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IN THE MATTER OF : ***APPLICATION NO. 200700548***

ALISON PASTORFIELD ASSOCIATES, LLC : ***NOVEMBER 4, 2013***

PROPOSED FINAL DECISION

I
SUMMARY

The applicant Alison Pastorfield Associates, Inc. has applied for a permit to construct and operate an onsite subsurface wastewater treatment and renovation system to treat and discharge domestic sewage from a planned age-restricted residential development known as Guilford Village West in Guilford. General Statutes §22a-430. The Department of Energy and Environmental Protection (DEEP or the Department)[1] published a notice of tentative determination to approve this application and DEEP staff has prepared a draft permit that would authorize this discharge (Attachment A). In response to a petition, a hearing was held in Guilford to receive public comment and continued at the DEEP in Hartford to receive evidence from the parties. Rivers Alliance of Connecticut intervened as a party pursuant to the provisions of General Statues §22a-19(a). The other parties are the applicant and DEEP staff.[2]

I have reviewed the entire record in this matter taking into consideration the statutory and regulatory criteria which apply to this application. General Statutes §22a-430 and Regs., Conn. State Agencies §§22a-430-1 through 22a-430-8. The record includes: the permit application and its appendices; documents and correspondence exchanged during DEEP's technical review of the application; correspondence regarding the comments, concerns and approvals of local authorizing bodies; comments received during the public comment period and at the public hearing; and the

[1] The application was originally submitted to the Department of Environmental Protection (DEP). DEEP, its successor agency, was established on July 1, 2011 with the consolidation of the DEP, the Department of Public Utility Control, and the Department's energy policy staff. P.A. 11-80.

[2] Water Permitting and Enforcement Division, Bureau of Materials Management and Compliance Assurance.

draft permit prepared by DEEP staff. I have also reviewed the pre-filed testimony of witnesses for the applicant and DEEP staff and the recorded hearing sessions. Finally, I have considered the basis on which Rivers Alliance was granted status as an intervening party, that the proposed activity of the applicant has, or is reasonably likely to have, the effect of unreasonably polluting, impairing or destroying the public trust in the air, water or other natural resources of the state. General Statutes §22a-19(a).

For the reasons detailed in this decision, I find that the substantial evidence in this record demonstrates that the proposed regulated activity, as detailed in the application and conditioned by the draft permit, would comply with the applicable statutes and regulations. Accordingly, I recommend that this permit be issued to the applicant following verification that the on-site subsurface wastewater treatment and renovation system has been constructed in conformance with the approved construction plans and specifications. Regs., Conn. State Agencies §22a-430-4(k).

II
DECISION

A
FINDINGS OF FACT

1
Procedural History

1. In March 2007, the Wayne Paul Corporation, predecessor to the current applicant Alison Pastorfield Associates, Inc., submitted an application to DEEP for a permit to discharge treated domestic sewage wastewaters to groundwaters in connection with the construction and operation of an onsite wastewater treatment system (WWTS) to dispose of wastewater generated by Guilford Village West, a proposed age-restricted development.[3] The WWTS in this application, which includes a "Bioclere" system, was sized to receive a maximum total daily flow of 42,000 gallons per day (gpd) of wastewater generated by the development. (Exs. APP-1/Attach A, 18.)
2. The First Selectman of the Town of Guilford was advised that this application had been submitted and, on May 5, 2007, a Notice of Permit Application was published in the Shoreline

[3] No public sewage facilities are available in Guilford and none are in the planning stage. As a result, a facility for the disposal of wastewater generated by the development is required. (Ex. APP-18.)

Times. In a May 25, 2007 letter, the Department issued a notice to the applicant that its application was sufficient and would be sent to staff for technical review. (Exs. APP-1, 2, 3.)

3. During its review, DEEP determined that the potential for a surface discharge at the toe of the slope before treated effluent entered a downgradient wetland was a point source discharge and was not allowed under the Connecticut Water Quality Standards (WQS). In order to provide sufficient subsurface hydraulic capacity and eliminate this potential, the applicant modified its proposed WWTS, which included relocating it to the southeast corner of the property and adding approximately 1850 linear feet of supplemental infiltration trenches to the southeastern section of the site. To accommodate this new location, the applicant eliminated twenty-five residential units, reducing the development to 115 units and thereby reducing the wastewater discharge from 42,000 gallons per day to 34,500 gallons per day. While this process was pending, Aquapoint, the manufacturer of the proposed wastewater treatment system, had been developing an updated Bioclere system design. That improved design was incorporated into the updated plans for the relocated WWTS, which were submitted to DEEP in 2009. This plan included a lateral sand filter placed in an engineered fill and supported in part by a retaining wall. (Exs. APP-5 – 9, 14, 18, DEEP-5, 7, 8; test. 4/29/13, R. Sonnichsen.)[4]

4. In early 2009, DEEP notified the applicant that all local approvals would be needed before the Department would complete its review of the application. In December 2009, the applicant applied for a regulated activity permit from the Guilford Inland Wetlands Commission (IWC).[5] Nathan L Jacobson and Associates, Inc., one of three reviewing consultants retained by the Commission to assist in the technical review of the application, was hired to review and comment on the design of the WWTS; these comments were incorporated into the final design. (Exs. APP-11C through 11K, 18, 21; test. 4/29/13, R. Sonnichsen.)

5. The Guilford IWC approved the permit with recommended conditions in July 2010. These recommendations (as well as public comments received during the DEEP review of this application) are either included in the draft permit or were properly considered not to be necessary by DEEP. In June 2011, the Guilford Planning and Zoning Commission approved a 115-unit

[4] The proceedings in this matter were recorded. No written transcript has been prepared; the date of the testimony and the speaker are listed. The audio recording is on file with the Office of Adjudications and is the official record of this proceeding.
[5] Activities within the Town's regulated 100 foot upland review area are primarily related to road crossings, installation of a portion of the leaching bed, supplemental infiltration trenches and stormwater structures. (Ex. APP-18.)

residential development following a public hearing. (Exs. APP-10, 11, 11A, 11B, 18, DEEP- 5, 6, Speaker -1; test. 5/1/13, A. Daha.)

6. During the local process, the applicant worked with the Guilford Water Pollution Control Authority (WPCA) at DEEP's request because the WWTS is a community sewerage system[6] subject to local authority pursuant to General Statutes §7-246f. The applicant and the WPCA approved the framework of an agreement related to the operation and maintenance of the WWTS. This agreement, which will include provisions regarding financial responsibility, will be finalized prior to the operation of the WWTS. (Exs. APP-4, 12, 18, DEEP-5; test. 4/29/13, R. Sonnichsen, 4/30/13, A. Daha.)

7. On July 31, 2012, the DEEP made a tentative determination that the proposed system to treat the discharge will protect the waters of the state from pollution and issued a tentative determination to approve, requiring the applicant to submit plans and specifications for approval prior to issuance of the permit. This notice was published in the New Haven Register on August 1, 2012. Staff prepared a draft permit authorizing the discharge with a maximum daily flow of 34,500 gallons per day (gpd) of wastewater and average daily flow of 23,000 gpd. (Exs. DEEP-1, 4.)

8. This process was initiated by the receipt of a petition for hearing. A site visit to observe the characteristics of the site was conducted on October 22, 2012. In November 2012, Rivers Alliance was granted status as an intervening party. Following a postponement of the hearing dates to complete the transfer of the application from Wayne Paul Corporation to the applicant in March 2013, a public hearing for the receipt of public comment was held on April 25, 2013. The only public comment directly relevant to this decision was a letter and testimony provided by Kevin Magee, staff of the Guilford IWC. The evidentiary hearing was held on April 29-30 and May 1, 2013 at the DEEP offices in Hartford. At this hearing, DEEP staff explained actions taken in response to Magee's comments, most of which had been raised earlier in the process. (Exs. DEEP-2, 3, 5, 6, 14 16, Hearing Officer- 1, Speaker -1; test. 5/1/13, A. Daha.) [7]

9. The applicant provided the following expert witnesses: Russell Waldo, the applicant's President; Robert Sonnichsen, P.E., design engineer for the Guilford West Development; Mark

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[6] " '[C]ommunity sewerage system' means any sewerage system serving two or more residences in separate structures which is not connected to a municipal sewerage system or which is connected to a municipal sewerage system as a distinct and separately managed district or segment of such system...."§7-245(3).

