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 July 22, 2020

SUBJECT: June 2020 Monitoring Well 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) June 2020 Monitoring Well and Residential Well Groundwater Data. This was an annual & quarterly sampling event. SpecPro Professional Services, LLC (SPS) collected groundwater samples from 33 monitoring wells and one residential well associated with the Central Plume. SPS collected groundwater samples from four monitoring wells associated with the Deterrent Burning Ground (DBG) Plume. SPS collected groundwater samples from 13 monitoring wells located directly downgradient of the Propellant Burning Ground (PBG) Waste Pits (source area).

The enclosed files contain the signed Environmental Monitoring Data Certification Forms, groundwater monitoring exceedance reports, groundwater monitoring all hits reports, a list of wells sampled, a map showing the well locations, and summary tables.

Central Plume

Based on the WDNR *Groundwater Sampling Program Modification Approval* letter dated July 15, 2016, 33 monitoring wells associated with the Central Plume were sampled during June 2020. The Central Plume boundary depicted on the enclosed June 2020 Sampled Wells map is based on the total dinitrotoluene (DNT) concentrations reported during June 2019 and June 2020. The plume boundary outlines where total DNT was detected above the NR 140 Preventive Action Limit (PAL).

Total DNT was detected above the NR 140 Enforcement Standard (ES) in NLN-1001A, NLN-1001C, and RIN-1002C. Total DNT was detected above the NR 140 PAL in NLN-8203B, NLN-8203C, RIN-1004B, RIN-1005C, and SEN-0503B. DNT concentrations in the Central Plume had been decreasing between 2014 and 2017. However, DNT concentrations in the Central Plume have increased over the past three

years. Total DNT in NLN-1001C increased from 0.192 micrograms per liter (µg/l) during June 2019 to 0.336 µg/l during June 2020.

The eight SEN series monitoring wells located in the southern end of the Central Plume will be sampled again during November 2020. All 18 residential wells located in the Water's Edge Subdivision will be sampled during August 2020. This sampling will be conducted in accordance with the WDNR *Plan Modification of the Groundwater Monitoring Program* dated September 4, 2013.

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, four monitoring wells associated with the DBG Plume were sampled during June 2020. ELN-1504B could not be sampled as it was surrounded by water and unsafe to access. An attempt to sample monitoring well ELN-1504B will be conducted during September 2020.

Total DNT was detected above the NR 140 ES in ELN-1003B and ELN-1003C. Total DNT was not detected in ELN-1003A or ELN-1003E. The total DNT concentration in ELN-1003B has dropped between 2019 and 2020. The total DNT concentration in ELN-1003C has increased over the past year. The enclosed Table 1 compares the DNT results from ELN-1003B, ELN-1003C, and ELN-1502A from September 2016 through June 2020.

Propellant Burning Ground Plume

From June 8 to 11, 2020, SPS collected groundwater samples from 13 monitoring wells that are located adjacent to and downgradient of the PBG source area. The June 2020 sampling event was conducted in addition to the WDNR required sampling.

PBN-8202C had a benzene concentration of 41 µg/l, which was above the NR 140 ES of 5 µg/l. This is the second time benzene has been detected above the NR 140 ES in PBN-8202C during 2020. PBN-8202C is located directly downgradient of the PBG source area. The source of the benzene appears to be the PBG source area.

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 June 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 1,286.9 µg/l during April 2020. In June 2020, the total DNT concentration in PBN-8202A dropped to 44.25 µg/l. 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 11.33 µg/l during June 2020.

Total DNT concentrations have also been increasing in other monitoring wells located downgradient of the PBG source area. The total DNT concentration in PBN-8910A increased from 0.233 µg/l (September 2014) to 14.524 µg/l (June 2020). PBN-8910A is located 380 feet downgradient of PBN-8202A.

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 groundwater level in PBN-8202A remained unchanged between April 2020 and June 2020. The enclosed graph compares the total DNT concentration in PBN-8202A versus the groundwater elevation from 2007 to 2020.

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 volatile organic compounds (VOC) on June 8, 2020. 2,6-DNT and total DNT were detected above the NR 140 PAL in WE-XK342.

Per the WDNR Plan Modification of the Groundwater Monitoring Program dated September 4, 2013, 54 residential wells, including WE-XK342, are scheduled to be sampled during August 2020.

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 210-466-1684 if you have any questions.

Sincerely,

Digitally signed by
LYNCH.BRYAN.PATRICK.1021561254
Date: 2020.07.22 16:02:34 -05'00'

Bryan P. Lynch
Commander's Representative

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

Table 1
September 2016 - June 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**
					6/11/20	0.051	<0.0081	<0.003	<0.004	0.13	<0.004	**0.181**
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**
					6/11/20	0.05	<0.0084	<0.0032	**0.035**	0.13	<0.0042	**0.215**

Table 1
September 2016 - June 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

