

**TOWN OF CHARLESTOWN
WASTEWATER MANAGEMENT COMMISSION
4540 South County Trail
Charlestown, RI 02813**

**Minutes (Amended) of Special Meeting
Thursday, March 20, 2014**

1. **CALL TO ORDER:** Meeting called to order at 6:00 pm.

2. **ROLL CALL:**

Present: Commissioners Pete Ogle, Tom Ferrio, Robert Frost, Barbara Lutzel. Wastewater Manager Matt Dowling. **Absent:** Commissioner Beth Richardson

3. **DISCUSSION:**

a. **Discussion and potential action relating to draft correspondence from the Chair of the Wastewater Management Commission to the Rhode Island Coastal Resources Management Council (CRMC) and/or the Rhode Island Department of Environmental Management (RIDEM) regarding *Phragmites* and its role in nutrient uptake in critical groundwater nitrate areas.**

Mr. Ogle began by saying that he thinks this is an issue that fits right in with what the WWMC has been doing for the past better part of a year, looking at elevated levels of nitrate in various areas of Charlestown, including the Quonochontaug area. The Quonochontaug area generally has areas of nitrate above 5ppm and the wells of the East Beach Association are up around 7ppm with a 10ppm limit, which is the EPA drinking water standard. It has been brought to the attention of the WWMC that the elimination of the phragmites in West Pond could have a serious aggravating effect on the nitrate levels in the groundwater and that could possibly push the wells to higher levels of nitrate and make the drinking water undrinkable. CRMC has scheduled a hearing on this on April 8, 2014, and he believes the commission should take this up as an issue and possibly make a formal recommendation to CRMC.

Mr. Ogle said, this issue of treating the phragmites has been an issue for several years and for the most part, people have been opposed to it because of the use of the chemical glyphosate, although the use of this chemical is approved by the EPA. The issue really is the possible increase in nitrate and the possible impact on the groundwater. To date, the Department of Health, Department of Environmental Management, and the CRMC have basically all agreed to the proposed spraying but based on discussions Mr. Ogle has had with those staff members, the issue of nitrate was not a part of those discussions. Discussions that the East Beach water association has had with engineers that can address the impact of trying to remove nitrate from drinking water have said that it would be very costly for the homeowners. Done on a home by home basis, the cost could be as much as two thousand dollars per home.

There are a number of issues here, stated Mr. Ogle. Number one is the question of whether the water from West Pond really influences the wells. The studies indicate that clearly it does. According to one report published in 1984 by Dr. Art Gold, URI, the map shows that the water flows from West Pond toward Quonochontaug Pond. This report was then updated in 1992 (Dr. Urish) and again in 2000 with the conclusion that the waters from West Pond and the areas of Central Beach are the primary flow of water towards the wells of East Beach and Central Beach. There is a study by the USGS that indicates that the water from West Pond seasonally flows from West Pond north to the marsh that is to the north of the wells and then out into Quonochontaug Pond. Also, there is a report by ESS which supports this project for Central Beach that says that the wetlands under

West Pond communicate with the aquifer that supports the wells. Clearly there is a direct communication between West Pond and the well fields.

The issue is nitrate and there is a history of nitrate dating back to the 1980s for both Central Beach and East Beach wells. The quarterly testing that is done on these wells shows a seasonal variation in nitrate levels. Back in the early 1990s there was a spike in the nitrate levels sufficient enough to put the wells on quarterly testing schedules by the Department of Health until the spike in nitrate went down. Trying to understand where these spikes come from, back in the early 1990s, the only answer that Mr. Ogle could come up with was that Hurricane Bob probably flooded West Pond and released a surge of nitrogen into the groundwater due to the killing off of some of the aquatic matter in the pond. There seems to be a history here of interplay between West Pond and the well fields that gives us cause for concern if anything of significance happens to the pond and the phragmites. The issue of nitrate in the phragmites becomes the question here, how much nitrate is in the phragmites? Estimates are that there are about 7 acres of phragmites and somewhere around 11,000 pounds of nitrates in the vegetation, some above ground, some below ground. This changes seasonally based on the cycle of the phragmites. The average home produces about 20 pounds of nitrogen yearly (average amount that goes into a septic system annually). East Beach has hired a biologist, Mary Aldred, and she has data from similar wetlands that show a release of nitrogen (a spiking) that occurs after the phragmites are killed and then a re-growth. In talking with Mary Aldred and Dr. Laura Myerson, URI, who is very well known in phragmites research, you will find out that phragmites is an extremely effective tool/plant for absorbing nitrogen out of the groundwater. To a great extent, that is why we have a high concentration of phragmites in the pond and other wetland areas, because there is an overabundance of nitrates and the phragmites is much better able to pick up the nitrates and take advantage of it than the native species such as cattails. This is why the phragmites likes to take over because there is plenty of vegetation, plenty of fertilizer there in the form of nitrogen and it just grows.

