TOWN OF EDDINGTON, MAINE

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PLANNING BOARD
December 11, 2014
5:30 pm
MINUTES

CALL TO ORDER: Tom Vanchieri called the meeting to order at 5:30 pm.

ROLL CALL: Members present were Tom Vanchieri, Henry Hodges, Craig Knight, Susan Dunham-Shane, Gretchen Heldmann and David McCluskey Charles Norburg has an excused absence.

Motion to make Craig a voting member for tonight. **By Henry/Susan 2nd. Vote 3-0**

MINUTES: Motion to accept the minutes of the November 13, 2014 meeting as written
By Gretchen/Henry 2nd. Vote 3-0 (Susan abstained because she was not at meeting)

Motion to accept the minutes of the December 4, 2014 meeting as amended below. Page 2, after 3. Add "4. 16. Fencing and Security and 17. Signs and lighting are ok." And Page 3, 5. Article VII, paragraph that starts Janet Hughes, after the 3rd sentence add: "Tom stated that he believed it should read at the property line."
By Henry/Susan 2nd. Vote 4-0

UNFINISHED BUSINESS:

NEW BUSINESS: Mark Stebbins, the Mining Coordinator with MDEP dealing with gravel pits, the quarry program and metallic mineral mining, presented a slide show and discussion. Mr. Stebbins gave a very informative presentation and then answered questions. The following are some of the items discussed.

From 1970 to 1993 quarries and mining sites were regulated by the Site Location and Development Law. In 1993 a Performance-Based Regulation was put into effect by the legislature. It is a permit by rule/registration process and there is not a formal application process up to 5 acres. MDEP receives an application form by certified mail and if it has the required submissions, a green card is sent back to quarry owner/operator and they are good to go.

MDEP has regular inspections. All of the standards are in the statue: reclamation, ground water, fuel storage, dust, noise, storm water and erosion control. It is the only program in MDEP that has authority to issue a Stop Work Order to shut the facility down until the issues are addressed and corrected. The Performance Base for a gravel pit applies to anything over 5 acres in size, (the actual hole in the ground is at least 5 acres in order to have a MDEP permit for gravel, clay, topsoil or silt). For a rock quarry it is one acre, the blasted area or area stripped down to ledge. One acre was what the legislature deemed would be easy to measure on the ground or by gps. There are regulations for topsoil and clay for anything under 5 acres, but they are mostly for reclamation and erosion control. There are no standards in law for gravel pits less than 5 acres. They tried to put some standards in in the 1990's, but if a town doesn't have a local ordinance and the state were to require standards in that law it would create unfunded mandates on the towns. So they couldn't put standards in. If a gravel pit is less than 5 acres only 2 things apply, that it have a 2 to 1 slope when finished and a 10' setback to property lines. They have some other laws for excavation, particularly storm water, which they will need a permit for. If there are wetlands on the site or streams that cross it, they will need a permit from MDEP.

When performance standards came into being and if a business has a site law permit, they had the option to keep it or switch to the new program. There are around 16,000 acres of permitted mine sites in

the state. There are two people that cover the state, he covers Augusta north and Christina Stacey covers Augusta south.

Blasting basics: Site assessment; type of rock, residential areas and commercial sites. Blast design: drilling, loading, shooting, mucking and afterward reviewing that everything worked as it was supposed to. The typical design has a bore hole in the rock. The burden is the distance between the front row of holes and the high wall. If there is not enough rock in front of the charge, the energy will not be used to break the rock and it will go somewhere else. The blast consists of a primer, blasting agent and stemming. (95% of the energy is used to break the rock and 5% is ground vibration.)

MDEP deals with fly rock, ground vibration and air blast. Fly rock is any rock propelled from the blast site more than 50' out. Ground vibration is energy that travels through the earth and dissipates over time. Air blast is like a concussion wave. As the rock moves out the air moves out too and is displaced. The standards that they use are based on the US Bureau of Mines research.

Ground vibration is described as like taking a rock and throwing it into a pond and as the wave goes Out it dissipates the same as the energy from a blast.

Schematic, shows the body wave/surface wave and is what they measure. As the wave travels away, every doubling of distance they have, cuts that energy in half.

