MANDAN REMEDIATION TRUST (MRT)
November 3, 2015

Meeting: 265h Official Meeting
Date: November 3, 2015
Location: Mandan City Hall, 205 2nd Ave. NW
Time: 10:00 A.M.

The MRT meeting was called to order by Jim Neubauer. Francis Schwindt and Dave Glatt were present. Marilyn Mertz, North Dakota Department of Health, was present. Jeff Wright, Public Works Director and Justin Froseth, Director of Planning and Engineering, city of Mandan, were present. Scott Radig was absent.

Minutes. The October 6, 2015 minutes, as amended, were reviewed.

Motion. Glatt moved to approve the October 6, 2015 minutes as amended; second by Schwindt. All ayes. Motion carried.

BND. The Bank of North Dakota statement for the period of September 30, 2015 showed a balance of $6,757,224.15. Three payments have gone through. Interest was $277.89. We acknowledge receipt of that.

Pay Request. We have the LBG pay request for a total of $27,006.06.

Motion. Schwindt moved to approve Pay Request 373 to LBG in the amount of $27,006.06 based on their invoice dated Oct. 20, 2015; second by Glatt. All ayes. Motion carried.

Pay Request. Request for city of Mandan industrial wastewater treatment plant charges for the period covering September 1 through September 30, 2015 of $652.54 with a volume of 40,784 cu. ft.

Motion. Schwindt moved approval of the payment to the city of Mandan; second by Glatt to pay the city of Mandan $652.54 for industrial wastewater charges for September 1 through September 30, 2015. All ayes. Motion carried.

Financial Statements. Neubauer indicated that Rachel Kmetz from North Dakota OMB had sent out a request. I think I emailed this to you on October 14, 2015 asking if there were any significant changes from when the financial statements were done and the audit was done for 2014. I signed it and said there are no significant changes to the audit and sent that back to her.

Glatt – It looked good.

MRT discussion with Jeff Wright and Justin Froseth about patches for the wells.

Neubauer – Do you guys want to talk about what you think would be the proper patches to the wells that will be abandoned in the streets and sidewalks?

Glatt – The good thing is we are talking about abandoning wells. We want to create more work for other people.

Wright -- Do you have a design for the abandonment? How far down are you going?

Schwindt – In general LBG is talking about—we do go in and plug the wells with bentonite—that brings it up to a couple feet below the surface. What LBG has been talking about is going in with a special tool. I don't know what kind of special tool. I think it is one that goes down inside the pipe. It cuts it off a couple feet below grade. Pull that pipe out and.

Wright – Put your base in whatever. I think the sidewalks are the easiest. If they are in the sidewalk we take out one section of sidewalk and then replace that section. Get rid of the cap, you know, take everything out and replace the sidewalk.

Schwindt – Is that going to be very easy to do, generally? It should be relatively easy.

Froseth – It should be. Cut your concrete. Are we going to run into any other utilities?

Wright – No, shouldn't. There is no need for sub cutting other than where the well is. It should be fine.

Neubauer – The sidewalk we don't need to pin in anything?

Wright– No, whatever the guidelines are for replacing sidewalk I think you still have a lot of expansion.

Froseth – I think we want expansion.

Schwindt – Do you still have a city approved sidewalk contractor or couple of sidewalk contractors?

Froseth – We have an approved list of contractors that you could pick from or I guess we haven't really discussed, but we do have annually our city contractor to remove and replace. I think that could be used for this.

Schwindt – That's kind of where I was going rather than us going out and rebidding everything and you guys have gone through that having selected and approved a city contractor I would be OK with. The city would be more assured that it is

going to be done properly rather than bringing in a different contractor.

Froseth – What's the time line for this? I'm assuming next year.

Schwindt – It would be over several years I would guess.

Glatt – It won't be all at once.

Froseth – We bid for the contractor.

Glatt – So we just need to identify how many sections we would abandon for this year.

Wright – There would be a rough quantity. That would be fair to bid it that way.

Froseth – Then we could add our expected quantity outside of this.

Wright – Usually, in February we kind of go out for bids for that.

Schwindt – I could go around with either of you guys. We can walk the areas where we are saying we are going to discontinue operations in this area and then identify those spots.

Neubauer -- And paint them pink so we do it once.