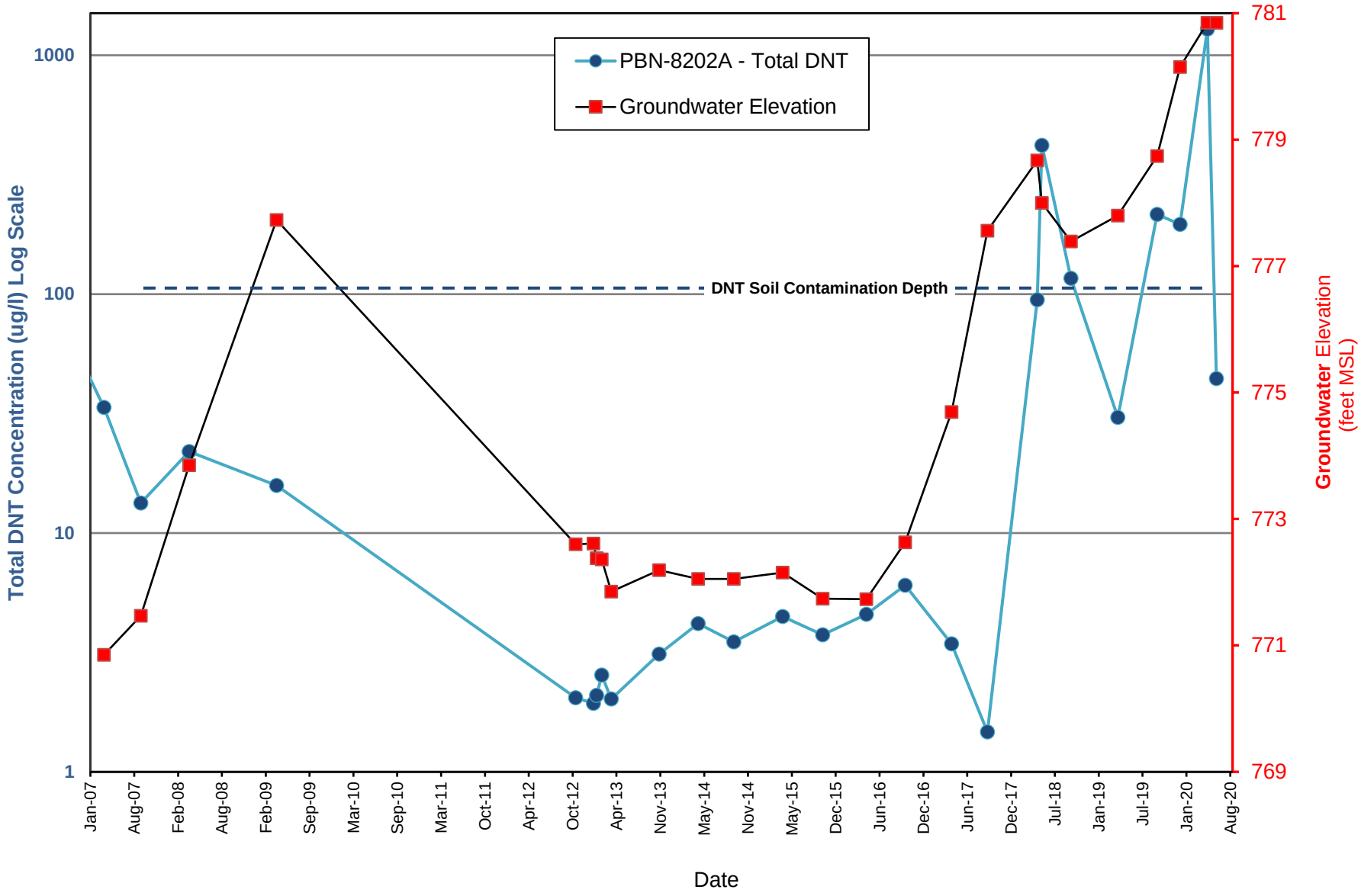
Notes:
DBG - Deterrent Burning Ground
The Sample Level references the typical well depth configuration
All results are expressed in micrograms per liter (µg/l)
DNT analysis was performed by CT Laboratories
D = Duplicate sample
J = Analytical result is between the Limit of Detection (LOD) and Limit of 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 - June 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**
					6/8/20	17	**0.35**	0.1	**17**	7.9	1.9	**44.25**
					6/8/20 (D)	18	**0.4**	0.12	**15**	8.1	2.6	**44.22**
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**
					6/8/20	8.7	**0.2**	0.075	**0.055**	1.2	1.1	**11.33**
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**



June 2020

Monitoring Well and Residential Well Groundwater Data

Central Plume

Deterrent Burning Ground 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	6/11/20

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

June 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 7/21/20

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 2813
Landfill #5
June 2020
Badger Army Ammunition Plant

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

Total Dinitrotoluene (DNT) exceeded the Enforcement Standard (ES) ELN-1003B (468) and ELN-1003C (469).

2,6-DNT exceeded the Preventive Action Limit (PAL) in ELN-1003C (469).

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

June 2020

Report Date: 7/19/2020

Parameter Name	Lic No.	Well No.	Well Name	Date	Dup	Result	Units	PAL	ES
Total Dinitrotoluenes	2813	468	ELN-1003B	6/11/2020	1	0.181	ug/l	0.005	0.05
2,6-Dinitrotoluene	2813	469	ELN-1003C	6/11/2020	1	0.035	ug/l	0.005	0.05
Total Dinitrotoluenes	2813	469	ELN-1003C	6/11/2020	1	0.215	ug/l	0.005	0.05

SpecPro Professional Services, LLC

Badger Army Ammunition Plant

June 2020 GROUNDWATER MONITORING ALL HITS REPORT

License No: 2813 Report Date: 7/19/2020

Parameter Name	Well	Well Name	Date	Dup	Result	LOD	LOQ	Units	PAL	ES
2,3-Dinitrotoluene	468	ELN-1003B	6/11/2020	1	0.051	0.0061	0.03	ug/l		
3,4-Dinitrotoluene	468	ELN-1003B	6/11/2020	1	0.13	0.004	0.04	ug/l		
Total Dinitrotoluenes	468	ELN-1003B	6/11/2020	1	0.181	0.0081	0.03	ug/l	0.005	0.05
2,3-Dinitrotoluene	469	ELN-1003C	6/11/2020	1	0.05	0.0063	0.032	ug/l		
2,6-Dinitrotoluene	469	ELN-1003C	6/11/2020	1	0.035	0.0042	0.032	ug/l	0.005	0.05
3,4-Dinitrotoluene	469	ELN-1003C	6/11/2020	1	0.13	0.0042	0.042	ug/l		
Total Dinitrotoluenes	469	ELN-1003C	6/11/2020	1	0.215	0.0084	0.032	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 - Propellant Burning Grounds	02814	157005420	6/8 - 6/11/20

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

June 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 7/21/20

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
June 2020
Badger Army Ammunition Plant

Groundwater is currently being monitored by the facility because of past production activities. This special sampling event included 13 monitoring wells located near the Propellant Burning Ground source area.

2,4-Dinitrotoluene (DNT), 2,6-DNT, and total DNT exceeded the Enforcement Standards (ES) in PBM-9902 (362), PBN-8202A (613), PBN-8202B (614), PBN-8202C (615), PBN-8910B (651), PBM-1201 (764), and PBM-1202 (765). 2,6-DNT and total DNT exceeded the ES in PBN-8910A (650) and PBM-1203 (766).

Benzene exceeded the ES in PBN-8202C (615). This is the second time benzene has exceeded the ES in PBN-8202C during 2020. PBN-8202C is located directly downgradient of the PBG source area. Benzene is not a typical groundwater contaminant found in the Propellant Burning Ground Plume.

Carbon tetrachloride exceeded the Preventive Action Limit (PAL) in PBN-8202B (614).

Trichloroethene exceeded the PAL in PBN-8202A (613), PBN-8202B (614), and PBN-8202C (615).

