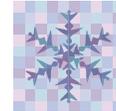




MINUTES –

**Hull WATER STUDY Task Force**  
**Thursday, January 12, 2012 at 6:30 p.m.**



**TOWN OF HULL MUNICIPAL BUILDING**  
**4550 WOJCIK MEMORIAL DRIVE, STEVENS POINT, WI 54482**

- 1) **Call to order:** The meeting of the **Hull Water Study Task Force** was called to order on Thursday, January 12, 2012 at 6:35 p.m. by Water Study Task Force Co-Chair John Holdridge at Hull Municipal Building, 4550 Wojcik Memorial Drive, Stevens Point, WI 54482.

Present: Co-Chair: John Holdridge, Co-Chair: Mel Bembenek.  
Committee Members: Tim Zimmerman, Bill DeVita, David Schmidt, Russ Prusak, Gwynne Bablitch, Gladys Laug, Phil Gjevre  
Advisor- Paul McGinley of UWSP College of Natural Resources,  
Advisor- Ray Schmidt Water Quality Specialist for Portage County,  
Water Study Secretary: Patty Amman.

Others Present: Amy Nitka

Absent: Harry Obremski, Terry Smith, Mike Olson

- 2) **Approval of minutes from December 8, 2011 Water Study Task Force meeting.** *As there was no quorum at the Dec. 8<sup>th</sup> meeting, it was determined it was not necessary to approve those minutes. The minutes from the previous meeting of November 10, 2011 will be added to the March 2012 agenda for approval at the March 2012 meeting.*

- 3) **Citizens wishing to address the Water Study Task Force on non-agenda items.**  
**Agenda items are for discussion and possible action:** *NONE.*

- 4) **Announcements/Comments Task Force members.**

Holdridge I have a note from Ray about the maps we may want to use. We'll just save that and decide what we want to do. Then I got something from Kim Halverson who apparently doesn't want to give us the electronic copy of the data.

Bembenek I'll read this, "from Ray Schmidt to Paul McGinley – I chatted with Kim and apparently we misunderstood when she said we could get the data. I understood that as long as we didn't map the locations of the monitoring wells..... She told me this morning that she

doesn't want any of the monitoring well data out there in electronic form. We are welcome to go to her office and look at anything else she has."

McGinley Let me make a comment: this was probably precipitated by me. I asked Ray if we were going to making any graphs of that data, it would be useful if we had it in spreadsheet form. Obviously we could take the data she gave you and type it into a spreadsheet. I guess if the group decides it's something they want to see, we could certainly add it to the spreadsheet or put it into a spreadsheet.

Holdridge I was a little surprised at that. At our last meeting, she clearly wanted to protect the map but the other data she gave us. Putting it in electronic form and on the internet, I'm sure that's a concern.

Prusak So what did you get from Kim? Just that hard copy?

Holdridge Just the hard copy.

Prusak The electronic version of the same material is what she didn't want to give you.

McGinley That came out of the spreadsheet. I guess I can appreciate her point. We don't want to cause any trouble there. We do have older versions of the spreadsheet from previous administrators. Obviously it isn't hard for someone to type in the data you might be interested in. I guess it's not a big deal either way.

DeVita The other thing is it's a matter of public record. The samples that were analyzed at UWSP are public record and anybody who requests it can get it.

McGinley Right.

Holdridge We could get that if we wanted it.

McGinley And we have it. We just don't have it in the spreadsheet. It's not a big deal either way. I just thought if the group wants to have some graphs it would have been easier if we didn't have to type it in. But we can type it in.

Prusak Did you find out how many wells there were? Total test wells that they had?

McGinley She just shared some of the information with you in that.

Bembenek We got 9.

Prusak Nine and that's supposed to be all she gave that they are monitoring?

Bembenek That's just for the Town of Hull.

Bembenek It gives us an indication of where they are and what we've got. Not the whole area. There are probably 40 some.

Holdridge Melvin and Pete Kaminski went out and found those.

Prusak Found all of them? There's one down at the corner, one by my place, I think there's one down by Plover Heights.

Holdridge There's one right out here by the parking lot.

McGinley I have an older map that Greg Disher gave me 10 years ago that show most of the well locations. Maybe some have been removed since then.

Bembenek I got a copy of that too.

McGinley Okay. I can share that with you too.

Holdridge I think what I will do at some point is talk with her and send her a letter indicating that if they are going to put any wells in our right-of-way, they need to inform us. That right-of-way, that's Town of Hull property. Cable companies can't put anything; nobody can put anything in the right-of-way without our permission. It's been so open that we kind of need to bring that in and get more information. We know that legally, the Town Board controls the right-of-way. Generally it's a 4 rod road so it's 66' wide. I don't want to be a stumbling block but I think we have to get some integrity here in our own processes so we know what the City is doing.

##### **5) Research Project in the Town of Hull – currently operational & planned. (McGinley)**

Holdridge We've got Amy (*Nitka*) here and Paul's got a write up. You want to tell about what you are doing?

Nitka Sure. I'm passing around a little summary on the study that I did. I did a small study. I collected samples in the Town of Hull in November (2011). There were 9 sites that I chose. If you look on the second page, you can see the map and the wells are numbered.

Holdridge These were all household wells?

Nitka Correct.

Holdridge How do you go about getting the citizen to cooperate in this? What is your approach?

Nitka Ray (*Schmidt*) had contacted a few of them. Also Bill (*DeVita*) and Paul had made a few contacts.

Holdridge Did they have to sign anything?

Nitka They didn't.

Holdridge So they said you can do this.

Nitka Correct.

Holdridge That's good.

Nitka We tried to target wells that had previously tested above the drinking water standard for nitrate. Then we also looked at one deep well that may have been a concern with uranium. A brief summary of the results starting with nitrates: 4 of the wells had greater than the drinking water standard which is 10 milligrams per liter. So the 4 with the highest were wells 1 and 6 which had approximately 13 milligrams per liter. Then wells 2 and 3 had around 36 milligrams per liter, so that's over 3 times the drinking water standard.

Holdridge That ought to alert something.

Nitka I also looked at arsenic. All of the wells I looked at were less than 1 part per billion and the drinking water standard is 10 parts per billion. So that was good. I looked at uranium and again, there was really only one I was concerned about. All of the wells were less than 9 parts per billion and the drinking water standard for uranium is 30 parts per billion. Another thing I looked at that goes along with the nitrate, is I looked at agricultural herbicides and their breakdown products. Those were detected in 7 of the 9 wells. The ones with the highest concentrations were wells 2 and 3. So if you look at those wells, they also had the highest levels of nitrates. I also looked at a sweetener. A sweetener was detected at 4 sites. So acesulfame (*sweetener*) was detected at 4 sites, 3 of those were greater than 1 part per billion. The reason I tested for acesulfame is because that can be linked to septic system contamination. I also tested for boron. Boron is naturally occurring but it can also be found in laundry detergent so again, that could be linked to septic systems. It was found at all the wells but the highest concentration was well 6 and that was over 126 parts per billion.

Holdridge Is that sweetener, what would that be in? Hershey bars?

Nitka I don't really know.

Bablitch Soft drinks, some chewing gums, some toothpaste and all sorts of products.

Holdridge You brush your teeth and it goes down into the septic.

McGinley A lot of times they are blended together. They use more than one sweetener at a time to give you a better...they mimic sugar better if you mix them together.

Holdridge What is the impact of that?

Nitka With the sweetener?

Holdridge Is it a health concern?

Nitka I wouldn't say so much of a health concern as I was using it more to track perhaps the source of the nitrate.

DeVita It may be an indicator of some other pharmaceuticals that come from a septic system.

Bembenek I see with the nitrates, the ones with 36 mg/l, they're right next to each other, wells 2 and 3. Well 6 is not far behind.

McGinley Which is consistent. Earlier we did that evaluation of the nitrate results from all the testing in the Township and it was that eastern section or zone that had the highest nitrate distribution and the highest nitrate concentration overall.

Holdridge It could be from farm fields or it could be from septic or a combination. Especially in the eastern part.

McGinley Right. That was part of the thinking in Amy's study. That groundwater is coming from the east there. Going east to west. So some of it is starting east of the Township in a more agricultural area and other water is originating inside the Township. In all cases, you can get septic contamination in addition to that.

Nitka If you look at the map, you can see the small dots on the map, those are septic systems.

Gjevre Pretty high concentration of septic systems right there too.

Holdridge What subdivision is that? With W2 and W3.

Nitka That is south of Fleet Farm. Conifer Acres.

Prusak South of Old Hwy. 18. So they're relatively new wells.

Ray S. They're 20 years old or 30.

Prusak Relatively. Some of the newer ones in the Town of Hull.

Holdridge Then on the back (*of the sheet*)....

Nitka The back shows the list of all the pesticides and metabolites and the breakdown products and all the pharmaceuticals I tested for.

Holdridge Could you do all this at the University?

Nitka Yes.

Holdridge You didn't have to send it in.

DeVita This is part of a course Paul and I teach that Amy did this project through.

Holdridge Who paid for the testing?

DeVita It was pretty much the lab, the University lab.

Nitka For the course, we had a budget so that's what directed the number of sites I could test.

Holdridge In terms of selecting these people, how did you do that?

Nitka Again, we tried to target ones that previously tested higher than the standard for drinking water for nitrates. I also wanted to try to get a representation of the different areas of the Township.