Glatt – So we would abandon the well first and pull out that concrete, and then we have someone go in there and plug and abandon the well then it is good to go.

Neubauer – So it will have to be a coordinated effort between the well plugger and abandonment sidewalk.

Glatt – Do they have to be a certified water well contractor? I think they probably do.

Wright – I doubt if they can get a certified well contractor.

Schwindt – I would suggest that we continue to use Roger Schmid for the well abandonment part of it. Now if he is not able to do the cutting off… so I guess that might be something to add in to the specifications to the bid where the contractor would be responsible for cutting the casing off and filling that in. Would that be doable?

Glatt – What do you mean cutting the protective casing, not abandoning the well?

Schwindt – No, I'm talking about the well itself because all Roger is going to do is fill it with bentonite and activate the bentonite. He can do that because that is completely independent.

Glatt -- With the concrete there he can go in and he will plug the well.

Schwindt – OK.

Glatt – And the concrete contractor will come in and remove the concrete and cut off the casing.

Schwindt – That's what I am wondering if that would work for you guys.

Wright – Typically, we have like adjust valves, adjust manholes. Isn't that the contract? It would be a specific bid item.

Schwindt – OK.

Glatt – It wouldn't be that difficult. You just cut it off and cap it at this point.

Wright – It is already plugged.

Glatt -- The bentonite will be kind of gooey.

Wright – It will still be wet.

Schwindt – When the bentonite gets wet it gets sticky and gooey.

Neubauer – Roger comes in and he puts the bentonite and water and plugs the well and then the sidewalk contractor will come in and remove this panel, cut this well cap off, fill, compact, and replace sidewalk. But if this is gooey.

Wright – It is still pretty dense.

Neubauer – Do we want a PVC cap on that well?

Glatt – I just bring that up. That's probably overkill.

Neubauer – The only issue is OK we come along 3 years from now all of a sudden we've got … that gooey has now sunk down in the sand and bedding material.

Wright – You could just put some concrete over the top of it and then put whatever bedding material you have and then pour your concrete.

Schwindt – I guess whatever you guys think is important to maintain the stability of the sidewalk.

Froseth – How long does it take to cure?

Schwindt – It doesn't set up like a concrete.

Glatt – As long as it is wet, it will be like clay. I don't think it is a big issue.

Wright – You could put something there on top of it.

Glatt -- Either that or like I said a 2-inch PVC pipe on top of it.

Wright – I was going to say 4-inch.

Glatt – You can get those caps.

Wright – Probably, the simplest.

Schwindt – Unless you had the bentonite in there. If you put Class V or whatever you use for the bedding under the sidewalk and that would more than compact. I think you would be good. You can add that as a bid item? I guess the only other thing is….

Glatt – Do you go back to all of them? They're not all 4-inch.

Schwindt – Yes.

Glatt – Even the monitoring wells?

Schwindt – No, the monitoring wells would not be.

Glatt – We have some small ones too. We want to abandon those as well.

Wright – Are they in a casing?

Glatt – A protective casing? Once you pull the concrete out that is coming out.

Wright – OK.

Schwindt – The main well has a metal can around it with about a 10" or 12" cover just like over on the corner of Main and Collins. That's how the main remediation wells are. Some of the monitoring wells have really small caps on them. Those are 2". Some of them are 1", aren't they? Some of the really old ones, but they would be smaller caps.

Glatt – They might be, but most of them are 2".

Neubauer – Maybe that is a walk around and like you said, I would encourage you whatever color you choose to paint them, spray paint them so whoever bids them they will want to come and look to do a walk around and then we don't have to go I didn't buy those wells. Is that fair? I'm sure they are all GPSed through LBG stuff . I

would assume so.

Wright – What are we doing with the caps when they get removed?

Schwindt – I guess as we remove those metal ones, we want to save the covers. I guess the rings if they come out, OK, but more than likely they will stay imbedded in the concrete would be my guess.

Wright – You want to save the lids?

Schwindt – Save the lids, yeah. You always lose some and break them.

Wright – Whose property do they become, the State's or MRT's?

Schwindt – We can just put them over by the remediation building there. We would use them as replacements as we go along.

Wright – We are removing them all. Why do we need to replace them for?