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

June 2020

Report Date: 7/19/2020

Parameter Name	Lic No.	Well No.	Well Name	Date	Dup	Result	Units	PAL	ES
2,4-Dinitrotoluene	2814	362	PBM-9902	6/11/2020	1	0.35	ug/l	0.005	0.05
2,4-Dinitrotoluene	2814	362	PBM-9902	6/11/2020	2	0.44	ug/l	0.005	0.05
2,6-Dinitrotoluene	2814	362	PBM-9902	6/11/2020	1	0.26	ug/l	0.005	0.05
2,6-Dinitrotoluene	2814	362	PBM-9902	6/11/2020	2	0.28	ug/l	0.005	0.05
Total Dinitrotoluenes	2814	362	PBM-9902	6/11/2020	1	7.034	ug/l	0.005	0.05
Total Dinitrotoluenes	2814	362	PBM-9902	6/11/2020	2	7.298	ug/l	0.005	0.05
2,4-Dinitrotoluene	2814	613	PBN-8202A	6/8/2020	1	0.35	ug/l	0.005	0.05
2,4-Dinitrotoluene	2814	613	PBN-8202A	6/8/2020	2	0.4	ug/l	0.005	0.05
2,6-Dinitrotoluene	2814	613	PBN-8202A	6/8/2020	1	17	ug/l	0.005	0.05
2,6-Dinitrotoluene	2814	613	PBN-8202A	6/8/2020	2	15	ug/l	0.005	0.05
Total Dinitrotoluenes	2814	613	PBN-8202A	6/8/2020	1	44.25	ug/l	0.005	0.05
Total Dinitrotoluenes	2814	613	PBN-8202A	6/8/2020	2	44.22	ug/l	0.005	0.05
Trichloroethene	2814	613	PBN-8202A	6/8/2020	1	0.57	ug/l	0.5	5
Trichloroethene	2814	613	PBN-8202A	6/8/2020	2	0.54	ug/l	0.5	5
2,4-Dinitrotoluene	2814	614	PBN-8202B	6/8/2020	1	0.2	ug/l	0.005	0.05
2,6-Dinitrotoluene	2814	614	PBN-8202B	6/8/2020	1	0.055	ug/l	0.005	0.05
Carbon tetrachloride	2814	614	PBN-8202B	6/8/2020	1	0.88	ug/l	0.5	5
Total Dinitrotoluenes	2814	614	PBN-8202B	6/8/2020	1	11.33	ug/l	0.005	0.05
Trichloroethene	2814	614	PBN-8202B	6/8/2020	1	0.99	ug/l	0.5	5
1,2-Dichloroethane	2814	615	PBN-8202C	6/8/2020	1	1.2	ug/l	0.5	5
2,4-Dinitrotoluene	2814	615	PBN-8202C	6/8/2020	1	0.47	ug/l	0.005	0.05
2,6-Dinitrotoluene	2814	615	PBN-8202C	6/8/2020	1	0.46	ug/l	0.005	0.05
Benzene	2814	615	PBN-8202C	6/8/2020	1	41	ug/l	0.5	5
Total Dinitrotoluenes	2814	615	PBN-8202C	6/8/2020	1	1.21	ug/l	0.005	0.05
Trichloroethene	2814	615	PBN-8202C	6/8/2020	1	2.5	ug/l	0.5	5
2,6-Dinitrotoluene	2814	650	PBN-8910A	6/10/2020	1	0.11	ug/l	0.005	0.05
Total Dinitrotoluenes	2814	650	PBN-8910A	6/10/2020	1	14.524	ug/l	0.005	0.05
2,4-Dinitrotoluene	2814	651	PBN-8910B	6/10/2020	1	0.083	ug/l	0.005	0.05
2,6-Dinitrotoluene	2814	651	PBN-8910B	6/10/2020	1	0.067	ug/l	0.005	0.05
Total Dinitrotoluenes	2814	651	PBN-8910B	6/10/2020	1	0.27	ug/l	0.005	0.05
2,4-Dinitrotoluene	2814	764	PBM-1201	6/11/2020	1	0.38	ug/l	0.005	0.05
2,6-Dinitrotoluene	2814	764	PBM-1201	6/11/2020	1	0.14	ug/l	0.005	0.05
Total Dinitrotoluenes	2814	764	PBM-1201	6/11/2020	1	7.07	ug/l	0.005	0.05
2,4-Dinitrotoluene	2814	765	PBM-1202	6/11/2020	1	0.29	ug/l	0.005	0.05
2,6-Dinitrotoluene	2814	765	PBM-1202	6/11/2020	1	0.1	ug/l	0.005	0.05
Total Dinitrotoluenes	2814	765	PBM-1202	6/11/2020	1	4.25	ug/l	0.005	0.05
2,6-Dinitrotoluene	2814	766	PBM-1203	6/11/2020	1	0.076	ug/l	0.005	0.05
Total Dinitrotoluenes	2814	766	PBM-1203	6/11/2020	1	0.768	ug/l	0.005	0.05