Blast Level Chart – particle velocity and frequency. This is based on testing by the US Bureau of Mines. As the frequency goes up you are allowed a higher particle velocity. All their blasting standards are designed to protect low-rise residential structures. This deals with cosmetic damage. They require all operators to use a seismograph and place it half way between the blast site and some residences. It measure the waves leaving the blast and they use a microphone to measure air blast. The MDEP standard is 129dB. The point of concern is the house closest to the blast. They require pre-blast survey for anyone within ½ a mile. There are procedures set up for using a seismograph. He tells his operators that if they get a complaint they should respond to it quickly. If Mr. Stebbins gets a call the operator will get a call. When a shot detonates, it is less than a 3 second event. The blast is less than a second and the air blast is 1 – 2 seconds. MDEP will get an event report from the operator.

Air blast Standards: 180 db – minor cracking / 170 db – windows break /140db – window sash Vibration /129 db – MDEP Max, and limit to 4 blasts in 1 day /110 db – complaints likely. Sometimes they do not blast on windy days. Some blasts are videotaped.

Flyrock – rock propelled or rolled from the site. Most of the damage he has seen from blasting is from fly rock. He has seen rock go several hundred feet.

They require pre-blast surveys for the conditions of the house within ½ mile. It will consist of notes, pictures and videos. Any ground vibration is usually minimal. Records are kept for any residents that do not want a survey.

They require a notification plan within 1000' of the site. There has to be a written plan by the operator. Some operators use just one and others use all three; telephone call list, a letter and Public Notice in the local newspaper 3 or 4 days before. Some towns have requirements for notification. Mr. Stebbins thinks that Augusta requires all 3. If there is a violation of one of the standards, the operator has to notify MDEP within 48 hours. He will get a call, then a blast report and they will work to determine what went wrong. Operators can design the blast to minimize ground vibration and air blast and determine the direction of the blast.

The three major issues are dust, noise and truck traffic. Regulators and operators attend smoke school at which time they calibrate their eyes for opacity in visual emissions testing. 100% opacity

would be if you could not see anything through the dust. They require the use of steps to reduce the dust such as water, calcium chloride, recycled asphalt or a spray bar system. And they have a 20% opacity rule. All rock crushers require a license from the Air Bureau and usually have a dust suppression system. Some operators have created an irrigation system with spray nozzles along the access road to control dust.

MDEP has noise standards. Article 7 and 8A, Chapter 375; their range is between 50 and 70 DBA. Some have posted a speed limit to slow down the trucks and thus make less dust. They can also create an acoustical berm. He has seen a 12 or 13 decibel difference with the use of a berm. Sometimes the operator can relocate equipment to serve as a noise barrier. MDEP goes out and measures noise and they do it at the property line. They would then download the information to see if they are in compliance or not.

Excavation below the water table. If an operator wants to do something different than what is allowed for in the statutory requirements they have to go in for a formal application process for a variance such as going below the water table or storm water basin It is written in the law what you have to come in for a variance for and then there are specific rules under Chapter 378 that they have to follow. They will look at dewatering potential for protecting natural resources, such as streams or wetlands and look at private or public wells. MDEP requires one-year monitoring for water quantity and quality. Water level is tested 9 times a year and quality 4 times a year. Mr. Stebbins said they have issued about 75 variances since he has been there and the largest water level drop he has seen is 6', 100' from a gravel pit. Operators of a gravel pit usually use wet mining because they will not be using a pump to control water level. Quarries have a pump. They have a cone of influence that goes out a certain radius. They try to measure how far that draw down goes out and see what is in the cone of influence to see what might be impacted such as a natural resource or private well. If they knock out a private well, the operator has to replace it. The law does not say how soon it has to be done. Mr. Stebbins has not seen one have to be replaced yet. Vibrations are likely to be felt by nearby residents. Structures have a natural frequency of 4 to 12 hertz. If they have an air blast down around the 4 to 12 frequency, you can match the frequency of the structure and get amplification. That is why you have your shot at 40 db or higher or you will have major rattling of windows, etc.

Truck traffic. You have to have 50 trucks or 100 cars in a peak hour to require a traffic permit. Mr. Stebbins is not aware of any traffic permits for a quarry or gravel pit. It may be able to be regulated if it is a town road.