Schwindt – We still have active areas. The only other thing would then be somehow we would have to identify those that we would pay for, those sections that we are responsible for. The contractor would have to break that out somehow.

Glatt – That would be pretty easy to do.

Wright – If we have the bid item, it will be broke out for you.

Froseth – I guess we would have to break it out because it would be 8" remove and replace so we would have to make an 8" remove and replace MRT or something like that.

Neubauer -- Let's finish the sidewalk part first so we are clear on the sidewalk.

Wright – Four inch, I don't think we are digging into Main Street.

Neubauer -- So the sidewalk will include that in the sidewalk contract. Do you think that would be the easiest way to go? Then it is a matter of coordinating with Roger and saying OK these wells that we have identified will be plugged by June 30 or whatever date, then after June 30 the sidewalk contractor can come in and do that. I assume the sidewalk contractor is going to ask that. When can I get in and start doing this?

Glatt – As far as abandoning those wells, we could have it earlier too.

Wright – That can be done in the winter.

Schwindt – He probably doesn't want to work in the winter.

Wright – Above freezing.

Schwindt – April or May.

Neubauer – Would July 1 be a date to say. Is that safe? There is no rush on this, there is no time-sensitive issue.

Wright – No.

Glatt – I would think July 1 is very safe. I think June 1 is safe, too.

Schwindt – July 1 would be fine.

Wright – Depending on where these are all at. If they are in downtown Main Street, we will want to coordinate with events. Further out working yourself in.

Schwindt – It will be along here, between here and Library Square. That's where the work is going to be done next year. That's the only areas we are abandoning right now, just this stuff north of First and around Starion, too.

Wright – Just have to worry about people in City Hall.

Neubauer – There is a whole bunch of wells on the east side of the building right where the sidewalk leads to the parking area of the street. There are a lot of wells in there.

Wright – Then could we throw a batch there? Can we or did we?

Neubauer – Then fill it in for the winter time so somebody doesn't fall in. Take a look at that. I don't think we have a concrete option there right now. Right? Asphalt can be knocked out pretty easily, if we need too. Take a gander at it, please.

Asphalt Streets.

Schwindt – Asphalt streets: As far as walking around do you guys want to do that sometime this fall yet? You guys normally go out in February you said.

Wright – So it would be nice to identify before the snow flies.

Neubauer – These patches in the asphalt street wouldn't be a sidewalk contractor?

Wright -- No. You are still talking about the sidewalk.

Schwindt – Now we are with streets.

Wright – Asphalt streets -- if we have a well in the asphalt street are we going to replace the whole street?

Schwindt – That wasn't our goal.

Neubauer -- Because all of those have a 2' x 2' concrete pad, right?

Schwindt – 4' x 4', typically they should be, yes.

Neubauer -- If you think of the ones that are in the parking lot over by Papa Murphy's.

Wright – Those are concrete.

Neubauer – Those are 2' x 2' or whatever those are. Take a jackhammer on the end of your Bobcat and bust those up, pull out the remains and put a duro patch over the top of it and asphalt.

Wright -- I think you would want more than duro patch. With any depth you will want real asphalt in. I guess if they are encased in concrete, we could just remove that and tack around the old asphalt and put new stuff in.

Schwindt – Is that something that the city forces typically do or do you want a contractor to do that?

Neubauer – Depending on how many there are in the street, I would imagine if there are five it doesn't make sense for us. I was thinking maybe we could do a change order on Mariner's contract on the east side of Main. We would pay it directly to that project.

Glatt – How many do we have? Get a count.

Schwindt – I'm not sure either.

Glatt – Get a counting from the sidewalk and then you can decide how you want to do that.

Neubauer – The asphalt in the street we would spend gazillion dollars; I would think having a contractor to come in and do that.

Wright – It would definitely see it work. It could be a change order or not. If there is only a handful, it is not a good deal.

Neubauer – Call Mike and Mark if it is under $25 grand.

Schwindt – First Street that is all asphalt out here?

Neubauer – Concrete.

Wright – At the intersections it is concrete.

Neubauer – Between is asphalt.

Schwindt – The main part of the street is asphalt?

Neubauer – Intersections are concrete so if we have so many intersections I think we do around the bulb outs.

Wright – A lot of it will be in the parking lane because we don't want to disturb….

