DEPARTMENT OF THE ARMY
US ARMY INSTALLATION MANAGEMENT COMMAND
US ARMY ENVIRONMENTAL COMMAND
2450 CONNELL ROAD
JOINT BASE SAN ANTONIO FORT SAM HOUSTON, TX 78234-7664

IMAE-M June 25, 2020

SUBJECT: January/April 2020 Monitoring and Residential Well Groundwater Data
Badger Army Ammunition Plant

Mr. Steve Martin
Wisconsin Department of Natural Resources
GEF2 Central Office
PO Box 7921
Madison, WI 53707-7921

Dear Mr. Martin:

Enclosed is the Badger Army Ammunition Plant (BAAP) January and April 2020 Monitoring Well and Residential Well Groundwater Data. On January 14, 2020, SpecPro Professional Services, LLC (SPS) collected groundwater samples from five monitoring wells located directly downgradient of the Propellant Burning Ground (PBG) Waste Pits (source area). During March/April/May 2020, SPS collected groundwater samples from 118 monitoring wells associated with the Deterrent Burning Ground (DBG) Plume, Nitrocellulose Production Area (NC) Plume, and PBG Plume. On May 5, 2020, SPS collected a groundwater sample from one residential well associated with the Central Plume.

The enclosed files contain the signed Environmental Monitoring Data Certification Forms, a concentration graph, a list of wells sampled, a map showing the well locations, residential well lab results, and summary tables.

Deterrent Burning Ground Plume

Based on the WDNR 2014 Monitoring Well Optimization Plan email approval dated May 27, 2014 and a subsequent modification dated July 15, 2016, 48 monitoring wells associated with the DBG Plume were sampled between March 30 and May 6, 2020.

The groundwater results indicate that dinitrotoluene (DNT) concentrations in the DBG Plume have continued to decrease over the past three years except in three monitoring wells, ELN-1003B, ELN-1003C, and ELN-1502A. DNT was not detected in ELN-1504B, located downgradient of ELN-1003B and ELN-1003C. The enclosed Table 1 compares the DNT results from ELN-1003B, ELN-1003C, and ELN-1502A from September 2016 through April 2020.

The total DNT concentration in ELN-1502A increased from 0.195 micrograms per liter (µg/l) during September 2016 to 0.801 µg/l during September 2018 but dropped to 0.275 µg/l during April 2020. ELN-1502A is located at the eastern plant boundary and

0.7 miles southeast of the DBG source area. ELN-1502A will be sampled again during September 2020.

The total DNT concentration in ELN-1003B increased from <0.008 (below the detection limit) during September 2016 to 0.223 µg/l during November 2019 but dropped to 0.13 µg/l during April 2020. The total DNT concentration in ELN-1003C increased from <0.0081 during September 2016 to 0.13 µg/l during April 2020. Both ELN-1003B and ELN-1003C are located 0.5 mile southeast of ELN-1502A. Both ELN-1003B and ELN-1003C will be sampled again during September 2020.

Nitrocellulose Production Area Plume

Per the WDNR's October 3, 2014 request, we have included DNT groundwater data from four monitoring wells located near the former DNT Screen House. These monitoring wells help define the extents of DNT in the NC Plume. The groundwater results indicate that DNT concentrations in this area have remained stable. These monitoring wells associated with the NC Plume will be sampled again during September 2020.

Propellant Burning Ground Plume

Based on the WDNR Propellant Burning Ground Monitoring Requirements dated January 5, 2015, 66 monitoring wells associated with the PBG Plume were sampled between April 23 and May 4, 2020. On January 14, 2020, SPS collected groundwater samples from five monitoring wells (PBM-0001, PBM-9902, PBN-8202A, B, C) that are located adjacent to and downgradient of the PBG source area. The January 2020 sampling event was in addition to the WDNR required sampling.

The groundwater results indicate that volatile organic compound (VOC) concentrations in the PBG Plume were relatively unchanged since September 2017. PBN-8202C had a benzene concentration of 37 µg/l, which was above the Chapter NR 140 Enforcement Standard (ES) of 5 µg/l. This is the first time benzene has been detected in PBN-8202C and also above the Chapter NR 140 ES in a PBG Plume monitoring well. PBN-8202C is located directly downgradient of the PBG source area. During June 2020, PBN-8202C was resampled for VOCs to confirm the benzene concentration. Preliminary results indicate that PBN-8202C does contain elevated benzene above the NR 140 ES.

DNT concentrations near the PBG source area have continued to increase since September 2017. The enclosed Table 2 compares the DNT results from PBN-8202A and PBN-8202B from September 2017 through April 2020. PBN-8202A and PBN-8202B are located adjacent to and downgradient of the PBG source area.

The total DNT concentration in PBN-8202A increased from 1.469 µg/l during September 2017 to 420.294 µg/l during May 2018. Since May 2018, the total DNT concentration in PBN-8202A has fluctuated. During April 2019, the total DNT concentration in PBN-8202A dropped to 30.49 µg/l. Since April 2019, the total DNT concentration in PBN-8202A has been increasing. In April 2020, the total DNT concentration in PBN-8202A was 1,286.9 µg/l. In April 2020, the 2,4-DNT and 2,6-DNT concentrations in PBN-8202A were 670 µg/l and 500 µg/l, respectively. These are the highest concentrations of 2,4-DNT, 2,6-DNT, and total DNT detected in PBN-8202A since 2005. The total DNT concentration in PBN-8202B increased from 0.881 µg/l during September 2017 to 85.1 µg/l during April 2019 and has dropped to 14.551 µg/l during April 2020.

Total DNT concentrations have also been increasing in three other monitoring wells located either beneath or downgradient of the capped PBG Waste Pits. The total DNT concentration in PBM-0001 increased from 0.701 µg/l (September 2017) to 11.05 µg/l (April 2020). The total DNT concentration in PBM-0002 increased from 1.347 µg/l (September 2017) to 2.367 µg/l (April 2020). The total DNT concentration in PBM-9902 increased from 0.835 µg/l (October 2013) to 77.739 µg/l (January 2020).

These are unexpected increases in DNT concentrations over recent sampling events. The recent increase in DNT concentrations near the source area may be related to the recent rise in groundwater levels. Over the past three years, the groundwater table at the PBG source area has risen eight feet and above the estimated depth of DNT contaminated soil remaining beneath the PBG cap. The enclosed graph compares the total DNT concentration in PBN-8202A versus the groundwater elevation from 2007 to 2020.

During June 2020, 13 monitoring wells will be sampled adjacent to and downgradient of the PBG source area. These groundwater results will help evaluate any migration of DNT downgradient from PBN-8202A. During September 2020, the Army plans to sample an additional 107 monitoring wells both near the PBG source area and in downgradient portions of the PBG Plume. In conjunction with the regularly scheduled September 2020 sampling of 79 monitoring wells, the Army will be sampling all monitoring wells associated with the PBG Plume.

Residential Wells

Residential well WE-XK342, located in the Water's Edge Subdivision (Central Plume), was sampled for DNT and VOCs on May 5, 2020. No DNT compounds were detected in WE-XK342. Chloroform was detected in WE-XK342 at a concentration of 0.18 µg/l, which is below the Chapter NR 140 Preventive Action Limit of 0.6 µg/l.

Quality Review

SPS conducted an internal quality control review of the groundwater data. The internal review did not find any issues with the groundwater data. All groundwater samples were analyzed by CT Laboratories, LLC (CT Lab) in Baraboo, Wisconsin. CT Lab is a WDNR Chapter NR 149 certified laboratory and accredited by the Department of Defense Environmental Laboratory Accreditation Program (DoD ELAP).

Please do not hesitate to contact me at 210-466-1351 if you have any questions.

Sincerely,

Digitally signed by LYNCH.BRYAN.PATRICK.1021561254
Date: 2020.07.13 12:13:44 -05'00'

Bryan P. Lynch
Commander's Representative

Enclosures
Copy furn: Joel Janssen, SpecPro Professional Services, LLC

Table 1
September 2016 - April 2020 Summary
Dinitrotoluene Groundwater Results
Deterrent Burning Ground
Badger Army Ammunition Plant

						Dinitrotoluenes						
Plume	**Well Name**	**Well ID**	**License**	**Sample Level**	**Date**	**2,3-Dinitrotoluene**	**2,4-Dinitrotoluene**	**2,5-Dinitrotoluene**	**2,6-Dinitrotoluene**	**3,4-Dinitrotoluene**	**3,5-Dinitrotoluene**	**Dinitrotoluene, Total**
DBG	ELN-1003B	468	2813	B	9/19/16	<0.006	<0.008	<0.003	<0.004	<0.004	<0.004	<0.008
					9/19/16 (D)	<0.006	<0.008	<0.003	<0.004	<0.004	<0.004	<0.008
					4/25/17	<0.006	<0.008	<0.003	<0.004	0.051	<0.004	**0.051**
					9/12/17	0.014 (J)	<0.0082	<0.0031	<0.0041	0.054	<0.0041	**0.068**
					4/26/18	0.029 (J)	**0.026 (J)**	0.028 (J)	**0.024 (J)**	0.1	0.025 (J)	**0.232**
					4/26/18 (D)	0.029 (J)	**0.024 (J)**	0.027 (J)	**0.023 (J)**	0.097	0.025 (J)	**0.225**
					5/14/18	0.03	<0.008	<0.003	**0.036**	0.12	<0.004	**0.186**
					6/28/18	0.059	<0.0076	<0.0029	<0.0038	0.12	<0.0038	**0.179**
					10/3/18	0.032	<0.0078	<0.0029	**0.01 (J)**	0.15	<0.0039	**0.192**
					10/3/18 (D)	0.031	<0.0081	<0.003	**0.01 (J)**	0.13	<0.004	**0.171**
					11/15/18	0.078	<0.0081	<0.003	**0.072**	0.17	<0.004	**0.32**
					4/23/19	0.045	<0.0078	<0.0029	<0.0039	0.12	<0.0039	**0.165**
					6/13/19	0.033	<0.0078	<0.0029	**0.02 (J)**	0.13	<0.0039	**0.183**
					6/13/19 (D)	0.033	<0.0077	<0.0029	**0.019 (J)**	0.13	<0.0038	**0.182**
					9/17/19	0.048	<0.0082	<0.0031	**0.023 (J)**	0.16	<0.0041	**0.231**
					9/17/19 (D)	0.048	<0.0082	<0.0031	**0.022 (J)**	0.15	<0.0041	**0.22**
					11/20/19	0.053	<0.0078	<0.0029	<0.0039	0.17	<0.0039	**0.223**
					5/6/20	<0.0063	<0.0083	<0.0031	<0.0042	0.13	<0.0042	**0.13**
DBG	ELN-1003C	469	2813	C	9/19/16	<0.0061	<0.0081	<0.003	<0.004	<0.004	<0.004	<0.0081
					4/25/17	<0.006	<0.008	<0.003	**0.0085 (J)**	<0.004	<0.004	**0.0085 (J)**
					9/12/17	<0.0064	<0.0085	<0.0032	<0.0043	<0.0043	<0.0043	<0.0085
					4/26/18	0.025 (J)	**0.026 (J)**	<0.003	**0.023 (J)**	<0.004	<0.004	**0.074**
					5/14/18	<0.0061	<0.0081	<0.003	**0.029 (J)**	0.079	<0.004	**0.108**
					6/28/18	<0.0057	<0.0076	<0.0029	<0.0038	<0.0038	<0.0038	<0.0076
					6/28/18 (D)	<0.0058	<0.0077	<0.0029	<0.0038	<0.0038	<0.0038	<0.0077
					10/3/18	0.024 (J)	<0.0078	<0.0029	**0.0087 (J)**	0.1	<0.0039	**0.1327**
					11/15/18	0.07	<0.0078	<0.0029	**0.068**	0.14	<0.0039	**0.278**
					4/23/19	<0.0058	<0.0078	<0.0029	<0.0039	0.09	<0.0039	**0.09**
					4/23/19 (D)	<0.0058	<0.0078	<0.0029	<0.0039	0.093	<0.0039	**0.093**
					6/13/19	0.028 (J)	<0.0082	<0.0031	**0.022 (J)**	0.11	<0.0041	**0.16**
					9/17/19	0.039	<0.0082	<0.0031	**0.022 (J)**	0.11	<0.0041	**0.171**
					11/20/19	<0.0059	<0.0079	<0.003	<0.004	0.13	<0.004	**0.13**
					11/20/19 (D)	<0.0059	<0.0079	<0.003	<0.004	0.13	<0.004	**0.13**
					5/6/20	<0.0064	<0.0085	<0.0032	<0.0043	0.13	<0.0043	**0.13**
					5/6/20 (D)	<0.0064	<0.0085	<0.0032	<0.0043	0.11	<0.0043	**0.11**

Table 1
September 2016 - April 2020 Summary
Dinitrotoluene Groundwater Results
Deterrent Burning Ground
Badger Army Ammunition Plant

						Dinitrotoluenes						
Plume	**Well Name**	**Well ID**	**License**	**Sample Level**	**Date**	**2,3-Dinitrotoluene**	**2,4-Dinitrotoluene**	**2,5-Dinitrotoluene**	**2,6-Dinitrotoluene**	**3,4-Dinitrotoluene**	**3,5-Dinitrotoluene**	**Dinitrotoluene, Total**
DBG	ELN-1502A	533	2813	A	9/15/16	0.065	<0.008	<0.003	<0.004	0.13	<0.004	**0.195**
					4/18/17	0.11	<0.0082	<0.0031	**0.011 (J)**	0.28	<0.0041	**0.401**
					4/18/17 (D)	0.12	<0.0084	<0.0032	**0.012 (J)**	0.31	<0.0042	**0.442**
					9/5/17	0.13	<0.0082	<0.0031	<0.0041	0.28	0.023 (J)	**0.433**
					9/5/17 (D)	0.13	<0.008	<0.003	<0.004	0.34	0.022 (J)	**0.492**
					4/24/18	0.14	<0.0083	<0.0031	**0.03 (J)**	0.39	0.034	**0.594**
					4/24/18 (D)	0.13	<0.008	<0.003	**0.027 (J)**	0.38	<0.004	**0.537**
					5/14/18	0.17	<0.008	<0.003	**0.08**	0.44	<0.004	**0.69**
					9/4/18	0.16	<0.0082	<0.0031	**0.011 (J)**	0.42	0.036	**0.627**
					9/4/18 (D)	0.21	<0.008	<0.003	**0.02 (J)**	0.53	0.041	**0.801**
					4/1/19	0.17	<0.0082	<0.0031	**0.024 (J)**	0.37	0.054	**0.618**
					4/1/19 (D)	0.16	<0.0082	<0.0031	**0.023 (J)**	0.35	0.053	**0.586**
					9/10/19	0.13	<0.0083	<0.0031	**0.026 (J)**	0.3	0.051	**0.507**
					9/10/19 (D)	0.14	<0.0081	<0.003	**0.027 (J)**	0.32	0.05	**0.537**
					4/6/20	0.085	<0.0087	<0.0033	<0.0043	0.19	<0.0043	**0.275**
					4/6/20 (D)	0.076	<0.0082	<0.0031	<0.0041	0.17	<0.0041	**0.246**
Chapter NR 140 PAL						NE	0.005	NE	0.005	NE	NE	0.005
Chapter NR 140 ES						NE	0.05	NE	0.05	NE	NE	0.05

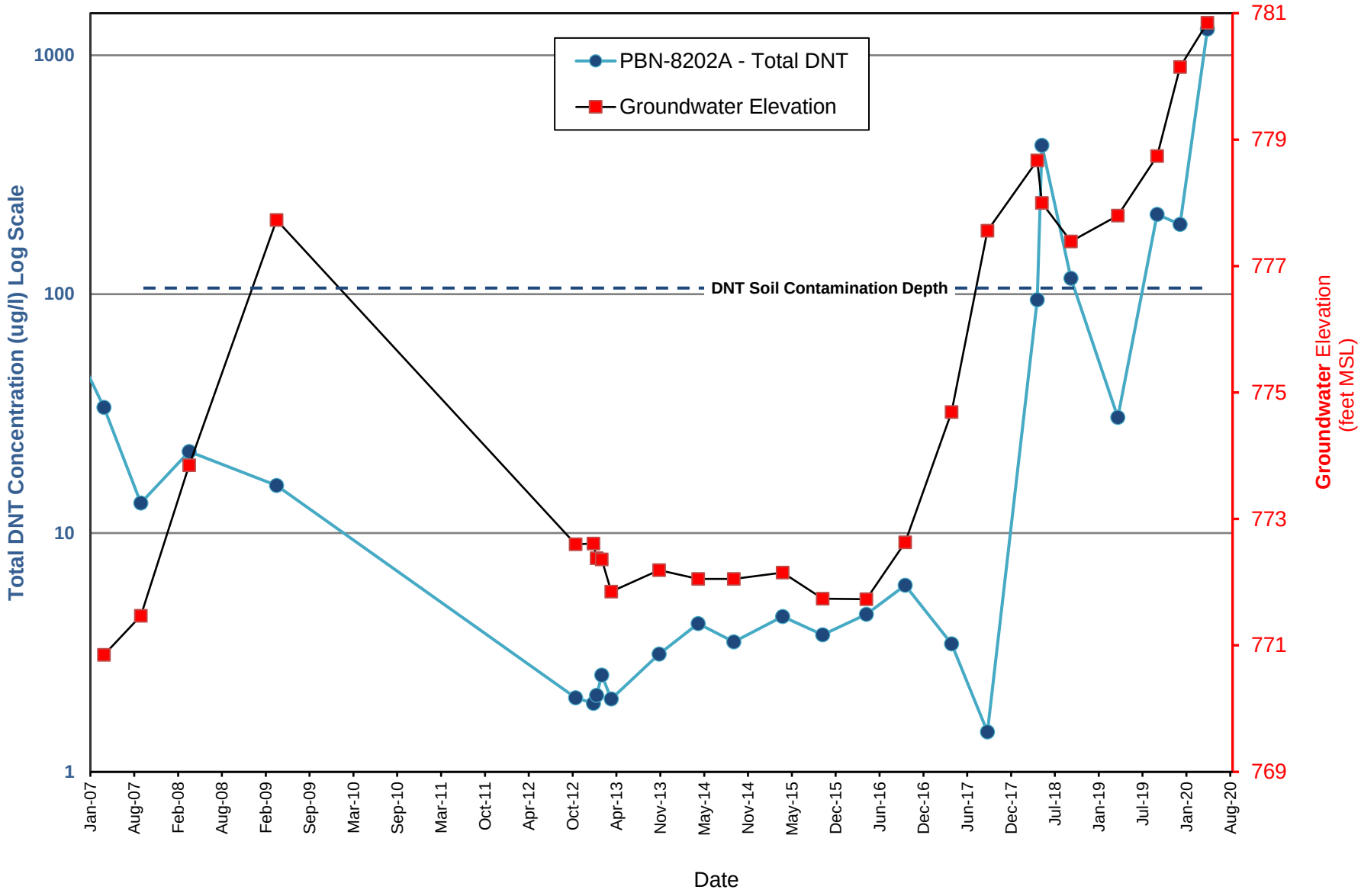
Notes:
DBG - Deterrent Burning Ground
The Sample Level references the typical well depth configuration
All results are expressed in micrograms per liter (µg/l)
DNT analysis was performed by CT Laboratories
D = Duplicate sample
J = Analytical result is between the Limit of Detection (LOD) and Limit of Quantitation (LOQ)
NE = Not Established
Chapter NR 140 PAL - Chapter NR 140, Wisconsin Administrative Code, Preventive Action Limit (bold values)
Chapter NR 140 ES - Chapter NR 140, Wisconsin Administrative Code, Enforcement Standard (bold & underline values)

Table 2
September 2017 - April 2020 Summary
Dinitrotoluene Groundwater Results
Propellant Burning Ground
Badger Army Ammunition Plant