Questions:

Does MDEP measure silica dust? MDEP does not regulate it. Mine Safety and Health Administration regulates dust and silica for workers safety. Breathable dust cannot be seen by the naked eye. It is inhaled, gets in your lungs, your lungs produce scar tissue around it and breathing becomes difficult. MSHA will inspect twice a year at a quarry or gravel pit if there is a rock crusher on site. They will measure breathable dust for 8 hours where there is a dust source and see if it meets the standard. They set the standard for what is acceptable for silica dust. MDEP has general standards for total dust and monitor it all across the state to see if Maine is meeting ambient air quality standards set up by the Federal Government. Mr. Stebbins said that first you have to have the right type of rock, granite, and unless you are right at the source of the silica dust the odds are you will not have an issue. Worker safety is the only place it will be monitored. Hughes Brothers employees have meters from MSHA.

Peter Hughes said that the Town Ordinance did not allow crushing and the Board and residents are concerned with the dust that will be produced from blasting. Mr. Stebbins explained that there will be dust from the blast. The operator may wet the surface, but then they have to use the right type of explosive because some of the explosives do not like water.

Mrs. McLeod asked what you do if your grandbabies are allergic to dust. Mr. Stebbins said that hopefully they are not at the point of detonation and she said that you don't have to be because the wind is always blowing up there. They can limit shock days until the wind is below a certain level. Then typically the dust will go up and dissipate and goes out into the atmosphere. Water suppression systems can limit this.

Gretchen Heldmann asked if there was any verifiable research done on what the span of time is for exposure to silica for affects to health over time? Susan Dunham-Shane stated that citizens are concerned regarding silica traveling in a blast and she asked Mark if it does travel in a blast and he said yes. Mr. Stebbins recommended researching silicosis at the CDC. The only cases he thinks there have been are with workers and the case numbers have dropped down. NYOSH develops some of the test methods to measure dust. According to CDC, you would have to be at the source of the dust for a long duration in order to breathe in enough to become an issue. Janet said that most of the cases were workers in underground mines in Virginia. Mr. Stebbins said that MDEP can put out canisters to measure for fumes. Mr. Wood said that they say that the dust that comes from the blasting, takes from 5 to 40 years to develop any symptoms. For a young person who inhales it, it stays there forever. Mr. Stebbins said that he is not an industrial hygienist, but everything he has seen shows the danger right at the point of generation. Mr. Wood said that the tests that they are doing, they are not looking at the health but are looking at the amount of exposure. Mr. Stebbins recommends that anyone with questions about silica should contact an industrial hygienist.

Mr. McLeod thanked Mr. Stebbins for his excellent presentation. Mr. McLeod asked him if there would be any smell from the explosives and Mr. Stebbins said you would smell it mostly at the blast site. Most of the smell will be disbursed into the air and not be noticeable.

Mr. Deroche asked if the MDEP had any complaints about Hughes Brothers and Mr. Stebbins said that in the mining unit they have not had any complaints. Maine Drilling and Blasting is the largest blaster in the Northeast and they do about 85% of the blasting in the State. The biggest case they have had against them was in 2004, for violation of blasting standards and it wasn't at a quarry. They have alot of lawsuits on the records, because they do most of the blasting. Some of the cases are the startle event, in which a notification list would help to control. If MDEP has issues with air blast they research them and sometimes video them. Holes are filled with explosives for each blast and each hole is detonated in sequence, so they do not go off all at once.

Mr. Stebbins explained that if someone asked him about designing a Mineral Extraction Ordinance, he would tell them to build in flexibility and keep it simple. He said that they had run into a problem in another town that had set a certain time frame for blasting and if they went past that window, (possibly partly due to wind speed) because the notification requirements did not have any flexibility, the Town would not allow the blast to happen after the scheduled time and because of this they left the explosives in the ground overnight, which was a huge liability. If there were 10,000 lbs of explosive and it went off at once, it would level a building. Flexibility needs to be built into the Ordinance for safety reasons. Mr. Stebbins said that Article 7, Gravel Pit, and Article 8A, Quarries, each have a provision that allows the town to assume delegate authority. They can take the state program and run it for the state. The Town would submit their Ordinance to the State and they would inspect it and if it meets the minimum requirements they are all set to go. It would then be the Town that would handle the inspections. No Towns have ever done this and assumed delegate authority since 1993. Blasts are designed so that all of the explosives do not go off at the same time. They will go off in intervals, thus making the whole blast duration about 3 seconds, including the air blast. Hughes would blast 2 or 3 times a year. Sometimes a company will have to choose between doing fewer larger blasts and doing smaller blasts that would limit the ground vibration and air blast issues, but would require the number of blasts needed to increase.

