

From: Andy Delforge <adelforge@reiengineering.com>
Sent: Friday, November 30, 2018 8:05 AM
To: Janowiak, Steve J - DNR
Subject: RE: Thoughts on Normington
Attachments: Witter well CV063.pdf; Witter well CV062.pdf


I did confirm that there is no well at the hospital.

The Witter Field wells are 200' deep! Cased to 60 (logs attached), so maybe like 75'?

I was thinking about drilling deeper in fractured rock, where we already know it's impacted, with a compound that's heavier than water, and it reminded me of a Jim Anklam line – "like trying to find a fart in a mitten" not sure I get the metaphor.

Makes sense to omit PZ5, the fact that it's screened in the rock got missed in the 15 years that passed since it was installed.

Thank you,



Andrew R. Delforge, P.G. – Senior Hydrogeologist



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From: Janowiak, Steve J - DNR <Steve.Janowiak@wisconsin.gov>
Sent: Thursday, November 29, 2018 5:29 PM
To: Andy Delforge <adelforge@reiengineering.com>

Cc: 'Matt Rowe' <mrowe@ruderware.com>

Subject: RE: Thoughts on Normington

So we have a PZ in the BR that is contaminated. You're thinking of drilling even deeper to see if we can get the vertical extent defined? (Just want to make sure I'm understanding you)

How deep are the irrigation wells at Witter and/or Assumption fields? Are there any wells serving the Hospital? I would say maybe go as deep at those and call it good. If it is in the granite, which is the basement rock, I'm not sure I can see the value of defining the vertical extent. And next to CPZ-5 makes sense.

For the purposes of defining the horizontal extent within the granite, it would make sense to me to make well nests out of those wells that are already on the perimeter of the upper plume and skip or minimize drilling in between.

If CPZ-5 is a bedrock piezometer, then it should be omitted from the groundwater contour maps. You can see that by including CPZ-5 with the other unconsolidated piezometers causes a really dramatic bend in the contours, and thus probably not real.

We are committed to service excellence.

Visit our survey at <http://dnr.wi.gov/customersurvey> to evaluate how I did.

Steve Janowiak

Phone: (715)421-7850

Steve.Janowiak@wisconsin.gov

From: Andy Delforge <adelforge@reiengineering.com>

Sent: Thursday, November 29, 2018 2:03 PM

To: Janowiak, Steve J - DNR <Steve.Janowiak@wisconsin.gov>

Cc: 'Matt Rowe' <mrowe@ruderware.com>

Subject: Thoughts on Normington

Hi Steve - So the city provided me with addresses of the permitted sandpoint irrigation wells. I was able to find 4 in the vicinity that we will attempt to sample in spring (shown on attached). In reviewing the historical data, I was looking at piezometer depths and realized that CPZ5 is set in the bedrock at 52' (log attached). Unfortunately, the chemistry is very similar to that of the surrounding PZs set above the rock (and the Witter Field irrigation wells for that matter). Although the PZ with the highest concentration is PZWR2, closest to the source. Any thoughts on what an appropriate depth would be? I would think the best location for the deeper PZ would be adjacent to CPZ5

Thank you,



Andrew R. Delforge, P.G. – Senior Hydrogeologist



Andrew R. Delforge, P.G.
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Well Construction Report For WISCONSIN UNIQUE WELL NUMBER **CV062**

State of WI - Private Water Systems - DG/2
Department of Natural Resources, Box 7921
Madison, WI 53707
Form 3300-77A
(R 8/00)

Property Owner WIS RAPIDS PUBLIC SCHOOLS		Telephone 715-423-1720 Number	
Mailing Address 510 PEACH			
City WISCONSIN RAPIDS		State WI	Zip Code 54494
County of Well Location Wood	County Well Permit No. W	Well Completion Date 05/18/1989	

1. Well Location <input type="checkbox"/> Town <input checked="" type="checkbox"/> City <input type="checkbox"/> Village		Fire # (if available)
of WISCONSIN RAPIDS		
Grid or Street Address or Road Name and Number		
Subdivision Name WITTER FIELD	Lot #	Block #

Well Constructor (Business Name) HAUPT WELL @ PUMP CO INC	License # 529	Facility ID Number (Public Wells)
Address HWY 10 1332 E PT ROA		Public Well Plan Approval # W--
City AUBURDALE	State WI	Zip Code 54412
Date of Approval (mm/dd/yyyy)		
Hicap Permanent well #	Common Well #	Specific Capacity 4.9 gpm/ft

Gov't Lot #	or	NE 1/4 of	SW 1/4 of
Section 17	T	22 N; R 6	<input checked="" type="checkbox"/> E <input type="checkbox"/> W
Latitude Deg.	Min.		
Longitude Deg.	Min.		
2. Well Type		Lat/Long Method	
<input checked="" type="checkbox"/> New		GPS008	
<input type="checkbox"/> Replacement		<input type="checkbox"/> Reconstruction	
of previous unique well # constructed in			
Reason for replaced or Reconstructed Well? SPRINKLE WITTER FIELD			

