

**From:** [Ryan Nehls](#)  
**To:** [Koepke, Cynthia L - DNR](#)  
**Cc:** [Bill Buckingham](#)  
**Subject:** Shorewood Commons  
**Date:** Tuesday, July 5, 2022 11:44:24 AM  
**Attachments:** [FieldNotes210916.pdf](#)  
[WellCon&BoringLogsMW5&PZ3.pdf](#)

---

**CAUTION: This email originated from outside the organization.  
Do not click links or open attachments unless you recognize the sender and know the content is safe.**

Hi Cindy,

Thanks for getting back to me last Friday. Attached are the field notes from our last sampling (9/16/21). I don't have any field notes from 11/16/21, 1/18/22, and 5/20/22 as we only checked water levels on those dates. We also developed MW-5 and PZ-3 on 9-16-21 and those notes are attached as well.

*Ryan Nehls, E.I.T.*  
*Civil/Environmental Engineer*

***Resource Engineering Associates, Inc.***

*Agricultural - Environmental  
Water Resource Management  
3510 Parmenter St. Suite 100  
Middleton, WI 53562  
Office: 608.831.5522  
Fax: 608.831.6564  
Cell: 920.210.0922*

*Website: [www.reaeng.com](http://www.reaeng.com)*

Facility/Project Name <b>3330 U. Ave</b>	Local Grid Location of Well ft. <input type="checkbox"/> N. <input type="checkbox"/> S. <input type="checkbox"/> E. <input type="checkbox"/> W.	Well Name <b>MW-5</b>
Facility License, Permit or Monitoring No.	Local Grid Origin <input type="checkbox"/> (estimated: <input type="checkbox"/> ) or Well Location <input type="checkbox"/> Lat. " Long. " or "	Wis. Unique Well No. DNR Well ID No.
Facility ID	St. Plane _____ ft. N, _____ ft. E. S/C/N	Date Well Installed <b>08/26/2021</b> m m d d y y v v y
Type of Well Well Code <b>11 / MW</b>	Section Location of Waste/Source <b>SE 1/4 of SE 1/4 of Sec. 17, T. 7 N. R. 9</b> <input checked="" type="checkbox"/> E <input type="checkbox"/> W	Well Installed By: Name (first, last) and Firm <b>Dan Bendorf Probe Technologies</b>
Distance from Waste/Source _____ ft.	Location of Well Relative to Waste/Source u <input type="checkbox"/> Upgradient s <input type="checkbox"/> Sidegradient d <input checked="" type="checkbox"/> Downgradient n <input type="checkbox"/> Not Known	
Enf. Stds. Apply <input type="checkbox"/>	Gov. Lot Number _____	

A. Protective pipe, top elevation \_\_\_\_\_ ft. MSL  
 B. Well casing, top elevation **881.62** ft. MSL  
 C. Land surface elevation **882.01** ft. MSL  
 D. Surface seal, bottom \_\_\_\_\_ ft. MSL or \_\_\_\_\_ ft.