						Dinitrotoluenes						
Plume	**Well Name**	**Well ID**	**License**	**Sample Level**	**Date**	**2,3-Dinitrotoluene**	**2,4-Dinitrotoluene**	**2,5-Dinitrotoluene**	**2,6-Dinitrotoluene**	**3,4-Dinitrotoluene**	**3,5-Dinitrotoluene**	**Dinitrotoluene, Total**
PBG	PBN-8202A	613	2814	A	9/20/17	0.91	**0.059**	0.02 (J)	**0.07**	0.27	0.14	**1.469**
					9/20/17 (D)	0.83	**0.056**	0.019 (J)	**0.066**	0.25	0.12	**1.341**
					4/23/18	45	**2.1**	0.14	**27**	17	2.1	**93.34**
					4/23/18 (D)	48	**2.2**	0.15	**24**	18	2.3	**94.65**
					5/14/18	78	**33**	0.094	**270**	35	4.2	**420.294**
					9/17/18	70	**6.3**	0.12	**2**	32	6	**116.42**
					9/17/18 (D)	62	**5.1**	0.12	**4.4**	27	4.7	**103.32**
					4/8/19	20	**0.26**	0.12	**0.31**	4.6	5.2	**30.49**
					9/25/19	75	**9.1**	0.14	**110**	15	6.5	**215.74**
					1/14/20	49	**30**	<0.14	**79**	13	4.9	**175.9**
					1/14/20 (D)	49	**39**	<0.14	**88**	15	5	**196**
					4/30/20	72	**670**	<0.15	**500**	35	9.9	**1,286.9**
PBG	PBN-8202B	614	2814	B	9/20/17	0.54	**0.055**	<0.0031	**0.049**	0.15	0.087	**0.881**
					4/23/18	0.99	<0.0081	<0.003	**0.12**	0.36	0.13	**1.6**
					9/17/18	9.2	**0.26**	0.054	**0.038**	4.6	0.46	**14.612**
					4/8/19	39	**0.63**	0.13	**0.54**	36	8.8	**85.1**
					9/25/19	16	**0.18**	0.12	**0.26**	6.3	1.6	**24.46**
					1/14/20	9.9	**0.44**	<0.029	**0.25**	2.8	1	**14.39**
					4/30/20	11	**0.35**	0.091	**0.21**	1.7	1.2	**14.551**
Chapter NR 140 PAL						NE	0.005	NE	0.005	NE	NE	0.005
Chapter NR 140 ES						NE	0.05	NE	0.05	NE	NE	0.05

Notes:
PBG - Propellant Burning Ground
The Sample Level references the typical well depth configuration
All results are expressed in micrograms per liter (µg/l)
DNT analysis was performed by CT Laboratories
D = Duplicate sample
J = Analytical result is between the Limit of Detection (LOD) and Limit of Quantitation (LOQ)
NE = Not Established
Chapter NR 140 PAL - Chapter NR 140, Wisconsin Administrative Code, Preventive Action Limit (bold values)
Chapter NR 140 ES - Chapter NR 140, Wisconsin Administrative Code, Enforcement Standard (bold & underline values)

PBN-8202A **Total Dinitrotoluene vs Groundwater Elevation** **2007 - 2020**



January 2020

Monitoring Well Groundwater Data

Propellant Burning Ground Plume

Badger Army Ammunition Plant

State of Wisconsin
Department of Natural Resources

Environmental Monitoring Data Certification

Form 4400-231(R 1/04)

Notice: Personally identifiable information collected will be used for program administration and enforcement purposes. The Department may also provide this information to requesters as required under Wisconsin's Open Records law, ss. 19.31 to 19.39, Wis. Stats.
When submitting monitoring data, the owner or operator of the facility, practice or activity is required to notify the Department in writing that a groundwater standard or an explosive gas level has been attained or exceeded, as specified in ss. NR 140.24(1)(a); NR 140.26(1)(a); NR 507.30NR 635.14(9)(a); NR 635.18(20) and NR 507.30, Wis. Adm. Code. Failure to report may result in fines, forfeitures or other penalties resulting from enforcement under ss. 289.97, 291.97 or 299.95, Wis. Stats.

Instructions:

- **Prepare one form for each license or monitoring ID.**
- **Please type or print legibly.**
- Attach a notification of any values that attain or exceed groundwater standards (that is, preventive action limits, enforcement standards or alternative concentration limits). The notification must include a preliminary analysis of the cause and significance of each value.
- Attach a notification of any gas values that attain or exceed explosive gas levels.
- Send the original signed form, any notification, and Electronic Data Deliverable [EDD] to: GEMS Data Submittal Contact - WA/5
  Bureau of Waste Management
  Wisconsin Department of Natural Resources
  101 South Webster Street
  Madison WI 53707-7921

Monitoring Data Submittal Information

Name of entity submitting data (laboratory, consultant, facility owner):

SpecPro Professional Services - Badger Army Ammunition Plant

Contact for questions about data formatting. Include data preparer's name, telephone number and E-mail address:

Name: Joel Janssen Phone: (608) 438-1110

E-mail: Joel.Janssen@SpecProSvcs.com

Facility name:	License # / Monitoring ID	Facility ID [FID]	Actual sampling dates (e.g., July 2-6, 2003)
BAAP - Propellant Burning Grounds	02814	157005420	1/14/20

The enclosed results are for sampling required in the month(s) of: (e.g., June 2003)

January 2020

Type of Data Submitted (Check all that apply)

- [x] Groundwater monitoring data from monitoring wells
- [ ] Groundwater monitoring data from private water supply wells
- [ ] Leachate monitoring data
- [ ] Gas monitoring data
- [ ] Air monitoring data
- [ ] Other (specify)

Notification attached?

- [ ] No. No groundwater standards or explosive gas limits were exceeded.
- [x] Yes, a notification of values exceeding a groundwater standard is attached. It includes a list of monitoring points, dates, sample values, groundwater standard and preliminary analysis of the cause and significance of any concentration.
- [ ] Yes, a notification of values exceeding an explosive gas limit is attached. It includes the monitoring points, dates, sample values and explosive gas limits.

Certification

To the best of my knowledge, the information reported and statements made on this data submittal and attachments are true and correct. Furthermore, I have attached complete notification of any sampling values meeting or exceeding groundwater standards or explosive gas levels, and a preliminary analysis of the cause and significance of concentrations exceeding groundwater standards.

Joel Janssen	Project Manager	(608) 438-1110
Facility Representative Name (Print)	Title	(Area Code) Telephone No.

Joel Janssen 6/23/20

Signature Date

FOR DNR USE ONLY. Check action taken, and record date and your initials. Describe on back side if necessary.

- [ ] **Found uploading problems on** _____ **Initials**
- [ ] **Notified contact of problems on** _____ **Uploaded data successfully on** _____

EDD format(s): [ ] **Diskette** [ ] **CD (initial submittal and follow-up)** [ ] **E-mail (follow-up only)** [ ] **Other**

Case Narrative
Groundwater Monitoring
License Number 2814
Propellant Burning Grounds
January 2020
Badger Army Ammunition Plant

Groundwater is currently being monitored by the facility because of past production activities. Only five monitoring wells were sampled during this special sampling event.

2,4-Dinitrotoluene (DNT), 2,6-DNT, and total DNT exceeded the Enforcement Standards (ES) in PBM-9902 (362), PBM-0001 (367), and PBN-8202A (613), PBN-8202B (614), and PBN-8202C (615).

DNT analysis was performed by CT Laboratories using method SW 8270D SIM. The following DNT isomers were reported: 2,3-DNT, 2,4-DNT, 2,5-DNT, 2,6-DNT, 3,4-DNT, and 3,5-DNT.

SpecPro Professional Services, LLC

Badger Army Ammunition Plant

GROUNDWATER MONITORING EXCEEDANCE REPORT

Jan 2020

Report Date: 6/22/2020

Parameter Name	Lic No.	Well No.	Well Name	Date	Dup	Result	Units	PAL	ES
2,4-Dinitrotoluene	2814	362	PBM-9902	1/14/2020	1	0.47	ug/l	0.005	0.05
2,6-Dinitrotoluene	2814	362	PBM-9902	1/14/2020	1	34	ug/l	0.005	0.05
Total Dinitrotoluenes	2814	362	PBM-9902	1/14/2020	1	77.739	ug/l	0.005	0.05
2,4-Dinitrotoluene	2814	367	PBM-0001	1/14/2020	1	0.38	ug/l	0.005	0.05
2,6-Dinitrotoluene	2814	367	PBM-0001	1/14/2020	1	0.43	ug/l	0.005	0.05
Total Dinitrotoluenes	2814	367	PBM-0001	1/14/2020	1	2.249	ug/l	0.005	0.05
2,4-Dinitrotoluene	2814	613	PBN-8202A	1/14/2020	1	30	ug/l	0.005	0.05
2,4-Dinitrotoluene	2814	613	PBN-8202A	1/14/2020	2	39	ug/l	0.005	0.05
2,6-Dinitrotoluene	2814	613	PBN-8202A	1/14/2020	1	79	ug/l	0.005	0.05
2,6-Dinitrotoluene	2814	613	PBN-8202A	1/14/2020	2	88	ug/l	0.005	0.05
Total Dinitrotoluenes	2814	613	PBN-8202A	1/14/2020	1	175.9	ug/l	0.005	0.05
Total Dinitrotoluenes	2814	613	PBN-8202A	1/14/2020	2	196	ug/l	0.005	0.05
2,4-Dinitrotoluene	2814	614	PBN-8202B	1/14/2020	1	0.44	ug/l	0.005	0.05
2,6-Dinitrotoluene	2814	614	PBN-8202B	1/14/2020	1	0.25	ug/l	0.005	0.05
Total Dinitrotoluenes	2814	614	PBN-8202B	1/14/2020	1	14.39	ug/l	0.005	0.05
2,4-Dinitrotoluene	2814	615	PBN-8202C	1/14/2020	1	0.12	ug/l	0.005	0.05
2,6-Dinitrotoluene	2814	615	PBN-8202C	1/14/2020	1	0.062	ug/l	0.005	0.05
Total Dinitrotoluenes	2814	615	PBN-8202C	1/14/2020	1	0.519	ug/l	0.005	0.05

SpecPro Professional Services, LLC

Badger Army Ammunition Plant

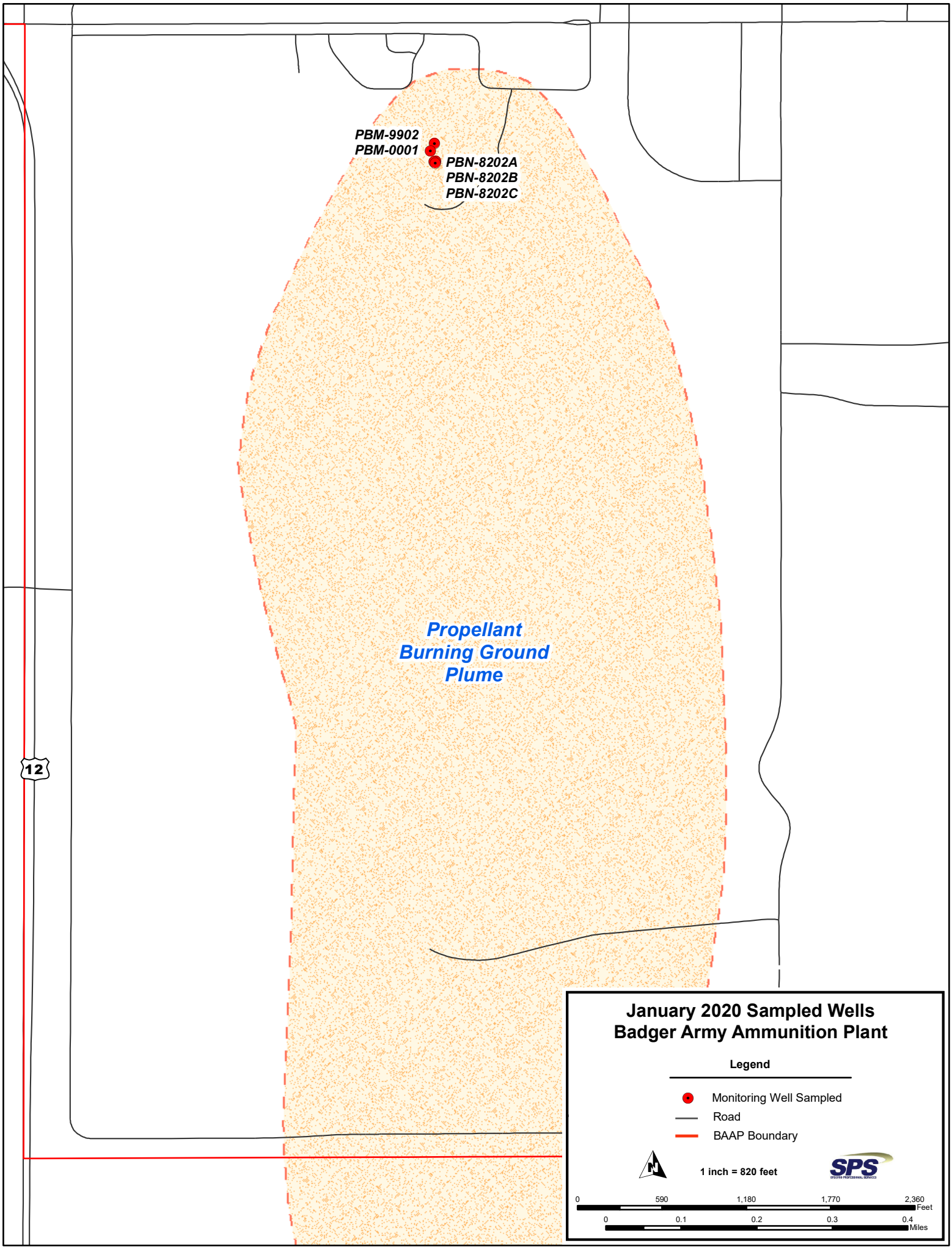
Jan 2020 GROUNDWATER MONITORING ALL HITS REPORT

License No: 2814 Report Date: 6/22/2020

Parameter Name	Well	Well Name	Date	Dup	Result	LOD	LOQ	Units	PAL	ES
2,3-Dinitrotoluene	362	PBM-9902	1/14/2020	1	30	0.12	0.58	ug/l		
2,4-Dinitrotoluene	362	PBM-9902	1/14/2020	1	0.47	0.0077	0.038	ug/l	0.005	0.05
2,5-Dinitrotoluene	362	PBM-9902	1/14/2020	1	0.069	0.0029	0.029	ug/l		
2,6-Dinitrotoluene	362	PBM-9902	1/14/2020	1	34	0.077	0.58	ug/l	0.005	0.05
3,4-Dinitrotoluene	362	PBM-9902	1/14/2020	1	10	0.038	0.38	ug/l		
3,5-Dinitrotoluene	362	PBM-9902	1/14/2020	1	3.2	0.038	0.29	ug/l		
Total Dinitrotoluenes	362	PBM-9902	1/14/2020	1	77.739	0.0077	0.029	ug/l	0.005	0.05
2,3-Dinitrotoluene	367	PBM-0001	1/14/2020	1	1	0.012	0.058	ug/l		
2,4-Dinitrotoluene	367	PBM-0001	1/14/2020	1	0.38	0.015	0.077	ug/l	0.005	0.05
2,5-Dinitrotoluene	367	PBM-0001	1/14/2020	1	0.069	0.0058	0.058	ug/l		
2,6-Dinitrotoluene	367	PBM-0001	1/14/2020	1	0.43	0.0077	0.058	ug/l	0.005	0.05
3,4-Dinitrotoluene	367	PBM-0001	1/14/2020	1	0.2	0.0077	0.077	ug/l		
3,5-Dinitrotoluene	367	PBM-0001	1/14/2020	1	0.17	0.0077	0.058	ug/l		
Total Dinitrotoluenes	367	PBM-0001	1/14/2020	1	2.249	0.0077	0.029	ug/l	0.005	0.05
2,3-Dinitrotoluene	613	PBN-8202A	1/14/2020	1	49	0.29	1.4	ug/l		
2,3-Dinitrotoluene	613	PBN-8202A	1/14/2020	2	49	0.29	1.4	ug/l		
2,4-Dinitrotoluene	613	PBN-8202A	1/14/2020	1	30	0.38	1.9	ug/l	0.005	0.05
2,4-Dinitrotoluene	613	PBN-8202A	1/14/2020	2	39	0.38	1.9	ug/l	0.005	0.05
2,6-Dinitrotoluene	613	PBN-8202A	1/14/2020	1	79	0.19	1.4	ug/l	0.005	0.05
2,6-Dinitrotoluene	613	PBN-8202A	1/14/2020	2	88	0.19	1.4	ug/l	0.005	0.05
3,4-Dinitrotoluene	613	PBN-8202A	1/14/2020	1	13	0.19	1.9	ug/l		
3,4-Dinitrotoluene	613	PBN-8202A	1/14/2020	2	15	0.19	1.9	ug/l		
3,5-Dinitrotoluene	613	PBN-8202A	1/14/2020	1	4.9	0.19	1.4	ug/l		
3,5-Dinitrotoluene	613	PBN-8202A	1/14/2020	2	5	0.19	1.4	ug/l		
Total Dinitrotoluenes	613	PBN-8202A	1/14/2020	1	175.9	0.0077	0.029	ug/l	0.005	0.05
Total Dinitrotoluenes	613	PBN-8202A	1/14/2020	2	196	0.0077	0.029	ug/l	0.005	0.05
2,3-Dinitrotoluene	614	PBN-8202B	1/14/2020	1	9.9	0.058	0.29	ug/l		
2,4-Dinitrotoluene	614	PBN-8202B	1/14/2020	1	0.44	0.077	0.38	ug/l	0.005	0.05
2,6-Dinitrotoluene	614	PBN-8202B	1/14/2020	1	0.25	0.038	0.29	ug/l	0.005	0.05
3,4-Dinitrotoluene	614	PBN-8202B	1/14/2020	1	2.8	0.038	0.38	ug/l		
3,5-Dinitrotoluene	614	PBN-8202B	1/14/2020	1	1	0.038	0.29	ug/l		
Total Dinitrotoluenes	614	PBN-8202B	1/14/2020	1	14.39	0.0077	0.029	ug/l	0.005	0.05
2,3-Dinitrotoluene	615	PBN-8202C	1/14/2020	1	0.13	0.0058	0.029	ug/l		
2,4-Dinitrotoluene	615	PBN-8202C	1/14/2020	1	0.12	0.0078	0.039	ug/l	0.005	0.05
2,5-Dinitrotoluene	615	PBN-8202C	1/14/2020	1	0.059	0.0029	0.029	ug/l		
2,6-Dinitrotoluene	615	PBN-8202C	1/14/2020	1	0.062	0.0039	0.029	ug/l	0.005	0.05
3,4-Dinitrotoluene	615	PBN-8202C	1/14/2020	1	0.078	0.0039	0.039	ug/l		
3,5-Dinitrotoluene	615	PBN-8202C	1/14/2020	1	0.07	0.0039	0.029	ug/l		
Total Dinitrotoluenes	615	PBN-8202C	1/14/2020	1	0.519	0.0078	0.029	ug/l	0.005	0.05

January 2020
Badger Army Ammunition Plant
Sampled Wells List

License Area	Well ID	Reporting Name	Date	Plume
2814	362	PBM-9902	1/14/20	Propellant Burning Ground
2814	367	PBM-0001	1/14/20	Propellant Burning Ground
2814	613	PBN-8202A	1/14/20	Propellant Burning Ground
2814	614	PBN-8202B	1/14/20	Propellant Burning Ground
2814	615	PBN-8202C	1/14/20	Propellant Burning Ground


PBM-9902
PBM-0001
PBN-8202A
PBN-8202B
PBN-8202C
Propellant
Burning Ground
Plume
12
January 2020 Sampled Wells
Badger Army Ammunition Plant
Legend
Monitoring Well Sampled
Road
BAAP Boundary
N
1 inch = 820 feet
SPS
0
590
1,180
1,770
2,360
Feet
0
0.1
0.2
0.3
0.4
Miles

April 2020

Monitoring Well and Residential Well Groundwater Data

Central Plume

Deterrent Burning Ground Plume

Nitrocellulose Production Area Plume

Propellant Burning Ground Plume

Badger Army Ammunition Plant

State of Wisconsin
Department of Natural Resources

Environmental Monitoring Data Certification

Form 4400-231(R 1/04)

Notice: Personally identifiable information collected will be used for program administration and enforcement purposes. The Department may also provide this information to requesters as required under Wisconsin's Open Records law, ss. 19.31 to 19.39, Wis. Stats.
When submitting monitoring data, the owner or operator of the facility, practice or activity is required to notify the Department in writing that a groundwater standard or an explosive gas level has been attained or exceeded, as specified in ss. NR 140.24(1)(a); NR 140.26(1)(a); NR 507.30NR 635.14(9)(a); NR 635.18(20) and NR 507.30, Wis. Adm. Code. Failure to report may result in fines, forfeitures or other penalties resulting from enforcement under ss. 289.97, 291.97 or 299.95, Wis. Stats.

