

NEWTON GRAVEL PIT MINUTES
CITY OF MANITOWOC/DNR
April 27, 2015

Attendees: Dave Henderson – AECOM
Dan Koski, Kathleen McDaniel, Greg Minikel, Karen Dorow – City of Manitowoc
Tauren Beggs and Liz Heinen – WDNR
Dave Johnson – DNR – Via phone

1. 3504 CTH CR – Priority IAC Update
K. McDaniel gave an update on the status of this well installation. Last fall she spoke with Mr. Bruenig several times. At first he wanted a written agreement for the work to be done. He changed his mind and does not want to sign an agreement and now only wants a schedule of work. He has trucks coming in for deliveries and shipments constantly and wants minimal disruption to his business. K. Dorow has been in touch with Groundsource. When weather conditions allow, Groundsource will put together a schedule and will minimize interruption as much as possible. We are doing our absolute best to accommodate Priority IAC's needs.
2. Landscaping restoration at completed new well locations
K. Dorow has also been in communication with Groundsource regarding the landscape restorations. Groundsource has contracted with Fresh Cut Lawn Care to do the work. As soon as weather permits we will get a schedule.
3. 3403 CTH CR (Schnuelle) & 3023 CTH CR (Eberhardt) – Well house update
D. Koski has contacted J. DeNoyer, a carpenter in Manitowoc, and he is working on revised drawings and estimates. They should be here any day.
4. Special Well Casing Communication Edits
K. McDaniel responded with edits to the special well casing communication. L. Heinen felt the edits were excellent. Discussion was held on point #9 – Connection to municipal water system is preferred. It was agreed to revise this to – Connection to municipal water system is preferred when available.
5. Reports Update
 - a. Quarter 4 Potable Well Testing Report
D. Henderson has the report completed and ready to be distributed.
 - b. Annual Groundwater Testing Report
D. Henderson has a complete report on his desk for his review. It should be distributed in the next couple of weeks.

6. Technical Meeting Update

At the meeting, the group came to a conclusion about well nests between the two plumes. D. Johnson feels time travel should be looked at again. He feels the number for effective porosity - pores that the water has to go through, determined by slope and connectivity of the pores, should be revisited. We need to talk more about ranges. If there is a clay wall there that changes time. In bedrock fractures flow vs primary flow there is a big difference. T. Beggs looked at the older DNAPL plume data looking to determine if there was free product pooling below the water table. As we get more information, more discussion should be done on this point.

7. 2015 On-Site Scope of Work

- a. Groundwater Testing
- b. Potable Well Testing
- c. Feasibility Study for Remediation
- d. No remediation work planned for 2015
- e. 2015 Town hall Meeting

As part of the 2015 On-Site Scope of Work the group followed D. Henderson's Work list for discussion.

Western source area. Remedial Options Alternative Report (ROAR)

In a design specified build scenario this would be our pathway forward. At the tech meeting discussion was held about a treatment pond. Before we get too far down the path we need to do a remedial options alternative review/report. In terms of options, D. Henderson sees the exploring the following:

Source area - free product pumping, SVE, Chem ox/ERD

Cap in source area. This is required due to the PCB's on a federal level.

On-site but down gradient from source area pump and treat

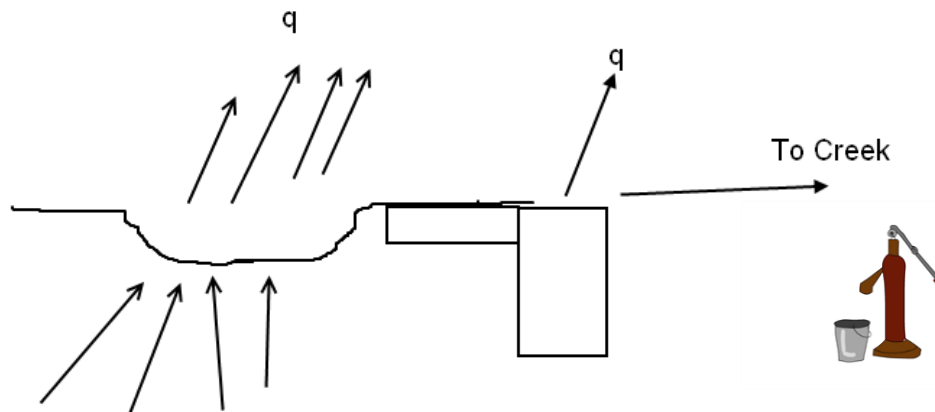
Permeable reactive barrier

Pond idea

First step budget estimations are going to be very broad. Proposing a timeline - 50 year life cycle design criteria? Everyone agreed with the 50 year design criteria. Going down this path would give guestimations on budget and confirmation that we are going down the right pathway. All agreed that there is a need for the ROAR.

