VERMONT

State of Vermont
Department of Environmental Conservation

Agency of Natural Resources

Wastewater Management Division
103 South Main Street - Sewing Bldg.
Waterbury, Vermont 05671-0405

Telephone: (802) 241-3822
Fax: (802) 241-2596
www.anr.state.vt.us/dec/ww/wwmd.cfm

June 18, 2009

Roland Mayhew
Marc Burroughs-Biron
Towns of Troy and Jay
1036 VT Rte 242
Jay, VT 05859

Re: Final Discharge Permit #3-1311

Dear Mr Mayhew and Mr Burroughs-Biron:

Enclosed is your copy of the above referenced permit, which has been signed by the Director of the Wastewater Management Division for the Commissioner of the Department of Environmental Conservation. Please read the permit carefully and familiarize yourself with all its terms and conditions. Your attention is particularly directed to those conditions which may require written responses by certain dates.

During the public notice period, we received one letter of comments from Leach Engineering Consultants, PA on behalf of the Towns. Those comments are addressed in the enclosed Response Summary.

If you have any questions concerning your permit, please contact Carol Carpenter at 241-3828.

Sincerely,

Brian D. Kooiker, Chief
Discharge Permits Section

Enclosure

cc: Leach Engineering Consultants
Simon Operation Services
District #7 Environmental Commission

AGENCY OF NATURAL RESOURCES
DEPARTMENT OF ENVIRONMENTAL CONSERVATION
WASTEWATER MANAGEMENT DIVISION
103 SOUTH MAIN STREET
WATERBURY, VERMONT 05671-0405

Permit No. 3-1311
Project ID No. SJ03-0205
NPDES No. VT0101168

Name of Applicant: Towns of Troy and Jay
1036 Vermont Route 242
Jay, VT 05859

Expiration Date: September 30, 2014

DISCHARGE PERMIT

In compliance with the provisions of the Vermont Water Pollution Control Act as amended (hereinafter referred to as the "Act") and the Federal Clean Water Act, as amended (33 U.S.C. §1251 et seq), the Towns of Troy and Jay, Vermont (hereinafter referred to as the "permittee") is authorized by the Secretary, Agency of Natural Resources, Waterbury, Vermont, to discharge from the Troy and Jay Wastewater Treatment Facility to the Missisquoi River in accordance with the following general and special conditions.

This permit shall become effective on October 1, 2009.

Justin G Johnson, Acting Commissioner
Department of Environmental Conservation

By: Christine Thompson
Christine Thompson, Director
Wastewater Management Division

Date: June 18, 2009

I. SPECIAL CONDITIONS

A. EFFLUENT LIMITS

1. *Prior to completion of the upgrade and expansion project*, the permittee is authorized to discharge from S/N 001 - outfall, the Troy/Jay Wastewater Treatment Facility, to the Missisquoi River, an effluent whose characteristics shall not exceed the values listed below:

DISCHARGE LIMITATIONS								
Effluent Characteristic	**Annual Limit**	**Monthly Average**	**Weekly Average**	**Maximum Day**	**Monthly Average**	**Weekly Average**	**Maximum Day**	**Instantaneous Maximum**
		.....	(lbs / day)	.....	.....	(Concentration)	.....	
Flow (annual average)	0.200 MGD							
Biochemical Oxygen Demand, 5-day, 20° C		50 lbs	75 lbs		30 mg/l	45 mg/l	50 mg/l	
Total Suspended Solids		75 lbs	75 lbs		45 mg/l	45 mg/l	50 mg/l	
Total Phosphorus (Total Annual Pounds) (a)	487 lbs				0.8 mg/l			
Total Nitrogen					Monitor only, mg/l			
Settleable Solids								1.0 ml/l
Total Residual Chlorine								0.1 mg/l
Escherichia coli Bacteria								77/100 ml
pH					Between 6.5 and 8.5 Standard Units			

(a) **Total Annual Pounds of Phosphorus** discharged shall be defined as the sum of all the **Total Monthly Pounds of Phosphorus** discharged for the calendar year. **Total Monthly Pounds of Phosphorus** discharged shall be calculated as follows:

(Monthly Average Phosphorus Concentration) x (Total Monthly Flow) x 8.34 (See Total Phosphorus monitoring report form WR43-PO4).

2. *Following completion of the upgrade and expansion project*, the permittee is authorized to discharge from S/N 001 - outfall, the Troy/Jay Wastewater Treatment Facility, to the Missisquoi River, an effluent whose characteristics shall not exceed the values listed below:

DISCHARGE LIMITATIONS								
Effluent Characteristic	**Annual Limit**	**Monthly Average**	**Weekly Average**	**Maximum Day**	**Monthly Average**	**Weekly Average**	**Maximum Day**	**Instantaneous Maximum**
		.....	(lbs / day)	.....	.....	(Concentration)	.....	
Flow (annual average)	0.800 MGD							
Biochemical Oxygen Demand, 5-day, 20° C		50 lbs	75 lbs		30 mg/l	45 mg/l	50 mg/l	
Total Suspended Solids		75 lbs	75 lbs		30 mg/l	45 mg/l	50 mg/l	
Total Phosphorus (Total Annual Pounds) (a)	487 lbs	1.33 lbs			0.8 mg/l			
Total Nitrogen					Monitor only, mg/l			
Settleable Solids								1.0 ml/l
Escherichia coli Bacteria								77/100 ml
pH					Between 6.5 and 8.5 Standard Units			

(a) **Total Annual Pounds of Phosphorus** discharged shall be defined as the sum of all the **Total Monthly Pounds of Phosphorus** discharged for the calendar year. **Total Monthly Pounds of Phosphorus** discharged shall be calculated as follows:

(Monthly Average Phosphorus Concentration) x (Total Monthly Flow) x 8.34 (See Total Phosphorus monitoring report form WR43-PO4).

(b) Notwithstanding Part I.A.6. of this permit, upon completion and operation of the UV light disinfection system the TRC limitation shall no longer be in effect. (See also Part I.F.2., footnotes 5 and 8.)

3. The upgrade/expansion project shall comply with the *Basis for Final Design, December 2008*, prepared by Leach Engineering Consultants PA. and approved by the Department on February 25, 2009 and subsequent Department approval on May 14, 2009 of the ultra-violet light disinfection system changes dated April 30, May 1, May 8, and May 11, 2009.

4. *At least 60 days prior to commencement of any construction on the proposed upgrade and expansion project*, the permittee shall submit to the Wastewater Management Division for review and written approval, detailed operating procedures which will assure proper operation of the wastewater treatment facility and full compliance with all the effluent limitations established by this permit during construction of the upgrade and expansion of the wastewater treatment facility. A Vermont registered professional engineer shall be engaged to develop these procedures in conjunction with the Chief Operator of the wastewater treatment facility. The procedures shall address, in detail, the proposed construction sequence for the upgrade project and shall provide detailed information to substantiate that the effluent limits will be met during all stages of construction, and during periods of equipment start-up and switch-over. Schematics and any supporting design calculations shall be provided for any temporary modifications that will need to be made to a particular component or treatment unit.

5. *At least 60 days prior to the commencement of construction on the proposed upgrade project*, the permittee shall submit to the Wastewater Management Division for review and approval, design details for influent and effluent sampling locations at the upgraded facility. A Vermont registered professional engineer shall be engaged to establish the sampling locations in conjunction with the Chief Operator of the wastewater treatment facility and in accordance with the written guidance developed by the Wastewater Management Division.

6. The upgrade and expansion of the Troy/Jay Wastewater Treatment Facility shall be considered complete when the permittee notifies the Department, by means of an engineer's certification, that the new facility is operational and the Department issues a written acknowledgment of its operational status.

7. Following completion and operation of the UV disinfection system, the permittee shall clean the quartz sleeves of the ultraviolet light disinfection system at a frequency that assures that effective disinfection is maintained and shall replace the ultraviolet light disinfection system lamps **as necessary to maintain compliance with the *E. coli* bacteria effluent limitation**. The dates and a description of the UV light disinfection system maintenance activities shall be included on the monthly discharge monitoring report form.

8. The effluent shall not have concentrations or combinations of contaminants including oil, grease, scum, foam, or floating solids which would cause a violation of the water quality standards of the receiving waters.

9. The discharge shall not cause visible discoloration of the receiving waters.

10. The monthly average concentrations of BOD_5 and total suspended solids in the discharge shall not exceed 15 percent of the monthly average concentrations of BOD_5 and total suspended solids in the influent into the permittee's wastewater treatment facilities. For the purposes of determining whether the permittee is in compliance with this condition, samples from the discharge and the influent shall be taken with appropriate allowance for detention times. See Part I, Special Conditions, Paragraph F.2., Effluent Monitoring.