Instructions:

- **Prepare one form for each license or monitoring ID.**
- **Please type or print legibly.**
- Attach a notification of any values that attain or exceed groundwater standards (that is, preventive action limits, enforcement standards or alternative concentration limits). The notification must include a preliminary analysis of the cause and significance of each value.
- Attach a notification of any gas values that attain or exceed explosive gas levels.
- Send the original signed form, any notification, and Electronic Data Deliverable [EDD] to: GEMS Data Submittal Contact - WA/5
  Bureau of Waste Management
  Wisconsin Department of Natural Resources
  101 South Webster Street
  Madison WI 53707-7921

Monitoring Data Submittal Information

Name of entity submitting data (laboratory, consultant, facility owner):

SpecPro Professional Services - Badger Army Ammunition Plant

Contact for questions about data formatting. Include data preparer's name, telephone number and E-mail address:

Name: Joel Janssen Phone: (608) 438-1110

E-mail: Joel.Janssen@SpecProSvcs.com

Facility name:	License # / Monitoring ID	Facility ID [FID]	Actual sampling dates (e.g., July 2-6, 2003)
BAAP - Landfill #5	02813	157005530	3/30 - 5/6/20

The enclosed results are for sampling required in the month(s) of: (e.g., June 2003)

April 2020

Type of Data Submitted (Check all that apply)

- [x] Groundwater monitoring data from monitoring wells
- [ ] Groundwater monitoring data from private water supply wells
- [ ] Leachate monitoring data
- [ ] Gas monitoring data
- [ ] Air monitoring data
- [ ] Other (specify)

Notification attached?

- [ ] No. No groundwater standards or explosive gas limits were exceeded.
- [x] Yes, a notification of values exceeding a groundwater standard is attached. It includes a list of monitoring points, dates, sample values, groundwater standard and preliminary analysis of the cause and significance of any concentration.
- [ ] Yes, a notification of values exceeding an explosive gas limit is attached. It includes the monitoring points, dates, sample values and explosive gas limits.

Certification

To the best of my knowledge, the information reported and statements made on this data submittal and attachments are true and correct. Furthermore, I have attached complete notification of any sampling values meeting or exceeding groundwater standards or explosive gas levels, and a preliminary analysis of the cause and significance of concentrations exceeding groundwater standards.

Joel Janssen	Project Manager	(608) 438-1110
Facility Representative Name (Print)	Title	(Area Code) Telephone No.

Signature: Joel Janssen Date: 6/23/20

FOR DNR USE ONLY. Check action taken, and record date and your initials. Describe on back side if necessary.

- [ ] **Found uploading problems on** _____ **Initials**
- [ ] **Notified contact of problems on** _____ **Uploaded data successfully on** _____

EDD format(s): [ ] **Diskette** [ ] **CD (initial submittal and follow-up)** [ ] **E-mail (follow-up only)** [ ] **Other**

Case Narrative
Groundwater Monitoring
License Number 2813
Landfill #5
April 2020
Badger Army Ammunition Plant

Groundwater is currently being monitored by the facility because of past production activities.

Total Dinitrotoluene (DNT) exceeded the Enforcement Standard (ES) in ELM-8901 (216), ELM-8907 (220), ELN-1003B (468), ELN-1003C (469), and ELN-1502A (533).

2,6-DNT exceeded the Preventive Action Limit (PAL) in ELM-8901 (216). Total DNT exceeded the PAL in ELM-8908 (221).

Sulfate exceeded the ES in ELN-8203A (210) and ELN-8203B (211) and the PAL in S1134R (236).

1,1,2-Trichloroethane exceeded the PAL in ELN-8203A (210), ELN-8203B (211), and S1134R (236).

Volatile organic compounds (VOCs) analysis was performed by CT Laboratories (CT Lab) using method EPA 8260C.

DNT analysis was performed by CT Lab using method SW 8270D SIM. The following DNT isomers were reported: 2,3-DNT, 2,4-DNT, 2,5-DNT, 2,6-DNT, 3,4-DNT, and 3,5-DNT.

Sulfate analyses were performed by CT Lab using method SW 846 9056A.

SpecPro Professional Services, LLC

Badger Army Ammunition Plant

GROUNDWATER MONITORING EXCEEDANCE REPORT

April 2020

Report Date: 6/21/2020

Parameter Name	Lic No.	Well No.	Well Name	Date	Dup	Result	Units	PAL	ES
1,1,2-Trichloroethane	2813	210	ELN-8203A	4/1/2020	1	0.84	ug/l	0.5	5
Sulfate	2813	210	ELN-8203A	4/1/2020	1	1500	mg/l	125	250
1,1,2-Trichloroethane	2813	211	ELN-8203B	4/1/2020	1	0.86	ug/l	0.5	5
Sulfate	2813	211	ELN-8203B	4/1/2020	1	1200	mg/l	125	250
2,6-Dinitrotoluene	2813	216	ELM-8901	4/7/2020	1	0.033	ug/l	0.005	0.05
Total Dinitrotoluenes	2813	216	ELM-8901	4/7/2020	1	0.873	ug/l	0.005	0.05
Total Dinitrotoluenes	2813	220	ELM-8907	3/30/2020	1	0.572	ug/l	0.005	0.05
Total Dinitrotoluenes	2813	221	ELM-8908	3/30/2020	1	0.044	ug/l	0.005	0.05
1,1,2-Trichloroethane	2813	236	S1134R	4/1/2020	1	0.64	ug/l	0.5	5
Sulfate	2813	236	S1134R	4/1/2020	1	130	mg/l	125	250
Total Dinitrotoluenes	2813	468	ELN-1003B	5/6/2020	1	0.13	ug/l	0.005	0.05
Total Dinitrotoluenes	2813	469	ELN-1003C	5/6/2020	1	0.13	ug/l	0.005	0.05
Total Dinitrotoluenes	2813	469	ELN-1003C	5/6/2020	2	0.11	ug/l	0.005	0.05
Total Dinitrotoluenes	2813	533	ELN-1502A	4/6/2020	1	0.275	ug/l	0.005	0.05
Total Dinitrotoluenes	2813	533	ELN-1502A	4/6/2020	2	0.246	ug/l	0.005	0.05

SpecPro Professional Services, LLC

Badger Army Ammunition Plant

April 2020 GROUNDWATER MONITORING ALL HITS REPORT

License No: 2813 Report Date: 6/21/2020

Parameter Name	Well	Well Name	Date	Dup	Result	LOD	LOQ	Units	PAL	ES
1,1,2-Trichloroethane	210	ELN-8203A	4/1/2020	1	0.84	0.2	0.4	ug/l	0.5	5
1,2-Dichloropropane	210	ELN-8203A	4/1/2020	1	0.47	0.1	0.2	ug/l	0.5	5
cis-1,2-Dichloroethene	210	ELN-8203A	4/1/2020	1	0.11	0.1	0.2	ug/l	7	70
Ethyl ether	210	ELN-8203A	4/1/2020	1	1.9	0.1	0.2	ug/l	100	1000
Sulfate	210	ELN-8203A	4/1/2020	1	1500	40	150	mg/l	125	250
1,1,1-Trichloroethane	211	ELN-8203B	4/1/2020	1	0.11	0.1	0.2	ug/l	40	200
1,1,2-Trichloroethane	211	ELN-8203B	4/1/2020	1	0.86	0.2	0.4	ug/l	0.5	5
1,2-Dichloropropane	211	ELN-8203B	4/1/2020	1	0.34	0.1	0.2	ug/l	0.5	5
Dichlorodifluoromethane	211	ELN-8203B	4/1/2020	1	0.4	0.1	0.2	ug/l	200	1000
Ethyl ether	211	ELN-8203B	4/1/2020	1	0.27	0.1	0.2	ug/l	100	1000
Sulfate	211	ELN-8203B	4/1/2020	1	1200	16	60	mg/l	125	250
Tetrahydrofuran	211	ELN-8203B	4/1/2020	1	8.8	1	2	ug/l	10	50
1,1,2-Trichloroethane	212	ELN-8203C	4/1/2020	1	0.35	0.2	0.4	ug/l	0.5	5
Sulfate	212	ELN-8203C	4/1/2020	1	60	0.8	3	mg/l	125	250
1,1,1-Trichloroethane	216	ELM-8901	4/7/2020	1	1.1	0.1	0.2	ug/l	40	200
2,3-Dinitrotoluene	216	ELM-8901	4/7/2020	1	0.28	0.0062	0.031	ug/l		
2,6-Dinitrotoluene	216	ELM-8901	4/7/2020	1	0.033	0.0041	0.031	ug/l	0.005	0.05
3,4-Dinitrotoluene	216	ELM-8901	4/7/2020	1	0.42	0.0041	0.041	ug/l		
3,5-Dinitrotoluene	216	ELM-8901	4/7/2020	1	0.14	0.0041	0.031	ug/l		
Sulfate	216	ELM-8901	4/7/2020	1	87	4	15	mg/l	125	250
Total Dinitrotoluenes	216	ELM-8901	4/7/2020	1	0.873	0.0082	0.031	ug/l	0.005	0.05
2,3-Dinitrotoluene	220	ELM-8907	3/30/2020	1	0.36	0.0065	0.032	ug/l		
3,4-Dinitrotoluene	220	ELM-8907	3/30/2020	1	0.14	0.0043	0.043	ug/l		
3,5-Dinitrotoluene	220	ELM-8907	3/30/2020	1	0.072	0.0043	0.032	ug/l		
Sulfate	220	ELM-8907	3/30/2020	1	17	0.8	3	mg/l	125	250
Total Dinitrotoluenes	220	ELM-8907	3/30/2020	1	0.572	0.0086	0.032	ug/l	0.005	0.05
2,3-Dinitrotoluene	221	ELM-8908	3/30/2020	1	0.044	0.0061	0.031	ug/l		
Sulfate	221	ELM-8908	3/30/2020	1	18	0.8	3	mg/l	125	250
Total Dinitrotoluenes	221	ELM-8908	3/30/2020	1	0.044	0.0082	0.031	ug/l	0.005	0.05
1,1,1-Trichloroethane	222	ELM-8909	4/1/2020	2	0.95	0.1	0.2	ug/l	40	200
1,1,1-Trichloroethane	222	ELM-8909	4/1/2020	1	1	0.1	0.2	ug/l	40	200
Sulfate	222	ELM-8909	4/1/2020	2	15	0.8	3	mg/l	125	250
Sulfate	222	ELM-8909	4/1/2020	1	15	0.8	3	mg/l	125	250
Sulfate	224	ELN-8902B	4/7/2020	1	18	0.8	3	mg/l	125	250
Tetrachloroethene	225	ELN-8904A	4/7/2020	1	0.1	0.1	0.2	ug/l	0.5	5
Sulfate	227	ELN-9107A	4/1/2020	1	18	0.8	3	mg/l	125	250
Sulfate	228	ELN-9107B	4/1/2020	1	23	0.8	3	mg/l	125	250
Dichlorodifluoromethane	229	ELM-9110	4/7/2020	1	0.45	0.1	0.2	ug/l	200	1000
Tetrachloroethene	229	ELM-9110	4/7/2020	1	0.12	0.1	0.2	ug/l	0.5	5
Sulfate	231	ELN-9402AR	4/22/2020	1	11	0.8	3	mg/l	125	250
1,1,2-Trichloroethane	236	S1134R	4/1/2020	1	0.64	0.2	0.4	ug/l	0.5	5
1,2-Dichloropropane	236	S1134R	4/1/2020	1	0.15	0.1	0.2	ug/l	0.5	5
Sulfate	236	S1134R	4/1/2020	1	130	16	60	mg/l	125	250
3,4-Dinitrotoluene	468	ELN-1003B	5/6/2020	1	0.13	0.0042	0.042	ug/l		
Total Dinitrotoluenes	468	ELN-1003B	5/6/2020	1	0.13	0.0083	0.031	ug/l	0.005	0.05
3,4-Dinitrotoluene	469	ELN-1003C	5/6/2020	1	0.13	0.0043	0.043	ug/l		
3,4-Dinitrotoluene	469	ELN-1003C	5/6/2020	2	0.11	0.0043	0.043	ug/l		
Total Dinitrotoluenes	469	ELN-1003C	5/6/2020	1	0.13	0.0085	0.032	ug/l	0.005	0.05

Parameter Name	Well	Well Name	Date	Dup	Result	LOD	LOQ	Units	PAL	ES
Total Dinitrotoluenes	469	ELN-1003C	5/6/2020	2	0.11	0.0085	0.032	ug/l	0.005	0.05
2,3-Dinitrotoluene	533	ELN-1502A	4/6/2020	2	0.076	0.0062	0.031	ug/l		
2,3-Dinitrotoluene	533	ELN-1502A	4/6/2020	1	0.085	0.0065	0.033	ug/l		
3,4-Dinitrotoluene	533	ELN-1502A	4/6/2020	2	0.17	0.0041	0.041	ug/l		
3,4-Dinitrotoluene	533	ELN-1502A	4/6/2020	1	0.19	0.0043	0.043	ug/l		
Total Dinitrotoluenes	533	ELN-1502A	4/6/2020	1	0.275	0.0087	0.033	ug/l	0.005	0.05
Total Dinitrotoluenes	533	ELN-1502A	4/6/2020	2	0.246	0.0082	0.031	ug/l	0.005	0.05
1,1,1-Trichloroethane	534	ELN-1502C	4/6/2020	1	0.78	0.1	0.2	ug/l	40	200
1,1-Dichloroethene	534	ELN-1502C	4/6/2020	1	0.11	0.1	0.2	ug/l	0.7	7
Dichlorodifluoromethane	534	ELN-1502C	4/6/2020	1	0.24	0.1	0.2	ug/l	200	1000

State of Wisconsin
Department of Natural Resources

Environmental Monitoring Data Certification

Form 4400-231(R 1/04)

Notice: Personally identifiable information collected will be used for program administration and enforcement purposes. The Department may also provide this information to requesters as required under Wisconsin's Open Records law, ss. 19.31 to 19.39, Wis. Stats.
When submitting monitoring data, the owner or operator of the facility, practice or activity is required to notify the Department in writing that a groundwater standard or an explosive gas level has been attained or exceeded, as specified in ss. NR 140.24(1)(a); NR 140.26(1)(a); NR 507.30NR 635.14(9)(a); NR 635.18(20) and NR 507.30, Wis. Adm. Code. Failure to report may result in fines, forfeitures or other penalties resulting from enforcement under ss. 289.97, 291.97 or 299.95, Wis. Stats.

Instructions:

- **Prepare one form for each license or monitoring ID.**
- **Please type or print legibly.**
- Attach a notification of any values that attain or exceed groundwater standards (that is, preventive action limits, enforcement standards or alternative concentration limits). The notification must include a preliminary analysis of the cause and significance of each value.
- Attach a notification of any gas values that attain or exceed explosive gas levels.
- Send the original signed form, any notification, and Electronic Data Deliverable [EDD] to: GEMS Data Submittal Contact - WA/5
  Bureau of Waste Management
  Wisconsin Department of Natural Resources
  101 South Webster Street
  Madison WI 53707-7921

Monitoring Data Submittal Information

Name of entity submitting data (laboratory, consultant, facility owner):

SpecPro Professional Services - Badger Army Ammunition Plant

Contact for questions about data formatting. Include data preparer's name, telephone number and E-mail address:

Name: Joel Janssen Phone: (608) 438-1110

E-mail: Joel.Janssen@SpecProSvcs.com

Facility name:	License # / Monitoring ID	Facility ID [FID]	Actual sampling dates (e.g., July 2-6, 2003)
BAAP - Propellant Burning Grounds	02814	157005420	4/23 - 5/4/20

The enclosed results are for sampling required in the month(s) of: (e.g., June 2003)

April 2020

Type of Data Submitted (Check all that apply)

- [x] Groundwater monitoring data from monitoring wells
- [ ] Groundwater monitoring data from private water supply wells
- [ ] Leachate monitoring data
- [ ] Gas monitoring data
- [ ] Air monitoring data
- [ ] Other (specify)

Notification attached?

- [ ] No. No groundwater standards or explosive gas limits were exceeded.
- [x] Yes, a notification of values exceeding a groundwater standard is attached. It includes a list of monitoring points, dates, sample values, groundwater standard and preliminary analysis of the cause and significance of any concentration.
- [ ] Yes, a notification of values exceeding an explosive gas limit is attached. It includes the monitoring points, dates, sample values and explosive gas limits.

Certification

To the best of my knowledge, the information reported and statements made on this data submittal and attachments are true and correct. Furthermore, I have attached complete notification of any sampling values meeting or exceeding groundwater standards or explosive gas levels, and a preliminary analysis of the cause and significance of concentrations exceeding groundwater standards.

Joel Janssen	Project Manager	(608) 438-1110
Facility Representative Name (Print)	Title	(Area Code) Telephone No.

Joel Janssen 6/23/20

Signature Date

FOR DNR USE ONLY. Check action taken, and record date and your initials. Describe on back side if necessary.

- [ ] **Found uploading problems on** _____ **Initials**
- [ ] **Notified contact of problems on** _____ **Uploaded data successfully on** _____

EDD format(s): [ ] **Diskette** [ ] **CD (initial submittal and follow-up)** [ ] **E-mail (follow-up only)** [ ] **Other**

Case Narrative
Groundwater Monitoring
License Number 2814
Propellant Burning Grounds
April 2020
Badger Army Ammunition Plant

Groundwater is currently being monitored by the facility because of past production activities.

2,4-Dinitrotoluene (DNT), 2,6-DNT, and total DNT exceeded the Enforcement Standards (ES) in PBM-0001 (367), PBM-0002 (368), PBM-0006 (372), PBM-0008 (374), PBN-8202A (613), PBN-8202B (614), and PBN-8202C (615). 2,6-DNT and total DNT exceeded the ES in PBN-8205A (622), PBN-8205C (624), PBN-9903C (694), PBN-1401A (782), and PBN-1401B (783). Total DNT exceeded the ES in PBN-8205B (623). 2,6-DNT exceeded the Preventive Action Limit (PAL) in PBN-8205B (623).

2,4-DNT, 2,6-DNT, and total DNT concentrations have increased in PBN-8202A since September 2019. PBN-8202A is located directly downgradient of the PBG source area.

Benzene exceeded the ES in PBN-8202C (615). This is the first time benzene has been detected in PBN-8202C. This is the first time benzene has exceeded the ES in a well associated with the Propellant Burning Ground. PBN-8202C is located directly downgradient of the PBG source area.

Carbon tetrachloride exceeded the ES in PBN-8502A (632) and PBN-9903C (694) and the PAL in 25 wells.

Ethyl ether exceeded the ES in PBN-9903D (695) and the PAL in PBN-9304D (687) and PBN-1404D (793).

Bromodichloromethane exceeded the PAL in PBN-9301C (669) and PBN-1404C (792).

Chloroform exceeded the PAL in seven wells.

Trichloroethene exceeded the PAL in 15 wells.

1,2-Dichloroethane exceeded the PAL in PBN-8202C (615).

Volatile organic compounds (VOCs) analysis was performed by CT Laboratories (CT Lab) using method EPA 8260C.

DNT analysis was also performed by CT Lab using method SW 8270D SIM. The following DNT isomers were reported: 2,3-DNT, 2,4-DNT, 2,5-DNT, 2,6-DNT, 3,4-DNT, and 3,5-DNT.