Holdridge What are you going to do with this? Have you communicated this (*results*) to the well owners?

McGinley I don't know how much communication you had with the owners of the wells.

Nitka I've only communicated with a few of them. Then I'll probably do a further report for each of them.

Holdridge I think that would be great. So they know that they contributed to something and here's what you found. From a legal standpoint, those that had a high nitrate, over 10 ppm, that's up to them then to follow up and do what they have to do to get those.....

Prusak Are they all aware that they had high nitrates?

Nitka Most of them were. The 2 highest ones, they have filtration systems in place so these were tested from a source prior to the filtration.

Bembenek You said these were tested before. Were these from ones I did years ago?

McGinley They could have been. I think they're from more recent testing. I don't know specifically what time period, but based on some knowledge that Ray had of some tests.

Ray S. They were some samples I had in our GIS.

Gjevre Just out of curiosity, how effective are the filters? From 36, what does it bring it down to?

Ray S. Good question.

Nitka Actually I did test one of the sites after filtration, where it was originally 36 and it brought it down to somewhere between 17 and 22.

Gjevre Which is still above standard?

Nitka Correct.

Holdridge Could you get it lower with more filtration? Whatever that means. Can you do more filtrating?

Bembenek It's under half.

McGinley 50% removal is not great removal. We don't know the specifics of that particular treatment. I haven't really done a lot of testing of different systems but presumably you should be able to get pretty good nitrate removal. It's not the easiest compound to get rid of but using reverse osmosis, I guessing that was the type of system probably used, I would think you could get pretty good removal, more than 50%. I don't know, maybe Ray, you've got comments on that?

Ray S. Yes, they should be able to get better removal than that. Some of these household systems, the pressure is too low to get enough flow with the reverse osmosis.

Holdridge What do you mean, "reverse osmosis"?

Ray S. That's what they're using for nitrate treatment.

Holdridge Is that a chemical you put in there or something?

Ray S. It's just a tube that the water goes in. It lets the water molecules pass through a membrane but it retains the bigger molecules.

McGinley The reason they call it reverse osmosis is because the only reason the water goes through is because you're pushing, increasing the pressure on the contaminated side so that essentially will push the water into areas where you just have more water and less salt which is the opposite of osmosis so they call it reverse osmosis.

Holdridge Did you do anything on bacteria?

Nitka I didn't do a lot on bacteria because most of them had a filtration system so it wasn't really a concern with their drinking water. I was more concerned with the nitrates and the sources of nitrate.

Holdridge Other questions for Amy?

Laug            With the boron there, the highest concentration at 126 at well 6, what can you do to fix that? What does that cause?

Nitka            Again with the boron, that wasn't a concern as a drinking water standard, it was more trying to link the source of the nitrates. Boron is found in laundry detergent. It would be likely it would be coming from a septic system.

Ray S.            That's in your neighborhood?

Laug            That's my well.

Holdridge        No wonder you have an interest.

Laug            I'm high in nitrates too.

Nitka            Yours is also high in the acesulfame, the sweetener.

Ray S.            I know you've got a fabulous budget for running these samples but what would these cost the average homeowner if we wanted to start looking at these? Because the potential is there for people to want to know.

Nitka            Your nitrate and metals under the homeowner's package are probably under \$100.

DeVita            The nitrogen and phosphorus containing pesticides, with the chloroacetanilide metabolites, that's \$200. Acid herbicides; we do those for \$75 and pharmaceuticals probably another \$75. So about \$450.

Holdridge        Can you do those all on your site? Or is it something you have to send out?

DeVita            We do them all on site. We can do a lot more too but we try to limit them because of the budget.

Bembenek        The \$450, that's with the \$100 homeowner's kit?

Nitka            Correct.

Zimmerman     The average homeowner, if any of these are detected, most of them are scared stiff that if they find something, their property or somebody is going to come after them. Their property is worth less. Somebody is going to come after them because of it. But in a practical sense, what does it mean for them? Even if they didn't have to share any money (*cost*). In other words, high nitrates – can they go to the store and buy bottled water and drink that? Can they shower with the high nitrate water? If they have some kind of farm chemical, what does it mean to them? More of a practical reasoning. What you should do, what you can do is more like what I'm asking.

Nitka I guess with the nitrate levels, I don't really think there's a problem with showering or laundry with that. It's more the drinking water. The pesticides that I found, I don't really know if they've exceeded any drinking water standards. But I was using it more as a tracer. I don't think there's any health concern with drinking that water at these levels. I was just trying to find the sources of where the nitrates are coming from.

DeVita As far as the pesticides go on the list, the standards for atrazine and atrazine breakdown products, there's quite a few standards the Wisconsin DNR and the EPA has listed. Those are really all done for single analytes. If you have 2 parts per billion atrazine in your drinking water, you're below the 3 ppb standard so it's considered safe to drink. But if then you put in some of the acetochlor ESA or alaclor and start getting some of these chemicals into the aquifer, and you're consuming these on a daily basis, I guess we really don't know what happens. There's no standards of synergistic affects, this combination of the affects of chemicals. So if you start seeing a lot of different compounds, you may choose to go ahead and treat your water with an activated carbon, something that would pull these compounds out of your water. It gives you some information what to do. No one is going to come after you if you have water that has greater than 3 ppb atrazine. Nobody is going to come after you but you're right, it is information that you have and I think you are legally bound to transfer that when you sell the place or try to sell the place.

Holdridge Do the banks have a requirement for a water test? I know they usually do the septic system.

DeVita That's for nitrate for Portage County.

Ray S. Years ago it was much more the case that people were concerned that it was going to affect their property values or they wouldn't be able to sell their houses. But we've got a quarter of the private wells in the County that are above the nitrate standard and 3 of the villages are near the standard or over the standard and using treatment consistently. It's not as scary for people any more now that they understand it. I think the same thing will happen as we bring these other things out into the open. The unknown is what people are afraid of, what might happen. As we educate, we're going to be getting rid of that attitude of "I don't want to know" because of what might happen down the road. When I talked to some of the folks and asked them to participate with Amy, some of them asked that question. "Well what if we find something?" I said, "Well, then you'll know what you're drinking. You'll know what's in your water." That is our primary focus.

Holdridge You know you've got a problem and you've got to deal with it.

Ray S. Or, you don't have to deal with it.

Holdridge Right, it's up to them to decide.

Amman Well some of the dealing with it can be selective. I know some people that know that they have higher nitrates at their home so what they do is, when they have grandchildren or

infants come, for those, they have bottled water. For adults, it's not really an issue. So it's knowing what people it targets a little more.

Ray S. We used to say that it wasn't an issue because that was the advice we were getting from the State Commission of Health. Now the advice as of about a year ago is that no one should consume water above the 10 parts per million nitrate standard for extended periods of time. Even normal healthy children or adults. Because of the unknown affects of other things that might be in the water. The synergistic effect of nitrate and other chemicals. So that's old advice.

Amman When you say synergistic, you other things that could be combining with the nitrates could be causing issues. Is that what you mean?

Ray S. It could. Say you have nitrate above the health standard, that will cause certain health effects. You've got atrazine above the health standard, that by itself will cause certain health effects. But if you combine the two and even if only one of them is above the health standard, we don't know what the effects are by that combination. If we've got a chemical soup with several different pesticides and high nitrate, we just don't know what the affects are going to be. But we know that the affects of the chemicals together are worse than an individual chemical that the body is trying to deal with.

DeVita Just to clarify what Ray is saying, just so we're clear, we're not talking about the chemicals actually combining but the (*combined*) effects of the chemicals.

Ray S. Right.

Holdridge Is there actual research going on by the group out of Atlanta (*CDC*) to look at these kinds of things?

Ray S. The CDC? I don't know? Paul?

McGinley I don't know if they are, but I think there are some studies continuing on these health effects.

Holdridge Nitrates.

Bembenek I see well #8 is 240 feet deep and the nitrates are 4 mg/L or less.

Ray S. That's your token bedrock well.

Nitka That's our bedrock well and it actually did not have the highest level of uranium but they were all pretty low.

Holdridge Amy, what area are you in school?

Nitka I'm a graduate student.

Prusak With this limited study being done, what conclusions would you draw from this? What questions would you want to pursue with this?

Holdridge Or what do you do now?

Laug Do you treat a well with bleach?

Nitka Bleach is for bacteria control.

Ray S. Bleach would just add one more contaminant.

McGinley Going back to a question that Ray had earlier was that what is the cost of some of this, one of the purposes of Amy's work and similar to the proposal that we had discussed last time, that was in this packet, a more detailed investigation along the lines of Amy's study would be to try to reduce the cost and try to figure out what we might be looking for so that we don't have to look for everything. If we were going to try to make that distinction between is it the septic system that's contaminating this, in which case you probably aren't going to worry about agricultural pesticides but there may be other things to be concerned about. Or does it look like agricultural contamination, in which case like Bill was saying, I might be thinking about a carbon filter or something to treat some of those. Maybe this type of study would get us to a point where we would at least simplify the testing if you came in and had a question like what's causing my nitrate? We could say it's (*tracing*) boron and a sweetener and this and that and maybe that test package would be \$100 or something like that. I'm speculating there. But that would be the point of this. That would be a long range goal, not really the specific conclusion of this study.