[7] The Docket File, part of the administrative record, includes Hearing Officer – 1 (the site walk map), Speaker-1 (April 25, 2013 letter with attachments to DEEP from Kevin Magee, Environmental Planner, Town of Guilford), petition for hearing, public comments, Rivers Alliance request to intervene and ruling granting intervening party status.

Lubbers, an Aquapoint representative; Peter Annunziato, P.E., former environmental engineer at Aquapoint; William Idarola, a Connecticut Class IV licensed wastewater treatment system operator; and Robert Russo, project biologist. The applicant also provided the written testimony of structural engineer Charles Elias, P.E. DEEP's primary expert witness was Antoanela Daha, a sanitary engineer. Michael Hart, a supervising sanitary engineer, supplemented her testimony. Rivers Alliance did not present any fact or expert witness; its proposed exhibits were marked for identification but not offered at the hearing. At the request of Rivers Alliance, administrative notice was taken of advisory information on the DEEP Pollution Prevention page on the DEEP website regarding the disposal of prescription medicines and over-the-counter products. (Exs. APP- 17 – 23, DEEP- 7; test. 4/29/13, R. Waldo, R. Sonnichsen, 4/30/13, P. Annunziato, M. Lubbers, W. Iadarola, A. Daha, 5/1/13, R. Russo, A. Daha; www.ct.gov/dep/p2.)

10. The applicant will comply with the terms and conditions of the permit and has not been convicted in any jurisdiction of any criminal violation of environmental law and has not suffered the imposition of any civil penalty in any state or federal administrative proceeding. No state or federal court or administrative agency has issued any order or adverse judgment to the applicant. (Exs. APP-1/Attach C, 17; test. 4/29/13, R. Waldo.)

2
The Site

11. The applicant owns the approximately 85-acre site, which is located along the southwest side of the Boston Post Road (U.S. Route 1) in Guilford. It is mainly undeveloped woodland of mixed hardwoods with hills, ridges and expansive wooded wetlands. These features occur throughout the site and are dictated by underlying bedrock. Slopes vary from very steep to nearly flat; site elevations range from approximately 50 to 150 feet NGVD. The site is located within three different watersheds, primarily in the West River Watershed. Land uses around the around the site include highway, residential and commercial. The site's southern boundary is Interstate 95; the Guilford Transfer Station and police firing range are on adjacent property to the southeast. (Exs. APP- 1/Attach D, 17, 18, 22; test. 4/29/13, R. Waldo, R. Sonnichsen.)

12. All wastewater generated by the Guilford Village West development proposed for the site must be treated to meet the Connecticut WQS. Surface water quality is Class A; the groundwater in the vicinity of the site has been assigned a GA classification. Therefore, the discharge of

wastewater must be treated to at least drinking water standards at the point of environmental concern (i.e., the wetland system) for the pollutants considered likely to be present in domestic sewage: bacteria, viruses, nitrogen and phosphorus. The composition of wastewater from residential uses is well-understood and has less variability than commercial uses such as medical offices or retail uses. (Exs. APP-8, 18, DEEP- 7, 8, 11; test. 4/30/13, A. Daha, R. Sonnichsen.)

13. A permit is required for this discharge to groundwater because the proposed design flow is more than 5000 gallons per day of domestic sewage. The relevant analysis performed by the DEEP was therefore an assessment of impacts to groundwater. DEEP's jurisdiction regarding this permit ends at the point of discharge to groundwater. However, because the applicant's proposed WWTS will fully renovate the wastewater when it discharges to groundwater, the wetland system on and adjacent to the site, which is the area of environmental concern, will be protected by this permit that governs that discharge. This permit would be issued for a ten-year period, after which an application for renewal must be submitted to the DEEP. (Ex. DEEP-7; test.5/1/13, A. Daha.)

3
Site Testing and Conditions

14. In order to evaluate the capacity of the site to transmit the effluent without surface breakout and to renovate pollutants in the wastewater to acceptable levels, the applicant performed a site investigation to determine soil hydraulic conductivity, depth to groundwater, groundwater flow direction and gradient and site constraints. Onsite subsurface investigations included groundwater monitoring and the excavation and logging of deep test pits and sampling representative soils for laboratory analysis including saturated permeability. Test pits were dug to obtain site-specific information required to evaluate the capacity of the naturally occurring soils/groundwater system to accept wastewater. Testing included evaluation of background levels of nitrogen. Groundwater samples collected from the site had nitrogen concentrations ranging from <1.00 to 2.09 milligrams per liter (mg/l), with one sample of 7.21 mg/l, which was considered to be a high outlier; surface water samples were in the range of 2.17 and 3.44 mg/l. (Exs. APP- 1/Attach Q/Appendix A, 18, 22, DEEP-5, 7, 12; test. 4/29/13, R. Sonnichsen, 5/1/13, R. Russo.)

15. A review of soil profiles and permeability test results from the test pits throughout the site led to the conclusion that the naturally occurring soils had relatively slow permeability and not enough hydraulic capacity nor adequate distance to transmit the effluent without a surface breakout.

Therefore, a lateral sand filter was designed and will be constructed in engineered fill (a/k/a placed soils) to overcome this limited hydraulic capacity of the site. Effluent from the WWTS will travel to the sand filter, where it will percolate and seep through this fill, which will renovate certain pollutants such as bacteria and viruses. In addition, because a discharge from the sand filter into naturally occurring soils would be a point source discharge (and no longer allowed in GA areas for proposed new development), the proposed design will include a series of infiltration trenches to disperse the treated effluent underground. Because nitrogen calculations for the design flow showed that regulatory requirements of 10 mg/l for nitrogen renovation could not be met with a conventional system, the applicant proposed a system of biological nitrogen removal. (Exs. APP-1/Attach Q/Appendices A, B, 18, DEEP-7; test. 4/29/13, R. Sonnichsen, 4/30/13, A. Daha.)

4
The Wastewater Treatment System
a
Overall System

16. The design of the proposed WWTS is sized to hydraulically handle a maximum wastewater flow of 34,500 gallons per day from Guilford Village West. This is a conservative, maximum design flow, which is calculated based on 150 gallons of discharge per day per bedroom for the 115 2-bedroom age restricted residential units. This incorporates at least a 50% safety factor. (Exs. APP-15, DEEP-7, 13; test. 4/29/13, R. Sonnichsen, 4/30/13, P. Annunziato, A. Daha.)

17. Wastewater being treated by the proposed WWTS will first flow by a combination of gravity and pumps to a septic tank, where primary settling will occur as coarse solids, oils, greases and other floatables will be separated from the raw waste stream. Initial de-nitrification will occur at this stage with significant levels of total nitrogen reduction.[8] (Exs. APP- 13, 14, 15, 18, 23; test. 4/29/13, R. Sonnichsen, 4/30/13, P. Annunziato.)

18. Wastewater will then flow to an equalization tank, which will provide consistent doses of wastewater to the Bioclere system for biological nitrogen removal. The first part of this biological treatment is an aerobic Moving Bed Biofilm Reactor (MBBR), followed by two Bioclere units that use a trickling filter technology in parallel. Developed in Europe more than 40 years ago and in use in the United States and Europe in commercial, residential and government applications, the Bioclere system is a biological process in which the organic material in the wastewater flowing to

[8] The tank is an anoxic zone and there is sufficient carbon in the influent waste stream to allow de-nitrification. (Ex. APP-23.)

the Bioclere unit attaches to a filter media and forms a film known as a biomass. Aerobic microorganisms thicken the biomass, which is eventually washed off by new wastewater entering the system in a process called "sloughing." The sloughing biomass settles to the bottom of the clarifier and is re-circulated back to the septic tank where it is stored and eventually removed. A second anoxic MBBR following the Bioclere process treats any remaining nitrates in the wastewater and sends it on to a settling tank. This stage of the WWTS will treat the wastewater to meet at least the drinking water standard of total nitrogen concentrations of 10 mg/l. The treated effluent will then flow to a dosing station where it will be equally distributed to the leaching field, which contains leaching beds with lateral sand filters for further treatment. (Exs. APP-1, 13, 14, 15, 18, 20, 23, DEEP-7; test. 4/29/13, R. Sonnichsen, 4/30/13, P. Annunziato.)