SpecPro Professional Services, LLC

Badger Army Ammunition Plant

June 2020 GROUNDWATER MONITORING ALL HITS REPORT

License No: 2814 Report Date: 7/19/2020

Parameter Name	Well	Well Name	Date	Dup	Result	LOD	LOQ	Units	PAL	ES
2,3-Dinitrotoluene	362	PBM-9902	6/11/2020	2	4.7	0.063	0.31	ug/l		
2,3-Dinitrotoluene	362	PBM-9902	6/11/2020	1	4.7	0.063	0.31	ug/l		
2,4-Dinitrotoluene	362	PBM-9902	6/11/2020	1	0.35	0.0083	0.042	ug/l	0.005	0.05
2,4-Dinitrotoluene	362	PBM-9902	6/11/2020	2	0.44	0.0083	0.042	ug/l	0.005	0.05
2,5-Dinitrotoluene	362	PBM-9902	6/11/2020	1	0.064	0.0031	0.031	ug/l		
2,5-Dinitrotoluene	362	PBM-9902	6/11/2020	2	0.068	0.0031	0.031	ug/l		
2,6-Dinitrotoluene	362	PBM-9902	6/11/2020	2	0.28	0.0042	0.031	ug/l	0.005	0.05
2,6-Dinitrotoluene	362	PBM-9902	6/11/2020	1	0.26	0.0042	0.031	ug/l	0.005	0.05
3,4-Dinitrotoluene	362	PBM-9902	6/11/2020	1	1.1	0.0042	0.042	ug/l		
3,4-Dinitrotoluene	362	PBM-9902	6/11/2020	2	1.2	0.0042	0.042	ug/l		
3,5-Dinitrotoluene	362	PBM-9902	6/11/2020	1	0.56	0.0042	0.031	ug/l		
3,5-Dinitrotoluene	362	PBM-9902	6/11/2020	2	0.61	0.0042	0.031	ug/l		
Total Dinitrotoluenes	362	PBM-9902	6/11/2020	2	7.298	0.0083	0.031	ug/l	0.005	0.05
Total Dinitrotoluenes	362	PBM-9902	6/11/2020	1	7.034	0.0083	0.031	ug/l	0.005	0.05
2,3-Dinitrotoluene	613	PBN-8202A	6/8/2020	2	18	0.059	0.29	ug/l		
2,3-Dinitrotoluene	613	PBN-8202A	6/8/2020	1	17	0.059	0.29	ug/l		
2,4-Dinitrotoluene	613	PBN-8202A	6/8/2020	2	0.4	0.0078	0.039	ug/l	0.005	0.05
2,4-Dinitrotoluene	613	PBN-8202A	6/8/2020	1	0.35	0.0078	0.039	ug/l	0.005	0.05
2,5-Dinitrotoluene	613	PBN-8202A	6/8/2020	2	0.12	0.0029	0.029	ug/l		
2,5-Dinitrotoluene	613	PBN-8202A	6/8/2020	1	0.1	0.0029	0.029	ug/l		
2,6-Dinitrotoluene	613	PBN-8202A	6/8/2020	1	17	0.039	0.29	ug/l	0.005	0.05
2,6-Dinitrotoluene	613	PBN-8202A	6/8/2020	2	15	0.039	0.29	ug/l	0.005	0.05
3,4-Dinitrotoluene	613	PBN-8202A	6/8/2020	1	7.9	0.039	0.39	ug/l		
3,4-Dinitrotoluene	613	PBN-8202A	6/8/2020	2	8.1	0.039	0.39	ug/l		
3,5-Dinitrotoluene	613	PBN-8202A	6/8/2020	1	1.9	0.0039	0.029	ug/l		
3,5-Dinitrotoluene	613	PBN-8202A	6/8/2020	2	2.6	0.039	0.29	ug/l		
Carbon tetrachloride	613	PBN-8202A	6/8/2020	1	0.27	0.1	0.2	ug/l	0.5	5
Carbon tetrachloride	613	PBN-8202A	6/8/2020	2	0.27	0.1	0.2	ug/l	0.5	5
Total Dinitrotoluenes	613	PBN-8202A	6/8/2020	1	44.25	0.0078	0.029	ug/l	0.005	0.05
Total Dinitrotoluenes	613	PBN-8202A	6/8/2020	2	44.22	0.0078	0.029	ug/l	0.005	0.05
Trichloroethene	613	PBN-8202A	6/8/2020	1	0.57	0.1	0.2	ug/l	0.5	5
Trichloroethene	613	PBN-8202A	6/8/2020	2	0.54	0.1	0.2	ug/l	0.5	5
2,3-Dinitrotoluene	614	PBN-8202B	6/8/2020	1	8.7	0.059	0.29	ug/l		
2,4-Dinitrotoluene	614	PBN-8202B	6/8/2020	1	0.2	0.0078	0.039	ug/l	0.005	0.05
2,5-Dinitrotoluene	614	PBN-8202B	6/8/2020	1	0.075	0.0029	0.029	ug/l		
2,6-Dinitrotoluene	614	PBN-8202B	6/8/2020	1	0.055	0.0039	0.029	ug/l	0.005	0.05
3,4-Dinitrotoluene	614	PBN-8202B	6/8/2020	1	1.2	0.0039	0.039	ug/l		
3,5-Dinitrotoluene	614	PBN-8202B	6/8/2020	1	1.1	0.0039	0.029	ug/l		
Carbon tetrachloride	614	PBN-8202B	6/8/2020	1	0.88	0.1	0.2	ug/l	0.5	5
Total Dinitrotoluenes	614	PBN-8202B	6/8/2020	1	11.33	0.0078	0.029	ug/l	0.005	0.05
Trichloroethene	614	PBN-8202B	6/8/2020	1	0.99	0.1	0.2	ug/l	0.5	5
1,2-Dichloroethane	615	PBN-8202C	6/8/2020	1	1.2	0.1	0.2	ug/l	0.5	5
2,4-Dinitrotoluene	615	PBN-8202C	6/8/2020	1	0.47	0.0078	0.039	ug/l	0.005	0.05
2,5-Dinitrotoluene	615	PBN-8202C	6/8/2020	1	0.06	0.0029	0.029	ug/l		
2,6-Dinitrotoluene	615	PBN-8202C	6/8/2020	1	0.46	0.0039	0.029	ug/l	0.005	0.05
3,4-Dinitrotoluene	615	PBN-8202C	6/8/2020	1	0.11	0.0039	0.039	ug/l		
3,5-Dinitrotoluene	615	PBN-8202C	6/8/2020	1	0.11	0.0039	0.029	ug/l		
Benzene	615	PBN-8202C	6/8/2020	1	41	0.5	1	ug/l	0.5	5