3. Well serves **1** # of homes and or **SPRINKLING** High capacity Well? Yes No
(e.g. barn, restaurant, church, school, industry, etc.) Property? Yes No

Drilled Driven Point Jetted Other:

4. Is the well located upslope or sideslope and not downslope from any contamination source, including those on neighboring properties? Yes No

Well located within 1,200 feet of a quarry? Yes No If yes, distance in feet from quarry:

Well located in floodplain? Yes No

Distance in Feet from Well to Nearest:

1. Landfill	11. Foundation Drain to Clearwater
2. Building Overhang	12. Foundation Drain to Sewer
3. Septic <input type="checkbox"/> Holding Tank <input type="checkbox"/>	13. Building Drain
4. Sewage Absorption Unit	<input type="checkbox"/> Cast Iron or Plastic <input type="checkbox"/> Other
5. Nonconforming Pit	14. Building Sewer <input type="checkbox"/> Gravity <input type="checkbox"/> Pressure
6. Buried Home Heating Oil Tank	<input type="checkbox"/> Cast Iron or Plastic <input type="checkbox"/> Other
7. Buried Petroleum Tank	43 15. Collector or Street Sewer:
	<input type="checkbox"/> Sanitary units in. diam.
8. Shoreline <input type="checkbox"/> Swimming Pool <input type="checkbox"/>	<input type="checkbox"/> Storm <input type="checkbox"/> =< 6 <input type="checkbox"/> > 6
	16. Clearwater Sump

17. Wastewater Sump
18. Paved Animal Barn Pen
19. Animal Yard or Shelter
20. Silo
21. Barn Gutter
22. Manure Pipe <input type="checkbox"/> Gravity <input type="checkbox"/> Pressure
<input type="checkbox"/> Cast Iron or Plastic <input type="checkbox"/> Other
23. Other Manure Storage
24. Ditch
25. Other NR 812 Waste Storage

5. Drillhole Dimensions and Construction Method		Lower Open Bedrock	
From (ft.)	To (ft.)	Enlarged Drillhole	
6	0	<input type="checkbox"/> --1. Rotary - Mud Circulation-----	<input type="checkbox"/>
	200	<input checked="" type="checkbox"/> --2. Rotary - Air-----	<input type="checkbox"/>
		<input type="checkbox"/> --3. Rotary - Air and Foam-----	<input type="checkbox"/>
		<input type="checkbox"/> --4. Drill-Through Casing Hammer	
		<input type="checkbox"/> --5. Reverse Rotary	
		<input type="checkbox"/> --6. Cable-tool Bit in. dia-----	<input type="checkbox"/>
		<input type="checkbox"/> 7. Dual Rotary	<input type="checkbox"/>
		<input type="checkbox"/> 8. Temp. Outer Casing in. dia. depth (ft)	
		Removed? <input type="checkbox"/> Yes <input type="checkbox"/> No	
		If no, why not?	

8. Geology	From (ft.)	To (ft.)
Type, Caving/Noncaving, Color, Hardness, etc		
--S- SAND	0	35
-QCH SHALEY CAVING CLAY	35	49
--Q- GRANITE	49	200

6. Casing, Liner, Screen	Material, Weight, Specification	From (ft.)	To (ft.)
Dia. (in.)			
	6 STEEL - 18.97# A53 SAWHILL P.E WELDED	0	50.3
Dia. (in.)	Screen type, material & slot size		

9. Static Water Level ft. above ground surface 18 ft. below ground surface	11. Well is: <input checked="" type="checkbox"/> Above Grade 24 in. <input type="checkbox"/> Below Grade
10. Pump Test Pumping Level 34 ft. below surface Pumping at 78 GPM for 20 hours	Developed? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Disinfected? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Capped? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No

7. Grout or Other Sealing Material. Method:	From (ft.)	To (ft.)	# Sacks Cement
Kind of Sealing Material			

12. Did you notify the owner of the need to permanently abandon and fill all unused wells on this property? <input type="checkbox"/> Yes <input type="checkbox"/> No If no, explain:
13. Signature of the Well Constructor or Supervisory Driller DH Date signed 06/14/1989
Signature of Drill Rig Operator (Mandatory unless same as above) DH Date signed 06/14/1989

Make additional comments on reverse side about geology, additional screens, water quality, etc.

Variance issued Yes No

Well Codes and Identifiers

Geologic Log No

SID Number

Common Well Name

Well Notification #

Batch Seq # 133

Driller Notes

Other DRILLER REPORTS THIS IS EAST WELL ON WITTEN FIELD.