11. When the effluent discharged for a period of 90 consecutive days exceeds 80 percent of the permitted flow limitation, the permittee shall submit to the permitting authority projected loadings and a program for maintaining satisfactory treatment levels consistent with approved water quality management plans.

12. Any action on the part of the Agency of Natural Resources in reviewing, commenting upon or approving plans and specifications for the construction of wastewater treatment facilities shall not relieve the permittee from the responsibility to achieve effluent limitations set forth in this permit and shall not constitute a waiver of, or act of estoppel against any remedy available to the Agency, the State of Vermont or the federal government for failure to meet any requirement set forth in this permit or imposed by state or federal law.

13. The WWTF is designed with a ground water collection system located beneath the four treatment lagoons. This system discharges to an adjacent wetland contiguous with the Missisquoi River. In order to insure the continued integrity of the lagoon liners, the permittee shall visually inspect the discharges from this collection system monthly from April through November *until the upgrade is complete*. The inspections shall be noted on that month's discharge monitoring report.

    In addition, as a part of process control, monitoring for specific conductivity from each discharge point in the collection system is required monthly from April through November *until the upgrade is complete*. The results shall be noted on that month's discharge monitoring report.

B. WASTE MANAGEMENT ZONE

In accordance with 10 V.S.A. Section 1252, this permit hereby establishes a waste management zone that extends from the outfall of the Troy/Jay Wastewater Treatment Facility in the Missisquoi River downstream one mile.

C. TOXICITY TESTING

The permittee shall complete the following toxicity testing on the same effluent sample during the month of **August or September 2012** and submit the results to the Department by **October 31, 2012**:

1. One acute/chronic Whole Effluent Toxicity (WET) test on *Pimephales promelas* and *Ceriodaphnia dubia*, conducted on a 24-hour composite effluent sample

    Whole Effluent Toxicity tests shall be conducted in accordance with the Methods recommended by EPA: Peltier, W And Weber, CI, Methods for Measuring Acute Toxicity of Effluents to Freshwater and Marine Organisms (the most recent edition) and Short-Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms (the most recent edition).

2. One toxic pollutant test. The list of pollutants is included in Appendix J, Table 2 of 40 CFR Part 122 (see Attachment A).

Based upon the results of these tests or any other tests conducted on this discharge, this permit may be amended to include effluent limitations, or to require additional testing, or to require a Toxicity Reduction Evaluation.

D. REAPPLICATION

If the permittee desires to continue to discharge after the expiration of this permit, the permittee shall reapply on the application forms then in use at least 180 days before this permit expires.

Reapply for a Discharge Permit by: March 31, 2014.

E. OPERATING FEES

This discharge is subject to operating fees. The permittee shall submit the operating fees in accordance with the procedures provided by the Secretary.

F. MONITORING AND REPORTING

1. Sampling and Analysis

The sampling, preservation, handling, and analytical methods used shall conform to regulations published pursuant to Section 304(g) of the Clean Water Act, under which such procedures may be required. Guidelines establishing these test procedures have been published in the Code of Federal Regulations, Title 40, Part 136 (Federal Register, Vol. 56, No. 195, July 1, 1999 or as amended).

If applicable, *Escherichia coli* shall be tested using one of the following methods:

a. "Most Probable Number" (MPN) method 9223B found in Standard Methods for the Examination of Water and Wastewater, 18th or subsequent approved edition(s). Premade formulations are available as Colilert and Colilert 18 from IDEXX Labs Inc., Westbrook, ME;
b. EPA "membrane filtration" (MF) method 1603 using modified mTEC; or
c. A single step membrane filtration (MF) method using mColiBlue 24 available from Hach Company, Loveland, CO.

Samples shall be representative of the volume and quality of effluent discharged over the sampling and reporting period. All samples are to be taken during normal operating hours. The permittee shall identify the effluent sampling location used for each discharge.

2. Effluent Monitoring

The permittee shall monitor and record the quality and quantity of discharge(s) S/N 001 - outfall, the Troy/Jay Wastewater Treatment Facility, according to the following schedule and other provisions until September 30, 2014.

PARAMETER	MINIMUM FREQUENCY OF ANALYSIS	SAMPLE TYPE
Flow	Continuous	Daily Total, Max., Min. (1)
BOD_5	1 x monthly	8-hour composite (2)
TSS	1 x monthly	8-hour composite (2)
Total Phosphorus	1 x monthly	8-hour composite (2)
Total Nitrogen (3)	1 x monthly	8-hour composite (2)
Settleable Solids	1 x daily	grab (4,9)
Escherichia coli Bacteria	1 x monthly (5)	grab (6,9)
Total Residual Chlorine	1 x daily	grab (6,7,8)
pH	1 x daily	grab (9)

(1) *Following the upgrade/expansion*, maximum and minimum flow are no longer required.

(2) Composite samples for BOD_5, TSS, TP, and TN shall be taken during the hours 6:00 A.M. to 6:00 P.M., unless otherwise specified. Eight hours is the minimum period for the composite. **Following the upgrade/expansion, 24-hour composite sampling is required.**

(3) Notwithstanding Part I.F.1., Total Nitrogen shall be determined by the persulfate digestion method (Standard Methods for the Examination of Water and Wastewater, 21st edition, method 4500-N C) with a minimum detection limit of 0.5 mg/l.

(4) Settleable Solids samples shall be collected between 10:00 A.M. and 2:00 P.M. or during the period of peak flow.

(5) Notwithstanding Part I.A.6. of the permit, upon completion and operation of the UV light disinfection system, **twice monthly** *E. coli* monitoring is required.

(6) On the day that the *Escherichia coli* grab sample is collected, the daily total residual chlorine grab sample for that day shall be collected at the same time and location as the *E. coli* sample and reported on the WR-43 form. Samples shall be collected between the hours of 6:00 A.M. to 6:00 P.M.

(7) Total Residual Chlorine shall be monitored both prior to and following dechlorination.

(8) Notwithstanding Part I.A.6. of this permit, upon completion and operation of the UV light disinfection system, TRC monitoring is no longer required.

(9) *Following the upgrade/expansion,* grab samples shall be collected in an alternating manner to be representative of each SBR cell discharge. (For example, on Monday the sample shall be collected as cell #1 discharges, on Tuesday the sample shall be collected as cell #2 discharges, etc.).

3. **Annually, by December 31**, the permittee shall monitor S/N 001 and submit the results, including units of measurement, as an attachment to the Discharge Monitoring Report form (WR-43) for the month in which the samples were taken for the following parameters:

Temperature
Ammonia (as N)
Dissolved Oxygen
Nitrate/Nitrite
Total Kjeldahl Nitrogen
Oil & Grease
Total Dissolved Solids

Grab samples shall be used for temperature, ammonia, dissolved oxygen, and oil & grease. All other parameters shall be composite samples. Samples shall be representative of the seasonal variation in the discharge.

4. **Influent Monitoring**

The permittee shall monitor the quality of the influent according to the following schedule and other provisions.

PARAMETER	MINIMUM FREQUENCY OF ANALYSIS	SAMPLE TYPE
Influent Flow	Daily	Daily Total, Max., Min.
Influent BOD_5	1 x monthly	8-hour composite, minimum (1)
Influent TSS	1 x monthly	8-hour composite, minimum (1)

(1) Composite samples for BOD_5 and TSS shall be taken during the hours of 6:00 a.m. to 6:00 p.m., unless otherwise specified. Eight hours is the minimum period for the composite.

5. **Reporting**

The permittee is required to submit monthly reports of monitoring results on forms WR-43 and WR-43-PO4. Reports are due on the 15th day of each month, beginning with the month following the effective date of this permit.

If, in any reporting period, there has been no discharge, the permittee must submit that information by the report due date.

Signed copies of these, and all other reports required herein, shall be submitted to the Secretary at the following address:

Agency of Natural Resources
Department of Environmental Conservation
Wastewater Management Division
103 South Main Street
Waterbury, Vermont 05671-0405

All reports shall be signed:

a. In the case of corporations, by a principal executive officer of at least the level of vice president, or his/her duly authorized representative, if such representative is responsible for the overall operation of the facility from which the discharge described in the permit form originates;

b. In the case of a partnership, by a general partner;

c. In the case of a sole proprietorship, by the proprietor;

d. In the case of a municipal, State, or other public facility, by either a principal executive officer, ranking elected official, or other duly authorized employee.

In addition to the monitoring and reporting requirements given above, daily monitoring of certain parameters for operational control are required by the Agency. Operations reports (reporting form WR-43) shall be submitted monthly.