19. The Bioclere process will achieve removal of organic contaminants and dissolved nutrients in the wastewater stream, including nitrogen and phosphorus, by the action of a variety of microorganisms which utilize wastewater constituents as an energy source for metabolism, cell growth and reproduction. Environments in the treatment process provide the proper conditions for bacteria to perform the chemical reactions necessary to sequentially oxidize organic matter and reduce nitrogen to acceptable levels required by regulation. (Exs. APP-1/Attach Q/Appendix C, 23; test. 4/30/13, P. Annunziato.)

20. There are commercial applications of Bioclere systems in the state, but there are no residential systems. Comparing these commercial systems to the proposed system to predict its performance or anticipate problems is not practical or appropriate since commercial and residential waste flows have different compositions and actual types of systems may vary depending on site conditions and other factors for a particular project. Also, the reasons for problems with other systems could be something as clear-cut as operator inattention, which would probably have no direct relevancy to the design of a treatment system. Similar residential systems have been operating successfully in Massachusetts since 2011. (Exs. APP- 19, 20, 24, 25; test. 4/30/13, M. Lubbers, W. Idarola.)

21. The size and location of the leaching field was based on a conservative Long Term Acceptance Rate (LTAR), which is the rate at which a subsurface wastewater absorption system continuously accepts effluent. In this case, the LTAR adjusted value for the sizing of the leaching field is 1.08 gallons per day per square foot, reflecting a hydraulic conductivity of 16 feet per day. This was calculated based on conservative assessments of capacity and wastewater strength, and

incorporated a 50% hydraulic reserve in addition to a 50% design flow safety factor. The applicant factored stormwater impacts into the lateral sand filter; however, saturation will occur in the event of a storm and any remaining rainfall will be runoff. The sand filter also has topsoil and vegetative cover to further enhance infiltration of stormwater. (Exs. APP-1, 14, DEEP-7; test. 4/29/13, R. Sonnichsen, 4/30/13, A. Daha.)

22. Following discharge from the sand filter, the treated water will be evenly distributed to supplemental infiltration trenches. These trenches will disperse the treated effluent underground and are designed to ensure that all water remains a ground water discharge, with no likelihood of breakout as surface water. One public comment was received during the DEEP review of the application regarding the stability of the retaining wall at the edge of the lateral sand filter. Revisions were made during the local approval process to flatten and stabilize the slope behind the wall. The wall structure was also analyzed to ensure that it can meet its design criteria. Per standard practice, final calculations and design data will be submitted for review once the final construction permits are in place. (Exs. APP- 9, 14, 21, DEEP-6; test. 4/29/13, R. Sonnichsen.)

b
Operation and Maintenance

23. The proposed WWTS is designed so that it can operate reliably independent of operator attention. This is due in part to the fixed-film nature of the biological treatment process and the functioning of the mechanical equipment being used in the system. The draft permit requires that a licensed Class III operator be on-site when required or needed to conduct periodic inspections, adjustments, tests and repairs. The system is designed so that an alarm condition will occur if there is a system malfunction and certain critical components are provided in duplicate in order to ensure compliance in the event of a mechanical failure. The system has a source of power during any power failure; an emergency generator will be powered by a natural gas main to ensure uninterrupted power to the equipment needed to operate the system. The applicant has prepared a required spill prevention and control plan. (Exs. APP-13, 15, 17, 19, 20, 23, DEEP-4; test. 4/29/13, R. Sonnichsen, R. Waldo, 4/30/13, P. Annunziato, A. Daha, M. Lubbers, W. Idarola.)

24. The system components will be inspected and maintained regularly by the licensed operator under a contract with the homeowners association; this cost will be included in the association's annual budget and monitored by the Guilford WPCA. Additional inspection and maintenance will

be done in accordance with system specific requirements as set forth in the Aquapoint Operations and Maintenance Manual to ensure proper system performance. The septic tank and equalization tank will be pumped out annually; the components will be inspected during this process. A licensed hauler will transport sludge from the tank to a treatment facility as needed but, at a minimum, annually. (Exs. APP-4, 12, 19, DEEP-4; test. 4/29/13, R. Sonnichsen, R. Waldo, 4/30/13, W. Idarola.)

25. The draft permit contains a requirement that any condominium or ownership documents include provisions that prohibit residents from discharging certain substances into the WWTS. These substances include: oils, greases, industrial or commercial wastes, toxic chemicals, wastes from water treatment systems or other liquids that could adversely affect the operation of the WWTS or which may pollute ground or surface water. The applicant will also have to register for a general permit in order to discharge wastewater from the development's swimming pool.[9] (Exs. APP-12, DEEP-4; test. 4/29/13, R. Sonnichsen, 5/1/13, A. Daha.)

26. The operation of the WWTS would not be impacted by the use of household cleaning agents, including laundry detergents. The biology of the system would oxidize household bleach and products with ammonia. Toxic cleaning products are not available for typical homes. The condominium homeowners association would also be able to control the use of products in the community center and could control the use of products for landscaping services. The draft permit provides for a holding tank for the community center (clubhouse) to contain floor cleaning wastewater. The notice on the DEEP website concerning the disposal of prescription medicine and over-the-counter products is a general advisory and not specific to this proposed development or the proposed WWTS.[10] (Ex. DEEP-4; test. 4/30/13, P. Annunziato, A. Daha, www.ct.gov/dep/p2.)

[9] *General Permit for the Discharge of Swimming Pool Wastewater*, DEP-WD-GP-005.

[10] This notice was posted by the DEEP Pollution Prevention (P2) program. As part of Compliance Assurance in the Office of Planning and Program Development, the function of this program is to oversee and implement the DEEP pollution prevention, source reduction and recycling programs.

c

Pollutant Renovation Capacity

27. To be consistent with groundwater classifications, the applicant had to demonstrate that the wastewater will be treated to a level to prevent pollution and maintain a high water quality. The wastewater from Guilford Village West will be renovated to WQS prior to leaving the property or impacting sensitive environmental receptors. The applicant has demonstrated that the wastewater will be treated to at least drinking water standards for the pollutants that are considered likely to be present in domestic sewage, which are bacteria, viruses, phosphorus and nitrogen. (Exs. APP-13, 18, DEEP-7; test. 4/30/13, A. Daha, 5/1/13, R. Russo.)

i

Bacteria

28. For bacteria removal, effluent must travel through soils for at least twenty-one days before encountering a point of environmental concern downgradient of the point where wastewater contacts groundwater. The applicant's renovation analysis shows that the effluent will travel through the lateral sand filter for at least twenty-one days prior to being collected by an underground collection drain and re-infiltrated in the supplemental trenches. These calculations are based on conservative assumptions using the highest hydraulic capacity value in the range for the fill in which the sand filter will be constructed. Additional renovation is expected to occur in the soils under and downgradient of the supplemental trenches as the water moves to the wetlands. The closest environmental receptor is more than forty feet from the point of discharge at the closest point. (Exs. APP-14, 15, 18, DEEP-7; test. 4/29/13, R. Sonnichsen.)

