

17. Source of water (attach analysis, if required): ___

E. Bentonite seal, top ___ ft. MSL or 149 ft.

F. Fine sand, top ___ ft. MSL or 154 ft.

G. Filter pack, top ___ ft. MSL or 155.5 ft.

H. Screen joint, top ___ ft. MSL or 158 ft.

I. Well bottom ___ ft. MSL or 163 ft.

J. Filter pack, bottom ___ ft. MSL or 165 ft.

K. Borehole, bottom ___ ft. MSL or 165 ft.

L. Borehole, diameter 8.0 in.

M. O.D. well casing 4.5 in.

N. I.D. well casing 3.826 in.

1. Cap and lock? ☒ Yes ☐ No

2. Protective cover pipe:
a. Inside diameter: 6.0 in.
b. Length: 7.0 ft.
c. Material: Steel ☒ 04; Other ☐
d. Additional protection? ☒ Yes ☐ No
If yes, describe: Steel Barrier Posts

3. Surface seal: Bentonite ☒ 30; Concrete ☐ 01; Other ☐

4. Material between well casing and protective pipe: Bentonite ☐ 30; Other ☒
Annular Space Seal

5. Annular space seal: a. Granular/Chipped Bentonite ☐ 33
b. ___ Lbs/gal mud weight . . . Bentonite-sand slurry ☐ 35
c. ___ Lbs/gal mud weight . . . . . Bentonite slurry ☐ 31
d. ___ % Bentonite . . . . . Bentonite-cement grout ☒ 50
e. 35.3 Ft^3 volume added for any of the above
f. How installed: Tremie ☐ 01; Tremie pumped ☒ 02; Gravity ☐ 08

6. Bentonite seal: a. Bentonite granules ☐ 33
b. ☐ 1/4 in. ☒ 3/8 in. ☐ 1/2 in. Bentonite chips ☒ 32
c. ___ Other ☐

7. Fine sand material: Manufacturer, product name & mesh size
a. 40-60 Ohio
b. Volume added 0.35 ft^3

8. Filter pack material: Manufacturer, product name & mesh size
a. #5 Ohio
b. Volume added 2.25 ft^3

9. Well casing: Flush threaded PVC schedule 40 ☐ 23; Flush threaded PVC schedule 80 ☒ 24; Other ☐

10. Screen material: Schedule 80 PVC
a. Screen type: Factory cut ☒ 11; Continuous slot ☐ 01; Other ☐
b. Manufacturer Timco
c. Slot size: 0.010 in.
d. Slotted length: 5.0 ft.

11. Backfill material (below filter pack): None ☒ 14; Other ☐

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature	Firm
[signature]	Badger State Drilling

Please complete both Forms 4400-113A and 4400-113B and return them to the appropriate DNR office and bureau. Completion of these reports is required by chs. 160, 281, 283, 289, 291, 292, 293, 295, and 299, Wis. Stats., and ch. NR 141, Wis. Adm. Code. In accordance with chs. 281, 289, 291, 292, 293, 295, and 299, Wis. Stats., failure to file these forms may result in a forfeiture of between $10 and $25,000, or imprisonment for up to one year, depending on the program and conduct involved. Personally identifiable information on these forms is not intended to be used for any other purpose. NOTE: See the instructions for more information, including where the completed forms should be sent.

State of Wisconsin
Department of Natural Resources

Route to: Watershed/Wastewater ☐ Waste Management ☐ Remediation/Redevelopment ☒ Other ☐ _____

MONITORING WELL CONSTRUCTION
Form 4400-113A Rev. 7-98

Facility/Project Name: BAAP/Olin Corporation	Local Grid Location of Well: ____ ft. ☐N. ☐S. ____ ft. ☐E. ☐W.	Well Name: PBN 9901-D
Facility License, Permit or Monitoring No.	Local Grid Origin ☐ (estimated: ☐) or Well Location ☐ Lat. ___° ___' ___" Long. ___° ___' ___" or	Wis. Unique Well No.: JW372 / DNR Well ID No.: ___
Facility ID: ___	St. Plane 484,788.26 ft. N, 2,066,425.64 ft. E. S/C/N	Date Well Installed: 06/23/1999 (m m d d y y y y)
Type of Well: Well Code 12 / pz	Section Location of Waste/Source: ___1/4 of ___ 1/4 of Sec. ___, T. ___ N, R. ___ ☐E ☐W	Well Installed By: Name (first, last) and Firm: Kevin McCumber, Badger State Drilling
Distance from Waste/Source ___ ft. Enf. Stds. Apply ☐	Location of Well Relative to Waste/Source: u ☐ Upgradient s ☐ Sidegradient d ☐ Downgradient n ☐ Not Known	Gov. Lot Number: ___

A. Protective pipe, top elevation 811.29 ft. MSL

B. Well casing, top elevation 810.86 ft. MSL

C. Land surface elevation 808.52 ft. MSL

D. Surface seal, bottom ___ ft. MSL or ___ ft.

12. USCS classification of soil near screen:
GP ☐ GM ☐ GC ☐ GW ☐ SW ☐ SP ☐
SM ☐ SC ☐ ML ☐ MH ☐ CL ☐ CH ☐
Bedrock ☒

13. Sieve analysis performed? ☐ Yes ☒ No

14. Drilling method used: Rotary ☒ 50; Hollow Stem Auger ☒ 41; Other ☐ ___

15. Drilling fluid used: Water ☐ 02; Air ☐ 01; Drilling Mud ☒ 03; None ☐ 99

16. Drilling additives used? ☒ Yes ☐ No

Describe: Pure Gold Bentonite

17. Source of water (attach analysis, if required): ___

E. Bentonite seal, top ___ ft. MSL or 202 ft.

F. Fine sand, top ___ ft. MSL or 207 ft.

G. Filter pack, top ___ ft. MSL or 209 ft.

H. Screen joint, top ___ ft. MSL or 211 ft.

I. Well bottom ___ ft. MSL or 216 ft.

J. Filter pack, bottom ___ ft. MSL or 218 ft.

K. Borehole, bottom ___ ft. MSL or 218 ft.

L. Borehole, diameter 8.0 in.

M. O.D. well casing 4.5 in.

N. I.D. well casing 3.826 in.

1. Cap and lock? ☒ Yes ☐ No

2. Protective cover pipe:
a. Inside diameter: 6.0 in.
b. Length: 7.0 ft.
c. Material: Steel ☒ 04; Other ☐ ___
d. Additional protection? ☒ Yes ☐ No
If yes, describe: Steel Barrier Posts

3. Surface seal: Bentonite ☒ 30; Concrete ☐ 01; Other ☐ ___

4. Material between well casing and protective pipe: Annular Space Seal
Bentonite ☐ 30; Other ☒ ___

5. Annular space seal: a. Granular/Chipped Bentonite ☐ 33
b. ___ Lbs/gal mud weight... Bentonite-sand slurry ☐ 35
c. ___ Lbs/gal mud weight..... Bentonite slurry ☐ 31
d. ___ % Bentonite ..... Bentonite-cement grout ☒ 50
e. 47.86 Ft^3 volume added for any of the above
f. How installed: Tremie ☐ 01; Tremie pumped ☒ 02; Gravity ☐ 08

6. Bentonite seal: a. Bentonite granules ☐ 33
b. ☐1/4 in. ☒3/8 in. ☐1/2 in. Bentonite chips ☒ 32
c. ___ Other ☐ ___

7. Fine sand material: Manufacturer, product name & mesh size
a. 40-60 Ohio
b. Volume added 0.47 ft^3

8. Filter pack material: Manufacturer, product name & mesh size
a. #5 Ohio
b. Volume added 2.6 ft^3

9. Well casing: Flush threaded PVC schedule 40 ☐ 23; Flush threaded PVC schedule 80 ☒ 24; Other ☐ ___

10. Screen material: Schedule 80 PVC
a. Screen type: Factory cut ☒ 11; Continuous slot ☐ 01; Other ☐ ___
b. Manufacturer Timco
c. Slot size: 0.010 in.
d. Slotted length: 5.0 ft.

11. Backfill material (below filter pack): None ☒ 14; Other ☐ ___

I hereby certify that the information on this form is true and correct to the best of my knowledge.

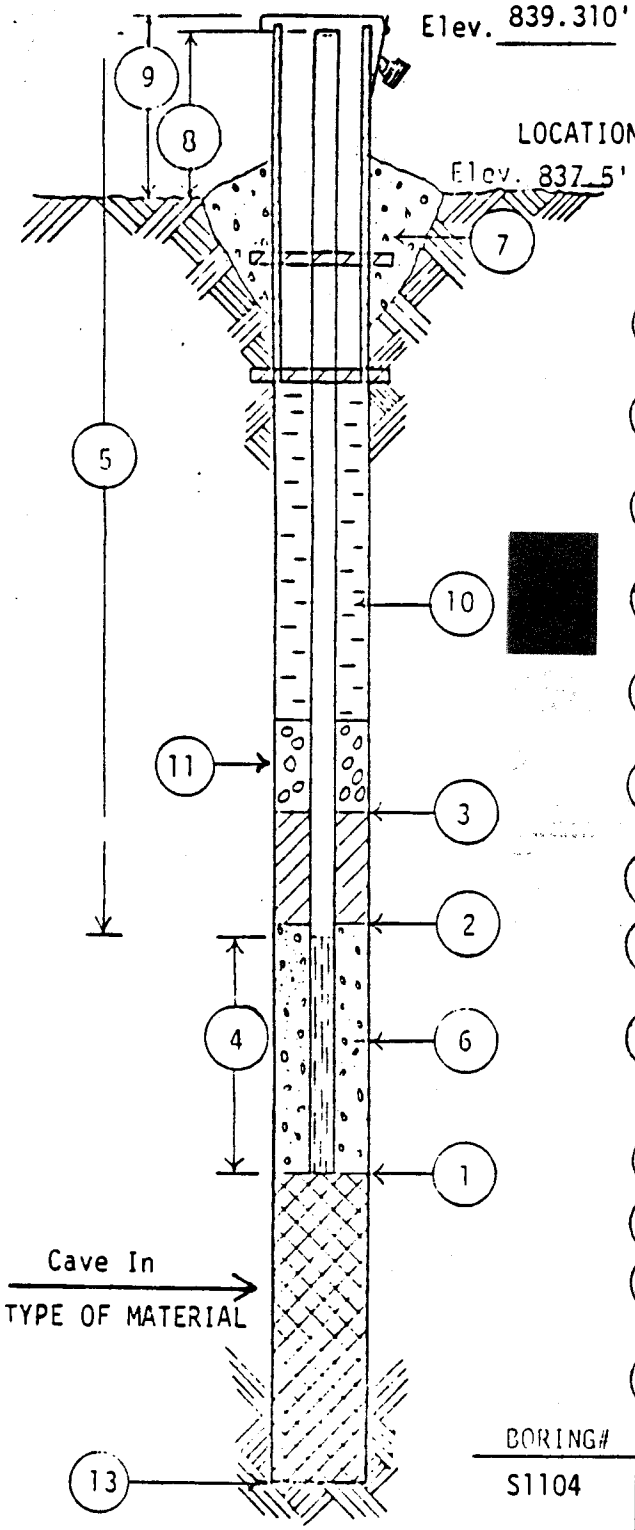
Signature: [signature] Firm: Badger State Drilling

Please complete both Forms 4400-113A and 4400-113B and return them to the appropriate DNR office and bureau. Completion of these reports is required by chs. 160, 281, 283, 289, 291, 292, 293, 295, and 299, Wis. Stats., and ch. NR 141, Wis. Adm. Code. In accordance with chs. 281, 289, 291, 292, 293, 295, and 299, Wis. Stats., failure to file these forms may result in a forfeiture of between $10 and $25,000, or imprisonment for up to one year, depending on the program and conduct involved. Personally identifiable information on these forms is not intended to be used for any other purpose. NOTE: See the instructions for more information, including where the completed forms should be sent.

Badger Army Ammunition Plant
Baraboo, Wisconsin

WELL DETAIL INFORMATION SHEET

JOB NO. C 8742
BORING NO. S1104 #703
DATE 11/7/79
CHIEF HFS
LOCATION N484,801.60 E2,071,095.05



All depth measurements of well detail to be from ground surface.

1. DEPTH TO BOTTOM OF WELL POINT OR SLOTTED PIPE 93.52 FEET.
2. DEPTH OF BOTTOM OF SEAL (if installed) 65.6 FEET.
3. DEPTH TO TOP OF SEAL (if installed) 64.6 FEET.
4. LENGTH OF PVC WELL SCREEN, 20.22 FEET. 18.92 Feet Slotted
5. TOTAL LENGTH OF PIPE 75.10 FEET @ 4 I.D. IN. DIAMETER.
6. TYPE OF FILTER MATERIAL AROUND WELL POINT OR SLOTTED PIPE Medium Sand .
7. CONCRETE CAP, YES NO (Circle One)
8. HEIGHT OF WELL CASING ABOVE GROUND 1.8 FEET.
9. PROTECTIVE CASING? YES NO (Circle One)
   HEIGHT ABOVE GROUND .
   LOCKING CAP? YES NO (Circle One)
10. TYPE OF BACKFILL: Cement/Bentonite Grout 3:1 by weight
11. THICKNESS OF GRAVEL PACK 3 FEET.
12. DEPTH TO FIRST COUPLING 2.56 FEET. From (TOC)
    COUPLING INTERVAL 10.2 FEET.
13. TOTAL DEPTH OF BOREHOLE 96 FEET.

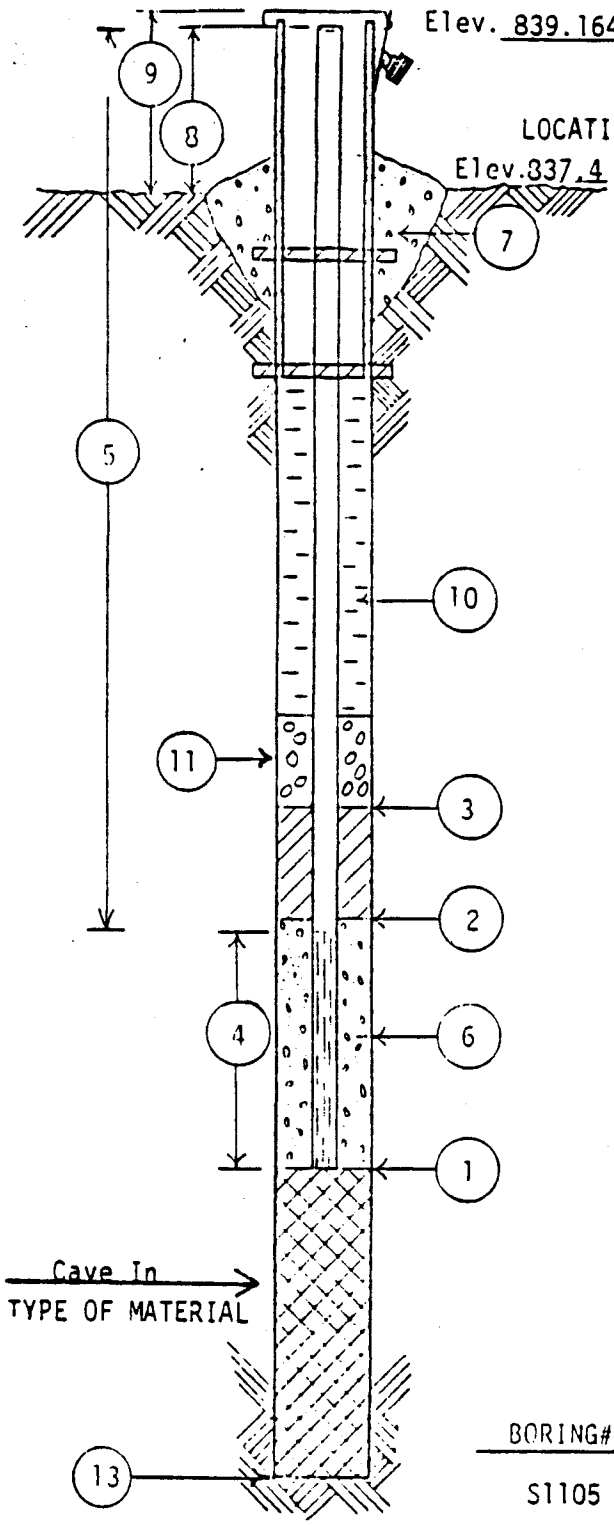
BORING#	DATE	TIME	DEPTH TO WATER	GROUNDWATER ELEVATION
S1104	2/19/80		75.20'	764.11'

Note: S1106 nearest sampled boring

Badger Army Ammunition Plant
Baraboo, Wisconsin

WELL DETAIL INFORMATION SHEET

JOB NO. C 8742
BORING NO. S1105 #704
DATE 11/15/79
CHIEF HFS
LOCATION N484,792.24 E2,071,089.74



All depth measurements of well detail to be from ground surface.

1. DEPTH TO BOTTOM OF WELL POINT OR SLOTTED PIPE 109.5 FEET.
2. DEPTH OF BOTTOM OF SEAL (if installed) 101.6 FEET.
3. DEPTH TO TOP OF SEAL (if installed) 98.2 FEET.
4. LENGTH OF PVC WELL SCREEN, 5.07 FEET. 4.48 Feet Slotted
5. TOTAL LENGTH OF PIPE 106.26 FEET @ 4 I.D. IN. DIAMETER.
6. TYPE OF FILTER MATERIAL AROUND WELL POINT OR SLOTTED PIPE Medium Sand.
7. CONCRETE CAP, YES NO (Circle One)
8. HEIGHT OF WELL CASING ABOVE GROUND 1.8 FEET.
9. PROTECTIVE CASING? YES NO (Circle One)
   HEIGHT ABOVE GROUND _____.
   LOCKING CAP? YES NO (Circle One)
10. TYPE OF BACKFILL: Cement/Bentonite Grout 3:1 by weight
11. THICKNESS OF GRAVEL PACK 8 FEET.
12. DEPTH TO FIRST COUPLING 3.18 FEET. From (TOC)
    COUPLING INTERVAL 10.2 FEET.
13. TOTAL DEPTH OF BOREHOLE 110.5 FEET.