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

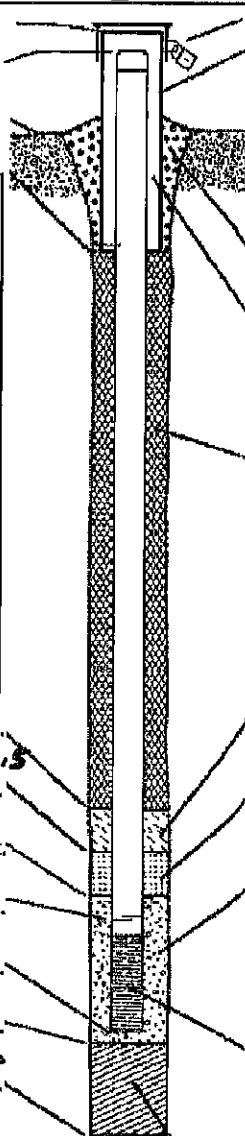
13. Sieve analysis performed?  Yes  No

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

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

16. Drilling additives used?  Yes  No  
 Describe **N/A**

17. Source of water (attach analysis, if required):  
**N/A**



- Cap and lock?  Yes  No
- Protective cover pipe:
  - Inside diameter: **8** in.
  - Length: **Flush mount** **1.5** ft.
  - Material: Steel  04  
Other
  - Additional protection?  Yes  No  
If yes, describe: \_\_\_\_\_
- Surface seal: Bentonite  30  
Concrete  01  
Other
- Material between well casing and protective pipe: Bentonite  30  
Other  **Sand**
- Annular space seal:
  - Granular/Chipped Bentonite  33
  - Lbs/gal mud weight . . . Bentonite-sand slurry  35
  - Lbs/gal mud weight . . . Bentonite slurry  31
  - % Bentonite . . . . . Bentonite-cement grout  50
  - 2.25** Ft<sup>3</sup> volume added for any of the above
  - How installed: Tremie  01  
Tremie pumped  02  
Gravity  08
- Bentonite seal:
  - Bentonite granules  33
  - 1/4 in.  3/8 in.  1/2 in. Bentonite chips  32
  - Other
- Fine sand material: Manufacturer, product name & mesh size
  - Red Flint #15**
  - Volume added **0.5 bags** ft<sup>3</sup> = **0.75 + 3**
- Filter pack material: Manufacturer, product name & mesh size
  - Red Flint Sand/Gravel #40**
  - Volume added **7.5 bags** = **3.75 + 3**
- Well casing: Flush threaded PVC schedule 40  23  
 Flush threaded PVC schedule 80  24  
 Other
- Screen material: **PVC**
  - Screen type: Factory cut  11  
 Continuous slot  01  
 Other
  - Manufacturer **Johnson's Screens**
  - Slot size: **0.010** in.
  - Slotted length: **10** ft.
- Backfill material (below filter pack): None  14  
 Other

E. Bentonite seal, top \_\_\_\_\_ ft. MSL or **1.0** ft.  
 F. Fine sand, top \_\_\_\_\_ ft. MSL or **12.5** ft.  
 G. Filter pack, top \_\_\_\_\_ ft. MSL or **13.0** ft.  
 H. Screen joint, top \_\_\_\_\_ ft. MSL or **15.0** ft.  
 I. Well bottom \_\_\_\_\_ ft. MSL or **25.0** ft.  
 J. Filter pack, bottom \_\_\_\_\_ ft. MSL or **25.5** ft.  
 K. Borehole, bottom \_\_\_\_\_ ft. MSL or **25.5** ft.  
 L. Borehole, diameter **4.25** in.  
 M. O.D. well casing **2.01** in.  
 N. I.D. well casing **1.98** in.

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

Signature **[Handwritten Signature]** Firm **Resource Engineering Assoc**

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

Route to: Watershed/Wastewater  Waste Management   
Remediation/Redevelopment  Other

Facility/Project Name <u>3330 U Ave</u>	County Name <u>Dane</u>	Well Name <u>MW-5</u>
Facility License, Permit or Monitoring Number	County Code <u>13</u>	Wis. Unique Well Number
		DNR Well ID Number

1. Can this well be purged dry?  Yes  No

2. Well development method

surged with bailer and bailed	<input type="checkbox"/>	41
surged with bailer and pumped	<input type="checkbox"/>	61
surged with block and bailed	<input checked="" type="checkbox"/>	42
surged with block and pumped	<input type="checkbox"/>	62
surged with block, bailed and pumped	<input type="checkbox"/>	70
compressed air	<input type="checkbox"/>	20
bailed only	<input type="checkbox"/>	10
pumped only	<input type="checkbox"/>	51
pumped slowly	<input type="checkbox"/>	50
Other	<input type="checkbox"/>	