Well Construction Report For
WISCONSIN UNIQUE WELL NUMBER CV063

State of WI - Private Water Systems - DG/2
 Department of Natural Resources, Box 7921
 Madison, WI 53707
 Form 3300-77A
 (R 8/00)

Property Owner **WIS RAPIDS PUBLIC SCHOOLS**
 Telephone **715-425-1720**
 Number

Please type or Print using a black Pen
 Please Use Decimals Instead of Fractions.

Mailing Address **510 PEACH**

1. Well Location
 Town City Village
 Fire # (if available)

City **WISCONSIN RAPIDS** State **WI** Zip Code **54494**

of **WISCONSIN RAPIDS**
 Grid or Street Address or Road Name and Number

County of Well Location **Wood** County Well Permit No. **W** Well Completion Date **05/19/1989**

Subdivision Name **WITTER FIELD** Lot # Block #

Well Constructor (Business Name) **HAUPT WELL @ PUMP CO INC** License # **529** Facility ID Number (Public Wells)

Gov't Lot # or **NE** 1/4 of **SW** 1/4 of

Address **HWY 10 1332 E PT ROA** Public Well Plan Approval #
 W--

Section **17** T **22** N; R **6** E W
 Latitude Deg. Min. Longitude Deg. Min.

City **AUBURDALE** State **WI** Zip Code **54412** Date of Approval (mm/dd/yyyy)

2. Well Type New Replacement Reconstruction Lat/Long Method **GPS008**

Hicap Permanent well # Common Well # Specific Capacity **3.5** gpm/ft

of previous unique well # constructed in Reason for replaced or Reconstructed Well?

3. Well serves **1** # of homes and or **SPRINKLING** High capacity Well? Yes No
 (e.g. barn, restaurant, church, school, industry, etc.) Property? Yes No

SPRINKLE WITTENFIELD
 Drilled Driven Point Jetted Other:

4. Is the well located upslope or sideslope and not downslope from any contamination source, including those on neighboring properties? Yes No

- Well located within 1,200 feet of a quarry? Yes No If yes, distance in feet from quarry:
 Well located in floodplain? Yes No Distance in Feet from Well to Nearest:
- 1. Landfill
 - 2. Building Overhang
 - 3. Septic Holding Tank
 - 4. Sewage Absorption Unit
 - 5. Nonconforming Pit
 - 6. Buried Home Heating Oil Tank
 - 7. Buried Petroleum Tank
 - 8. Shoreline Swimming Pool
 - 9. Downspout/Yard Hydrant
 - 10. Privy
 - 11. Foundation Drain to Clearwater
 - 12. Foundation Drain to Sewer
 - 13. Building Drain
 Cast Iron or Plastic Other
 - 14. Building Sewer Gravity Pressure
 Cast Iron or Plastic Other
 - 15. Collector or Street Sewer:
 Sanitary units in. diam.
 Storm =< 6 > 6
 - 16. Clearwater Sump
 - 17. Wastewater Sump
 - 18. Paved Animal Barn Pen
 - 19. Animal Yard or Shelter
 - 20. Silo
 - 21. Barn Gutter
 - 22. Manure Pipe Gravity Pressure
 Cast Iron or Plastic Other
 - 23. Other Manure Storage
 - 24. Ditch
 - 25. Other NR 812 Waste Storage

5. Drillhole Dimensions and Construction Method		8. Geology	
From (ft.)	To (ft.)	Type, Caving/Noncaving, Color, Hardness, etc	From (ft.) To (ft.)
6	0	--S- SAND	0 34
	200	--C- CLAY	34 50
		--Q- GRANITE	50 200

6. Casing, Liner, Screen	Material, Weight, Specification	From (ft.)	To (ft.)
Dia. (in.)			
6	STEEL-18.97 A53-SAWHILL P.E. WELDED	0	51.2

7. Grout or Other Sealing Material. Method:	From (ft.)	To (ft.)	# Sacks Cement
Kind of Sealing Material			

9. Static Water Level
 ft. above ground surface
18 ft. below ground surface

10. Pump Test
 Pumping Level **40** ft. below surface
 Pumping at **76** GPM for **2** hours

11. Well is: Above Grade
24 in. Below Grade
 Developed? Yes No
 Disinfected? Yes No
 Capped? Yes No

12. Did you notify the owner of the need to permanently abandon and fill all unused wells on this property?
 Yes No If no, explain:

13. Signature of the Well Constructor or Supervisory Driller **DAH** Date signed **06/14/1989**
 Signature of Drill Rig Operator (Mandatory unless same as above) **DOH** Date signed **06/14/1989**

Well Codes and Identifiers

Geologic Log No

SID Number

Common Well Name

Well Notification #

Batch Seq # 133

Driller Notes

Other DRILLER REPORTS THIS IS THE WEST WELL ON WITTEN FIELD.