

BEAR LAKE LAKE BOARD
REGULAR MEETING
Thursday October 11, 2018
6:00 p.m.
Laketon Township Hall
MINUTES

CALL TO ORDER: The meeting was called to order by Kim Arter at 6:00 pm.

PLEDGE OF ALLEGIANCE TO THE FLAG:

ROLL CALL:

Present: Kim Arter, Darrell VanFossan, Brenda Moore, Steve Johnson and John Snider

Absent/Excused:

Also: Representative of RLS Dr, Jennifer Jermalowitz-Jones, Certified Petroleum Geologist Linda Hensel, Recording Secretary Veronica West and approximately a dozen area citizens.

MINUTES: Darrell VanFossan stated he would like to see an addition to the minutes regarding the discussion based on his question to Dr. Jones last month regarding whether individual residents can spray/treat for weeds on their own lake frontage, noting that Dr. Jones said it is allowed, but requires DEQ permit and the sign off of adjacent neighbors and also that she does not encourage the practice as it can be counterproductive to the activities of the Lake Board. Darrell VanFossan moved to approve the minutes with the addition discussed. Brenda Moore supported the motion. The motion carried by voice vote. The minutes will be placed on file.

REPORTS:

- **Restorative Lake Sciences:** For the benefit of those not in attendance at the September BLLB meeting, Dr. Jones summarized the findings regarding algae, noting this was a universal problem on most lakes due to the sustained high water temps this summer. She reminded everyone that no swimming or allowing pets to drink from the lake when algal blooms and scum mats are present. RLS will be watching for algae problems and addressing earlier in the season if problematic blooms occur again. Dr. Jones also talked about the 30 core sediments taken from around the lake that were tested for petroleum at the top, middle and bottom of each core sample. She referred to the data sheet showing the results, noting the map shows about 11 with high results scattered around the lake and not concentrated in one area of the lake. She talked about the potential for seepage on the lake bottom and are getting input from the Michigan Department of Environmental Quality (MDEQ), the possibility of using petroleum digesting bacterium to treat the oil issue. She noted this issue is not typically seen on inland lakes and is very likely the cause of the low number of invertebrates found in the lake bottom. She also again talked about the very low oxygen levels in the water below the three foot depth, and how concerning it is as it is a sign of a very distressed lake. She talked about taking about only 8 core samples next summer in areas where the highest petroleum levels were found in the cores taken this year, getting bids on petroleum digesting bacterium treatments, aeration treatment and getting more base line sampling information in the 2019 season. She also noted that she is putting together the annual progress report to deliver to the board at the next meeting. Brenda Moore asked Dr. Jones to explain the thresholds for concern in the results data sheet. Dr. Jones noted the thresholds are really unknown at this time and she is currently researching this information, but that most information found at this point is based on marine (salt water) not fresh water environments. Linda Hensel (CPG) noted that there are site specific thresholds for many of these petroleum products based on the environment. Brenda Moore also compliments Dr. Jones on her thought processes and reaching out to a CPG (certified petroleum geologist) and asked about the processing lab and any discussions Dr. Jones may have had with them regarding this results. Dr. Jones stated they expected to get results of non-detect, but these results are significantly above non-

detect and they have reached out to the MDEQ and is waiting for a meeting date from them. Brenda Moore also asked if any of the past study information of this lake had included anything like this. Dr. Jones stated there was no study or testing done on this lake with regard to oil/petroleum in the information from the past study and testing that was given to her, the information was mostly related to nutrient loading. In addition, Brenda Moore asked Dr. Jones if information about petroleum digesting bacterium is available with good documentation and how this affects the planned aeration system. Dr. Jones stated they would be getting good specs together on the bacterium before seeking bids and that aeration would have to be done after any anaerobic petroleum digesting bacterium treatment, and she is hopeful for this treatment in 2019 summer and getting the aeration system implemented in 2020 summer. There was additional discussion about the budget and the sediment core testing costs with Dr. Jones noting the study and budget accounted for 60 cores total (30 in the first year, and 30 in the second year) but now only anticipating taking 8 cores in the second year where the highest petroleum levels were detected will give some room in the budget. It was also noted none of the cores came from Fenner's Ditch due to the EPA project to cap/seal the oil seep there. Darrell VanFossan asked if the planned aeration system projected for implementation in years 3 or 4 would now be different, with Dr. Jones noting it would not be a different system, but now that there has been petroleum detected in the lake bottom, that must be addressed first.

