

Beggs, Tauren R - DNR

From: Beggs, Tauren R - DNR
Sent: Friday, October 27, 2017 2:34 PM
To: 'Henderson, Dave'
Cc: GravelPit (GravelPit@manitowoc.org); Merry, JaNelle P - DNR; Chronert, Roxanne N - DNR; Johnson, Dave M - DNR; Kasdorf, James H Jr - DNR
Subject: RE: 2918 S. 26th Street Potable Well Depth

Hi Dave,

Dave Johnson talked to Groundsource and concluded the following:

"I spoke with Luke at GS and he said he will go to 300 with the casing due to the dip and deeper if the rock isn't competent at 300 feet."

If you have any other questions, please let me know.

Thanks,

We are committed to service excellence.

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

Tauren R. Beggs

Phone: (920) 662-5178

Tauren.Beggs@wisconsin.gov

From: Henderson, Dave [mailto:Dave.Henderson@aecom.com]
Sent: Friday, October 27, 2017 2:27 PM
To: Beggs, Tauren R - DNR; Merry, JaNelle P - DNR; Chronert, Roxanne N - DNR; Johnson, Dave M - DNR; Kasdorf, James H Jr - DNR
Cc: GravelPit (GravelPit@manitowoc.org)
Subject: FW: 2918 S. 26th Street Potable Well Depth

Tauren,

The well depth discussion provided to Groundsource.

Please confirm back to me the WDNR's opinion of casing depth.

Thanks
dsh

David Henderson, P.E.

Senior Project Manager/Director, Environment
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AECOM

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From: Karen Dorow [<mailto:kdorow@manitowoc.org>]
Sent: Thursday, October 26, 2017 5:14 PM
To: 'Tom Van de Yacht'
Cc: GravelPit
Subject: 2918 S. 26th Street Potable Well Depth

Tom,
I talked to Dave Henderson and below is his thought process. Would you please confirm.

Background:

The 2918 well is on the eastern boarder of the WDNR's Special Casing Area. The Special Casing Area requires a minimum casing depth of 275' below ground surface (bgs).
Historically, we've been installing wells with about 140' of cased/sealed bedrock above the open borehole. These wells have been testing clean after installation.

At 2918 S. 26th Street:

The ground surface (GS) is at approx. elev. 650.
From the old "Carlson" well log, the top of bedrock is approximately 135' bgs.
So $135' + 140' = 275'$ bgs to bottom of casing. So... based on past experience, this would give us 140' of cased/sealed bedrock above the open borehole and meet the requirements of the Special Casing Area (275' bgs).

Compared to the two other wells nearest to 2918 S. 26th Street, at about the same GS elevation, but about 5,000 feet west.

3403 CTH CR, GS elev. is about 663, top of bedrock was 150 bgs and we installed casing to 275 bgs
3023 CTH CR, GS elev. is about 670, top of bedrock was 133 bgs and we installed casing to 275 bgs.

Because the 2918 well is 5,000 east of the CTH CR wells, we should take in account bedrock bedding plane dip to the east (e.g. the rule of thumb for the area is 2% per mile) and the GS elevation changes (about 13' to 20' lower at the 2918 S. 26th when compared to CTH CR).

So... If the 2918 well casing is installed to 275' bgs, it should have about 140' of cased/sealed bedrock above it and meet the depth requirement (275' bgs) of the Special Casing Area. Additionally, it should be about 13 to 20' lower in elevation than the wells at 3403 and 3023 CTH CR, which will help account for a little bit (only about 20%) of the possible bedrock bedding plane dip to the east.

So I would suggest casing the well to a minimum of 275' bgs, with the understanding that the bedrock bedding plane dip to the east may possibly provide an opportunity for contaminant migration the further east we go.

Please have Groundsource confirm my thought process and calculations. Give me a call if you have any questions or want to discuss.

Thanks
dsh

David Henderson, P.E.
Senior Project Manager/Director, Environment
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AECOM

Thanks Tom!

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Beggs, Tauren R - DNR

From: Beggs, Tauren R - DNR
Sent: Friday, October 27, 2017 2:13 PM
To: Johnson, Dave M - DNR
Subject: RE: Well Construction Information and Logs - Manitowoc City / Former Newton Tn Gravel Pit

That sounds great Dave, thanks!

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

Tauren R. Beggs

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From: Johnson, Dave M - DNR
Sent: Friday, October 27, 2017 2:05 PM
To: Beggs, Tauren R - DNR
Subject: RE: Well Construction Information and Logs - Manitowoc City / Former Newton Tn Gravel Pit

Yes I spoke with Luke at GS and he said he will go to 300 with the casing due to the dip and deeper if the rock isn't competent at 300 feet.

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Dave Johnson

Hydrogeologist – Bureau of Drinking Water and Groundwater/Water Division

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From: Beggs, Tauren R - DNR
Sent: Friday, October 27, 2017 2:03 PM
To: Merry, JaNelle P - DNR; Kasdorf, James H Jr - DNR; Johnson, Dave M - DNR
Cc: Henderson, Dave (Dave.Henderson@aecom.com)
Subject: RE: Well Construction Information and Logs - Manitowoc City / Former Newton Tn Gravel Pit

Also Dave Henderson wanted to confirm the 25ft/dip per mile in the bedrock, since Groundsource is planning to be out at the Novy's next week Monday or Tuesday. Please confirm with Dave. I have cc'd him on this email for quick reference to his email address.

Thanks,

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Tauren R. Beggs

Phone: (920) 662-5178

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From: Beggs, Tauren R - DNR

Sent: Friday, October 27, 2017 1:58 PM

To: Merry, JaNelle P - DNR; Kasdorf, James H Jr - DNR; Johnson, Dave M - DNR

Subject: Well Construction Information and Logs - Manitowoc City / Former Newton Tn Gravel Pit

Hi everyone,

Thanks for your valuable input in the meeting today! Dave Henderson from AECOM already has pulled all the well log information together for the areas we are looking to sample so you will be getting an email(s) from him with that information.

Have a nice weekend,

We are committed to service excellence.

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Tauren R. Beggs

Hydrogeologist & Northeast Region Land Recycling Expert

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