

The Special Meeting of the Water Pollution Control Authority was called to order by Chairman Michael DeAngelis at 5:09 p.m. on Wednesday, July 29, 2009 in Room 305 of Shelton City Hall, 54 Hill Street, Shelton, CT 06484.

The following Commissioners were in attendance to constitute a *quorum*:

Commissioner Steve Morse  
Commissioner Anthony Presutto  
Commissioner Michael DeAngelis  
Commissioner Regis Dognin  
Commissioner Todd Dowty  
Commissioner Bronislaw Piotrowski

Absent was: Thomas Sym - Sewer Administrator - excused  
Commissioner Richard Jager  
Commissioner Edwin Hellauer - excused

Also attending were: Jeffrey Shortell - Treatment Plant  
Sebastian Amenta - Maguire Group  
George Pendleton - Maguire Group  
LeRoy Wood - Great Blue Heron Management, LLC

## 1. PLEDGE OF ALLEGIANCE

The Pledge of Allegiance was recited.

## 2. TREATMENT PLANT UPDATE

Mr. LeRoy Wood from Great Blue Heron Management, LLC reviewed his Operations Assistance Report Week Ending 7/17/09.

On day 1 through testing, etc., the filtrate from the rotary drum thickener which comes from processing sludge out of the waste sludge holding tank, was having a significant impact on the plant from a nitrogen and BOD standpoint and suspended solids. But, the real issue was nitrogen which is top priority with this Board.

Working with Jeff and his staff, we have been able to get the sludge holding tank down to a manageable level so when you process sludge now, you are not having a major impact on the plant, so you are not having a self inflicted problem. That was corrected last Wednesday. From a nitrogen standpoint from where we started to where we are today, on day 1 the ammonia level from the rotary drum thickener were above 60 parts per million, (which has to be retreated in you plant requiring air, etc.) and has an impact on the nitrogen credits you have to pay to the State - so the focus was to get that down. So, in one week we went from 60 parts per million to 6 parts to million and by Thursday, to 1 part per million. The sludge holding tank needs to be kept down to its lowest levels.

The average ammonia out of the filtrate is 1 today - last Monday it was 6. It is now operating in the empty range and working great.

We made changes to the DO control system and how the plant utilizes air; we are getting more proficient in using the blowers. The details are in the report.

When we started a couple of weeks ago, it was very difficult for the SBR's to get above a 2 part per million DO in a particular cycle and we actually today are going up to 3 blower shuts off, going down to 2, blower goes on - like text book. That is a major accomplishment right there and a lot of that has to do with the fact we are achieving greater DO and more efficient air use and we are not sending stuff back from the filtrate process.

Made a couple of changes to the control system. The DO meters are working OK.

The trash and screenings are an issue. With the bar screen being off line for a long time, a lot of debris, grit and things that are in wastewater, made it into the SBR's and you can see it floating on top of the SBR's. In waste amounts like I am seeing, the jet nozzles are getting plugged and the trash is effecting the modem pump and not getting good or enough air and probably have trash in them as well.

The bar screen has been operational for a month now, but the damage has been done to the SBR's.

*Note: Sebastian Amenta - Maguire Group arrived at 5:15 p.m.*

You cannot put off cleaning the SBR's any longer - all four need cleaning badly. You have to get the trash out of there and clean off the jets and make sure we can clean out the modem pump and put it back on line.

The manufacturer recommends a once a year inspection. This really needs to be done ASAP. It will probably cost \$5K - \$6K per tank and it will all have to be hauled off. If there is one thing I want to make clear, this is it - you guys need to find a way to pay for this.

Commissioner Dognin asked for clarification on how the air flows.

First thing we will do, is take SBR #4 off line and suck off the top and haul away off site. Then let it settle for 24 hours and decant and then pump out the sludge to the sludge holding tank and process it out of the plant and take it off site. Eventually, when we cannot suck out any more sludge, and then we will let what is left in there go down the drain or pump it over to the off line tank and take that out of the plant as well. We will have to pay to get rid of the stuff that is on top, as well as what is on the bottom. Five to ten loads have to be removed by the Vac truck. They (McVac) will clean while we maintain - we will clean the jet nozzles and check the torque on the underwater equipment and it should take 1-2 days per tank and we are going to do this over an eight-week period. We will do one tank every 2 weeks. All lines will self-drain. We will leave the plant in a 3 SBR mode.