6. Recording of Results

The permittee shall maintain records of all information resulting from any monitoring activities required, including:

a. The exact place, date, and time of sampling;
b. The dates and times the analyses were performed;
c. The person(s) who performed the analyses;
d. The analytical techniques and methods used including sample collection handling and preservation techniques;
e. The results of all required analyses;
f. The records of monitoring activities and results, including all instrumentation and calibration and maintenance records;
g. The original calculation and data bench sheets of the operator who performed analysis of the influent or effluent pursuant to requirements of Section I.(A) of this permit.

The results of monitoring requirements shall be reported (in the units specified) on the Vermont reporting form WR-43 or other forms approved by the Secretary.

7. Additional Monitoring

If the permittee monitors any pollutant at the location(s) designated herein more frequently than required by this permit, using approved analytical methods as specified above, the results of such monitoring shall be included in the calculation and reporting of

the values required in the Discharge Monitoring Report Form WR-43. Such increased frequency shall also be indicated.

G. DRY WEATHER FLOWS

Dry weather flows of untreated municipal wastewater from any sanitary or combined sewers are not authorized by this permit and are specifically prohibited by State and Federal laws and regulations.

H. OPERATION, MANAGEMENT, AND EMERGENCY RESPONSE PLAN

1. The permittee shall implement the Operation, Management and Emergency Response Plan for the wastewater treatment facility, sewage pump/ejector stations, and stream crossings as approved by the Agency.

2. ***Within 60 days following completion of the upgrade/expansion***, the permittee shall prepare and submit to the Agency for review and approval an Operation, Management and Emergency Response Plan for the *upgraded* wastewater treatment facility.

   The Plan shall include the following:

   a. the identification of the components that are determined to be prone to failure based on installation, age, design or other relevant factors and which, if one or more failed, would result in a significant release of untreated or partially treated sewage to waters of the State.

   b. an inspection schedule for the components identified in subsection H.2.a. above.

   c. an emergency contingency plan to reduce the volume of a detected sewage release and to mitigate the effect of such a release on public health and the environment.

   Upon the Secretary's approval of the inspection schedule as specified in H.2.b. above, the permittee shall implement the Operation, Management, and Emergency Response Plan

3. By **July 1, 2010**, The permittee shall prepare and submit to the Agency for review and approval an Operation, Management and Emergency Response Plan for the sewage collection system.

   The Plan shall include the following:

   a. the identification of the components that are determined to be prone to failure based on installation, age, design or other relevant factors and which, if one or more failed, would result in a significant release of untreated or partially treated sewage to waters of the State.

   b. an inspection schedule for the components identified in subsection H.3.a. above.

   c. an emergency contingency plan to reduce the volume of a detected sewage release and to mitigate the effect of such a release on public health and the environment.

   Upon the Secretary's approval of the inspection schedule as specified in H.3.b. above, the permittee shall implement the Operation, Management, and Emergency Response Plan.

I. EMERGENCY ACTION - ELECTRIC POWER FAILURE

The permittee shall indicate in writing to the Secretary **within 30 days after the effective date of this permit** that the discharge shall be handled in such a manner that, in the event the primary source of electric power to the waste treatment facilities (including pump stations) fails, any discharge into the receiving waters will attempt to comply with the conditions of this permit, but in no case shall the wastes receive less than primary treatment (or in the case of ultraviolet light disinfection systems, not less than secondary treatment) plus disinfection.

The permittee shall either provide an alternative source of power for the operation of its treatment facilities, or demonstrate that the treatment facility has the capacity to store the wastewater volume that would be generated over the duration of the longest power failure that would have affected the facility in the last five years, excluding catastrophic events.

The alternative power supply, whether from a generating unit located at the plant site or purchased from an independent source of electricity, must be separate from the existing power source used to operate the waste treatment facilities. If a separate unit located at the plant site is to be used, the permittee shall certify in writing to the Secretary when the unit is completed and prepared to generate power.

The determination of treatment system storage capacity shall be submitted to the Wastewater Management Division upon completion.

J. SEWER ORDINANCE

The permittee shall have in effect a sewer use ordinance acceptable to the Secretary which, at a minimum, shall

1. Prohibit the introduction by any discharger into the permittee's sewerage system or treatment facilities of any pollutant which:

    a. is a toxic pollutant in toxic amounts as defined in standards issued from time to time under Section 307(a) of the Clean Water Act;

    b. creates a fire or explosion hazard in the permittee's treatment works;

    c. causes corrosive structural damage to the permittee's treatment works, including all wastes with a pH lower than 5.0;

    d. contains solid or viscous substances in amounts which would cause obstruction to the flow in sewers or other interference with proper operation of the permittee's treatment works; or

    e. in the case of a major contributing industry, as defined herein, contains an incompatible pollutant, as further defined herein, in an amount or concentration in excess of that allowed under standards or guidelines issued from time to time pursuant to Sections 304, 306, and/or 307 of the Clean Water Act.

2. Require 45 days prior notification to the permittee by any person or persons of a:

a. proposed substantial change in volume or character of pollutants over that being discharged into the permittee's treatment works at the time of issuance of this permit;

b. proposed new discharge into the permittee's treatment works of pollutants from any source which would be a new source as defined in Section 306 of the Clean Water Act if such source were discharging pollutants; or

c. proposed new discharge into the permittee's treatment works of pollutants from any source which would be subject to Section 301 of the Clean Water Act if it were discharging such pollutants.

3. Require any industry discharging into the permittee's treatment works to perform such monitoring of its discharge as the permittee may reasonably require, including the installation, use, and maintenance of monitoring equipment methods, to keep records of the results of such monitoring, and to report the results of such monitoring to the permittee. Such records shall be made available by the permittee to the Secretary upon request.

4. Authorize the permittee's authorized representatives to enter into, upon, or through the premises of any industry discharging into the permittee's treatment works to have access to and copy any records, to inspect any monitoring equipment or method required under subsection 3 above, and to sample any discharge into the permittee's treatment works.

The permittee shall notify the Secretary of any discharge specified in subsection 2 above within 30 days of the date on which the permittee is notified of such discharge. This permit may be modified accordingly.

II. GENERAL CONDITIONS

A. MANAGEMENT REQUIREMENTS

1. Facility Modification / Change in Discharge

All discharges authorized herein shall be consistent with the terms and conditions of this permit. The discharge of any pollutant more frequently than, or at a level in excess of, that identified and authorized by this permit shall constitute a violation of the terms and conditions of this permit. Such a violation may result in the imposition of civil and/or criminal penalties as provided for in Section 1274 and 1275 of the Vermont Water Pollution Control Act. Any anticipated facility expansions or process modifications which will result in new, different, or increased discharges of pollutants must be reported by submission of a new permit application or, if such changes will not violate the effluent limitations specified in this permit, by notice to the permit issuing authority of such changes. Following such notice, the permit may be modified to specify and limit any pollutants not previously limited.

In addition, the permittee shall provide notice to the Secretary of the following:

a. any new introduction of pollutants into the treatment works from a source which would be a new source as defined in Section 306 of the Clean Water Act if such source were discharging pollutants;

b. except for such categories and classes of point sources or discharges specified by the Secretary, any new introduction of pollutants into the treatment works from a source which would be subject to Section 301 of the Clean Water Act if such source were discharging pollutants; and

c. any substantial change in volume or character of pollutants being introduced into the treatment works by a source introducing pollutants into such works at the time of issuance of the permit.

The notice shall include:

i. the quality and quantity of the discharge to be introduced into the system, and

ii. the anticipated impact of such change in the quality or quantity of the effluent to be discharged from the permitted facility.

2. Noncompliance Notification

In the event the permittee is unable to comply with any of the conditions of this permit due, among other reasons, to:

a. breakdown or maintenance of waste treatment equipment (biological and physical-chemical systems including, but not limited to, all pipes, transfer pumps, compressors, collection ponds or tanks for the segregation of treated or untreated wastes, ion exchange columns, or carbon absorption units),

b. accidents caused by human error or negligence, or

c. other causes such as acts of nature,

the permittee shall notify the Secretary within 24 hours of becoming aware of such condition or by the next business day and shall provide the Secretary with the following information, in writing, within five (5) days:

i. cause of non-compliance

ii. a description of the non-complying discharge including its impact upon the receiving water;

iii. anticipated time the condition of non-compliance is expected to continue or, if such condition has been corrected, the duration of the period of non-compliance;

iv. steps taken by the permittee to reduce and eliminate the non-complying discharge; and

v. steps to be taken by the permittee to prevent recurrence of the condition of non-compliance.