ii

Viruses

29. To address the required inactivation of viruses, the applicant conducted a mounding analysis, which measures the rise in groundwater level beneath a leaching field caused by adding wastewater flow to the natural groundwater flow. There must be at least three feet of separation between the bottom of the leaching beds and the top of the seasonal (mounded) high water table. The applicant conducted this analysis and demonstrated that the WWTS will maintain at least three feet of separating distance between the bottom of the leaching structure and the mounded seasonal high groundwater elevation. In addition, the applicant has added an impermeable liner to the side and

bottom of the leaching bed to control its permeability. (Exs. APP-14, 15, 18, DEEP-7; test. 4/29/13, R. Sonnichsen, 4/30/13, A. Daha.)

iii
Phosphorus

30. Six months of phosphorus production must be absorbed by the unsaturated naturally occurring soils available under the leaching bed. The applicant has shown that these soils have sufficient capacity to meet this requirement based on typically assumed phosphorus absorption quality of soils. Since the construction of the lateral sand filter requires a significant amount of fill that will most likely be manufactured, the applicant will also test the mineral content of the fill before construction and verify its sorption capacity. If testing reveals higher than expected levels of phosphorus, a flocculent can be added to the Bioclere system to further reduce phosphorus levels. Once the flow is collected at the end of the lateral sand filter and discharged through supplemental infiltration trenches, more phosphorus removal is expected to occur in the natural soils and phosphorus is expected to return to background levels shortly after the wastewater leaves the trenches. Phosphorus will therefore return to background levels before any wastewater enters the wetlands system; therefore, testing for phosphorus at that point is not necessary. (Exs. APP-18, DEEP-7; test. 4/29/13, R. Sonnichsen, 4/30/13, A. Daha, 5/1/13, R. Russo.)

iv
Nitrogen

31. Nitrogen must be treated to meet drinking water standards of 10 milligrams per liter (mg/l) before reaching the wetland system downgradient of the WWTS.[11] Conservatively, the proposed WWTS will treat the wastewater to meet or exceed this standard before discharging to the lateral sand filter, which will provide additional treatment, bringing the levels of nitrogen to approximately 6 mg/l before the wastewater reaches the supplemental trenches, where another 75 - 95% reduction will occur. Groundwater recharge occurring on the groundwater flow path would further dilute the discharge to background levels of approximately 2 to 3 mg/l before leaving the site. Wetlands vegetative buffers, such as those that will be present on the site, commonly remove another 75% to 90% of total nitrogen. By the time any wastewater reaches the wetlands system, nitrogen levels

[11] The unit measure of mg/l defines the concentration of nitrogen in the wastewater, which is the measure of the mass, weight or volume of nitrogen relative to a defined volume of wastewater. Nitrogen is assessed in terms of concentrations to determine toxicity (and compliance with WQS). This is a more conservative standard than an assessment of "load," which measures the total amount of a pollutant such as nitrogen entering the wetlands at a given time, such as "tons of nitrogen per year." (Test. 5/1/13, R. Russo, A. Daha.)

will be at background where they would have no negative impacts on the wetlands, including vernal pool habitat. There is no relationship between the nitrogen flowing in and out of the system such that an increase in nitrogen concentrations flowing in will increase the total concentration flowing out. The WWTS is designed to handle the total nitrogen in the system; the biological process will function to handle the nitrogen regardless of any increased concentrations coming into the system. (Exs. APP-18, 22, 23; test. 4/29/13, R. Sonnichsen, 4/30/13, P. Annunziato, A. Daha, 5/1/13, R. Russo.)

d
System Monitoring/Reporting

32. The draft permit contains record-keeping requirements and a schedule for regular sampling and system monitoring as well as a schedule for inspection, operation, maintenance and, as needed, repair.[12] The control parameters that will be monitored by the operator will manage and maintain factors such as optimal flow, pH, and air levels to ensure that the WWTS will function as designed. Quarterly groundwater monitoring to ensure compliance with the WQS is required, as well as the monitoring of the effluent at various points in the WWTS. The compliance point for sampling to ensure the effluent achieves the required limits is at the end of the sand filter, before any effluent reaches the leaching field. As required by the draft permit, a mandatory monitoring plan will be part of the homeowners agreement. (Exs. APP-12, 20, DEEP- 4; test. 4/30/13, A. Daha, W. Idarola.)

33. The WWTS has been designed so that an alarm condition will occur if there is a system malfunction. The applicant's plans for the WWTS include a description of how the alarm system will work and how the operator will respond to such situations. (Exs. APP- 15, 19; test, 4/30/13, P. Annunziato.)

34. The applicant will submit monthly Discharge Monitoring Reports and any other required reports to the DEEP. These reports will include the basis for any permit violations, the corrective actions taken, and a schedule for completing any outstanding corrective actions. The permit also requires that the applicant perform a permit compliance audit every two years and report the results to the DEEP. This report, which evaluates overall compliance with the permit terms for the preceding two years, will include the results of the monitoring of effluent, influent and groundwater, as well as an evaluation of the performance of the system and include any recommendations for adjustments or improvements. This report must also include detailed

[12] The draft homeowners agreement includes a "Repair and Replacement Fund" and a "Maintenance Fund." (Ex.APP-12.)

descriptions of any remedial actions taken or proposed to address any violation or deficiencies discovered. Reports filed with the DEEP will be publicly available pursuant to Freedom of Information Act laws. (Ex. DEEP-4; test. 4/29/13, R. Sonnichsen, 4/30/13, A. Daha, W. Idarola.)

35. The Guilford WPCA will have an oversight role in the management of the WWTS under General Statutes §7-246f as a result of the system's classification as a community sewerage system. §7-245. Hard copies of monthly DMRs and the results of the biennial permit compliance will be submitted to the WPCA and the Guilford Health Department at the time they are filed electronically or submitted as hard copies to the DEEP. (Exs. APP-12, 18, DEEP-4; test. 4/29/13, R. Sonnichsen, 4/30/13, A. Daha.)

5
Unreasonable Pollution

36. Rivers Alliance presented no evidence to support its claim that the proposed regulated activity for which the applicant seeks a permit is reasonably likely to cause unreasonable pollution under the provisions of General Statutes §22a-19(a), specifically, it claims: "given the character of the site (rocky, steep, and wet) and the untested complexity of the proposed system, the pending permit cannot adequately protect the groundwaters of the state. Nor does it provide sufficient transparency for officials or the public to follow the system's performance and require compliance with the terms of the permit." Rivers Alliance did not produce any documentary evidence or expert testimony to counter the contrary persuasive testimony, documentary evidence, and expert opinions presented by the applicant and DEEP that this proposed activity will not cause unreasonable pollution.

B
CONCLUSIONS OF LAW

1
GENERAL STATUTES §22a-430/CT WATER QUALITY STANDARDS

Under the provisions of General Statutes §22a-430, the Commissioner may not issue a permit for any discharge of water, substance or material into the waters of the state unless the Commissioner determines that a "proposed system to treat such discharge will protect the waters of the state from pollution." §22a-430(b). Discharges to the waters of the state must also be consistent with the Connecticut WQS, which set objectives for existing and future water quality. The DEEP, in accordance

with the WQS, required the applicant to show that wastewater would be treated to a level to prevent pollution of groundwater and to maintain a high water quality.[13]

The wastewater will be treated to a level to prevent pollution and maintain a high water quality. The wastewater generated by the Guilford Village West development will be treated by the proposed WWTS to at least drinking water standards at the point of environmental concern for the pollutants likely to be present in domestic sewage: bacteria, viruses, nitrogen and phosphorus. The WWTS is properly sized based on a conservative design flow and has the capacity to treat and renovate the wastewater for these pollutants.

2

REGULATIONS, CONNECTICUT STATE AGENCIES §§22a-430-3, 22a-430-4

Section 22a-430-3 of the Regulations of Connecticut State Agencies outlines general conditions that apply to water discharge permits. Section 22a-430-3(b) provides that a permit must incorporate all applicable regulatory provisions, either expressly or by reference, of that section and §22a-430-4. § 22a-430-3(b)(1)(C). A review of the draft permit, attached hereto, indicates compliance with this requirement. Section 22a-430-3(e) provides that once the permit is issued, the applicant (permittee) is under a duty to comply with its terms and conditions. The applicant has indicated its intent and ability to comply with all terms of the draft permit.