Schwindt – That's in the alley of the LEC. These are the wells so this is First Street here so there are 3 along here, 3 along there.

Wright – That's all parking.

Schwindt – This should all be concrete, right?

Wright – First Avenue is concrete.

Schwindt – We have 19 maybe.

Wright – About 20 of them.

Schwindt – These would be in the alley.

Wright – This is concrete too. I don't know what this parking area is.

Froseth – Roughly 20 pavement or asphalt?

Wright – Are there any on these avenues?

Schwindt – Not that we are abandoning.

Froseth – Roughly 15.

Froseth – No abandonments off of this street?

Schwindt – No. The only thing there is stuff that is over by the old Depot, but this is all south of Main. We are not going to abandon that yet. This is the only area right up here that we are abandoning for now and this area right here.

Wright – One of these asphalts has a 4’ x 4’ square around it. That will have to be checked out.

Schwindt -- I’m pretty sure there is a concrete collar around each well like that.

Wright – We can take a look. If it is a 2’ x 2’ or a 3’ x 3’ concrete collar, I don’t know why we couldn’t remove that concrete and leave it at that and put asphalt in there. It’s going to be flat plate type compaction for those small patches anyhow or maybe a small roller would even work for that. It would work actually for that top lift anyhow.

Neubauer – It would be just one of those portable ones that you set near the hole and pack it down.

Schwindt –Do you have any plans to replace or repair any of those streets within the next 2 or 3 years?

Wright – It would just be our normal maintenance, crack sealing, patching.

Schwindt – So there is no.

Wright -- So we are not coming this way yet. We are still on the east end of town.

Froseth – To be determined how far west we are going to go 3 or 4 years maybe.

Schwindt – What about the next 5 years?

Wright -- We should be back in this area in the next 5 years.

Neubauer – For street maintenance?

Wright – Yeah, because we have the old residential--this area would have been one area and then the areas to the east.

Glatt – I think we need to vote on that. I just as soon patch and get done.

Neubauer – Then we don’t have to set x amount of dollars aside for when the future street replacement comes in and whenever it comes in.

Glatt – I think there is a little bit of savings that we have there because if we abandon them we can leave them there till everybody is done.

Froseth – With that thought in mind how low are we going to go with the casing cut?

Glatt – The same type that we did before. We are somewhat flexible. It would be the same, a few feet below.

Schwindt – Is that adequate?

Froseth – Yeah, as long as we are more than 2 feet below.

Neubauer – So you get your base and some type of compaction.

Glatt – I think that is what it is anyway.

Wright – They need to be below the frost line. The casing has to be going up and down with the concrete, but the well probably is sitting still.

Froseth -- You survey them in.

Wright -- The bentonite would be below the frost line.

Neubauer – The well is 20 feet deep.

Wright – We have 20 of them. Try to change order to get Mariner to—it's not going to be a bid item. It is already on the project so it will not be a lot to go through.

Neubauer – Can you get a price from him and see what it looks like? It's a small enough job because some of those asphalt folks could come in and do that relatively easy. You see the Mike and Martin trucks going around. I think they are just small job folks.

Wright – He is always asking me for work.

Neubauer – So you could get a price from him, one from Mariner and one from him.

Wright – Yeah. When they plug it with bentonite, when does he go in and cut the casing off?

Schwindt – Roger doesn't typically cut the casing off.

Wright – The well.

Schwindt – He will just put the bentonite in and activate it. That's all he does.

Glatt – The contractor when they start ripping the casing, the security protective casing out that's when we would be looking to the contractor to cut it off.

Wright – O.K. That's right.

Neubauer – Just like a drill bit that they put on and they put a power drill down there, turn it.

Schwindt – I assume it operates like that, but I have never seen one.

Glatt – I've also seen them dig out like this and use a hack saw.

Wright – So he will keep the bentonite down so far and that's what you are saying. If the bentonite is up to the top then we can't do anything on the inside so it has to be dug out, hand cut with a reciprocating saw or something.

Neubauer – My not engineering mind would take a dremel tool and put it down here with a blade on it and sticks out at a 90 degree angle go around the inside of that pipe and chop it off and the way you go. Or stick the end of your jack hammer tipped in there and go (sound effect) and seal later.