3. Time spent developing well 30 min.

4. Depth of well (from top of well casing) 24.4 ft.

5. Inside diameter of well 1.98 in.

6. Volume of water in filter pack and well casing 1.5 gal.

7. Volume of water removed from well 15.5 gal.

8. Volume of water added (if any) 0.0 gal.

9. Source of water added N/A

10. Analysis performed on water added?  Yes  No  
(If yes, attach results) N/A

	Before Development	After Development
11. Depth to Water (from top of well casing)	a. <u>14.73</u> ft.	<u>23.99</u> ft.
Date	b. <u>09/16/2021</u>	<u>09/16/2021</u>
Time	c. <u>10:45</u> a.m.	<u>10:15</u> a.m.
12. Sediment in well bottom	<u>6.0</u> inches	<u>0.0</u> inches
13. Water clarity	Clear <input type="checkbox"/> 10 Turbid <input checked="" type="checkbox"/> 15 (Describe) <u>yellowish</u>	Clear <input type="checkbox"/> 20 Turbid <input checked="" type="checkbox"/> 25 (Describe) <u>yellowish</u>
Fill in if drilling fluids were used and well is at solid waste facility:		
14. Total suspended solids	_____ mg/l	_____ mg/l
15. COD	_____ mg/l	_____ mg/l
16. Well developed by: Name (first, last) and Firm		
First Name:	<u>Ryan</u>	Last Name: <u>Nehls</u>
Firm:	<u>REA</u>	

17. Additional comments on development:

Name and Address of Facility Contact/Owner/Responsible Party

First Name: Ryan Last Name: Nehls

Facility/Firm: Resource Engineering Assoc

Street: 3510 Parmestr St Supt 100

City/State/Zip: Middleton WI 53562

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

Signature: Ryan Nehls

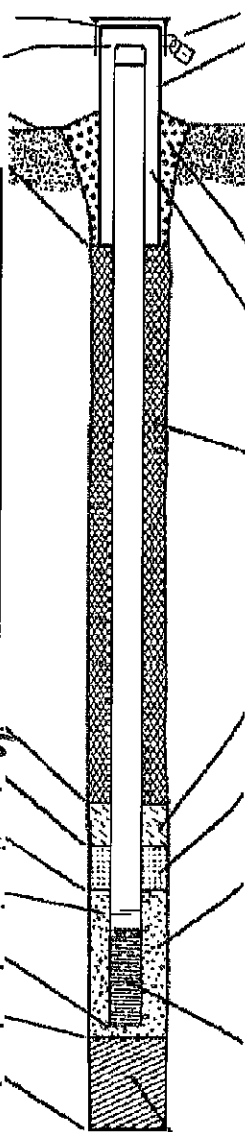
Print Name: Ryan Nehls

Firm: REA

NOTE: See instructions for more information including a list of county codes and well type codes.

Facility/Project Name <b>3330 U Ave</b>	Local Grid Location of Well ft. <input type="checkbox"/> N. <input type="checkbox"/> S. <input type="checkbox"/> E. <input type="checkbox"/> W.	Well Name <b>PZ-3</b>
Facility License, Permit or Monitoring No.	Local Grid Origin <input type="checkbox"/> (estimated: <input type="checkbox"/> ) or Well Location <input type="checkbox"/> Lat. " Long. " or " "	Wis. Unique Well No. DNR Well ID No.
Facility ID	St. Plane _____ ft. N. _____ ft. E. S/C/N	Date Well Installed <b>08/27/2021</b> m m d d y y y y
Type of Well Well Code <b>12/PZ</b>	Section Location of Waste/Source <b>SE 1/4 of SE 1/4 of Sec. 17, T. 7 N. R. 9</b> <input checked="" type="checkbox"/> E <input type="checkbox"/> W	Well Installed By: Name (first, last) and Firm <b>Dan Bendorf Probe Technologies</b>
Distance from Waste/Source _____ ft.	Location of Well Relative to Waste/Source u <input type="checkbox"/> Upgradient s <input type="checkbox"/> Sidegradient d <input checked="" type="checkbox"/> Downgradient n <input type="checkbox"/> Not Known	