Commissioner Morse wants to measure the orifices while the tank is down.

Commissioner DeAngelis asked why wait 2 weeks between tanks - then your contract will have to be extended.

Roy said we can do a tank a week - I just wanted to wait and see what works and what does not work with the staff and see how it went.

Sevi said they all need to be inspected yearly and then see what needs to be cleaned. Three need to be inspected yearly and you can tell what needs to be cleaned.

We are likely to remain 3 SBR's on line when we are through with the cleaning.

It will cost \$215/hr for the truck and 3 people for cleaning and I am guessing it will be 16 hours (2 days) = \$3,340 for each tank. We will do the mechanical work while they can our 3-4 people - all hands on deck!

For all four tanks it will cost \$25K or so.

Roy said they were using the oxidizer in the sludge holding tank to stabilize the sludge and odor and now we don't need the oxidizer so that is a \$20K a year savings since the holding tank is kept at its lowest level.

The polymer is down which is a savings.

Roy said he does not think we need to use so much chemicals.

Jeff Shortell said we did get rid of the eco-catalyst and went three days a week with ABC and saved about \$55-60K a year with that.

Roy continued. The next issue are the equipment issues.

1. Cannot verify the motive pumps are pumping what they should be- we need to get a portable flow meter and attach it to the pipe and verify the flow. We measured how fast the blowers are running and it is 2150 rpm's. The design curve on the blowers - you got what you paid for in the speed. Either the blower is not putting out 1200 cfm or the air flow meters are incorrect - we need to in an accurate air flow meter to prove it. You could purchase one for \$555 and you will have one for the future - it would cost more for someone to come out.

The discharge pressure is Ok and the temperature is OK.

The air filters are not plugged but they could have originally been set up wrong. It is a mechanical problem.

2. We cannot find a vendor who can measure airflow as it relates to the blower. We measure how fast air blowers are turning - you have the speed.
3. We changed the DO control to off at 3.00 ppm and on at 2.0 ppm.
4. Eliminated the settle prep and added 5 minutes of settle time per batch.
5. Reduced back flush from 7 to 3 minutes and picked up 4 minutes of react per batch.
6. DO meters are verified with lab meter and the measurements taken in the tank were slightly lower than realty. Achieving higher DO level than is being recorded (which is good)

Commissioner DeAngelis asked if there will be any more overtime spent?

Roy said maybe an evening or so - like during a four-day holiday. I don't recommend going 4 days without processing sludge.

Commissioner DeAngelis said he heard "chatter" that we would not approve any overtime to empty that tank - and I am just telling you it is "chatter". I don't ever recall us telling you at the plant that we would not authorize overtime - that is your call and you don't have to ask us. The chatter is that we would not authorize overtime and that is why the tank would not be emptied - until Roy said they have to be emptied and was told we would not approve any overtime and that is garbage - that is your job. (Everyone agreed).

8. Is related to the debris in the SBR's. Every time the SBR's decant, which is dumping the clean water, there are nozzles that are spring loaded. If you pull in debris and the valve goes to shut and cannot shut, when the air comes along, it fills the pipe up with solids. We raised the tank level all the way up and that solves that problem. There is so much debris in those tanks, the tanks need to be cleaned.
9. The lwl (low water level) on each tank - the deeper you run the SBR's the better your air and DO transfers will be. We have since gone up to 19 feet now and are getting excellent DO's.
10. Is related to the probe in each SBR that measure the level of the tank and it is called a pressure transducer and is sitting in a 4 inch pipe and I pulled on the cable and they were stuck. I told Jeff and his staff, they need to be checked monthly and if they are not free, they need to be cleaned out.

Commissioner Presutto asked are you charting everything down for the guys?

Roy said yes - via my weekly report at the end I will tabulate everything.

Commissioner Morse said that Jeff has to put this monthly/weekly process into his monthly/weekly schedule.

Commissioner DeAngelis said Commissioners Dognin and Morse will add it to Jeff's monthly status report.

Commissioner Dognin said we purchased software for this. It is part of Asset Management "JobCal" and preventative maintenance and what was fixed and the cost. It is in our cost asset management. We will install it on the computer when we get it.

Roy said that is a great tool for the staff to put in the schedule on the computer and if we can, I can help but the equipment maintenance schedule on line.

Jeff Shortell said the newer equipment does not have a lot of maintenance.

Commissioner DeAngelis asked George when is it scheduled to get the computers?

