



DEPARTMENT OF THE ARMY
BADGER ARMY AMMUNITION PLANT
S7273 BLUFF ROAD
MERRIMAC, WISCONSIN 53561

October 4, 2017

SUBJECT: Submittal of August 2017 Annual Residential Well Testing Results
Badger Army Ammunition Plant

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

Dear Mr. Lowery:

Enclosed is the Badger Army Ammunition Plant (BAAP) August 2017 Annual Residential Well Testing Results from 52 residential wells. The enclosed compact disc contains copies of the signed Environmental Monitoring Data Certification Form, a list of wells sampled, a map showing the well locations, residential well lab results summary spreadsheet, residential well lab results, and updated residential well owners' addresses. Per previous discussions, the Army understands that the WDNR will be mailing the results to each well owner.

SpecPro Professional Services, LLC (SPS) collected groundwater samples from 52 residential wells on August 23, 24, 28, and 29, 2017. The Raschein (424) well could not be sampled because their well pump was not working.

This annual sampling of residential wells followed the WDNR Plan Modification of the Groundwater Monitoring Program dated September 4, 2013. In accordance with the plan modification and subsequent WDNR revisions, WE-UK124 (432) will be sampled again during November 2017 and Purcell-D (163) will be sampled again during April 2018.

The analytical results for the enclosed residential wells showed no NR 140 Enforcement Standard (ES) exceedances. Dinitrotoluene (DNT) was detected above the Preventive Action Limit (PAL) but below the ES in three residential wells. Trichloroethene (TCE) was detected above the PAL but below the ES in three residential wells. Chloroform was detected above the PAL but below the ES in three residential wells.

Per the Army's letter dated July 31, 2017, all 16 residential wells located in the Water's Edge Subdivision and monitoring well SEN-0503B were sampled for volatile organic compounds (VOCs) during August 2017. Only chloroform was detected in SEN-0503B during August 2017. Chloroform was detected in 15 of the 16 residential wells located in the Water's Edge Subdivision. Toluene was detected in one residential well located in the Water's Edge Subdivision with a concentration of only 0.12 micrograms per liter. Based on the August 2017 sampling results, there appears to be no threat of petroleum compounds in the Water's Edge Subdivision. SEN-0503B will be sampled again for VOCs during November 2017 along with the other seven monitoring wells in the Water's Edge Subdivision.

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). SPS conducted an internal quality control review of the groundwater data and did not find any data quality issues.

Please do not hesitate to contact me at 608-434-5374 if you have any questions.