3. Operation and Maintenance

All waste collection, control, treatment, and disposal facilities shall be operated in a manner consistent with the following:

a. The permittee shall, at all times, maintain in good working order and operate as efficiently as possible all treatment or control facilities or systems installed or used by the permittee to achieve compliance with the terms and conditions of this permit.

b. The permittee shall provide an adequate operating staff which is duly qualified to carry out the operation, maintenance, and testing functions required to insure compliance with the conditions of this permit; and

c. The operation and maintenance of this facility shall be performed only by qualified personnel. The personnel shall be certified as required under the Vermont Water Pollution Abatement Facility Operator Certification Regulations.

4. Quality Control

The permittee shall calibrate and perform maintenance procedures on all monitoring and analytical instrumentation at regular intervals to ensure accuracy of measurements, or shall ensure that both activities will be conducted.

The permittee shall keep records of these activities and shall provide such records upon request of the Secretary.

The permittee shall demonstrate the accuracy of the flow measurement device weekly and report the results on the monthly report forms. The acceptable limit of error is ± 10%.

The permittee shall analyze any additional samples as may be required by the Agency of Natural Resources to ensure analytical quality control.

5. Bypass

The diversion or bypass of facilities (including pump stations) necessary to maintain compliance with the terms and conditions of this permit is prohibited, except where authorized under the terms and conditions of an Emergency Pollution Permit issued pursuant to 10 V.S.A. Section 1268.

6. Duty to Mitigate

The permittee shall take all reasonable steps to minimize or prevent any adverse impact to waters of the State resulting from non-compliance with any condition specified in this permit, including accelerated or additional monitoring as necessary to determine the nature and impact of the non-complying discharge.

7. Records Retention

All records and information resulting from the monitoring activities required by this permit including all records of analyses performed, calibration and maintenance of instrumentation, and recordings from continuous monitoring instrumentation shall be retained for a minimum of three (3) years, and shall be submitted to Department representatives upon request. This period shall be extended during the course of unresolved litigation regarding the discharge of pollutants or when requested by the Secretary.

8. Solids Management

Collected screenings, sludges, and other solids removed in the course of treatment and control of wastewaters shall be stored, treated and disposed of in accord with 10 V.S.A., Chapter 159 and with the terms and conditions of any certification, interim or final, transitional operation authorization or order issued pursuant to 10 V.S.A., Chapter 159 that is in effect on the effective date of this permit or is issued during the term of this permit.

9. Emergency Pollution Permits

Maintenance activities, or emergencies resulting from equipment failure or malfunction, including power outages, which result in an effluent which exceeds the effluent limitations specified herein, shall be considered a violation of the conditions of this permit, unless the permittee immediately applies for, and obtains, an emergency pollution permit under the provisions of 10 V.S.A., Chapter 47, Section 1268. The permittee shall notify the Department of the emergency situation by the next working day.

10 V.S.A., Chapter 47, Section 1268 reads as follows:

"When a discharge permit holder finds that pollution abatement facilities require repairs, replacement or other corrective action in order for them to continue to meet standards specified in the permit, he may apply in the manner specified by the secretary for an emergency pollution permit for a term sufficient to effect repairs, replacements or other corrective action. The permit may be issued without prior public notice if the nature of the emergency will not provide sufficient time to give notice; provided that the secretary shall give public notice as soon as possible but in any event no later than five days after the effective date of the emergency pollution permit. No emergency pollution permit shall be issued unless the applicant certifies and the secretary finds that:

(1) there is no present, reasonable alternative means of disposing of the waste other than by discharging it into the waters of the state during the limited period of time of the emergency;

(2) the denial of an emergency pollution permit would work an extreme hardship upon the applicant;

(3) the granting of an emergency pollution permit will result in some public benefit;

(4) the discharge will not be unreasonably harmful to the quality of the receiving waters;

(5) the cause or reason for the emergency is not due to wilful or intended acts or omissions of the applicant."

Application shall be made to the Secretary of the Agency of Natural Resources, Department of Environmental Conservation, 103 South Main Street, Waterbury, Vermont 05671-0405.

B. RESPONSIBILITIES

1. Right of Entry

The permittee shall allow the Secretary or authorized representative, upon the presentation of proper credentials:

a. to enter upon the permittee's premises in which an effluent source or any records required to be kept under terms and conditions of the permit are located;

b. to have access to and copy any records required to be kept under the terms and conditions of the permit;

c. to inspect any monitoring equipment or method required in the permit; or

d. to sample any discharge of pollutants.

2. Transfer of Ownership or Control

This permit is not transferable without prior written approval of the Secretary. All application and operating fees must be paid in full prior to transfer of this permit. In the event of any change in control or ownership of facilities from which the authorized discharges emanate, the permittee shall provide a copy of this permit to the succeeding owner or controller and shall send written notification of the change in ownership or control to the Secretary. The permittee shall also inform the prospective owner or operator of their responsibility to make an application for transfer of this permit.

This request for transfer application must include at a minimum:

a. a properly completed application form as provided by the Secretary and the applicable processing fee.

b. A written statement from the prospective owner or operator certifying:

i. The conditions of the operation that contribute to, or affect, the discharge will not be materially different under the new ownership.

ii. The prospective owner or operator has read and is familiar with the terms of the permit and agrees to comply with all terms and conditions of the permit.

iii. The prospective owner or operator has adequate funding to operate and maintain the treatment system and remain in compliance with the terms and conditions of the permit.

c. The date of the sale or transfer.

The Secretary may require additional information dependent upon the current status of the facility operation, maintenance, and permit compliance.

3. Confidentiality

Pursuant to 10 V.S.A. 1259(b):

"Any records, reports or information obtained under this permit program shall be available to the public for inspection and copying. However, upon a showing satisfactory to the secretary that any records, reports or information or part thereof, other than effluent data, would, if made public, divulge methods or processes entitled to protection as trade secrets, the secretary shall treat and protect those records, reports or information as confidential. Any records, reports or information accorded confidential treatment will be disclosed to authorized representatives of the state and the United States when relevant to any proceedings under this chapter."

4. Permit Modification

After notice and opportunity for a hearing, this permit may be modified, suspended, or revoked in whole or in part during its term for cause including, but not limited to, the following:

a. violation of any terms or conditions of this permit;

b. obtaining this permit by misrepresentation or failure to disclose fully all relevant facts; or

c. a change in any condition that requires either a temporary or permanent reduction or elimination of the permitted discharge.

5. Toxic Effluent Standards

If a toxic effluent standard or prohibition (including any schedule of compliance specified in such effluent standard or prohibition) is established under section 307(a) of the Federal Act for a toxic pollutant which is present in the permittee's discharge and such standard or prohibition is more stringent than any limitation upon such pollutant in this permit, then this permit shall be revised or modified in accordance with the toxic effluent standard or prohibition and the permittee so notified.

6. Oil and Hazardous Substance Liability

Nothing in this permit shall be construed to preclude the institution of legal action or relieve the permittee from any responsibilities, liabilities, or penalties to which the permittee is or may be subject under 10 V.S.A. §1281.

7. Other Materials

Other materials ordinarily produced or used in the operation of this facility, which have been specifically identified in the application, may be discharged at the maximum frequency and maximum level identified in the application, provided:

a. They are not:

i. designated as toxic or hazardous under provisions of Sections 307 and 311, respectively, of the Clean Water Act, or

ii. known to be hazardous or toxic by the permittee, except that such materials indicated in (a) and (b) above may be discharged in certain limited amounts with the written approval of, and under special conditions established by, the Secretary or his designated representative, if the substances will not pose any imminent hazard to the public health or safety;

b. The discharge of such materials will not violate applicable water quality standards; and

c. The permittee is not notified by the Secretary to eliminate or reduce the quantity of such materials entering the watercourse.

8. Navigable Waters

This permit does not authorize or approve the construction of any onshore or offshore physical structures or facilities or the undertaking of any work in any navigable waters.

9. Civil and Criminal Liability

Except as provided in, "Bypass" (Part II.A., paragraph 5.), "Emergency Action - Electric Power Failures" (Part I, paragraph I.), and "Emergency Pollution Permits" (Part II.A., paragraph 9.), nothing in this permit shall be construed to relieve the permittee from civil or criminal penalties for noncompliance. Civil penalties, as authorized under 10 V.S.A. §1274 and 10 V.S.A. §8010, shall not exceed $10,000 a day for each day of violation. Criminal penalties, as authorized under 10 V.S.A. §1275, shall not exceed $25,000 for each day of violation, imprisonment for up to six months, or both.

10. State Laws

Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the permittee from any responsibilities, liabilities, or penalties established pursuant to any applicable State law or regulation under authority preserved by Section 510 of the Clean Water Act.

11. Property Rights

Issuance of this permit does not convey any property rights in either real or personal property, or any exclusive privileges, nor does it authorize any injury to private property

or any invasion of personal rights, nor any infringement of Federal, State, or local laws or regulations.