David McCluskey questioned why the state regulates quarries at one acre or five acres, depending on the type of product. Mr. Stebbins explained that quarries were previously regulated starting at 1000 cubic yards in one year. Because this was so hard to measure, the legislature changed it to one acre in 1997. MSHA has safety regulations. Federal regulations do not take effect until a quarry is 1 acre or over. MDEP does not regulate a quarry under 1 acre, so the only regulation would be from the Town. It would also be the Town that would regulate any blasting on lots that are under 1 acre. Mr. Stebbins said that MSHA only regulates facilities that have processing equipment. And the only time that OSHA would come to the site would be if there were a death on site. Janet Hughes said that MSHA went to their quarry in Dedham for a records inspection and safety. A quarry that is under 5 acres and does not have a processing facility, would not be regulated for dust (and thus there would be no measurement of the dust) unless the Town has regulations in their Ordinance. Once it is over 5 acres, even if there is no processing or air emission license, it would be regulated by the Mining Unit of Bureau of Land and Water Quality. They have standards for dust that the operator would have to follow.

David McCluskey asked how a Town could insure that the air quality remains sound 20 years down the road when there are numerous mining operations in Town. Mr. Stebbins said it would be extremely difficult. Different sources can cause the dust and it is hard to put the blame on one source. They have monitors across the state testing the ambient air quality. Monitors are not normally put at gravel pits or quarries.

David asked what most of the complaints they received were for. Mr. Stebbins responded that a lot of times it is questions about the setback to property line and buffer issues. He does get dust complaints and he will call the operator and tell them to use water or calcium chloride. You are not going to be able to eliminate it all. Some days it may be out of compliance for 15 minutes, but ok the rest of the day. Distance and dispersion help. Janet said that there was much concern about the dust bothering students at the school ½ mile from their site or residents within 1000'. Mr. Stebbins explained that there are things that the operator can do by using berms or equipment placement that could help with dust or sound issues. Mark DeRoche suggested asking Hughes Bros. if they could do their blasting during school vacations. Susan Dunham-Shane explained that that would be an issue to discuss at the Public Hearing for Hughes's application and not now. They explained that the Town's local permit could regulate items to be more restrictive.

Susan asked if they get complaints regarding water quality or wells. He gets concerns about wells but there have been very few that have to be investigated further. Mr. Stebbins said they do a lot of noise measurements if they get complaints and sometimes it is from a crusher and they will have the operator move it to another spot in the pit. Mr. Stebbins said he thinks they have issued about 80 variances to go below the water table since the 1970's. The cone of influence and draw down need to be determined to assess the impact. They do a hydrogeological assessment for the variance process. The state has, in their Ordinance, that if an operator knocks out a well, the operator will replace it. They usually have 1 up gradient and 2 down gradient wells. Ground water typically follows the contour of the land. They will do a pump test at one of the bore holes. They pump all the water out, measure the draw-down time and how fast it recovers. You get a draw-down curve and then calculate how fast the ground water is moving. Nine times a year water level test is done, twice in April, May and June, once in September, December and March. Four times a year water quality is tested. The parameters from the pump test are put into a model to calculate what the draw down will be for the actual working area of the quarry. For gravel pits you have to be 5' above the water table and for a quarry it says you cannot go below. He said that some other bore holes could be drilled to determine where the water table is.