Parameter Name	Well	Well Name	Date	Dup	Result	LOD	LOQ	Units	PAL	ES
Naphthalene	615	PBN-8202C	6/8/2020	1	0.23	0.1	0.2	ug/l	10	100
o-Xylene	615	PBN-8202C	6/8/2020	1	0.18	0.1	0.2	ug/l	400	2000
Tetrachloroethene	615	PBN-8202C	6/8/2020	1	0.16	0.1	0.2	ug/l	0.5	5
Total Dinitrotoluenes	615	PBN-8202C	6/8/2020	1	1.21	0.0078	0.029	ug/l	0.005	0.05
Trichloroethene	615	PBN-8202C	6/8/2020	1	2.5	0.1	0.2	ug/l	0.5	5
2,3-Dinitrotoluene	650	PBN-8910A	6/10/2020	1	13	0.063	0.31	ug/l		
2,5-Dinitrotoluene	650	PBN-8910A	6/10/2020	1	0.084	0.0031	0.031	ug/l		
2,6-Dinitrotoluene	650	PBN-8910A	6/10/2020	1	0.11	0.0042	0.031	ug/l	0.005	0.05
3,4-Dinitrotoluene	650	PBN-8910A	6/10/2020	1	0.23	0.0042	0.042	ug/l		
3,5-Dinitrotoluene	650	PBN-8910A	6/10/2020	1	1.1	0.0042	0.031	ug/l		
Total Dinitrotoluenes	650	PBN-8910A	6/10/2020	1	14.524	0.0083	0.031	ug/l	0.005	0.05
2,3-Dinitrotoluene	651	PBN-8910B	6/10/2020	1	0.12	0.0062	0.031	ug/l		
2,4-Dinitrotoluene	651	PBN-8910B	6/10/2020	1	0.083	0.0082	0.041	ug/l	0.005	0.05
2,6-Dinitrotoluene	651	PBN-8910B	6/10/2020	1	0.067	0.0041	0.031	ug/l	0.005	0.05
Total Dinitrotoluenes	651	PBN-8910B	6/10/2020	1	0.27	0.0082	0.031	ug/l	0.005	0.05
2,3-Dinitrotoluene	764	PBM-1201	6/11/2020	1	4.5	0.062	0.31	ug/l		
2,4-Dinitrotoluene	764	PBM-1201	6/11/2020	1	0.38	0.0082	0.041	ug/l	0.005	0.05
2,5-Dinitrotoluene	764	PBM-1201	6/11/2020	1	0.17	0.0031	0.031	ug/l		
2,6-Dinitrotoluene	764	PBM-1201	6/11/2020	1	0.14	0.0041	0.031	ug/l	0.005	0.05
3,4-Dinitrotoluene	764	PBM-1201	6/11/2020	1	1.3	0.0041	0.041	ug/l		
3,5-Dinitrotoluene	764	PBM-1201	6/11/2020	1	0.58	0.0041	0.031	ug/l		
Total Dinitrotoluenes	764	PBM-1201	6/11/2020	1	7.07	0.0082	0.031	ug/l	0.005	0.05
2,3-Dinitrotoluene	765	PBM-1202	6/11/2020	1	2.4	0.012	0.062	ug/l		
2,4-Dinitrotoluene	765	PBM-1202	6/11/2020	1	0.29	0.0082	0.041	ug/l	0.005	0.05
2,5-Dinitrotoluene	765	PBM-1202	6/11/2020	1	0.14	0.0031	0.031	ug/l		
2,6-Dinitrotoluene	765	PBM-1202	6/11/2020	1	0.1	0.0041	0.031	ug/l	0.005	0.05
3,4-Dinitrotoluene	765	PBM-1202	6/11/2020	1	0.96	0.0041	0.041	ug/l		
3,5-Dinitrotoluene	765	PBM-1202	6/11/2020	1	0.36	0.0041	0.031	ug/l		
Total Dinitrotoluenes	765	PBM-1202	6/11/2020	1	4.25	0.0082	0.031	ug/l	0.005	0.05
2,3-Dinitrotoluene	766	PBM-1203	6/11/2020	1	0.45	0.0061	0.031	ug/l		
2,6-Dinitrotoluene	766	PBM-1203	6/11/2020	1	0.076	0.0041	0.031	ug/l	0.005	0.05
3,4-Dinitrotoluene	766	PBM-1203	6/11/2020	1	0.15	0.0041	0.041	ug/l		
3,5-Dinitrotoluene	766	PBM-1203	6/11/2020	1	0.092	0.0041	0.031	ug/l		
Total Dinitrotoluenes	766	PBM-1203	6/11/2020	1	0.768	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)

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  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	6/9/20

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

June 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
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Notification attached?

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- [ ] 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.
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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 7/21/20

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

Groundwater is currently being monitored by the facility because of past production activities. One monitoring well was sampled to assist with determining the degree and lateral extent of dinitrotoluene (DNT) in the Central Plume.

No compounds were detected in S1111 (751).

Dinitrotoluene (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.

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 - Demolition Landfill	03118	157071420	6/10/20

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

June 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 7/21/20

Signature Date

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Case Narrative
Groundwater Monitoring
License Number 3118
Off-Site Plume Wells
June 2020
Badger Army Ammunition Plant

Groundwater is currently being monitored by the facility because of past production activities. Three monitoring wells were sampled to assist with determining the degree and lateral extent of dinitrotoluene (DNT) in the Central Plume.

2,6-DNT and total DNT exceeded the Preventive Action Limit (PAL) in NLN-8203B (259) and NLN-8203C (260).

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

June 2020

Report Date: 7/19/2020

Parameter Name	Lic No.	Well No.	Well Name	Date	Dup	Result	Units	PAL	ES
2,6-Dinitrotoluene	3118	259	NLN-8203B	6/10/2020	1	0.034	ug/l	0.005	0.05
Total Dinitrotoluenes	3118	259	NLN-8203B	6/10/2020	1	0.034	ug/l	0.005	0.05
2,6-Dinitrotoluene	3118	260	NLN-8203C	6/10/2020	1	0.032	ug/l	0.005	0.05
Total Dinitrotoluenes	3118	260	NLN-8203C	6/10/2020	1	0.032	ug/l	0.005	0.05

SpecPro Professional Services, LLC

Badger Army Ammunition Plant

June 2020 GROUNDWATER MONITORING ALL HITS REPORT

License No: 3118 Report Date: 7/19/2020

Parameter Name	Well	Well Name	Date	Dup	Result	LOD	LOQ	Units	PAL	ES
2,6-Dinitrotoluene	259	NLN-8203B	6/10/2020	1	0.034	0.0041	0.031	ug/l	0.005	0.05
Total Dinitrotoluenes	259	NLN-8203B	6/10/2020	1	0.034	0.0082	0.031	ug/l	0.005	0.05
2,6-Dinitrotoluene	260	NLN-8203C	6/10/2020	1	0.032	0.0042	0.031	ug/l	0.005	0.05
Total Dinitrotoluenes	260	NLN-8203C	6/10/2020	1	0.032	0.0083	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)

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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	6/9 - 6/10/20

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

June 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 — 7/21/20

Signature — Date

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

Groundwater is currently being monitored by the facility because of past production activities. Nineteen monitoring wells were sampled to assist with determining the degree and lateral extent of dinitrotoluene (DNT) in the Central Plume.

2,6-DNT and total DNT exceeded the Enforcement Standard (ES) RIN-1002C (493).

2,6-DNT and total DNT exceeded the Preventive Action Limit (PAL) in RIN-1005C (497) and RIN-1004B (498).