12. Severability

The provisions of this permit are severable, and if any provision of this permit, or the application of any provision of this permit to any circumstance, is held invalid, the application of such provision to other circumstances, and the remainder of this permit, shall not be affected thereby.

13. Authority

This permit is issued under authority of 10 V.S.A. §1259 which states that: "No person shall discharge any waste, substance, or material into waters of the State, nor shall any person discharge any waste, substance, or material into an injection well or discharge into a publicly owned treatment works any waste which interferes with, passes through without treatment, or is otherwise incompatible with those works or would have a substantial adverse effect on those works or on water quality, without first obtaining a permit for that discharge from the Secretary", and under the authority of Section 402 of the Clean Water Act, as amended.

14. Definitions

For purposes of this permit, the following definitions shall apply.

The Act - The Vermont Water Pollution Control Act, 10 V.S.A. Chapter 47

Annual Average - The highest allowable average of daily discharges calculated as the sum of all daily discharges (mg/l, lbs or gallons) measured during a calendar year divided by the number of daily discharges measured during that year.

Average - The arithmetic means of values taken at the frequency required for each parameter over the specified period.

The Clean Water Act - The federal Clean Water Act, as amended.

Composite Sample - A sample consisting of a minimum of one grab sample per hour collected during a 24-hour period (or lesser period as specified in the section on Monitoring and Reporting) and combined proportionally to flow over that same time period.

Daily Discharge - The discharge of a pollutant measured during a calendar day or any 24-hour period that reasonably represents the calendar day for purposes of sampling.

For pollutants with limitations expressed in pounds the daily discharge is calculated as the total pounds of pollutants discharged over the day.

For pollutants with limitations expressed in mg/l the daily discharge is calculated as the average measurement of the pollutant over the day.

Grab Sample - An individual sample collected in a period of less than 15 minutes.

Incompatible Substance (Pollutant) - Any waste being discharged into the treatment works which interferes with, passes through without treatment, or is otherwise incompatible with said works or would have a substantial adverse effect on these works or on water quality. This includes all pollutants required to be regulated under the Federal Clean Water Act.

Instantaneous Maximum - A value not to be exceeded in any grab sample.

Major Contributing Industry - One that: (1) has a flow of 50,000 gallons or more per average work day; (2) has a flow greater than five percent of the flow carried by the municipal system receiving the waste; (3) has in its wastes a toxic pollutant in toxic amounts as defined in standards issued under Section 307(a) of the Clean Water Act; or (4) has a significant impact, either singly or in combination with other contributing industries, on a publicly owned treatment works or on the quality of effluent from that treatment works.

Maximum Day (maximum daily discharge limitation) - The highest allowable "daily discharge" (mg/l, lbs or gallons).

Mean - The mean value is the arithmetic mean.

Monthly Average - (Average monthly discharge limitation) - The highest allowable average of daily discharges (mg/l, lbs or gallons) over a calendar month, calculated as the sum of all daily discharges (mg/l, lbs or gallons) measured during a calendar month divided by the number of daily discharges measured during that month.

NPDES - The National Pollutant Discharge Elimination System.

Secretary - The Secretary of the Agency of Natural Resources

State Certifying Agency Agency of Natural Resources
Department of Environmental Conservation
Wastewater Management Division
103 South Main Street
Waterbury, Vermont 05671-0405

Weekly Average - (Average weekly discharge limitation) - The highest allowable average of daily discharges (mg/l, lbs or gallons) over a calendar week, calculated as the sum of all daily discharges (mg/l, lbs or gallons) measured during a calendar week divided by the number of daily discharges measured during that week.

ATTACHMENT A

40 CFR §122.21 - Appendix J, Table 2

Metals (total recoverable), cyanide and total phen
Antimony
Arsenic
Beryllium
Cadmium
Copper
Lead
Mercury
Nickel
Selenium
Silver
Thallium
Zinc
Cyanide
Total phenolic compounds

Volatile organic compounds.
acrolein
acrylonitrile
benzene
bromoform
carbon tetrachloride
chlorobenzene
chlorodibromomethane
chloroethane
2-chloroethylvinyl ether
chloroform
dichlorobromomethane
1,1-dichloroethane
1,2-dichloroethane
Trans-1,2-dichloroethylene
1,1-dichloroethylene
1,2-dichloropropane
1,3-dichloropropylene
ethylbenzene
methyl bromide
methyl chloride
methylene chloride
1,1,2,2-tetrachloroethane
tetrachloroethylene
toluene
1,1,1-trichloroethane
1,1,2-trichloroethane
trichloroethylene
vinyl chloride

Acid-extractable compounds:
p-chloro-m-cresol
2-chlorophenol
2,4-dichlorophenol
2,4-dimethylphenol
4,6-dinitro-o-cresol
2,4-dinitrophenol
2-nitrophenol
4-nitrophenol
pentachlorophenol
phenol
2,4,6-trichlorophenol

Base-neutral compounds:
acenaphthene
acenaphthylene
anthracene
benzidine
benzo(a)anthracene
benzo(a)pyrene
3,4-benzofluoranthene
benzo(ghi)perylene
benzo(k)fluoranthene
bis(2-chloroethoxy)methane
bis(2-chloroethyl)ether
bis(2-chloroisopropyl)ether
bis(2-ethylhexyl)phthalate
4-bromophenyl phenyl ether
butyl benzyl phthalate
2-chloronaphthalene
4-chlorophenyl phenyl ether
chrysene
di-n-butyl phthalate
di-n-octyl phthalate
dibenzo(a,h)anthracene
1,2-dichlorobenzene
1,3-dichlorobenzene
1,4-dichlorobenzene
3,3'-dichlorobenzidine
diethyl phthalate
dimethyl phthalate
2,4-dinitrotoluene
2,6-dinitrotoluene
1,2-diphenylhydrazine
fluroranthene
fluorene
hexachlorobenzene
hexachlorobutadiene
hexachlorocyclo-pentadiene
hexachloroethane
indeno(1,2,3-cd)pyrene
isophorone
napthalene
nitrobenzene
N-nitrosodi-n-propylamine
N-nitrosodimethylamine
N-nitrosodiphenylamine
phenanthrene
pyrene
1,2,4-trichlorobenzene

[65 FR 42469, August 4, 1999]

AGENCY OF NATURAL RESOURCES
DEPARTMENT OF ENVIRONMENTAL CONSERVATION
WASTEWATER MANAGEMENT DIVISION
103 SOUTH MAIN STREET
WATERBURY, VERMONT 05671-0405

FACT SHEET
(May 2009)

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) PERMIT TO DISCHARGE TO WATERS OF THE UNITED STATES

NPDES NO: VT0101168
PERMIT NO: 3-1311
PROJECT ID NO: SJ03-0205

NAME AND ADDRESS OF APPLICANT:

Towns of Troy and Jay
1036 Vermont Route 242
Jay, VT 05859

NAME AND ADDRESS OF FACILITY WHERE DISCHARGE OCCURS:

Troy/Jay Wastewater Treatment Facility
355 Starr Drive
Troy, Vermont

RECEIVING WATER: Missisquoi River

CLASSIFICATION: Class B with a waste management zone. Class B waters are suitable for bathing and recreation, irrigation and agricultural uses; good fish habitat; good aesthetic value; acceptable for public water supply with filtration and disinfection. A waste management zone is a specific reach of Class B waters designated by a permit to accept the discharge of properly treated wastes that prior to treatment contained organisms pathogenic to human beings.

I. Proposed Action, Type of Facility, and Discharge Location

The above named applicant applied on April 18, 2008 and March 23, 2009 to the Vermont Department of Environmental Conservation for amendment and renewal respectively of the permit to discharge into the designated receiving water. The applicant proposes an upgrade and expansion of the facility. At this time the Department has made a tentative decision to issue a renewed discharge permit with modifications. The facility is engaged in the treatment of municipal wastewater. The discharge is from the outfall of the Towns of Troy and Jay Wastewater Treatment Facility to the Missisquoi River (see attached aerial photo).

II. Description of Discharge

A quantitative description of the discharge in terms of significant effluent parameters is based on state and federal laws and regulations, the discharge permit application, and the recent self-monitoring data.

III. Limitations and Conditions

The effluent limitations of the permit, the monitoring requirements, and any implementation schedule (if required), may be found on the following pages of the permit:

Effluent Limitations:	Pages 2 and 3 of 20
Monitoring Requirements:	Pages 5 through 8 of 20

IV. Permit Basis and Explanation of Effluent Limitations

History and Summary

The Towns of Troy and Jay own and operate the Troy/Jay Wastewater Treatment Facility which is an aerated lagoon treatment system with in-lagoon phosphorus removal and chlorine disinfection. The original lagoon facility was constructed in 1991 and was upgraded in 2006 to include phosphorus removal which became operational in September of that year. The facility receives and treats wastewater from both towns as well as the Jay Peak Resort. Three pump stations serve the collection system.