D. Schmidt For the average homeowner coming in, they wouldn't necessarily know what problems they have so you would need to have a starting point. Along the east side we have the nitrates. Or in the northwest corner we have as close to perfect water as possible. And everything in between. A lot of places have high septic system concentrations.

McGinley Right. Which gets you a start. There are a lot of unknowns. As Ray talked about in the previous session, if it is a septic system that's contaminating the water, it does open up the possibility that there are viruses. These are areas we just don't know that much about. Hopefully this gets us a little further down that road.

Zimmerman Just a suggestion. I don't know how good this is going to be, but I see Patty as being one of the head persons for the point of contact, so to speak. You almost need to have a little box...what about my water, what can I do about my water, I'm concerned...is it bad or is it good...what can I do if it is bad. Just like we're discussing tonight. Patty's going to be the point of contact then. She might refer them to Ray but the point of contact is always town clerks (*Hull Town Clerk is Janet Wolle*). So if you can come to some conclusion, maybe Ray can carry it on when we have these different testings at different townships where you have a standardized this is what you can do so other town clerks... you don't just box it off...the Town of Hull.... it

doesn't cost anything for a little information for these town clerk's to know. A 5 or 10 minute presentation by Ray would go a long way towards expanding knowledge of what's going on.

Holdridge Are you doing testing in other towns now?

Ray S. Yes. We have groundwater education sessions where folks will bring in a sample of their cold water and we'll run a nitrate test.

Holdridge Have you done anything like what Amy's done here?

Ray S. No. This is groundbreaking. This is right on the frontier. What we're doing here.

Holdridge My concern is that you make sure you follow up with people and let them know what you've got. Tim's suggestion is some sort of information on this. If they've got nitrate problems, here's what they might want to consider.

McGinley There are resources available. Brochures available on that.

Holdridge So often on these studies you kind of forget the source.

Ray S. One of the things I see coming from Amy's study is just having the boron and the artificial sweetener, if it's in your water, you know that water is coming from a septic system. Even though boron probably won't hurt you at those levels and sweeteners are probably innocuous, but everything else that is water soluble that someone is putting in their septic system is getting into the groundwater. That's scary to me.

Amman And it's not their septic system. It could be the neighbor's septic system.

Ray S. Sure, or it could be a half a dozen septic systems up the line having all their stuff....I said before, fear of the unknown isn't as bad as it used to be. Well it is for me. This stuff is....there's so much stuff there we didn't know.

Holdridge Amy, we certainly appreciate you doing this.

Nitka Thank you. I appreciate your interest.

*Motion was made by Phil Gjevre to accept the report given by Amy Nitka on the research project she is working on in Hull testing 9 wells for tracer elements from septic versus agriculture sources. Motion seconded by David Schmidt. Motion passed.*

Holdridge Maybe this is also something that would fit into your study, Paul. Let us know if there's others. I would think you can call the Town and talk to Barb or Janet and they can take any information you want to give them.

Nitka Sure.

Holdridge That will work fine. Now let's go to Paul's study which is very interesting. I didn't understand all of it or some of the terms. It looks like you're going to select 15 sites. I'm interested in the process. How do you identify 15 households? Are those people who have had test before? Or are clearly interested?

McGinley That was the thinking when we started. Similar to what Amy did. Try to target a group and see if you can get people to volunteer and be willing to participate. They would then be getting free testing as part of that project. It really is a lot like Amy's project. The 2 are very related. There would be a similar type study. The difference would be that there would be multiple tests at the well. So we would sample the same well throughout the study multiple times. There are other questions here. These nitrate concentrations are not constant this time. We see that in the monitoring well data if you look at that information from Kim. We see that in private wells. So concentrations go up and down. So this would be a way to really repeat Amy's study and get more detail at multiple sites over the course of a year and a half.

Laug I had a day-care at the house when we first moved here in 1990. I was state-certified so I had the water done. I've had it done twice before Amy's study. Is there any way you can go back on those nitrates and see what the study was on that location?

McGinley Oh sure. Chances are those were samples that were analyzed here at the University.

DeVita If we're asked to do it, we'll do it.

Laug Just to see if the nitrates have changed any since we've been there.

DeVita I think you did that initially there didn't you Paul? You had some of that information.

McGinley Just a little bit. We had some of that data from St. Casimir church because they've been testing the nitrate concentration every year since 1995 or something like that. Because they're a public water system. Nothing is typical I suppose but that's sort of typical. It's kind of up and down. In that case it was 8 then it would go down to 4 and then higher. We see that in the monitoring well data. Look at the monitoring well data that the City provided. Some of those wells, the nitrate goes up and down over time. So this would be a way to get at that because with the single test, we don't know. If a single test would always show boron....

Laug We didn't have that when we tested for State certification. Also, do you use the same machine? Or do machines vary from here to last time?

McGinley Different machines, but always compared with standards and the State certifies laboratories. We're a State certified lab for nitrate.

DeVita They go through proficiency testing every year. Sometimes a couple of times a year so the numbers should ..... We have the same analytical method from one machine to another.

Ray S. Some of the methods they are using now were not even known back then. Bill has developed some of these methods here at his lab. To look for this stuff.

Prusak Nitrate has remained the same.

Laug Just the nitrate levels. I know we were tested twice for that.

Holdridge Paul, do you want to take over and relay anything about your report?

McGinley There's nothing new. Amy set it up with an extension towards that kind of a project where we would hope to refine our ability to distinguish between different sources of nitrate contamination. That's the general purpose. I think locally, there may be more interest in the actually specific results and that may be something that feeds into your process down the road. But from the standpoint of a proposal, it was written strictly as a research project. This is a question that not only do the people in the Town of Hull care about but there are questions about this everywhere. As Ray said, these are new ideas, new methods that have just come along in the past couple of years. So hopefully this will be a way to make some scientific progress on water contamination.

Amman They'll be letting you know in February or March if you will get the grant?

McGinley March or April maybe.

Holdridge On the last page under methods it says, "Wells will be selected in the Town of Hull, Portage County in coordination with the Portage County Water Quality Specialist." Is that you Ray?

Ray S. Yes, that's me.

McGinley I think we talked about that ahead of time. Thanks for pointing that out.

Holdridge You knew that was in the proposal Ray?

Ray S. Yes.

Holdridge So then you select these 15. You have a map here in those particular subdivisions. Where is the one on the corner? Where would that be? Is that off of Hwy. 66? You've got a big subdivision here and I think that's the one put in with big lots.

Prusak That's the new one of Pulaski's. It's between Jordan Acres and Patricia Pines.

Holdridge Those are all bigger lots.

McGinley I got some help from the County to put that map together.

Holdridge The bottom map, where would this be, is that 10 going across?

McGinley 10 is right in the middle.

Ray S. Hwy. 10 and I-39 interchange is over on the left side of it.

McGinley We weren't trying to provide anything real specific there other than for someone reading it. We send these proposals out to people that don't know anything about it and they have to comment on the scientific validity and importance of this kind of work. So we just wanted to convey the idea that this is a challenge that communities are grappling with to figure out what the source of contamination is.

Holdridge I notice you use the word suburban. We are really suburban. We are a suburb of Stevens Point. How much money are you asking for (*the grant*)?

McGinley About \$60,000 over 2 years.

Holdridge So that would pay for the well (*testing*) and any staff assistance?

McGinley It would pay for this analysis we're talking about. Amy is describing this as \$500 or \$600 per sample so it adds up when you do this over and over again.

Holdridge Of those 15 wells, how many times will each well be tested?

McGinley I believe it's 6.

Holdridge When will you know, Paul?

McGinley In probably 2 or 3 months.

Prusak How would you choose the 15 wells?

McGinley Ideally we want to see a mix. We want to see some systems that probably have some septic impact and some that have ag impact. It would be by location and also by nitrate concentration.

Prusak Would you do them in pairs, like 2 neighboring properties to compare the same things? Like 7 pairs or 5 triplets or something like that?

McGinley That's a good question and I can anticipate that there's going to be criticism of the proposal on how do you pick them so you're getting something representative. Our goal here was to say these are wells that are already exhibiting some contamination. What else is in there. In that case, sample that well 6 different times over time so that you get some idea of how these other things occur and vary over time so that later, if we are making recommendations to somebody, we can say, you can't just do it once. You probably have to test that well 2 or 3 times to get a good idea of what the concentration of these things are.

Bembenek You'll be doing it every 120 days?

McGinley Yes. We've just got to work it out to be less than 2 years so we get the results done in 2 years.

Holdridge You don't anticipate having any trouble getting households to cooperate?

Ray S. Not if they want to know what's in their water. Most of them do.

McGinley So to come up with 15 or 20 initially. That may not be that difficult out of 2000 wells.

Holdridge I don't think we're over in that area. We're over by the well fields. I'd love to have my well tested over time.

Bembenek Probably all 12 of us wouldn't mind that.

McGinley I'll keep that in mind.

Prusak If you do that, you'd only need 3 more.

Ray S. Amy, I have a question back on yours. You have the sweetener and you have the boron but on the other side you have a list of pharmaceuticals and personal care products. Did you test that whole list?

Nitka I did and most of them are below the detection limit or had some other issues where they weren't really useful for comparison.