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

June 2020

Report Date: 7/19/2020

Parameter Name	Lic No.	Well No.	Well Name	Date	Dup	Result	Units	PAL	ES
2,6-Dinitrotoluene	3487	493	RIN-1002C	6/9/2020	1	0.058	ug/l	0.005	0.05
Total Dinitrotoluenes	3487	493	RIN-1002C	6/9/2020	1	0.058	ug/l	0.005	0.05
2,6-Dinitrotoluene	3487	497	RIN-1005C	6/9/2020	1	0.041	ug/l	0.005	0.05
Total Dinitrotoluenes	3487	497	RIN-1005C	6/9/2020	1	0.041	ug/l	0.005	0.05
2,6-Dinitrotoluene	3487	498	RIN-1004B	6/9/2020	1	0.046	ug/l	0.005	0.05
2,6-Dinitrotoluene	3487	498	RIN-1004B	6/9/2020	2	0.049	ug/l	0.005	0.05
Total Dinitrotoluenes	3487	498	RIN-1004B	6/9/2020	1	0.046	ug/l	0.005	0.05
Total Dinitrotoluenes	3487	498	RIN-1004B	6/9/2020	2	0.049	ug/l	0.005	0.05

SpecPro Professional Services, LLC

Badger Army Ammunition Plant

June 2020 GROUNDWATER MONITORING ALL HITS REPORT

License No: 3487 Report Date: 7/19/2020

Parameter Name	Well	Well Name	Date	Dup	Result	LOD	LOQ	Units	PAL	ES
2,6-Dinitrotoluene	493	RIN-1002C	6/9/2020	1	0.058	0.0043	0.032	ug/l	0.005	0.05
Total Dinitrotoluenes	493	RIN-1002C	6/9/2020	1	0.058	0.0086	0.032	ug/l	0.005	0.05
2,6-Dinitrotoluene	497	RIN-1005C	6/9/2020	1	0.041	0.0039	0.029	ug/l	0.005	0.05
Total Dinitrotoluenes	497	RIN-1005C	6/9/2020	1	0.041	0.0078	0.029	ug/l	0.005	0.05
2,6-Dinitrotoluene	498	RIN-1004B	6/9/2020	2	0.049	0.004	0.03	ug/l	0.005	0.05
2,6-Dinitrotoluene	498	RIN-1004B	6/9/2020	1	0.046	0.0039	0.029	ug/l	0.005	0.05
Total Dinitrotoluenes	498	RIN-1004B	6/9/2020	2	0.049	0.0079	0.03	ug/l	0.005	0.05
Total Dinitrotoluenes	498	RIN-1004B	6/9/2020	1	0.046	0.0078	0.029	ug/l	0.005	0.05

State of Wisconsin
Department of Natural Resources

Environmental Monitoring Data Certification

Form 4400-231(R 1/04)

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Instructions:

- **Prepare one form for each license or monitoring ID.**
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- Attach a notification of any gas values that attain or exceed explosive gas levels.
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  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	6/8/20

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

June 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?

- [ ] 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 7/21/20

Signature Date

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

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

Groundwater is currently being monitored by the facility because of past production activities. One residential well located in the Central Plume was sampled during this round.

2,6-Dinitrotoluene (DNT) and total DNT exceeded the Preventive Action Limit (PAL) 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.

SpecPro Professional Services, LLC

Badger Army Ammunition Plant

GROUNDWATER MONITORING EXCEEDANCE REPORT

June 2020

Report Date: 7/19/2020

Parameter Name	Lic No.	Well No.	Well Name	Date	Dup	Result	Units	PAL	ES
2,6-Dinitrotoluene	3497	435	WE-XK342	6/8/2020	1	0.032	ug/l	0.005	0.05
Total Dinitrotoluenes	3497	435	WE-XK342	6/8/2020	1	0.032	ug/l	0.005	0.05

SpecPro Professional Services, LLC

Badger Army Ammunition Plant

June 2020 GROUNDWATER MONITORING ALL HITS REPORT

License No: 3497 Report Date: 7/19/2020

Parameter Name	Well	Well Name	Date	Dup	Result	LOD	LOQ	Units	PAL	ES
2,6-Dinitrotoluene	435	WE-XK342	6/8/2020	1	0.032	0.0039	0.029	ug/l	0.005	0.05
Chloroform	435	WE-XK342	6/8/2020	1	0.18	0.1	0.2	ug/l	0.6	6
Total Dinitrotoluenes	435	WE-XK342	6/8/2020	1	0.032	0.0078	0.029	ug/l	0.005	0.05

State of Wisconsin
Department of Natural Resources

Environmental Monitoring Data Certification

Form 4400-231(R 1/04)

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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 - Demolition Landfill Expansion	03646	157053930	6/10/20

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

June 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 7/21/20

Signature Date

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

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

Case Narrative
Groundwater Monitoring
License Number 3646
Settling Ponds
June 2020
Badger Army Ammunition Plant

Groundwater is currently being monitored by the facility because of past production activities. Two monitoring wells were sampled to assist with determining the degree and lateral extent of dinitrotoluene (DNT) in the Central Plume.

2,4-DNT, 2,6-DNT, and total DNT exceeded the Enforcement Standard (ES) in NLN-1001C (332). Total DNT exceeded the ES in NLN-1001A (331).

2,6-DNT exceeded the Preventive Action Limit (PAL) in NLN-1001A (331).

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

June 2020

Report Date: 7/19/2020

Parameter Name	Lic No.	Well No.	Well Name	Date	Dup	Result	Units	PAL	ES
2,6-Dinitrotoluene	3646	331	NLN-1001A	6/10/2020	1	0.037	ug/l	0.005	0.05
2,6-Dinitrotoluene	3646	331	NLN-1001A	6/10/2020	2	0.044	ug/l	0.005	0.05
Total Dinitrotoluenes	3646	331	NLN-1001A	6/10/2020	1	0.178	ug/l	0.005	0.05
Total Dinitrotoluenes	3646	331	NLN-1001A	6/10/2020	2	0.197	ug/l	0.005	0.05
2,4-Dinitrotoluene	3646	332	NLN-1001C	6/10/2020	1	0.073	ug/l	0.005	0.05
2,6-Dinitrotoluene	3646	332	NLN-1001C	6/10/2020	1	0.064	ug/l	0.005	0.05
Total Dinitrotoluenes	3646	332	NLN-1001C	6/10/2020	1	0.336	ug/l	0.005	0.05