A. Protective pipe, top elevation _____ ft. MSL	1. Cap and lock? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
B. Well casing, top elevation <b>881.59</b> ft. MSL	2. Protective cover pipe: a. Inside diameter: <b>8.0</b> in. b. Length: <b>1.5</b> ft. c. Material: <b>Flush mount</b> Steel <input checked="" type="checkbox"/> 04 Other <input type="checkbox"/>
C. Land surface elevation <b>881.75</b> ft. MSL	d. Additional protection? <input type="checkbox"/> Yes <input type="checkbox"/> No If yes, describe: _____
D. Surface seal, bottom _____ ft. MSL or _____ ft.	3. Surface seal: Bentonite <input type="checkbox"/> 30 Concrete <input checked="" type="checkbox"/> 01 Other <input type="checkbox"/>
12. USCS classification of soil near screen: GP <input type="checkbox"/> GM <input type="checkbox"/> GC <input type="checkbox"/> GW <input type="checkbox"/> SW <input type="checkbox"/> SP <input type="checkbox"/> SM <input type="checkbox"/> SC <input type="checkbox"/> ML <input checked="" type="checkbox"/> MH <input type="checkbox"/> CL <input type="checkbox"/> CH <input type="checkbox"/> Bedrock <input type="checkbox"/>	4. Material between well casing and protective pipe: <b>Sand</b> Bentonite <input type="checkbox"/> 30 Other <input checked="" type="checkbox"/>
13. Sieve analysis performed? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	5. Annular space seal: a. Granular/Chipped Bentonite <input checked="" type="checkbox"/> 33 b. _____ Lbs/gal mud weight . . . Bentonite-sand slurry <input type="checkbox"/> 35 c. _____ Lbs/gal mud weight . . . Bentonite slurry <input type="checkbox"/> 31 d. _____ % Bentonite . . . . Bentonite-cement grout <input type="checkbox"/> 50 e. <b>5.0</b> Ft <sup>3</sup> volume added for any of the above
14. Drilling method used: Rotary <input type="checkbox"/> 50 Hollow Stem Auger <input checked="" type="checkbox"/> 41 Other <input type="checkbox"/>	f. How installed: Tremie <input type="checkbox"/> 01 Tremie pumped <input type="checkbox"/> 02 Gravity <input checked="" type="checkbox"/> 08
15. Drilling fluid used: Water <input type="checkbox"/> 02 Air <input type="checkbox"/> 01 Drilling Mud <input type="checkbox"/> 03 None <input checked="" type="checkbox"/> 99	6. Bentonite seal: a. Bentonite granules <input type="checkbox"/> 33 b. <input type="checkbox"/> 1/4 in. <input checked="" type="checkbox"/> 3/8 in. <input type="checkbox"/> 1/2 in. Bentonite chips <input checked="" type="checkbox"/> 32 c. _____ Other <input type="checkbox"/>
16. Drilling additives used? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Describe <b>N/A</b>	7. Fine sand material: Manufacturer, product name & mesh size a. <b>Reel Flint #15</b> <input checked="" type="checkbox"/> 1.0 b. Volume added <b>0.2505</b> ft <sup>3</sup> ( <b>0.5</b> bags)
17. Source of water (attach analysts, if required): <b>N/A</b>	8. Filter pack material: Manufacturer, product name & mesh size a. <b>Reel Flint #40</b> <input checked="" type="checkbox"/> b. Volume added <b>2.5</b> ft <sup>3</sup> ( <b>5</b> bags)
E. Bentonite seal, top _____ ft. MSL or <b>1.0</b> ft.	9. Well casing: Flush threaded PVC schedule 40 <input checked="" type="checkbox"/> 23 Flush threaded PVC schedule 80 <input type="checkbox"/> 24 Other <input type="checkbox"/>
F. Fine sand, top _____ ft. MSL or <b>30.5</b> ft.	10. Screen material: <b>PVC</b> a. Screen type: Factory cut <input checked="" type="checkbox"/> 11 Continuous slot <input type="checkbox"/> 01 Other <input type="checkbox"/>
G. Filter pack, top _____ ft. MSL or <b>31.5</b> ft.	b. Manufacturer <b>Johson Screws</b> c. Slot size: <b>0.010</b> in. d. Slotted length: <b>5</b> ft.
H. Screen joint, top _____ ft. MSL or <b>35.0</b> ft.	11. Backfill material (below filter pack): None <input checked="" type="checkbox"/> 14 Other <input type="checkbox"/>
I. Well bottom _____ ft. MSL or <b>40.0</b> ft.	
J. Filter pack, bottom _____ ft. MSL or <b>40.0</b> ft.	
K. Borehole, bottom _____ ft. MSL or <b>40.5</b> ft.	
L. Borehole, diameter <b>4.25</b> in.	
M. O.D. well casing <b>2.01</b> in.	
N. I.D. well casing <b>1.98</b> in.	