SpecPro Professional Services, LLC

Badger Army Ammunition Plant

GROUNDWATER MONITORING EXCEEDANCE REPORT

April 2020

Report Date: 6/21/2020

Parameter Name	Lic No.	Well No.	Well Name	Date	Dup	Result	Units	PAL	ES
2,4-Dinitrotoluene	2814	367	PBM-0001	4/30/2020	1	0.25	ug/l	0.005	0.05
2,6-Dinitrotoluene	2814	367	PBM-0001	4/30/2020	1	0.22	ug/l	0.005	0.05
Total Dinitrotoluenes	2814	367	PBM-0001	4/30/2020	1	11.05	ug/l	0.005	0.05
Trichloroethene	2814	367	PBM-0001	4/30/2020	1	0.88	ug/l	0.5	5
2,4-Dinitrotoluene	2814	368	PBM-0002	4/30/2020	1	0.16	ug/l	0.005	0.05
2,6-Dinitrotoluene	2814	368	PBM-0002	4/30/2020	1	0.12	ug/l	0.005	0.05
Total Dinitrotoluenes	2814	368	PBM-0002	4/30/2020	1	2.367	ug/l	0.005	0.05
Trichloroethene	2814	368	PBM-0002	4/30/2020	1	0.56	ug/l	0.5	5
2,4-Dinitrotoluene	2814	372	PBM-0006	4/30/2020	1	0.16	ug/l	0.005	0.05
2,6-Dinitrotoluene	2814	372	PBM-0006	4/30/2020	1	0.13	ug/l	0.005	0.05
Total Dinitrotoluenes	2814	372	PBM-0006	4/30/2020	1	2.068	ug/l	0.005	0.05
Trichloroethene	2814	372	PBM-0006	4/30/2020	1	0.56	ug/l	0.5	5
2,4-Dinitrotoluene	2814	374	PBM-0008	4/30/2020	1	0.11	ug/l	0.005	0.05
2,6-Dinitrotoluene	2814	374	PBM-0008	4/30/2020	1	0.13	ug/l	0.005	0.05
Total Dinitrotoluenes	2814	374	PBM-0008	4/30/2020	1	0.604	ug/l	0.005	0.05
Trichloroethene	2814	374	PBM-0008	4/30/2020	1	0.87	ug/l	0.5	5
Carbon tetrachloride	2814	595	PBN-1001C	4/27/2020	1	1.9	ug/l	0.5	5
Chloroform	2814	595	PBN-1001C	4/27/2020	1	0.96	ug/l	0.6	6
2,4-Dinitrotoluene	2814	613	PBN-8202A	4/30/2020	1	670	ug/l	0.005	0.05
2,6-Dinitrotoluene	2814	613	PBN-8202A	4/30/2020	1	500	ug/l	0.005	0.05
Total Dinitrotoluenes	2814	613	PBN-8202A	4/30/2020	1	1286.9	ug/l	0.005	0.05
Trichloroethene	2814	613	PBN-8202A	4/30/2020	1	0.63	ug/l	0.5	5
2,4-Dinitrotoluene	2814	614	PBN-8202B	4/30/2020	1	0.35	ug/l	0.005	0.05
2,6-Dinitrotoluene	2814	614	PBN-8202B	4/30/2020	1	0.21	ug/l	0.005	0.05
Carbon tetrachloride	2814	614	PBN-8202B	4/30/2020	1	0.78	ug/l	0.5	5
Total Dinitrotoluenes	2814	614	PBN-8202B	4/30/2020	1	14.551	ug/l	0.005	0.05
Trichloroethene	2814	614	PBN-8202B	4/30/2020	1	1	ug/l	0.5	5
1,2-Dichloroethane	2814	615	PBN-8202C	4/30/2020	1	2.2	ug/l	0.5	5
2,4-Dinitrotoluene	2814	615	PBN-8202C	4/30/2020	1	0.39	ug/l	0.005	0.05
2,6-Dinitrotoluene	2814	615	PBN-8202C	4/30/2020	1	0.44	ug/l	0.005	0.05
Benzene	2814	615	PBN-8202C	4/30/2020	1	37	ug/l	0.5	5
Total Dinitrotoluenes	2814	615	PBN-8202C	4/30/2020	1	1.18	ug/l	0.005	0.05
Trichloroethene	2814	615	PBN-8202C	4/30/2020	1	2.9	ug/l	0.5	5
2,6-Dinitrotoluene	2814	622	PBN-8205A	5/4/2020	1	0.065	ug/l	0.005	0.05
Carbon tetrachloride	2814	622	PBN-8205A	5/4/2020	1	1.8	ug/l	0.5	5
Total Dinitrotoluenes	2814	622	PBN-8205A	5/4/2020	1	0.352	ug/l	0.005	0.05
2,6-Dinitrotoluene	2814	623	PBN-8205B	5/4/2020	1	0.047	ug/l	0.005	0.05
Carbon tetrachloride	2814	623	PBN-8205B	5/4/2020	1	1.6	ug/l	0.5	5
Total Dinitrotoluenes	2814	623	PBN-8205B	5/4/2020	1	0.396	ug/l	0.005	0.05
Trichloroethene	2814	623	PBN-8205B	5/4/2020	1	0.51	ug/l	0.5	5
2,6-Dinitrotoluene	2814	624	PBN-8205C	5/4/2020	1	0.062	ug/l	0.005	0.05
Carbon tetrachloride	2814	624	PBN-8205C	5/4/2020	1	1.7	ug/l	0.5	5
Total Dinitrotoluenes	2814	624	PBN-8205C	5/4/2020	1	0.567	ug/l	0.005	0.05
Trichloroethene	2814	624	PBN-8205C	5/4/2020	1	0.53	ug/l	0.5	5
Carbon tetrachloride	2814	632	PBN-8502A	5/4/2020	1	13	ug/l	0.5	5
Trichloroethene	2814	632	PBN-8502A	5/4/2020	1	1.5	ug/l	0.5	5
Carbon tetrachloride	2814	633	PBN-8503A	5/4/2020	1	1.8	ug/l	0.5	5
Carbon tetrachloride	2814	645	PBN-8902C	5/4/2020	1	2.2	ug/l	0.5	5

Parameter Name	Lic No.	Well No.	Well Name	Date	Dup	Result	Units	PAL	ES
Trichloroethene	2814	645	PBN-8902C	5/4/2020	1	0.73	ug/l	0.5	5
Carbon tetrachloride	2814	646	PBN-8903B	5/4/2020	1	0.6	ug/l	0.5	5
Carbon tetrachloride	2814	655	PBN-8912B	4/29/2020	1	0.59	ug/l	0.5	5
Carbon tetrachloride	2814	668	PBN-9301B	4/28/2020	1	3	ug/l	0.5	5
Chloroform	2814	668	PBN-9301B	4/28/2020	1	0.75	ug/l	0.6	6
Bromodichloromethane	2814	669	PBN-9301C	4/28/2020	1	0.18	ug/l	0.06	0.6
Carbon tetrachloride	2814	669	PBN-9301C	4/28/2020	1	1.2	ug/l	0.5	5
Chloroform	2814	669	PBN-9301C	4/28/2020	1	1.4	ug/l	0.6	6
Carbon tetrachloride	2814	673	PBN-9303B	4/27/2020	1	2.9	ug/l	0.5	5
Carbon tetrachloride	2814	674	PBN-9303C	4/27/2020	1	3.9	ug/l	0.5	5
Carbon tetrachloride	2814	674	PBN-9303C	4/27/2020	2	3.8	ug/l	0.5	5
Chloroform	2814	674	PBN-9303C	4/27/2020	1	1	ug/l	0.6	6
Chloroform	2814	674	PBN-9303C	4/27/2020	2	1	ug/l	0.6	6
Ethyl ether	2814	687	PBN-9304D	4/27/2020	1	260	ug/l	100	1000
Carbon tetrachloride	2814	692	PBN-9903A	4/28/2020	1	1.2	ug/l	0.5	5
Carbon tetrachloride	2814	693	PBN-9903B	4/28/2020	1	3.2	ug/l	0.5	5
Trichloroethene	2814	693	PBN-9903B	4/28/2020	1	1.3	ug/l	0.5	5
2,6-Dinitrotoluene	2814	694	PBN-9903C	4/28/2020	1	0.052	ug/l	0.005	0.05
Carbon tetrachloride	2814	694	PBN-9903C	4/28/2020	1	9.2	ug/l	0.5	5
Total Dinitrotoluenes	2814	694	PBN-9903C	4/28/2020	1	0.052	ug/l	0.005	0.05
Trichloroethene	2814	694	PBN-9903C	4/28/2020	1	1.8	ug/l	0.5	5
Ethyl ether	2814	695	PBN-9903D	4/28/2020	1	1200	ug/l	100	1000
Carbon tetrachloride	2814	770	PBN-1302A	4/23/2020	1	1.8	ug/l	0.5	5
Carbon tetrachloride	2814	771	PBN-1302B	4/23/2020	1	3.7	ug/l	0.5	5
Carbon tetrachloride	2814	771	PBN-1302B	4/23/2020	2	3.5	ug/l	0.5	5
Carbon tetrachloride	2814	772	PBN-1302C	4/23/2020	1	3.1	ug/l	0.5	5
Chloroform	2814	772	PBN-1302C	4/23/2020	1	1	ug/l	0.6	6
Carbon tetrachloride	2814	774	PBN-1303A	4/23/2020	1	0.87	ug/l	0.5	5
Carbon tetrachloride	2814	775	PBN-1303B	4/23/2020	1	1.3	ug/l	0.5	5
Carbon tetrachloride	2814	776	PBN-1303C	4/23/2020	1	1.9	ug/l	0.5	5
Carbon tetrachloride	2814	781	PBN-1304D	4/23/2020	1	0.55	ug/l	0.5	5
2,6-Dinitrotoluene	2814	782	PBN-1401A	4/30/2020	1	0.11	ug/l	0.005	0.05
Total Dinitrotoluenes	2814	782	PBN-1401A	4/30/2020	1	0.503	ug/l	0.005	0.05
2,6-Dinitrotoluene	2814	783	PBN-1401B	4/30/2020	1	0.1	ug/l	0.005	0.05
Total Dinitrotoluenes	2814	783	PBN-1401B	4/30/2020	1	0.283	ug/l	0.005	0.05
Carbon tetrachloride	2814	791	PBN-1404B	4/28/2020	1	2.5	ug/l	0.5	5
Chloroform	2814	791	PBN-1404B	4/28/2020	1	0.84	ug/l	0.6	6
Trichloroethene	2814	791	PBN-1404B	4/28/2020	1	0.87	ug/l	0.5	5
Bromodichloromethane	2814	792	PBN-1404C	4/28/2020	1	0.16	ug/l	0.06	0.6
Carbon tetrachloride	2814	792	PBN-1404C	4/28/2020	1	0.66	ug/l	0.5	5
Chloroform	2814	792	PBN-1404C	4/28/2020	1	1.4	ug/l	0.6	6
Ethyl ether	2814	793	PBN-1404D	4/28/2020	1	550	ug/l	100	1000
Carbon tetrachloride	2814	795	PBN-8902BR	5/4/2020	1	2	ug/l	0.5	5
Trichloroethene	2814	795	PBN-8902BR	5/4/2020	1	0.82	ug/l	0.5	5

SpecPro Professional Services, LLC

Badger Army Ammunition Plant

April 2020 GROUNDWATER MONITORING ALL HITS REPORT

License No: 2814 Report Date: 6/21/2020

Parameter Name	Well	Well Name	Date	Dup	Result	LOD	LOQ	Units	PAL	ES
2,3-Dinitrotoluene	367	PBM-0001	4/30/2020	1	8	0.061	0.3	ug/l		
2,4-Dinitrotoluene	367	PBM-0001	4/30/2020	1	0.25	0.0081	0.04	ug/l	0.005	0.05
2,5-Dinitrotoluene	367	PBM-0001	4/30/2020	1	0.18	0.003	0.03	ug/l		
2,6-Dinitrotoluene	367	PBM-0001	4/30/2020	1	0.22	0.004	0.03	ug/l	0.005	0.05
3,4-Dinitrotoluene	367	PBM-0001	4/30/2020	1	1.5	0.004	0.04	ug/l		
3,5-Dinitrotoluene	367	PBM-0001	4/30/2020	1	0.9	0.004	0.03	ug/l		
Carbon tetrachloride	367	PBM-0001	4/30/2020	1	0.39	0.1	0.2	ug/l	0.5	5
Total Dinitrotoluenes	367	PBM-0001	4/30/2020	1	11.05	0.0081	0.03	ug/l	0.005	0.05
Trichloroethene	367	PBM-0001	4/30/2020	1	0.88	0.1	0.2	ug/l	0.5	5
2,3-Dinitrotoluene	368	PBM-0002	4/30/2020	1	1.2	0.0063	0.031	ug/l		
2,4-Dinitrotoluene	368	PBM-0002	4/30/2020	1	0.16	0.0083	0.042	ug/l	0.005	0.05
2,5-Dinitrotoluene	368	PBM-0002	4/30/2020	1	0.097	0.0031	0.031	ug/l		
2,6-Dinitrotoluene	368	PBM-0002	4/30/2020	1	0.12	0.0042	0.031	ug/l	0.005	0.05
3,4-Dinitrotoluene	368	PBM-0002	4/30/2020	1	0.6	0.0042	0.042	ug/l		
3,5-Dinitrotoluene	368	PBM-0002	4/30/2020	1	0.19	0.0042	0.031	ug/l		
Carbon tetrachloride	368	PBM-0002	4/30/2020	1	0.28	0.1	0.2	ug/l	0.5	5
Total Dinitrotoluenes	368	PBM-0002	4/30/2020	1	2.367	0.0083	0.031	ug/l	0.005	0.05
Trichloroethene	368	PBM-0002	4/30/2020	1	0.56	0.1	0.2	ug/l	0.5	5
2,3-Dinitrotoluene	372	PBM-0006	4/30/2020	1	0.84	0.0062	0.031	ug/l		
2,4-Dinitrotoluene	372	PBM-0006	4/30/2020	1	0.16	0.0082	0.041	ug/l	0.005	0.05
2,5-Dinitrotoluene	372	PBM-0006	4/30/2020	1	0.068	0.0031	0.031	ug/l		
2,6-Dinitrotoluene	372	PBM-0006	4/30/2020	1	0.13	0.0041	0.031	ug/l	0.005	0.05
3,4-Dinitrotoluene	372	PBM-0006	4/30/2020	1	0.73	0.0041	0.041	ug/l		
3,5-Dinitrotoluene	372	PBM-0006	4/30/2020	1	0.14	0.0041	0.031	ug/l		
Carbon tetrachloride	372	PBM-0006	4/30/2020	1	0.25	0.1	0.2	ug/l	0.5	5
Total Dinitrotoluenes	372	PBM-0006	4/30/2020	1	2.068	0.0082	0.031	ug/l	0.005	0.05
Trichloroethene	372	PBM-0006	4/30/2020	1	0.56	0.1	0.2	ug/l	0.5	5
2,3-Dinitrotoluene	374	PBM-0008	4/30/2020	1	0.16	0.0063	0.031	ug/l		
2,4-Dinitrotoluene	374	PBM-0008	4/30/2020	1	0.11	0.0083	0.042	ug/l	0.005	0.05
2,6-Dinitrotoluene	374	PBM-0008	4/30/2020	1	0.13	0.0042	0.031	ug/l	0.005	0.05
3,4-Dinitrotoluene	374	PBM-0008	4/30/2020	1	0.12	0.0042	0.042	ug/l		
3,5-Dinitrotoluene	374	PBM-0008	4/30/2020	1	0.084	0.0042	0.031	ug/l		
Carbon tetrachloride	374	PBM-0008	4/30/2020	1	0.35	0.1	0.2	ug/l	0.5	5
Total Dinitrotoluenes	374	PBM-0008	4/30/2020	1	0.604	0.0083	0.031	ug/l	0.005	0.05
Trichloroethene	374	PBM-0008	4/30/2020	1	0.87	0.1	0.2	ug/l	0.5	5
1,1,1-Trichloroethane	595	PBN-1001C	4/27/2020	1	0.28	0.1	0.2	ug/l	40	200
Carbon tetrachloride	595	PBN-1001C	4/27/2020	1	1.9	0.1	0.2	ug/l	0.5	5
Chloroform	595	PBN-1001C	4/27/2020	1	0.96	0.1	0.2	ug/l	0.6	6
Trichloroethene	595	PBN-1001C	4/27/2020	1	0.15	0.1	0.2	ug/l	0.5	5
2,3-Dinitrotoluene	613	PBN-8202A	4/30/2020	1	72	0.31	1.5	ug/l		
2,4-Dinitrotoluene	613	PBN-8202A	4/30/2020	1	670	4.1	21	ug/l	0.005	0.05
2,6-Dinitrotoluene	613	PBN-8202A	4/30/2020	1	500	2.1	15	ug/l	0.005	0.05
3,4-Dinitrotoluene	613	PBN-8202A	4/30/2020	1	35	0.21	2.1	ug/l		
3,5-Dinitrotoluene	613	PBN-8202A	4/30/2020	1	9.9	0.21	1.5	ug/l		
Carbon tetrachloride	613	PBN-8202A	4/30/2020	1	0.24	0.1	0.2	ug/l	0.5	5
Total Dinitrotoluenes	613	PBN-8202A	4/30/2020	1	1286.9	0.0082	0.031	ug/l	0.005	0.05
Trichloroethene	613	PBN-8202A	4/30/2020	1	0.63	0.1	0.2	ug/l	0.5	5
2,3-Dinitrotoluene	614	PBN-8202B	4/30/2020	1	11	0.063	0.31	ug/l		