Sincerely,

Robert M. Sitton
Commander's Representative

Enclosure

Copy furn: Roger Walton, Contracting Officer's Representative

Residential Groundwater Test Results - August 2017 Sampling Event

						All results are expressed as µg/l (micrograms per liter)																		
						Benzene	Toluene	Dichlorodifluoromethane	Trichlorofluoromethane	Chloroform	Carbon Tetrachloride	Trichloroethene	Ethyl Ether	1,1,1-Trichloroethane	1,1,2-Trichloroethane	2,6-Dinitrotoluene	2,4-Dinitrotoluene	2,3-Dinitrotoluene	3,4-Dinitrotoluene	2,5-Dinitrotoluene	3,5-Dinitrotoluene	Dinitrotoluene, Total		
Last Name	Well No.	Well Name	Shared With	Analyzed By	Sample Date																			
Anderson	411	Anderson-R		CT Lab	8/23/2017	ND	ND	ND	ND	ND	ND	0.23	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Apel	998	Apel		CT Lab	8/23/2017	ND	ND	ND	ND	0.17	0.12	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Brey	817	Brey		CT Lab	8/28/2017	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Curto	412	Curto	Nimmow	CT Lab	8/28/2017	ND	ND	0.13	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Delaney	152	Delaney		CT Lab	8/23/2017	ND	ND	ND	ND	ND	ND	ND	0.17	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Gibbs	839	Gibbs		CT Lab	8/28/2017	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Grosse	415	Grosse		CT Lab	8/28/2017	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Groth	842	Groth		CT Lab	8/28/2017	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Gruber	417	Gruber-D		CT Lab	8/23/2017	ND	ND	ND	ND	ND	ND	1.9	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Hendershot	418	Hendershot		CT Lab	8/28/2017	ND	ND	ND	ND	ND	ND	0.71	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
				CT Lab (D)	8/28/2017	ND	ND	ND	ND	ND	ND	0.82	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Howery	419	Howery		CT Lab	8/23/2017	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Judd	862	Judd		CT Lab	8/23/2017	ND	ND	ND	ND	0.2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Kopras	874	Kopras	Miller	CT Lab	8/23/2017	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Krumenauer	875	Krumenauer		CT Lab	8/23/2017	ND	ND	ND	ND	0.19	0.11	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Lukens	860	Lukens		CT Lab	8/28/2017	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Melum	423	Melum		CT Lab	8/23/2017	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Mittenzwei	800	Mittenzwei		CT Lab	8/23/2017	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Nowotarski	891	Nowotarski		CT Lab	8/28/2017	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Olah	904	Olah		CT Lab	8/29/2017	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
				CT Lab (D)	8/29/2017	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Osterland	422	Osterland		CT Lab	8/28/2017	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Prairie du Sac Utilities	911	PDS-3		CT Lab	8/24/2017	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Purcell	163	Purcell-D		CT Lab	8/23/2017	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
				CT Lab (D)	8/23/2017	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Purcell	916	Purcell-G		CT Lab	8/23/2017	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Ramaker	917	Ramaker		CT Lab	8/23/2017	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Raschein	424	Raschein				Pump not running; well not sampled																		
Reif	427	Reif		CT Lab	8/28/2017	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Revers	425	Revers		CT Lab	8/28/2017	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Roll	426	Roll		CT Lab	8/28/2017	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Schlender	931	Schlender	Koenig, Ballweg	CT Lab	8/23/2017	ND	ND	ND	ND	0.48	0.27	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Schumann	428	Schumann		CT Lab	8/28/2017	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Spear	803	Spear		CT Lab	8/23/2017	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.17	ND	ND	ND	ND	ND	ND	ND	ND	
Water's Edge Group	158	WE-QN039	Hilgemann, Layton	CT Lab	8/24/2017	ND	ND	ND	ND	0.29	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Water's Edge Group	157	WE-QR441	Hemberger, Pattarozzi, Heath	CT Lab	8/24/2017	ND	ND	ND	ND	0.34	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Water's Edge Group	159	WE-RD430	Ford, Madden, Bastien/Eddy	CT Lab	8/24/2017	ND	ND	ND	ND	0.14	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Water's Edge Group	153	WE-RM383	Good, Rossing	CT Lab	8/24/2017	ND	ND	ND	ND	0.2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Water's Edge Group	164	WE-SQ017	Thompson	CT Lab	8/24/2017	ND	ND	ND	ND	1.7	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Water's Edge Group	165	WE-SQ001	Rosenau, Schwarz	CT Lab	8/24/2017	ND	ND	ND	ND	1.2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Water's Edge Group	156	WE-RR542	Cairnes, Sherpe	CT Lab	8/24/2017	ND	ND	ND	ND	0.21	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Water's Edge Group	169	WE-RR598	Hall, Chow, Hartmann, Wenger	CT Lab	8/24/2017	ND	ND	ND	ND	0.38	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Water's Edge Group	170	WE-SQ002	Neumaier, Ramaker	CT Lab	8/24/2017	ND	ND	ND	ND	0.33	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Water's Edge Group	174	WE-TF023	Hilgemann	CT Lab	8/24/2017	ND	ND	ND	ND	0.68	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	

August '17 Round	Level of Detection	Level of Quantitation
2,3-DNT	0.006	0.03
2,4-DNT	0.008	0.03
2,5-DNT	0.003	0.03
2,6-DNT	0.004	0.03
3,4-DNT	0.004	0.03
3,5-DNT	0.004	0.03