Section 22a-430-3(f) provides that a permittee must properly operate and maintain all facilities and systems and components for wastewater collection, storage, treatment and control which are installed or used by the permittee to achieve compliance with the terms and conditions of the permit. Proper operation and maintenance includes effective performance, adequate funding and the employment of certified operators. The applicant presented sufficient evidence to demonstrate that the planned operation and maintenance of the proposed WWTS will comply with this regulation. The draft permit also sets forth an inspection and maintenance schedule and requires that the result of all

[13] The DEEP has coordinate jurisdiction with local regulatory bodies. Here, DEEP notified the applicant that all local approvals were necessary before the Department would complete its review of the application. The draft permit incorporates comments received from consultants during the review of the Guilford Inland Wetlands Commission. This coordinate jurisdiction recognizes the separate roles of local environmental authorities and the DEEP, whose complementary efforts protect the state's natural resources.

inspections and monitoring be reported to the DEEP. Section 22a-430-3(c) also provides that the DEEP may also enter the property to conduct an inspection or to review records.

Section 22a-430-4 of the Regulations of Connecticut State Agencies sets forth the criteria for issuing a water discharge permit. Consistent with the finding made by the DEEP on May 25, 2007, the record shows that the application includes all of the relevant required information. §22a-430-4(c); see *Commission on Hospitals and Health Care v. The Stamford Hospital*, 208 Conn. 663 (1988) (agency has authority to determine when application complete). The application meets the requirements of the subparagraphs of subdivision (1) of subsection 22a-430-4(e), supporting the determination of DEEP staff that the proposed WWTS will treat the discharge of wastewater so that the waters of the state will be protected from pollution. The applicant will submit construction plans and specifications to the DEEP for approval of the WWTS prior to issuance of the permit. §22a-430-4(k).

3

THE DISCHARGE IS NOT REASONABLY LIKELY TO UNREASONABLY POLLUTE, IMPAIR OR DESTROY THE PUBLIC TRUST IN THE WATER AND OTHER NATURAL RESOURCES OF THE STATE

General Statutes § 22a-19(a), which provides for intervening party status upon the allegation that a proposed regulated activity (here, the proposed WWTS) "involves conduct which has, or which is reasonably likely to have, the effect of unreasonably polluting, impairing or destroying the public trust in the air, water or other natural resources of the state." Whether pollution is unreasonable in any given instance is an issue to be determined by the trier of fact based on the evidentiary record. *Gardiner v. Conservation Commission*, 222 Conn. 98 (1992). A petition for intervention filed under §22a-19 must contain specific factual allegations setting forth the environmental issue that the intervenor intends to raise. *Nizzardo v. State Traffic Commission,* 259 Conn. 131, 164-65 (2002).

Rivers Alliance, which has the burden of proof under §22a-19, did not present facts or the testimony of any witnesses to sustain its allegations that the proposed WWTS would create and cause unreasonable pollution or would be even reasonably likely to create or cause unreasonable pollution. *Manchester Environmental Coalition v. Stockton*, 184 Conn. 51 (1981). It also failed to present any evidence to establish unreasonable impairment "through the lens" of the statutory and regulatory schemes under General Statutes §22a-430 and Regs., Conn. State Agencies §§22a-430-1 through 22a-

430-8. See *Waterbury v. Washington*, 260 Conn. 506, 549-51 (2002) (claim of unreasonable impairment reviewed and evaluated through the lens of the entire statutory scheme, if any, that the legislature has created to regulate the conduct underlying the impairment).

Rivers Alliance offered no fact or expert testimony to rebut the applicant's various expert witnesses concerning any aspects of the testing and characterization of the site, the preparation of the application, the design and operation of the proposed WWTS, or the potential discharge to that system. Rivers Alliance did not produce any evidence or expert testimony to counter the facts and expert opinions presented by the applicant and DEEP; none of the questions it asked the witnesses presented by the applicant or DEEP raised an issue that would prompt concern that the proposed WWTS would produce a discharge that would cause or be reasonably likely to cause pollution to the waters of the state.

During its cross-examination of various witnesses who testified at the hearing, Rivers Alliance tried to raise various issues solely through its questioning. Some topics raised were based on its own interpretation of facts (presented and assumed) or were framed by an inaccurate scientific or legal premise. Other issues or concerns had been previously addressed during the hearing or were adequately answered by the witness being questioned. Some subjects that were raised were either not relevant to this permit or were not considered a cause for concern by the expert witness. Several questions were repeatedly asked in an evident attempt to get a certain answer instead of the answer being provided. Finally, some questions seemed to stem from unfounded speculation about the operation of the WWTS and the impacts to the environment. See *River Bend Associates v. Conservation & Inland Wetlands Commission,* 269 Conn. 57, 71 (2004); *Estate of Casimir Machowski v Inland Wetlands Commission,* 137 Conn. App. 830, 836 (2012) (Mere speculation or general concerns do not qualify as substantial evidence.)

The concerns of Rivers Alliance regarding water quality in this state are laudable; however, this permit will present no cause for such concern. DEEP staff has correctly determined that this application will comply with the applicable statute and regulations designed to protect the waters of the state. The permit has been drafted to ensure that this discharge will not have adverse environmental impacts and contains a schedule for regular sampling and system monitoring as well as a schedule for inspection, operation, maintenance and, as needed, repair to assure continued protection. The control

parameters that will be monitored by the operator will manage and maintain factors to ensure that the WWTS will function as designed. Quarterly groundwater monitoring to ensure compliance with the WQS is required, as well as the monitoring of the effluent at various points in the WWTS.

The applicant will submit monthly Discharge Monitoring Reports (DMRs) and any other required reports to the DEEP. These reports will include the basis for any permit violations, the corrective actions taken, and a schedule for completing any outstanding corrective actions. The permit also requires that the applicant perform a permit compliance audit every two years and report the results to the DEEP. This report will include the results of the monitoring of effluent, influent and groundwater, as well as an evaluation of the performance of the system. This report must also include detailed descriptions of any remedial actions taken or proposed to address any violation or deficiencies discovered.

The DEEP is not the only agency with oversight of the performance of this proposed WWTS. The Guilford WPCA will have an oversight role in the management of the WWTS and will also receive copies of monthly DMRs and the results of biennial permit compliance audits, as will the Guilford Health Department. Reports filed with the DEEP will be publicly available.

There is no evidence that the proposed regulated activity will be inconsistent with statutory and regulatory requirements or with any policies that protect the environment. The WWTS has been designed and would be operated to effectively renovate and treat bacteria, viruses, phosphorus and nitrogen to prevent the discharge of pollutants to the waters of the state. The water quality in the groundwater would be maintained. The discharges from the system would meet the criteria for discharges to GA areas, ensuring consistency with the state's goal of maintaining a GA groundwater quality of the area.

III
CONCLUSION

The application complies with applicable statutory and regulatory standards. General Statutes §22a-430; Regs. Conn. State Agencies §§ 22a-430-3, 22a-430-4. The terms and conditions of the draft permit, with which the applicant has demonstrated it can and will comply, are consistent with the provisions of §22a-430 and its implementing regulations. The proposed WWTS would treat the wastewater to a level to prevent pollution of groundwater and adjacent areas of environmental concern and maintain a high water quality, as required by the Connecticut Water Quality Standards. The requested permit for a discharge of wastewater from Guilford Village West would not cause pollution to the waters of the state and is not reasonably likely to cause unreasonable pollution.

IV
RECOMMENDATION

The applicant should be permitted to present construction plans and specifications to the DEEP to construct the proposed WWTS. Once the DEEP has verified that the system has been constructed in accordance with approved plans and specifications, the draft permit should be finalized and issued to the applicant.

Janice B. Deshais, Hearing Officer

Service List

In the Matter of Alison Pastorfield Associates, Inc.