Ray S. I noticed in Paul's grant application here, acetaminophen is one of the indicators we're relying on. I wondered if you had tested for that and found it.

Nitka We did test for that and I don't think it was up to the detection limit. We are also looking at a new method for better identification.

McGinley Acetaminophen has had mixed success in the past. It seems some people have found it in groundwater and others have not. It seems like maybe it isn't as persistent as you might think, it might break down.

Holdridge Thanks Paul.

McGinley I appreciate your interest.

*Motion was made by Russ Prusak to accept the report from Paul McGinley on the grant proposal Paul has submitted. Motion seconded by David Schmidt. Motion passed.*

**6) Report of Water Quality at Hull Municipal Building. (McGinley)**

Holdridge Now to what we're drinking in this building. We had a test taken and if I read this right, this was taken in October and we got the results somewhere around December 31<sup>st</sup>. That item 6 (*handout*) is what they told us.

Amman The sample was taken from the back sink in the bay.

Holdridge The road crew has bottled water they drink from. They don't drink our water.

McGinley We took our sample right out of the tap. We ran the tap for quite a while then took the sample. Split it with the lab at the State Hygiene. We talked about this earlier. We ran it in our laboratory and our laboratory runs.....do you want me to get into this a little bit here?

Holdridge Yes.

McGinley Let me pass a fact sheet around which isn't our fact sheet but if you search for uranium and you're looking for information, it's quite an issue in the northeast United States; Vermont, Connecticut, Maine and in Canada, Nova Scotia all those areas have their state and province environmental departments that have prepared fact sheets for citizens. There is quite an issue in some of those areas. I copied the one here from Conn. That's some background information I thought you would be interested in. Does everybody have the copy of the State lab report from the State Lab of Hygiene?

Holdridge That's handout #6.

McGinley This looks confusing. I'll give you a quick description of my understanding of how I think this works: uranium is an element but there are actually 3 different isotopes or forms of uranium that you can find in the water. So they're giving these numbers of 234, 235 and 238. As it turns out, this is naturally occurring uranium found in bedrock. A little bit can dissolve in the water and that uranium, most of the uranium in the bedrock is in the 238 form. By weight, almost all the uranium is going to be in this 238 form. These are radioactive elements which means they break down over time. So the element will break down and release a little bit of energy and form another element. The rate at which they break down determines how radioactive they are. So if it breaks down really quickly, it is considered very radioactive. If it breaks down very slowly, it has less activity. It turns out that uranium 238 doesn't break down very quickly. It takes 4 billion years for half of it to disappear. So we would say that is a really long half life. Even though it's most of the weight, it doesn't have much of the radioactivity. It turns out that 234 is just the opposite. It's very little weight, a very small percentage of the total uranium, but it has a much shorter half life, about 400,000 years. It's still long but a lot shorter and that's the one that tends to be radioactive. As a result, when you get a complete uranium analysis, you end up with the report of the radioactivity and they report the weight which is the mass on here. With the 234, 235 and 238, you're given an activity; how much radioactivity is coming and a mass; how much it actually weighed in the sample.

Holdridge So the results is the "mass", is that right?

McGinley Well if you look down at the bottom, they turn out to be about the same. Total uranium activity is 79 and it has units of pico curies per liter, which is a measure of radioactivity. Then the weight or the mass is 76.7, that very last line is 76.7 micrograms per unit, the ug/L is micrograms per liter. When they tried to develop a drinking water standard for this, this made it really complicated. How were they going to come up with a standard when they've got different radioactivities and different mass? In the end they just concluded that because most of the time the ratio between these things are about the same, they just said they're going to make the standard 30 micrograms per liter and we're not going to typically require people to look for all these forms. You add up the 3 forms of uranium and you report that as a uranium mass, the bottom line on your sheet. In our lab, we just ran a screening test where all we measured was the uranium 238 mass. As you can see, that's the 3<sup>rd</sup> line from the bottom. The uranium 238 mass is 75.8 and the total mass is 76.7 so it gives you basically almost the same number because almost all the uranium is in that 238 form. So if you're measuring the mass, you're going to get a pretty good answer measuring the 238 mass.

Holdridge And the 30 is the standard?

McGinley 30 is the (*drinking water*) standard. The other side of this is the standard is 30 micrograms per liter and this is 76 so that's about a little more than double the standard. This test used to be a lot more difficult. Now with an instrument like what we have, we can easily analyze something like uranium 238. As Amy mentioned, she did that on the 9 wells she looked at and they were all less than 10 which was the highest. One was a 9 and even the deeper bedrock well in the northwest area was about 3. This well here (*this building*) is deep. Around 350' in rock and so that's certainly a likely candidate for high uranium but obviously based on the results on that other well, that doesn't mean you're going to have uranium if you have a deeper bedrock well.

Holdridge You said other well?

McGinley It was 240' I think?

Nitka Correct.

Holdridge Now what other well?

McGinley The well that Amy looked at. She looked at a well in the northwest (*area*). No, not another well here.

Holdridge When you say uranium 238, I think of the atomic bomb.

McGinley Yes, in fact 235 is actually the one used to initiate the chain reaction. You'd need a lot more than what you've got here in the water to do that.

Holdridge What does this mean?

McGinley The drinking water (*standard*) is 30 micrograms per liter. That's based on kidney health effects. There's a little bit of a description in the thing I handed around. There's been work done in Canada, several studies and they're really detailed and from the World Health Organization or some things you can get on-line from Nova Scotia that talk about the effect on kidneys. That's really what the standard is based on. Less on the radioactivity. There's still radioactivity but it seems like the drinking water standard is based on the health/kidney effect. Just like any other drinking water standard, they set a standard where they think it's going to be reasonably protective. They've got some factors of safety in there but everybody is different and everybody reacts a little bit differently. The easiest thing to do is to say, well the standard is 30 and I've got to try to meet that.

Bembenek So we shouldn't drink this then.

Amman Not continuously.

McGinley The standard is based on 2 liters of water a day for a lifetime of exposure.

Ray S. For a 170 pound person.

McGinley There are health risks associated with drinking high uranium water.

Holdridge Is there any way to get that out of the water?

McGinley You can treat water to get uranium out of water. It's not as easy as just softening water. The reverse osmosis unit we talked about earlier for nitrate would be one way to do that. That's what they educate for in Conn. There is also something called ion exchange which is kind of like a nitrate treatment system called an ion exchange unit that actually replaces the nitrate with chloride. You could do the same thing, replace the uranium with chloride. That's an alternative treatment.

Holdridge It sounds expensive.

McGinley All those things have maintenance with them in addition to the initial cost.

Ray S. It says here uranium tests cost about \$50. What's it going to cost here? People are going to ask that.

McGinley We'll have to work through that. In our case, it would be a screening test where we'd probably look at 238, we could look at 235 and 234 but the masses are so small. But it could be done. In my opinion, by looking at 238, that gives you a pretty good indication.

Holdridge Is that something you're going to test for in your study?

McGinley We didn't include it in that study. To stay on that research theme, we really wanted to stay focused on distinguishing the difference sources of nitrate. This is a little bit of a different question here.

Ray S. But people are going to want a uranium test.

McGinley The State Lab test, which is of course quite detailed, this is a \$160 test, I think. That does provide both activity and mass. For most people, I think it would be sufficient to run a quick mass test.

Holdridge So if you were a homeowner and got this results, what would the homeowner do, start importing their water? You can use it for showers and that kind of stuff but not drinking.

McGinley Right. All the literature that I've seen says don't worry, it's not an issue for contact, for showering, things like that. The consumption of water and the kidney effect is what the standard is based on. If somebody wanted to do something about it, I would say you're looking at reverse osmosis.

Holdridge Is it age related? You wouldn't want to give this to young people, under 10, you wouldn't want them drinking this water?

McGinley I don't know specifically. In general, because they have a lower weight and they tend to be, in some cases, more susceptible. But I don't know specifically.

Bembenek That discoloration we have outside here on the building, is that with the uranium?

Amman That's iron.

McGinley That's got to be iron. In a way, if you think about it, these are pretty low concentrations overall with everything that's in the water. We didn't run your iron. But if that was a milligram per liter, that would be 1,000 micrograms per liter. It could be 2,000. There's probably a lot more iron in there.

Holdridge I'm glad you gave us this Connecticut report because we'll probably have to go to the Board at the next meeting. Patty had sent out some stuff. Where was that taken from?

Amman Here, I'll give you (*Paul*) a copy of this. This was from Nebraska (*info. sheet*). They had some options in there for public/community water supplies or if you find it in your private water supply. What you might consider doing about it. Just some practical sorts of things.

Holdridge Is it because we are probably a public water supply here like a mobile home park, does that have some repercussions for how we handle this?

McGinley Technically, I don't think you are considered a public water supply system because you don't have enough employees at one time to bump yourself up to that.

Holdridge Even though anybody can come in here and drink from it.

McGinley Right. In fact the only public water systems that would do that type of testing would be community systems. There are the mobile home parks in the Town of Hull that have tested for uranium. But normally a tavern or a church would probably not be looking for uranium because it's more of a concern for someone drinking the water over a long period of time. I don't know where you would fall into it requirement wise.

Holdridge If you make coffee, does that do anything to this?

McGinley It probably isn't going to change. I don't know. If it's percolating through, is it attracted to the coffee grounds? I don't know. That would be a great research project.