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

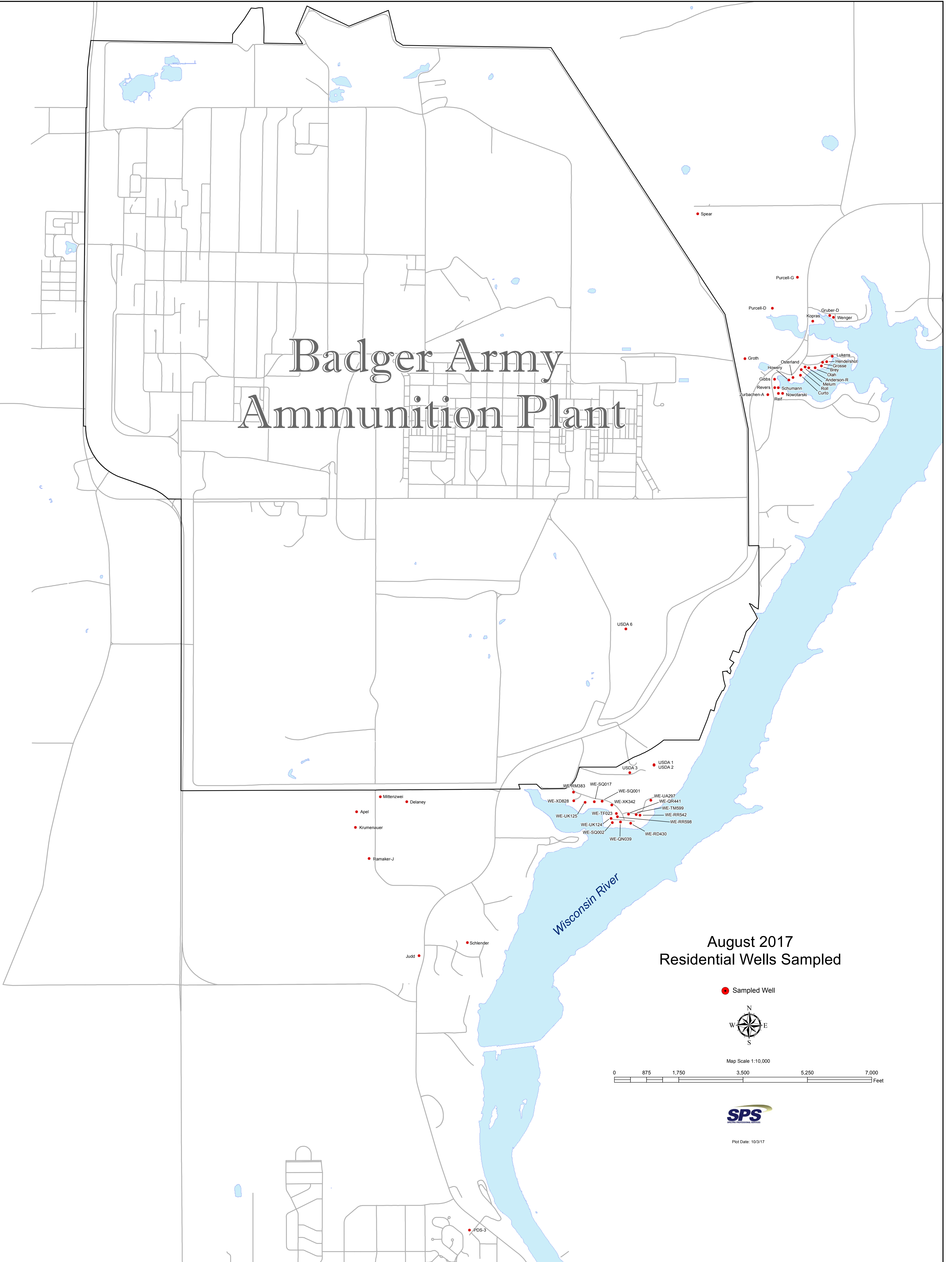
- = Under PAL and ES
- = Over Preventive Action Limit (PAL)
- = Over Enforcement Standard (ES)
- = No PAL or ES established
- = Not Tested
- ND = Compound was not detected

