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Subject: Truro
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Attachments: [image001.png](#)
[image002.png](#)
[PV.Current Draft - Wastewater Treatment conditions PV comments.docx](#)

Good afternoon Barbara:

Attached is a detailed mark-up of the conditions of the Wastewater Treatment section of the Comprehensive Permit, which we understand is going to be voted on and adopted by the ZBA tomorrow night. We would like the Board to consider these proposed edits. Above all, we are concerned that the conditions must clearly state that achieving an average total nitrogen concentration of no greater than 5 mg/L is a requirement for system compliance. That premise appears to be accepted by all of the stakeholders and these revisions make it more clear. The proposed edits also contain suggested language that clarifies system reporting requirements to the Truro BoH. All of this is consistent with what was verbally communicated by Mr. Nelson et al at prior ZBA hearings.

We do not believe that these proposed amendments run counter to the conclusions already made by the ZBA. Nor do these edits require the consideration of additional evidence.

Thank you in advance for your assistance on this matter.

Best, Jay

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Wastewater Treatment

As discussed in the Waiver Appendix, the proposed Project cannot be constructed without a waiver of Article 14 of the Board of Health regulations (“Nitrogen Loading Requirements”), which requires a minimum of ten thousand square feet of Buildable Upland for every 110 gallons per day of design flow, and requires wastewater disposal systems to meet the standards for Nitrogen Sensitive Areas defined in 310 CMR 15.215 irrespective of whether the properties are located within Nitrogen Sensitive Areas as so defined.” This results in a limitation of wastewater flow to 440 gallons per day per acre.

The Cloverleaf site contains a total of 3.91 acres or 170,320 square feet. Under Article 14, the maximum wastewater discharge permitted would be 1,874 gallons per day. The proposed system for this project has a design flow of 7,480 gallons per day. Waiver of Article 14 is required to allow this discharge in excess of the 1,874 gpd limit for a parcel of this size.

The Applicant proposes use of the BioMicrobics BioBarrier wastewater treatment facility to treat wastewater effluent generated by the Project. This is an Innovative/Alternative technology certified for enhanced nutrient removal by the Department of Environmental Protection. This system may be designed to achieve a level of nitrogen removal such that the concentration of nitrogen in effluent averages 5 mg/L. The following conditions are imposed to ensure protection of public health and safety, specifically, downgradient private wells

1. The maximum total nitrogen concentration in the wastewater effluent allowed for this system is 10 mg/L measured at any time following the first six months of operation. The initial six-month timeframe recognizes there is a startup period during which the system reaches its full treatment capacity. If, after three months of operation an effluent sample contains a total nitrogen concentration above 10 mg/L, the applicant shall follow the steps listed in the operation and maintenance condition (#80) below to inspect and repair the system and bring it back into compliance.
2. The system shall be designed and operated to achieve an average total nitrogen concentration of 5 mg/L. The 5 mg/L average will be calculated as a rolling average taking into account all measurements taken in the prior 12 months. The calculation of the rolling average will begin following the initial six-month start-up period. Achieving an average total nitrogen concentration of no greater than 5 mg/L is a requirement for compliance.-
3. The applicant shall finalize an Operation and Maintenance plan that will be reviewed and approved by the Board of Health prior to system startup to govern the management of the facility. This plan shall incorporate the requirements of the Pilot Approval granted by DEP for the BioBarrier system (DEP, July 11, 2016, Pilot Approval Renewal For BioMicrobics BioBarrier system). It shall also include the additional items listed below for the operation of the system, monitoring of influent and effluent, and monitoring of groundwater upgradient and downgradient of the disposal facility.