Gjevre Is uranium found only in bedrock type wells? Or drilling through rock? Or can it be found in the sand/shallow wells?

McGinley It can be found in both. Most of the sand and gravel here is material that came from the glaciers from the northeast. There certainly could be material even in that sand and gravel that contains some uranium. I don't know if that would be the source that's going into the water. How likely these different sources are to show up in the water. In Amy's study, just looking at those 9 wells, it was a real mix. Some of the sand and gravel wells had 3 or 4 micrograms per liter, nothing near 30.

DeVita Mine was 9 and that's a sand point.

McGinley We also don't know how variable it is. The 2 tests we did here were pretty close which was pretty interesting. We ran them about 3 weeks apart (*the UW lab and State lab*) and they were pretty close both times.

Amman Pretty consistent.

McGinley I don't know how variable it would be.

Ray S. Are there methods for screening other radioactive substances or can you use a mass method to get radium and radon?

DeVita The gross alpha and gross beta test that they do at the State Hygiene Lab; I want to say it's around \$50. The Town of Hull kind of by-passed that and went right to the uranium test.

McGinley Partly that was based on the other testing that was done in the area. This is an area where we typically, at least in the data I've looked at, we don't find a lot of radium. Radium is another radioactive element. One of the forms of radium is part of the same series. Uranium breaks down and eventually you end up with radon and radium and end up with other radioactive elements. Waukesha, their radioactive issues in those deep sandstone aquifers, they have high concentrations of radium. They don't have a lot of uranium in there. That's not even something they're talking about.

Laug            My brother-in-law lived in Waukesha and he had severe kidney stones and they actually told him at the hospital that it was from drinking the water.

McGinley      I don't know about that.

Laug            They did, they said that. Because he had to go back and have them blasted several times. That's what he told us.

McGinley      It turns out that's a lot easier to get out of the water but that's not going to help us here. So in answer to your question, you could do this gross alpha, gross beta which is a measure of overall radioactivity. It might be of interest to do a small amount of that. Some results of that are already available. The mobile home parks, the community water systems in the area have gotten that kind of testing. Some have looked for radium. In my review of that, it just didn't seem like there was much radium in the water.

Ray S.         I know the Fairview Village Mobile Home Park had radioactivity issues when they deepened their wells and I think that is part of the reason they went with municipal water supply.

McGinley      We should go back and look.

Holdridge     Right over here, Ray?

Ray S.         Yes. I remember that was when Fred Bailey was the DNR private water specialist and that was probably 10 years ago now.

Holdridge     Radioactivity, what does that mean?

Ray S.         It's the radium, fluorium, uranium, different radioactive elements in the water.

Holdridge     I keep thinking it means something where you're going to lose your hair, or cancer causing. You say it basically affects the kidneys?

McGinley      In the case of uranium it does. Each element has its own toxic effect. In the case of radium, which is the problem in Waukesha, that tends to mimic calcium and so the issue there is it tends to be that it gets in the bones and as it is a radioactive element, ultimately it can break down and that is when that energy is released, that can cause problems. So it depends upon the compound. Radon is part of this scheme. We don't think of this. Radon is a gas. Maybe you've tested for that in your basement. That's not really a drinking water issue as much as you ingest the radon. It can get in the lungs and lodge there and it's radioactive.

Holdridge     I think Marathon County almost mandates that for its households.

McGinley      You could see where that would be a logical thing in some of those areas, where you're closer to a lot of bedrock.

Ray S. I've been looking for the results of a radioactivity study that was done in the 1980's by the DNR. They call it the North Central District Study. They did a little bit in Portage County and Marathon County, they did a lot of wells up there. A few over in northern Wood County and up through the granite counties to the north. We had several wells out along Hwy. 10 East that were high in radioactivity. Treder's Farm was one of them, Klismith's east of there, the Eau Plaine mobile home park out in Stockton. Fleet Farm; that was part of the reason Fleet Farm went to municipal water because they had radioactivity in their well. It's through that area but I don't know what specific elements they were talking about. There were a couple of them on Evergreen and up North Second. I'm trying to get that data but currently it's in hard copy somewhere but it's not on anybody's computer yet. I'm working on that and sometime we'll be able to use that as background stuff too. But not everything is as easy to get at as some of the computerized data we have so far.

McGinley Thinking in terms of cost, I think a gross alpha screening is not particularly expensive. It might be \$50 or something like that so it's not unreasonably pricey. If you were able to do that in a group of wells and maybe the uranium screening over here, that combined test would probably be \$100 for 2 tests. That might be a way to get at some of this data.

Ray S. That would be something people would be interested in. Just the whole radioactivity thing scares me/them.

Bembenek You mentioned Ray \$50 for the uranium test, the radium test in Conn. is \$200. Does that test have more to it or something?

McGinley Yes. Those tests tend to be a little bit more expensive because you actually have to measure the radioactivity. Radium is different than uranium in that it has such a relatively short half life that there really isn't much mass there, not much weight. But there is radioactive decay. To get the results you have to measure the radioactive decay. Much like they did in your test for the uranium. I guess that's why this was \$160 for the uranium test. Going back to that radium question, I think you could get at that radium with the gross alpha and gross beta test that Bill was talking about. 226 is an alpha and 228 is a beta.

DeVita The gross alpha and gross beta test at the State Hygiene lab is \$68. Radium 226 and 228 is \$245.

Holdridge Still sounds like an atom bomb to me! You start using those numbers.

McGinley They'd have to concentrate a lot of water to get there I think.

Holdridge Okay Paul, anything else?

McGinley That's probably enough for now but I'm happy to answer questions or if people have questions after this. I've accumulated quite a few of these fact sheets and have some other information. Let me know if you have questions tomorrow.

*Motion made by Bill DeVita and seconded by Phil Gjevre to accept the report from Paul McGinley on the information of the water test for the Hull Municipal building. Motion passed.*

**7) Water Test Data Pertaining to Hull Collected by City of Stevens Point.**

Holdridge This was collected from 1988 (*through 2011*). Raymond, Melvin, myself, Kim Halverson and Joe Lemke were there. She provided this to us. We also got a map but that map is under wraps. We secured that. But she did give us an up to date listing of her testing which we were very happy to get. The last one was 2011.

Prusak So we don't know where in the Town the wells are by number?

Holdridge Well we do.

Prusak Does your map correlate with these wells?

Holdridge The map shows where they are so we know where they are but we can't show the map. Melvin and Pete went out and located where the wells were. One is right out here in our parking lot.

Prusak There's another one on the corner.

Holdridge There's an awful lot of people who know where these are. So it's not exactly top secret.

Gjevre With the latitude and longitude on these things, anybody can find them.

Holdridge We were pleased to get this. Who can talk through this that understands it?

Bembenek This is pretty helpful to you, right?

McGinley I went ahead and plotted up a couple of the results. You can look through there and make some sense of it but I also did make a copy of just a couple of them if I can hand that out. I know Bill was looking at it too and maybe he wants to make some comments first. There is a lot of information there. It's really a question of what you want to try to get out of that. It's a pretty long set when you go from 1988 to 2011. That's quite a few years.

Holdridge I was thinking this was very helpful in terms of the quantity question.

McGinley I was intrigued with that. On the first page of this handout that's going around, on the one side, that's the depth to the water on the Y axis over time. So the ground surface at the top and so when it's lower on that graph, it's deeper to the top of the water table. When the graph is higher, the water is closer to the ground surface. So you can see in the wet periods like last year, the water is pretty high and in 1993 it was pretty high. In the dry years of the late 1980's it was pretty dry. 1999 was pretty dry.

Holdridge So these are the selected wells.

McGinley I just picked 2 of them.

DeVita I think MW1 is not going to be affected by any pumping. I don't know about where MW17 is.

Ray S. It looks like there's only about 3' fluctuation total over all those years. But over on #1, I'm skeptical about that one hanging way down there.

McGinley I am too. It's possible there are a few mistakes in here.

Holdridge That would encourage '93 wouldn't it! If you saw it, you'd say thank goodness for '93. That's when we really had a big flood out here.

Bembenek That's when we had all that water over in Emerald Forest area.

McGinley Going to your point, Ray, I think that is something useful and interesting. That does show that if you're not showing any rain coming in, then that water level will go down.

Holdridge If we don't have a lot of snow this winter, if we don't have much rain in the spring...

Prusak If you chart nitrates on some of these wells right after high water years, and see if nitrates went up or down.....

Holdridge With the water?

Prusak Yes.

McGinley It could certainly be done. One the backside are some chloride results from a couple of the wells and then the bottom graph is a nitrate at #6 where Torun Road comes off of 66. There's nothing real systematic about how I picked these. But it's something you could do or others could do. You can see sometimes it's pretty complicated. Look at #1, there you had pretty low chloride and then it goes quite a bit higher.

Amman 6 is right off of Torun. I'm looking to see if they had a lot of salt on the road in 1999 to 2001. Did they salt the heck out of Torun?

Bablitch Maybe somebody hit the well with the salt truck!

Ray S. You know with your question about those high water years, it's kind of a mixed bag because you'll see some of the nitrates going up but with dilution from all the precipitation, you'll see other ones going down. The Village of Plover had fits with that when they were trying to figure out what to do with their water treatment because initially they had a certain parameter with their test wells, what they were going to do to put in their treatment system. Then all of a sudden in '93 the levels dropped and stayed down.