Parameter Name	Well	Well Name	Date	Dup	Result	LOD	LOQ	Units	PAL	ES
2,4-Dinitrotoluene	614	PBN-8202B	4/30/2020	1	0.35	0.0083	0.042	ug/l	0.005	0.05
2,5-Dinitrotoluene	614	PBN-8202B	4/30/2020	1	0.091	0.0031	0.031	ug/l		
2,6-Dinitrotoluene	614	PBN-8202B	4/30/2020	1	0.21	0.0042	0.031	ug/l	0.005	0.05
3,4-Dinitrotoluene	614	PBN-8202B	4/30/2020	1	1.7	0.0042	0.042	ug/l		
3,5-Dinitrotoluene	614	PBN-8202B	4/30/2020	1	1.2	0.0042	0.031	ug/l		
Carbon tetrachloride	614	PBN-8202B	4/30/2020	1	0.78	0.1	0.2	ug/l	0.5	5
Total Dinitrotoluenes	614	PBN-8202B	4/30/2020	1	14.551	0.0083	0.031	ug/l	0.005	0.05
Trichloroethene	614	PBN-8202B	4/30/2020	1	1	0.1	0.2	ug/l	0.5	5
1,2-Dichloroethane	615	PBN-8202C	4/30/2020	1	2.2	0.1	0.2	ug/l	0.5	5
2,4-Dinitrotoluene	615	PBN-8202C	4/30/2020	1	0.39	0.0082	0.041	ug/l	0.005	0.05
2,5-Dinitrotoluene	615	PBN-8202C	4/30/2020	1	0.08	0.0031	0.031	ug/l		
2,6-Dinitrotoluene	615	PBN-8202C	4/30/2020	1	0.44	0.0041	0.031	ug/l	0.005	0.05
3,4-Dinitrotoluene	615	PBN-8202C	4/30/2020	1	0.14	0.0041	0.041	ug/l		
3,5-Dinitrotoluene	615	PBN-8202C	4/30/2020	1	0.13	0.0041	0.031	ug/l		
Benzene	615	PBN-8202C	4/30/2020	1	37	0.5	1	ug/l	0.5	5
o-Xylene	615	PBN-8202C	4/30/2020	1	0.25	0.1	0.2	ug/l	400	2000
Tetrachloroethene	615	PBN-8202C	4/30/2020	1	0.13	0.1	0.2	ug/l	0.5	5
Total Dinitrotoluenes	615	PBN-8202C	4/30/2020	1	1.18	0.0082	0.031	ug/l	0.005	0.05
Trichloroethene	615	PBN-8202C	4/30/2020	1	2.9	0.1	0.2	ug/l	0.5	5
1,1,1-Trichloroethane	622	PBN-8205A	5/4/2020	1	0.25	0.1	0.2	ug/l	40	200
2,3-Dinitrotoluene	622	PBN-8205A	5/4/2020	1	0.12	0.0063	0.031	ug/l		
2,6-Dinitrotoluene	622	PBN-8205A	5/4/2020	1	0.065	0.0042	0.031	ug/l	0.005	0.05
3,4-Dinitrotoluene	622	PBN-8205A	5/4/2020	1	0.097	0.0042	0.042	ug/l		
3,5-Dinitrotoluene	622	PBN-8205A	5/4/2020	1	0.07	0.0042	0.031	ug/l		
Carbon tetrachloride	622	PBN-8205A	5/4/2020	1	1.8	0.1	0.2	ug/l	0.5	5
Chloroform	622	PBN-8205A	5/4/2020	1	0.17	0.1	0.2	ug/l	0.6	6
Total Dinitrotoluenes	622	PBN-8205A	5/4/2020	1	0.352	0.0083	0.031	ug/l	0.005	0.05
Trichloroethene	622	PBN-8205A	5/4/2020	1	0.48	0.1	0.2	ug/l	0.5	5
1,1,1-Trichloroethane	623	PBN-8205B	5/4/2020	1	0.22	0.1	0.2	ug/l	40	200
2,3-Dinitrotoluene	623	PBN-8205B	5/4/2020	1	0.15	0.0062	0.031	ug/l		
2,6-Dinitrotoluene	623	PBN-8205B	5/4/2020	1	0.047	0.0041	0.031	ug/l	0.005	0.05
3,4-Dinitrotoluene	623	PBN-8205B	5/4/2020	1	0.12	0.0041	0.041	ug/l		
3,5-Dinitrotoluene	623	PBN-8205B	5/4/2020	1	0.079	0.0041	0.031	ug/l		
Carbon tetrachloride	623	PBN-8205B	5/4/2020	1	1.6	0.1	0.2	ug/l	0.5	5
Chloroform	623	PBN-8205B	5/4/2020	1	0.17	0.1	0.2	ug/l	0.6	6
Total Dinitrotoluenes	623	PBN-8205B	5/4/2020	1	0.396	0.0082	0.031	ug/l	0.005	0.05
Trichloroethene	623	PBN-8205B	5/4/2020	1	0.51	0.1	0.2	ug/l	0.5	5
1,1,1-Trichloroethane	624	PBN-8205C	5/4/2020	1	0.2	0.1	0.2	ug/l	40	200
2,3-Dinitrotoluene	624	PBN-8205C	5/4/2020	1	0.23	0.0062	0.031	ug/l		
2,6-Dinitrotoluene	624	PBN-8205C	5/4/2020	1	0.062	0.0041	0.031	ug/l	0.005	0.05
3,4-Dinitrotoluene	624	PBN-8205C	5/4/2020	1	0.18	0.0041	0.041	ug/l		
3,5-Dinitrotoluene	624	PBN-8205C	5/4/2020	1	0.095	0.0041	0.031	ug/l		
Carbon tetrachloride	624	PBN-8205C	5/4/2020	1	1.7	0.1	0.2	ug/l	0.5	5
Chloroform	624	PBN-8205C	5/4/2020	1	0.14	0.1	0.2	ug/l	0.6	6
Total Dinitrotoluenes	624	PBN-8205C	5/4/2020	1	0.567	0.0082	0.031	ug/l	0.005	0.05
Trichloroethene	624	PBN-8205C	5/4/2020	1	0.53	0.1	0.2	ug/l	0.5	5
1,1,1-Trichloroethane	632	PBN-8502A	5/4/2020	1	0.71	0.1	0.2	ug/l	40	200
Carbon tetrachloride	632	PBN-8502A	5/4/2020	1	13	0.1	0.2	ug/l	0.5	5
Chloroform	632	PBN-8502A	5/4/2020	1	0.29	0.1	0.2	ug/l	0.6	6
Trichloroethene	632	PBN-8502A	5/4/2020	1	1.5	0.1	0.2	ug/l	0.5	5
1,1,1-Trichloroethane	633	PBN-8503A	5/4/2020	1	0.11	0.1	0.2	ug/l	40	200
Carbon tetrachloride	633	PBN-8503A	5/4/2020	1	1.8	0.1	0.2	ug/l	0.5	5
1,1,1-Trichloroethane	645	PBN-8902C	5/4/2020	1	0.16	0.1	0.2	ug/l	40	200
Carbon tetrachloride	645	PBN-8902C	5/4/2020	1	2.2	0.1	0.2	ug/l	0.5	5
Chloroform	645	PBN-8902C	5/4/2020	1	0.17	0.1	0.2	ug/l	0.6	6
Trichloroethene	645	PBN-8902C	5/4/2020	1	0.73	0.1	0.2	ug/l	0.5	5
Carbon tetrachloride	646	PBN-8903B	5/4/2020	1	0.6	0.1	0.2	ug/l	0.5	5

Parameter Name	Well	Well Name	Date	Dup	Result	LOD	LOQ	Units	PAL	ES
1,2,4-Trimethylbenzene	655	PBN-8912B	4/29/2020	1	0.11	0.1	0.2	ug/l	96	480
Benzene	655	PBN-8912B	4/29/2020	1	0.11	0.1	0.2	ug/l	0.5	5
Carbon tetrachloride	655	PBN-8912B	4/29/2020	1	0.59	0.1	0.2	ug/l	0.5	5
m & p-Xylene	655	PBN-8912B	4/29/2020	1	0.25	0.2	0.4	ug/l	400	2000
o-Xylene	655	PBN-8912B	4/29/2020	1	0.13	0.1	0.2	ug/l	400	2000
Tetrachloroethene	655	PBN-8912B	4/29/2020	1	0.11	0.1	0.2	ug/l	0.5	5
Toluene	655	PBN-8912B	4/29/2020	1	2.4	0.1	0.2	ug/l	160	800
Trichloroethene	655	PBN-8912B	4/29/2020	1	0.38	0.1	0.2	ug/l	0.5	5
Chloroform	665	PBN-9112C	4/29/2020	1	0.28	0.1	0.2	ug/l	0.6	6
Trichloroethene	665	PBN-9112C	4/29/2020	1	0.14	0.1	0.2	ug/l	0.5	5
1,1,1-Trichloroethane	668	PBN-9301B	4/28/2020	1	0.24	0.1	0.2	ug/l	40	200
Carbon tetrachloride	668	PBN-9301B	4/28/2020	1	3	0.1	0.2	ug/l	0.5	5
Chloroform	668	PBN-9301B	4/28/2020	1	0.75	0.1	0.2	ug/l	0.6	6
Trichloroethene	668	PBN-9301B	4/28/2020	1	0.24	0.1	0.2	ug/l	0.5	5
1,1,1-Trichloroethane	669	PBN-9301C	4/28/2020	1	0.73	0.1	0.2	ug/l	40	200
Bromodichloromethane	669	PBN-9301C	4/28/2020	1	0.18	0.1	0.2	ug/l	0.06	0.6
Carbon tetrachloride	669	PBN-9301C	4/28/2020	1	1.2	0.1	0.2	ug/l	0.5	5
Chloroform	669	PBN-9301C	4/28/2020	1	1.4	0.1	0.2	ug/l	0.6	6
Trichloroethene	669	PBN-9301C	4/28/2020	1	0.33	0.1	0.2	ug/l	0.5	5
1,1,1-Trichloroethane	673	PBN-9303B	4/27/2020	1	0.5	0.1	0.2	ug/l	40	200
Carbon tetrachloride	673	PBN-9303B	4/27/2020	1	2.9	0.1	0.2	ug/l	0.5	5
Chloroform	673	PBN-9303B	4/27/2020	1	0.39	0.1	0.2	ug/l	0.6	6
Trichloroethene	673	PBN-9303B	4/27/2020	1	0.13	0.1	0.2	ug/l	0.5	5
1,1,1-Trichloroethane	674	PBN-9303C	4/27/2020	2	1.7	0.1	0.2	ug/l	40	200
1,1,1-Trichloroethane	674	PBN-9303C	4/27/2020	1	1.7	0.1	0.2	ug/l	40	200
1,1-Dichloroethene	674	PBN-9303C	4/27/2020	2	0.31	0.1	0.2	ug/l	0.7	7
1,1-Dichloroethene	674	PBN-9303C	4/27/2020	1	0.34	0.1	0.2	ug/l	0.7	7
Carbon tetrachloride	674	PBN-9303C	4/27/2020	1	3.9	0.1	0.2	ug/l	0.5	5
Carbon tetrachloride	674	PBN-9303C	4/27/2020	2	3.8	0.1	0.2	ug/l	0.5	5
Chloroform	674	PBN-9303C	4/27/2020	1	1	0.1	0.2	ug/l	0.6	6
Chloroform	674	PBN-9303C	4/27/2020	2	1	0.1	0.2	ug/l	0.6	6
Trichloroethene	674	PBN-9303C	4/27/2020	1	0.12	0.1	0.2	ug/l	0.5	5
1,1-Dichloroethane	675	PBN-9303D	4/27/2020	1	0.73	0.1	0.2	ug/l	85	850
1,1-Dichloroethene	675	PBN-9303D	4/27/2020	1	0.17	0.1	0.2	ug/l	0.7	7
Ethyl ether	675	PBN-9303D	4/27/2020	1	2.2	0.1	0.2	ug/l	100	1000
Ethyl ether	687	PBN-9304D	4/27/2020	1	260	2	4	ug/l	100	1000
Carbon tetrachloride	692	PBN-9903A	4/28/2020	1	1.2	0.1	0.2	ug/l	0.5	5
Chloroform	692	PBN-9903A	4/28/2020	1	0.14	0.1	0.2	ug/l	0.6	6
Trichloroethene	692	PBN-9903A	4/28/2020	1	0.32	0.1	0.2	ug/l	0.5	5
1,1,1-Trichloroethane	693	PBN-9903B	4/28/2020	1	0.23	0.1	0.2	ug/l	40	200
Carbon tetrachloride	693	PBN-9903B	4/28/2020	1	3.2	0.1	0.2	ug/l	0.5	5
Chloroform	693	PBN-9903B	4/28/2020	1	0.38	0.1	0.2	ug/l	0.6	6
Trichloroethene	693	PBN-9903B	4/28/2020	1	1.3	0.1	0.2	ug/l	0.5	5
1,1,1-Trichloroethane	694	PBN-9903C	4/28/2020	1	0.17	0.1	0.2	ug/l	40	200
2,6-Dinitrotoluene	694	PBN-9903C	4/28/2020	1	0.052	0.0041	0.031	ug/l	0.005	0.05
Carbon tetrachloride	694	PBN-9903C	4/28/2020	1	9.2	0.1	0.2	ug/l	0.5	5
Chloroform	694	PBN-9903C	4/28/2020	1	0.51	0.1	0.2	ug/l	0.6	6
Total Dinitrotoluenes	694	PBN-9903C	4/28/2020	1	0.052	0.0082	0.031	ug/l	0.005	0.05
Trichloroethene	694	PBN-9903C	4/28/2020	1	1.8	0.1	0.2	ug/l	0.5	5
Ethyl ether	695	PBN-9903D	4/28/2020	1	1200	10	20	ug/l	100	1000
1,1,1-Trichloroethane	770	PBN-1302A	4/23/2020	1	0.33	0.1	0.2	ug/l	40	200
Carbon tetrachloride	770	PBN-1302A	4/23/2020	1	1.8	0.1	0.2	ug/l	0.5	5
Chloroform	770	PBN-1302A	4/23/2020	1	0.32	0.1	0.2	ug/l	0.6	6
1,1,1-Trichloroethane	771	PBN-1302B	4/23/2020	1	0.38	0.1	0.2	ug/l	40	200
1,1,1-Trichloroethane	771	PBN-1302B	4/23/2020	2	0.35	0.1	0.2	ug/l	40	200
Carbon tetrachloride	771	PBN-1302B	4/23/2020	2	3.5	0.1	0.2	ug/l	0.5	5
Carbon tetrachloride	771	PBN-1302B	4/23/2020	1	3.7	0.1	0.2	ug/l	0.5	5

Parameter Name	Well	Well Name	Date	Dup	Result	LOD	LOQ	Units	PAL	ES
Chloroform	771	PBN-1302B	4/23/2020	2	0.38	0.1	0.2	ug/l	0.6	6
Chloroform	771	PBN-1302B	4/23/2020	1	0.39	0.1	0.2	ug/l	0.6	6
Trichloroethene	771	PBN-1302B	4/23/2020	2	0.15	0.1	0.2	ug/l	0.5	5
Trichloroethene	771	PBN-1302B	4/23/2020	1	0.13	0.1	0.2	ug/l	0.5	5
1,1,1-Trichloroethane	772	PBN-1302C	4/23/2020	1	1.3	0.1	0.2	ug/l	40	200
1,1-Dichloroethene	772	PBN-1302C	4/23/2020	1	0.2	0.1	0.2	ug/l	0.7	7
Carbon tetrachloride	772	PBN-1302C	4/23/2020	1	3.1	0.1	0.2	ug/l	0.5	5
Chloroform	772	PBN-1302C	4/23/2020	1	1	0.1	0.2	ug/l	0.6	6
Ethyl ether	772	PBN-1302C	4/23/2020	1	0.13	0.1	0.2	ug/l	100	1000
1,1,1-Trichloroethane	774	PBN-1303A	4/23/2020	1	0.43	0.1	0.2	ug/l	40	200
Carbon tetrachloride	774	PBN-1303A	4/23/2020	1	0.87	0.1	0.2	ug/l	0.5	5
Chloroform	774	PBN-1303A	4/23/2020	1	0.26	0.1	0.2	ug/l	0.6	6
1,1,1-Trichloroethane	775	PBN-1303B	4/23/2020	1	0.52	0.1	0.2	ug/l	40	200
Carbon tetrachloride	775	PBN-1303B	4/23/2020	1	1.3	0.1	0.2	ug/l	0.5	5
Chloroform	775	PBN-1303B	4/23/2020	1	0.29	0.1	0.2	ug/l	0.6	6
1,1,1-Trichloroethane	776	PBN-1303C	4/23/2020	1	0.85	0.1	0.2	ug/l	40	200
Carbon tetrachloride	776	PBN-1303C	4/23/2020	1	1.9	0.1	0.2	ug/l	0.5	5
Chloroform	776	PBN-1303C	4/23/2020	1	0.58	0.1	0.2	ug/l	0.6	6
Trichloroethene	776	PBN-1303C	4/23/2020	1	0.11	0.1	0.2	ug/l	0.5	5
1,1-Dichloroethane	777	PBN-1303D	4/23/2020	1	0.2	0.1	0.2	ug/l	85	850
1,1,1-Trichloroethane	779	PBN-1304B	4/23/2020	1	0.31	0.1	0.2	ug/l	40	200
Carbon tetrachloride	779	PBN-1304B	4/23/2020	1	0.37	0.1	0.2	ug/l	0.5	5
Chloroform	779	PBN-1304B	4/23/2020	1	0.23	0.1	0.2	ug/l	0.6	6
1,1,1-Trichloroethane	780	PBN-1304C	4/23/2020	1	0.28	0.1	0.2	ug/l	40	200
Carbon tetrachloride	780	PBN-1304C	4/23/2020	1	0.36	0.1	0.2	ug/l	0.5	5
Chloroform	780	PBN-1304C	4/23/2020	1	0.21	0.1	0.2	ug/l	0.6	6
1,1,1-Trichloroethane	781	PBN-1304D	4/23/2020	1	0.28	0.1	0.2	ug/l	40	200
1,1-Dichloroethane	781	PBN-1304D	4/23/2020	1	0.27	0.1	0.2	ug/l	85	850
Carbon disulfide	781	PBN-1304D	4/23/2020	1	0.24	0.2	0.4	ug/l	200	1000
Carbon tetrachloride	781	PBN-1304D	4/23/2020	1	0.55	0.1	0.2	ug/l	0.5	5
1,1,1-Trichloroethane	782	PBN-1401A	4/30/2020	1	0.1	0.1	0.2	ug/l	40	200
2,3-Dinitrotoluene	782	PBN-1401A	4/30/2020	1	0.2	0.0062	0.031	ug/l		
2,6-Dinitrotoluene	782	PBN-1401A	4/30/2020	1	0.11	0.0041	0.031	ug/l	0.005	0.05
3,4-Dinitrotoluene	782	PBN-1401A	4/30/2020	1	0.12	0.0041	0.041	ug/l		
3,5-Dinitrotoluene	782	PBN-1401A	4/30/2020	1	0.073	0.0041	0.031	ug/l		
Total Dinitrotoluenes	782	PBN-1401A	4/30/2020	1	0.503	0.0082	0.031	ug/l	0.005	0.05
Trichloroethene	782	PBN-1401A	4/30/2020	1	0.23	0.1	0.2	ug/l	0.5	5
2,3-Dinitrotoluene	783	PBN-1401B	4/30/2020	1	0.11	0.0062	0.031	ug/l		
2,6-Dinitrotoluene	783	PBN-1401B	4/30/2020	1	0.1	0.0041	0.031	ug/l	0.005	0.05
3,4-Dinitrotoluene	783	PBN-1401B	4/30/2020	1	0.073	0.0041	0.041	ug/l		
Total Dinitrotoluenes	783	PBN-1401B	4/30/2020	1	0.283	0.0082	0.031	ug/l	0.005	0.05
Trichloroethene	783	PBN-1401B	4/30/2020	1	0.14	0.1	0.2	ug/l	0.5	5
1,1,1-Trichloroethane	784	PBN-1401C	4/30/2020	1	0.11	0.1	0.2	ug/l	40	200
1,1,1-Trichloroethane	791	PBN-1404B	4/28/2020	1	0.18	0.1	0.2	ug/l	40	200
Carbon tetrachloride	791	PBN-1404B	4/28/2020	1	2.5	0.1	0.2	ug/l	0.5	5
Chloroform	791	PBN-1404B	4/28/2020	1	0.84	0.1	0.2	ug/l	0.6	6
Trichloroethene	791	PBN-1404B	4/28/2020	1	0.87	0.1	0.2	ug/l	0.5	5
1,1,1-Trichloroethane	792	PBN-1404C	4/28/2020	1	0.24	0.1	0.2	ug/l	40	200
Bromodichloromethane	792	PBN-1404C	4/28/2020	1	0.16	0.1	0.2	ug/l	0.06	0.6
Carbon tetrachloride	792	PBN-1404C	4/28/2020	1	0.66	0.1	0.2	ug/l	0.5	5
Chloroform	792	PBN-1404C	4/28/2020	1	1.4	0.1	0.2	ug/l	0.6	6
Trichloroethene	792	PBN-1404C	4/28/2020	1	0.25	0.1	0.2	ug/l	0.5	5
Ethyl ether	793	PBN-1404D	4/28/2020	1	550	10	20	ug/l	100	1000
1,1,1-Trichloroethane	795	PBN-8902BR	5/4/2020	1	0.14	0.1	0.2	ug/l	40	200
Carbon tetrachloride	795	PBN-8902BR	5/4/2020	1	2	0.1	0.2	ug/l	0.5	5
Chloroform	795	PBN-8902BR	5/4/2020	1	0.34	0.1	0.2	ug/l	0.6	6
Trichloroethene	795	PBN-8902BR	5/4/2020	1	0.82	0.1	0.2	ug/l	0.5	5

State of Wisconsin
Department of Natural Resources

Environmental Monitoring Data Certification

Form 4400-231(R 1/04)

Notice: Personally identifiable information collected will be used for program administration and enforcement purposes. The Department may also provide this information to requesters as required under Wisconsin's Open Records law, ss. 19.31 to 19.39, Wis. Stats.
When submitting monitoring data, the owner or operator of the facility, practice or activity is required to notify the Department in writing that a groundwater standard or an explosive gas level has been attained or exceeded, as specified in ss. NR 140.24(1)(a); NR 140.26(1)(a); NR 507.30NR 635.14(9)(a); NR 635.18(20) and NR 507.30, Wis. Adm. Code. Failure to report may result in fines, forfeitures or other penalties resulting from enforcement under ss. 289.97, 291.97 or 299.95, Wis. Stats.