BORING#	DATE	TIME	DEPTH TO WATER	GROUNDWATER ELEVATION
S1105	2/10/80		75.07	764.09

Note: S1106 nearest sampled boring

Badger Army Ammunition Plant
Baraboo, Wisconsin

WELL DETAIL INFORMATION SHEET

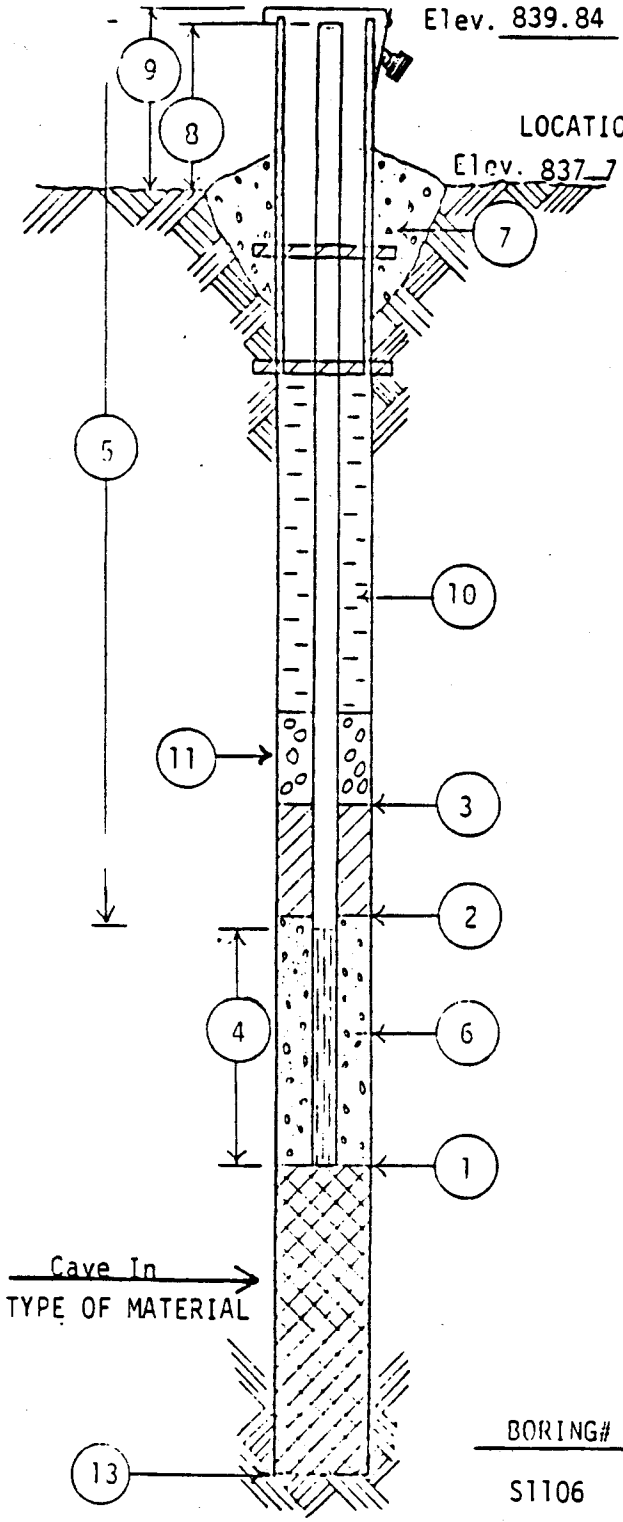
JOB NO. C 8742

BORING NO. S1106 #705

DATE 11/14/79

CHIEF HFS

LOCATION N484,793.05 E2,071,101.83



All depth measurements of well detail to be from ground surface.

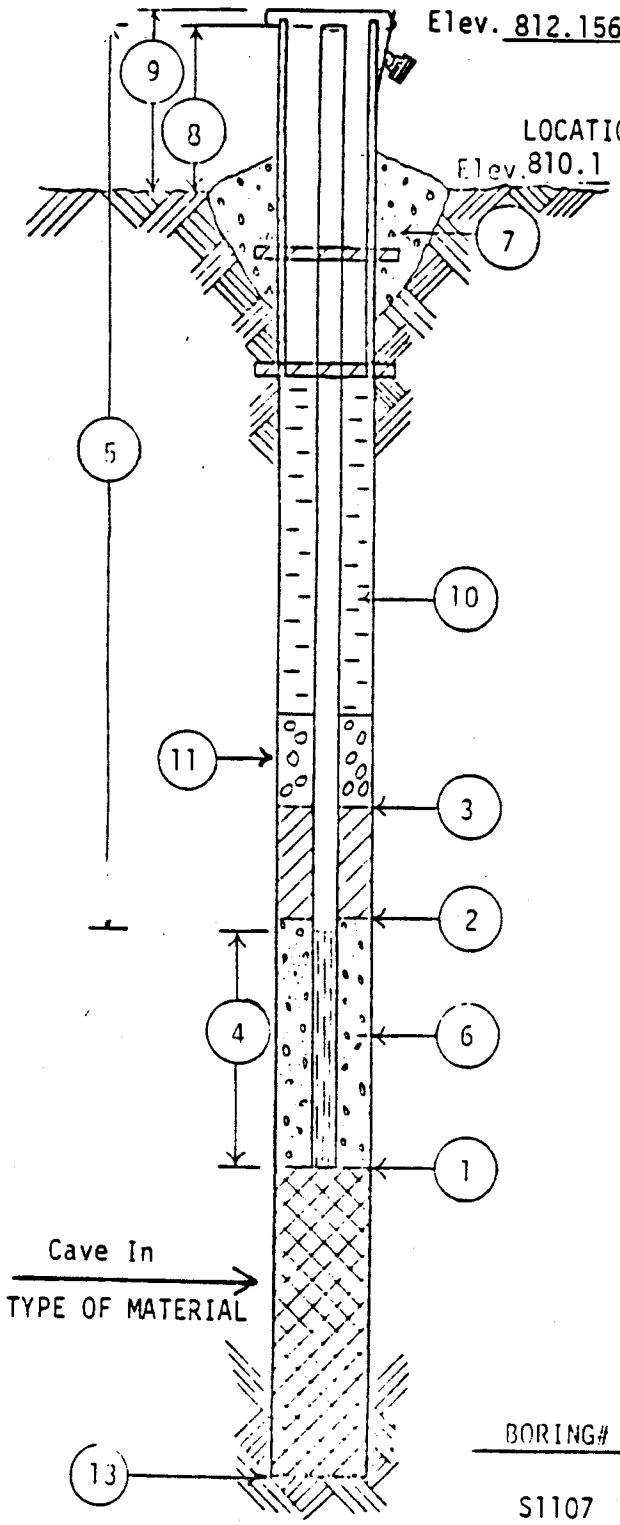
1. DEPTH TO BOTTOM OF WELL POINT OR SLOTTED PIPE 135.72 FEET.
2. DEPTH OF BOTTOM OF SEAL (if installed) 125.15 FEET.
3. DEPTH TO TOP OF SEAL (if installed) 119.55 FEET.
4. LENGTH OF PVC WELL SCREEN, 4.96 FEET. 4.5 Feet Slotted
5. TOTAL LENGTH OF PIPE 132.87 FEET @ 4 I.D. IN. DIAMETER.
6. TYPE OF FILTER MATERIAL AROUND WELL POINT OR SLOTTED PIPE Medium Sand & Cave in Material
7. CONCRETE CAP, YES (NO) (Circle One)
8. HEIGHT OF WELL CASING ABOVE GROUND 2.1 FEET.
9. PROTECTIVE CASING? (YES) NO (Circle One)
   HEIGHT ABOVE GROUND .
   LOCKING CAP? (YES) NO (Circle One)
10. TYPE OF BACKFILL: Cement/Bentonite Grout 3:1 by weight
11. THICKNESS OF GRAVEL PACK 7.8 FEET.
12. DEPTH TO FIRST COUPLING .55 FEET. From (TOC)
    COUPLING INTERVAL 10.2 FEET.
13. TOTAL DEPTH OF BOREHOLE 136 FEET.

BORING#	DATE	TIME	DEPTH TO WATER	GROUNDWATER ELEVATION
S1106	2/19/80		75.74'	764.10'

Badger Army Ammunition Plant
Baraboo, Wisconsin

WELL DETAIL INFORMATION SHEET

JOB NO. C 8742
BORING NO. S1107 #706
DATE 1/10/80
CHIEF HFS
LOCATION N484,860.18 E2,072,645.25

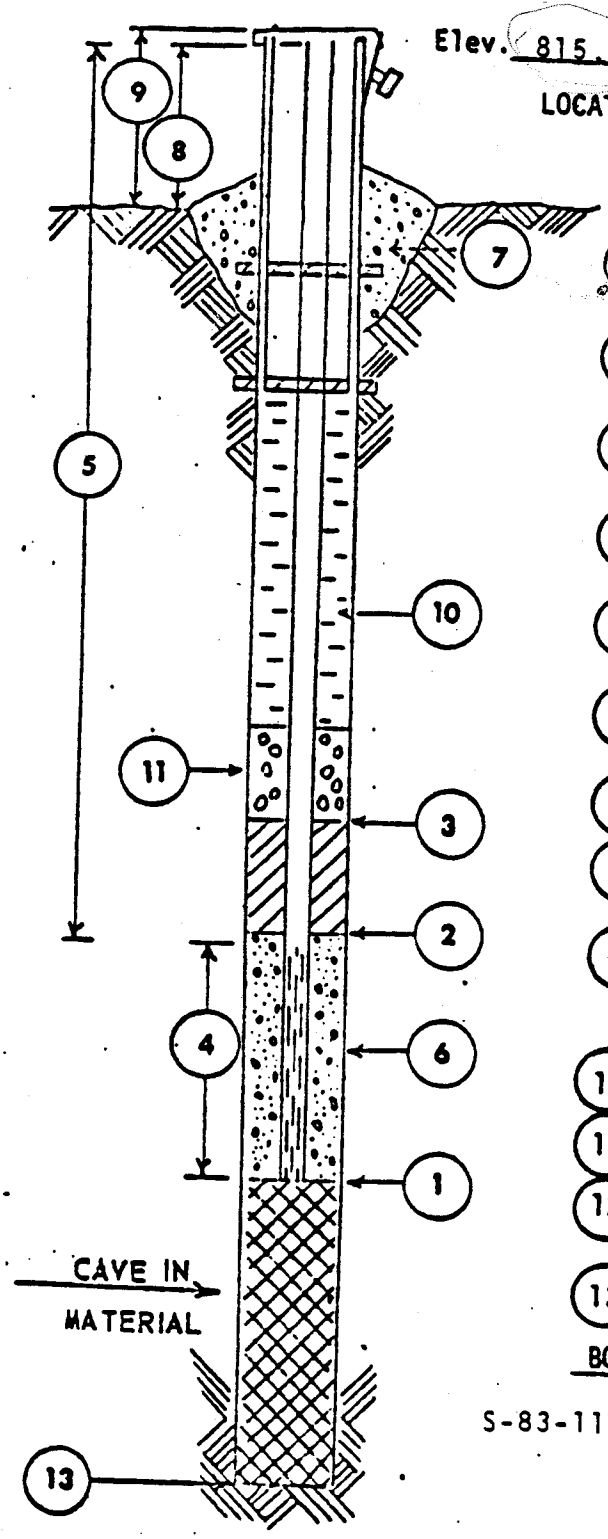


All depth measurements of well detail to be from ground surface.

1. DEPTH TO BOTTOM OF WELL POINT OR SLOTTED PIPE 73.7 FEET.
2. DEPTH OF BOTTOM OF SEAL (if installed) 8.1 FEET.
3. DEPTH TO TOP OF SEAL (if installed) 7 FEET.
4. LENGTH OF PVC WELL SCREEN, 20.39 FEET. 18.80 Feet Slotted
5. TOTAL LENGTH OF PIPE 55.43 FEET @ 4 I.D. IN. DIAMETER.
6. TYPE OF FILTER MATERIAL AROUND WELL POINT OR SLOTTED PIPE Cave-in & Medium Sand
7. CONCRETE CAP, YES (NO) (Circle One)
8. HEIGHT OF WELL CASING ABOVE GROUND 2.1 FEET.
9. PROTECTIVE CASING? (YES) NO (Circle One)
   HEIGHT ABOVE GROUND 2.1.
   LOCKING CAP? (YES) NO (Circle One)
10. TYPE OF BACKFILL: Cement/Bentonite Grout 3:1 by weight
11. THICKNESS OF GRAVEL PACK 1 FEET.
12. DEPTH TO FIRST COUPLING 4.35 FEET. From (TOC)
    COUPLING INTERVAL 10.2 FEET.
13. TOTAL DEPTH OF BOREHOLE 78 FEET.

BORING#	DATE	TIME	DEPTH TO WATER	GROUNDWATER ELEVATION
S1107	2/19/80		47.93	764.23

WELL DETAIL INFORMATION SHEET



Elev. 815.23

JOB NO. 4910
BORING NO. S-83-1147 #709
DATE 10-10-83
CHIEF R.F. Sarko and Associates, Inc.

LOCATION N 3,021.422 E 5,149.283

All depth measurements of well detail to be from ground surface.

1. DEPTH TO BOTTOM OF WELL POINT OR SLOTTED PIPE 70.75 FEET.
2. DEPTH OF BOTTOM OF SEAL (if installed) 41 FEET.
3. DEPTH TO TOP OF SEAL (if installed) 33 FEET.
4. LENGTH OF PVC WELL SCREEN, 25 FEET. 25 FEET SLOTTED
5. TOTAL LENGTH OF PIPE 48 FEET @ 5 IN. DIAMETER.
6. TYPE OF FILTER MATERIAL AROUND WELL POINT OR SLOTTED PIPE ~~Pea Gravel~~.
7. CONCRETE CAP. YES NO (Circle One)
8. HEIGHT OF WELL CASING ABOVE GROUND 2.25 FEET.
9. PROTECTIVE CASING? YES NO (Circle One)
   HEIGHT ABOVE GROUND 2.42 feet
   LOCKING CAP? YES NO (Circle One)
10. TYPE OF BACKFILL: Bentonite-Cement
11. THICKNESS OF GRAVEL PACK 5 feet above screen FEET.
12. DEPTH TO FIRST COUPLING 20 FEET From (TOC)
    COUPLING INTERVAL one at 8' then 20 FEET.
13. TOTAL DEPTH OF BOREHOLE 90.75 FEET.

BORING #	DATE	TIME	DEPTH TO WATER	GROUNDWATER ELEVATION
S-83-1147	5/5/83	1:42	From top of PVC 52.8 feet	762.43

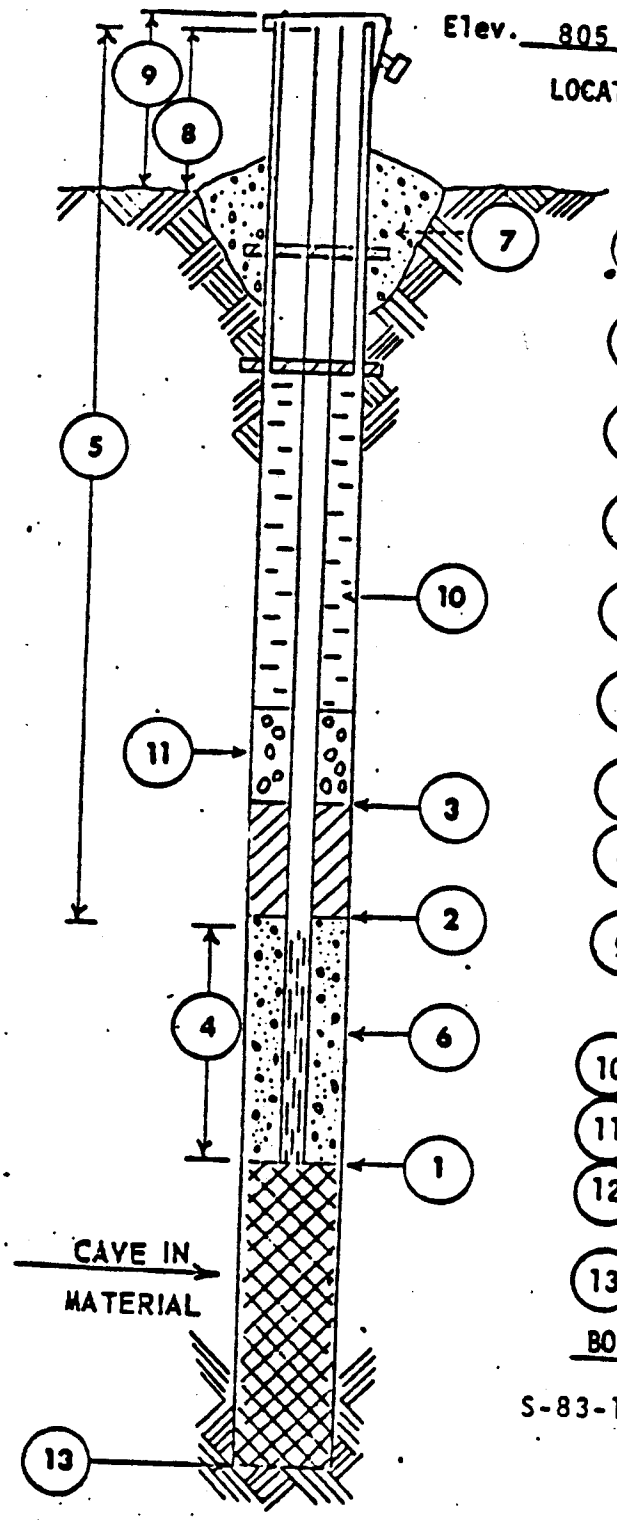
GEOLOGICAL & SOILS SURVEY
AND GROUNDWATER MONITORING PROJECT

SK-3932 SHEET 1 OF 6

WELL DETAIL INFORMATION SHEET

JOB NO. 4910
BORING NO. S-83-1149 #711
DATE 10-10-83
CHIEF R. F. Sarko and Associates, Inc.
LOCATION N 3,252,536 E 7,110,671

Elev. 805.80



All depth measurements of well detail to be from ground surface.