Prusak            So high groundwater is not necessarily correlated to washing nitrates out for awhile.

Ray S.            No, it's not. It depends too upon the integration into the water table. Those wells in Emerald Forest, they were all shallow wells but when the water rose 6-7' then all of a sudden you've got the screens for those wells down deeper in the water table and you've got the lateral flow flushing the stuff away from the septic systems but it might never get down to the point which is now 15' below the water table whereas before it was 7 or 8'. So it's unpredictable.

Holdridge        So one measure of the quantity questions would be to take each well that's on there and have a graph something like this.

McGinley        You could certainly do that, right.

Holdridge        I know we get these every summer when there's not much rain, people who wonder if they're going to lose their point and have to go deeper. But to have this kind of information..... How would you do this Bill?

DeVita           Paul did this. You basically just type the information in, right? If you don't have the electronic records.

Holdridge        That would certainly measure around Hull. Are any of those wells west of I-39? Melvin, do you know? Did they test any wells there?

Ray S.            I thought there was one over by Kennedy or East Maria.

Holdridge        No, I'm talking about across I-39 and the river.

Ray S.            That would be over on the west side of I-39.

McGinley        #20, I mean near the Country Club, is that what you're talking about?

Holdridge        No. You know where St. Casimir Church is?

Ray S.            North of Park Ridge.

DeVita            Some of the recharge areas for Stevens Point municipal wells we're probably not too interested in.

Holdridge        I was talking about what we always call the I-39 West area. From the interstate over.

McGinley        No. Out of this group of wells you have here in this set, there's 17 across 10 from Target then 20 which is close to the Country Club. There are 2 wells in that area then the rest of them are all north. A couple by the airport; 28 and 9 are both north of the airport.

Ray S. Originally when the County did it, the groundwater management plan, we thought that the primary flow for the airport wells and City well field was from the northwest based on the modeling they had then. So they did put a couple of wells up there to try to figure out what was happening. Then George and Dave M. did some more modeling and found out that there wasn't really that much flow coming from that area, more from the east. I bring that up because we had people confused for years.

Holdridge How do we actually use it? We use it for quantity questions?

Ray S. I would say in areas where you've got this track record, these are probably good for a certain distance around where those wells are. You can say, in this area the groundwater fluctuates about 3 feet over..... we've got almost 25 years of data here, it fluctuates about 3 feet. Then people can know, in your well, it's going to fluctuate about 3 feet. So if your well stops delivering water, the point might be plugged, or you might have only penetrated into the water table 5 feet to start with. You don't know what some of these old wells are like. If you put it down another 10 feet, you're going to be in the water because we know it won't fluctuate 10 feet. I think that might be a reasonable approach for people that have the kind of questions that you've been getting.

Prusak It's a different rate at 25'. A shallow well lift at 25' then going to jet below 25'... you start to capitate. That's your problem....you have to change your pump over. That's the point where a lot of these wells are at in that 24 – 30 foot range. All of a sudden you're starting to capitate that shallow well.

Ray S. Sure and they put them in that way because it was cheaper.

Prusak Right, they go for the cheapest one. The water supply drops, now you don't have any lift. Now you're putting in new pumps.

Holdridge Another source of data. I assume the City is going to continue to collect this. That's what she said.

Bembenek We can keep on getting the information year to year now.

Prusak It will be interesting to see when some of these wells turn on; this new well over here, and see if their test data is actually born out. Especially if they start at 5 and go to 13 someday and see what affect that has.

Ray S. They're only testing once a year on these right? I'm wondering if it might not be beneficial for the Town, as long as the City is sampling once a year, if the Town might want to use that City one for water quality and measure a private well nearby 6 months off of whatever the City is doing and see if there's a seasonal variation. You could rely on the City's data but also measure a well nearby for additional information. Or even 4 times a year.

Holdridge That might be a good recommendation for the future.

Ray S. Because we know there are seasonal variations especially with nitrate and probably with other chemicals as well.

Bembenek That's a good thought.

McGinley You certainly see that in well #20 which would probably have been a good one to plot up. There the nitrate was up and down. It's been as high as 21 or 22 and then as low as 5 in 2003 and 2005 then it was back up to 8 in 2008 so you do see quite a bit of variation in some of them. Which is useful for people to know by itself. That there's going to be some variation in the test result.

Ray S. If you go back just a little earlier where they were doing it twice a year or 3 or 4 times a year, you're seeing those fluctuations then. That would be interesting to graph that to see what you could expect in nearby wells as far as.....

Holdridge Ray, could you kind of write that up with your thoughts on that?

Ray S. Sure, if you think that might be useful.

Prusak It looks like there is some variation in the timing of their sampling. It's not like it's between May 1<sup>st</sup> and May 15<sup>th</sup> every year.

Ray S. They used to go out when they had time. They had student interns and sent them out when they didn't have other work for them to do.

DeVita That well 20, where is that Paul?

McGinley Very close to the Country Club entrance.

DeVita Okay. So that might be influenced a lot by the pumping of well #5 at Iverson. They were using that quite a bit back in the '90's.

Prusak Fertilizer up on the golf course.

McGinley Actually it's east of the golf course.

Bembenek It's across from the golf course.

Ray S. The golf course doesn't have any influence on that.

*Multiple talking.*

DeVita There's a lot of variables here.

Gjevre In 1991 it was tested 5 times each year.

Holdridge Where is nitrate on this?

Ray S. It's about half way across, NO<sub>2</sub> and NO<sub>3</sub>.

DeVita That frequent testing was probably done because they were using well #5 a lot. They were looking at stuff that was coming in and when it went over 10 parts per million, they pretty much just shut it down.

Holdridge They've had different responsibilities than with the homeowner's. Any other questions on that? We'll come back to that and use that.

Prusak There were 17 wells in the Town of Hull?

McGinley You have the results there for 9.

Prusak This isn't complete. There's 9 on the thing but there's 17.

DeVita They're just not testing all of them. It's so expensive.

Holdridge So 9 monitoring wells.

Bembenek 9 that are active, right.

*A motion was made by Dave Schmidt and seconded by Bill DeVita to accept the report on the water test data collection. Motion passed.*

### **8) Preliminary Report of Task Force Findings – Update (draft #5). (McGinley)**

McGinley This is something at the last meeting that I volunteered to initiate. We talked about what kind of report you wanted. You had started with an earlier outline and I offered to put something together. With some comments from Ray and he made some suggestions, and from Bill. I'm just offering that up as an example to help you to think about what you'd like your report to look like.

Holdridge I think it's much better than mine.

McGinley It's certainly longer.

Prusak I think you covered virtually everything we talked about.

Bembenek You did a very good job on this.

Holdridge Under limitations, I'd, you say groundwater is complicated, the data analysis is relatively rudimentary, and it really is random, isn't it? What we've got? There was never really

a system unless the City had some kind of system. But it was really very random. Then I wrote (*in the word*) “City” by d1 at the bottom, 2d. Over on the third page right at the top, iii where it says public water systems must meet the primary drinking water standards. We’re not talking about....we could say municipal water systems and public water systems. But public water system refers to like the mobile home park. A municipal system by definition is a totally different system.

Prusak            Maybe you need to define a public water system.

McGinley        We should define it there. A municipal water system is a type of a public water system so there is a category within public water systems that is municipal.

Holdridge        With one central pumping for a whole host of households. This one is a much smaller....you’re talking about Meadow Manor mobile home park up on North Second. They have one water system there and they feed it out to those....?

McGinley        I don’t know about the water system there but mobile home parks are a public water system if they have a central system serving each mobile home.

Ray S.            They actually have 3 wells up there.

Holdridge        But that would be a public water system. But the church would not be considered a public water system.

McGinley        That’s a public water system.

Holdridge        I think it would be good to list them.

McGinley        It’s just that those are different categories of water systems. So whether it’s a mobile home park or a municipal system, that serves a community whereas the church or a tavern is not considered a community system so they all have different testing requirements and different contaminants that they look for.

Holdridge        Roman numeral 6 (*under 4b*) it says refer to list of drinking water standards. I think you have to show the drinking water standards. I would say this is written so we can give it to a citizen, any citizen and assume they don’t know much, which most of them don’t. They have bits and pieces of this stuff.

McGinley        Or it could be attached as an appendix, there’s about 200 compounds on that list.

Holdridge        Then down under f, you say several small public water systems and you identify it there, mobile home parks, taverns, churches so that’s good.

McGinley        So if I was to add something there, I would put more detail up in that earlier part, make a reference.

Holdridge Then over on the next page, l, m, n, o you identify zones in Hull and whatever can be distinctive out of those zones. Then on the last page we've got the recommendations and that's really what we're going to give to the Hull Board and say here's what we recommend and here's what we expect. Some action of some sort. What that is, Ray suggests one thing here but I think we need to have something that is pretty well laid out and there's an expectation that this is going to be done every 6 months or annually. Certain bench marks. I think the results of these testings, we're going to create some real interest in water. At some point, the press will be covering this. So people will start getting interested in the topic, which they should be. It's probably going to be a pain in the neck for some of these other townships.

Ray S. It definitely is John.

Bembenek They're going to tell them to come here.