City 2016 Capital budget information is due by the end of May. K. McDaniel explained the Capital Allocation Work Group (CAWG) process – the rating of projects by an internal team of department heads insuring that all projects get fair review and placement on a priority list. City team needs to set some time aside with D. Henderson to determine his deadlines for the capital requests.

Research – Research should be kept separate from feasibility. Research may affect feasibility. Contaminates of Concern (COC's) should be reviewed again to insure that we are treating what is there. Look at the $\frac{1}{2}$ life in open water and aeration ability. Wetlands treatability - Picking right plants to do phytoremediation. Be as sustainable as we can be for 50 year duration. Potential to use windmill as a power source for pond aeration. Use solar for free product recovery. We need to look at long term treatability. There is power to a PD building so power would be part way there. Permits could have a long lead time. If we do a pond, is a pond considered a remediation or surface water pond? We would prefer remediation rather than surface water. D. Henderson asked what permits we need to create a pond. D. Johnson stated a WPDES permit. D. Henderson did a drawing showing the pond with q being removed from the pond through evaporation. We need to get water pulled into the pond. q will matter when we determine how big the capture zone is when we model it. We probably won't get enough q to get the capture. We could put in a 60" pit and pump quantity q out of pond flowing to the well, the q out of pond will start to pull groundwater in. We could put in a small treatment zone and set up a pump and pump water to creek which should be clean water by that point. Once we have several years of data that water is coming out of the pond to the pit clean, we could remove the treatment option and trench directly to the creek.



We would be requesting an air emission exemption, pulling vapor out of the source area – we will need an exemption to discharge into the air. Design criteria 5.7 pounds per hour voc's.

Stormwater pond – We would need erosion control permits.

City zoning - any permits we need to discuss?

Feasibility studies – need free product characterization. Double check the PCB's.

SVE pilot study. Pilot to be conducted with vertical wells and mechanical blowers to determine radius of influence and mass removal rate. Once we have the pilot data we

can determine the number of extraction wells and if a passive system using horizontal wells and vertical wells as air vents – w/ no mechanical induced air flow through the source area is possible.

Groundwater plume delineation – we need delineation through the area proposed for the pond location. – Possibility of putting in temporary vertical wells nests using geoprobe or small drill rig to help modeling the size of the pond.

Surveying work - The cap area has already been done. We would need to survey all the way to the creek for design purposes.

Tentatively plan for the ROAR to be completed in 2015.

There were no other questions so moved on to the design phase discussion.

Design Phase - - design would go into 2016. Design phase will be modeling plume width and depth. Use the mod flow program in source area. T. Beggs said during tech meeting it was not determined if there was enough investigation to determine if DNAPL was pooling at depth. There were only two areas in the investigation report boring and monitoring location on maps from 1996 location. T. Beggs feels that that there may be additional investigation needed. At WT-02 there is a 200-300 foot area east of the well that we don't have anything in depth. At B-2/WT-02 we do see a clay layer at bottom of piezometer. D. Henderson stated what is happening to the underneath of the plume is the question. There is a well that was added in 2007 or 2008 that is near the area T. Beggs was referring to.

While the design phase discussion was going on D. Johnson did some research on permits for ponds. He stated if you are more than 500 feet from a navigable stream you don't need a permit for the pond. He will send D. Henderson a reference link to the pond page. D. Johnson answered the questionnaire for ponds and it came up as unlikely we will need a permit.

Mass calcs - Agreement that we do not have to do them for the earlier report – we will have to do it for remediation.

Geotechnical – We will have to do a review of the stability of the hill to see how close the pond can be to it. We will also need cut and fill for cap.

Permits – We will need to apply for permits....WPDES, air emissions, storm water and any zoning required during design phase.

Source area design - Cap will need to be designed. Material could be concrete, asphalt or clay. Depending on the clay source, clay would be best with topsoil over it. It will need to be fenced. K. Dorow asked since the area was gated for entry do we need to

have the fence around the capped area. T. Beggs will check to see if the fence could be waived for the cap area. Pond will definitely need to be fenced.

Source Area Mass Removal - passive or active (this one would need building, power, and piping). If we are looking at 50 years we could go with passive to begin with. Also the possibility of using wind power.

Free Product Recovery – They make nice solar systems now that are not labor intensive.

Pond Design/Construction – Physical shape, depth, width and shelves. Could include sump channel, pumping and possible point treatment. If discharge is clean for a period of time (e.g. 5 years), potential to dig a trench to the creek and let it happen naturally so it becomes a stream to the stream.