Discussion ensued amongst commission members. Mr. Frost asked if any samples had been taken from West Pond to test for nitrate levels. Mr. Frost stated that he has also noticed in the wintertime when the pond is going from liquid to frozen, you can see the springs beneath the pond bubbling up. Mr. Ferrio stated that it seems pretty clear, after reviewing the file that the people reviewing this were only looking at groundwater with respect to the herbicide itself, and not with regard to this potential nitrate issue. Mr. Ferrio found numerous references to this herbicide being used for phragmites in other states.

Mr. Ferrio stated that he does not have the scientific knowledge that CRMC does. By writing the letter, he wanted to make sure that the WWMC was calling attention to a factor that may have been overlooked. The commission members commenced discussion of the letter. Mr. Ferrio and Mr. Ogle discussed several changes to the letter. Instead of the recommendation by the WWMC to deny the application, change the wording to "gives careful consideration to". Conversation ensued regarding the section about harvesting the dead phragmites. The wordage of the letter would be changed to read "The Commission feels that harvesting phragmites on an annual basis would provide a means for both controlling the growth of the phragmites and an effective tool for reducing the nitrate loading to the aquifer." Mr. Ferrio stated that what we would be achieving then, if we accept these changes, is we would be trying to highlight the importance of CRMC to look at this aspect of water quality.

Mr. Ogle asked if anyone from the public would like to speak.

Jeff Knisely introduced himself as the legal counsel to the Quonochontaug/Central Beach Fire District. He has brought with him Bob Ferrari, a professional engineer and the principal of Northeast Water Solutions, the current operator of the Central Beach wells and previously the operator of the East Beach wells. He stated that this project was debated intensely for many years in Central Beach before it was approved with roughly a 70% vote at the Central Beach annual meeting in 2012. The current fire district officers have been taken aback by the lack of advance notice on these meetings involving the Wastewater Management Commission. The draft of

the initial letter to CRMC from the WWMC was not a general policy statement of the commission but rather a request to deny the Central Beach Fire District's application. The Central Beach Fire District again was taken aback by the short notice of these meetings. As he looked at the Charlestown code of ordinances, he questioned what authority this commission has to write a letter to CRMC. He read part of the wastewater ordinance aloud. He doesn't see how this commission has the authority to send a letter to a state agency. Mr. Ferrio stated that they contacted the legal counsel that represents this commission (Wyatt Brochu) who told him that because they are not making a decision in this case, they are just raising a point, then it is not outside of what they are able to do as a commission.

Mr. Ogle stated that the nitrate in the groundwater comes from the septic systems and we are studying it on a Town-wide basis. The studies by URI and loads of experts say that is where the predominant cause of it is. The WWMC is concerned with how to manage that, one way is to impose tighter regulations on septic systems, another way is to better manage the environment, and another is to not use fertilizers. Taking care of the groundwater is the reason this commission was set up in the first place, because we rely on wells for our drinking water. If it gets contaminated, we don't have drinking water.

Mr. George Prior introduced himself. He stated "But Peter, you do want to deny it, don't you?"

Mr. Ogle stated that he just wants the CRMC to take a closer look and investigate the nitrogen.

