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Sent: Monday, July 22, 2019 9:52 AM
To: Volkening, Aaron <Aaron.Volkening@stantec.com>
Cc: Wells, Martin J - DNR <martin.wells@wisconsin.gov>; Lourigan, Tanya L - DNR <Tanya.Lourigan@wisconsin.gov>
Subject: Irogami Weir Hydraulics Discussion (DKSN 6266)

Hi Aaron, I wanted to pass along my questions to you before our discussion at 3pm today:

1. Terminology
 - DNR assumes that the use of the word riser, riser pipe and standpipe are all synonymous.
 - DNR assumes the term “riser pipe opening” refers to the (top) circular opening in the horizontal plane (not the circular opening in the vertical plane where the riser connects to the 130-foot outlet pipe).
 - If the above assumptions are not correct, please clarify.
2. Weir Length
 - Should the weir length correspond to the rectangular opening less the bar widths (7.8 feet) or the riser circumference (6.3 feet)?
 - Without a riser and gate detail to show how the gate/grate is mounted and where water has the ability to flow, these details are unclear. Regardless, the discharge estimate for Scenario 1 does not change substantially using either of the two weir lengths and use of the rectangle opening is conservative (higher discharge estimate).
 - DNR recommends this discrepancy/uncertainty/clarification be acknowledged/addressed in the hydraulic memo.
3. Discharge Estimates
 - Further explain the 2-step flow estimate calculation; specifically, the portion of the computation that refers to the terms interior/immediate water elevation in the riser and net head.
 - Out of curiosity, why did you choose to use a 2-step computation (Mannings and orifice) rather than solve the Energy Equation (including head loss and minor losses) directly for the velocity (see attached notes). Also, due to the difference in the amount of head used to “drive” the flow, the two approaches result in fairly different discharge estimates (e.g., 12 cfs versus 18 cfs).
 - I will setup a Skype call so if we need to share one of our screens we can do so. Also, another new DNR engineer (Marty) will likely join the discussion as well. I am looking forward to talking! Thanks, Jen **We are committed to service excellence.** Visit our survey at <http://dnr.wi.gov/customersurvey> to evaluate how I did.

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