1. DEPTH TO BOTTOM OF WELL POINT OR SLOTTED PIPE 60.83 FEET.
2. DEPTH OF BOTTOM OF SEAL (if installed) 31 FEET.
3. DEPTH TO TOP OF SEAL (if installed) 23 FEET.
4. LENGTH OF PVC WELL SCREEN, 25 FEET. 25 FEET SLOTTED
5. TOTAL LENGTH OF PIPE 38 FEET Ø 5 IN. DIAMETER.
6. TYPE OF FILTER MATERIAL AROUND WELL POINT OR SLOTTED PIPE Pea Gravel.
7. CONCRETE CAP. YES NO (Circle One)
8. HEIGHT OF WELL CASING ABOVE GROUND 2.17 FEET.
9. PROTECTIVE CASING? YES NO (Circle One)
   HEIGHT ABOVE GROUND 28 inches
   LOCKING CAP? YES NO (Circle One)
10. TYPE OF BACKFILL: Bentonite-Cement
11. THICKNESS OF GRAVEL PACK 5' above screen FEET.
12. DEPTH TO FIRST COUPLING 18 FEET From (TOC)
    COUPLING INTERVAL 20 FEET.
13. TOTAL DEPTH OF BOREHOLE 80.83 FEET.

BORING #	DATE	TIME	DEPTH TO WATER	GROUNDWATER ELEVATION
S-83-1149	5/5/83	2:20	From top of PVC 42.3 feet	763.50

GEOLOGICAL & SOILS SURVEY
AND GROUNDWATER MONITORING PROJECT

SK-3932 SHEET 1 OF 6

State of Wisconsin
Department of Natural Resources

MONITORING WELL CONSTRUCTION
Form 4400-113A
8-89

Facility/Project Name: Badger Army Ammunition Plant	Grid Location: 4,800,953.7 m N. ☒ N. ☐ S. / 276,907.0 m E. ☒ E. ☐ W.	Well Name: SPN-89-03B #718
License, Permit or Monitoring Number: _____		Wis. Unique Well Number: _____ DNR Well Number: _____
Type of Well: Water Table Observation Well ☐ 11; Piezometer ☒ 12	Section Location: ____ 1/4 of ____ 1/4 of Section ____, T ____ N, R ____ ☐ E ☐ W	Date Well Installed: 03/22/89 (mm/dd/yy)
Distance Well Is From Waste/Source Boundary: NA ft.		Well Installed By: (Person's Name and Firm) Paul Balmer / E.C. Jordan Co.
Is Well A Point of Enforcement Std. Application? ☐ Yes ☒ No	Location of Well Relative to Waste/Source: ☐ Upgradient ☐ Sidegradient ☐ Downgradient ☐ Not Known	

A. Protective pipe, top elevation 818.21 ft. MSL
B. Well casing, top elevation 818.09 ft. MSL
C. Land surface elevation 815.1 ft. MSL
D. Surface seal, bottom _____ ft. MSL or _____ ft.

12. USCS classification of soil near screen:
☐ GP ☐ GM ☐ GC ☐ GW ☐ SW ☒ SP
☐ SM ☐ SC ☐ ML ☐ MH ☐ CL ☐ CH
☐ Bedrock

13. Sieve analysis attached? ☐ Yes ☐ No

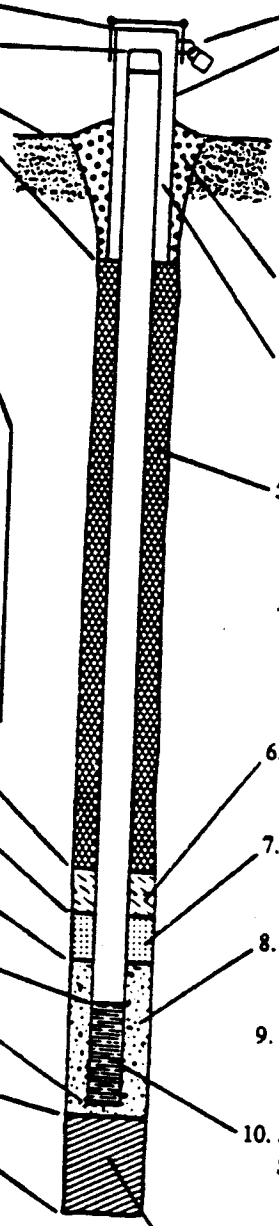
14. Drilling method used: Rotary ☐ 50; Hollow Stem Auger ☒ 41; Other ☐ __

15. Drilling fluid used: Water ☐ 02; Air ☐ 01; Drilling Mud ☐ 03; None ☒ 99

16. Drilling additives used? ☐ Yes ☒ No
Describe _____

17. Source of water (attach analysis): PWTP 2

E. Bentonite seal, top 739.9 ft. MSL or 75.2 ft.
F. Fine sand, top NA ft. MSL or NA ft.
G. Filter pack, top 732.5 ft. MSL or 82.6 ft.
H. Well screen, top 726.4 ft. MSL or 88.7 ft.
I. Well screen, bottom 721.4 ft. MSL or 93.7 ft.
J. Filter pack, bottom 721.4 ft. MSL or 93.7 ft.
K. Borehole, bottom 715.1 ft. MSL or 100.0 ft.
L. Borehole, diameter 9.5 in.
M. O.D. well casing 4.5 in.
N. I.D. well casing 4.0 in.



1. Cap and lock? ☒ Yes ☐ No
2. Protective cover pipe:
a. Inside diameter: 6.0 in
b. Length: 7.0 ft.
c. Material: Steel ☒ 04; Other ☐ __
d. Additional protection? ☒ Yes ☐ No
If yes, describe: 4 bucking posts
3. Surface seal: Bentonite ☐ 30; Concrete ☐ 01; Other ☒ __
Grout
4. Material between well casing and protective pipe: Bentonite ☐ 30; Annular space seal ☐; Other ☒ __
Grout
5. Annular space seal: Granular Bentonite ☐ 33
____ Lbs/gal mud weight . . . Bentonite-sand slurry ☐ 35
____ Lbs/gal mud weight . . . . . Bentonite slurry ☐ 31
5 % Bentonite . . . . . Bentonite-cement grout ☒ 50
± 200 gal ft³ volume added for any of the above
How installed: Tremie ☐ 01; Tremie pumped ☒ 02; Gravity ☐ 08
6. Bentonite seal: Bentonite granules ☐ 33
☐ 1/4 in. ☐ 3/8 in. ☐ 1/2 in. Bentonite pellets ☐ 32
Bentonite Slurry Other ☒ __
7. Fine sand material: Manufacturer, product name and mesh size
NA
Volume added NA ft³
8. Filter pack material: Manufacturer, product name and mesh size
Red Flint, Silica Filter Sand
Volume added ≈ 1.2 ft³
9. Well casing: Flush threaded PVC schedule 40 ☐ 23; Flush threaded PVC schedule 80 ☒ 24; Other ☐ __
10. Screen material: Schedule 80 PVC
Screen type: Factory cut ☒ 11; Continuous slot ☐ 01; Other ☐ __
Manufacturer Timco
Slot size: 0.010 in.
Slotted length: 5.0 ft.
11. Backfill material (below filter pack): None ☐; Other ☒
Native sand

I certify that the information on this form is true and correct to the best of my knowledge.

Signature: Paul Balmer
Firm: E.C. Jordan Co.

Please complete and return both sides of this form as required by chs. 144, 147 and 160, Wis. Stats., and ch. NR 141, Wis. Adm. Code. In accordance with ch. 144, Wis Stats., failure to file this form may result in a forfeiture of not less than $10, nor more than $5,000 for each day of violation. In accordance with ch. 147, Wis. Stats., failure to file this form may result in a forfeiture of not more than $10,000 for each day of violation.
NOTE: Shaded areas are for DNR use only. See instructions for more information.

State of Wisconsin
Department of Natural Resources

MONITORING WELL CONSTRUCTION
Form 4400-113A
8-89

Facility/Project Name: Badger Army Ammunition Plant	Grid Location: 4,803,992.4 m N.; 277,666.8 m E. ☒ N. ☐ S. ☒ E. ☐ W.	Well Name: SPW-89-03C #719
Y License, Permit or Monitoring Number: _____		Wis. Unique Well Number: _____ DNR Well Numb: _____
Type of Well: Water Table Observation Well ☐ 11; Piezometer ☒ 12	Section Location: ____ 1/4 of ____ 1/4 of Section ____, T ____ N, R ____ ☐ E ☐ W	Date Well Installed: 03/31/89 (m m / d d / y y)
Distance Well Is From Waste/Source Boundary: NA ft.		Well Installed By: (Person's Name and Firm) Dave H. Belan / E.C. Jordan Co
Is Well A Point of Enforcement Std. Application? ☐ Yes ☒ No	Location of Well Relative to Waste/Source: ☐ Upgradient ☐ Sidegradient ☐ Downgradient ☐ Not Known	

A. Protective pipe, top elevation 818.65 ft. MSL

B. Well casing, top elevation 818.25 ft. MSL

C. Land surface elevation 815.3 ft MSL

D. Surface seal, bottom _____ ft. MSL or _____ ft.

12. USCS classification of soil near screen:
☐ GP ☐ GM ☐ GC ☐ GW ☐ SW ☒ SP
☐ SM ☐ SC ☐ ML ☐ MH ☐ CL ☐ CH
☐ Bedrock

13. Sieve analysis attached? ☐ Yes ☒ No

14. Drilling method used: Rotary ☐ 50; Hollow Stem Auger ☐ 41; Other ☒ --
Dual Wall

15. Drilling fluid used: Water ☐ 02; Air ☒ 01; Drilling Mud ☐ 03; None ☐ 99

illing additives used? ☐ Yes ☒ No

Describe _____

17. Source of water (attach analysis):
Well #2

E. Bentonite seal, top 703.3 ft. MSL or 112.0 ft.

F. Fine sand, top NA ft. MSL or NA ft.

G. Filter pack, top 698.3 ft. MSL or 117.0 ft.

H. Well screen, top 692.6 ft. MSL or 122.7 ft.

I. Well screen, bottom 687.6 ft. MSL or 127.7 ft.

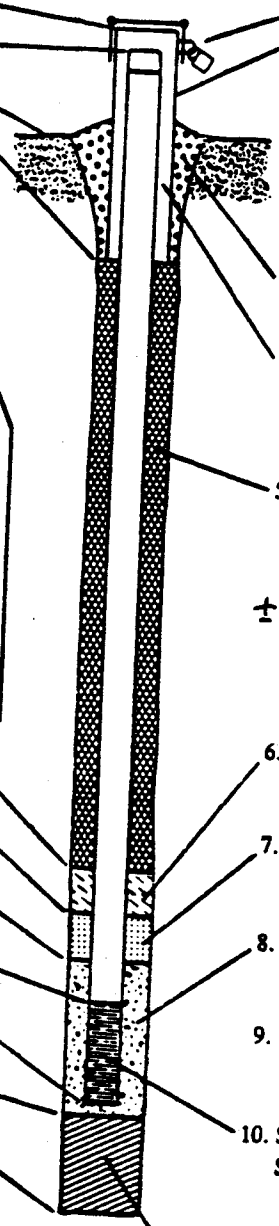
J. Filter pack, bottom 682.6 ft. MSL or 132.7 ft.

K. Borehole, bottom 685.3 ft. MSL or 130.0 ft.

L. Borehole, diameter 8.5 in.

M. O.D. well casing 4.5 in.

N. I.D. well casing 4.0 in.



1. Cap and lock? ☒ Yes ☐ No

2. Protective cover pipe:
a. Inside diameter: 6.0 in
b. Length: 7.0 ft
c. Material: Steel ☒ 02; Other ☐ --
d. Additional protection? ☒ Yes ☐ No
If yes, describe: 4 Bucking Posts

3. Surface seal: Bentonite ☐ 30; Concrete ☐ 01; Other ☒ --
Grout

4. Material between well casing and protective pipe: Bentonite ☐ 30; Annular space seal ☐; Other ☒ --
Grout

5. Annular space seal: Granular Bentonite ☐ 33
____ Lbs/gal mud weight . . . Bentonite-sand slurry ☐ 35
____ Lbs/gal mud weight . . . . . Bentonite slurry ☐ 31
5 % Bentonite . . . . . Bentonite-cement grout ☒ 50
± 300 gal ft³ volume added for any of the above
How installed: Tremie ☐ 01; Tremie pumped ☒ 02; Gravity ☐ 08

6. Bentonite seal: Bentonite granules ☐ 33
☐ 1/4 in. ☐ 3/8 in. ☐ 1/2 in. Bentonite pellets ☐ 32
Bentonite Slurry Other ☒ --

7. Fine sand material: Manufacturer, product name and mesh size
NA
Volume added NA ft³

8. Filter pack material: Manufacturer, product name and mesh size
Red Flint, Silica Filter Sand
Volume added _____ ft³

9. Well casing: Flush threaded PVC schedule 40 ☐ 23; Flush threaded PVC schedule 80 ☒ 24; Other ☐ --
Schedule 80 PVC

10. Screen material: Schedule 80 PVC
Screen type: Factory cut ☒ 11; Continuous slot ☐ 01; Other ☐ --
Manufacturer Lines
Slot size: 0.010 in.
Slotted length: 5.0 ft.

11. Backfill material (below filter pack): None ☐; Other ☒
Native Cave

I certify that the information on this form is true and correct to the best of my knowledge.

Signature: [signature] Firm: E.C. Jordan Co.

Please complete and return both sides of this form as required by chs. 144, 147 and 160, Wis. Stats., and ch. NR 141, Wis. Adm. Code. In accordance with ch. 144, Wis Stats., failure to file this form may result in a forfeiture of not less than $10, nor more than $5,000 for each day of violation. In accordance with ch. 147, Wis. Stats., failure to file this form may result in a forfeiture of not more than $10,000 for each day of violation.

NOTE: Shaded areas are for DNR use only. See instructions for more information.

ABB Environmental Services, Inc.

MONITORING WELL CONSTRUCTION FORM

Facility/Project Name: BADGER AAP

Facility License, Permit or Monitoring Number: _____

Grid Location: _____ ft. ☐ N. ☐ S. / _____ ft. ☐ E. ☐ W.

Well Name: SPN-91-03D #725

Wis. Unique Well Number: _____ DNR Well Number: _____

Type of Well: Water Table Observation Well ☐ 11 / Piezometer ☒ 12

Section Location: _____ 1/4 of _____ 1/4 of Section _____ T _____ N. R _____ ☐ E ☐ W

Date Well Installed: 10/08/91 (m m / d d / y y)

Distance Well is From Waste/Source Boundary: NA ft.

Location of Well Relative to Waste/Source: ☐ Upgradient ☐ Sidegradient ☒ Downgradient ☐ Not Known

Well Installed By: (Person's Name and Firm) G. RODRIGUEZ / LAYNE

Is Well A Point of Enforcement Std. Application? ☐ Yes ☒ No

A. Protective pipe, top elevation: 819.48 ft. MSL

B. Well casing, top elevation: 819.36 ft. MSL

C. Land surface elevation: 816.7 ft. MSL

D. Surface seal, bottom: _____ ft. MSL or 00.0 ft.

12. USCS classification of soil near screen: ☐ GP ☐ GM ☐ GC ☐ GW ☐ SW ☐ SP ☐ SM ☐ SC ☐ ML ☐ MH ☐ CL ☐ CH ☐ Bedrock

13. Sieve analysis attached? ☐ Yes ☐ No

14. Drilling method used: Rotary ☐ 50; Hollow Stem Auger ☐ 41; Other ☒ DUAL WALL

15. Drilling fluid used: Water ☒ 02; Air ☒ 01; Drilling Mud ☐ 03; None ☐ 99

Drilling additives used? ☐ Yes ☒ No

Describe _____

17. Source of water (attach analysis): PRODUCTION WELL # 2

E. Bentonite seal, top: 663.7 ft. MSL or 153.0 ft.

F. Fine sand, top: _____ ft. MSL or _____ ft.

G. Filter pack, top: ~~643~~ 643.7 ft. MSL or 173.0 ft.

H. Well screen, top: 626.2 ft. MSL or 190.5 ft.

I. Well screen, bottom: 616.2 ft. MSL or 200.5 ft.

J. Filter pack, bottom: 615.7 ft. MSL or 201.0 ft.

K. Borehole, bottom: 614.7 ft. MSL or 202.0 ft.

L. Borehole, diameter: 09.0 in.

M. O.D. well casing: 04.00 in.

N. I.D. well casing: 3.75 in.

1. Cap and lock? ☒ Yes ☐ No

2. Protective cover pipe:
   a. Inside diameter: 06.0 in.
   b. Length: 06.0 ft.
   c. Material: Steel ☒ 04; Other ☐ __
   d. Additional protection? ☒ Yes ☐ No
   If yes, describe: BUCKING POSTS

3. Surface seal: Bentonite ☐ 30; Concrete ☒ 01; Other ☐ __

4. Material between well casing and protective pipe: Bentonite ☐ 30; Annular space seal ☒; Other ☐ __

5. Annular space seal: Granular Bentonite ☐ 33; ____ Lbs/gal mud weight . . . Bentonite-sand slurry ☐ 35; ____ Lbs/gal mud weight . . . . . Bentonite slurry ☐ 34; 10 % Bentonite . . . . . Bentonite-cement grout ☒ 50; _____ ft^3 volume added for any of the above

   How installed: Tremie ☐ 01; Tremie pumped ☐ 02; Gravity ☒ 03

6. Bentonite seal: Bentonite granules ☐ 33; ☐ 1/4 in. ☐ 3/8 in. ☐ 1/2 in. Bentonite pellets ☐ 32; BENTONITE POWDER Other ☒

7. Fine sand material: Manufacturer, product name and mesh size _____

   Volume added _____ ft^3

8. Filter pack material: Manufacturer, product name and mesh size COLORADO SILICA SAND #4

   Volume added 16 ft^3

9. Well casing: Flush threaded PVC schedule 40 ☐ 23; Flush threaded PVC schedule 80 ☒ 24; Other ☐ __

10. Screen material: SCHEDULE 80 PVC

    Screen type: Factory cut ☒ 11; Continuous slot ☐ 01; Other ☐ __

    Manufacturer: MONOFLEX

    Slot size: 0.010 in.

    Slotted length: 10.0 ft.