Wright – PVC pipe.

Glatt – At the end of the day what you are trying to protect is anything going down the casing to contaminate groundwater so they are filling it up from the screen all the way up and then the backhoe broke it.

Froseth – That's how I saw it happening especially if we use our concrete contractor.

Glatt – It doesn't have to be a clean cut. The big thing is to make sure you'll get it down.

Neubauer – So we look at maybe talk to Mariner. We may have to go through Stan Tech for change order and all that.

Wright – It shouldn't cost you $300 a well I wouldn't think. So if you have 20 of them, it would be under….

Schwindt – Should be under $25,000.

Neubauer – So concrete patches on asphalt patches. Concrete patches in the street.

Wright – Yeah, if they are all encased in concrete, we should just remove that and replace it with asphalt. That's all we should need--so concrete. How were those put in? Were they separated from the other concrete around it?

Schwindt – I don't recall on First Avenue how that was poured. I think the wells were in and they just poured the concrete up to the well. I'm not positive.

Wright – Because of the wells—protective casing.

Schwindt – As far as I know we don't have a separate collar around the hole so it is just imbedded in the road concrete, I believe.

Schwindt – Because there wasn't a separate collar, there probably wouldn't be an expansion joint in there because we repaved First as part of our project so I think the wells just got embedded in the street with the concrete, I think.

Wright -- That's all 8 inch concrete I believe.

Schwindt – I don't recall. It might be 12 inch.

Neubauer – Isn't Main Street 8 inch, but First Avenue.

Wright – It shouldn't have been 12 inches.

Schwindt – The reason I say that is because that street ended up so soft. We ended up putting in that extra crushed concrete underneath. There were 2 or 3 feet of that and then we poured concrete on top of that. I'm just wondering whether we didn't increase the thickness on it, but I could be entirely wrong. I know there were extra steps taken because of the wet conditions. That one block stretch.

Neubauer – In front of the LEC.

Wright – We should be able to find that out.

Neubauer – My question to Jeff and Justin has been we are trying to fix something that isn't broke. We go in there and we saw cut around a 2' x 2' or 4' x 4' section and pull the well out, pull it off and pack it back in are we now just creating a future headache? If we just leave the cap on it hasn't budged at all. It isn't going anywhere.

Glatt – Just leave them there until they fix the road 5 years from now or whatever.

Wright – My thought is to get rid of them because when we are out in an emergency or just locating utilities I mean now you have to -- here is a well is it alive, is it dead, we can have a drawing of that, too. It would be nice to just get rid of them. It would be nice if they were separated from the other concrete, but then it would be easy to do that.

Schwindt – It would be.

Neubauer – Do you think a sidewalk contractor could do this?

Wright – Yeah.

Schwindt – Even though it might be 8 inches thick.

Neubauer – You wanted 10 called whistler joints. Right? When the suspension was made between the red concrete and the asphalt concrete on the intersection the whistler joint was supposed to slide in and out and allow some suspension, traction. It caused them to bust up.

Wright – They didn't have them straight. They had them tipped and then it caused problems.

Neubauer – So what is your recommendation of how wide to cut around that … cap, 3 feet?

Wright – Just enough to get room to get in there and do what you have to do to abandon it. If you are going 2 feet down, you have to have room to work so I would think 3 feet would be pretty close.

Neubauer – Is 4 feet or 3 feet a better match or a better product if you have a 4 foot patch or a 3 foot patch or doesn't that matter? You will have to get down to drill in for your pins so you may need a little more wriggle room to get in there.

Schwindt – I guess the contractor would be able to figure that out after the first one or two that he works on.

Wright –Yeah, I guess we should pick a number. A 4' x 4' patch is the easiest to work and get everything done, get it doweled in and poured.

Froseth – I agree, a little more room to work. A 3' x 3' is a little tight.

Wright – Let's just make it a 4' x 4' patch.

Froseth – That could be if we ask for a quote from Mariner for that work. They have a division that does just concrete.

Neubauer – Even for us, if we continue to run it through the MRT and it is less than $25 grand we don't have to go to the public to bid it. I'm throwing this out, I think if we go through the change order process it adds up to a street maintenance project then we may have to get Stan Tech involved, an engineering firm versus us doing it directly. Maybe just get some prices on what they think it would cost them and we can go from there.