Mr. Prior stated that he suspects that Mr. Ogle personally would like to deny it. Mr. Ogle stated that he doesn't think it is advisable to do for the reasons he has stated. He further stated that if there is a spike in nitrogen, one hundred and ten homes lose water. And there is good data to support that it could happen. Mr. Prior stated that the pond is surface water. The water that feeds the aquifer is going from north to south. Mr. Ogle stated that according to the report he has (done by Dan Urish, URI) the water is going from south to north. Mr. Prior stated that Mr. Urish is wrong. Mr. Prior stated that he is calling into question Mr. Ogle's own personal interest in this and attempting to enlist this commission in taking up his cause.

Mr. Tom Frost, (?) Central Beach area property owner, asked Mr. Ogle if he has been following this issue all the years it has been discussed? Mr. Ogle stated that he has not. Mr. Ogle stated that this commission did not know there was going to be a public hearing on this. Mr. Ogle stated that the commission has been working on the nitrate issue for over a year now. The commission has an ongoing study going on with URI just to help them to solve the problem. This was not done at the last minute, he stated that he was blindsided that the hearing with CRMC was even going to happen. Mr. Frost asked if the East Beach Water Association controls the land around the wells. Mr. Ogle answered that the East Beach Association owns the land around their wells. Mr. Frost asked if the land is wetlands and are there phragmites on the wetlands. Mr. Ogle said yes there are wetlands and there are some phragmites. Mr. Frost asked if the association has started to harvest the phragmites? Mr. Ogle stated no. Is the association not concerned about the nitrate levels? Mr. Ogle said that this is something that has just come up but that Mr. Frost is providing an excellent catalyst for the commission to think about. Mr. Frost asked who does Mr. Ogle represent? The East Beach Water Association? Mr. Frost stated that he questions Mr. Ogle's motives.

Peter Rettig introduced himself and stated that he has to question Mr. Ogle's motives, too. If Mr. Ogle is so concerned about ground water, what about the paving with petro-chemical materials virtually on top of the East Beach water well head that not only can leach but also makes an impermeable barrier. Where are you on that? He thinks Mr. Ogle has an axe to grind and he is trying to drag the commission along with him. Harvesting of the phragmites is just a slow-down of the overgrowth of the pond.

Robert F. Ferrari, chief operator and the consulting engineer for the Central Beach Fire District public water system introduced himself. His firm ran the East Beach system from 2006 until mid 2011, and the Central Beach system from 2006 to the present time. Keeping this strictly technical, he is not questioning anyone's

motives. The hearing with the CRMC they will be appropriately prepared for. There are plenty of PHDs and scientists involved. The East Beach wells have always had higher nitrates than the Central Beach wells, all more or less being in the same well field or aquifer. West Pond is about 2/10 mile away from the wells. East Beach wells have always had higher nitrates according to the data he has seen. Central Beach has always used more water than East Beach. The point being, you have four wells in the same well field, you would think the wells that are drawing more water out would have higher nitrates, interestingly enough we have a situation where the wells that are drawing more water out have lower nitrates. The reason this might be important is that the faster your rate of withdrawal, the more your potential for drawing down a well. A lot of data is available, including the pumping rates and draw down rates. Mr. Ferrari gave a history of the 2009 upgrade of the Central Beach wells (by putting a storage tank in) thereby enabling the system to operate on one well. Following the upgrade, since May of 2009, the nitrate levels in the wells in Central Beach have decreased by half. Mr. Ferrari did a comparison of the East Beach and Central Beach well data, stating that the East Beach levels have not decreased, but have instead gone up. Mr. Ferrari talked in detail about some of the data available regarding pumping rates and draw down rates of these wells. Mr. Ferrari believes that the East Beach water association has a big problem with nitrate levels. He believes that the first thing they should do is to upgrade (or modify) their wells, to put in well pumps with variable speed drives on them. This would be a way for the pumping rates in the wells to match up with the demand rates in the community.

Mr. Ogle asked how would Mr. Ferrari know what the water association is trying to do? Mr. Ogle stated that he is entirely wrong. Mr. Ferrari stated that he knows that an upgrade to the East Beach wells has been approved by the Department of Health, submitted by the engineering firm hired by the East Beach water association. Mr. Ferrari stated that Mr. Ogle seems to be emphasizing that East Beach is very concerned that their wells are hydraulically connected to West Pond. Understand that everyone agrees that East Beach has a nitrate problem. Mr. Ferrari stated that the commission can do what they want with the letter. He agrees that there are nitrate problems, that East Beach has nitrate problems, but that there are ways to mitigate it. Phragmite control in West Pond has nothing to do with it.