11. Backfill material (below filter pack): None ☒; Other ☐ _____

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature: Todd R Rustad

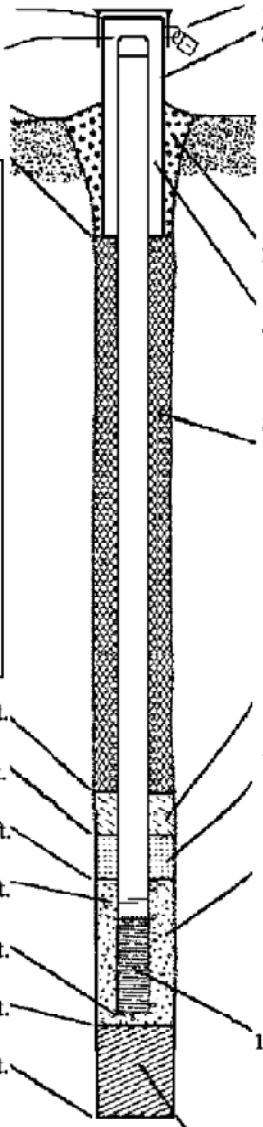
Firm: ABB-ES

State of Wisconsin
Department of Natural Resources

Route to: Watershed/Wastewater ☐ Waste Management ☐ Remediation/Redevelopment ☑ Other ☐ _____

MONITORING WELL CONSTRUCTION
Form 4400-113A Rev. 7-98

Facility/Project Name: Badger Army - Settling Ponds	Local Grid Location of Well: ____ ft. ☐ N. ☐ S. ____ ft. ☐ E. ☐ W.	Well Name: SPN-0402A
Facility License, Permit or Monitoring No.: 3499	Local Grid Origin ☐ (estimated: ☐) or Well Location ☐ Lat. ___° ___' ___" Long. ___° ___' ___" or	Wis. Unique Well No.: PH 402 / DNR Well ID No.: 729
Facility ID: 157053930	St. Plane ____ ft. N, ____ ft. E. S/C/N	Date Well Installed: 08/31/2004 (m m d d y y y y)
Type of Well: Well Code MW / ____	Section Location of Waste/Source: NE 1/4 of NW 1/4 of Sec. 24, T. 10 N, R. 6 ☑ E. ☐ W	Well Installed By: Name (first, last) and Firm: Chad Van DeYacht, Environmental Drilling Services
Distance from Waste/Source ____ ft. Enf. Stds. Apply ☐	Location of Well Relative to Waste/Source: u ☐ Upgradient s ☐ Sidegradient d ☐ Downgradient n ☐ Not Known; Gov. Lot Number ____	



A. Protective pipe, top elevation _____ ft. MSL

B. Well casing, top elevation _____ ft. MSL

C. Land surface elevation _____ ft. MSL

D. Surface seal, bottom _____ ft. MSL or 0 ft.

12. USCS classification of soil near screen:
GP ☐ GM ☐ GC ☐ GW ☐ SW ☐ SP ☑
SM ☐ SC ☐ ML ☐ MH ☐ CL ☐ CH ☐
Bedrock ☐

13. Sieve analysis performed? ☐ Yes ☑ No

14. Drilling method used: Rotary ☑ 50; Hollow Stem Auger ☐ 41; Other ☐ ____
Casing Hammer

15. Drilling fluid used: Water ☐ 02; Air ☑ 01; Drilling Mud ☐ 03; None ☐ 99

16. Drilling additives used? ☑ Yes ☐ No
Describe: Water Added During Well Installation

17. Source of water (attach analysis, if required):
MIRM

E. Bentonite seal, top _____ ft. MSL or 21 ft.

F. Fine sand, top _____ ft. MSL or 26 ft.

G. Filter pack, top _____ ft. MSL or 28 ft.

H. Screen joint, top _____ ft. MSL or 30 ft.

I. Well bottom _____ ft. MSL or 45 ft.

J. Filter pack, bottom _____ ft. MSL or 46 ft.

K. Borehole, bottom _____ ft. MSL or 46 ft.

L. Borehole, diameter 8 in.

M. O.D. well casing 4.5 in.

N. I.D. well casing 4 in.

1. Cap and lock? ☑ Yes ☐ No

2. Protective cover pipe:
a. Inside diameter: 6 in.
b. Length: 7 ft.
c. Material: Steel ☑ 04; Other ☐ ____
d. Additional protection? ☐ Yes ☑ No
If yes, describe: ____

3. Surface seal: Bentonite ☑ 30; Concrete ☐ 01; Other ☐ ____

4. Material between well casing and protective pipe: Bentonite ☑ 30; Other ☐ ____

5. Annular space seal: a. Granular/Chipped Bentonite ☐ 33
b. 11.0 Lbs/gal mud weight . . . Bentonite-sand slurry ☑ 35
c. ____ Lbs/gal mud weight . . . . . Bentonite slurry ☐ 31
d. ____ % Bentonite . . . . . Bentonite-cement grout ☐ 50
e. 17 Ft^3 volume added for any of the above
f. How installed: Tremie ☐ 01; Tremie pumped ☑ 02; Gravity ☐ 08

6. Bentonite seal: a. Bentonite granules ☐ 33
b. ☐ 1/4 in. ☑ 3/8 in. ☐ 1/2 in. Bentonite chips ☑ 32
c. ____ Other ☐ ____

7. Fine sand material: Manufacturer, product name & mesh size
a. 40/60 Badger Mining
b. Volume added .5 ft^3

8. Filter pack material: Manufacturer, product name & mesh size
a. 20/40 Badger Mining
b. Volume added 5 ft^3

9. Well casing: Flush threaded PVC schedule 40 ☐ 23; Flush threaded PVC schedule 80 ☑ 24; Other ☐ ____

10. Screen material: PVC
a. Screen type: Factory cut ☑ 11; Continuous slot ☐ 01; Other ☐ ____
Highflow - PVC
b. Manufacturer Campbell Monoflex
c. Slot size: 0.010 in.
d. Slotted length: 15 ft.

11. Backfill material (below filter pack): None ☑ 14; Other ☐ ____

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature	Firm
Chad Van De Yacht	EDS, Inc.

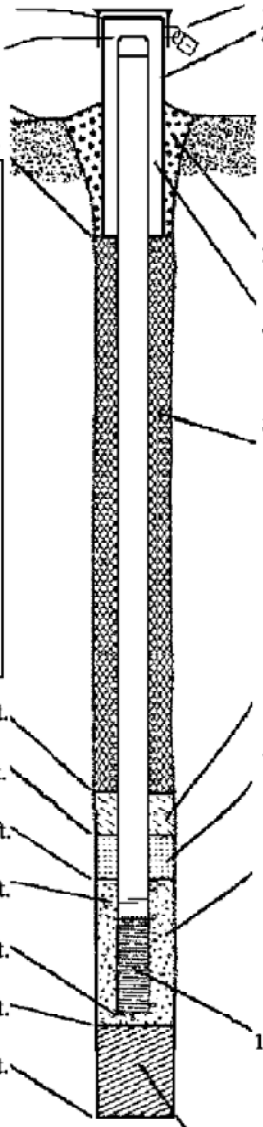
Please complete both Forms 4400-113A and 4400-113B and return them to the appropriate DNR office and bureau. Completion of these reports is required by chs. 160, 281, 283, 289, 291, 292, 293, 295, and 299, Wis. Stats., and ch. NR 141, Wis. Adm. Code. In accordance with chs. 281, 289, 291, 292, 293, 295, and 299, Wis. Stats., failure to file these forms may result in a forfeiture of between $10 and $25,000, or imprisonment for up to one year, depending on the program and conduct involved. Personally identifiable information on these forms is not intended to be used for any other purpose. NOTE: See the instructions for more information, including where the completed forms should be sent.

State of Wisconsin
Department of Natural Resources

Route to: Watershed/Wastewater ☐ Waste Management ☐ Remediation/Redevelopment ☑ Other ☐ _____

MONITORING WELL CONSTRUCTION
Form 4400-113A Rev. 7-98

Facility/Project Name: Badger Army - Settling Ponds	Local Grid Location of Well: ____ ft. ☐ N. ☐ S. ____ ft. ☐ E. ☐ W.	Well Name: SPN-0402C
Facility License, Permit or Monitoring No.: 3499	Local Grid Origin ☐ (estimated: ☐) or Well Location ☐ Lat. ___° ___' ___" Long. ___° ___' ___" or	Wis. Unique Well No.: PH 403 / DNR Well ID No.: 730
Facility ID: 157053930	St. Plane ____ ft. N, ____ ft. E. S/C/N	Date Well Installed: 08/30/2004 (m m d d y y y y)
Type of Well: Well Code PZ / ____	Section Location of Waste/Source: NE 1/4 of NW 1/4 of Sec. 24, T. 10 N, R. 6 ☑ E. ☐ W	Well Installed By: Name (first, last) and Firm: Chad Van DeYacht, Environmental Drilling Services
Distance from Waste/Source ____ ft. Enf. Stds. Apply ☐	Location of Well Relative to Waste/Source: u ☐ Upgradient s ☐ Sidegradient d ☐ Downgradient n ☐ Not Known; Gov. Lot Number ____	



A. Protective pipe, top elevation ____ ft. MSL

B. Well casing, top elevation ____ ft. MSL

C. Land surface elevation ____ ft. MSL

D. Surface seal, bottom ____ ft. MSL or 0 ft.

12. USCS classification of soil near screen:
GP ☐ GM ☐ GC ☐ GW ☐ SW ☐ SP ☑
SM ☐ SC ☐ ML ☐ MH ☐ CL ☐ CH ☐
Bedrock ☐

13. Sieve analysis performed? ☐ Yes ☑ No

14. Drilling method used: Rotary ☑ 50; Hollow Stem Auger ☐ 41; Other ☐ ____
Casing Hammer

15. Drilling fluid used: Water ☐ 02; Air ☑ 01; Drilling Mud ☐ 03; None ☐ 99

16. Drilling additives used? ☑ Yes ☐ No
Describe: Water Added During Well Installation

17. Source of water (attach analysis, if required):
MIRM

E. Bentonite seal, top ____ ft. MSL or 135 ft.

F. Fine sand, top ____ ft. MSL or 140 ft.

G. Filter pack, top ____ ft. MSL or 142 ft.

H. Screen joint, top ____ ft. MSL or 144 ft.

I. Well bottom ____ ft. MSL or 149 ft.

J. Filter pack, bottom ____ ft. MSL or 150 ft.

K. Borehole, bottom ____ ft. MSL or 150 ft.

L. Borehole, diameter 8 in.

M. O.D. well casing 4.5 in.

N. I.D. well casing 4 in.

1. Cap and lock? ☑ Yes ☐ No

2. Protective cover pipe:
a. Inside diameter: 6 in.
b. Length: 7 ft.
c. Material: Steel ☑ 04; Other ☐ ____
d. Additional protection? ☐ Yes ☑ No
If yes, describe: ____

3. Surface seal: Bentonite ☑ 30; Concrete ☐ 01; Other ☐ ____

4. Material between well casing and protective pipe: Bentonite ☑ 30; Other ☐ ____

5. Annular space seal: a. Granular/Chipped Bentonite ☐ 33
b. 11.0 Lbs/gal mud weight . . . Bentonite-sand slurry ☑ 35
c. ____ Lbs/gal mud weight . . . . . Bentonite slurry ☐ 31
d. ____ % Bentonite . . . . . Bentonite-cement grout ☐ 50
e. 34 Ft^3 volume added for any of the above
f. How installed: Tremie ☐ 01; Tremie pumped ☑ 02; Gravity ☐ 08

6. Bentonite seal: a. Bentonite granules ☐ 33
b. ☐ 1/4 in. ☑ 3/8 in. ☐ 1/2 in. Bentonite chips ☑ 32
c. ____ Other ☐ ____

7. Fine sand material: Manufacturer, product name & mesh size
a. 40/60 Badger Mining
b. Volume added .5 ft^3

8. Filter pack material: Manufacturer, product name & mesh size
a. 20/40 Badger Mining
b. Volume added 2.5 ft^3

9. Well casing: Flush threaded PVC schedule 40 ☐ 23; Flush threaded PVC schedule 80 ☑ 24; Other ☐ ____

10. Screen material: PVC
a. Screen type: Factory cut ☑ 11; Continuous slot ☐ 01; Other ☐ ____
Highflow - PVC
b. Manufacturer Campbell Monoflex
c. Slot size: 0.010 in.
d. Slotted length: 5 ft.

11. Backfill material (below filter pack): None ☑ 14; Other ☐ ____

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature	Firm
Chad Van De Yacht	EDS, Inc.

Please complete both Forms 4400-113A and 4400-113B and return them to the appropriate DNR office and bureau. Completion of these reports is required by chs. 160, 281, 283, 289, 291, 292, 293, 295, and 299, Wis. Stats., and ch. NR 141, Wis. Adm. Code. In accordance with chs. 281, 289, 291, 292, 293, 295, and 299, Wis. Stats., failure to file these forms may result in a forfeiture of between $10 and $25,000, or imprisonment for up to one year, depending on the program and conduct involved. Personally identifiable information on these forms is not intended to be used for any other purpose. NOTE: See the instructions for more information, including where the completed forms should be sent.

State of Wisconsin
Department of Natural Resources

Route to: Watershed/Wastewater ☐ Waste Management ☐ Remediation/Redevelopment ☑ Other ☐ _____

MONITORING WELL CONSTRUCTION
Form 4400-113A Rev. 7-98

Facility/Project Name: Badger Army - Settling Ponds	Local Grid Location of Well: ____ ft. ☐ N. ☐ S. ____ ft. ☐ E. ☐ W.	Well Name: SPN-0403A
Facility License, Permit or Monitoring No.: 3499	Local Grid Origin ☐ (estimated: ☐) or Well Location ☐ Lat. ___° ___' ___" Long. ___° ___' ___" or	Wis. Unique Well No.: PH 404 / DNR Well ID No.: 731
Facility ID: 157053930	St. Plane ____ ft. N, ____ ft. E. S/C/N	Date Well Installed: 08/19/2004 (m m d d y y y y)
Type of Well: Well Code MW / ____	Section Location of Waste/Source: SE 1/4 of NW 1/4 of Sec. 20, T. 10 N, R. 6 ☑ E. ☐ W	Well Installed By: Name (first, last) and Firm: Chad Van De Yacht, Environmental Drilling Services
Distance from Waste/Source ____ ft. Enf. Stds. Apply ☐	Location of Well Relative to Waste/Source: u ☐ Upgradient s ☐ Sidegradient d ☐ Downgradient n ☐ Not Known	Gov. Lot Number: ____

A. Protective pipe, top elevation ____ ft. MSL

B. Well casing, top elevation ____ ft. MSL

C. Land surface elevation ____ ft. MSL

D. Surface seal, bottom ____ ft. MSL or 0 ft.

12. USCS classification of soil near screen: SP-SW
GP ☐ GM ☐ GC ☐ GW ☐ SW ☐ SP ☑
SM ☐ SC ☐ ML ☐ MH ☐ CL ☐ CH ☐
Bedrock ☐

13. Sieve analysis performed? ☐ Yes ☑ No

14. Drilling method used: Rotary ☑ 50; Hollow Stem Auger ☐ 41; Other ☐ ____
Casing Hammer

15. Drilling fluid used: Water ☐ 02; Air ☑ 01; Drilling Mud ☐ 03; None ☐ 99

16. Drilling additives used? ☑ Yes ☐ No
Describe: Water Added During Well Installation

17. Source of water (attach analysis, if required):
MIRM

E. Bentonite seal, top ____ ft. MSL or 32 ft.

F. Fine sand, top ____ ft. MSL or 37 ft.

G. Filter pack, top ____ ft. MSL or 39 ft.

H. Screen joint, top ____ ft. MSL or 41 ft.

I. Well bottom ____ ft. MSL or 56 ft.

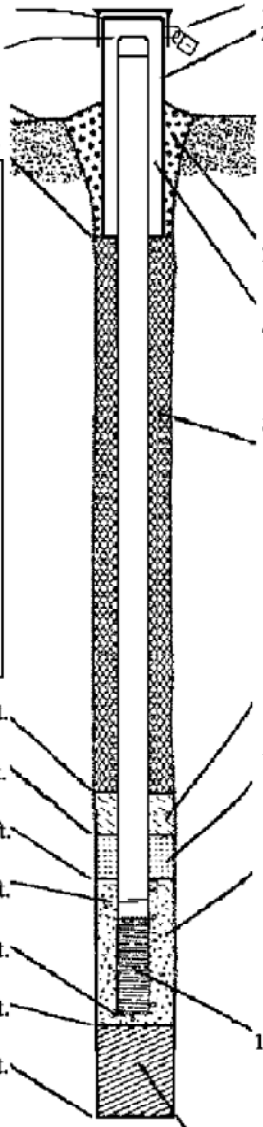
J. Filter pack, bottom ____ ft. MSL or 57 ft.

K. Borehole, bottom ____ ft. MSL or 57 ft.

L. Borehole, diameter 8 in.

M. O.D. well casing 4.5 in.

N. I.D. well casing 4 in.



1. Cap and lock? ☑ Yes ☐ No

2. Protective cover pipe:
a. Inside diameter: 6 in.
b. Length: 7 ft.
c. Material: Steel ☑ 04; Other ☐ ____
d. Additional protection? ☐ Yes ☑ No
If yes, describe: ____

3. Surface seal: Bentonite ☑ 30; Concrete ☐ 01; Other ☐ ____

4. Material between well casing and protective pipe: Bentonite ☑ 30; Other ☐ ____

5. Annular space seal: a. Granular/Chipped Bentonite ☐ 33
b. 11.0 Lbs/gal mud weight . . . Bentonite-sand slurry ☑ 35
c. ____ Lbs/gal mud weight . . . . . Bentonite slurry ☐ 31
d. ____ % Bentonite . . . . . Bentonite-cement grout ☐ 50
e. 15 Ft^3 volume added for any of the above
f. How installed: Tremie ☐ 01; Tremie pumped ☑ 02; Gravity ☐ 08

6. Bentonite seal: a. Bentonite granules ☐ 33
b. ☐1/4 in. ☑3/8 in. ☐1/2 in. Bentonite chips ☑ 32
c. ____ Other ☐ ____

7. Fine sand material: Manufacturer, product name & mesh size
a. 40/60 Badger Mining
b. Volume added .5 ft^3

8. Filter pack material: Manufacturer, product name & mesh size
a. 20/40 Badger Mining
b. Volume added 5 ft^3

9. Well casing: Flush threaded PVC schedule 40 ☐ 23; Flush threaded PVC schedule 80 ☑ 24; Other ☐ ____

10. Screen material: PVC
a. Screen type: Factory cut ☑ 11; Continuous slot ☐ 01; Other ☐ ____
Highflow - PVC
b. Manufacturer Campbell Monoflex
c. Slot size: 0.010 in.
d. Slotted length: 15 ft.