In 2008 the Towns applied for a permit amendment to increase the hydraulic capacity from 0.200 MGD to 0.800 MGD. On April 6, 2009 the Towns completed the renewal application for the existing discharge permit which expires on September 30, 2009. The Department (with concurrence from the Towns) has decided to combine the renewal and permit amendment applications into a single draft permit/ tentative determination which is described in this fact sheet and accompanying draft permit.

The proposed facility expansion involves a change of treatment technology from the existing aerated lagoon technology. The proposed wastewater treatment facility will consist of sequencing batch reactors (SBR, an activated sludge process) with chemical precipitation and filtration followed by ultraviolet light disinfection prior to discharge to the Missisquoi River. The expanded facility is designed to maintain existing permitted pollutant loadings for wastewater flows of up to 0.800 MGD (*Basis for Final Design, December 2008*, prepared by Leach Engineering Consultants PA.). Improvements to two of the three existing pump stations are planned as well. The outfall location will remain unchanged.

The complete applications, draft permit and other information, including calculations are on file and may be requested at the VTDEC, Wastewater Management Division, Waterbury Office.

Receiving Water

The reach of the Missisquoi River downstream of the Troy/Jay WWTF is Class B water and has been designated as Cold Water Fish Habitat (see Appendix A, Vermont Water Quality Standards). A one mile Waste Management Zone has been established below the Troy/Jay WWTF outfall pursuant to 10 VSA; Section 1252. There are no permitted direct discharges upstream of the Troy/Jay WWTF.

The 7Q10 flow of the Missisquoi River used for calculation purposes for this permit is 16.85 cfs. The low median monthly flow used for instream nutrient evaluation is 40.8 cfs. The design/permitted flow of the existing facility is 0.200 MGD and following expansion the proposed permitted flow is 0.800 MGD (1.2 cfs). The in-stream waste concentration (IWC) for the existing facility is 0.018 at 7Q10 flow and 0.008 at Low Median Monthly Flow. The instream waste concentration for the proposed expanded facility is 0.068 at 7Q10 flow and 0.029 at Low Median Monthly Flow. For purposes of certain metals calculations, a hardness of 41 mg/l (1992-2005 data) for the Missisquoi River was used.

Since construction of the Troy/Jay WWTF in 1991, the Department has conducted four biological assessments targeting the macroinvertebrate community of the Missisquoi River approximately 1.4 miles downstream from the Troy/Jay WWTF discharge. These assessments were intended to address potential impacts from the Troy/Jay WWTF.

All of the biological assessments indicate the biological condition meets Class B standards for aquatic biota and aquatic habitat uses for the Medium High Gradient (MHG) stream type. Further biological assessments are scheduled to be conducted above and below the Troy/Jay WWTF in the fall of 2009.

Since 2005, the Department has supported a volunteer-run sampling program of the Missisquoi River and its tributaries through the Missisquoi River Basin Association. Samples have been collected and analyzed for total nitrogen, total phosphorus, and turbidity at 25 sampling sites (*Missisquoi River Basin Association, Water Quality Monitoring Program, Summary of Results 2005-2007*). Samples are analyzed at the Department's LaRosa Analytical Laboratory.

Anti-Degradation Findings

In order to issue a discharge permit for the proposed expansion of the facility, the Department must first determine that the project is consistent with the Anti-Degradation Policy set forth in Section 1-03 of the Vermont Water Quality Standards. The Applicants have proposed a design for the expanded facility which is capable of meeting the currently permitted pollutant loads for the existing 0.200 MGD facility. The Applicants' design achieves this by increasing the pollutant removal efficiency of the expanded facility. The Department has found the Applicants' proposal to be consistent with the requirements of the Anti-Degradation Policy because all of the permitted pollutant loadings for the existing facility will be met despite the proposed hydraulic increase. The Department has therefore drafted a permit with effluent limitations for the expanded facility that maintains the currently permitted pollutant loads.

In addition to maintaining the existing loadings, the design of the expanded facility utilizes a UV light disinfection system which will eliminate the discharge of chlorine to the Missisquoi River.

Flow - The effluent flow limitation is currently 0.200 MGD, annual average, representing the existing facility's design flow. Following Department approval of the upgrade/expansion, the flow limitation will be increased to 0.800 MGD, annual average. (At present time the facility does not maintain a continuous discharge as the flow *into* the facility is very low.)

Biochemical Oxygen Demand (BOD_5) - The current effluent concentration limitations for biochemical oxygen demand are 30 mg/l, monthly average, and 45 mg/l, weekly average, reflecting the minimum level of effluent quality specified for secondary treatment in 40 CFR Part 133.102. These limits will remain the same following the upgrade/expansion. In addition, the permit contains a 50 mg/l, maximum day, BOD limitation which will remain the same following the upgrade/expansion. This is the Department standard applied to all such discharges pursuant to 13.4 c. of the Vermont Water Pollution Control Permit Regulations. The Agency implements the limit to supplement the federal technology based limitations to prevent a gross one-day permit effluent violation to be offset by multiple weekly and monthly sampling events which would enable a discharger to comply with the weekly average and monthly average permit limitations.

Mass limits (50 lbs/day, monthly average and 75 lbs/day, weekly average) for the existing facility are derived by multiplying the concentration limits by the permitted flow (0.200 MGD). These limits will be maintained following the upgrade/expansion pursuant to the Department's Anti-degradation Policy findings. The BOD monthly monitoring requirement remains unchanged from the previous permit.

Total Suspended Solids (TSS) – The concentration based TSS effluent limitations for the existing aerated lagoon facility are 45 mg/l, monthly and weekly averages, reflecting the level of effluent quality equivalent to secondary treatment for waste stabilization ponds (aerated lagoons) pursuant to 40 CFR Part 133.105. In addition, the permit contains a 50 mg/l, maximum day, TSS limitation. This limitation is applied to all such discharges to all such discharges pursuant to 13.4.c. of the Vermont Water Pollution Control Permit Regulations. The Department implements the limit to supplement the federal technology based limitations to prevent a gross one-day permit effluent violation to be offset by multiple weekly and monthly sampling events which would enable a discharger to comply with the weekly average and monthly average permit limitations.

Mass limits for the existing facility (75 lbs/day, monthly and weekly average) were derived by multiplying the concentration limits by the permitted flow (0.200 MGD) and remain unchanged from the previous permit. The TSS monthly monitoring requirement also remains unchanged from the previous permit.

Following the upgrade/expansion the facility will no longer employ waste stabilization pond technology and therefore will not be eligible for TSS effluent limits equivalent to secondary pursuant to 40 CFR Part 133.105. TSS effluent limits for the expanded facility will reflect the minimum level of effluent quality for secondary treatment specified in 40 CFR Part 133.102. The weekly average limit will remain at 45 mg/l however the monthly average limitation will be reduced to 30 mg/l. A maximum day TSS limit of 50 mg/l will be retained for the expanded facility pursuant to 13.4.c. of the Vermont Water Pollution Control Regulations.

Mass limits (75 lbs/day, monthly and weekly average) for the expanded facility will be the same as for the existing facility pursuant to the Department's Anti-Degradation Policy findings. The TSS monitoring frequency will remain at monthly for the expanded facility.

pH - The pH limitation remains at 6.5 - 8.5 Standard Units as specified in Section 3-01 B.9. in the Vermont Water Quality Standards. Monitoring remains at daily. This limitation applies to both the existing and expanded facility.

Settleable Solids - The limitation of 1.0 ml/l instantaneous maximum and daily monitoring remain unchanged from the previous permit. This numeric limit was established in support of the narrative standard in Section 3-01 B.5. of the Vermont Water Quality Standards and applies to both the existing and expanded facility.

Total Phosphorus - The concentration limitation of 0.8 mg/l, monthly average, remains unchanged from the previous permit and will apply to both the existing and expanded facility. The concentration limit is based on requirements in 10 VSA, §1266a.

In addition, the 2002 "Lake Champlain Phosphorus Total Maximum Daily Load" established a phosphorus mass loading allocation for the Troy/Jay WWTF utilizing an effluent concentration of 0.8 mg/l at the design flow of the facility (0.200 MGD). That allocation (0.221 metric tons per year or 487 pounds per year) remains unchanged from the previous permit. The annual total pounds is the sum of the twelve monthly totals, which are calculated by multiplying the total monthly flow x the monthly average phosphorus concentration x 8.34.