Holdridge There's one person calling about our weight limit standards which are really comprehensive. One of the most comprehensive in Wisconsin towns. I talked with a chairman today and said these were developed for Hull. He wants to put weight limits on 4 or 5 asphalt roads. It's a whole different ball game. You've got to have someone there that gives permits, you've got to have an ordinance and signage. We share it and they can pick and choose what they want, it's public information. As I go to recommendation, those are the ones that have the long-term impact on what should be proposed. Maybe there's some models around Wisconsin on private water systems and households where they looked at this. There have certainly been some areas where there's been a lot of conflict often between towns and cities or villages that have public systems.

Zimmerman What happens if a farmer sticks a high capacity well in and somebody nearby has their water go down? Each has his own rights. If the water goes down to nothing and the farmer says it's not me even though he's drawing water out with a high capacity well. That's what I'm trying to see. If you have a different situation, singularities. Just what do you do? Do you do the best you can at the time? Or do you plan for it? I have no idea.

Holdridge If you took that new well and say they put that thing in force and Plover Heights' people all of sudden notice their water....they lose their water and you can trace it to the City with the before and after stuff, then we have an issue with the City. What we've typically done is we've taken the side in a real active way with the citizen. I can give you any number of examples of that. We have the resources, we have lawyers and civil engineers. So we're going to protect the interest of the Town of Hull which is really the interest of resident neighborhoods. The reason we were strongly opposed to the City annexing the Casimir/I-39 interchange was because we had a plan developed by the citizens of Hull that wanted no commercial development there. We were prepared to go to the wall on that. We didn't have to. The mayor got no support from the city council and no support from the city plan commission. If the City is causing the problem, we're going to have some regress.

Ray S. It's hard to plan for all kinds of unknown scenarios but one scenario I can see happening is someone putting in a water bottling plant near the City well field.

Holdridge Like they tried to do in Adams County?

Ray S. Yes.

Laug That's what I was wondering about. Maher water, do they test water?

Ray S. If for instance, someone wants to put in a water bottling plant over on Plover Heights Road in the Town. They know what the water quality is like and what the supply is like in the City. It's an almost infinite supply, the City has documented that. So you go right across the road in Plover Heights and put a single well and start pumping. I don't know that the Town has any restrictions on that.

Holdridge Isn't that sort of a DNR issue?

Ray S. Well is it? Or is it a township issue.

Holdridge I thought in Adams County it was.

Ray S. Oh yes, down there it is.

Holdridge We would certainly pursue that if it's going to damage our household water supply and quantity question.

Ray S. How do you know if it's the new hi-cap well or if it's the City well?

Holdridge I don't know. That's why you've got engineers. That's the reality of it. You fight experts with experts. We know that the water law is constantly in flux in the Wisconsin State Supreme Court. But more and more issues get to the high court on this stuff. Towns fighting villages, etc. But I'm just saying to Tim that our interest is going to be the interest of the householders. We've got any number of examples where we've done that, historically. I think we need to think about what we want to do going forward.

#### **9) Recommendation for Future Monitoring of Hull Water Quality & Quantity.**

Holdridge How do we, in effect, want to monitor the status of our water? How do you design something that makes sense and that people can understand? It's probably a scientific question.

Ray S. In your recommendations section here, are we thinking of recommendations to give to individual property owners for their own wells or are we looking at recommendations to put systems in place for the Town to do monitoring?

Holdridge That's what brought this all about because the Town didn't know what was going on. One of the things the Town government does and the City does is they're supposed to represent the interest of their citizens. That's why you collectively have government. For you to plow the streets, Ray, it's pretty tough. So I would say we put in systems and we monitor these

things and probably some of this group may want to periodically meet and review those once a year or something. The Town Board could do that. Or our Plan Commission could do it. That might well trigger...you take a look at this and say, something is going on here with these high nitrates or high bacteria or something that's clearly a health issue. I see the Town Board being very active in that.

Ray S. I just wondered what kinds of recommendations you were looking at.

Holdridge I think you need to have comprehensive testing, geographically, for one thing, it seems, across Hull. Maybe some of those wells the City has got, maybe it's selective households. Maybe Gwynne Bablitch over there, by the Red Bridge almost on the Wisconsin River, Scott Rifleman lives up there, any number of people that live over there, maybe that's an area where you test. There are any number of areas you may want to look at. Maybe that's once a year that you do that, maybe twice. That's why you've got to turn to the experts, people who are in this area to identify that.

Ray S. So you don't have a feel for what you'd like to see as recommendations coming out of this?

Holdridge No, this is new to me (*but maybe not to*) Ray, Paul, Amy and Bill. I didn't know anything about this stuff, hardly anything about this stuff when we started. I think going forward, you need to have some way to make judgments about the quantity of your water and the quality of it. Those 2,020 households that live in Hull. It would be a sampling sort of thing of some sort. Jim Kruzicki our treasurer came in and he said just had his water tested. He lives over in Conifer Acres off Old Hwy. 18. I asked how it was, and he said it was good. I thought, what if we had you test your water once a year, maybe we'd subsidize that. That would be one way you can make some judgment. That's a subdivision over there. Maybe that's what you do, you ask for volunteers and put some kind of money behind it, that's not unreasonable.

Prusak Could the Town ask any well to be tested beyond the coliform as part of obtaining an occupancy permit? As a Town requirement?

Ray S. I don't know.

Prusak I know every new well has to but I'm talking about that. I'm saying also for... To get more baseline data.

Ray S. The County has a requirement that every new well is sampled after it's put into service.

Holdridge After it's put into service?

Ray S. After it's put into service. The DNR has the requirement that every new well be sampled for bacteria after the pump is installed. Whoever the well installer or pump installer is has to sample it.

Holdridge So you already have those kinds of tests.

Ray S. The DNR has the authority. In a local test, I don't know if the County has the authority or not.

Holdridge But DNR doesn't require that of Portage County? So I don't know, it's kind of an open book what you do.

Ray S. Towns really have a lot more authority to enact in the system than counties do. We're pretty limited as to what we can do.

Prusak Based on our historical data, we have water problems therefore the Town is requiring all new wells to be tested at a minimum of the homeowner's package before an occupancy permit is given. Something like that.

Ray S. It sounds like a good recommendation. Whether or not you could require it or not, I don't know, you'd have to talk to your Town attorney. But it sure sounds like a concrete recommendation based on evidence that we've got.

Prusak It's not frivolous. There's a basis for requiring it.

McGinley I guess you could say nitrate and chloride instead of homeowner's package.

Prusak I'm just saying something like that.

McGinley Where it would be very easy to defend that type of request.

Laug Let's say you require this test, what solutions do you have? I mean it's groundwater.

Prusak The property owner would know right off the bat if he's got problems. Secondly, if would provide ongoing data to see if things would deteriorate over time. We don't have that data right now. We don't have data on all the wells that are in the Town of Hull. So it would increase our data and knowledge of what's out there on wells and the homeowner would have more information that he has now.

DeVita Just regarding the recommendations we're talking about here, the charge of this Task Force is to provide recommendations to the Town Board, right? And it's the charge of the Town Board to implement those.

Holdridge We're advisory. The Plan Commission is advisory to the Town Board. I find when you do good work, these Boards tend to follow that stuff. It helps to have 2 Board members of the 5 on the committee. If we support it, I can't see the other 3 Board members....some know more but most won't know what we know. They tend to follow suit. The charge is to come up with reasonable recommendations. Once you get those and understand the costs and who is going to do it and that sort of thing, then you go from there.

Ray S. I think defining the problem is what you need to do. We have a lot of information. Is the problem that people don't have knowledge of what they're drinking? To me I see that as an issue throughout the County. People are drinking water and they don't know what is in it. That's why I would say wait and sample. Other people would want to know just for grins and giggles what is in their water, because they're drinking bottled water anyway.

Holdridge Water is continuing to be more and more of an issue. I think what you are talking about is that one of these recommendation might be education.

Ray S. Could be.

Gjevre I think Ray hit the nail pretty square here from the standpoint of defining the problem. My question is, is there a problem? We've learned that the groundwater that ultimately becomes drinking water, varies all over Town. That's a problem we can't solve. We're going to play the cards we're dealt. The suggestion of mandatory testing before an occupancy permit, I would think the Town would have a very, very difficult time proving there's a need for that ordinance. If you are going to saddle someone with \$250 worth of testing, for what? Some people would probably just eat it and say, okay. But if the DNR already requires that the well be tested when it's drilled, that's taken care of the main concern that most people have that the water isn't contaminated.

Holdridge I agree. If you build a house and put in your water and then test it, that seems a little backward. If you're going to build a house in an area, maybe you need to have a firm test the groundwater before you start building the house.

Gjevre Maybe people should.

Ray S. County ordinance requires that....subdivision ordinance requires that before you split a lot with a certified survey map, you test the water, or at least have knowledge of the water in the area. It requires a water quality review. I do that.

Holdridge I've got a letter on one of them Ray. Up on North Second.

Gjevre I guess where I'm coming from, I could not support a recommendation of a Town ordinance requiring testing as such. As we are talking about it here, I can't say with a straight face to the Town Board that we find no problems. We find all kinds of issues. These are issues that first of all should be communicated. I'm kind of rolling along to what Ray was alluding to and that's that maybe there is a place for more education. Most of us don't give a thought towards our water until there's a problem where it doesn't come out of the faucet or it stinks or something.