11. Backfill material (below filter pack): None ☑ 14; Other ☐ ____

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature	Firm
Chad Van De Yacht	EDS, Inc.

Please complete both Forms 4400-113A and 4400-113B and return them to the appropriate DNR office and bureau. Completion of these reports is required by chs. 160, 281, 283, 289, 291, 292, 293, 295, and 299, Wis. Stats., and ch. NR 141, Wis. Adm. Code. In accordance with chs. 281, 289, 291, 292, 293, 295, and 299, Wis. Stats., failure to file these forms may result in a forfeiture of between $10 and $25,000, or imprisonment for up to one year, depending on the program and conduct involved. Personally identifiable information on these forms is not intended to be used for any other purpose. NOTE: See the instructions for more information, including where the completed forms should be sent.

State of Wisconsin
Department of Natural Resources

Route to: Watershed/Wastewater ☐ Waste Management ☐ Remediation/Redevelopment ☑ Other ☐ _____

MONITORING WELL CONSTRUCTION
Form 4400-113A Rev. 7-98

Facility/Project Name: Badger Army - Settling Ponds	Local Grid Location of Well: ____ ft. ☐ N. ☐ S. ____ ft. ☐ E. ☐ W.	Well Name: SPN-0403C
Facility License, Permit or Monitoring No.: 3499	Local Grid Origin ☐ (estimated: ☐) or Well Location ☐ Lat. ___° ___' ___" Long. ___° ___' ___" or	Wis. Unique Well No.: PH 405 / DNR Well ID No.: 732
Facility ID: 157053930	St. Plane ____ ft. N, ____ ft. E. S/C/N	Date Well Installed: 08/18/2004 (m m d d y y y y)
Type of Well: Well Code PZ / ____	Section Location of Waste/Source: SE 1/4 of NW 1/4 of Sec. 24, T. 10 N, R. 6 ☑ E. ☐ W	Well Installed By: Name (first, last) and Firm: Chad Van De Yacht, Environmental Drilling Services
Distance from Waste/Source ____ ft. Enf. Stds. Apply ☐	Location of Well Relative to Waste/Source: u ☐ Upgradient s ☐ Sidegradient d ☐ Downgradient n ☐ Not Known	Gov. Lot Number: ____

A. Protective pipe, top elevation _____ ft. MSL

B. Well casing, top elevation _____ ft. MSL

C. Land surface elevation _____ ft. MSL

D. Surface seal, bottom _____ ft. MSL or 0 ft.

12. USCS classification of soil near screen:
GP ☐ GM ☐ GC ☐ GW ☐ SW ☐ SP ☑
SM ☐ SC ☐ ML ☐ MH ☐ CL ☐ CH ☐
Bedrock ☐

13. Sieve analysis performed? ☐ Yes ☑ No

14. Drilling method used: Rotary ☑ 50
Hollow Stem Auger ☐ 41
Casing Hammer Other ☐

15. Drilling fluid used: Water ☐ 02 Air ☑ 01
Drilling Mud ☐ 03 None ☐ 99

16. Drilling additives used? ☑ Yes ☐ No

Describe Water Added During Well Installation

17. Source of water (attach analysis, if required):
MIRM

E. Bentonite seal, top _____ ft. MSL or 149 ft.

F. Fine sand, top _____ ft. MSL or 156 ft.

G. Filter pack, top _____ ft. MSL or 158 ft.

H. Screen joint, top _____ ft. MSL or 160 ft.

I. Well bottom _____ ft. MSL or 165 ft.

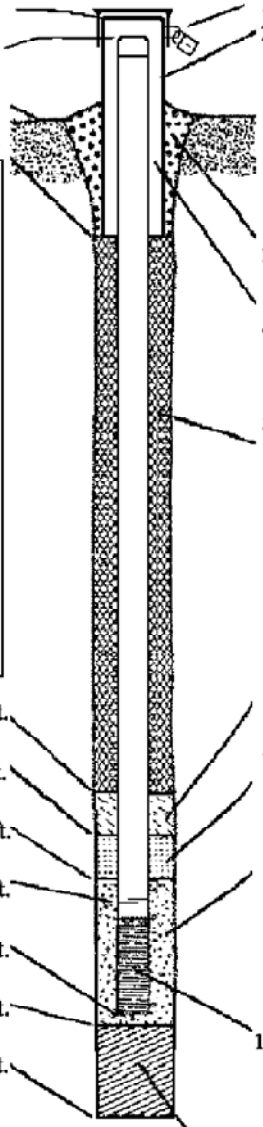
J. Filter pack, bottom _____ ft. MSL or 166 ft.

K. Borehole, bottom _____ ft. MSL or 166 ft.

L. Borehole, diameter 8 in.

M. O.D. well casing 4.5 in.

N. I.D. well casing 4 in.



1. Cap and lock? ☑ Yes ☐ No

2. Protective cover pipe:
a. Inside diameter: 6 in.
b. Length: 7 ft.
c. Material: Steel ☑ 04 Other ☐
d. Additional protection? ☐ Yes ☑ No
If yes, describe: _____

3. Surface seal: Bentonite ☑ 30 Concrete ☐ 01 Other ☐

4. Material between well casing and protective pipe: Bentonite ☑ 30 Other ☐

5. Annular space seal: a. Granular/Chipped Bentonite ☐ 33
b. 11.0 Lbs/gal mud weight . . . Bentonite-sand slurry ☑ 35
c. ____ Lbs/gal mud weight . . . . . Bentonite slurry ☐ 31
d. ____ % Bentonite . . . . . Bentonite-cement grout ☐ 50
e. 60 Ft^3 volume added for any of the above
f. How installed: Tremie ☐ 01 Tremie pumped ☑ 02 Gravity ☐ 08

6. Bentonite seal: a. Bentonite granules ☐ 33
b. ☐1/4 in. ☑3/8 in. ☐1/2 in. Bentonite chips ☑ 32
c. _____ Other ☐

7. Fine sand material: Manufacturer, product name & mesh size
a. 40/60 Badger Mining
b. Volume added .5 ft^3

8. Filter pack material: Manufacturer, product name & mesh size
a. 20/40 Badger Mining
b. Volume added 2.5 ft^3

9. Well casing: Flush threaded PVC schedule 40 ☐ 23
Flush threaded PVC schedule 80 ☑ 24
Other ☐

10. Screen material: PVC
a. Screen type: Factory cut ☑ 11 Continuous slot ☐ 01
Highflow - PVC Other ☐
b. Manufacturer Campbell Monoflex
c. Slot size: 0.010 in.
d. Slotted length: 5 ft.

11. Backfill material (below filter pack): None ☑ 14 Other ☐

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature	Firm
Chad Van De Yacht	EDS, Inc.

Please complete both Forms 4400-113A and 4400-113B and return them to the appropriate DNR office and bureau. Completion of these reports is required by chs. 160, 281, 283, 289, 291, 292, 293, 295, and 299, Wis. Stats., and ch. NR 141, Wis. Adm. Code. In accordance with chs. 281, 289, 291, 292, 293, 295, and 299, Wis. Stats., failure to file these forms may result in a forfeiture of between $10 and $25,000, or imprisonment for up to one year, depending on the program and conduct involved. Personally identifiable information on these forms is not intended to be used for any other purpose. NOTE: See the instructions for more information, including where the completed forms should be sent.

State of Wisconsin
Department of Natural Resources

Route to: Watershed/Wastewater ☐ Waste Management ☐ Remediation/Redevelopment ☑ Other ☐ _____

MONITORING WELL CONSTRUCTION
Form 4400-113A Rev. 7-98

Facility/Project Name: Badger Army - Settling Ponds	Local Grid Location of Well: ____ ft. ☐ N. ☐ S. ____ ft. ☐ E. ☐ W.	Well Name: SPN-0404D
Facility License, Permit or Monitoring No.: 3499	Local Grid Origin ☐ (estimated: ☐) or Well Location ☐ Lat. ___° ___' ___" Long. ___° ___' ___" or	Wis. Unique Well No.: PH 406 / DNR Well ID No.: 733
Facility ID: 157053930	St. Plane ____ ft. N, ____ ft. E. S/C/N	Date Well Installed: 09/02/2004 (m m d d y y y y)
Type of Well: Well Code PZ / ____	Section Location of Waste/Source: SW 1/4 of NW 1/4 of Sec. 24, T. 10 N, R. 6 ☑ E. ☐ W	Well Installed By: Name (first, last) and Firm: Chad Van De Yacht, Environmental Drilling Services
Distance from Waste/Source ____ ft. Enf. Stds. Apply ☐	Location of Well Relative to Waste/Source: u ☐ Upgradient s ☐ Sidegradient d ☐ Downgradient n ☐ Not Known; Gov. Lot Number ____	

A. Protective pipe, top elevation ____ ft. MSL

B. Well casing, top elevation ____ ft. MSL

C. Land surface elevation ____ ft. MSL

D. Surface seal, bottom ____ ft. MSL or 0 ft.

12. USCS classification of soil near screen:
GP ☑ GM ☐ GC ☐ GW ☐ SW ☐ SP ☐
SM ☐ SC ☐ ML ☐ MH ☐ CL ☐ CH ☐
Bedrock ☐

13. Sieve analysis performed? ☐ Yes ☑ No

14. Drilling method used: Rotary ☑ 50; Hollow Stem Auger ☐ 41; Other ☐ ____
Casing Hammer

15. Drilling fluid used: Water ☐ 02; Air ☑ 01; Drilling Mud ☐ 03; None ☐ 99

16. Drilling additives used? ☑ Yes ☐ No
Describe: Water Added During Well Installation

17. Source of water (attach analysis, if required):
MIRM

E. Bentonite seal, top ____ ft. MSL or 228 ft.

F. Fine sand, top ____ ft. MSL or 234 ft.

G. Filter pack, top ____ ft. MSL or 236 ft.

H. Screen joint, top ____ ft. MSL or 238 ft.

I. Well bottom ____ ft. MSL or 243 ft.

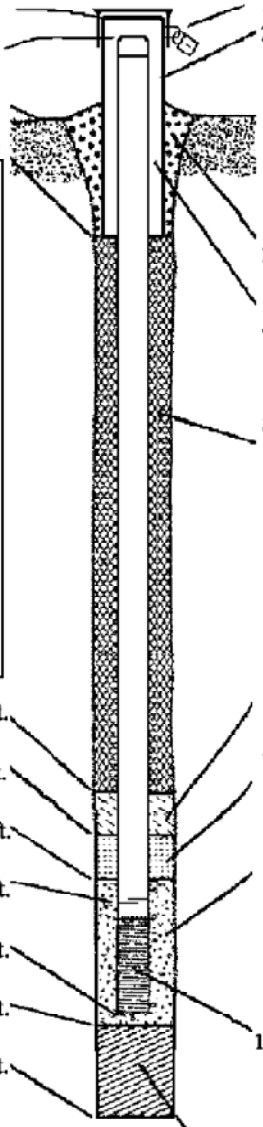
J. Filter pack, bottom ____ ft. MSL or 243 ft.

K. Borehole, bottom ____ ft. MSL or 243 ft.

L. Borehole, diameter 8 in.

M. O.D. well casing 4.5 in.

N. I.D. well casing 4 in.



1. Cap and lock? ☑ Yes ☐ No

2. Protective cover pipe:
a. Inside diameter: 6 in.
b. Length: 7 ft.
c. Material: Steel ☑ 04; Other ☐ ____
d. Additional protection? ☐ Yes ☑ No
If yes, describe: ____

3. Surface seal: Bentonite ☑ 30; Concrete ☐ 01; Other ☐ ____

4. Material between well casing and protective pipe: Bentonite ☑ 30; Other ☐ ____

5. Annular space seal: a. Granular/Chipped Bentonite ☐ 33
b. 11.0 Lbs/gal mud weight . . . Bentonite-sand slurry ☑ 35
c. ____ Lbs/gal mud weight . . . . . Bentonite slurry ☐ 31
d. ____ % Bentonite . . . . . Bentonite-cement grout ☐ 50
e. 82 Ft^3 volume added for any of the above
f. How installed: Tremie ☐ 01; Tremie pumped ☑ 02; Gravity ☐ 08

6. Bentonite seal: a. Bentonite granules ☐ 33
b. ☐ 1/4 in. ☑ 3/8 in. ☐ 1/2 in. Bentonite chips ☑ 32
c. ____ Other ☐ ____

7. Fine sand material: Manufacturer, product name & mesh size
a. 40/60 Badger Mining
b. Volume added .5 ft^3

8. Filter pack material: Manufacturer, product name & mesh size
a. 20/40 Badger Mining
b. Volume added 2.5 ft^3

9. Well casing: Flush threaded PVC schedule 40 ☐ 23; Flush threaded PVC schedule 80 ☑ 24; Other ☐ ____

10. Screen material: PVC
a. Screen type: Factory cut ☑ 11; Continuous slot ☐ 01; Other ☐ ____
Highflow - PVC
b. Manufacturer Campbell Monoflex
c. Slot size: 0.010 in.
d. Slotted length: 5 ft.

11. Backfill material (below filter pack): None ☑ 14; Other ☐ ____

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature	Firm
Chad Van De Yacht	EDS, Inc.

Please complete both Forms 4400-113A and 4400-113B and return them to the appropriate DNR office and bureau. Completion of these reports is required by chs. 160, 281, 283, 289, 291, 292, 293, 295, and 299, Wis. Stats., and ch. NR 141, Wis. Adm. Code. In accordance with chs. 281, 289, 291, 292, 293, 295, and 299, Wis. Stats., failure to file these forms may result in a forfeiture of between $10 and $25,000, or imprisonment for up to one year, depending on the program and conduct involved. Personally identifiable information on these forms is not intended to be used for any other purpose. NOTE: See the instructions for more information, including where the completed forms should be sent.

EW-163

Well Construction Report
WISCONSIN UNIQUE WELL NUMBER RX242

State of Wisconsin — Private Water Systems-DG/2
Department of Natural Resources, Box 7921
Madison, WI 53707

Form 3300-77A (R 12/2000)

Property Owner: BADGER ARMY AMMO PLANT
Telephone Number: (608) 643-3361
Mailing Address: 1 BADGER ROAD
City: BARABOO
State: WI
Zip Code: 53913-
County of Well Location: SAUK
Co. Well Permit No. W
Well Completion Date (mm/dd/yyyy): 08 / 15 / 2002

Well Constructor (Business Name): Layne Northwest
License #: 582
Facility ID Number (Public Wells): 0
Address: W229 N5005 DuPlainville Road
Public Well Plan Approval #: W-
City: Pewaukee
State: WI
Zip Code: 53072-
Date of Approval (mm/dd/yyyy):
Hicap Permanent Well #:
Common Well #: 163
Specific Capacity: gpm/ft

1. Well Location
[X] Town [ ] City [ ] Village of Sumpter
Fire # (If avail.)
Grid or Street Address or Road Name and Number
Subdivision Name | Lot # | Block #
Gov't Lot # ____ or SW 1/4 of NE 1/4 of
Section 23, T 10 N; R 6 [X] E [ ] W
Latitude Deg. ____ Min. ____ Sec. ____
Longitude Deg. ____ Min. ____ Sec. ____
Lat/Long Method

2. Well Type
[X] Replacement (see item 12 below) [ ] New [ ] Reconstruction
of previous unique well # ____ constructed in ____
Reason for replaced or reconstructed well? Recovery Well
[X] Drilled [ ] Driven Point [ ] Jetted [ ] Other ____

3. Well serves ____ # of homes and or Recovery Well
(Eg: barn, restaurant, church, school, industry, etc.)
High Capacity: Well? [X] Yes [ ] No; Property? [X] Yes [ ] No

4. Is the well located upslope or sideslope and not downslope from any contamination sources, including those on neighboring properties? [X] Yes [ ] No If no, explain on back side.
Well located in floodplain? [ ] Yes [X] No
Distance in Feet From Well To Nearest: (include proposed)

____ 1. Landfill
____ 2. Building Overhang
____ 3. Septic [ ] Holding Tank [ ]
____ 4. Sewage Absorption Unit
____ 5. Nonconforming Pit
____ 6. Buried Home Heating Oil Tank
____ 7. Buried Petroleum Tank
____ 8. Shoreline [ ] Swimming Pool [ ]
____ 9. Downspout/Yard Hydrant
____ 10. Privy
____ 11. Foundation Drain to Clearwater
____ 12. Foundation Drain to Sewer
____ 13. Building Drain [ ] Cast Iron or Plastic [ ] Other
____ 14. Building Sewer [ ] Gravity [ ] Pressure [ ] Cast Iron or Plastic [ ] Other
____ 15. Collector Sewer: ____ units ____ in. diameter
____ 16. Clearwater Sump
____ 17. Wastewater Sump
____ 18. Paved Animal Barn Pen
____ 19. Animal Yard or Shelter
____ 20. Silo
____ 21. Barn Gutter
____ 22. Manure Pipe [ ] Gravity [ ] Pressure [ ] Cast Iron or Plastic [ ] Other
____ 23. Other Manure Storage ____
____ 24. Ditch
____ 25. Other NR 812 Waste Source

5. Drillhole Dimensions and Construction Method

Dia. (in.)	From (ft.)	To (ft.)
20	surface	218

Upper Enlarged Drillhole
[ ] 1. Rotary - Mud Circulation
[X] 2. Rotary - Air
[ ] 3. Rotary - Air and Foam
[ ] 4. Drill-Through Casing Hammer
[ ] 5. Reverse Rotary
[ ] 6. Cable-tool Bit ____ in. dia.
[X] 7. Temp. Outer Casing 20 in. dia.
Removed? 216 depth ft.
[X] Yes [ ] No - If no, explain on back side.
Lower Open Bedrock: [ ]

8. Geology Codes / Geology

				Type, Caving/Noncaving, Color, Hardness, Etc.	From (ft.)	To (ft.)
-	-	S	M	Sand, Silty	0	8
-	-	Y	-	Sand & Gravel	8	22
-	N	S	-	Fine, Sand	22	94
-	N	S	-	Fine, Sand	94	182
-	N	S	M	Fine, Sand, Silty	182	211
-	D	N	-	Decomposed/Weathered, Sandstone	211	218

6. Casing, Liner, Screen

Dia. (in.)	Material, Weight, Specification Manufacturer & Method of Assembly	From (ft.)	To (ft.)
12	ASTM A53B Prime 49.56 lbs/ft Hy	surface	83
	sco		

Dia. (in.)	screen type, material & slot size	From	To
12	304 SS x .02 PBxWR 600' const.	83	217

9. Static Water Level
____ ft. above ground surface
44.5 ft. below ground surface

10. Pump Test
Pumping Level 64 ft. below surface
Pumping at 725 GPM for 4 hours

11. Well Is:
48 in. [X] Above [ ] Below Grade
Developed? [X] Yes [ ] No
Disinfected? [X] Yes [ ] No
Capped? [X] Yes [ ] No

7. Grout or Other Sealing Material
Method tremie line pumped

Kind of Sealing Material	From (ft.)	To (ft.)	# Sacks Cement
Neat Cement Grout	surface	70	100
(Gravel pack if applicable) 12" 304SS PBxWRx.02 slot US Filt	83	217	186

12. Did you notify the owner of the need to permanently abandon and fill all unused wells on this property?
[X] Yes [ ] No If no, explain ____

13. Signature of Well Constructor or Supervisory Driller: KLM
Date Signed: 08/15/2002
Signature of Drill Rig Operator (Mandatory unless same as above)
Date Signed

additional comments on reverse side about geology, additional screens, water quality, etc.
Comments on reverse side ____ (CHECK √, IF YES) Variance Issued [ ] Yes [ ] No

DNR

Well Construction Report

WISCONSIN UNIQUE WELL NUMBER **KV454**

State of Wi-Private Water Systems-DG/2
Department Of Natural Resources, Box 7921
Madison, WI 53707

Form 3300-77A
(Rev 12/00)

Property Owner: DEPT OF THE ARMY BADGER ARMY A
Telephone Number: 608 – 643 – 3361
Mailing Address: 2 BADGER RD
BARABOO | State: WI | Zip Code: 53913
County of Well Location: 57 SAUK
Co Well Permit No: W
Well Completion Date: February 17, 1996

Well Constructor: CDS INC
License #:
Facility ID (Public):
Address: PO BOX 1
Public Well Plan Approval#:
City: SARANAC State: MI Zip Code: 48881
Date Of Approval: 06/05/1995
Hicap Permanent Well #: 1598
Common Well #: 004
Specific Capacity: gpm/ft

1. Well Location Depth 214 FT
T T=Town C=City V=Village of SUMPTER
Fire#:
Street Address or Road Name and Number: 2894 42 N 6566 81 E
Subdivision Name: Lot#: Block #:
Gov't Lot or SW 1/4 of NE 1/4 of Section 23 T10 N R6 E
Latitude Deg. Min. Sec.
Longitude Deg Min. Sec.