George said it would be good to get them now.

Tape 1 Side B 5:55 p.m.

Roy said the computers need to be done at the Plant, not at City Hall.

#11 Verified that the amount of 50% caustic soda being added is adequate to achieve good nitrification. The staff is doing a good job here.

#12 Roy was shocked at how clean the pump stations were at his visit. Ed Deptula cleans the surface of the wet wells daily, manually and is doing a great job. I am not convinced that you are getting a lot of grease compared to other treatment plants that I have worked at. Only time will tell. One of the suggestions I made was measuring FOG in our influent. There is no influent data being collected and should be collected for a baseline.

George Pendleton said that Ed Comboni was going to contact the testing labs to see which ones did that test and what the cost was.

#### Recommendations:

The first recommendation was to purchase a microscope and we did that and did our first microscopic analysis today and we have old sludge. Going to a three SBR operation will help that situation. Roy has a daily log sheet that the guys will fax to Roy daily to tell him how things are going and Jeff can present this to the Commission and we will know the nitrogen numbers daily. Decant valves get plugged and there is a need to clean it out. We need good process control on the decant. Now the guys know where to collect the samples.

#### Goals for the coming week:

1. Raise LWL in all SBR's to 19 feet
2. Empty the sludge holding tank and keep empty each day
3. Determine maintenance tasks being performed
4. Plan logistics of cleaning SBR tanks
5. Schedule field verification of blower air output and motive pump flow
6. Verify tasks completed from previous week

Roy indicated that he accomplished all the goals in week 2.

Report from week ending 7-24-09

1. There are still no answers on the air flow rates on the blowers. We need an air flow meter.
2. The sludge holding tank was emptied on Wednesday. All process data and DO level in the SBR's indicated plant performance is improving.
3. Cleaned the remaining stilling wells. Talked about taking SBR 4 down Monday. If we get the funding tonight we may start on Friday and get it off line and take it off the top as early as Friday morning.
5. The staff has been collecting the SBR samples from the top of the tank and the tank has historically had problems with foaming and therefore, hard to get a representative sample with those conditions. I suggested we collect a sample from a more representative location, and at the modem pump we can collect a better sample. We are starting to see more consistent numbers collecting the samples from here. This was a good find.
6. We got the microscope and we started using it today and we did three of the four SBR's, the results show that we are toward the old activated sludge. We have too much sludge for the amount of food coming in. We need to collect samples from SBR's and keep a record and adjust your Food to Mass (F to M) ratio. We have way too many bugs and they are starving.
7. A daily log sheet that includes process data. The staff did a log sheet on a computer they got at the landfill.
8. Raises the LWL on each SBR to 19 feet. This will allow for better dissolved oxygen transfer in the SBR's. Roy said he sees no need to add oxidizer. It is a cost savings and eliminates toxicity to the Plant.

Mike asked Roy if he can type up a procedure on how tanks are to be cleaned - the process and procedure.

Goals for the coming week:

1. Determine maintenance tasks being performed
2. Make final plans for cleaning SBR tanks
3. Schedule field verification of blower air output and motive pump flow
4. Verify tasks completed from previous week
5. Meet with the WPCA board to discuss cleaning SBR's

Commissioner Morris said between Jeff and Roy, before you start to take down those tanks, would you set up a process and procedure and put it in writing and follow it.

Roy said he will sit with Jeff and bulletize what needs to be done and Jeff can put it into the computer and copy the Board and call it "SBR Cleaning and Annual Maintenance Steps".

Commissioner Morse said we have to set aside annual monies for this cleaning of the tanks.

Roy said you need to always have an on-line spare. You will save a major cost down the road. You rotate your equipment.

Commissioner Morse said if we work this thing right, we will have a wash with the use of less chemicals and cleaning of the tanks. We are short of air at the plant.

Roy Wood said you need to stay ahead of the trash issue. The blowers are either down or the air flow meters are incorrect. We will find out.

Commissioner Morse said we should save money on electrical/energy as well.

Roy Wood said the foam is subsiding a little bit and you can see the top of the tank.

Roy Wood said what if we take down tank #4 and it is really bad and costs \$10K? The grit will be the most expensive thing to get rid of. Then we may only be able to do a couple of tanks.

Commissioner Presutto said perhaps the others won't be as expensive. We will just have to see.