Discussion then moved along to the budget with regard to the treatment of invasives and now bacterium to treat the oil and Darrell VanFossan asked we would be going over budget. Dr. Jones noted it would be very difficult to know this far in advance without any cost estimates but the findings of petroleum have her concerned about the systemic health of the lake. There was continued discussion about outside financial assistance regarding the oil clean up and Dr. Jones stated this is why they have contacted the MDEQ and possibly the EPA (Environmental Protection Agency). She also noted that there is now the possibility of applying for a restoration grant from the MDEQ. There were questions from Darrell VanFossan regarding the technology and if it is proven with regard to these petroleum digesting bacterium. Dr. Jones replied that it is proven technology and the bid will have very specific specs and require treatment guarantees. Linda Hensel also commented that these bacterium love their food and do a very good job. Kim Arter noted that she and Dr. Jones have contacted the MDEQ and are waiting on them to set up an appointment for a meeting on the core sample findings. Dr. Jones noted she will have more information and numbers and cost estimates for the bacterium in her annual progress report. Darrell VanFossan also reminded Dr. Jones he would still like to get out and see one of her aeration systems in operation.

- **Drain Commissioner Brenda Moore:** Brenda Moore began her presentation discussing how the law requires the County Drain Commissioner to sit on all Lake Boards in the county and how there are a number of county drains at the headwaters of Bear Lake. She gave a brief history on how drain commissioners came into existence and talked about how many county drains are old streams or wetlands that were modified to speed up drainage. She talked about how drain commissioners used to be exempt from state laws, but now must follow state laws. She explained how healthy stream systems can actually clean the water, she explained the riparian zones (50 feet either side of a stream or drain) as the most productive habitats. She explained previous practices such as head cutting, flashy creeks and others cause problems such as dropping sediments, clogging culverts, carrying pollutants downstream, undercutting banks and smothering native vegetation. She also explained new "best management practices" that are now used to correct these problems; buffers of native vegetation, meandering creeks to slow down the water, constructing vanes (a series of rocks) to drop sediment and aerate the water, two stage ditching and bank stabilization with the use of rip rap (angled rock) to slow down the flow and allow sediment to settle out. She talked about how she has been partnering with the conservation districts for work on one drain in which they contributed \$70,000 and how she will be continuing to partner with conservation districts for more grant funding for more restoration. She also briefly touched on the many drains that they are currently working on and how they are paid for with assessments to the county, the local community and to the residents in the drain district. Darrell VanFossan asked about why there are grants for upstream work, but residents here are footing the bill. John Snider talked about how little work was done for many decades under previous drain commissioners and Brenda Moore is tackling problems decades old and is trying to make up for the mistakes of the past. He also stated he understands it is not popular to charge people money for

these things, but they are essential to the health of the environment. Kim Arter thanked Brenda for the information on the drains and commented how important it is to see what is going on upstream

COMMUNICATION:

- **Resident E-mails:** Kim Arter noted that she had received an email from concerned residents after last months meeting and she distributed them to the other board members.

OLD BUSINESS: NONE

NEW BUSINESS:

- **Phragmites Spraying:** Kim Arter presented the treatment bill from PLM and noted the window of opportunity was small, but there was room in the budget and they had a day of no rain and plenty of sun for the treatment to take place. Dr. Jones noted treatment must take place in the fall and before the first frost. Brenda Moore commented on the West Michigan Shoreline Regional Development Commission’s 2 year grant project regarding phragmites treatment and how there was a need to “pick up the ball” now that that program has ended. Darrell VanFossan noted there were 2 acres treated this year by PLM. Brenda Moore moved to pay the bill from PLM for the treatment of phragmites. John Snider supported the motion.

Roll Call Vote:

Yes: John Snider, Steve Johnson, Darrell VanFossan, Kim Arter and Brenda Moore

No: None

Motion Carried.