Holdridge That's true. We just accept that it's going to work.

Gjevre I would like to see some recommendations come out that are little bit more positive. We really haven't discovered any major problem in the Town. We certainly

discovered issues and issues that bear watching. One of the issues is education. Another is continued monitoring.

Holdridge As we do this analysis, we may do several parts of Hull that have real nitrate problems.

Gjevre Yes.

Holdridge Committing that to writing so you've got that as part of a report. Then you'd have to say, that's a potential problem. So how do you deal with that? You look for the source and certainly let the people know.

Gjevre Being careful though, to separate fact from opinion.

Holdridge Yes. I'm not one to think that government should be heavy handed on this stuff. I think we ought to tell the citizens here what we discovered and you have to decide. It's kind of like our fire department. We have these long driveways and people let their trees grow over them. Our fire department wants us to write an ordinance and demand that they cut them. We said no, we will notify the citizen that they have a problem and they need to get some of this stuff out of here so if you have a fire, the trucks can get in there. Now if you choose not to do that, that's on your shoulders. Because government can get awfully heavy handed.

Ray S. That's quite an alternative.

Holdridge Well, put it back on the citizens. It's their property, it's their house. You have a responsibility. I'm saying the householder has a responsibility on this stuff.

DeVita I think Amy's study was a good demonstration of the way we could go about to discern whether or not this nitrate problem.....we do have some significant nitrate problems in the Town of Hull. I think we agree on that.

Holdridge The data shows it.

DeVita Her preliminary study shows that we can link that to saying that it's either from septic systems or from agriculture sources. Right, we can do that?

Nitka *(nodded)*

DeVita In a few cases, we can do that. Now Township wide, we haven't done that yet but we look at some of the Town's subdivisions we have in the Township south of Hwy. 10, just north up on Torun Road and Jordan, the Zdroik subdivision, we had high nitrates up there. We have this housing density issue where the lots just aren't big enough and septic systems are providing a source of contamination for private wells. We can't do anything about what has been done. We need to advise and educate people that maybe they should have their water tested or treated, whatever or however they want to proceed. In terms of new development, we have a project just up from me on Torun Road, the 40 up there just south of Jordan, what's going to

happen with that 40 acres? Is there going to be another subdivision in there? What's the developer going to do when that land is platted out? Are they going to put septic systems 50 feet away from the well? There are some issues that we can recommend to the Town that they take a little more care in placing septic systems and wells.

Holdridge A lot of that is in the subdivision ordinance. We can write addendums to our subdivision ordinance. We can't go against what the County has, but we can expand on what the County has.

Ray S. The Town can be more thorough.

Gjevre One thing that was pointed out was that it takes an acre of land to take care of 2 people. The current zoning or land use within the Town requires a minimum of 2 acre lots now?

Ray S. Yes.

Gjevre So you cannot undo what has already been done with high density. But I think this could certainly be pointed out in the report.

Holdridge Oh yes.

Ray S. The average household size is probably around 3.

Holdridge If you look at that one map that was in Amy's report where you had those big lots off of Hwy. 66, those were probably, Ray, probably part the County subdivision ordinance where they had to.....that one by Gerard's, that's a conservation subdivision and those have large lots with paths around the outer edge of it.

Ray S. Right, the lots themselves are smaller but are a certain number of lots per the total development.

Holdridge That becomes fairly common when these guys come in to develop. That's where you've got to control. Nothing has been built, it's all vacant land and they have to be.....surface water treatment, have swales and some of them have big areas where the water runs into. A lot of that is part of Wisconsin law and supplemented by Portage County.

Ray S. One of the things we might want to look at is as long as we have a reasonably good groundwater flow map so we know groundwater direction, maybe on new subdivisions when they are laid out or approved, maybe we look at having a corridor where you've got all these septic systems in the brown corridor and you have all these wells lining up in the blue corridor so you're not mixing up septic systems and wells up-gradient and down gradient from each other like we have done in the past. Or make a recommendation so when people put in replacement wells, we look at, okay, there's half a dozen septic systems over here in a line, so that if you put your new well there, you're probably going to pick up that contamination. If you put it over on the other side of your house, maybe you'll improve your water because there's only 2 septic systems up-gradient from that. Even though you might have to redo some

plumbing in the basement because your old driven point was put there back in the old days. When you put your new well in, put it on the other side where it's likely that the flow will be better.

DeVita That would entail the aligning of subdivisions, not southeast/west but tilting it so you have it perpendicular to the flow.

Ray S. Right. When they're laying out lots in a subdivision, they can sure do that. It would still require the GIS to find out what is there already.

DeVita What does it take? It takes 3 shallow point wells to delineate your groundwater flow path. If a developer is going in to a 40 or 160 acre plot and they're developing this land, I don't think it's that much added expense.

McGinley It wouldn't be. Maybe they know it already. The flow direction. Or do you think there's enough uncertainty?

DeVita I don't know that it's detailed enough. These are really generalized maps that we have.

Holdridge That's the time you should control the development. You should commit that to writing too Ray. So we've got to think about it. We've met for 6 times or so and the purpose is to look at all this stuff and say what are we going to do into the future that makes sense that's not terribly costly to the Town yet we try to improve the environment in which we live. That's what we need to do.

Gjevre Or at least maintain it.

Holdridge Yes, in some cases, maybe it's maintaining it. But we know eventually, we don't have a lot of development right now, but this stuff will eventually come back. I'm thinking Ray wrote a letter to a guy who wants to do some development off North Second. He requested that he have that water test. Along North Second, you don't have to get up to where the mobile home park is before there are all kinds of open areas there, right along North Second. Those at some point will be neighborhoods. This stuff is suburban development.

Ray S. One of the other things that I see, we're looking at these nice maps, Amy's stuff and the flow directions. We're thinking in 2 dimensions and our wells out here are not in 2 dimensions. We've got some that are deeper right next to some that are shallower and we're trying to make some decisions and correlations based on overall within an area but you might have a deeper well out in Conifer Acres that's even higher in nitrates than the shallow ones. Or vice-versa. We might have groundwater coming from septic systems that are affecting our shallow wells within a subdivision and yet the deeper ones might be getting their nitrates and other chemicals from the ag that is up-gradient. Generally the further away the recharge is, the deeper it will be when it gets to a certain point in the flow path. I don't want to complicate things by going there right now but I think somewhere down the road, we'll be looking at 3-D

because we'll need to help people solve these problems and looking shallower or deeper might help with that. But for right now, forget I said it.

Holdridge Paul, what do we have to do now on this report?

McGinley Someone has to turn each of these bullets into a sentence.

Holdridge Do you have someone that can do that for us? We pay them and...

McGinley Starting with something like this, I think it would be easier to bring in somebody.

Holdridge I'd like to see paragraphs for some of these where you've got bullet points that should stand out. This might be a 10 page report or something like that.

McGinley You want it brief, so no more than that. We could see if we could find a student that knows something about the Town of Hull.

Holdridge Melvin and I talked about this and we understand this is a task and somebody has got to do it.

Ray S. Somebody that is a good writer.

McGinley I suggested a few figures in here based on our previous discussions. They could create a couple of figures.

Holdridge At our next meeting, we've got our written draft, then we can revise some things and talk about maps.

Ray S. We're going to have more meetings?

Holdridge We said we'd have one more.

Ray S. That must have been before I got here.

Holdridge That was actually last time. Didn't we talk about a meeting in February?

Amman This is actually only our 6<sup>th</sup> meeting. We said we would have at least 6. So that would be only one more.

McGinley So we're doing pretty good.

Bembenek February 9<sup>th</sup> is the second Thursday in February.

Gjevre Can the report be writing by February 9<sup>th</sup>?

McGinley That doesn't leave us.....you need it before February 9<sup>th</sup> wouldn't you as people would need a week to react to it before the 9<sup>th</sup>.

Gjevre Or any other date after Paul gets the report done.

Holdridge I always find on this stuff, set some deadlines and say get us a draft. The way to do this is you've got a draft, you get it out, and it should be out into your hands. Then we go through it. If there are modifications to it, we make modifications and then send those to the committee members and we don't have to meet, but if you're not satisfied, get back to us. Then we'll recommend whatever we come up with to the Town Board and we'll go.

McGinley March would give 4 weeks to write a report and get it out.

Holdridge We'll certainly want to get a draft out to you then we can review that at the meeting and make whatever changes or suggestions needed.

Ray S. I just wanted to compliment Paul on this outline. It was terrific.

McGinley Well going back to that point, this really is just a summary of what we've been talking about. The recommendations part is probably the most important part.

Prusak It's comprehensive. It's everything we did.

McGinley We're still working on it.

Bembenek I'd like to thank Ray and Amy and Bill, all you for helping out these last couple of months.

Ray S. This really makes people aware when we start making recommendations.

Holdridge We need some way of monitoring and going forward, anticipate problems.

**10) Set next meeting date.** *There will be no meeting in February. The next meeting will be Thursday, March 15, 2012 at 6:30 p.m. This was the date determined most available by the largest number of members of the Task Force.*

**11) Adjournment.**

*Meeting adjourned at 9:00 p.m. with a motion made by Bill DeVita and seconded by Gladys Laug. Motion passed.*

Respectfully submitted,

Patty Amman, Task Force Secretary  
Town of Hull, Portage County