SpecPro Professional Services, LLC

Badger Army Ammunition Plant

June 2020 GROUNDWATER MONITORING ALL HITS REPORT

License No: 3646 Report Date: 7/19/2020

Parameter Name	Well	Well Name	Date	Dup	Result	LOD	LOQ	Units	PAL	ES
2,3-Dinitrotoluene	331	NLN-1001A	6/10/2020	2	0.056	0.0061	0.03	ug/l		
2,3-Dinitrotoluene	331	NLN-1001A	6/10/2020	1	0.052	0.006	0.03	ug/l		
2,6-Dinitrotoluene	331	NLN-1001A	6/10/2020	1	0.037	0.004	0.03	ug/l	0.005	0.05
2,6-Dinitrotoluene	331	NLN-1001A	6/10/2020	2	0.044	0.004	0.03	ug/l	0.005	0.05
3,4-Dinitrotoluene	331	NLN-1001A	6/10/2020	1	0.089	0.004	0.04	ug/l		
3,4-Dinitrotoluene	331	NLN-1001A	6/10/2020	2	0.097	0.004	0.04	ug/l		
Total Dinitrotoluenes	331	NLN-1001A	6/10/2020	1	0.178	0.008	0.03	ug/l	0.005	0.05
Total Dinitrotoluenes	331	NLN-1001A	6/10/2020	2	0.197	0.0081	0.03	ug/l	0.005	0.05
2,3-Dinitrotoluene	332	NLN-1001C	6/10/2020	1	0.069	0.0063	0.031	ug/l		
2,4-Dinitrotoluene	332	NLN-1001C	6/10/2020	1	0.073	0.0083	0.042	ug/l	0.005	0.05
2,6-Dinitrotoluene	332	NLN-1001C	6/10/2020	1	0.064	0.0042	0.031	ug/l	0.005	0.05
3,4-Dinitrotoluene	332	NLN-1001C	6/10/2020	1	0.13	0.0042	0.042	ug/l		
Total Dinitrotoluenes	332	NLN-1001C	6/10/2020	1	0.336	0.0083	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 - Southeast Area	04330	157005530	6/8/20

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

June 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 7/21/20

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 4330
Southeast Area
June 2020
Badger Army Ammunition Plant

Groundwater is currently being monitored by the facility because of past production activities. Eight monitoring wells were sampled to assist with determining the degree and lateral extent of dinitrotoluene (DNT) in the Central Plume.

2,6-DNT and total DNT exceeded the Preventive Action Limit (PAL) in SEN-0503B (586).

Chloroform exceeded the PAL in SEN-0501D (582), SEN-0502D (584), and SEN-0503D (587).

Volatile organic compounds (VOCs) analysis was performed by CT Laboratories (CT Lab) using method SW 846 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.

SpecPro Professional Services, LLC

Badger Army Ammunition Plant

GROUNDWATER MONITORING EXCEEDANCE REPORT

June 2020

Report Date: 7/19/2020

Parameter Name	Lic No.	Well No.	Well Name	Date	Dup	Result	Units	PAL	ES
Chloroform	4330	582	SEN-0501D	6/8/2020	1	0.92	ug/l	0.6	6
Chloroform	4330	584	SEN-0502D	6/8/2020	1	1.3	ug/l	0.6	6
2,6-Dinitrotoluene	4330	586	SEN-0503B	6/8/2020	1	0.039	ug/l	0.005	0.05
Total Dinitrotoluenes	4330	586	SEN-0503B	6/8/2020	1	0.039	ug/l	0.005	0.05
Chloroform	4330	587	SEN-0503D	6/8/2020	1	1.5	ug/l	0.6	6

SpecPro Professional Services, LLC

Badger Army Ammunition Plant

June 2020 GROUNDWATER MONITORING ALL HITS REPORT

License No: 4330 Report Date: 7/19/2020

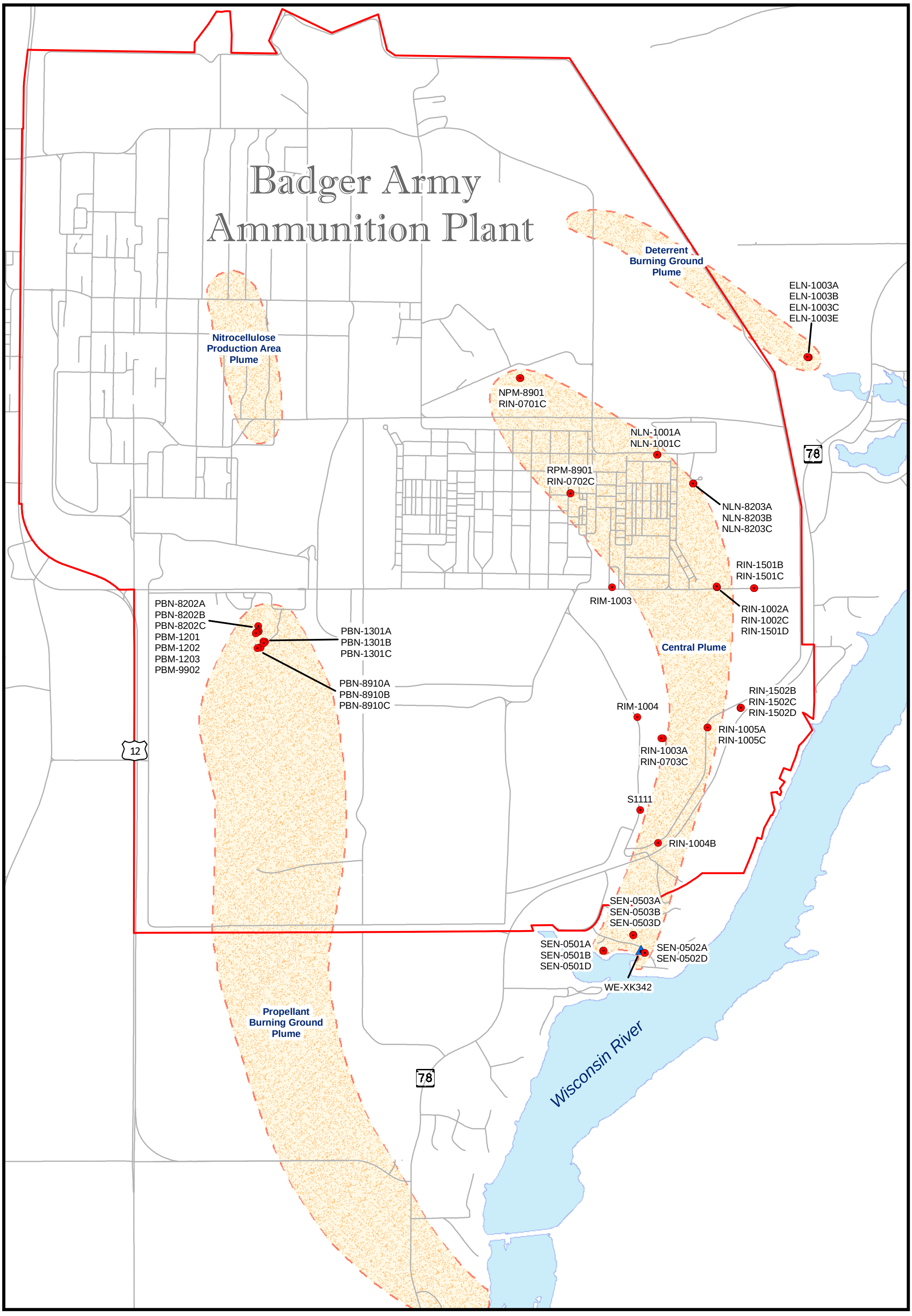
Parameter Name	Well	Well Name	Date	Dup	Result	LOD	LOQ	Units	PAL	ES
Chloroform	580	SEN-0501A	6/8/2020	1	0.17	0.1	0.2	ug/l	0.6	6
Chloroform	581	SEN-0501B	6/8/2020	1	0.17	0.1	0.2	ug/l	0.6	6
Chloroform	582	SEN-0501D	6/8/2020	1	0.92	0.1	0.2	ug/l	0.6	6
Chloroform	584	SEN-0502D	6/8/2020	1	1.3	0.1	0.2	ug/l	0.6	6
2,6-Dinitrotoluene	586	SEN-0503B	6/8/2020	1	0.039	0.0039	0.029	ug/l	0.005	0.05
Chloroform	586	SEN-0503B	6/8/2020	1	0.23	0.1	0.2	ug/l	0.6	6
Total Dinitrotoluenes	586	SEN-0503B	6/8/2020	1	0.039	0.0078	0.029	ug/l	0.005	0.05
Chloroform	587	SEN-0503D	6/8/2020	1	1.5	0.1	0.2	ug/l	0.6	6