PUBLIC COMMENT:

Paul Prentice of 1621 Mulder, asked about the oil findings, if they were in all the different levels tested and what conclusions were derived. He also asked if there are any negative side effects of the petroleum digesting bacteria and if there will be more leaking in the future. Dr. Jones noted the petroleum was found in all 3 levels tested (top, middle, bottom) and no conclusions have been derived at yet, will wait for the testing results from the cores that will be taken next summer. Linda Hensel commented that her experience with the oil eating microbes is that once their food source is gone, they die; but underwater conditions are totally different. Brenda Moore asked about cost and if property owners will be covering it. Dr. Jones noted that some bioaugmentation was accounted for in the budget but the cost is not yet clear. Paul Prentice asked if fertilizing lawns is part of the problem and if there are any restrictions on types of fertilizers. Dr. Jones noted that while phosphorus containing fertilizers should not be used, nitrogen is an even bigger problem, she suggested just using lake water to sprinkle lawns and it would get fertilized at the same time. She also talked about restrictions, noting some communities adopt local ordinances. There was also discussion about buffers between lawns and natural shorelines but they are hard to enforce, noting education is key. Paul Prentice also asked if it is healthier for the lake to have a lot of weeds. Dr. Jones noted that is true if they are native aquatic plants, and even then, sometimes it is necessary to manage natives that can become a nuisance with methods like mechanical harvesting.

Susan Besteman of 1671 Mulder, asked what else was tested for in the core samples and Dr. Jones noted the cores were tested for petroleum and organic compounds and stated there were pretty good levels of organic compounds that will break down the muck once aeration is implemented. Susan Besteman also asked why there was only one weed treatment this year and expressed concern that there were so many weeds around her dock. It was explained that only the invasives were treated and they were on June 7, 2018 and then in October there was a phragmites treatment done as that is the best time of year to treat that species. Kim Arter explained that it is not healthy to kill all plants, that the lake needs beneficial native aquatic plants.

Clyde Rinsema of 1653 Mulder, asked if the oil found in the cores could have come from Fenner's Ditch and what happens if there is new oil continuing to seep in and the source cannot be found. Dr. Jones noted they will make the best use of their findings over the next few years. She also noted that the reason for the core testing was that during the initial study they found oil sheen in the area of the deep basin and the findings in the core samples were well scattered around the lake bottom. Linda Helsel commented it could also have come from land sources and also pointed to the uniformity of the spread around the lake. There was also discussion of old methods of capping wells versus new modern methods, with Linda Helsel noting that clay acts as a good shield or cap and protects from oil spreading as flows can't go far in clay.

Tom Richardson of 740 Glenwood commented that he has never seen algae like what was seen this year, he commented that Fenner's Ditch needs flow and asked if the aeration is going to help this. Dr. Jones noted it will all depend on what the MDEQ will allow with Fenner's Ditch being unique with a capped oil seep. She also noted the algae blooms and also some weeds were caused by the water temperatures being so high for so long this summer – this was a problem seen on lakes all over Michigan, not just Bear Lake.

Elaine Vandenberg of 1617 Mulder Dr thanked the board for their excellent job so far and asked if there are not other lakes with these oil issues. Dr. Jones did not know of any others but state there could be, but noted it takes a reason (a symptom) to do the kinds of testing she did on the core samples – and the Fenner's Ditch seep and the serious lack of macro invertebrates were a warning sign. Elaine also asked how to tell the difference between a native or an invasive weed and asked if pulling them is ok. Dr. Jones said it is ok the rake or pull nuisance natives because herbicides will only knock them down for a few weeks, she added they can address nuisance natives next year.

Rod Morphew of 664 Massachusetts asked if the oil could be a natural seep and if there were any other things like metals found in the cores. Linda Helsel noted it would not be likely the oil was a natural seep and Dr. Jones noted there will be more testing for things like metals in the next phase next year.

Kim Arter noted the MDEQ finished the project in Fenner's Ditch but then had an issue with the cap and had to do some more work but everything has been repaired and is functioning properly now. There will be an informational article from the MDEQ on the website.

Darrell VanFossan asked about the extreme algal bloom in the late summer and asked about skimming. Dr. Jones pointed to the the high water temps and the very heavy late summer rains as contributing factors and stated that skimming is the proper action where ever dense mats existed as they don't respond to algicide. Darrell VanFossan also commented on the 501c3 non profit Bear Lake Preservation Association that is working on putting together an educational flyer/pamphlet for lake do's and don'ts and invited anyone to come to the meetings and volunteer and participate. Kim Arter also noted this will help offset the BLLB for educational purposes and added that the Township sends out welcome letters to new property owners and would welcome an pamphlet from the Bear Lake Preservation Association to include for new lakefront property owners. Kim Arter also noted that educational workshops are part of the BLLB plan for next year.

ADJOURN: John Snider moved to adjourn the meeting. Brenda Moore supported the motion. The motion carried by voice vote and the meeting adjourned at 7:31 pm

Respectfully Submitted:
Veronica West
Recording Secretary

Approved by the Bear Lake Lake Board on _____.

Signed: _____.