Application #200700548

Applicant

Alison Pastorfield Associates, Inc.
89 State Street
Guilford, CT 06437

Representative

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DEEP Staff

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Water Permitting and Enforcement Division
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Petitioner

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Connecticut Department of
ENERGY &
ENVIRONMENTAL
PROTECTION

79 Elm Street • Hartford, CT 06106-5127 www.ct.gov/deep Affirmative Action/Equal Opportunity Employer

ATTACHMENT A

UIC PERMIT

issued to

Wayne Paul Corporation
1600 Old County Road
Suite 209
Plainview, NY 11803

Location Address:
Alison Pastorfield Property
Boston Post Road West
Guilford, CT 06437

Permit ID: UI0000450

Permit Expires:

Watershed: West River

Basin Code: 5110

SECTION 1: GENERAL PROVISIONS

(A) This permit is issued in accordance with section 1421 of the Federal Safe Drinking Water Act 42 USC 300h et. seq. and section 22a-430 of Chapter 446k, Connecticut General Statutes ("CGS"), and Regulations of Connecticut State Agencies ("RCSA") adopted thereunder, as amended.

(B) Wayne Paul Corporation, ("Permittee"), shall comply with all conditions of this permit including the following sections of the RCSA which have been adopted pursuant to section 22a-430 of the CGS and are hereby incorporated into this permit. Your attention is especially drawn to the notification requirements of subsection (i)(2), (i)(3), (j)(1), (j)(6), (j)(8), (j)(9)(C), (j)(11)(C), (D), (E), and (F), (k)(3) and (4) and (l)(2) of section 22a-430-3.

Section 22a-430-3 General Conditions

(a) Definitions
(b) General
(c) Inspection and Entry
(d) Effect of a Permit
(e) Duty
(f) Proper Operation and Maintenance
(g) Sludge Disposal
(h) Duty to Mitigate
(i) Facility Modifications; Notification
(j) Monitoring, Records and Reporting Requirements
(k) Bypass
(l) Conditions Applicable to POTWs
(m) Effluent Limitation Violations (Upsets)
(n) Enforcement
(o) Resource Conservation
(p) Spill Prevention and Control
(q) Instrumentation, Alarms, Flow Recorders
(r) Equalization

Section 22a-430-4 Procedures and Criteria

(a) Duty to Apply
(b) Duty to Reapply
(c) Application Requirements
(d) Preliminary Review
(e) Tentative Determination
(f) Draft Permits, Fact Sheets
(g) Public Notice, Notice of Hearing
(h) Public Comments
(i) Final Determination
(j) Public Hearings
(k) Submission of Plans and Specifications. Approval.
(l) Establishing Effluent Limitations and Conditions
(m) Case by Case Determinations
(n) Permit issuance or renewal
(o) Permit Transfer
(p) Permit revocation, denial or modification
(q) Variances
(r) Secondary Treatment Requirements
(s) Treatment Requirements for Metals and Cyanide
(t) Discharges to POTWs - Prohibitions

(C) Violations of any of the terms, conditions, or limitations contained in this permit may subject the Permittee to enforcement action, including but not limited to, seeking penalties, injunctions and/or forfeitures pursuant to applicable sections of the CGS and RCSA.

(D) Any false statement in any information submitted pursuant to this permit may be punishable as a criminal offense under section 22a-438 or 22a-131a of the CGS or in accordance with section 22a-6, under section 53a-157 of the CGS.

(E) The Permittee shall comply with Section 22a-416-1 through Section 22a-416-10 of the RCSA concerning operator certification.

(F) No provision of this permit and no action or inaction by the Commissioner of Energy & Environmental Protection ("Commissioner") shall be construed to constitute an assurance by the Commissioner that the actions taken by the Permittee pursuant to this permit will result in compliance or prevent or abate pollution.

(G) The authorization to discharge under this permit may not be transferred without prior written approval of the Commissioner. To request such approval, the Permittee and proposed transferee shall register such proposed transfer with the Commissioner, at least 30 days prior to the transferee becoming legally responsible for creating or maintaining any discharge which is the subject of the permit transfer. Failure, by the transferee, to obtain the Commissioner's approval prior to commencing such discharge(s) may subject the transferee to enforcement action for discharging without a permit pursuant to applicable sections of the CGS and RCSA.

(H) Nothing in this permit shall relieve the Permittee of other obligations under applicable federal, state and local law.

(I) An annual fee shall be paid for each year this permit is in effect as set forth in section 22a-430-7 of the RCSA.

(J) This permitted discharge is consistent with the applicable goals and policies of the Connecticut Coastal Management Act (section 22a-92 of the CGS).

SECTION 2: DEFINITIONS

(A) The definitions of the terms used in this permit shall be the same as the definitions contained in section 22a-423 of the CGS and section 22a-430-3(a) and 22a-430-6 of the RCSA.

(B) In addition to the above the following definitions shall apply to this permit:

"Annual" in the context of a sampling frequency, shall mean the sample must be taken in the month of February.

"Average Monthly Limit" means the highest allowable average of all grab samples taken during any calendar month.

"Maximum Daily Limit" in the context of this permit is defined as the maximum concentration at any time as measured in a daily composite sample or a grab sample.

"Quarterly", in the context of a sampling frequency, shall mean sampling is required in the months of February, May, August, and November.

"3 times per year", in the context of maintenance frequency shall mean the maintenance must be performed at least 3 times during the period of May to November.

"Twice per month" when used as a sample frequency shall mean two samples per calendar month collected no less than 12 days apart.

"Twelve Month Rolling Average" means the highest allowable average of all grab samples taken during the twelve month period.

SECTION 3: COMMISSIONER'S DECISION

(A) The Commissioner has made a final determination and found that the system installed for the treatment of the discharge will protect the waters of the state from pollution. The Commissioner's decision is based on **Application No. 200700548** for permit issuance received on February 25, 2007 and the administrative record established in the processing of that application.

(B) The Commissioner hereby authorizes the Permittee to discharge 34,500 gallons per day of domestic sewage in accordance with the provisions of this permit, the above referenced application, and all approvals issued by the Commissioner or the Commissioner's authorized agent for the discharges and/or activities authorized by, or ass ociated with, this permit.

(C) The Commissioner reserves the right to make appropriate revisions to the permit in order to establish any appropriate effluent limitations, schedules of compliance, or other provisions which may be authorized under the Federal Safe Drinking Water Act or the Connecticut General Statutes or regulations adopted thereunder, as amended. The permit as modified or renewed under this paragraph may also contain any other requirements of the Federal Safe Drinking Water Act or Connecticut General Statutes or regulations adopted thereunder which are then applicable.

SECTION 4: EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

(A) The use of sewage system additives, as defined in section 22a-460(g) of the CGS, are prohibited unless such additive is registered with the Commissioner in accordance with section 22a-462-3 of the RCSA. The Commissioner in no way certifies the safety or effectiveness of any registered additive. The Permittee shall include in the public offering statement, condominium instruments, rules and regulations adopted pursuant thereto, and any management agreement for

the facility the requirement that no sewage system additive shall be used in the subject treatment system unless such additives is registered with the Commissioner, in accordance with section 22a-462-3 of the RCSA.

(B) Oils, greases, industrial or commercial wastes, toxic chemicals, wastes from water treatment systems, or other substances, that will adversely affect the operation of the subsurface sewage treatment and disposal system, or, which may pollute ground or surface water, shall not be discharged to the subsurface sewage treatment and disposal system. The Permittee shall include in the public offering statement, condominium instruments, and rules and regulations adopted pursuant thereto, and any management agreement for community sewerage system the requirement that no oils, greases, industrial or commercial wastes, toxic chemicals, wastes from water treatment systems or other liquids that will adversely affect the operation of the subsurface sewage treatment and disposal system or which may pollute ground or surface water shall be discharged to the subsurface sewage treatment and disposal system.

(C) The Permittee shall assure that groundwater affected by the subject discharge shall conform to the Connecticut Water Quality Standards.

(D) This permit becomes effective on the date of signature.