June 2020
Badger Army Ammunition Plant
Sampled Wells List

License Area	Well ID	Reporting Name	Date	Plume
2813	467	ELN-1003A	6/11/20	Deterrent Burning Ground
2813	468	ELN-1003B	6/11/20	Deterrent Burning Ground
2813	469	ELN-1003C	6/11/20	Deterrent Burning Ground
2813	470	ELN-1003E	6/11/20	Deterrent Burning Ground
2814	362	PBM-9902	6/11/20	Propellant Burning Ground
2814	613	PBN-8202A	6/8/20	Propellant Burning Ground
2814	614	PBN-8202B	6/8/20	Propellant Burning Ground
2814	615	PBN-8202C	6/8/20	Propellant Burning Ground
2814	650	PBN-8910A	6/10/20	Propellant Burning Ground
2814	651	PBN-8910B	6/10/20	Propellant Burning Ground
2814	652	PBN-8910C	6/10/20	Propellant Burning Ground
2814	764	PBM-1201	6/11/20	Propellant Burning Ground
2814	765	PBM-1202	6/11/20	Propellant Burning Ground
2814	766	PBM-1203	6/11/20	Propellant Burning Ground
2814	767	PBN-1301A	6/11/20	Propellant Burning Ground
2814	768	PBN-1301B	6/11/20	Propellant Burning Ground
2814	769	PBN-1301C	6/11/20	Propellant Burning Ground
3038	751	S1111	6/9/20	Central
3118	258	NLN-8203A	6/10/20	Central
3118	259	NLN-8203B	6/10/20	Central
3118	260	NLN-8203C	6/10/20	Central
3487	443	RIN-0701C	6/10/20	Central
3487	444	RIN-0702C	6/10/20	Central
3487	445	RIN-0703C	6/9/20	Central
3487	491	RIM-1003	6/9/20	Central
3487	492	RIN-1002A	6/9/20	Central
3487	493	RIN-1002C	6/9/20	Central
3487	494	RIM-1004	6/9/20	Central
3487	495	RIN-1003A	6/9/20	Central
3487	496	RIN-1005A	6/9/20	Central
3487	497	RIN-1005C	6/9/20	Central
3487	498	RIN-1004B	6/9/20	Central
3487	506	NPM-8901	6/10/20	Central
3487	507	RPM-8901	6/10/20	Central
3487	538	RIN-1501B	6/9/20	Central
3487	539	RIN-1501C	6/9/20	Central
3487	540	RIN-1501D	6/9/20	Central
3487	541	RIN-1502B	6/9/20	Central
3487	542	RIN-1502C	6/9/20	Central
3487	543	RIN-1502D	6/9/20	Central
3497	435	WE-XK342	6/8/20	Central
3646	331	NLN-1001A	6/10/20	Central
3646	332	NLN-1001C	6/10/20	Central
4330	580	SEN-0501A	6/8/20	Central
4330	581	SEN-0501B	6/8/20	Central
4330	582	SEN-0501D	6/8/20	Central
4330	583	SEN-0502A	6/8/20	Central
4330	584	SEN-0502D	6/8/20	Central
4330	585	SEN-0503A	6/8/20	Central

June 2020
Badger Army Ammunition Plant
Sampled Wells List

License Area	Well ID	Reporting Name	Date	Plume
4330	586	SEN-0503B	6/8/20	Central
4330	587	SEN-0503D	6/8/20	Central



Sampled Monitoring Well

Sampled Residential Well

Groundwater Plume
(Based on 2019 & 2020 data)

June 2020 Sampled Wells
Badger Army Ammunition Plant

0 2,300 4,600 9,200 Feet

Plot Date: 7/21/20

Residential Groundwater Test Results - June 2020 Sampling Event

June '20 Round	Level of Detection	Level of Quantitation
2,3-DNT	0.0059	0.029
2,4-DNT	0.0078	0.039
2,5-DNT	0.0029	0.029
2,6-DNT	0.0039	0.029
3,4-DNT	0.0039	0.039
3,5-DNT	0.0078	0.029

*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**	**6/8/2020**	**0.18**	0.032	ND	ND	ND	ND	ND	0.032

(D) = Duplicate

CT Lab = CT Laboratories, LLC