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

Signature **[Signature]** Firm **Resource Engineering Associates**

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

Route to: Watershed/Wastewater  Waste Management

Remediation/Redevelopment  Other

Facility/Project Name <u>3320 U Ave</u>	County Name <u>Dane</u>	Well Name <u>PE-3</u>
Facility License, Permit or Monitoring Number	County Code <u>13</u>	Wis. Unique Well Number _____
		DNR Well ID Number _____

1. Can this well be purged dry?  Yes  No
2. Well development method
- surged with bailer and bailed  41
  - surged with bailer and pumped  61
  - surged with block and bailed  42
  - surged with block and pumped  62
  - surged with block, bailed and pumped  70
  - compressed air  20
  - bailed only  10
  - pumped only  51
  - pumped slowly  50
  - Other \_\_\_\_\_
3. Time spent developing well 30 min.
4. Depth of well (from top of well casing) 39.3 ft.
5. Inside diameter of well 1.98 in.
6. Volume of water in filter pack and well casing 2.5 gal.
7. Volume of water removed from well 25.0 gal.
8. Volume of water added (if any) 0.0 gal.
9. Source of water added \_\_\_\_\_
10. Analysis performed on water added?  Yes  No  
(If yes, attach results)

- |  | Before Development   | After Development  |
|--|--|--|
| 11. Depth to Water (from top of well casing) | a. <u>23.61</u> ft.  | <u>38.30</u> ft.   |
| Date   | b. <u>09/16/2021</u><br>m m d d y y y y  | <u>09/16/2021</u><br>m m d d y y y y   |
| Time   | c. <u>11:00</u> <input checked="" type="checkbox"/> a.m. <input type="checkbox"/> p.m.                                   | <u>11:30</u> <input checked="" type="checkbox"/> a.m. <input type="checkbox"/> p.m.                                      |
| 12. Sediment in well bottom                  | <u>6.0</u> inches  | <u>0.0</u> inches  |
| 13. Water clarity                            | Clear <input type="checkbox"/> 10<br>Turbid <input checked="" type="checkbox"/> 15<br>(Describe) <u>gray silt opaque</u> | Clear <input type="checkbox"/> 20<br>Turbid <input checked="" type="checkbox"/> 25<br>(Describe) <u>gray silt opaque</u> |
- Fill in if drilling fluids were used and well is at solid waste facility:
14. Total suspended solids \_\_\_\_\_ mg/l \_\_\_\_\_ mg/l
15. COD \_\_\_\_\_ mg/l \_\_\_\_\_ mg/l