Instructions:

- **Prepare one form for each license or monitoring ID.**
- **Please type or print legibly.**
- Attach a notification of any values that attain or exceed groundwater standards (that is, preventive action limits, enforcement standards or alternative concentration limits). The notification must include a preliminary analysis of the cause and significance of each value.
- Attach a notification of any gas values that attain or exceed explosive gas levels.
- Send the original signed form, any notification, and Electronic Data Deliverable [EDD] to: GEMS Data Submittal Contact - WA/5
  Bureau of Waste Management
  Wisconsin Department of Natural Resources
  101 South Webster Street
  Madison WI 53707-7921

Monitoring Data Submittal Information

Name of entity submitting data (laboratory, consultant, facility owner):

SpecPro Professional Services - Badger Army Ammunition Plant

Contact for questions about data formatting. Include data preparer's name, telephone number and E-mail address:

Name: Joel Janssen Phone: (608) 438-1110

E-mail: Joel.Janssen@SpecProSvcs.com

Facility name:	License # / Monitoring ID	Facility ID [FID]	Actual sampling dates (e.g., July 2-6, 2003)
BAAP - Deterrent Burning Grounds	03037	157065260	3/30 - 4/7/20

The enclosed results are for sampling required in the month(s) of: (e.g., June 2003)

April 2020

Type of Data Submitted (Check all that apply)

- [x] Groundwater monitoring data from monitoring wells
- [ ] Groundwater monitoring data from private water supply wells
- [ ] Leachate monitoring data
- [ ] Gas monitoring data
- [ ] Air monitoring data
- [ ] Other (specify)

Notification attached?

- [ ] No. No groundwater standards or explosive gas limits were exceeded.
- [x] Yes, a notification of values exceeding a groundwater standard is attached. It includes a list of monitoring points, dates, sample values, groundwater standard and preliminary analysis of the cause and significance of any concentration.
- [ ] Yes, a notification of values exceeding an explosive gas limit is attached. It includes the monitoring points, dates, sample values and explosive gas limits.

Certification

To the best of my knowledge, the information reported and statements made on this data submittal and attachments are true and correct. Furthermore, I have attached complete notification of any sampling values meeting or exceeding groundwater standards or explosive gas levels, and a preliminary analysis of the cause and significance of concentrations exceeding groundwater standards.

Joel Janssen	Project Manager	(608) 438-1110
Facility Representative Name (Print)	Title	(Area Code) Telephone No.

Signature: Joel Janssen Date: 6/23/20

FOR DNR USE ONLY. Check action taken, and record date and your initials. Describe on back side if necessary.

- [ ] **Found uploading problems on** _____ **Initials**
- [ ] **Notified contact of problems on** _____ **Uploaded data successfully on** _____

EDD format(s): [ ] **Diskette** [ ] **CD (initial submittal and follow-up)** [ ] **E-mail (follow-up only)** [ ] **Other**

Case Narrative
Groundwater Monitoring
License Number 3037
Deterrent Burning Grounds
April 2020
Badger Army Ammunition Plant

Groundwater is currently being monitored by the facility because of past production activities.

2,6-Dinitrotoluene (DNT) exceeded the Enforcement Standard (ES) in DBM-8201 (301). Total DNT exceeded the ES in DBM-8201 (301), DBM-8202 (302), DBN-1001B (472), and DBN-1002C (476).

Volatile organic compounds (VOCs) analysis was performed by CT Laboratories (CT Lab) using method EPA 8260C.

DNT analysis was performed by CT Lab using method SW 8270D SIM. The following DNT isomers were reported: 2,3-DNT, 2,4-DNT, 2,5-DNT, 2,6-DNT, 3,4-DNT, and 3,5-DNT.

Sulfate analyses were performed by CT Lab using method SW 846 9056A.

SpecPro Professional Services, LLC

Badger Army Ammunition Plant

GROUNDWATER MONITORING EXCEEDANCE REPORT

April 2020

Report Date: 6/21/2020

Parameter Name	Lic No.	Well No.	Well Name	Date	Dup	Result	Units	PAL	ES
2,6-Dinitrotoluene	3037	301	DBM-8201	4/7/2020	1	0.077	ug/l	0.005	0.05
Total Dinitrotoluenes	3037	301	DBM-8201	4/7/2020	1	1.807	ug/l	0.005	0.05
Total Dinitrotoluenes	3037	302	DBM-8202	4/7/2020	1	0.136	ug/l	0.005	0.05
Total Dinitrotoluenes	3037	472	DBN-1001B	4/7/2020	1	0.297	ug/l	0.005	0.05
Total Dinitrotoluenes	3037	476	DBN-1002C	3/30/2020	1	0.38	ug/l	0.005	0.05

SpecPro Professional Services, LLC

Badger Army Ammunition Plant

April 2020 GROUNDWATER MONITORING ALL HITS REPORT

License No: 3037 Report Date: 6/21/2020

Parameter Name	Well	Well Name	Date	Dup	Result	LOD	LOQ	Units	PAL	ES
2,3-Dinitrotoluene	301	DBM-8201	4/7/2020	1	1.2	0.0061	0.031	ug/l		
2,6-Dinitrotoluene	301	DBM-8201	4/7/2020	1	0.077	0.0041	0.031	ug/l	0.005	0.05
3,4-Dinitrotoluene	301	DBM-8201	4/7/2020	1	0.17	0.0041	0.041	ug/l		
3,5-Dinitrotoluene	301	DBM-8201	4/7/2020	1	0.36	0.0041	0.031	ug/l		
Sulfate	301	DBM-8201	4/7/2020	1	20	0.8	3	mg/l	125	250
Total Dinitrotoluenes	301	DBM-8201	4/7/2020	1	1.807	0.0082	0.031	ug/l	0.005	0.05
1,1,1-Trichloroethane	302	DBM-8202	4/7/2020	1	1.3	0.1	0.2	ug/l	40	200
1,2-Dichlorobenzene	302	DBM-8202	4/7/2020	1	0.12	0.1	0.2	ug/l	60	600
2,3-Dinitrotoluene	302	DBM-8202	4/7/2020	1	0.054	0.0061	0.03	ug/l		
3,4-Dinitrotoluene	302	DBM-8202	4/7/2020	1	0.039	0.004	0.04	ug/l		
3,5-Dinitrotoluene	302	DBM-8202	4/7/2020	1	0.043	0.004	0.03	ug/l		
Sulfate	302	DBM-8202	4/7/2020	1	35	4	15	mg/l	125	250
Total Dinitrotoluenes	302	DBM-8202	4/7/2020	1	0.136	0.0081	0.03	ug/l	0.005	0.05
1,1,1-Trichloroethane	472	DBN-1001B	4/7/2020	1	1.3	0.1	0.2	ug/l	40	200
2,3-Dinitrotoluene	472	DBN-1001B	4/7/2020	1	0.097	0.0063	0.031	ug/l		
3,4-Dinitrotoluene	472	DBN-1001B	4/7/2020	1	0.2	0.0042	0.042	ug/l		
Total Dinitrotoluenes	472	DBN-1001B	4/7/2020	1	0.297	0.0083	0.031	ug/l	0.005	0.05
Chloroethane	474	DBN-1001E	4/7/2020	1	0.26	0.2	0.4	ug/l	80	400
1,1,1-Trichloroethane	476	DBN-1002C	3/30/2020	1	0.21	0.1	0.2	ug/l	40	200
2,3-Dinitrotoluene	476	DBN-1002C	3/30/2020	1	0.12	0.0067	0.034	ug/l		
3,4-Dinitrotoluene	476	DBN-1002C	3/30/2020	1	0.26	0.0045	0.045	ug/l		
Sulfate	476	DBN-1002C	3/30/2020	1	27	0.8	3	mg/l	125	250
Total Dinitrotoluenes	476	DBN-1002C	3/30/2020	1	0.38	0.009	0.034	ug/l	0.005	0.05
Sulfate	477	DBN-1002E	3/30/2020	1	19	0.8	3	mg/l	125	250

State of Wisconsin
Department of Natural Resources

Environmental Monitoring Data Certification

Form 4400-231(R 1/04)

Notice: Personally identifiable information collected will be used for program administration and enforcement purposes. The Department may also provide this information to requesters as required under Wisconsin's Open Records law, ss. 19.31 to 19.39, Wis. Stats.
When submitting monitoring data, the owner or operator of the facility, practice or activity is required to notify the Department in writing that a groundwater standard or an explosive gas level has been attained or exceeded, as specified in ss. NR 140.24(1)(a); NR 140.26(1)(a); NR 507.30NR 635.14(9)(a); NR 635.18(20) and NR 507.30, Wis. Adm. Code. Failure to report may result in fines, forfeitures or other penalties resulting from enforcement under ss. 289.97, 291.97 or 299.95, Wis. Stats.

Instructions:

- **Prepare one form for each license or monitoring ID.**
- **Please type or print legibly.**
- Attach a notification of any values that attain or exceed groundwater standards (that is, preventive action limits, enforcement standards or alternative concentration limits). The notification must include a preliminary analysis of the cause and significance of each value.
- Attach a notification of any gas values that attain or exceed explosive gas levels.
- Send the original signed form, any notification, and Electronic Data Deliverable [EDD] to: GEMS Data Submittal Contact - WA/5
  Bureau of Waste Management
  Wisconsin Department of Natural Resources
  101 South Webster Street
  Madison WI 53707-7921

Monitoring Data Submittal Information

Name of entity submitting data (laboratory, consultant, facility owner):

SpecPro Professional Services - Badger Army Ammunition Plant

Contact for questions about data formatting. Include data preparer's name, telephone number and E-mail address:

Name: Joel Janssen Phone: (608) 438-1110

E-mail: Joel.Janssen@SpecProSvcs.com

Facility name:	License # / Monitoring ID	Facility ID [FID]	Actual sampling dates (e.g., July 2-6, 2003)
BAAP - Southeast Boundary	03038	157005530	4/6/20

The enclosed results are for sampling required in the month(s) of: (e.g., June 2003)

April 2020

Type of Data Submitted (Check all that apply)

- [x] Groundwater monitoring data from monitoring wells
- [ ] Groundwater monitoring data from private water supply wells
- [ ] Leachate monitoring data
- [ ] Gas monitoring data
- [ ] Air monitoring data
- [ ] Other (specify) _____

Notification attached?

- [x] No. No groundwater standards or explosive gas limits were exceeded.
- [ ] Yes, a notification of values exceeding a groundwater standard is attached. It includes a list of monitoring points, dates, sample values, groundwater standard and preliminary analysis of the cause and significance of any concentration.
- [ ] Yes, a notification of values exceeding an explosive gas limit is attached. It includes the monitoring points, dates, sample values and explosive gas limits.

Certification

To the best of my knowledge, the information reported and statements made on this data submittal and attachments are true and correct. Furthermore, I have attached complete notification of any sampling values meeting or exceeding groundwater standards or explosive gas levels, and a preliminary analysis of the cause and significance of concentrations exceeding groundwater standards.

Joel Janssen	Project Manager	(608) 438-1110
Facility Representative Name (Print)	Title	(Area Code) Telephone No.

Joel Janssen 6/23/20

Signature Date

FOR DNR USE ONLY. Check action taken, and record date and your initials. Describe on back side if necessary.

- [ ] **Found uploading problems on** _____ **Initials**
- [ ] **Notified contact of problems on** _____ **Uploaded data successfully on** _____

EDD format(s): [ ] **Diskette** [ ] **CD (initial submittal and follow-up)** [ ] **E-mail (follow-up only)** [ ] **Other**

Case Narrative
Groundwater Monitoring
License Number 3038
Southeast Boundary
April 2020
Badger Army Ammunition Plant

Groundwater is currently being monitored by the facility because of past production activities.

Only one well, S1121 (755), was sampled during this sampling period. No compounds were detected in S1121.

Volatile organic compounds (VOCs) analysis was performed by CT Laboratories (CT Lab) using method EPA 8260C.

Dinitrotoluene (DNT) analysis was performed by CT Lab using method SW 8270D SIM. The following DNT isomers were reported: 2,3-DNT, 2,4-DNT, 2,5-DNT, 2,6-DNT, 3,4-DNT, and 3,5-DNT.

State of Wisconsin
Department of Natural Resources

Environmental Monitoring Data Certification

Form 4400-231(R 1/04)

Notice: Personally identifiable information collected will be used for program administration and enforcement purposes. The Department may also provide this information to requesters as required under Wisconsin's Open Records law, ss. 19.31 to 19.39, Wis. Stats.
When submitting monitoring data, the owner or operator of the facility, practice or activity is required to notify the Department in writing that a groundwater standard or an explosive gas level has been attained or exceeded, as specified in ss. NR 140.24(1)(a); NR 140.26(1)(a); NR 507.30NR 635.14(9)(a); NR 635.18(20) and NR 507.30, Wis. Adm. Code. Failure to report may result in fines, forfeitures or other penalties resulting from enforcement under ss. 289.97, 291.97 or 299.95, Wis. Stats.

Instructions:

- **Prepare one form for each license or monitoring ID.**
- **Please type or print legibly.**
- Attach a notification of any values that attain or exceed groundwater standards (that is, preventive action limits, enforcement standards or alternative concentration limits). The notification must include a preliminary analysis of the cause and significance of each value.
- Attach a notification of any gas values that attain or exceed explosive gas levels.
- Send the original signed form, any notification, and Electronic Data Deliverable [EDD] to: GEMS Data Submittal Contact - WA/5
  Bureau of Waste Management
  Wisconsin Department of Natural Resources
  101 South Webster Street
  Madison WI 53707-7921

Monitoring Data Submittal Information

Name of entity submitting data (laboratory, consultant, facility owner):

SpecPro Professional Services - Badger Army Ammunition Plant

Contact for questions about data formatting. Include data preparer's name, telephone number and E-mail address:

Name: Joel Janssen Phone: (608) 438-1110

E-mail: Joel.Janssen@SpecProSvcs.com

Facility name:	License # / Monitoring ID	Facility ID [FID]	Actual sampling dates (e.g., July 2-6, 2003)
BAAP - Off-Site Plume Wells	03485 & 03493	157005530	5/4/20

The enclosed results are for sampling required in the month(s) of: (e.g., June 2003)

April 2020

Type of Data Submitted (Check all that apply)

- [x] Groundwater monitoring data from monitoring wells
- [ ] Groundwater monitoring data from private water supply wells
- [ ] Leachate monitoring data
- [ ] Gas monitoring data
- [ ] Air monitoring data
- [ ] Other (specify)

Notification attached?

- [ ] No. No groundwater standards or explosive gas limits were exceeded.
- [x] Yes, a notification of values exceeding a groundwater standard is attached. It includes a list of monitoring points, dates, sample values, groundwater standard and preliminary analysis of the cause and significance of any concentration.
- [ ] Yes, a notification of values exceeding an explosive gas limit is attached. It includes the monitoring points, dates, sample values and explosive gas limits.

Certification

To the best of my knowledge, the information reported and statements made on this data submittal and attachments are true and correct. Furthermore, I have attached complete notification of any sampling values meeting or exceeding groundwater standards or explosive gas levels, and a preliminary analysis of the cause and significance of concentrations exceeding groundwater standards.

Joel Janssen	Project Manager	(608) 438-1110
Facility Representative Name (Print)	Title	(Area Code) Telephone No.

Joel Janssen 6/23/20

Signature Date

FOR DNR USE ONLY. Check action taken, and record date and your initials. Describe on back side if necessary.

- [ ] **Found uploading problems on** _____ **Initials**
- [ ] **Notified contact of problems on** _____ **Uploaded data successfully on** _____

EDD format(s): [ ] **Diskette** [ ] **CD (initial submittal and follow-up)** [ ] **E-mail (follow-up only)** [ ] **Other**

Case Narrative
Groundwater Monitoring
License Number 3485 & 3493
Off-Site Plume Wells
April 2020
Badger Army Ammunition Plant

Groundwater is currently being monitored by the facility because of past production activities. Contamination from the Propellant Burning Ground impacts groundwater quality in wells associated with this license.

2,6-Dinitrotoluene (DNT) and total DNT exceeded the Preventive Action Limit (PAL) in PBN-9101C (561).

Carbon tetrachloride exceeded the Enforcement Standard (ES) in PBN-9101C (561) and PBM-9001D (981). Carbon tetrachloride exceeded the PAL in SWN-9103B (571), SWN-9104C (575), and SWN-9104D (576).

Chloroform exceeded the PAL in PBN-9101C (561) and PBM-9001D (981).

Trichloroethene exceeded the ES in PBN-9101C (561) and PBM-9001D (981).

Volatile organic compounds (VOCs) analysis was performed by CT Laboratories (CT Lab) using method EPA 8260C.

DNT analysis was also performed by CT Lab using method SW 8270D SIM. The following DNT isomers were reported: 2,3-DNT, 2,4-DNT, 2,5-DNT, 2,6-DNT, 3,4-DNT, and 3,5-DNT.