Mr. Prior just wanted to suggest that they all knew that the hearing with the CRMC was imminent this spring but they just didn't know exactly when.

Mrs. Catherine Prior introduced herself and stated that in the DRAFT letter from the WWMC to the Town Council, the commission members changed some words, took out the word "denial", which they all know was the intention of the commission. When the commission sends this letter in as a representation of "my Town Council", she takes offense to that, because that is personal. Another thing the commission members were talking about changing, they used the words, "might have" originally and then changed it to "would". In other words, they couldn't control the nitrates, where in fact, as the commission has stated more than once, they are not biologists. The commission also indicated there is a study that is not quite complete. One of the women that Mr. Ogle previously cited as being an expert, just in a passing remark, said that the EPA would pass anything, well God help us all, stated Mrs. Prior. Mrs. Prior respectfully requests that the commission not send this letter as a representation of her town. She doesn't think they have the facts or the real authority of the Town Council to do this.

Don McDougal, resident of Charlestown, Central Beach, thought that the purpose of this meeting was for the commission to discuss the substance of the letter being proposed to be sent to CRMC. He has listened to the discussions and stated that he does support the WWMC putting their opinion in and saying what they want CRMC to review because that is the purpose of the CRMC hearing, so that everyone can get their viewpoint in so that CRMC does have all the facts, has the science, and can make its own evaluation based on what it receives and it will have nothing unless it receives the concerns of the individuals. He supports the letter and what the commission has done.

Public portion of discussion closed.

Motion made by Mr. Ogle to modify the letter, as proposed, and send the letter to the CRMC for their hearing. Mr. Ferrio stated that the CRMC is getting the information, and that the background material they have been discussing has already been given to them. Personally, he doesn't see the importance of doing this, he doesn't know enough about the science himself to make an informed statement. Mr. Frost stated that he is in an uncomfortable position because he is in the nitrogen removal business and feels that he must recuse himself due to a conflict of interest. No second to the motion. Mr. Dowling stated that Mr. Frost will need to fill out an official recusal form.

(b) Discussion and potential action relating to the RIDEM On-site wastewater treatment system (OWTS) Variance Request for RIDEM OWTS Permit # 8905-0148 Plat 1, Lot 50 West Beach Road relating to relief from specific OWTS Rules:

- *15.9.1 Test Holes Requirements*
- *Table 22.4 Minimum Setback Distance from Drinking Water Wells*
- *Rule 32.4 Depth to Groundwater from Original Ground Surface, and*
- *Rule 39.4 Site Suitability*

Mr. Ogle did a little legwork. The well across the street from Plat 1 Lot 50 is defined as a Public Water System in the application, although the DOH does not consider it a public water system because it only serves 14 homes. Cherenzia called it a public well. Mr. Ogle contacted the DOH and they didn't know anything about it as a public water supply. He got in touch with Cherenzia, and he was most kind to put him in contact with the name of the guy who is part of the water association that runs this water system. It is said to be maintained by Hoxie, although he is not a licensed operator by the state. It is not a public system, it is a private system with fourteen hook ups and therefore it doesn't really fall under the DOH regulations. Cherenzia is just being overly conservative in submitting this. He just wanted to make sure no one came back and said that you should have called this a public well. Mr. Ogle talked with the guy who knows the most about this, other than Hoxie, and asked him whether he knew whether he had any water quality problems, bacteria problems or nitrogen problems, and he said he thought his water was always good. He said the system is tested quarterly.

Mr. Ferrio made a motion that the WWMC make no comment for the (Variance Request) hearing. No discussion. VOTE: Mr. Ogle – aye, Mr. Ferrio – aye, Mr. Frost – aye, Ms. Lutzell – aye. Motion passed with four (4) concurring votes.

4. PUBLIC COMMENTS: see above

5. ADJOURNMENT: Mr. Ferrio made a motion to adjourn. All in favor.