Area by school bus - starting to think about site grading, construction, may want to move some material away from the hill so there is an area to put soil. Erosion control will need to be set up.

D. Henderson asked if a pond is dug could the gravel be sold? Could it be sold right away or does it need to sit for a while or be treated? T. Beggs spoke about a new Volunteer Party Liability exemption, taking it through the remediation process where the whole property is checked and has adequate documentation that the soil is clean before it is moved. It is in the public review period right now. We may need to do something to call it clean before we can sell. Do we stockpile with the rest of the gravel or keep it to fill in the pond at some point in time? There will be no remediation done in 2015. ROAR will be done in 2015. Design in 2016 and Construction potentially in 2016 or 2017.

T. Beggs agreed with doing the review because the point of doing the review is looking at all the options to see what makes the most sense.

D. Henderson would like to sit down with City and review the budget to see what can be afforded yet this year and next.

D. Koski put up the lobe map. Putting a well nest at 35th and Viebahn will probably be required for closure. It is not needed right away. During the tech meeting there was a discussion regarding the two plumes being from separate sources. The question is how we prove that. It was suggested getting as much existing data as we can from sentinel wells. If it involves having a plumber come in and pull the pumps and measure the wells it would be an estimated \$3,000 well spent. If that doesn't give us enough information the next course of action would be to put a couple of additional well nests on Shoop's northwest property line and on the county land at parcel line. D. Johnson would like a well on west side of freeway on the County land because at the first open house there was discussion that materials were dug up at the gravel pit and spread on the county

land. By doing this it would take away a source on county land. City got D. Henderson the property owner information. D. Henderson will be doing the research on well logs. If there is no report we should consider getting an ROE and plumber out to measure the physical depth of the wells - Estimated cost \$3,000 for the process. It will come to a point that the City will say it is two separate plumes and DNR will want more information. We will need to have some discussion and come to an agreement at that point about moving forward.

2015 groundwater sampling will take place in October and at that time we will also do the 6 month potable well sampling – need a potable well work plan. We also need to come to an agreement on a two year work plan. Target zone test every 6 months for a year and annual on sentinel for two years or could we do 6 months and a few sentinels scattered in over the two year period?

2015 Town Hall Meeting. The Town Hall Meetings have traditionally been held the first week of December. That week and December as a whole is difficult to schedule. Discussion was held about what would be the best time to schedule the Open House. Should we consider moving it back to January or up into October to avoid the Hunting season? Tentative dates of October 24th or January 16th were decided upon. We will revisit at our July meeting and make a decision so that a save the date can be put on the website.

8. Viebahn Affected Wells

a. Watermain versus Well Replacement

G. Minikel has been working with SMI consulting firm for design of the watermain and to get a true estimate of costs for Viebahn, 35th St to CTH CR, North on CTH CR 500' and South on CTH CR 1,000'. Hopefully will have the information soon. The City's elected officials were not opposed to this. Because of the proximity to the City is why the current affected property owners would be able to receive municipal water. It is fairly likely we will go in that direction.

b. Communication To Property Owners – We will be reaching out with a letter to affected property owners on where we are with a permanent clean water solution. D. Koski and K. McDaniel will be meeting with the property owners at 3621/3617 Viebahn (Trembley's) this week.

9. City's Plans for Financing -

Discussion was held on the potential for DNR funding a loan program or revolving loan fund. D. Johnson spoke with person who runs the loan program and he felt the watermain would score highly. This program funds grants or low interest loans to communities that need help with a contamination issue – City would go through the application process and awards done in the fall. We should contact of Jim Witthuhn at the DNR at 608-267-9659. D. Henderson has someone in his office who writes the grants for other communities that would be able to help us. K. McDaniel is also working with City finance director, S. Corbeille, on applying for another loan. The watermain was

not budgeted for last year as it came after budgets were in place, so exploring other financing options now. The DNR loan program would be for running the watermain and not for remediation. City will get in touch with J. Witthuhn once we have some better numbers from SMI.

D. Henderson and the City will work together to get some budget numbers together to meet City deadlines.

10. Web Page Update – K. McDaniel will get website updated with information that we are planning another Town Hall Meeting. After the communication goes out to newly affected property owners she will put that information on as well.

11. Other topics

K. McDaniel provided an update on Heresite property. A letter was received about alleged barrels being buried at the site. Based on investigation to date it doesn't appear that there is anything buried there.

No other topics to discuss.

12. Schedule next meeting – Week of May 26th
Meeting schedule was discussed. It was decided that things are moving along ok so push the meeting out to end of June - tentatively June 22 at 10:00.