Residential Groundwater Test Results - August 2017 Sampling Event

						All results are expressed as µg/l (micrograms per liter)																																														
<table border="1"> <tr> <td>August '17 Round</td> <td>Level of Detection</td> <td>Level of Quantitation</td> </tr> <tr> <td>2,3-DNT</td> <td>0.006</td> <td>0.03</td> </tr> <tr> <td>2,4-DNT</td> <td>0.008</td> <td>0.03</td> </tr> <tr> <td>2,5-DNT</td> <td>0.003</td> <td>0.03</td> </tr> <tr> <td>2,6-DNT</td> <td>0.004</td> <td>0.03</td> </tr> <tr> <td>3,4-DNT</td> <td>0.004</td> <td>0.03</td> </tr> <tr> <td>3,5-DNT</td> <td>0.004</td> <td>0.03</td> </tr> <tr> <td colspan="3">*Level of detection and level of quantitation may change each round.</td> </tr> </table>						August '17 Round	Level of Detection	Level of Quantitation	2,3-DNT	0.006	0.03	2,4-DNT	0.008	0.03	2,5-DNT	0.003	0.03	2,6-DNT	0.004	0.03	3,4-DNT	0.004	0.03	3,5-DNT	0.004	0.03	*Level of detection and level of quantitation may change each round.			<ul style="list-style-type: none"> = 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 						Benzene	Toluene	Dichlorodifluoromethane	Trichlorofluoromethane	Chloroform	Carbon Tetrachloride	Trichloroethene	Ethyl Ether	1,1,1-Trichloroethane	1,1,2-Trichloroethane	2,6-Dinitrotoluene	2,4-Dinitrotoluene	2,3-Dinitrotoluene	3,4-Dinitrotoluene	2,5-Dinitrotoluene	3,5-Dinitrotoluene	Dinitrotoluene, Total
August '17 Round	Level of Detection	Level of Quantitation																																																		
2,3-DNT	0.006	0.03																																																		
2,4-DNT	0.008	0.03																																																		
2,5-DNT	0.003	0.03																																																		
2,6-DNT	0.004	0.03																																																		
3,4-DNT	0.004	0.03																																																		
3,5-DNT	0.004	0.03																																																		
*Level of detection and level of quantitation may change each round.																																																				
Last Name	Well No.	Well Name	Shared With	Analyzed By	Sample Date																																															
Water's Edge Group	129	WE-TM599	Riordan	CT Lab	8/24/2017	ND	ND	ND	ND	0.22	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND																																
Water's Edge Group	431	WE-UK125	Gust, Haag, Lochner	CT Lab	8/24/2017	ND	0.12	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND																																
Water's Edge Group	432	WE-UK124	Whalen	CT Lab	8/24/2017	ND	ND	ND	ND	0.23	ND	ND	ND	ND	ND	0.018	ND	ND	ND	ND																																
Water's Edge Group	433	WE-UA297	Krisko	CT Lab	8/24/2017	ND	ND	ND	ND	0.29	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND																																
Water's Edge Group	434	WE-XD828	Riethmiller	CT Lab	8/24/2017	ND	ND	ND	ND	0.24	ND	ND	ND	ND	ND	0.015	ND	ND	ND	ND																																
Water's Edge Group	435	WE-XK342	Brandherm	CT Lab	8/24/2017	ND	ND	ND	ND	0.16	ND	ND	ND	ND	ND	0.015	ND	ND	ND	ND																																
				CT Lab (D)	8/24/2017	ND	ND	ND	ND	0.17	ND	ND	ND	ND	ND	0.013	ND	ND	ND	ND																																
Wenger	414	Wenger		CT Lab	8/23/2017	ND	ND	ND	ND	ND	ND	1.3	ND	ND	ND	ND	ND	ND	ND	ND																																
Zurbachen	967	Zurbachen-A		CT Lab	8/28/2017	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND																																
Dairy Forage Res Ctr	828	USDA 1		CT Lab	8/29/2017											ND	ND	ND	ND	ND																																
Dairy Forage Res Ctr	829	USDA 2		CT Lab	8/28/2017											ND	ND	ND	ND	ND																																
Dairy Forage Res Ctr	126	USDA 3		CT Lab	8/28/2017											ND	ND	ND	ND	ND																																
Dairy Forage Res Ctr	128	USDA 6		CT Lab	8/29/2017											ND	ND	ND	ND	ND																																

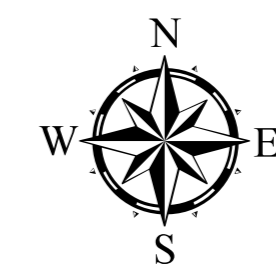
(D) = Duplicate
 CT Lab = CT Laboratories, LLC

Badger Army Ammunition Plant

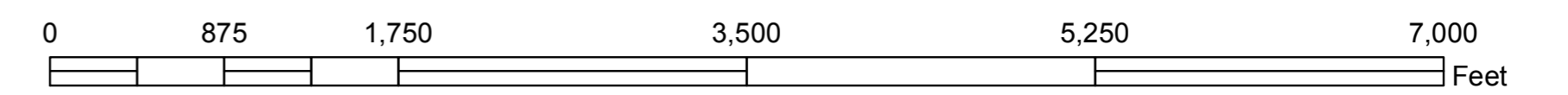


August 2017
Residential Wells Sampled

● Sampled Well



Map Scale 1:10,000



Plot Date: 10/3/17