4. The applicant will hire a certified operator to inspect, maintain and monitor the facility. The agreement with the certified operator shall run for a period of two (2) years and will be renewed with the same or other certified operator in subsequent two-year periods.
5. Wastewater influent and effluent will be monitored monthly upon the system's start up and shall continue monthly for a period of one year after the development is fully occupied or after the initial six-month start-up period is concluded, whichever is first. Influent and effluent shall be monitored for the parameters contained in the DEP Pilot Approval of the BioBarrier system and any other parameters requested by the Board of Health. Notice of ~~when the 12-month period begins, following full occupancy, the~~ commencement of monitoring shall be provided to the Truro Board of Health within 7 days of commencement. Monitoring data will be submitted monthly to the Board of Health and the Barnstable County Department of Health and the Environment within two weeks of receipt of the data.
6. Upon the completion of the first 12-month period of compliance following full occupancy, the owner and operator may request approval from the Board of Health to adjust the monitoring to a quarterly schedule. Approval from the Board of Health is required to make this change.
7. Prior to the start-up of the system, two (2) proposed long-term monitoring wells shall be installed on the Cloverleaf property to monitor groundwater quality near the proposed leaching facility. One will be placed on the northeast side of the property directly upgradient of the leaching facility. The second will be placed on the southwest property line directly downgradient of soil adsorption system #1, the larger of the two leaching facilities. Once these wells are installed, the owner will develop a new water table map incorporating water level measurements from the two new wells, three existing monitoring wells installed by the Town in 2020 near the property, and from two surface water level monitoring locations in Pilgrim Pond and its associated wetland. The groundwater flow data from this new water table map will be used to site a third long-term monitoring well further downgradient from the leaching facility and located on the southwest edge of the Route 6 property boundary in the vicinity of Old Firehouse Road.

The three long-term monitoring wells shall be installed with ten-foot screens located within the top seven feet of the aquifer. They shall be tested quarterly for total nitrogen, pH, specific conductance, total and fecal coliform and any other parameters requested by the Board of Health. The first samples will be collected prior to system startup. The groundwater monitoring data will be submitted to the Board of Health within two weeks of receipt of the data.

8. The O&M plan shall include the As-Built Plan of the installed BioBarrier system.
9. The operator and owner will prepare and submit an annual report summarizing the system's performance and submit it to the Board of Health. This report shall include an analysis and all raw performance data in a format consistent with MassDEP

requirements. Within 30 days of the submission of the annual report, the owner and operator shall meet with the BOH or its agent, to review the previous year's O&M.

10. If the effluent concentration from the BioBarrier system exceeds 10 mg/L or the average total nitrogen concentration exceeds 5 mg/L, the owner and operator will inform the Board of Health within one week and follow the recommended system modifications, procedures and treatment adjustments outlined in DEP's Pilot Approval Renewal to bring the system back into compliance. If the operator is not successful in bringing the system into compliance with the 10 mg/L total nitrogen maximum concentration and the average total nitrogen concentration below 5 mg/L within two months, the owner and Operator shall notify the DEP and the BOH of additional actions they will take to bring the system into compliance. The required repair/replacement timelines shall conform to the requirements outlined in the Pilot Approval or as required by the BOH upon the issuance of the Disposal Works Permit. ~~During-If~~ the noncompliance period exceeds two months, the BOH, after a public hearing, ~~may-shall~~ require the system to stop discharge of the effluent to the soil absorption systems, until compliance is achieved.
11. If the effluent concentration exceeds 10 mg/L or the average total nitrogen concentration exceeds 5 mg/L for more than one month, the owner will increase the frequency of groundwater monitoring at the three monitoring wells. Samples will be taken monthly for six months after the system is back in compliance and effluent concentrations are again below 10 mg/L and the average total nitrogen concentration below 5 mg/L. Monthly reports during this six-month period will be provided to the Board of Health.
12. Once the system is installed and operational, the continual O&M will address the replacement and/or repair of the various mechanical components within the system. The Operator shall review with the Board of Health the necessary mechanical components which should be inventoried and available onsite for immediate installation. These items will be listed in the approved O&M plan and inventoried at the site to make the necessary repairs to keep the system in compliance.

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