SpecPro Professional Services, LLC

Badger Army Ammunition Plant

GROUNDWATER MONITORING EXCEEDANCE REPORT

April 2020

Report Date: 6/21/2020

Parameter Name	Lic No.	Well No.	Well Name	Date	Dup	Result	Units	PAL	ES
Carbon tetrachloride	3485	981	PBM-9001D	5/4/2020	1	12	ug/l	0.5	5
Chloroform	3485	981	PBM-9001D	5/4/2020	1	1.2	ug/l	0.6	6
Trichloroethene	3485	981	PBM-9001D	5/4/2020	1	5.6	ug/l	0.5	5

SpecPro Professional Services, LLC

Badger Army Ammunition Plant

April 2020 GROUNDWATER MONITORING ALL HITS REPORT

License No: 3485 Report Date: 6/21/2020

Parameter Name	Well	Well Name	Date	Dup	Result	LOD	LOQ	Units	PAL	ES
1,1,1-Trichloroethane	981	PBM-9001D	5/4/2020	1	0.11	0.1	0.2	ug/l	40	200
Carbon tetrachloride	981	PBM-9001D	5/4/2020	1	12	0.1	0.2	ug/l	0.5	5
Chloroform	981	PBM-9001D	5/4/2020	1	1.2	0.1	0.2	ug/l	0.6	6
Trichloroethene	981	PBM-9001D	5/4/2020	1	5.6	0.1	0.2	ug/l	0.5	5

SpecPro Professional Services, LLC

Badger Army Ammunition Plant

GROUNDWATER MONITORING EXCEEDANCE REPORT

April 2020

Report Date: 6/21/2020

Parameter Name	Lic No.	Well No.	Well Name	Date	Dup	Result	Units	PAL	ES
2,6-Dinitrotoluene	3493	561	PBN-9101C	5/4/2020	1	0.039	ug/l	0.005	0.05
2,6-Dinitrotoluene	3493	561	PBN-9101C	5/4/2020	2	0.049	ug/l	0.005	0.05
Carbon tetrachloride	3493	561	PBN-9101C	5/4/2020	1	23	ug/l	0.5	5
Carbon tetrachloride	3493	561	PBN-9101C	5/4/2020	2	21	ug/l	0.5	5
Chloroform	3493	561	PBN-9101C	5/4/2020	1	2.6	ug/l	0.6	6
Chloroform	3493	561	PBN-9101C	5/4/2020	2	2.6	ug/l	0.6	6
Total Dinitrotoluenes	3493	561	PBN-9101C	5/4/2020	1	0.039	ug/l	0.005	0.05
Total Dinitrotoluenes	3493	561	PBN-9101C	5/4/2020	2	0.049	ug/l	0.005	0.05
Trichloroethene	3493	561	PBN-9101C	5/4/2020	1	11	ug/l	0.5	5
Trichloroethene	3493	561	PBN-9101C	5/4/2020	2	11	ug/l	0.5	5
Carbon tetrachloride	3493	571	SWN-9103B	5/4/2020	1	1.4	ug/l	0.5	5
Carbon tetrachloride	3493	575	SWN-9104C	5/4/2020	1	3.4	ug/l	0.5	5
Carbon tetrachloride	3493	576	SWN-9104D	5/4/2020	1	2.6	ug/l	0.5	5

SpecPro Professional Services, LLC

Badger Army Ammunition Plant

April 2020 GROUNDWATER MONITORING ALL HITS REPORT

License No: 3493 Report Date: 6/21/2020

Parameter Name	Well	Well Name	Date	Dup	Result	LOD	LOQ	Units	PAL	ES
2,6-Dinitrotoluene	561	PBN-9101C	5/4/2020	2	0.049	0.0041	0.031	ug/l	0.005	0.05
2,6-Dinitrotoluene	561	PBN-9101C	5/4/2020	1	0.039	0.0041	0.031	ug/l	0.005	0.05
Carbon tetrachloride	561	PBN-9101C	5/4/2020	2	21	0.5	1	ug/l	0.5	5
Carbon tetrachloride	561	PBN-9101C	5/4/2020	1	23	0.5	1	ug/l	0.5	5
Chloroform	561	PBN-9101C	5/4/2020	1	2.6	0.1	0.2	ug/l	0.6	6
Chloroform	561	PBN-9101C	5/4/2020	2	2.6	0.1	0.2	ug/l	0.6	6
Total Dinitrotoluenes	561	PBN-9101C	5/4/2020	2	0.049	0.0082	0.031	ug/l	0.005	0.05
Total Dinitrotoluenes	561	PBN-9101C	5/4/2020	1	0.039	0.0082	0.031	ug/l	0.005	0.05
Trichloroethene	561	PBN-9101C	5/4/2020	1	11	0.1	0.2	ug/l	0.5	5
Trichloroethene	561	PBN-9101C	5/4/2020	2	11	0.1	0.2	ug/l	0.5	5
1,1,1-Trichloroethane	571	SWN-9103B	5/4/2020	1	0.19	0.1	0.2	ug/l	40	200
Carbon tetrachloride	571	SWN-9103B	5/4/2020	1	1.4	0.1	0.2	ug/l	0.5	5
Chloroform	571	SWN-9103B	5/4/2020	1	0.1	0.1	0.2	ug/l	0.6	6
Trichloroethene	571	SWN-9103B	5/4/2020	1	0.19	0.1	0.2	ug/l	0.5	5
Carbon tetrachloride	572	SWN-9103C	5/4/2020	1	0.38	0.1	0.2	ug/l	0.5	5
Chloroform	572	SWN-9103C	5/4/2020	1	0.37	0.1	0.2	ug/l	0.6	6
1,1-Dichloroethane	573	SWN-9103D	5/4/2020	1	0.1	0.1	0.2	ug/l	85	850
Carbon tetrachloride	573	SWN-9103D	5/4/2020	1	0.34	0.1	0.2	ug/l	0.5	5
Ethyl ether	574	SWN-9103E	5/4/2020	1	0.26	0.1	0.2	ug/l	100	1000
Toluene	574	SWN-9103E	5/4/2020	1	0.55	0.1	0.2	ug/l	160	800
1,1,1-Trichloroethane	575	SWN-9104C	5/4/2020	1	0.16	0.1	0.2	ug/l	40	200
Carbon tetrachloride	575	SWN-9104C	5/4/2020	1	3.4	0.1	0.2	ug/l	0.5	5
Chloroform	575	SWN-9104C	5/4/2020	1	0.54	0.1	0.2	ug/l	0.6	6
Carbon tetrachloride	576	SWN-9104D	5/4/2020	1	2.6	0.1	0.2	ug/l	0.5	5
Chloroform	576	SWN-9104D	5/4/2020	1	0.39	0.1	0.2	ug/l	0.6	6

State of Wisconsin
Department of Natural Resources

Environmental Monitoring Data Certification

Form 4400-231(R 1/04)

Notice: Personally identifiable information collected will be used for program administration and enforcement purposes. The Department may also provide this information to requesters as required under Wisconsin's Open Records law, ss. 19.31 to 19.39, Wis. Stats.
When submitting monitoring data, the owner or operator of the facility, practice or activity is required to notify the Department in writing that a groundwater standard or an explosive gas level has been attained or exceeded, as specified in ss. NR 140.24(1)(a); NR 140.26(1)(a); NR 507.30NR 635.14(9)(a); NR 635.18(20) and NR 507.30, Wis. Adm. Code. Failure to report may result in fines, forfeitures or other penalties resulting from enforcement under ss. 289.97, 291.97 or 299.95, Wis. Stats.

Instructions:

- **Prepare one form for each license or monitoring ID.**
- **Please type or print legibly.**
- Attach a notification of any values that attain or exceed groundwater standards (that is, preventive action limits, enforcement standards or alternative concentration limits). The notification must include a preliminary analysis of the cause and significance of each value.
- Attach a notification of any gas values that attain or exceed explosive gas levels.
- Send the original signed form, any notification, and Electronic Data Deliverable [EDD] to: GEMS Data Submittal Contact - WA/5
  Bureau of Waste Management
  Wisconsin Department of Natural Resources
  101 South Webster Street
  Madison WI 53707-7921

Monitoring Data Submittal Information

Name of entity submitting data (laboratory, consultant, facility owner):

SpecPro Professional Services - Badger Army Ammunition Plant

Contact for questions about data formatting. Include data preparer's name, telephone number and E-mail address:

Name: Joel Janssen Phone: (608) 438-1110

E-mail: Joel.Janssen@SpecProSvcs.com

Facility name:	License # / Monitoring ID	Facility ID [FID]	Actual sampling dates (e.g., July 2-6, 2003)
BAAP - Nitroglycerine Pond/Rocket Paste Area	03487	157005530	4/22/20

The enclosed results are for sampling required in the month(s) of: (e.g., June 2003)

April 2020

Type of Data Submitted (Check all that apply)

- [x] Groundwater monitoring data from monitoring wells
- [ ] Groundwater monitoring data from private water supply wells
- [ ] Leachate monitoring data
- [ ] Gas monitoring data
- [ ] Air monitoring data
- [ ] Other (specify)

Notification attached?

- [ ] No. No groundwater standards or explosive gas limits were exceeded.
- [x] Yes, a notification of values exceeding a groundwater standard is attached. It includes a list of monitoring points, dates, sample values, groundwater standard and preliminary analysis of the cause and significance of any concentration.
- [ ] Yes, a notification of values exceeding an explosive gas limit is attached. It includes the monitoring points, dates, sample values and explosive gas limits.

Certification

To the best of my knowledge, the information reported and statements made on this data submittal and attachments are true and correct. Furthermore, I have attached complete notification of any sampling values meeting or exceeding groundwater standards or explosive gas levels, and a preliminary analysis of the cause and significance of concentrations exceeding groundwater standards.

Joel Janssen	Project Manager	(608) 438-1110
Facility Representative Name (Print)	Title	(Area Code) Telephone No.

Joel Janssen 6/23/20

Signature Date

FOR DNR USE ONLY. Check action taken, and record date and your initials. Describe on back side if necessary.

- [ ] **Found uploading problems on** _____ **Initials**
- [ ] **Notified contact of problems on** _____ **Uploaded data successfully on** _____

EDD format(s): [ ] **Diskette** [ ] **CD (initial submittal and follow-up)** [ ] **E-mail (follow-up only)** [ ] **Other**

Case Narrative
Groundwater Monitoring
License Number 3487
Nitroglycerine Pond/Rocket Paste Area
April 2020
Badger Army Ammunition Plant

Groundwater is currently being monitored by the facility because of past production activities. Four (4) wells were sampled to assist with determining the degree and lateral extent of dinitrotoluene (DNT) in the Nitrocellulose Production Area Plume.

2,6-DNT and total DNT exceeded the Enforcement Standard (ES) RIN-1001A (480).

2,6-DNT and total DNT exceeded the Preventive Action Limit (PAL) in RIM-0705 (442).

DNT analysis was performed by CT Laboratories using method SW 8270D SIM. The following DNT isomers were reported: 2,3-DNT, 2,4-DNT, 2,5-DNT, 2,6-DNT, 3,4-DNT, and 3,5-DNT.

SpecPro Professional Services, LLC

Badger Army Ammunition Plant

GROUNDWATER MONITORING EXCEEDANCE REPORT

April 2020

Report Date: 6/21/2020

Parameter Name	Lic No.	Well No.	Well Name	Date	Dup	Result	Units	PAL	ES
2,6-Dinitrotoluene	3487	442	RIM-0705	4/22/2020	1	0.046	ug/l	0.005	0.05
Total Dinitrotoluenes	3487	442	RIM-0705	4/22/2020	1	0.046	ug/l	0.005	0.05
2,6-Dinitrotoluene	3487	480	RIN-1001A	4/22/2020	1	0.068	ug/l	0.005	0.05
Total Dinitrotoluenes	3487	480	RIN-1001A	4/22/2020	1	0.068	ug/l	0.005	0.05

SpecPro Professional Services, LLC

Badger Army Ammunition Plant

April 2020 GROUNDWATER MONITORING ALL HITS REPORT

License No: 3487 Report Date: 6/21/2020

Parameter Name	Well	Well Name	Date	Dup	Result	LOD	LOQ	Units	PAL	ES
2,6-Dinitrotoluene	442	RIM-0705	4/22/2020	1	0.046	0.0041	0.031	ug/l	0.005	0.05
Total Dinitrotoluenes	442	RIM-0705	4/22/2020	1	0.046	0.0082	0.031	ug/l	0.005	0.05
2,6-Dinitrotoluene	480	RIN-1001A	4/22/2020	1	0.068	0.0041	0.031	ug/l	0.005	0.05
Total Dinitrotoluenes	480	RIN-1001A	4/22/2020	1	0.068	0.0082	0.031	ug/l	0.005	0.05

State of Wisconsin
Department of Natural Resources

Environmental Monitoring Data Certification

Form 4400-231(R 1/04)

Notice: Personally identifiable information collected will be used for program administration and enforcement purposes. The Department may also provide this information to requesters as required under Wisconsin's Open Records law, ss. 19.31 to 19.39, Wis. Stats.
When submitting monitoring data, the owner or operator of the facility, practice or activity is required to notify the Department in writing that a groundwater standard or an explosive gas level has been attained or exceeded, as specified in ss. NR 140.24(1)(a); NR 140.26(1)(a); NR 507.30NR 635.14(9)(a); NR 635.18(20) and NR 507.30, Wis. Adm. Code. Failure to report may result in fines, forfeitures or other penalties resulting from enforcement under ss. 289.97, 291.97 or 299.95, Wis. Stats.

Instructions:

- **Prepare one form for each license or monitoring ID.**
- **Please type or print legibly.**
- Attach a notification of any values that attain or exceed groundwater standards (that is, preventive action limits, enforcement standards or alternative concentration limits). The notification must include a preliminary analysis of the cause and significance of each value.
- Attach a notification of any gas values that attain or exceed explosive gas levels.
- Send the original signed form, any notification, and Electronic Data Deliverable [EDD] to: GEMS Data Submittal Contact - WA/5
  Bureau of Waste Management
  Wisconsin Department of Natural Resources
  101 South Webster Street
  Madison WI 53707-7921

Monitoring Data Submittal Information

Name of entity submitting data (laboratory, consultant, facility owner):

SpecPro Professional Services - Badger Army Ammunition Plant

Contact for questions about data formatting. Include data preparer's name, telephone number and E-mail address:

Name: Joel Janssen Phone: (608) 438-1110

E-mail: Joel.Janssen@SpecProSvcs.com

Facility name:	License # / Monitoring ID	Facility ID [FID]	Actual sampling dates (e.g., July 2-6, 2003)
BAAP - Off-Site Residential Wells	03497	157005530	5/5/20

The enclosed results are for sampling required in the month(s) of: (e.g., June 2003)

April 2020

Type of Data Submitted (Check all that apply)

- [ ] Groundwater monitoring data from monitoring wells
- [x] Groundwater monitoring data from private water supply wells
- [ ] Leachate monitoring data
- [ ] Gas monitoring data
- [ ] Air monitoring data
- [ ] Other (specify)

Notification attached?

- [x] No. No groundwater standards or explosive gas limits were exceeded.
- [ ] Yes, a notification of values exceeding a groundwater standard is attached. It includes a list of monitoring points, dates, sample values, groundwater standard and preliminary analysis of the cause and significance of any concentration.
- [ ] Yes, a notification of values exceeding an explosive gas limit is attached. It includes the monitoring points, dates, sample values and explosive gas limits.

Certification

To the best of my knowledge, the information reported and statements made on this data submittal and attachments are true and correct. Furthermore, I have attached complete notification of any sampling values meeting or exceeding groundwater standards or explosive gas levels, and a preliminary analysis of the cause and significance of concentrations exceeding groundwater standards.

Joel Janssen	Project Manager	(608) 438-1110
Facility Representative Name (Print)	Title	(Area Code) Telephone No.

Joel Janssen 6/23/20

Signature Date

FOR DNR USE ONLY. Check action taken, and record date and your initials. Describe on back side if necessary.

- [ ] **Found uploading problems on** _____ **Initials**
- [ ] **Notified contact of problems on** _____ **Uploaded data successfully on** _____

EDD format(s): [ ] **Diskette** [ ] **CD (initial submittal and follow-up)** [ ] **E-mail (follow-up only)** [ ] **Other**

Case Narrative
Groundwater Monitoring
License Number 3497
Off-Site Residential Wells
April 2020
Badger Army Ammunition Plant

Groundwater is currently being monitored by the facility because of past production activities. One residential well located near the Deterrent Burning Ground Plume and one residential well in the Central Plume were sampled during this round.

No compounds were detected in WE-XK342 (435). WE-XK342 is located in the Water's Edge Subdivision at the southern end of the Central Plume.

Volatile organic compounds (VOCs) analysis was performed by CT Laboratories (CT Lab) using method EPA 8260C.

DNT analysis was also performed by CT Lab using method SW 8270D SIM. The following DNT isomers were reported: 2,3-DNT, 2,4-DNT, 2,5-DNT, 2,6-DNT, 3,4-DNT, and 3,5-DNT.

State of Wisconsin
Department of Natural Resources

Environmental Monitoring Data Certification

Form 4400-231(R 1/04)

Notice: Personally identifiable information collected will be used for program administration and enforcement purposes. The Department may also provide this information to requesters as required under Wisconsin's Open Records law, ss. 19.31 to 19.39, Wis. Stats.
When submitting monitoring data, the owner or operator of the facility, practice or activity is required to notify the Department in writing that a groundwater standard or an explosive gas level has been attained or exceeded, as specified in ss. NR 140.24(1)(a); NR 140.26(1)(a); NR 507.30NR 635.14(9)(a); NR 635.18(20) and NR 507.30, Wis. Adm. Code. Failure to report may result in fines, forfeitures or other penalties resulting from enforcement under ss. 289.97, 291.97 or 299.95, Wis. Stats.

Instructions:

- **Prepare one form for each license or monitoring ID.**
- **Please type or print legibly.**
- Attach a notification of any values that attain or exceed groundwater standards (that is, preventive action limits, enforcement standards or alternative concentration limits). The notification must include a preliminary analysis of the cause and significance of each value.
- Attach a notification of any gas values that attain or exceed explosive gas levels.
- Send the original signed form, any notification, and Electronic Data Deliverable [EDD] to: GEMS Data Submittal Contact - WA/5
  Bureau of Waste Management
  Wisconsin Department of Natural Resources
  101 South Webster Street
  Madison WI 53707-7921

Monitoring Data Submittal Information

Name of entity submitting data (laboratory, consultant, facility owner):

SpecPro Professional Services - Badger Army Ammunition Plant

Contact for questions about data formatting. Include data preparer's name, telephone number and E-mail address:

Name: Joel Janssen Phone: (608) 438-1110

E-mail: Joel.Janssen@SpecProSvcs.com

Facility name:	License # / Monitoring ID	Facility ID [FID]	Actual sampling dates (e.g., July 2-6, 2003)
BAAP - Settling Ponds	03499	157005530	4/27 - 4/29/20

The enclosed results are for sampling required in the month(s) of: (e.g., June 2003)

April 2020

Type of Data Submitted (Check all that apply)

- [x] Groundwater monitoring data from monitoring wells
- [ ] Groundwater monitoring data from private water supply wells
- [ ] Leachate monitoring data
- [ ] Gas monitoring data
- [ ] Air monitoring data
- [ ] Other (specify)

Notification attached?

- [ ] No. No groundwater standards or explosive gas limits were exceeded.
- [x] Yes, a notification of values exceeding a groundwater standard is attached. It includes a list of monitoring points, dates, sample values, groundwater standard and preliminary analysis of the cause and significance of any concentration.
- [ ] Yes, a notification of values exceeding an explosive gas limit is attached. It includes the monitoring points, dates, sample values and explosive gas limits.

Certification

To the best of my knowledge, the information reported and statements made on this data submittal and attachments are true and correct. Furthermore, I have attached complete notification of any sampling values meeting or exceeding groundwater standards or explosive gas levels, and a preliminary analysis of the cause and significance of concentrations exceeding groundwater standards.

Joel Janssen	Project Manager	(608) 438-1110
Facility Representative Name (Print)	Title	(Area Code) Telephone No.

Joel Janssen 6/23/20

Signature Date

FOR DNR USE ONLY. Check action taken, and record date and your initials. Describe on back side if necessary.

- [ ] **Found uploading problems on** _____ **Initials**
- [ ] **Notified contact of problems on** _____ **Uploaded data successfully on** _____

EDD format(s): [ ] **Diskette** [ ] **CD (initial submittal and follow-up)** [ ] **E-mail (follow-up only)** [ ] **Other**

Case Narrative
Groundwater Monitoring
License Number 3499
Settling Ponds
April 2020
Badger Army Ammunition Plant

Groundwater is currently being monitored by the facility because of past production activities. Contamination from the Propellant Burning Ground largely impacts groundwater quality in wells associated with this license.

Ethyl ether exceeded the Enforcement Standard (ES) in SPN-9104D (726).

2,6-Dinitrotoluene (DNT) and total DNT exceeded the Preventive Action Limit (PAL) in SPN-8904B (720).

1,2-Dichloroethane exceeded the PAL in SPN-8904C (721).

Carbon tetrachloride exceeded the PAL in SPN-8903B (718), SPN-8904B (720), and SPN-8904C (721).

Trichloroethene exceeded the PAL in SPN-8903C (719), SPN-8904B (720), and SPN-8904C (721).

Volatile organic compounds (VOCs) analysis was performed by CT Laboratories (CT Lab) using method EPA 8260C.

DNT analysis was also performed by CT Lab using method SW 8270D SIM. The following DNT isomers were reported: 2,3-DNT, 2,4-DNT, 2,5-DNT, 2,6-DNT, 3,4-DNT, and 3,5-DNT.