David asked what would happen if his well went dry within his 2 acre lot and he only has so much space to put in another well. Mr. Stebbins said there are many things that can be done in this situation. He said they had some wells go dry back in 2002 and 2003 that were dug wells, because it was a very dry year. Drilled wells are not usually impacted by climate. If there was limited land, they

could work on an easement. MDEP would work to get the water supply back. Gretchen said another concern was wells getting contaminated. They test for petroleum products. They require that if there is onsite fuel storage they have to have a double wall tank, spill kit, etc. and it is required in the law. Most of their contaminated sites are residential homes that have had a heating tank leak. Arsenic is very common in the state. When the state is monitoring water quality, they are testing iron, manganese, ph, etc (in Section 378) and they can change it for site specific testing. Janet said that operators may also pull in contaminates into their site, so they want the testing done for quality for their safety also. They have about an 82% compliance rate throughout the state. There are 944 sites in the state and the most they have inspected in a year is 286. They rotate every three years, unless there is a complaint. Some towns require inspections every year or two years, or require a permit renewal and require an inspection at renewal, in which case the CEO would inspect the site or a third-party inspector. He suggests a tier process to schedule inspections dependent on what is on the site, such as a processor or not.

Susan questioned whether water monitoring continued after a variance had been granted. And Mr. Stebbins said that the operators are required to provide a one-year baseline of water monitoring when they apply for the variance. If they are granted the variance, the MDEP will require them to continue the same type of monitoring at the same frequency, monitor certain perimeters quarterly and submit these reports. After years of monitoring and there has been no change, the operator may be granted permission to do the water testing twice a year, but if there is a spill, they can resume the prior testing requirements. Susan asked Mr. Stebbins if seasonal high water table is spring sister to ground water and he said that yes it is. He will send a definition for ground water. Gretchen said they have noticed that both words are used interchangeable throughout their work. Mr. Stebbins agreed that they were the same and seasonal high water was when it was at its highest level. The Town of Hancock used the Town of Washington's MEO as the template for their Ordinance. He also suggested working with Maine Municipal Association.

Mr. Stebbins clarified that they should be referring to Article 7, gravel pits, clay, topsoil, Article 8-A quarries, and Chapter 378 variances. They should not refer to Article 6, Site Law, as it would not pertain to any new operation. He has a lot of gravel pits that become rock quarries and then need two licenses. Tom asked if there is any impact from radon in quarries. Mr. Stebbins said that first you have to be in granite and the site on Fox Hill may not be granite. It is usually a problem if you have it in your cellar and you do not vent it. It is mostly a gas issue that is vented in a pit, so it is not an issue. In regards to a pit, it would be vented. (Maine Geological Survey, Henry Berry, is an excellent source of information.)

Mr. Stebbins reviewed the questions Susan had submitted that day.

1.a. Does applicant apply to MDEP concurrently with a local municipal application?
Answer: It depends on how the Towns Ordinance is written. Some towns require that the operator have a permit from MDEP before they apply to the Town. Some operators will go to the Town first because they do not want to pay for a variance if the Town is not going to approve it.

1.b. Does a variance application happen at the same time as a regular application to MDEP?
Answer: Most of the time no, because they have to have the 12-month background water study before applying for a variance.

1.c. If the applicant submits the application to MDEP at the same time as the local application, does MDEP start the process of review immediately or does it wait until the municipality issues its acceptance or denial?
Answer: It doesn't matter. He is not going to wait for the municipality at all. They have processing deadlines they have to meet. They have 15 days to accept it as complete and then send it out to review agents and decide whether to issue a variance or not.

2. Professionals – Mr. Stebbins will email information to Gretchen on this.

2.a. Why are they only defined in Chapter 378?
Answer: Because 378 is the rules and in order to change them in 8-A or 7, they have to go to the legislature and is not an easy change. Article 8-A was updated in 2010 and the copy the Board received from Sargents was 2005, so they can go online to get the updated version.

David asked what Mr. Stebbins Wish List for the Legislature included:
Answer: Nothing on his wish list regarding safety, because that is MSHAW.
David suggested that if there were items that he thought might be changed in a couple years, the Board could include them in the Addendum. He said they could address safety by requiring fencing or warning signs. MSHAW requires that workers wear life jackets around the site that has water. The design standards for ponds address egress with a shallow slope so someone could get out. He would clarify some items to do with storm water on his wish list.