**Motion:** A motion was made by Commissioner Dowty and seconded by Commissioner Dognin to allocate \$25K to start cleaning the SBR tanks this year as it relates to Roy Wood's recommendation and see how far the \$25K will go. All were in favor. Motion carried unanimously. Monies to come from the Sludge Dumping Account (#715.80-32).

Commissioner Morse said he spoke with Ed Comboni and fifteen (15) truckloads are needed to haul away the sludge from the sludge holding tank. He asked Ed to call the hauler and put in a separate bill for those fifteen loads of sludge because it relates to the sludge holding tank and we have in our income statement of \$10K in the old digester cleaning account - so this will not hit our current bills.

Roy Wood said there is no way there is 15 truckloads. He does not think we need to allocate money for additional sludge disposal.

Labor cannot be charged separately.

No overtime is needed to clean the tanks and Jeff will log who works and what hours, etc.

Commissioner DeAngelis asked Jeff to keep a daily log.

**Motion:** A motion was made by Commissioner Dowty and seconded by Commissioner Dognin to purchase an air flow meter for \$555 plus shipping charges as it relates to Roy Wood's recommendation to verify the blower field data matches curves provided by the vendor. Need to verify the airflow rates on the blowers. All were in favor. Motion carried unanimously. Monies to come from the equipment maintenance account.

**Motion:** A motion was made by Commissioner Dognin and seconded by Commissioner Piotrowski to purchase a microscope as it relates to Roy Wood's recommendation that the plant staff should be doing microscopic exams one per week in each SBR tank and without it, the staff is relying on a biochemical vendor to perform this task monthly and this is not a recommended ongoing practice. All were in favor. Motion carried unanimously. Monies to come from Jeff Shortell's lab account. The cost was under \$2K.

Commissioner DeAngelis said he wants to make it clear that overtime is required only for critical items at this plant and is not to be abused.

We need to be careful with overtime and when Roy recommends it like emptying the SBR's and critical plant issues.

Jeff asked Roy to please verify that - I don't know where he gets this idea from.

6:40 p.m. Jeff Shortell left the meeting.

### **3. FOG Review**

Commissioner DeAngelis did a draft of the FOG Program review, which he handed out as follows:

Tape 2 Side A 6:40 p.m.

Commissioner DeAngelis said we need goals and set objectives set to reduce the FOG.

Commissioner DeAngelis said we have to go through the process of RFQ if we use Hadlyme and the process can be slow.

Perhaps we can use Maguire Group for Phase I.

Commissioner Dognin said my conclusion is to go through Maguire and hire Hadlyme.

Phase I is most important piece and should go to the most qualified person, which is Hadlyme.

We may need to negotiate with Valley Health. We need clout and Valley Health is holding the food licenses if they don't comply. DEP has no clout.

George Pendleton said the DEP General Permit gives the responsibility to the WPCA. The WPCA really does have clout via the Ordinance.

Commissioner Dognin said we may or may not use Valley Health. Hadlyme can do things better than anyone else.

He would like Hadlyme and Maguire Group do a joint proposal. The Ordinance and visiting the restaurants is priority then there is no RFP.

Sebastian Amenta from Maguire Group said that we will be glad to sit down with Regis Dognin and go down the list of what you want Hadlyme to do and what you want Maguire to do and I will have a proposal for the August meeting.

They will try to meet soon and check with Catherine at Hadlyme for her availability.

Commissioner Morse said he favors selecting Maguire Group with Hadlyme. We need to say what the metrics are and now do we measure FOG?

Sebastian Amenta said into your maintenance program daily log book, collect data now and measure the baseline.

Roy Wood said to start now so you have a year of data and management.

George Pendleton said you need to get a base line to track. We need to take samplings and should be one of your long-term goals.

Goal 1 is to get into compliance of the general permit.

Goal 2 is to continue to reduce FOG.

Roy Wood said they stopped using the emulsifier in the collection system at the Plant which saves money.

Commissioners Presutto and Piotrowski left the meeting at 7:00 p.m.

#### **4. ADJOURNMENT**

There being no further business to conduct this evening,

<p><b><i>Motion:</i></b> A motion was made by Commissioner Dognin and seconded by Commissioner Dowty to adjourn. All were in favor. Motion carried unanimously.</p>
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The meeting adjourned at 7:03 p.m.

Respectfully submitted,

Linda M. Hooper  
Clerk 2 Tapes on file with the City/Town Clerk