

From: TA Taylor <lpwatersuper@comcast.net>
Subject: Wells to raise lake levels
Date: Thu, 7 Dec 2006 11:05:03 -0600
To: <jjprat@sprairie.com>
CC: 'Jerry P. Jackson' <lpsewage-supt@comcast.net>
'Casey Sullivan' <parks@cityoflaporte.com>
BCC:

Joe,

I sent an email to the hydrologist that did our wellhead protection plan. He is pretty familiar with this area. His name is John Barnhart. Here is what I said in the email, followed by his response.

John,

Jerry Jackson and I met today with people trying to find a way to raise lake levels back up as they have dropped dramatically over the last 5 years with the reduced rainfall. They are familiar with the old well on the shore of the lake that was used in the 60's but knowing that it is in the aquifer above the bedrock and that it is connected to the lakes it is dubious that it did much but donate to NIPSCO. The big question they have now is - Is it realistic to go through the bedrock into a "lower aquifer" for a source of water to raise lake levels. Number one I perceive that it would be quite expensive and have questions about the quality of water you would find. Also it seems to me that it would be an expensive well to maintain if it were an option. In 1952 they drilled a well at the Yacht Club property 755' deep (bedrock 258') with the thought of pumping water back into it to reduce lake levels. The DNR reference number on that well is 291853. Do you have any idea what kind of water quality there is below the bedrock? If you can't find the well info I can scan the sheet and send it to you.

Todd

His response:

Todd,

I found the Yacht Club well log on the Division of Water website. In the comments, it says they did a pumping test, but their notes don't really explain the results.

Was that lake filling well ever used? I thought that I had been told that it had not been used. I remember that is close to the lake so it may be just recycling water. However, if the water can be pumped out of the aquifer faster than it can leak from the lake, it may appear to be a solution. I say "appear to a solution" because, eventually the water taken from the aquifer has to be replaced and the most likely source will be the lake.

I don't think that a bedrock well would be the best solution. The carbonate aquifer below the Ellsworth and Antrim Shales is likely to be heavily mineralized. It would be expensive to drill and pump such a deep well (static water level on the yacht club well was 145 feet). It may be more cost effective to drill a new well far enough away to not influence the lake

and pipe the water back to the lake.

Has anyone done any calculations to determine the amount of water that will be needed to maintain lake levels? If so, did they account for evaporation, groundwater discharge from the lake, and recharge from precipitation?

I will see if I can locate some info on water quality in the carbonate aquifer and get back to you on this.

Take care,
John