2. Well Type 1 1=New (See item 12 below)
2=Replacement
3=Reconstruction
of previous unique well # _____ constructed in 0
Lat/Long Method:
Reason for replaced or reconstructed Well?
EXTRACTION WELL
1 1=Drilled 2=Driven Point 3=Jetted 4=Other

3. Well Serves # of homes and or EXTRACTION
(eg: barn, restaurant, church, school, industry, etc.)
XZ M=Munic O=OTM N=NonCom P=Private Z=Other
X=NonPot A=Anode L=Loop H=Drillhole
High Capacity: Well? Y Property? Y

4. Is the well located upslope or sideslope and not downslope from any contamination sources, including those on neighboring properties? N
Well located in floodplain?
Distance in feet from well to nearest: (including proposed)

1. Landfill
2. Building Overhang
3. 1=Septic 2= Holding Tank
4. Sewage Absorption Unit
5. Nonconforming Pit
6. Buried Home Heating Oil Tank
7. Buried Petroleum Tank
8. 1=Shoreline 2= Swimming Pool
9. Downspout/ Yard Hydrant
10. Privy
11. Foundation Drain to Clearwater
12. Foundation Drain to Sewer
13. Building Drain 1=Cast Iron or Plastic 2=Other
14. Building Sewer 1=Gravity 2=Pressure 1=Cast Iron or Plastic 2=Other
15. Collector Sewer: ___ units ___ in . diam.
16. Clearwater Sump
17. Wastewater Sump
18. Paved Animal Barn Pen
19. Animal Yard or Shelter
20. Silo
21. Barn Gutter
22. Manure Pipe 1=Gravity 2=Pressure 1=Cast iron or Plastic 2=Other
23. Other manure Storage
24. Ditch
25. Other NR 812 Waste Source

5. Drillhole Dimensions and Construction Method

Dia.(in.)	From (ft)	To (ft)
16.0	surface	214

Upper Enlarged Drillhole — Lower Open Bedrock
-- 1. Rotary - Mud Circulation
-- 2. Rotary - Air
-- 3. Rotary - Air and Foam
-- 4. Drill-Through Casing Hammer
-- 5. Reverse Rotary
-- 6. Cable-tool Bit _____ in. dia
X -- 7. Temp. Outer Casing 16 in. dia. _____ depth ft. Removed ? X
X Other DUAL TUBE

8. Geology

Geology Codes	Type, Caving/Noncaving, Color, Hardness, etc	From (ft.)	To (ft.)
---	BOULDERS CLAY	Surface	18
-AS-	BROWN FINE TO COURSE SAND	18	148
---	BOULDERS	148	164
-ASG	BROWN FINE TO COURSE SAND	164	203
---	BOULDERS	203	208

6. Casing Liner Screen

Dia. (in.)	Material, Weight, Specification Manufacturer & Method of Assembly	From (ft.)	To (ft.)
10.0	A53 WELDED ERW 40 48# LB FOSTER	surface	73

Dia.(in.)	Screen type, material & slot size	From	To
10.0	WW 304SS 025 WW 304SS 020	73	213

9. Static Water Level 37.6 feet B ground surface A=Above B=Below

10. Pump Test Pumping level 52.6 ft. below surface
Pumping at 500.0 GP M 24.0 Hrs

11. Well Is: A Grade 12 in. A=Above B=Below
Developed? Y
Disinfected? N
Capped? Y

7. Grout or Other Sealing Material

Method / Kind of Sealing Material	From (ft.)	To (ft.)	# Sacks Cement
5 BENT CMT	surface	63.0	36 S
4 SAND @ 2 BENT SEAL	63.0	69.0	

12. Did you notify the owner of the need to permanently abandon and fill all unused wells on this property? N
If no, explain: NONE IN AREA

13. Initials of Well Constructor or Supervisory Driller: RJC Date Signed: 4/2/96
Initials of Drill Rig Operator (Mandatory unless same as above): MMB Date Signed: 4/8/96

Additional Comments?
Owner Sent Label? Y
Variance Issued?
More Geology?

Well Construction Report For
WISCONSIN UNIQUE WELL NUMBER KV 454

State of Wisconsin
Private Water Supply - WS/2
Department of Natural Resources
Box 7921
Madison, WI 53707

APR 12 1996

(Please type or print using a black pen.)

Property Owner: DEPT. OF THE ARMY BADGER ARMY AMMO PLT
Telephone Number: (608) 643-3361
Mailing Address: 2 BADGER RD
City: BARABOO
State: WI
Zip Code: 53913-5000
County of Well Location: SAUK
Co. Well Permit No. W
Well Completion Date (mm-dd-yy): 02-17-96

57 Well Constructor (Business Name): C D S, Inc.
License #
Address: PO Box 1
City: SARANAC
State: MI
Zip Code: 48881

2. Mark well location with a dot in correct 40-acre parcel of section. N / W / E / S

1. Well Location Please use decimals instead of fractions.
[X] Town [ ] City [ ] Village of SUMPTER
Fire # (If avail.)
Grid or Street Address or Road Name and Number (If avail.): 2894.42 N 6566.81 E
Subdivision Name Lot # Block #
Gov't Lot # ____ or SW 1/4 of NE 1/4 of Section 23, T 10 N, R 6 [X] E [ ] W

3. Well Type [X] New [ ] Replacement [ ] Reconstruction
of previous unique well # ____ constructed in 19 ____
Reason for new, replaced or reconstructed well? EXTRACTION WELL EW164
[X] Drilled [ ] Driven Point [ ] Jetted [ ] Other ____

4. Well serves ___ # of homes and or EXTRACTION
(Ex: barn, restaurant, church, school, industry, etc.)
High Capacity: Well? [X] Yes [ ] No Property? [X] Yes [ ] No

5. Well located on highest point of property, consistent with the general layout and surroundings? [ ] Yes [X] No If no, explain on back side.

Well located in floodplain? [ ] Yes [ ] No
Distance in Feet From Well To Nearest:
____ 1. Landfill
____ 2. Building Overhang
____ 3. Septic or Holding Tank (circle one)
____ 4. Sewage Absorption Unit
____ 5. Nonconforming Pit
____ 6. Buried Home Heating Oil Tank
____ 7. Buried Petroleum Tank
____ 8. Shoreline/Swimming Pool
____ 9. Downspout/Yard Hydrant
____ 10. Privy
____ 11. Foundation Drain to Clearwater
____ 12. Foundation Drain to Sewer
____ 13. Building Drain [ ] Cast Iron or Plastic [ ] Other
____ 14. Building Sewer [ ] Gravity [ ] Pressure [ ] Cast Iron or Plastic [ ] Other
____ 15. Collector or Street Sewer
____ 16. Clearwater Sump
____ 17. Wastewater Sump
____ 18. Paved Animal Barn Pen
____ 19. Animal Yard or Shelter
____ 20. Silo - Type ____
____ 21. Barn Gutter
____ 22. Manure Pipe [ ] Gravity [ ] Pressure [ ] Cast Iron or Plastic [ ] Other
____ 23. Other Manure Storage ____
Other NR 112 Waste Source
____ 24. ____

NOT APPLICABLE

6. Drillhole Dimensions

Dia. (in.)	From (ft.)	To (ft.)
16	surface	214

Method of constructing upper enlarged drillhole only.
[ ] 1. Rotary - Mud Circulation
[ ] 2. Rotary - Air
[ ] 3. Rotary - Foam
[ ] 4. Reverse Rotary
[ ] 5. Cable-tool Bit ____ in. dia.
[X] 6. Temp. Outer Casing 16 in. dia.
Removed? [X] Yes [ ] No
If no, explain ____
[X] 7. Other DUAL TUBE

7. Casing, Liner, Screen

Dia. (in.)	Material, Weight, Specification, Manufacturer & Method of Assembly	From (ft.)	To (ft.)
10	Welded AS3, ERW, 40.48#, LB	surface	73

Dia. (in.)	screen type, material & slot size	From	To
10	WW-30455 - .035	73	188
	WW-80455 - .030	188 - 208	
		208 - 218	

8. Grout or Other Sealing Material
Method: Tremie

Kind of Sealing Material	From (ft.)	To (ft.)	Sacks Cement
5% bent/cmt	surface	63	36
4' sand + 2' bent seal	63	69	

9. Geology

DNR USE ONLY	Type, Caving/Noncaving, Color, Hardness, Etc.	From (ft.)	To (ft.)
AYG	BROWN FINE TO COARSE SAND COBBLES & BOULDERS - clay	Surface	18
ASG	BROWN FINE TO COURSE SAND TRACE OF GRAVEL	18	148
ASG	BROWN FINE TO COURSE SAND COBBLES & BOULDERS	148	164
ASG	BROWN FINE TO COURSE SAND TRACE OF GRAVEL	164	203
AYG	BROWN FINE TO COURSE SAND W/ COBBLES & Boulder	203	208
N	L 01595 Sand Stone	208	214
	01595		
	TERM WELL 01598 MVRM	004	

10. Static Water Level
____ ft. above ground surface
37.6 ft. below ground surface

11. Pump Test
Pumping Level 52.6 ft. below surface
Pumping at 500 GPM for 24 hours

12. Well Is:
12 in. [X] Above [ ] Below Grade
Developed? [X] Yes [ ] No
Disinfected? [ ] Yes [X] No
Capped? [X] Yes [ ] No

13. Did you permanently seal all unused, noncomplying, or unsafe wells? [ ] Yes [X] No If no, explain NONE IN AREA

14. Signature of Point Driver or Licensed Supervisory Driller: Robert H Cole 6063 Date Signed 2 April 96
Signature of Drill Rig Operator (Mandatory unless same as above) Date Signed 4-8-96

E.2 Well Development Forms

Well development forms that were available are included in the subsequent pages of this attachment; however, not all well development forms were readily obtainable. Well development forms or relevant well development information were presumably submitted to the WDNR around the time of well construction. The geologic environment in this area is relatively consistent and the wells within Parcels M1 and T1 have been bailed and sampled numerous times since construction. Consequently, missing well development information is likely similar to the information contained in the subsequent pages. The wells within Parcels M1 and T1 will remain as long as the Army has a use for them. The WDNR will be notified before any of these monitoring wells are abandoned.

State of Wisconsin
Department of Natural Resources

MONITORING WELL DEVELOPMENT
Form 4400-113B 8-89

Facility/Project Name: Propellant Badger Army Ammunition Plant-Burning Ground

Well Name: PBN 9303B

License, Permit or Monitoring Number: _____

Wis. Unique Well Number: _____ DNR Well Number: _____

1. Can this well be purged dry? ☐ Yes ☒ No

2. Well development method

surged with bailer and bailed	☐	4 1
surged with bailer and pumped	☒	6 1
surged with block and bailed	☐	4 2
surged with block and pumped	☐	6 2
surged with block, bailed and pumped	☐	7 0
compressed air	☐	2 0
bailed only	☐	1 0
pumped only	☐	5 1
pumped slowly	☐	5 0
Other _____	☐	

3. Time spent developing well: 480 min.

4. Depth of well (from top of well casisng): 93.5 ft.

5. Inside diameter of well: 4.00 in.

6. Volume of water in filter pack and well casing: 42. gal.

7. Volume of water removed from well: 425. gal.

8. Volume of water added (if any): 0. gal.

9. Source of water added: N/A

10. Analysis performed on water added? ☐ Yes ☐ No
(If yes, attach results)

	Before Development	After Development
11. Depth to Water (from top of well casing)	45. ft.	45. ft.
Date	3/22/93 (m m d d y y)	3/25/93 (m m d d y y)
Time	: ☐ a.m. ☐ p.m.	: ☐ a.m. ☐ p.m.
12. Sediment in well bottom	0. inches	0. inches
13. Water clarity	Clear ☐ 10 Turbid ☒ 15 (Describe) Very Turbid with Bentonite Drilling Mud	Clear ☒ 20 Turbid ☐ 25 (Describe) Turbidity Meter 0.4 NTU

Fill in if drilling fluids were used and well is at solid waste facility: N/A

14. Total suspended solids	____. mg/l	____. mg/l
15. COD	____. mg/l	____. mg/l

Additional comments on development:

10 Well Volumes = 420

Well developed by: Person's Name and Firm

Name: Chris Bostwick

Firm: IT Corporation

I hereby certify that the above information is true and correct to the best of my knowledge.

Signature: Christopher W. Bostwick

Firm: IT Corporation

NOTE: Shaded areas are for DNR use only. See instructions for more information.

State of Wisconsin
Department of Natural Resources

MONITORING WELL DEVELOPMENT
Form 4400-113B 8-89

Facility/Project Name: Propellant Badger Army Ammunition Plant-Burning Ground

Well Name: PBN 9303C

License, Permit or Monitoring Number: _____

Wis. Unique Well Number: _____ DNR Well Number: _____

1. Can this well be purged dry? ☐ Yes XXX☐ No

2. Well development method

surged with bailer and bailed	☐	41
surged with bailer and pumped	XX☐	61
surged with block and bailed	☐	42
surged with block and pumped	☐	62
surged with block, bailed and pumped	☐	70
compressed air	☐	20
bailed only	☐	10
pumped only	☐	51
pumped slowly	☐	50
Other _____	☐	___

3. Time spent developing well: 1140 min.

4. Depth of well (from top of well casisng): 164.5 ft.

5. Inside diameter of well: 4.00 in.

6. Volume of water in filter pack and well casing: 92. gal.

7. Volume of water removed from well: 1325. gal.

8. Volume of water added (if any): 0. gal.

9. Source of water added: N/A

10. Analysis performed on water added? ☐ Yes ☐ No
(If yes, attach results)

	Before Development	After Development
11. Depth to Water (from top of well casing)	40. ft.	40. ft.
Date	3/22/93 (mm/dd/yy)	3/25/93 (mm/dd/yy)
Time	: ☐ a.m. ☐ p.m.	15:55 ☐ a.m. ☐ p.m.
12. Sediment in well bottom	0. inches	0. inches
13. Water clarity	Clear ☐ 10 Turbid XXX 15 (Describe) Very Turbid with Bentonite Drill Mud	Clear XXX ☐ 20 Turbid ☐ 25 (Describe) Turbidity Meter 2.5 NTU

Fill in if drilling fluids were used and well is at solid waste facility: N/A

14. Total suspended solids	____. mg/l	____. mg/l
15. COD	____. mg/l	____. mg/l

Additional comments on development:

10 Well Volumes = 917 Gallons

Well developed by: Person's Name and Firm

Name: Chris Bostwick

Firm: IT Corporation

I hereby certify that the above information is true and correct to the best of my knowledge.

Signature: Christopher W. Bostwick

Firm: IT Corporation

NOTE: Shaded areas are for DNR use only. See instructions for more information.