(E) The Permittee shall operate and maintain all processes as installed in accordance with the approved plans and specifications and as outlined in the associated operation and maintenance manual. This includes but is not limited to all pumping systems, aeration equipment, aeration tank cycling, mixing equipment, anoxic tanks, chemical feed systems, effluent filters or any other process equipment necessary for the optimal removal of pollutants. The Permittee shall not bypass or fail to operate any of the approved equipment or processes without the written approval of the Commissioner.

(F) The discharge shall not exceed and shall otherwise conform to specific terms and conditions listed in this permit. The discharge is restricted by, and shall be monitored in accordance with the Tables A through C, which are incorporated into this permit as Attachment 1.

(G) The pH of the discharge shall not be less than 6.0 nor greater than 9.0 Standard Units at any time and shall be monitored on a weekly basis. The Permittee shall report pH values, specifically maximum and minimum, for each day of sample collection and the pH range for each month. The pH range for each month is defined as the highest and lowest single pH reading during all operating days of the month including periods when sampling is not performed.

(H) The Permittee shall maintain at the facility a record of the total flow for each day of discharge and shall report on the discharge monitoring report the total flow and number of hours of discharge for the day of sample collection and the average daily flow for each sampling month.

(I) All samples shall be comprised of only those wastewaters described in this schedule; therefore, samples shall be taken prior to combination with wastewaters of any other type and after all approved treatment units, if applicable. All samples taken shall be representative of the discharge during standard operating conditions.

(J) In cases where limits and sample type are specified but sampling is not required, the limits specified shall apply to all samples which may be collected and analyzed by the Department of Energy and Environmental Protection personnel, the Permittee, or other parties.

(K) The Permittee shall ensure that the wastewater treatment facility is operated by a person with a valid and effective certification in the State of Connecticut, at a minimum, as a facility Class III operator pursuant to C.G.S. 22a-416(d) and the regulations adopted thereunder. The Permittee shall ensure that the wastewater treatment facility is operated by such an operator with such qualifications throughout the entire life of the wastewater treatment facility.

(L) The Permittee shall monitor, inspect and maintain the treatment facilities in accordance with Table D, which is incorporated into this permit as Attachment 2.

(M) The Permittee shall perform ground water monitoring in accordance with Table E, which is incorporated into this permit as Attachment 3. The requirement that the monitoring plan be performed shall be included in the Public Offering Statement, Condominium Bylaws, and the rules and regulations adopted thereto.

(N) The monitoring and sampling required within this permit is a minimum for reporting purposes only. More frequent monitoring and sampling of the treatment system may be required to operate the facility to obtain acceptable results for the parameters being monitored as required by the Operation and Maintenance Manual approved by the Commissioner.

SECTION 5: SAMPLE COLLECTION, HANDLING AND ANALYTICAL TECHNIQUES AND REPORTING REQUIREMENTS

(A) Chemical analyses to determine compliance with effluent limits and conditions established in this permit shall employ methods approved by the Environmental Protection Agency pursuant to 40 CFR 136 unless an alternative method has been approved in writing in accordance with 40 CFR 136.4.

(B) If any sample analysis indicates that an effluent limitation specified in Section 4 of this permit has been exceeded, a second sample of the effluent shall be collected and analyzed for the parameter(s) in question and the results reported to the Commissioner within 30 days of the exceedance. Re-sampling for permit violations is in addition to routine required sampling.

(C) The Permittee shall enter the results of chemical analysis and treatment facilities monitoring and maintenance required by Section 4 on a Discharge Monitoring Report (DMR), provided by this office, and shall submit such DMR to the Bureau of Materials Management and Compliance Assurance by the end of the month following the month in which the samples are taken.

(D) **Electronic Reporting:**
Unless otherwise approved in writing by the Commissioner, no later than one-hundred-twenty (120) days after the issuance of this permit, the Permittee shall report chemical analysis, monitoring and maintenance data using the Department's Onsite Wastewater Reporting System, a web-based tool that allows Permittees to electronically submit DMRs ***and other required reports*** through a secure internet connection. The Permittee shall subscribe to and submit such data using the Onsite Wastewater Reporting System in accordance with subsection 5(F) below.

(E) **Subscription to the Onsite Wastewater Reporting System:**
On or before sixty (60) days after the issuance of this permit, the Permittee shall contact the Department and subscribe to the Onsite Wastewater Reporting System for electronic submission of DMR information ***and other required reports***. Such subscription shall be by a person authorized to sign the Permittee's DMR and other reports as prescribed by RCSA Section 22a-430-3(b)(2) ("Signatory Authority"). To obtain a copy of the Subscriber Agreement form, please contact the Department at 860-424-3018.

(F) **Submittal of Reports Using the Onsite Wastewater Reporting System:**
On or before one-hundred-twenty (120) days after issuance of this permit, the Permittee shall through its Signatory Authority electronically submit DMRs and reports required under this permit to the Department using the Onsite Wastewater Reporting System in satisfaction of the DMR submission requirement of subsection 5(C) above, except that the Permittee shall still be required, in response to a permit limitation violation, to submit to the Department a hard-copy report in accordance with subsection 5(H) below. Such report shall include a detailed explanation of such violation, corrective actions performed and a schedule for the completion of any corrective actions remaining. The Onsite Wastewater Reporting System is accessed from: http://www.ctdeponsitereporting.org.

(G) **Submittal of Onsite Wastewater Reporting System Opt-Out Requests:**
If the Permittee demonstrates in writing to the Department's satisfaction that use of the Onsite Wastewater Reporting System is not reasonably possible ("opt-out request") because of a factor such as technical or administrative infeasibility, the Commissioner may grant such request and approve the submission of DMRs and other required reports in hard-copy

form. Opt-out requests must be submitted in writing to the Department for written approval on or before fifteen (15) days prior to the date the Permittee would be required under this permit to begin filing DMRs and other reports using the Onsite Wastewater Reporting System. This demonstration shall be valid for twelve (12) months from the date of the Department's approval and shall thereupon expire. On or before one-hundred-twenty (120) days after such expiration, the Permittee shall electronically submit DMRs and other reports to the Department in accordance with subsections 5(E) and 5(F).

Unless otherwise indicated by the Department, all opt-out requests and subscriber requests for the Onsite Wastewater Reporting System shall be sent to the following address:

Attn: Onsite Wastewater Reporting System Coordinator
Connecticut Department of Energy and Environmental Protection
79 Elm Street
Hartford, CT 06106-5127

(H) **Non-Electronic or Hard-Copy Submission:**
The results of chemical analysis and treatment facilities monitoring that are not required to be submitted electronically under Section 5 shall be submitted in hard-copy form on a DMR provided by this office. Such DMRs and other reports not required to be submitted electronically shall be reported to the Bureau of Materials Management and Compliance Assurance, at the following address. The DMR shall also include a detailed explanation of any violations of the limitations specified and corrective actions performed, and a schedule for the completion of any corrective actions remaining.

Bureau of Materials Management and Compliance Assurance
Water Permitting and Enforcement Division (Attn: DMR Processing)
Connecticut Department of Energy & Environmental Protection
79 Elm Street
Hartford, CT 06106-5127

(I) Copies of all hard-copy DMRs shall be submitted concurrently to the Guilford Health Department.

(J) Copies of all hard-copy DMRs shall be submitted concurrently to the Guilford Water Pollution Control Authority (hereinafter "WPCA").

SECTION 6: COMPLIANCE SCHEDULE

(A) On or before three (3) months after issuance of this permit the Permittee shall verify in writing to the Commissioner that the alternative treatment technology is operating in accordance with the approved plans and specifications and is achieving compliance with all permit limits and conditions. The Permittee shall obtain written concurrence from the design engineer, the technology provider and the wastewater treatment facility operator who will be responsible for the operation of the wastewater treatment facility.