The annual phosphorus loading limit of 487 lbs/yr will be retained for the expanded facility and is based on the Lake Champlain TMDL allocation for the Troy/Jay WWTF and is consistent with the Department's Anti-degradation Policy findings. The Department has concluded that the expanded facility is capable of meeting the annual phosphorus loading limit even at increased flows (0.800 MGD) due to its increased phosphorus removal efficiency (i.e. filtration).

Based on an evaluation of the expanded facility relative to Vermont's Anti-Degradation Policy, the Department is also proposing to establish a monthly average phosphorus limitation of 1.33 lbs/day. This limitation was derived by utilizing the existing flow limitation (0.200 MGD) and the existing monthly average phosphorus concentration limit (0.8 mg/l).

$$0.8 \text{ mg/l} \times 0.200 \text{ MGD} \times 8.34 = 1.33 \text{ lbs/day}$$

This new limit will effectively limit the monthly discharge of phosphorus to levels authorized under the existing permit.

The Department also concludes that the monthly average limit of 1.33 lbs/day is consistent with Vermont's narrative phosphorus criteria for streams (Section 3-01 B.2.a. of the Vermont Water Quality Standards). The Department bases this conclusion on the Department's biological assessment of the Missisquoi River and on an assessment of projected in-stream phosphorus concentrations as explained below.

Since construction of the Troy/Jay WWTF in 1991, the Department has conducted four biological assessments of the Missisquoi River at a site approximately 1.4 miles below the Troy/Jay WWTF. Since biological communities respond to the effects of a wide range of environmental stressors, biological assessments provide a broad measure of the cumulative impacts of environmental stressors including elevated nutrient levels and associated cultural eutrophication. All four assessments indicated the biological condition meets Class B standards for aquatic biota and aquatic habitat uses. All biological assessments were conducted before phosphorus removal technology was employed at the Troy/Jay WWTF.

Therefore the assessments reflect a phosphorus discharge from the Troy/Jay WWTF in excess of the phosphorus limitations proposed in this permit.

The Department has also conducted an assessment of the impacts of projected in-stream phosphorus concentrations based on a review of existing water quality data and recent nutrient criteria development studies conducted by the Department. Existing water quality data for the Missisquoi River indicate that the phosphorus concentrations during low median monthly flow is approximately 14 ppb at monitoring stations above the Troy/Jay WWTF (see Appendix A). Calculations indicate that the addition of 1.33 lbs/day of phosphorus would result in an estimated downstream concentration of approximately 20 ppb (see Appendix B). Recent studies completed by the Department (*Draft: Proposed Nutrient Criteria for Vermont's Lakes and Wadeable Streams, December 11, 2008*) suggest that for wadeable streams typed as Cold Water Habitat, an in-stream phosphorus concentration of 35 ppb or less would be protective of existing uses.

Total Nitrogen - Vermont DEC is currently in the process of proposing scientifically based nitrogen criteria for lakes and wadeable streams for review by the Vermont Water Resources Panel and the USEPA. In support of this effort the Department is including requirements in WWTF discharge permits to monitor discharges for total nitrogen. Once adopted the total nitrogen criteria will be used to determine the potential of WWTF discharges to cause or contribute to eutrophication and adversely impact the aquatic biota downstream of the discharge. Monitoring is required monthly for both the existing and expanded facility.

***E. coli* Bacteria** - The *E. coli* limitation for both the existing and expanded facility is 77colonies/100 ml as specified in Section 3-04 B.3., Vermont Water Quality Standards. Monthly monitoring will be required for the existing facility and will increase to twice monthly (consistent with similarly sized facilities utilizing UV disinfection) following the upgrade/expansion.

On March 26, 2007 EPA published new guidelines establishing new bacterial testing procedures for wastewater and sewage sludge as part of 40 CFR Part 136 (see Federal Register Vol. 72, No. 57, Monday, March 26, 2007, p.14220). The new guidelines establish the *E. coli* analytical methods cited in Part I.F. of the permit as the only approved methods for enumerating *E. coli* in wastewater and sewage sludge. The guidelines are effective April 25, 2007.

Notably the membrane filter method using the two step incubation technique (i.e. Method 9213D, Standard Methods) which was previously approved by prior NPDES discharge permits is no longer cited by EPA as an approved method. Therefore permittees who are currently using Method 9213D for *E. coli* analysis must switch over to one of the three approved methods listed in Part I.F. of the permit.

Total Residual Chlorine (TRC) - The TRC limit of 0.1 mg/l is based on meeting the instream water quality acute and chronic chlorine criteria (0.019 mg/l and 0.011 mg/l respectively) in the Vermont Water Quality Standards for the protection of aquatic biota. Daily monitoring is required until the UV light system is in operation. Upon completion and operation of the UV light disinfection system the TRC limits and associated monitoring requirements will no longer be in effect.

Whole Effluent Toxicity (WET) and Toxic Pollutant Testing - 40 CFR Part 122.44(d)(1) requires the Department to assess whether the discharge causes, has the reasonable potential to cause, or contribute to an excursion above any narrative or numeric water quality criteria. As a result, Whole Effluent Toxicity testing is being required. The intent of the WET testing is to confirm the results of previous WET testing conducted by the Towns in January and August 2001. Those results indicated that this discharge did not have the potential to cause an instream toxic impact. If the results of future WET tests indicate a reasonable potential to cause an instream toxic impact, the Department may require additional WET testing, establish a WET limit, or require a Toxicity Reduction Evaluation. The proposed permit includes one two-species acute/chronic WET test in August or September 2012.

The permit also requires the completion of one toxic pollutant scan. Toxic pollutants include the parameters listed in 40 CFR Part 122, Appendix J, Table 2 (Attachment A).

Additional Monitoring - For all facilities with a design flow of greater than 0.1 MGD, 40 CFR § 122.21(j), requires the annual submittal of effluent monitoring data for those parameters identified in Condition I.F.3. of the permit.

Samples must be collected once annually during various seasons (i.e. include each of the four quarters during the permit period) and the results submitted by December 31 of each year.

Waste Management Zone - As defined under 10 V.S.A. §1251(16), a waste management zone (WMZ) is "a specific reach of Class B waters designated by a permit to accept the discharge of properly treated wastes that prior to treatment contained organisms pathogenic to human beings. Throughout the receiving waters, water quality criteria must be achieved but increased health risks exist due to the authorized discharge".

The Department has completed waste management zone modeling on the proposed upgrade/expansion with its hydraulic increase and has determined that the existing one mile waste management zone is of adequate length to accommodate the increased discharge from the new facility. As a result, the proposed permit retains the existing waste management zone that extends downstream from the outfall for approximately one mile in the Missisquoi River.

Electric Power Failure - Within 30 days of the effective date of the permit, the permittee must submit to the Department, updated documentation addressing how the discharge will be handled in the event of an electric power outage. The effluent must receive a minimum of primary treatment (or in the case of ultraviolet light disinfection systems, not less than secondary treatment) plus disinfection.

Operation, Management, and Emergency Response Plans - As required by the revisions to 10 V.S.A. Section 1278, promulgated in the 2006 legislative session, Condition I.H. has been included in the proposed permit. This condition requires that the permittee implement the Operation, Management and Emergency Response Plan, as approved by the Agency, for the wastewater treatment facility, sewage pump/ejector stations, and stream crossings.

The condition also requires that within 60 days following completion of the upgrade/expansion, a new plan be developed, implemented, and submitted to the Agency for review and approval of the wastewater treatment facility.

The condition also requires that the second element (the collection system) of the Plan be developed and submitted to the Agency for review and approval by *July 1, 2010*

Special Conditions-Transition to Expanded Facility

PartI.A.3. - This condition stipulates that the upgrade/expansion follow the approved *Basis for Final Design* and subsequent approved documentation as described in the draft permit.

Part I. A.4. - During construction of expanded facilities certain existing treatment units may need to be taken off line. In order to insure compliance with effluent limits during the construction period the Department is requiring the submittal of detailed operating procedures, proposed construction sequencing and other measures necessary to maintain adequate treatment capability.

Part I.A.5. – In order to insure representative samples from the expanded facility the Department is requiring that influent and effluent sampling locations be identified before construction commences.

Part I.A.6. - The draft permit contains effluent limits applicable to the existing facility (Part I.A.1., page 2 of 20) and to the expanded facility (Part I.A.2., page 3 of 20). In order to provide for a clear transition to the effluent limits for the expanded facility the Department proposes to establish certain conditions that govern that transition. Specifically, Part I.A.5. of the permit defines the procedure for determining when the upgrade/expansion is complete and therefore when the effluent limits for the expanded facility are effective.