16. Well developed by: Name (first, last) and Firm

First Name: Ryan Last Name: Nehls

Firm: Resource Engineering Assoc

17. Additional comments on development:

Name and Address of Facility Contact /Owner/Responsible Party

First Name: Ryan Last Name: Nehls

Facility/Firm: Resource Engineering Assoc

Street: 3510 Parkview St Susteloo

City/State/Zip: Madison WI 53562

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

Signature: Ryan Nehls

Print Name: Ryan Nehls

Firm: Resource Engineering Assoc

JOB NO.		CLIENT		LOCATION		DRILLING METHOD: <i>Geoprobe</i>		SAMPLING METHOD: <i>Shelby</i>		Drilling	
601		Flud - 3530		University Ave 601						Start Time	Finish Time
										8:15	9:20
Inches Driven	BLOWS/FT. SAMPLER	FID READING	DEPTH IN FEET	SOIL GRAPH	SHEET: 1 of 1	SURFACE CONDITIONS: <i>grass/turf</i>		Date	Date		
Inches Recovered								8/26/21	8/26/21		
48			1.5'	native soil	Topsoil silt loam, brown, GP (fill) light brown						
40			2		(SM-ML) Sand some silt, few clay, few gravel						
		0.0	3		10% orange and grey mottles, little marl						
			3.5'		7.5YR 3/2 Dark Brown						
48			4								
39											
			5	5.5'							
			6	ML	Silt some clay few sand, little marl						
			7		20% orange mottles						
		0.0	7		10YR 4/2 Dark greyish brown						
			8								
48			9								
39.5											
			10	10.2'							
			11		SM, black, moist		Sand few silt, few clay				
			12		5YR 2.5/1		no mottles				
		0.0	12		wet at bottom of sample						
48			13		ML-CL, silt some clay, few sand						
34					3% mottles, wet						
		0.0	14		2.5Y 5/2 Grayish Brown						
			15								
			16								
			17								
			18								
			19								
			20		Black, organic silt, wet						

Gravel and Sand

drilled well here to 40' 35' → changed to grey sand some silt

JOB NO.		CLIENT		LOCATION			
602		Flad		3440 - 602			
DRILLING METHOD: <i>Wapole</i>				SAMPLING METHOD: <i>NA</i>			
				<i>Piezometer</i>			
Inches Driven		BLOWS/FT. SAMPLER	FID READING	DEPTH IN FEET	SOIL GRAPH	Drilling	
Inches Recovered	SHEET: 1 of 1					Start Time	Finish Time
						<i>9:30</i>	
						Date	Date
						<i>grass</i>	
				1			
				2			
				3			
				4			
				5			
				6			
				7			
				8			
				9			
				10			
				11			
				12			
				13			
				14			
				15			
				16			
				17			
				18			
				19			
				20			

*Blind Drill for Piezometer*  
*0-40 ft*

## Field Notes - Monitoring Wells

Project Name: 3330 University Ave Date: 9/16/21  
 Weather: 70s Sunny  
 Sampler: Ryan, Bill, Frank

Well Name	MW-1R	MW-2	MW-3	MW-4	MW-5
Depth to Water	dry	22.57	23.66	17.25	14.73
Depth to Well Bottom	23ft	27.5	27.0	18.0	24.4
Height of Water Column	-	4.93	3.34	0.75	9.67
3 Well Volumes (gal)	-	2.4	1.6	0.4	15.5 (10)
Purge Time (start)		11:30	1:05	1:15	9:45
Purge Time (end)					
Purged Dry?		N	N	Y	Y
Field Temperature (°C)					
Field pH					
Field Specific Conductance (µS/cm)					
Turbid (Y/N)		Y	Y	Y	Y
Color		silty brn	silty brn	silty brown	yellow
Odor (Y/N)		N	N	N	N
Filtered (Y/N)		N	N	N	N
Time Sample Collected		11:45	1:20	1:30	12:20

Notes/Comments: Field Blank 11:05

---



---



---



---



---



---



## Field Notes - Monitoring Wells

Project Name: 3330 University Ave

Date: 9/16/21

Weather: 70°s

Sampler: Ryan

Well Name	MW-9	PZ-1	PZ-2	PZ-3 <i>* Develop</i>	PZ-4
Depth to Water	21.88	23.90	21.45	23.61	21.47
Depth to Well Bottom	29.6	43.0	32.50	39.3	45.1
Height of Water Column	7.8	19.1	11.1	15.7	23.6
3 Well Volumes (gal)	3.7	9.2	5.3	25 (10)	11.3
Purge Time (start)	12:35	11:20	10:25	11:00	12:55
Purge Time (end)					
Purged Dry?	N	N	N	N	N
Field Temperature (°C)					
Field pH					
Field Specific Conductance (µS/cm)					
Turbid (Y/N)	Y	N	N	Y	N
Color	Light brown	clear	clear	gray	clear
Odor (Y/N)	N	N	N	N	N
Filtered (Y/N)	N	N	N	N	N
Time Sample Collected	12:50	11:35	10:35	1:00	1:15

Notes/Comments: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_