State of Wisconsin
Department of Natural Resources

MONITORING WELL DEVELOPMENT
Form 4400-113B 8-89

Facility/Project Name: Propellant Badger Army Ammunition Plant-Burning Ground

Well Name: PBN 9303D

License, Permit or Monitoring Number: _____

Wis. Unique Well Number: _____ DNR Well Number: _____

1. Can this well be purged dry? ☐ Yes XX ☐ No

2. Well development method

surged with bailer and bailed	☐	4 1
surged with bailer and pumped	XXX	6 1
surged with block and bailed	☐	4 2
surged with block and pumped	☐	6 2
surged with block, bailed and pumped	☐	7 0
compressed air	☐	2 0
bailed only	☐	1 0
pumped only	☐	5 1
pumped slowly	☐	5 0
Other _____	☐	___

3. Time spent developing well: 9 6 0 min.

4. Depth of well (from top of well casisng): 2 2 4 5 ft.

5. Inside diameter of well: 4 . 0 0 in.

6. Volume of water in filter pack and well casing: 1 2 8 . __ gal.

7. Volume of water removed from well: 1 2 8 0 . __ gal.

8. Volume of water added (if any): 0 . __ gal.

9. Source of water added: N/A

10. Analysis performed on water added? ☐ Yes ☐ No
(If yes, attach results)

	Before Development	After Development
11. Depth to Water (from top of well casing)	4 5 . __ ft.	4 5 . __ ft.
Date	3 / 2 2 / 9 3 (m m d d y y)	3 / 2 5 / 9 3 (m m d d y y)
Time	__ : __ ☐ a.m. ☐ p.m.	__ : __ ☐ a.m. ☐ p.m.
12. Sediment in well bottom	0 . __ inches	__ . __ inches
13. Water clarity	Clear ☐ 10 Turbid XX 15 (Describe) Very Turbid with Bentonite Drilling Mud	Clear XX 20 Turbid ☐ 25 (Describe) Turbidity Meter Indicates 15 NTU's

Fill in if drilling fluids were used and well is at solid waste facility: N/A

14. Total suspended solids	____ . __ mg/l	____ . __ mg/l
15. COD	____ . __ mg/l	____ . __ mg/l

Additional comments on development:

10 Well Volumes = 1276 Gallons

Well developed by: Person's Name and Firm

Name: Chris Bostwick

Firm: IT Corporation

I hereby certify that the above information is true and correct to the best of my knowledge.

Signature: Christopher W. Bostwick

Firm: IT Corporation

NOTE: Shaded areas are for DNR use only. See instructions for more information.

State of Wisconsin
Department of Natural Resources

MONITORING WELL DEVELOPMENT
Form 4400-113B Rev. 4-90

Route to: Solid Waste ☐ Haz. Waste ☐ Wastewater ☐
Env. Response & Repair ☐ Underground Tanks ☐ Other ☐ _____

Facility/Project Name	County Name	Well Name
Badger Army Ammunition Plant	Sauk	PBN-93-04 A

Facility License, Permit or Monitoring Number	County Code	Wis. Unique Well Number	DNR Well Number
_____	57	_____	_____

1. Can this well be purged dry? ☐ Yes ☒ No

2. Well development method
- surged with bailer and bailed ☐ 41
- surged with bailer and pumped ☐ 61
- surged with block and bailed ☐ 42
- surged with block and pumped ☒ 62
- surged with block, bailed and pumped ☐ 70
- compressed air ☐ 20
- bailed only ☐ 10
- pumped only ☐ 51
- pumped slowly ☐ 50
- Other _____ ☐

3. Time spent developing well 165 min.

4. Depth of well (from top of well casisng) 53.2 ft.

5. Inside diameter of well 3.75 in.

6. Volume of water in filter pack and well casing 15 gal.

7. Volume of water removed from well 25. gal.

8. Volume of water added (if any) 0. gal.

9. Source of water added None

10. Analysis performed on water added? ☐ Yes ☐ No
(If yes, attach results)

	Before Development	After Development
11. Depth to Water (from top of well casing)	a. 35.46 ft.	46.80 ft.
Date	b. 10/25/93 (m m / d d / y y)	10/26/93 (m m / d d / y y)
Time	c. 15:25 ☐ a.m. ☒ p.m.	08:30 ☒ a.m. ☐ p.m.
12. Sediment in well bottom	. inches	. inches
13. Water clarity	Clear ☐ 10 Turbid ☒ 15	Clear ☒ 20 Turbid ☐ 25
(Describe)	Brown 999+NTV 0.667 mS/cm 7.82 pH 10.5 °C No odor	Clear 13 NTV 0.620 mS/cm 7.02 pH 7.6 °C No odor

Fill in if drilling fluids were used and well is at solid waste facility:

14. Total suspended solids	. mg/l	. mg/l
15. COD	. mg/l	. mg/l

16. Additional comments on development:

Well developed by: Person's Name and Firm

Name: _____

Firm: Exploration Technology Inc.

I hereby certify that the above information is true and correct to the best of my knowledge.

Signature: _____

Print Initials: JRH

Firm: Woodward-Clyde Consultants

NOTE: Shaded areas are for DNR use only. See instructions for more information including a list of county codes.

State of Wisconsin
Department of Natural Resources

MONITORING WELL DEVELOPMENT
Form 4400-113B Rev. 4-90

Route to: Solid Waste ☐ Haz. Waste ☐ Wastewater ☐
Env. Response & Repair ☒ Underground Tanks ☐ Other ☐ _____

Facility/Project Name	County Name	Well Name
Badger Army Ammunition Plant	Sauk	PBN-93-04B

Facility License, Permit or Monitoring Number	County Code	Wis. Unique Well Number	DNR Well Number
_____	57		

1. Can this well be purged dry? ☐ Yes ☒ No

2. Well development method

surged with bailer and bailed	☒	41	1st 500 gal
surged with bailer and pumped	☐	61	
surged with block and bailed	☐	42	
surged with block and pumped	☐	62	
surged with block, bailed and pumped	☐	70	
compressed air	☐	20	
bailed only	☐	10	
pumped only	☐	51	
pumped slowly	☒	50	2nd
Other _____	☐		

3. Time spent developing well 235 min.

4. Depth of well (from top of well casisng) 88.3 ft.

5. Inside diameter of well 3.75 in.

6. Volume of water in filter pack and well casing 35.3 gal.

7. Volume of water removed from well 680.0 gal.

8. Volume of water added (if any) 0.0 gal.

9. Source of water added None added

10. Analysis performed on water added? ☐ Yes ☐ No
(If yes, attach results)

	Before Development	After Development
11. Depth to Water (from top of well casing)	a. 38.70 ft.	38.70 ft.
Date	b. 10/25/93 (mm/dd/yy)	10/25/93 (mm/dd/yy)
Time	c. 07:54 ☒ a.m. ☐ p.m.	14:15 ☐ a.m. ☒ p.m.
12. Sediment in well bottom	___.__ inches	___.__ inches
13. Water clarity	Clear ☐ 10 Turbid ☒ 15	Clear ☒ 20 Turbid ☐ 25
(Describe)	Orange/Brown	Clear
	Opaque	
	No odor	No odor
	Very Silty	-
	8.03 pH	7.95 pH
	0.689 mS/cm	0.683 mS/cm

Fill in if drilling fluids were used and well is at solid waste facility:

14. Total suspended solids	____.__ mg/l	____.__ mg/l
15. COD	____.__ mg/l	____.__ mg/l

16. Additional comments on development:

Well developed by: Person's Name and Firm

Name: _____

Firm: Exploration Technology Inc.

I hereby certify that the above information is true and correct to the best of my knowledge.

Signature: _____

Print Initials: JRH

Firm: Woodward-Clyde Consultants

NOTE: Shaded areas are for DNR use only. See instructions for more information including a list of county codes.

State of Wisconsin
Department of Natural Resources

MONITORING WELL DEVELOPMENT
Form 4400-113B Rev. 4-90

Route to: Solid Waste ☐ Haz. Waste ☐ Wastewater ☐
Env. Response & Repair ☐ Underground Tanks ☐ Other ☐ _____

Facility/Project Name	County Name	Well Name
Badger Army Ammunition Plant	Sauk	PBN-93-04C

Facility License, Permit or Monitoring Number	County Code	Wis. Unique Well Number	DNR Well Number
	57		

1. Can this well be purged dry? ☐ Yes ☒ No

2. Well development method
- surged with bailer and bailed ☐ 41
- surged with bailer and pumped ☐ 61
- surged with block and bailed ☐ 42
- surged with block and pumped ☒ 62
- surged with block, bailed and pumped ☐ 70
- compressed air ☐ 20
- bailed only ☐ 10
- pumped only ☐ 51
- pumped slowly ☐ 50
- Other _____ ☐

3. Time spent developing well 90 min.

4. Depth of well (from top of well casisng) 117.5 ft.

5. Inside diameter of well 3.75 in.

6. Volume of water in filter pack and well casing 52.0 gal.

7. Volume of water removed from well 680.0 gal.

8. Volume of water added (if any) 0 gal.

9. Source of water added None

10. Analysis performed on water added? ☐ Yes ☐ No
(If yes, attach results)

	Before Development	After Development
11. Depth to Water (from top of well casing)	a. 38.18 ft.	39.20 ft.
Date	b. 10 / 27 / 93 (mm dd yy)	10 / 27 / 93 (mm dd yy)
Time	c. 08:05 ☐ a.m. ☐ p.m.	09:35 ☐ a.m. ☐ p.m.
12. Sediment in well bottom	___.__ inches	___.__ inches
13. Water clarity	Clear ☐ 10 Turbid ☒ 15	Clear ☒ 20 Turbid ☐ 25
(Describe)	Brown	Clear
	999+NTU	18 NTU
	0.713 mS/cm	0.694 mS/cm
	7.32 pH	7.37 pH
	9.1 °C	9.7 °C
	No odor	No odor

Fill in if drilling fluids were used and well is at solid waste facility:

14. Total suspended solids	____.__ mg/l	____.__ mg/l
15. COD	____.__ mg/l	____.__ mg/l

16. Additional comments on development:

Well developed by: Person's Name and Firm

Name: Scott Kraemer

Firm: Exploration Technology Inc.

I hereby certify that the above information is true and correct to the best of my knowledge.

Signature: _____

Print Initials: JRH

Firm: Woodward-Clyde Consultants

NOTE: Shaded areas are for DNR use only. See instructions for more information including a list of county codes.

State of Wisconsin
Department of Natural Resources

MONITORING WELL DEVELOPMENT
Form 4400-113B Rev. 4-90

Route to: Solid Waste ☐ Haz. Waste ☐ Wastewater ☐
Env. Response & Repair ☐ Underground Tanks ☐ Other ☐ _____

Facility/Project Name	County Name	Well Name
Badger Army Ammunition Plant	Sauk	PBN-93-04 D

Facility License, Permit or Monitoring Number	County Code	Wis. Unique Well Number	DNR Well Number
_____	57	_____	_____

1. Can this well be purged dry? ☐ Yes ☐ No

2. Well development method
- surged with bailer and bailed ☐ 41
- surged with bailer and pumped ☐ 61
- surged with block and bailed ☐ 42
- surged with block and pumped ☒ 62
- surged with block, bailed and pumped ☐ 70
- compressed air ☐ 20
- bailed only ☐ 10
- pumped only ☐ 51
- pumped slowly ☐ 50
- Other _____ ☐

3. Time spent developing well 100 min.

4. Depth of well (from top of well casisng) 212.5 ft.

5. Inside diameter of well 3.75 in.

6. Volume of water in filter pack and well casing 52.0 gal.

7. Volume of water removed from well 450.0 gal.

8. Volume of water added (if any) 0 gal.

9. Source of water added None

10. Analysis performed on water added? ☐ Yes ☐ No
(If yes, attach results)

	Before Development	After Development
11. Depth to Water (from top of well casing)	a. 38.15 ft.	38.93 ft.
Date	b. 10/26/93 (mm/dd/yy)	10/26/93 (mm/dd/yy)
Time	c. 10:20 ☒ a.m. ☐ p.m.	1:15 ☐ a.m. ☒ p.m.
12. Sediment in well bottom	___.__ inches	___.__ inches
13. Water clarity	Clear ☐ 10 Turbid ☒ 15 (Describe) Red-Brown 999+NTU 0.610 mS/cm 7.52 pH 10.3°C No odor	Clear ☐ 20 Turbid ☒ 25 (Describe) Clear 15 NTU 0.595 mS/cm 7.39 pH 10.0°C No odor

Fill in if drilling fluids were used and well is at solid waste facility:

14. Total suspended solids	____.__ mg/l	____.__ mg/l
15. COD	____.__ mg/l	____.__ mg/l

16. Additional comments on development:

Well developed by: Person's Name and Firm

Name: Scott Kraemer

Firm: Exploration Technology Inc.

I hereby certify that the above information is true and correct to the best of my knowledge.

Signature: _____

Print Initials: JRH

Firm: Woodward-Clyde Consultants

NOTE: Shaded areas are for DNR use only. See instructions for more information including a list of county codes.

State of Wisconsin
Department of Natural Resources

MONITORING WELL DEVELOPMENT
Form 4400-113B 8-89

Facility/Project Name: BADGER ARMY AMUNITION PLANT

Well Name: SPN-89-03B

License, Permit or Monitoring Number: _____

Wis. Unique Well Number: _____ DNR Well Number: _____

1. Can this well be purged dry? ☐ Yes ☒ No

2. Well development method

surged with bailer and bailed	☐	4 1
surged with bailer and pumped	☐	6 1
surged with block and bailed	☐	4 2
surged with block and pumped	☐	6 2
surged with block, bailed and pumped	☐	7 0
compressed air	☐	2 0
bailed only	☐	1 0
pumped only	☒	5 1
pumped slowly	☐	5 0
Other _____	☐	

3. Time spent developing well 943 min.

4. Depth of well (from top of well casisng) 95. ft.

5. Inside diameter of well 4.0 in.

6. Volume of water in filter pack and well casing 37. gal.

7. Volume of water removed from well 5660. gal.

8. Volume of water added (if any) 1825. gal.

9. Source of water added _____

10. Analysis performed on water added? ☐ Yes ☒ No
(If yes, attach results)

	Before Development	After Development
11. Depth to Water (from top of well casing)	52.87 ft.	54.23 ft.
Date	05/01/89 (m m d d y y)	06/25/89 (m m d d y y)
Time	12:00 ☐ a.m. ☐ p.m.	__:__ ☐ a.m. ☐ p.m.
12. Sediment in well bottom	__.__ inches	__.__ inches
13. Water clarity	Clear ☒ 10 Turbid ☐ 15 (Describe)	Clear ☐ 20 Turbid ☐ 25 (Describe)

Fill in if drilling fluids were used and well is at solid waste facility:

14. Total suspended solids	____.__ mg/l	____.__ mg/l
15. COD	____.__ mg/l	____.__ mg/l

Additional comments on development:

Well developed by: Person's Name and Firm

Name: _____

Firm: C E ENVIRONMENTAL

I hereby certify that the above information is true and correct to the best of my knowledge.

Signature: [signature]

Firm: C E ENVIRONMENTAL

NOTE: Shaded areas are for DNR use only. See instructions for more information.

State of Wisconsin
Department of Natural Resources

MONITORING WELL DEVELOPMENT
Form 4400-113B 8-89

Facility/Project Name: BADGER ARMY AMMUNITION PLANT

Well Name: SPN-89-03C

License, Permit or Monitoring Number: _____

Wis. Unique Well Number: _____ DNR Well Number: _____

1. Can this well be purged dry? ☐ Yes ☒ No

2. Well development method

surged with bailer and bailed	☐	4 1
surged with bailer and pumped	☐	6 1
surged with block and bailed	☐	4 2
surged with block and pumped	☐	6 2
surged with block, bailed and pumped	☐	7 0
compressed air	☐	2 0
bailed only	☐	1 0
pumped only	☒	5 1
pumped slowly	☐	5 0
Other _____	☐	

3. Time spent developing well: 1448 min.

4. Depth of well (from top of well casisng): 129.__ ft.

5. Inside diameter of well: 4.0 in.

6. Volume of water in filter pack and well casing: 58.__ gal.

7. Volume of water removed from well: ≥610.__ gal.

8. Volume of water added (if any): ≥800.__ gal.

9. Source of water added _____

10. Analysis performed on water added? ☐ Yes ☒ No
(If yes, attach results)

	Before Development	After Development
11. Depth to Water (from top of well casing)	53.08 ft.	54.41 ft.
Date	04/28/89 (m m d d y y)	10/25/89 (m m d d y y)
Time	15:30 ☐ a.m. ☒ p.m.	__:__ ☐ a.m. ☐ p.m.
12. Sediment in well bottom	__.__ inches	__.__ inches
13. Water clarity	Clear ☐ 10 Turbid ☐ 15 (Describe)	Clear ☐ 20 Turbid ☐ 25 (Describe)
Fill in if drilling fluids were used and well is at solid waste facility:		
14. Total suspended solids	____.__ mg/l	____.__ mg/l
15. COD	____.__ mg/l	____.__ mg/l

Additional comments on development:

Well developed by: Person's Name and Firm

Name: _____

Firm: C E ENVIRONMENTAL

I hereby certify that the above information is true and correct to the best of my knowledge.

Signature: [signature]

Firm: C E ENVIRONMENTAL

NOTE: Shaded areas are for DNR use only. See instructions for more information.

METAL WELL PIPE ABOVE GROUND SURFACE - 2.5 ft
PVC WELL CASING TOP BELOW METAL PIPE TOP - 2.0 IN.

ABB Environmental Services, Inc.

MONITORING WELL DEVELOPMENT FORM

Facility/Project Name: BAAP- USATHAMA

Well Name: SPN-91-03D

License, Permit or Monitoring Number: _____

Wis. Unique Well Number: _____ DNR Well Number: _____

1. Can this well be purged dry? ☐ Yes ☑ No

2. Well development method

surged with bailer and bailed	☐	4 1
surged with bailer and pumped	☐	6 1
surged with block and bailed	☐	4 2
surged with block and pumped	☐	6 2
surged with block, bailed and pumped	☐	7 0
compressed air	☐	2 0
bailed only	☐	1 0
pumped only (with surging)	☑	5 1
pumped slowly	☐	5 0
Other _____	☐	

3. Time spent developing well: 625 min.

4. Depth of well (from top of well casisng): 203.4 ft.

5. Inside diameter of well: 3.75 in.

6. Volume of water in filter pack and well casing: 124.0 ~~620.7~~ gal. (PR)

7. Volume of water removed from well: 3620.0 gal.

8. Volume of water added (if any): 1000.0 gal.

9. Source of water added: BPW #2

10. Analysis performed on water added? ☑ Yes ☐ No (If yes, attach results)

	Before Development	After Development
11. Depth to Water (from top of well casing)	57.24 ft.	57.23 ft. 57.23 (24 hrs later)
Date	11/21/91 (m m d d y y)	11/22/91 (m m d d y y) 11-23-9
Time	07:45 ☒ a.m. ☐ p.m.	11:30 ☒ a.m. ☐ p.m. 1350
12. Sediment in well bottom	___.__ inches	___.__ inches
13. Water clarity	Clear ☐ 10; Turbid ☑ 15; (Describe) SLIGHTLY CLOUDY	Clear ☑ 20; Turbid ☐ 25; (Describe)

Fill in if drilling fluids were used and well is at solid waste facility:

14. Total suspended solids	____.__ mg/l	____.__ mg/l
15. COD	____.__ mg/l	____.__ mg/l
16. Screen length	10.0 ft.	

Additional comments on development:

T (°C)	11.2	10.7	10.2 (1640)	NOT TAKEN
pH (units)	6.7	6.7	7.2	7.0
cond. (µmhos)	520	480	469	545
Time	0900	1416	1640	1110
	11-21-91	11-21-91	11-21-91	11-22-91

well to casing: - 2.0" =
stick-up: 2.5' =
initial depth to bottom: 203.39
final depth to bottom: 203.40 203.40

Well developed by: Person's Name and Firm

Name: B. DAVID LOUCKS

Firm: ABB ENVIRONMENTAL SERVICES

I hereby certify that the above information is true and correct to the best of my knowledge.