Schwindt – We shouldn't have very many of those along First.

Wright – I think the best thing to do is to include it in our sidewalk bids. You will have other contractors bidding the same work, so you are going to get your best bid, unless there is only one contractor.

Neubauer – The issue would be you would only get one bid. What we tell people is you are better off going out and contracting to get your apron poured on your own versus us coming in and having our contractor pour it because the price is probably more with our contractor than you can do it on your own. Maybe we just see what our quantity is, what's our estimated cost.

Wright – Last year we had I think about 5 bidders on the city. We had pretty competitive bids last year. We had good numbers all the way. Unfortunately, this is not going to be a money making deal for anybody so it is going to cost you a little.

Schwindt – It looks like there might be about 10 or so on First.

Wright – So are we talking 30, total? We had 20 sidewalks.

Schwindt – We didn't even count the sidewalk ones.

Froseth – So 15 to 20 in asphalt; about 10 in concrete rollers so far.

Schwindt – Then there would be a couple of them – there are some in the Library Square parking lot area so I suppose we need to talk to them what they want done. Then there would be those in the alley by the LEC, too.

Wright – Those are concrete.

Schwindt – There would be 4 or 5 of them along there.

Neubauer – You might want to have that (map) printed or copied on one of your machines so you know here's green, yellow or red, or whatever, here's asphalt, here's sidewalk, here's street.

Wright – Like you said First Avenue, if that street was poured and the wells were just tied in, if the well went in on an existing concrete street more than likely there is a little so then we would just require either a 4' x 4' patch or use the existing whatever it is we can spell it out that way.

Schwindt – Is the alley at the LEC county property or is that city?

Neubauer – I don't know. City right-of-way easement. The county paid for part. We paid for part of that or we paid for all of that when we installed wells and pipe in there.

Schwindt – Where we disturbed it, yes.

Wright – Far as I know it is still a 20 foot alley way, but then there is some parking stuff on both sides. That would be private.

Schwindt – So the parking areas would be private, Jeff?

Wright – It would just be the 20 foot alley right-of-way.

Schwindt – So it would be county stuff then.

Wright – If it is in the parking area.

Schwindt – It looks like that's where it is. Here's the alley way.

Neubauer – Are you in town for the next few weeks? Do you have any time 1-hour or 2-hours for a jaunt? Bring a can of spray paint and a map.

Meeting scheduled November 4, 2015 at 10 at City Hall.

Wright -- Spray paint will be used. Don't use blue, green, yellow or red. Probably, will use white. Technically, that is what you are supposed to be using.

Neubauer – If you can make a copy of that map for tomorrow morning and you can take that out with you and highlight those wells and not complicate this too terribly much. Take a can of spray paint and pick your favorite color so if we have a contractor that wants to come in February and wants to walk around and see what he is going to bid on they can identify rather than going on a map. I'm guessing your 4 square folks won't want a digital representation. You will probably want to walk around.

Wright and Froseth left the meeting at 11:05 a.m.

Other Business.

Site Closure.

Schwindt is meeting with H. A. Thompson & Sons tomorrow to install the ventilation system for the LEC.

Schwindt – I called Frontier Electric as well. I don't have a quote from them at all, but they are the electrician that the county uses so whatever it ends up being to tie that fan in. I don't anticipate too big a bill. I tried getting ahold of Grey Ghost again a couple more times after that and I couldn't even get a call back.

Closure Plan.

Schwindt – I'm looking at that Closure Plan. I was going to ask Scott Radig if he

changed that fluid level to 0.02 of a foot. I thought it was 0.1 before. He still has a tenth in there, but it was changed to 0.02. I think that is a change. I'm not sure.

Glatt -- At 0.02 that almost gets to a sheen.

Schwindt – Well, it is. So I don't know whether that is an appropriate number. In actuality what we have been doing is whenever there has been any kind of recorded number of free product, we're just saying, we are not done in that well yet.

Glatt – Keep working it.

Schwindt – So I don't know whether we want to put that in or if it was just a change. That was on page 2.

Neubauer – The first bullet point following criterion: "MPE-recoverable free product measured in wells is 0.1 feet or less."