(B) On or before seven (7) days after issuance of this permit, the Permittee shall record on the land records of the Town of Guilford a document indicating the location of the zone of influence created by the subject discharge, as reflected in the application and approved plans and specifications for this permit. On or before one (1) month after issuance of this permit, the Permittee shall submit written verification to the Commissioner that the approved document indicating the location of the zone of influence created by the subject discharge as reflected in the application for this permit has been recorded on the land records in the Town of Guilford.

(C) On or before seven (7) days after issuance of this permit, the Permittee shall record a copy thereof on the land records in the Town of Guilford. On or before one (1) month after issuance of this permit, the Permittee shall submit written verification to the Commissioner that this permit has been recorded in the land records in the Town of Guilford.

(D) Every two years, on or before the anniversary date of the issuance of this permit, the Permittee shall submit the results of a detailed permit compliance audit to the Commissioner. Such audits shall be performed within sixty (60) days prior to the anniversary date. The compliance audits shall be performed by a qualified professional engineer licensed to practice in Connecticut with the appropriate education, experience and training which is relevant to the work required.

Each audit shall evaluate compliance with all permit terms and conditions for the preceding two-year period. The evaluation shall review all pertinent records and documents as necessary, including Discharge Monitoring Reports (DMRs); laboratory reports; operations and maintenance plans and performance logs/records; equipment specifications and maintenance schedules; engineering drawings; and spare parts inventory.

Each audit report shall include a description of all records and documents used in the evaluation, a summary of compliance with permit terms and conditions, and detailed descriptions of all remedial actions taken or proposed to address each violation or deficiency discovery.

(E) A copy of each audit shall be submitted concurrently to the Guilford WPCA and to the Guilford Health Department.

This permit is hereby issued on

_____

Macky McCleary
Deputy Commissioner
Department of Energy and Environmental Protection

cc: Guilford Health Department
DMR

ATTACHMENT 1

TABLE A				
Discharge Serial No. 301-2			Monitoring Location: G	
Wastewater Description: Domestic Sewage Influent for the Moving Bed Biofilm Reactor				
Monitoring Location Description: EQ Tank (raw influent)				
Average Daily Flow: 23,000 gallons per day			Maximum Daily Flow: 34,500 gallons per day	
PARAMETER	**FLOW / TIME BASED MONITORING**		**INSTANTANEOUS MONITORING**	
	Sample frequency	Sample Type	Sample Type	Sample Frequency
Biochemical Oxygen Demand			Grab	Twice per month
Total Suspended Solids			Grab	Twice per month
Total Kjeldahl Nitrogen			Grab	Twice per month
Total Phosphorus			Grab	Twice per month
pH			Instantaneous	Weekly
Oils & Grease			Grab	Twice per month

TABLE B				
Discharge Serial No. 301-2			Monitoring Location: J	
Wastewater Description: Domestic Sewage Influent to the Bioclere Units				
Monitoring Location Description: Bioclere Processing Tanks				
Average Daily Flow: 23,000 gallons per day			Maximum Daily Flow: 34,500 gallons per day	
PARAMETER	**FLOW / TIME BASED MONITORING**		**INSTANTANEOUS MONITORING**	
	Sample frequency	Sample Type	Sample Type	Sample Frequency
Biochemical Oxygen Demand			Grab	Twice per month
Total Suspended Solids			Grab	Twice per month
Total Nitrogen			Grab	Twice per month
Ammonia			Grab	Twice per month
Nitrate Nitrogen			Grab	Twice per month
Nitrite Nitrogen			Grab	Twice per month
Total Kjeldahl Nitrogen			Grab	Twice per month
Temperature			Grab	Twice per month
pH			Instantaneous	Weekly
Alkalinity			Grab	Twice per month

TABLE C				
Discharge Serial No. 301-2			Monitoring Location: 1	
Wastewater Description: Domestic Sewage Effluent				
Monitoring Location Description: Sand Filter (Final effluent)				
Average Daily Flow: 23,000 gallons per day			Maximum Daily Flow: 34,500 gallons per day	
PARAMETER	**INSTANTANEOUS MONITORING**			
	Average Monthly Limit	Maximum Daily Limit	Sample Type	Sample Frequency
Biochemical Oxygen Demand	20 mg/l	30 mg/l	Grab	Twice per month
Total Suspended Solids	20 mg/l	30 mg/l	Grab	Twice per month
Total Nitrogen	1.91 lbs/day (1)	10 mg/l	Grab	Twice per month
Ammonia			Grab	Twice per month
Nitrate Nitrogen			Grab	Twice per month
Nitrite Nitrogen			Grab	Twice per month
Total Kjeldahl Nitrogen			Grab	Twice per month
Orthophosphate			Grab	Twice per month
Total Phosphorus			Grab	Twice per month
pH			Instantaneous	Weekly
Methanol			Grab	Twice per month
Alkalinity			Grab	Twice per month
Oils & Grease			Grab	Twice per month
Footnotes: (1) Limit is based on a twelve month rolling average.				

ATTACHMENT 2

TABLE D	
Discharge Serial No. 301-2	Monitoring Location:
Wastewater Description: Domestic Sewage	
Monitoring Location Description: Subsurface Sewage Disposal System	
Average Daily Flow: 23,000 gallons per day	Maximum Daily Flow: 34,500 gallons per day

INSPECTION, MONITORING OR MAINTENANCE REQUIREMENTS	
INSPECTION, MONITORING, or MAINTENANCE	**MINIMUM FREQUENCY**
Depth of sludge in septic tanks	During pump-out
Pump out septic tanks	Annually
Mechanical inspection of septic tank baffles	During pump-out
Mechanical inspection of septic tank effluent filter	During pump-out
Clean septic tank effluent filter	During pump-out
Mechanical inspection of pump station	Quarterly
Pump out pump chambers	Annually
Pump out equalization tank	Annually
Pump out holding tank (floor cleaning wastewater)	As necessary
Test run of emergency generators	Monthly
Water meter readings of water usage	Weekly
Visual inspection of BioClere system	Monthly
Visual inspection of aerobic MBBR	Monthly
Visual inspection of anoxic chambers	Monthly
Visual inspection of denitrification filter	Monthly
Visual inspection of anoxic MBBR	Monthly
Mechanical inspection of alarm conditions	Quarterly
Mechanical inspection of blowers	Monthly
Mechanical inspection of carbon feed system	Monthly
Mechanical inspection of alkalinity feed system	Monthly
Visual inspection of distribution chambers	Quarterly
Visual inspection of surface condition of leaching field(s)	Quarterly
Depth of ponding in leaching field(s)	Quarterly
Mow grass over leaching field	3 times per year
Mow grass over supplementary leaching trenches	3 times per year

NOTE:
The Guilford Sanitarian shall be notified at least one week prior to pumping of septic tanks and grease traps. Verification of all pump outs shall be attached to the monitoring report and a copy of the report shall be sent to the Guilford Director of Health.

ATTACHMENT 3

TABLE E GROUNDWATER MONITORING			
DISCHARGE SERIAL NO. *301 A, 301 B, 301C, 301 D, 301 E, 301 F, 301 G, 301 H, 301 J*		**MONITORING LOCATION:** *{W-downgradient; V-upgradient*	
GROUND WATER MONITORING WELL NO:. *{as named on AS BUILT}*		**DESCRIPTION**: *{i.e downgradient monitoring wells}*	
PARAMETER	**UNITS**	**MINIMUM FREQUENCY OF SAMPLING**	**SAMPLE TYPE**
Coliform, Fecal	col/100ml	Quarterly	Grab
Groundwater Depth (Standard depth below grade)	Ft, in	Quarterly	Instantaneous
Nitrogen, Ammonia	mg/l	Quarterly	Grab
Nitrogen, Nitrate	mg/l	Quarterly	Grab
Nitrogen, Nitrite	mg/l	Quarterly	Grab
Nitrogen, Total Kjeldahl	mg/l	Quarterly	Grab
Nitrogen, Total	mg/l	Quarterly	Grab
pH	S.U.	Quarterly	Instantaneous
Phosphorus, Total Dissolved	mg/l	Quarterly	Grab