Signature: B. David Loucks

Firm: ABB ENVIRONMENTAL SERVICES

NOTE: Shaded areas are for DNR use only. See instructions for more information.

11-21-91 PUMPING BEGINS AT 0850 @ 7.5 GPM
11-21-91 2nd PUMP BEGINS AT 1320 @ 4.9 GPM
11-22-91 BEGIN PUMPING W/ 1 PUMP 0825 @ 7.2 GPM - BEGIN 2nd PUMP 0850 @ 4.9 GPM

Notifications to Owners of Impacted Properties

Not applicable. The soil contamination in Parcels M1 and T1 has not impacted off-site properties. Groundwater has not been impacted from the soil contamination in Parcels M1 and T1.

PARCEL "M1"

A parcel of land located in the NE1/4 of the NE1/4 of Section 23, the NW1/4 of the NW1/4, the NE1/4 of the NW1/4, the SE1/4 of the NW1/4, the SW1/4 of the NW1/4, the NW1/4 of the NE1/4, the NE1/4 of the NE1/4, the SE1/4 of the NE1/4 and the SW1/4 of the NE1/4 of Section 24, all in T10N, R6E, Town of Sumpter, Sauk County, Wisconsin more particularly described as follows:

Commencing at a Harrison monument at the southwest corner of the SW1/4 of the NW1/4 of said Section 24; thence N0°17'46"E along the west line of said SW1/4 of the NW1/4, 170.87 ft. to a 3/4" solid round iron rod at the point of beginning; thence N89°44'19"E, 3236.05 ft. to a 3/4" solid round iron rod on the westerly right-of-way line of State Highway "78"; thence N41°31'46"E along said westerly right-of-way line, 563.25 ft. to a 3/4" solid round iron rod; thence N62°08'04"E along said westerly right-of-way line, 73.95 ft. to a 3/4" solid round iron rod; thence N23°20'06"E along said westerly right-of-way line, 326.17 ft. to a 3/4" solid round iron rod; thence N72°08'07"E along said westerly right-of-way line, 504.52 ft. to a 3/4" solid round iron rod; thence N0°40'28"W, 537.40 ft. to a 3/4" solid round iron rod; thence N55°12'33"W, 420.00 ft. to a 3/4" solid round iron rod; thence N87°27'55"W, 361.73 ft. to a 3/4" solid round iron rod; thence N0°04'08"E, 46.00 ft. to a 3/4" solid round iron rod; thence N89°55'52"W, 180.02 ft. to a 3/4" solid round iron rod; thence N1°44'13"E, 165.02 ft. to a 3/4" solid round iron rod; thence N88˚21'50"W, 440.78 ft. to a 3/4" solid round iron rod at the point of curvature of a curve to the right having a central angle of 16˚05'50" and a radius of 690.00 ft.; thence northwesterly along the arc of said curve, 193.86 ft. to a 3/4" solid round iron rod at the point of tangency thereof, said curve having a long chord bearing N81˚36'55"W, 193.22 ft.; thence N73˚34'00"W 101.97 ft. to a 3/4" solid round iron rod at the point of curvature of a curve to the left having a central angle of 22˚55'32" and a radius of 778.00 ft.; thence westerly along the arc of said curve, 311.30 ft. to a 3/4" solid round iron rod at the point of tangency thereof, said curve having a long chord bearing N85˚01'46"W, 309.23 ft.; thence S83˚30'28"W, 228.28 ft. to a 3/4" solid round iron rod at the point of curvature of a curve to the right having a central angle of 26˚30'12" and a radius of 1370.00 ft.; thence northwesterly along the arc of said curve, 633.72 ft. to a 3/4" solid round iron rod at the point of tangency thereof, said curve having a long chord bearing N83˚14'26"W, 628.09 ft.; thence S1˚15'19"E, 503.80 ft. to a 3/4" solid round iron rod in a curve to the left having a central angle of 1˚30'00" and a radius of 622.00 ft.; thence southwesterly along the arc of said curve, 16.28 ft. to a 3/4" solid round iron rod at the point of tangency thereof, said curve having a long chord bearing S75˚57'43"W, 16.28 ft.; thence S75˚12'43"W, 74.03 ft. to a 3/4" solid round iron rod at the point of curvature of a curve to the right having a central angle of 45˚35'30" and a radius of 550.00 ft.; thence northwesterly along the arc of said curve, 437.65 ft. to a 3/4" solid round iron rod at the point of tangency thereof, said curve having a long chord bearing N81˚59'32"W, 426.19 ft.; thence N59˚11'47"W, 68.63 ft. to a 3/4" solid round iron rod at the point of curvature of a curve to the left having a central angle of 39˚50'02" and a radius of 295.00 ft.; thence westerly along the arc of said curve, 205.09 ft. to a 3/4" solid round iron rod at the point of tangency thereof, said curve having a long chord bearing N79˚06'48"W, 200.99 ft.; thence S80˚58'11"W, 208.17 ft. to a 3/4" solid round iron rod; thence S73˚20'33"W, 569.38 ft. to a 3/4" solid round iron rod; thence S0°33'50"E, 333.51 ft. to a 3/4" solid round iron rod at the northwest corner of the SW1/4 of the NW1/4 of said Section 24; thence S0°17'46"W along the west line of said SW1/4 of the NW1/4, 1150.53 ft. to the point of beginning.

Containing 6,999,971 square feet or 160.70 acres

PARCEL "T1"

A parcel of land located in the NE1/4 of the NE1/4, the NW1/4 of the NE1/4, the SW1/4 of the NE1/4, the SE1/4 of the NE1/4, the NE1/4 of the NW1/4, the SE1/4 of the NW1/4, the SW1/4 of the NW1/4 and the NW1/4 of the

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Containing 6,419,650 square feet or 147.37 acres

The Badger Army Ammunitions Plant land was acquired by the United States for use as an ammunition plant, so under ss. 1.02(intro.) and (1), Wis. States., it is a “site for the erection of …magazines, arsenals,…” over which the United States has exclusive jurisdiction as a “federal enclave.” Once Wisconsin cedes exclusive jurisdiction to the United States over a place or tract of land within the state pursuant to ss. 1.02(1) and 1.03, States., the United States retains exclusive jurisdiction” so long… as the place or tract shall remain the property of the United States.” To date, Parcels M1 and T1 remain United States property subject to the exclusive jurisdiction of the United States.

PARCEL "M1"

A parcel of land located in the NE1/4 of the NE1/4 of Section 23, the NW1/4 of the NW1/4, the NE1/4 of the NW1/4, the SE1/4 of the NW1/4, the SW1/4 of the NW1/4, the NW1/4 of the NE1/4, the NE1/4 of the NE1/4, the SE1/4 of the NE1/4 and the SW1/4 of the NE1/4 of Section 24, all in T10N, R6E, Town of Sumpter, Sauk County, Wisconsin more particularly described as follows:

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PARCEL "T1"

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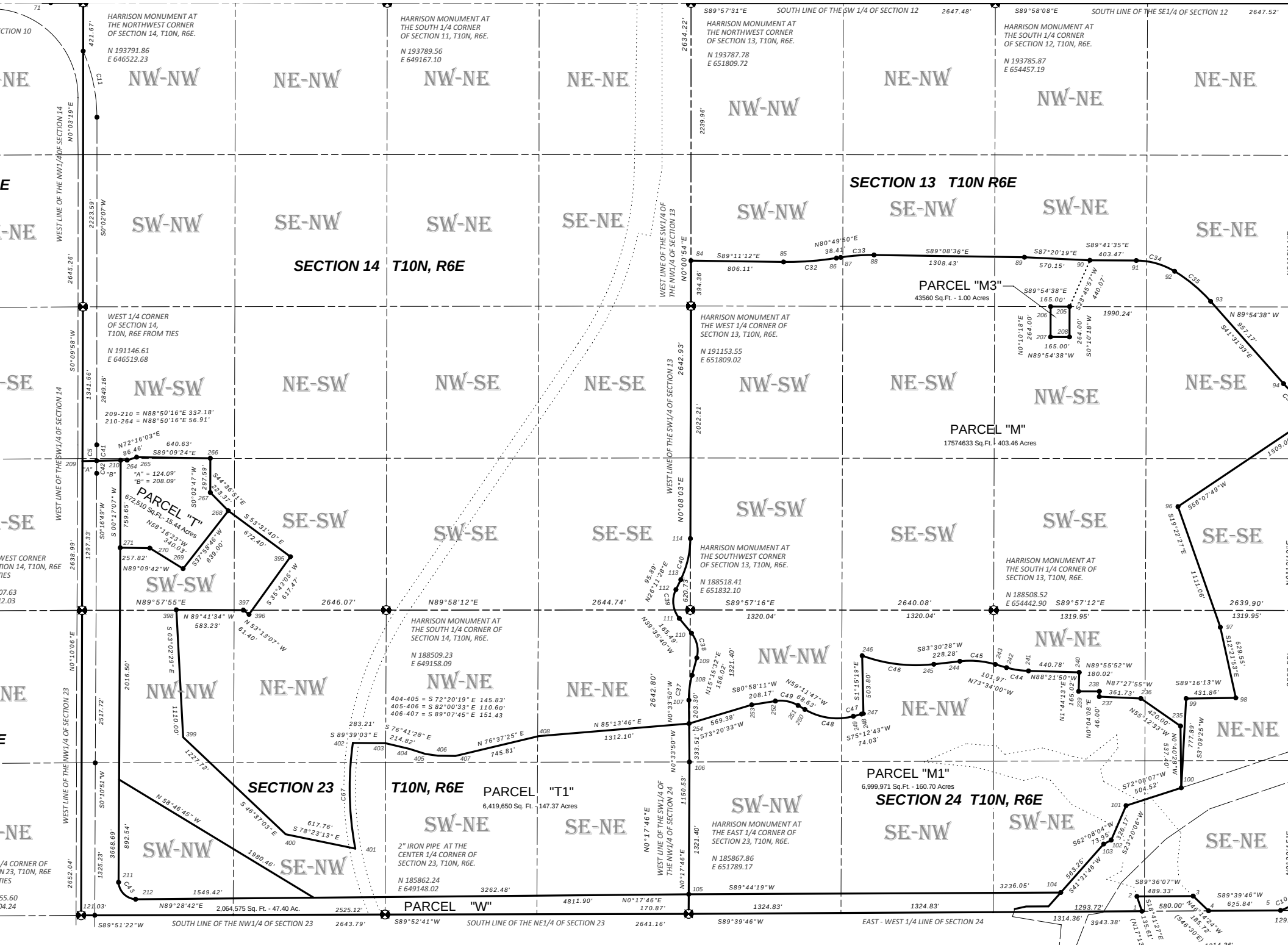
HARRISON MONUMENT AT THE NORTHWEST CORNER OF SECTION 14, T10N, R6E.
N 193791.86
E 646522.23
HARRISON MONUMENT AT THE SOUTH 1/4 CORNER OF SECTION 11, T10N, R6E.
N 193789.56
E 649167.10
HARRISON MONUMENT AT THE NORTHWEST CORNER OF SECTION 13, T10N, R6E.
N 193787.78
E 651809.72
HARRISON MONUMENT AT THE SOUTH 1/4 CORNER OF SECTION 12, T10N, R6E.
N 193785.87
E 654457.19
SECTION 13 T10N R6E
SECTION 14 T10N, R6E
WEST 1/4 CORNER OF SECTION 14, T10N, R6E FROM TIES
N 191146.61
E 646519.68
HARRISON MONUMENT AT THE WEST 1/4 CORNER OF SECTION 13, T10N, R6E.
N 191153.55
E 651809.02
PARCEL "M3"
43560 Sq.Ft. - 1.00 Acres
PARCEL "M"
17574633 Sq.Ft. - 403.46 Acres
PARCEL "T"
672,510 Sq.Ft. - 15.44 Acres
HARRISON MONUMENT AT THE SOUTHWEST CORNER OF SECTION 13, T10N, R6E.
N 188518.41
E 651832.10
HARRISON MONUMENT AT THE SOUTH 1/4 CORNER OF SECTION 13, T10N, R6E.
N 188508.52
E 654442.90
HARRISON MONUMENT AT THE SOUTH 1/4 CORNER OF SECTION 14, T10N, R6E.
N 188509.23
E 649158.09
SECTION 23 T10N, R6E
PARCEL "T1"
6,419,650 Sq. Ft. - 147.37 Acres
PARCEL "M1"
6,999,971 Sq.Ft. - 160.70 Acres
SECTION 24 T10N, R6E
2" IRON PIPE AT THE CENTER 1/4 CORNER OF SECTION 23, T10N, R6E.
N 185862.24
E 649148.02
HARRISON MONUMENT AT THE EAST 1/4 CORNER OF SECTION 23, T10N, R6E.
N 185867.86
E 651789.17
PARCEL "W"
2,064,575 Sq. Ft. - 47.40 Ac.
SOUTH LINE OF THE SW 1/4 OF SECTION 12
SOUTH LINE OF THE SE1/4 OF SECTION 12
SOUTH LINE OF THE NW1/4 OF SECTION 23
SOUTH LINE OF THE NE1/4 OF SECTION 23
EAST - WEST 1/4 LINE OF SECTION 24
WEST LINE OF THE NW1/4 OF SECTION 14
WEST LINE OF THE SW1/4 OF SECTION 14
WEST LINE OF THE SW1/4 OF SECTION 13
WEST LINE OF THE NW1/4 OF SECTION 23
WEST LINE OF THE SW1/4 OF SECTION 24

Verification of Zoning

G.3. The Badger Army Ammunitions Plant land was acquired by the United States for use as an ammunition plant, so under ss. 1.02(intro.) and (1), Wis. States., it is a "site for the erection of …magazines, arsenals,…" over which the United States has exclusive jurisdiction as a "federal enclave." Once Wisconsin cedes exclusive jurisdiction to the United States over a place or tract of land within the state pursuant to ss. 1.02(1) and 1.03, States., the United States retains exclusive jurisdiction" so long… as the place or tract shall remain the property of the United States." To date, Parcels M1 and T1 remain United States property subject to the exclusive jurisdiction of the United States.

DEPARTMENT OF THE ARMY
BADGER ARMY AMMUNITION PLANT
S7560 U.S. HIGHWAY 12
NORTH FREEDOM, WISCONSIN 53951-9588

December 9, 2013

SUBJECT: Parcels M1 and T1 – Legal Description

Mr. Will Myers
Hydrogeologist
Wisconsin Department of Natural Resources
South Central Region
3911 Fish Hatchery Road
Fitchburg, WI 53711-5397

Dear Mr. Myers:

As a representative for the Responsible Party, I believe that the attached legal description accurately describes the property for Parcels M1 and T1.

Please do not hesitate to contact me at 608-643-3361 if you have any questions.

Sincerely,

Joan M. Kenney

Joan M. Kenney
Commander's Representative

Attachments
Copy furn: Badger Technical Services, LLC

PARCEL "M1"

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A parcel of land located in the NE1/4 of the NE1/4, the NW1/4 of the NE1/4, the SW1/4 of the NE1/4, the SE1/4 of the NE1/4, the NE1/4 of the NW1/4, the SE1/4 of the NW1/4, the SW1/4 of the NW1/4 and the NW1/4 of the

NW1/4 of Section 23, the SE1/4 of the SW1/4 and the SW1/4 of the SW1/4 of Section 14, all in T10N, R6E, Town of Sumpter, Sauk County, Wisconsin more particularly described as follows:

Commencing at a Harrison monument at the southeast corner of the SE1/4 of the NE1/4 of said Section 23; thence N0°17'46"E along the east line of said SE1/4 of the NE1/4, 170.87 ft. to a 3/4" solid round iron rod at the point of beginning; thence S89°28'42"W, 3,262.48 ft.; thence N58°46'45"W, 1,980.46 ft.; thence N00°17'07"E, 2,016.50 ft. to a 3/4" solid round iron rod; thence S89°09'42"E, 257.82 ft. to a 3/4" solid round iron rod; thence S58°16'23"E, 340.03 ft. to a 3/4" solid round iron rod; thence N37°58'46"E, 639.00 ft. to a 3/4" solid round iron rod; thence S53°31'40"E, 672.40 ft. to a 3/4" solid round iron rod; thence S35°43'05"W, 617.47 ft. to a 3/4" solid round iron rod; thence N53°13'07"W, 61.40 ft. to a 3/4" solid round iron rod; thence N89°41'34"W, 583.23 ft. to a 3/4" solid round iron rod; thence S03°02'29"E, 1,110.00 ft.; thence S46°37'03"E, 1,227.72 ft.; thence S78°23'13"E, 617.76 ft. to the point of curvature of a curve to the right having a central angle of 18°35'42" and a radius of 2,842.38 ft.; thence northerly along the arc of said curve, 922.49 ft. to the end of the curve, said curve having a long chord bearing N01°18'47"W, 918.45 ft.; thence S89°39'03"E, 283.21 ft.; thence S76°41'28"E, 214.82 ft.; thence S72°20'19"E, 145.83 ft.; thence S82°00'33"E, 110.60 ft.; thence S89°07'45"E, 151.43 ft.; thence N76°37'25"E, 745.81 ft.; thence N85°13'46"E, 1,312.10 ft. to a 3/4" solid round iron rod; thence S00°33'50"E , 333.51 ft. to a 3/4" solid round iron rod at the northeast corner of the SE1/4 of the NE1/4 of said Section 23; thence S00°17'46"W along the east line of said SE1/4 of the NE1/4, 1,150.53 ft. to the point of beginning.

Containing 6,419,650 square feet or 147.37 acres