3. Please define "unreasonable erosion of soil"
Answer: Getting dirt in the water.

4. Why are financial assurance provisions only applicable to a working pit larger than 10 acres?
Answer: Remember this only applies gravel pits as there is no threshold limit for size of a quarry over 10 acres. There is more reclamation work for a gravel pit because you have to do the slope and the pit floor, with a quarry you only have the bench. Mark will email an answer. Under 10 acres they do not have to provide financial assurance. The local ordinance would fill in the gaps for this provision. This could be another item for the wish list. He has never had to call a bond yet for a gravel pit.

5. How are the performance financial assurance funds handled when both the MDEP and the local municipality require reclamation funds guarantee?
Answer: If it is over 10 acres, it can be written with MDEP and the Town listed on it. It costs the operator more to get two bonds. This could be another wish list item.

6. Does "Permit by Rule" as a result of filing an "Intent to Comply" cover up to 9.99 acres disturbed.
Answer: It is a threshold thing, 5 acres for a gravel pit, 1 acre for a quarry. You can open up to 10 acres for a gravel pit without a variance. There is no financial insurance for a rock quarry. Because they are dealing with a vertical face, they may have a tiered step down from the top, but they do not backfill the whole slope. To keep it safe you have warning signs or work with the snowmobile and atv clubs to reroute the trail around the quarry. Some facilities use fence. Peter Hughes said that they post the whole site and use berms. Susan said she has seen snowmobile trails through a quarry. Janet said that their insurance company would drop them if they allowed atvs or snowmobiles to operate in their quarry. Mr. Stebbins said that they have a reclamation variance in which the operator can reclaim a site for recreational management area for atv use.

7. Why under Section 13F (reclamation) does MDEP use the word "may" require a bond payable to the state.
Answer: This wording is back from 1968 and another item on the wish list.

8. Why is the phrase "unless it is intended to circumvent this article" included in 490B, Applicability, 5, grading preliminary to construction?
Answer: You may have someone come in and say they are going to do a 2 acre project but need to blast before they get there and they never come in to get a permit. He has not

had anyone yet try to circumvent the law.

9. Why in borrow and silt is a variance allowed between 2' and 5' from seasonal high water level?
   Answer: The quarry rules does not give you a separation of distances. It just says you cannot go below the water table. It is very vague. This will be changed.
   Why do the setbacks from water supply not count if the water source is owned by the owner of the excavation?
   Answer: If they want to knock out their own water supply, let them. He said it is only private water supply. He will look into this.

10. What are "noise limits adopted by the board"? Where would we find an indication of what those limits are?
    Answer: Chapter 375-10

11. Why in borrow, clay, etc. are slopes allowable as 2 ½ horizontal to 1 vertical in reclamation, but in Chapter 378 a pond is 4 horizontal to 1 vertical. Why isn't it the same for both? And why does a quarry not having a variance list no slope requirements?
    Answer: Egress is why they have 4 to 1 in one area of the pond. 2 to 1 is if you are not below the water table.

12. Are rock quarries ever reclaimed as ponds other than when they have a variance to go below the seasonal water table?
    Answer: Yes, mostly open water kind of deals.

13. Inspections by MDEP, please define "periodically" for both quarries and excavations for borrow, clay, etc.
    Answer: 3-year rotation

Mr. Stebbins will email the answers back to the Board, if he is sent the questions so they will have them in writing. If they have any questions, they can call or email him. The Board and audience thanked him for a very good presentation.

OTHER BUSINESS: There is no time to work on the ordinance tonight.

Russell will ask Ken Libby, DEP Storm water if he can attend the next meeting on December 17, 2014.

They will decide the meeting dates for January at their next meeting.

The Agenda contained the following time line for the Boards information:
Attorney Review, Planning Board Public Hearing advertised and notification at least 7 days in advance. Selectmen must have by February 24, 2015 to schedule a Public Hearing and Special Town Meeting which would be March 31, 2015.

STAFF REPORTS:
PLANNING BOARD COMMENTS: Susan will send the sections for the lawyer review to Charles Gilbert tomorrow.

PUBLIC ACCESS: Mr. McLeod thanked them for a great job again.

NEXT MEETING: The next meeting will be Wednesday, December 17, 2014 at 5:30 pm.

ADJOURNMENT: Motion to adjourn at 8:36 pm. **By Gretchen/Susan 2nd. All in favor**

Respectfully Submitted, Denise M. Knowles