SpecPro Professional Services, LLC

Badger Army Ammunition Plant

GROUNDWATER MONITORING EXCEEDANCE REPORT

April 2020

Report Date: 6/21/2020

Parameter Name	Lic No.	Well No.	Well Name	Date	Dup	Result	Units	PAL	ES
Carbon tetrachloride	3499	718	SPN-8903B	4/29/2020	1	0.61	ug/l	0.5	5
Trichloroethene	3499	719	SPN-8903C	4/29/2020	1	0.73	ug/l	0.5	5
2,6-Dinitrotoluene	3499	720	SPN-8904B	4/27/2020	1	0.039	ug/l	0.005	0.05
Carbon tetrachloride	3499	720	SPN-8904B	4/27/2020	1	2.6	ug/l	0.5	5
Total Dinitrotoluenes	3499	720	SPN-8904B	4/27/2020	1	0.039	ug/l	0.005	0.05
Trichloroethene	3499	720	SPN-8904B	4/27/2020	1	1.1	ug/l	0.5	5
1,2-Dichloroethane	3499	721	SPN-8904C	4/27/2020	1	0.5	ug/l	0.5	5
Carbon tetrachloride	3499	721	SPN-8904C	4/27/2020	1	1.8	ug/l	0.5	5
Trichloroethene	3499	721	SPN-8904C	4/27/2020	1	0.84	ug/l	0.5	5
Ethyl ether	3499	726	SPN-9104D	4/27/2020	1	1900	ug/l	100	1000

SpecPro Professional Services, LLC

Badger Army Ammunition Plant

April 2020 GROUNDWATER MONITORING ALL HITS REPORT

License No: 3499 Report Date: 6/21/2020

Parameter Name	Well	Well Name	Date	Dup	Result	LOD	LOQ	Units	PAL	ES
1,1,1-Trichloroethane	718	SPN-8903B	4/29/2020	1	0.13	0.1	0.2	ug/l	40	200
Carbon tetrachloride	718	SPN-8903B	4/29/2020	1	0.61	0.1	0.2	ug/l	0.5	5
Chloroform	718	SPN-8903B	4/29/2020	1	0.34	0.1	0.2	ug/l	0.6	6
Trichloroethene	718	SPN-8903B	4/29/2020	1	0.13	0.1	0.2	ug/l	0.5	5
1,1,1-Trichloroethane	719	SPN-8903C	4/29/2020	1	0.8	0.1	0.2	ug/l	40	200
1,1-Dichloroethene	719	SPN-8903C	4/29/2020	1	0.14	0.1	0.2	ug/l	0.7	7
Carbon tetrachloride	719	SPN-8903C	4/29/2020	1	0.32	0.1	0.2	ug/l	0.5	5
Trichloroethene	719	SPN-8903C	4/29/2020	1	0.73	0.1	0.2	ug/l	0.5	5
1,1,1-Trichloroethane	720	SPN-8904B	4/27/2020	1	0.18	0.1	0.2	ug/l	40	200
2,6-Dinitrotoluene	720	SPN-8904B	4/27/2020	1	0.039	0.0042	0.031	ug/l	0.005	0.05
Carbon tetrachloride	720	SPN-8904B	4/27/2020	1	2.6	0.1	0.2	ug/l	0.5	5
Chloroform	720	SPN-8904B	4/27/2020	1	0.34	0.1	0.2	ug/l	0.6	6
Total Dinitrotoluenes	720	SPN-8904B	4/27/2020	1	0.039	0.0083	0.031	ug/l	0.005	0.05
Trichloroethene	720	SPN-8904B	4/27/2020	1	1.1	0.1	0.2	ug/l	0.5	5
1,1,1-Trichloroethane	721	SPN-8904C	4/27/2020	1	0.12	0.1	0.2	ug/l	40	200
1,2-Dichloroethane	721	SPN-8904C	4/27/2020	1	0.5	0.1	0.2	ug/l	0.5	5
Carbon tetrachloride	721	SPN-8904C	4/27/2020	1	1.8	0.1	0.2	ug/l	0.5	5
Chloroform	721	SPN-8904C	4/27/2020	1	0.41	0.1	0.2	ug/l	0.6	6
Trichloroethene	721	SPN-8904C	4/27/2020	1	0.84	0.1	0.2	ug/l	0.5	5
Ethyl ether	726	SPN-9104D	4/27/2020	1	1900	50	100	ug/l	100	1000

April 2020
Badger Army Ammunition Plant
Sampled Wells List

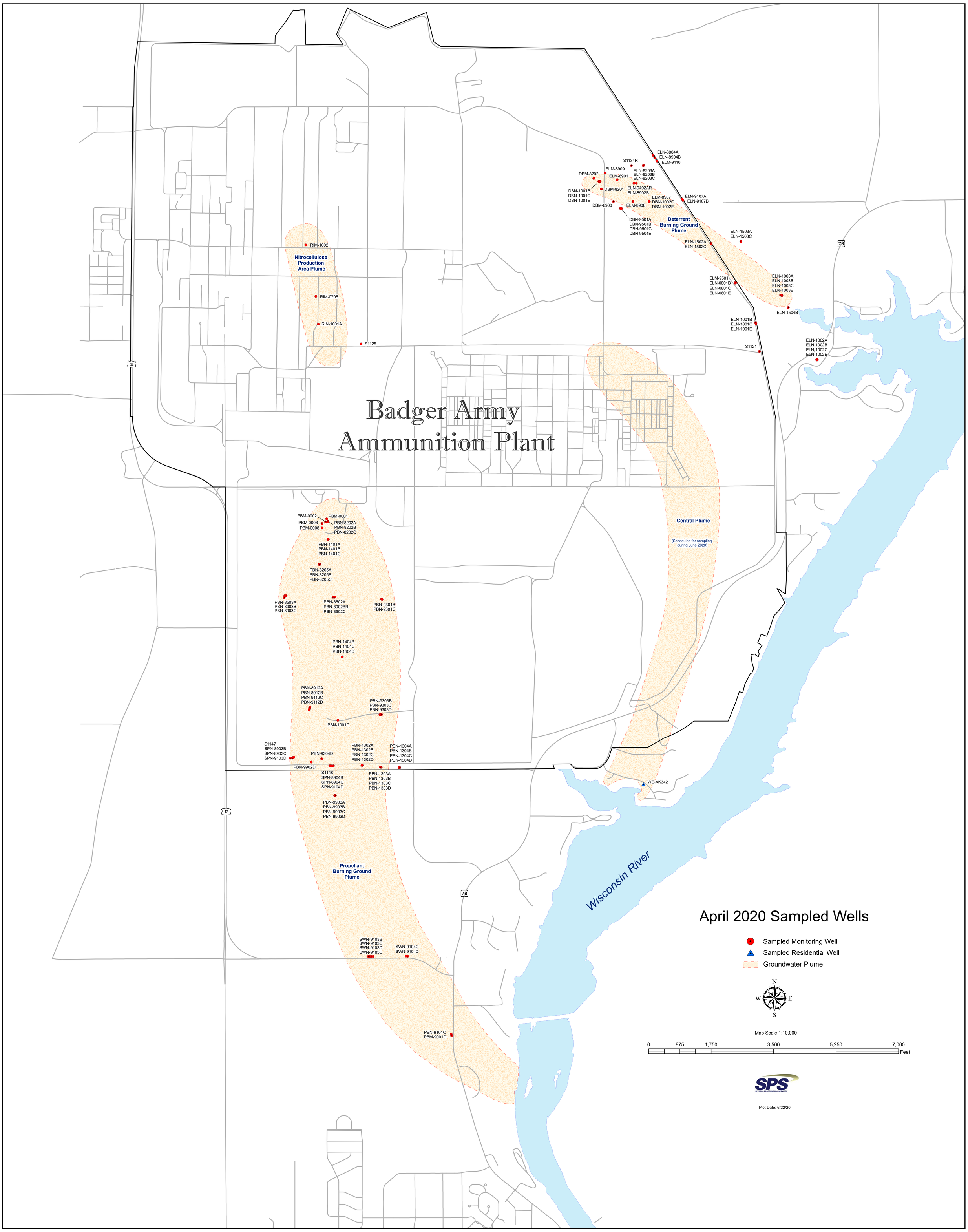
License Area	Well ID	Reporting Name	Date	Plume
2813	210	ELN-8203A	4/1/20	Deterrent Burning Ground
2813	211	ELN-8203B	4/1/20	Deterrent Burning Ground
2813	212	ELN-8203C	4/1/20	Deterrent Burning Ground
2813	216	ELM-8901	4/7/20	Deterrent Burning Ground
2813	220	ELM-8907	3/30/20	Deterrent Burning Ground
2813	221	ELM-8908	3/30/20	Deterrent Burning Ground
2813	222	ELM-8909	4/1/20	Deterrent Burning Ground
2813	224	ELN-8902B	4/7/20	Deterrent Burning Ground
2813	225	ELN-8904A	4/7/20	Deterrent Burning Ground
2813	226	ELN-8904B	4/7/20	Deterrent Burning Ground
2813	227	ELN-9107A	4/1/20	Deterrent Burning Ground
2813	228	ELN-9107B	4/1/20	Deterrent Burning Ground
2813	229	ELM-9110	4/7/20	Deterrent Burning Ground
2813	231	ELN-9402AR	4/22/20	Deterrent Burning Ground
2813	234	ELM-9501	4/6/20	Deterrent Burning Ground
2813	236	S1134R	4/1/20	Deterrent Burning Ground
2813	455	ELN-0801B	4/6/20	Deterrent Burning Ground
2813	456	ELN-0801C	4/6/20	Deterrent Burning Ground
2813	457	ELN-0801E	4/6/20	Deterrent Burning Ground
2813	460	ELN-1001B	4/6/20	Deterrent Burning Ground
2813	461	ELN-1001C	4/6/20	Deterrent Burning Ground
2813	462	ELN-1001E	4/6/20	Deterrent Burning Ground
2813	463	ELN-1002A	4/22/20	Deterrent Burning Ground
2813	464	ELN-1002B	4/22/20	Deterrent Burning Ground
2813	465	ELN-1002C	4/22/20	Deterrent Burning Ground
2813	466	ELN-1002E	4/22/20	Deterrent Burning Ground
2813	467	ELN-1003A	5/6/20	Deterrent Burning Ground
2813	468	ELN-1003B	5/6/20	Deterrent Burning Ground
2813	469	ELN-1003C	5/6/20	Deterrent Burning Ground
2813	470	ELN-1003E	5/6/20	Deterrent Burning Ground
2813	533	ELN-1502A	4/6/20	Deterrent Burning Ground
2813	534	ELN-1502C	4/6/20	Deterrent Burning Ground
2813	535	ELN-1503A	4/22/20	Deterrent Burning Ground
2813	536	ELN-1503C	4/22/20	Deterrent Burning Ground
2813	537	ELN-1504B	5/6/20	Deterrent Burning Ground
2814	367	PBM-0001	4/30/20	Propellant Burning Ground
2814	368	PBM-0002	4/30/20	Propellant Burning Ground
2814	372	PBM-0006	4/30/20	Propellant Burning Ground
2814	374	PBM-0008	4/30/20	Propellant Burning Ground
2814	595	PBN-1001C	4/27/20	Propellant Burning Ground
2814	613	PBN-8202A	4/30/20	Propellant Burning Ground
2814	614	PBN-8202B	4/30/20	Propellant Burning Ground
2814	615	PBN-8202C	4/30/20	Propellant Burning Ground
2814	622	PBN-8205A	5/4/20	Propellant Burning Ground
2814	623	PBN-8205B	5/4/20	Propellant Burning Ground
2814	624	PBN-8205C	5/4/20	Propellant Burning Ground
2814	632	PBN-8502A	5/4/20	Propellant Burning Ground
2814	633	PBN-8503A	5/4/20	Propellant Burning Ground
2814	645	PBN-8902C	5/4/20	Propellant Burning Ground

April 2020
Badger Army Ammunition Plant
Sampled Wells List

License Area	Well ID	Reporting Name	Date	Plume
2814	646	PBN-8903B	5/4/20	Propellant Burning Ground
2814	647	PBN-8903C	5/4/20	Propellant Burning Ground
2814	654	PBN-8912A	4/29/20	Propellant Burning Ground
2814	655	PBN-8912B	4/29/20	Propellant Burning Ground
2814	665	PBN-9112C	4/29/20	Propellant Burning Ground
2814	666	PBN-9112D	4/29/20	Propellant Burning Ground
2814	668	PBN-9301B	4/28/20	Propellant Burning Ground
2814	669	PBN-9301C	4/28/20	Propellant Burning Ground
2814	673	PBN-9303B	4/27/20	Propellant Burning Ground
2814	674	PBN-9303C	4/27/20	Propellant Burning Ground
2814	675	PBN-9303D	4/27/20	Propellant Burning Ground
2814	687	PBN-9304D	4/27/20	Propellant Burning Ground
2814	691	PBN-9902D	4/29/20	Propellant Burning Ground
2814	692	PBN-9903A	4/28/20	Propellant Burning Ground
2814	693	PBN-9903B	4/28/20	Propellant Burning Ground
2814	694	PBN-9903C	4/28/20	Propellant Burning Ground
2814	695	PBN-9903D	4/28/20	Propellant Burning Ground
2814	770	PBN-1302A	4/23/20	Propellant Burning Ground
2814	771	PBN-1302B	4/23/20	Propellant Burning Ground
2814	772	PBN-1302C	4/23/20	Propellant Burning Ground
2814	773	PBN-1302D	4/23/20	Propellant Burning Ground
2814	774	PBN-1303A	4/23/20	Propellant Burning Ground
2814	775	PBN-1303B	4/23/20	Propellant Burning Ground
2814	776	PBN-1303C	4/23/20	Propellant Burning Ground
2814	777	PBN-1303D	4/23/20	Propellant Burning Ground
2814	778	PBN-1304A	4/23/20	Propellant Burning Ground
2814	779	PBN-1304B	4/23/20	Propellant Burning Ground
2814	780	PBN-1304C	4/23/20	Propellant Burning Ground
2814	781	PBN-1304D	4/23/20	Propellant Burning Ground
2814	782	PBN-1401A	4/30/20	Propellant Burning Ground
2814	783	PBN-1401B	4/30/20	Propellant Burning Ground
2814	784	PBN-1401C	4/30/20	Propellant Burning Ground
2814	791	PBN-1404B	4/28/20	Propellant Burning Ground
2814	792	PBN-1404C	4/28/20	Propellant Burning Ground
2814	793	PBN-1404D	4/28/20	Propellant Burning Ground
2814	795	PBN-8902BR	5/4/20	Propellant Burning Ground
3037	301	DBM-8201	4/7/20	Deterrent Burning Ground
3037	302	DBM-8202	4/7/20	Deterrent Burning Ground
3037	306	DBM-8903	4/1/20	Deterrent Burning Ground
3037	314	DBN-9501A	3/30/20	Deterrent Burning Ground
3037	315	DBN-9501B	3/30/20	Deterrent Burning Ground
3037	316	DBN-9501C	3/30/20	Deterrent Burning Ground
3037	317	DBN-9501E	3/30/20	Deterrent Burning Ground
3037	472	DBN-1001B	4/7/20	Deterrent Burning Ground
3037	473	DBN-1001C	4/7/20	Deterrent Burning Ground
3037	474	DBN-1001E	4/7/20	Deterrent Burning Ground
3037	476	DBN-1002C	3/30/20	Deterrent Burning Ground
3037	477	DBN-1002E	3/30/20	Deterrent Burning Ground
3038	755	S1121	4/6/20	Deterrent Burning Ground

April 2020
Badger Army Ammunition Plant
Sampled Wells List

License Area	Well ID	Reporting Name	Date	Plume
3485	981	PBM-9001D	5/4/20	Propellant Burning Ground
3487	442	RIM-0705	4/22/20	Nitrocellulose Production Area
3487	478	RIM-1002	4/22/20	Nitrocellulose Production Area
3487	480	RIN-1001A	4/22/20	Nitrocellulose Production Area
3487	504	S1125	4/22/20	Nitrocellulose Production Area
3493	561	PBN-9101C	5/4/20	Propellant Burning Ground
3493	571	SWN-9103B	5/4/20	Propellant Burning Ground
3493	572	SWN-9103C	5/4/20	Propellant Burning Ground
3493	573	SWN-9103D	5/4/20	Propellant Burning Ground
3493	574	SWN-9103E	5/4/20	Propellant Burning Ground
3493	575	SWN-9104C	5/4/20	Propellant Burning Ground
3493	576	SWN-9104D	5/4/20	Propellant Burning Ground
3497	435	WE-XK342	5/5/20	Central
3499	709	S1147	4/29/20	Propellant Burning Ground
3499	710	S1148	4/27/20	Propellant Burning Ground
3499	718	SPN-8903B	4/29/20	Propellant Burning Ground
3499	719	SPN-8903C	4/29/20	Propellant Burning Ground
3499	720	SPN-8904B	4/27/20	Propellant Burning Ground
3499	721	SPN-8904C	4/27/20	Propellant Burning Ground
3499	725	SPN-9103D	4/29/20	Propellant Burning Ground
3499	726	SPN-9104D	4/27/20	Propellant Burning Ground


Badger Army
Ammunition Plant
Nitrocellulose
Production
Area Plume
RIM-1002
RIM-0705
RIN-1001A
S1125
Deterrent
Burning Ground
Plume
ELN-8904A
ELN-8904B
ELM-9110
S1134R
ELM-8909
ELN-8203A
ELN-8203B
ELN-8203C
DBM-8202
ELM-8901
ELN-9402AR
ELN-8902B
DBN-1001B
DBN-1001C
DBN-1001E
DBM-8201
ELM-8907
DBN-1002C
DBN-1002E
ELN-9107A
ELN-9107B
DBM-8903
ELM-8908
DBN-9501A
DBN-9501B
DBN-9501C
DBN-9501E
ELN-1503A
ELN-1503C
ELN-1502A
ELN-1502C
ELM-9501
ELN-0801B
ELN-0801C
ELN-0801E
ELN-1003A
ELN-1003B
ELN-1003C
ELN-1003E
ELN-1504B
ELN-1001B
ELN-1001C
ELN-1001E
S1121
ELN-1002A
ELN-1002B
ELN-1002C
ELN-1002E
Central Plume
(Scheduled for sampling
during June 2020)
PBM-0002
PBM-0001
PBM-0006
PBN-8202A
PBM-0008
PBN-8202B
PBN-8202C
PBN-1401A
PBN-1401B
PBN-1401C
PBN-8205A
PBN-8205B
PBN-8205C
PBN-8503A
PBN-8903B
PBN-8903C
PBN-8502A
PBN-8902BR
PBN-8902C
PBN-9301B
PBN-9301C
PBN-1404B
PBN-1404C
PBN-1404D
PBN-8912A
PBN-8912B
PBN-9112C
PBN-9112D
PBN-9303B
PBN-9303C
PBN-9303D
PBN-1001C
S1147
SPN-8903B
SPN-8903C
SPN-9103D
PBN-9304D
PBN-1302A
PBN-1302B
PBN-1302C
PBN-1302D
PBN-1304A
PBN-1304B
PBN-1304C
PBN-1304D
PBN-9902D
S1148
SPN-8904B
SPN-8904C
SPN-9104D
PBN-1303A
PBN-1303B
PBN-1303C
PBN-1303D
WE-XK342
PBN-9903A
PBN-9903B
PBN-9903C
PBN-9903D
Propellant
Burning Ground
Plume
Wisconsin River
SWN-9103B
SWN-9103C
SWN-9103D
SWN-9103E
SWN-9104C
SWN-9104D
PBN-9101C
PBM-9001D
12
78
April 2020 Sampled Wells
Sampled Monitoring Well
Sampled Residential Well
Groundwater Plume
N
W
E
S
Map Scale 1:10,000
0
875
1,750
3,500
5,250
7,000
Feet
SPS
Plot Date: 6/22/20

Residential Groundwater Test Results - May 2020 Sampling Event

April '20 Round	Level of Detection	Level of Quantitation
2,3-DNT	0.0061	0.031
2,4-DNT	0.0082	0.041
2,5-DNT	0.0031	0.031
2,6-DNT	0.0041	0.031
3,4-DNT	0.0041	0.041
3,5-DNT	0.0041	0.031

*Level of detection and level of quantitation may change each round.

= Under PAL and ES
= Over Preventive Action Limit (PAL)
= Over Enforcement Standard (ES)
= No PAL or ES established
= Not Tested
ND = Compound was not detected

All results are expressed as µg/l (micrograms per liter)

Last Name	Well No.	Well Name or Address	*Shared With*	Analyzed By	Sample Date	Chloroform	2,6-Dinitrotoluene	2,4-Dinitrotoluene	2,3-Dinitrotoluene	3,4-Dinitrotoluene	2,5-Dinitrotoluene	3,5-Dinitrotoluene	Dinitrotoluene, Total
Water's Edge Group	**435**	**WE-XK342**	***Hallman, Keiser***	**CT Lab**	**5/5/2020**	**0.16**	ND	ND	ND	ND	ND	ND	ND
				CT Lab (D)	**5/5/2020**	**0.18**	ND	ND	ND	ND	ND	ND	ND

(D) = Duplicate

CT Lab = CT Laboratories, LLC