Part I.A.7. and Part I.F.2. footnote (5) & (8)
Certain effluent limits, monitoring and maintenance requirements will change once the transition to the UV light disinfection system is made. The permit conditions cited above detail those changes. The Department recognizes that completion and operation of the UV light disinfection system may occur before the expanded facility reaches final completion.Given the benefits of UV disinfection, the above cited permit conditions allow for the transition to the UV disinfection system before the expanded facility reaches final completion.

V. Procedures for Formulation of Final Determinations

The public comment period for receiving comments on this draft permit is from May 18 through June 17, 2009 during which time interested persons may submit their written views on the draft permit. All written comments received by 4:30 PM on June 17, 2009 will be retained by the Department and considered in the formulation of the final determination to issue, deny or modify the draft permit. The period of comment may be extended at the discretion of the Department.

Written comments should be sent to:

Vermont Agency of Natural Resources
Department of Environmental Conservation
Wastewater Management Division - Sewing Building
103 South Main Street
Waterbury, VT 05671-0405

Comments may also be faxed to: 802-241-2596.

Any interested person or groups of persons may request or petition for a public hearing with respect to this draft permit. Any such request or petition for a public hearing shall be filed within the public comment period described above and shall indicate the interest of the party filing such request and the reasons why a hearing is warranted.

The Department will hold a hearing if there is significant public interest in holding such a hearing. Any public hearing brought in response to such a request or petition will be held in the geographical area of the proposed discharge or other appropriate area, at the discretion of the Department and may, as appropriate, consider related groups of draft permits. Any person may submit oral or written statements and data concerning the draft permit at the public hearing. The Department may establish reasonable limits on the time allowed for oral statements and may require the submission of statements in writing. All statements, comments, and data presented at the public hearing will be retained by the Department and considered in the formulation of the final determination to issue, deny, or modify the draft permit.

The complete application, draft permit, and other information are on file and may be inspected at the VTDEC, Wastewater Management Division, Waterbury Office. Copies will be made at a cost based on the current Secretary of State Official Fee Schedule for Copying Public Records from 8:00 AM to 4:30 PM, Monday through Friday. The draft permit and fact sheet may also be viewed on the Division's website at www.anr.state.vt.us/dec/ww/wwmd.cfm .

During the public notice period, comments were received from Leach Engineering Consultants, PA on behalf of the Towns of Troy and Jay.

APPENDIX A

Troy/Jay Wastewater Treatment Facility

Phosphorus concentrations above (upstream) the Troy/Jay WWTF during low median monthly flow conditions [1]

Date	P concentration (ppb) [2]	Stream Flow (cfs) [3]
8/24/05	15.7	36
9/7/05	15.1	43
9/6/06	13.6	27
9/5/07	12.6	36
Average:	**14.25 ppb**	

[1] Low monthly median flow is 47 cfs as recorded at the USGS North Troy gauging station.

[2] Phosphorus data is extracted from "*Missisquoi River Basin Association, Water Quality Monitoring Program, Summary of Results 2005-2007*" Troy – Citizen's Dam monitoring site (site ID 3-03).

[3] Flows referenced are daily mean values recorded at the USGS North Troy gauging station.

APPENDIX B

Troy/Jay Wastewater Treatment Facility

Calculated phosphorus concentration below (downstream) the Troy/Jay WWTF during low median monthly flow conditions

$$C_U + \left[\frac{Q_{WWTF}}{Q_R + Q_{WWTF}} \times C_{WWTF}\right] = C_D$$

where

C_U = insteam phosphorus concentration upstream of WWTF = 14.25 ppm
Q_R = Low Median Monthly Flow of Missisquoi River at the discharge point = 40.8 cfs
Q_{WWTF} = Design flow of WWTF = 0.200 MGD or 0.31 cfs
C_{WWTF} = permitted phosphorus concentration of WWTF discharge = 800 ppb
C_D = phosphorus instream concentration (ppb) downstream of WWTF

$$14.25 + \left[\frac{0.31}{40.8 + 0.31} \times 800\right] = 20.25\ ppb$$

USGS **110 km SE of Montreacuteal, Quebec, Canada** 30 Apr 1999

Image courtesy of the U.S. Geological Survey

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RESPONSE SUMMARY FOR
DRAFT DISCHARGE PERMIT No. 3-1311
Proposed NPDES Municipal Discharge Permit
for the Towns of Troy and Jay

The above referenced draft permit was placed on public notice for comment from the period of May 18 through June 17, 2009. The draft permit proposed to renew the existing permit which included an upgrade/expansion of the facility. Comments were received during the public notice period from Leach Engineering Consultants, PA on behalf of the Towns. The following is a summary of the comments received on this draft discharge permit, and the Agency's responses to those comments.

1. **Comment:** Fact sheet, page 3 under **Receiving Water**, when reference is made to the in-stream waste concentration, which waste is the permit referring to? If we are not increasing the permitted pounds of any waste being discharged from the expanded facility, how can the IWC increase from 0.018 at 7Q10 flow and 0.008 at Low Median Monthly Flow to 0.068 and 0.029 respectively?

   Response: In-stream waste concentration (IWC) means the concentration of an effluent in the receiving water so therefore if the hydraulic capacity increases (i.e. from 0.2 to 0.8 MGD), the percent IWC will increase. Basically, it is a percentage of the discharge flow to the receiving water flow at different low flow conditions. It was used, in this case, to determine whether or not the discharge of certain metals had the potential to violate the numeric criteria in the Vermont Water Quality Standards at 7Q10; and whether, under the Anti-Degradation provision in the water quality standards, the discharge of phosphorus had the potential to violate either narrative or proposed in-stream phosphorus criteria at low median monthly flow conditions.

2. **Comment:** Fact sheet, page 4 under **Flow**, the statement is made that the facility maintains a continuous discharge. However, with the low flow entering the facility, the aerated lagoons have been operated as a batch process. Flow is discharged at a rate exceeding the influent flow, lowering the lagoons, then the discharge is terminated. The lagoons refill and the plant starts discharging again.

   Response: The fact sheet has been modified to reflect the intermittent discharge.

3. **Comment:** Fact sheet, page 8 and draft discharge permit, page 11 under **Electric Power Failure**. Since there will be no change in the existing facilities until well after the effective date of the permit, what kind of updated documentation is required to satisfy this condition?

   Response: It is standard practice to require an electric power failure plan for all wastewater treatment facilities and municipally owned sewage pump stations to be updated each time a discharge permit is renewed (i.e. every five years). The update to the plan needs to conform with the *Written Guidance for Preparation of Emergency Action – Electric Power Failure Plans*. The written guidance can be found on the Department's website at http://www.anr.state.vt.us/dec/ww/wwmd.cfm .

4. **Comment:** Fact sheet, page 8 under **Special Conditions – Transition to Expanded Facilities, Part I.A.5**. The influent and effluent sampling locations were identified and approved in the Basis for Final Design.

Response: The influent and effluent sampling locations as depicted on the Process Flow Schematic in the Basis for Final Design document are very general and lack specificity. With final design plans for the upgrade now complete, detailed information needs to be provided to substantiate that the influent and effluent sampling locations conform with the Division's written *Guidance for Establishing Influent and Effluent Sampling Location.* The written guidance can be found on the Department's website at http://www.anr.state.vt.us/dec/ww/wwmd.cfm .

5. **Comment:** Draft discharge permit, page 3 under **Discharge Limitations**. The units for Total Phosphorus **Monthly Average** are lbs/day not lbs.

Response: "lbs/day" is stipulated in the Discharge Limitations table near the top on the same line as "concentration".

6. **Comment:** Draft discharge permit, page 5, Condition 13. The permit has eliminated all testing of the ground water collection system after the upgrade is complete. In fact, the existing Lagoon #2 will be converted to a sludge storage lagoon. We recommend that monitoring of the ground water collection system associated with the sludge storage lagoon continue.

Response: Groundwater monitoring for the existing Lagoon #2 that will be converted to a sludge storage lagoon will be covered in the Sludge Certification for the facility.

7. **Comment:** Draft discharge permit, page 10, **Operation, Management and Emergency Response Plan**. The requirements of a. and b., identification and inspection of components prone to failure, seems to be unnecessary since the plant will be new and still under the one year warranty.

Response: The Department acknowledges that the upgraded wastewater treatment facility will be new and therefore more reliable, so it is not expected that there will be many elements of concern. The reasons to update the current Operation, Management, and Emergency Response Plan are so that it will be accurate with a new site plan and flow schematic, and to address any elements prone to failure that could result in a release of untreated or undisinfected wastewater, such as an effluent flow meter that controls the ultraviolet disinfection system.