Schwindt – That's the one I'm talking about. He changed the title to Guideline. Did you want to put a paragraph in here about this is a guideline and is not a standard something to that effect that you were talking about at the last meeting? Do you want to have some kind of a lead into that?

Glatt – Yes, it is used as a tool to help determining whether to discontinue operations. There may be site specific conditions that require some interpretations.

Schwindt – On page 3 above the groundwater elevations, Site Remediation Strategy, the continuation beyond the second. This paragraph right there.

Neubauer – I'm not sure he has footnotes in here? Do you have the 1's that are showing up on yours?

Schwindt – No. This is the latest one that Radig had sent out. This is the one that I printed. Anyway, it says in some areas there are more clay rich sediments in elevation greater than 1629, which may reduce efficiency. Maybe I'm misunderstanding what is being said, but I thought some of the clay areas are extended deeper into the sand area and, therefore, kind of block movement of the stuff. So is it really greater than 1629 or is it less than? If it is shallower than 1629….

Glatt – The way I understood it wasn't there an old pipeline there that's why it was being trapped so needed preferential treatment. It was the old river channel so that would be the porous. And in some areas you've got clay and shallow that's why we did recovery across from the LEC. We used to have that recovery well because of that.

Neubauer – The clay plug?

Schwindt – I don't know if it is greater or less.

Glatt – So just check the number.

Schwindt – Yeah. Then the next part where it talks about the SVE operation it says target perimeter of thresholds, startup rates for each SVE blower are not available so this may have to be estimated. I guess does it pay to have this kind of stuff in there if the information is not available. We are just estimating it.

Glatt – How are you using that?

Schwindt – Exactly.

Glatt -- Is it to show the difference from beginning to end that we are hitting a point? We started here and now we are down here?

Schwindt – But we don't have this data up here. How did we get here?

Glatt – For us, the more important … is the endpoint of what's coming out of there.

Schwindt – But even that are we even getting this information as far as the SVE? It says that asymptotic vapor recovery rates during periods of acceptable groundwater and vapor recovery rates that are less than 10 percent of system's startup recovery rates. I don't think we even got any of the recovery startup rates. Are we really going to be using this criterion?

Glatt – I don't know if we did. At some point we were getting mass amounts because they were calculating how much recovery they were getting based on the mass of the wells. They had to base it on something. Do we have those startup rates? We have some numbers.

Schwindt – I don't think so. As they started the system up, they couldn't start the whole system up at one time because there was too much to run through the RTO so they were bringing it online in phases.

Schwindt – Page 3 about groundwater elevations – sequential strategy -- from where more clay is greater than 1629. Maybe I am misunderstanding. Therefore, block movement really is greater than 1629.

Glatt – I understood … old river channel, porous, clay, shallow recovery well.

Neubauer – Clay plug.

Glatt – CR the #. The issue there does represent clay.

Glatt – Are we setting up a compliance bar to measure? Might have to rephrase—will look at it.

Schwindt – Phase 4 "Targeted Polishing" may include surfactant.

Glatt – We have done some of that.

Schwindt – LBG proposed. Don't have a problem leaving it… May include…or targeted polishing.

Neubauer – May include... or other technology.

Glatt – Getting all the free product. Ken Kytta wanted to bring in vacuum trucks to push water in and pull back out, to put soap down there.

Schwindt – But didn't do it because of cost. Page 6. … and options. How long to operate? The second bullet item: "Until Full Site is Closed." Because we are doing phase type closure, if we close on First, won't do any monitoring.

Neubauer – Close area then we are done.

Glatt – "Monitor Manifold Specific."

Neubauer – Any other business?

RTO Repair.

Schwindt – The LBG invoice was a bit higher. It was because Paul Donovan and Carrie Hinners had to come up to repair the RTO. They had trouble with tripping, corrosion and program issue, which explains part of the cost.

Neubauer – Nice if we wouldn't have to use the RTO.

Glatt – Will talk to the Air Quality guys. If below certain threshold, maybe they don't. Air Quality indicated there were not a lot of issues.

Schwindt – Wouldn't hurt.

Glatt – Will ask Jim [Semerad] and Air Quality.

Next Meeting. December 8, 2015 at 10:00 a.m.

Motion to Adjourn. Glatt moved to adjourn the meeting; second by Schwindt. All ayes. Motion carried.