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

FACT SHEET
(revised November 2008)

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

NPDES NO: VT0100188
FILE NO: 01-11
PERMIT NO: 3-1210
PROJECT ID NO: RU98-0028

NAME AND ADDRESS OF APPLICANT:

Town of Middlebury
94 Main Street
Middlebury, VT 05752

NAME AND ADDRESS OF FACILITY WHERE DISCHARGE OCCURS:

Middlebury Wastewater Treatment Facility
243 Industrial Avenue
Middlebury, Vermont

RECEIVING WATER: Otter Creek

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 September 17, 2007 to the Vermont Department of Environmental Conservation for renewal of the permit to discharge into the designated receiving water. At this time the Department has made a tentative decision to reissue the discharge permit. The facility is engaged in the treatment of municipal wastewater. The discharge is from the outfall of the Town of Middlebury Wastewater Treatment Facility to Otter Creek.

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:	Page 2 of 20
Monitoring Requirements:	Pages 4 through 6 of 20

IV. Permit Basis and Explanation of Effluent Limitation Derivation

The Town of Middlebury owns and operates the Middlebury Wastewater Treatment Facility, a sequencing batch reactor (SBR) activated sludge process with chemical addition for phosphorus removal and ultraviolet light disinfection. The facility receives domestic sewage from the Town, as well as industrial wastewater from the Agri-Mark dairy processing facility and other industrial sources.

The 7Q10 flow of Otter Creek used for calculation purposes for this permit is 156 CFS. The design flow of the facility is 2.2 MGD (3.4 CFS). The instream waste concentration (IWC) is 0.02. For purposes of certain metals calculations, a hardness of 77 mg/l for Otter Creek was used (from 1999-05 data).

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

Flow - The effluent flow limitation remains at 2.2 MGD, annual average, representing the facility's design flow. The facility maintains a constant discharge.

Biochemical Oxygen Demand (BOD_5) - The effluent limitations for biochemical oxygen demand remain unchanged from the previous permit. The monthly average (30 mg/l) and weekly average (45 mg/l) reflect the minimum level of effluent quality specified for secondary treatment in 40 CFR Part 133.102. In addition, the permit contains a 50 mg/l, maximum day, BOD limitation. 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 (550 lbs/day, monthly average and 826 lbs/day, weekly average) are derived by multiplying the concentration limits by the permitted flow. The BOD weekly monitoring requirement is unchanged from the previous permit.

Total Suspended Solids (TSS) - The effluent limitations for total suspended solids remain unchanged from the previous permit. The monthly average (30 mg/l) and weekly average (45 mg/l) reflect the minimum level of effluent quality specified for secondary treatment in 40 CFR Part 133.102. In addition, the permit contains a 50 mg/l, maximum day, TSS limitation. 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 (550 lbs/day, monthly average and 826 lbs/day, weekly average) are derived by multiplying the concentration limits by the permitted flow. The TSS weekly monitoring requirement is unchanged from the previous permit.

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, effective February 9, 2006. Monitoring remains at daily.

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, effective February 9, 2006.

Total Phosphorus - The concentration limitation of 0.8 mg/l, monthly average, remains unchanged from the previous permit. The concentration limit is based on requirements in Title 10, Chapter 47 §1266a. The Total Phosphorus weekly monitoring requirement is unchanged from the previous permit.

In addition, the requirements of the 2002 "Lake Champlain Phosphorus Total Maximum Daily Load" (TMDL) are being incorporated into this permit. The TMDL became effective on November 4, 2002 and allocated 1.823 metric tons or 4018 pounds per year to the Middlebury Wastewater Treatment Facility (2.2 MGD, design flow). Consequently this limitation has been included in the permit. The limitation replaces the 14.7 lbs/day, monthly average phosphorus limitation contained in 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.

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.

***E. coli* Bacteria** – A mixing zone of 200 feet downstream from the discharge point has been established for *E. coli* bacteria (see Special Condition I.A.2. of permit). A limit of up to 300 colonies/100 ml is allowed at the point of discharge. This limitation ensures

that the water quality standard of 77 colonies/100 ml is met at the end of the 200 foot mixing zone. Section 2-04 of the Vermont Water Quality Standards allows creation of a mixing zone provided that it does not exceed 200 feet from the point of discharge and that it meets effluent limitations at the end of the mixing zone.

The mixing zone must: 1) not create a public health hazard; 2) not constitute a barrier to the passage of fish or prevent the full support of aquatic biota; 3) not kill organisms passing through; 4) protect and maintain existing uses; 5) be free from materials that settle to form objectionable deposits; 6) be free from floating debris, oil, scum and other materials that form nuisances; 7) be free from substances that produce objectionable color, odor, taste or turbidity; and 8) be free from substances that produce undesirable aquatic life or result in a dominance of nuisance species.

A mixing zone was established in a previous permit when the facility implemented UV light disinfection. It was determined that a mixing zone was necessary in order to allow UV disinfection to be utilized at this treatment facility. A review of recent self-monitoring data indicated that the mixing zone is still necessary for this facility to meet water quality standards.

The Department has also determined that the mixing zone criteria have been and will continue to be met. Therefore, the existing limit of 300 colonies/100 ml and weekly monitoring remain unchanged from the previous permit.

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.

Whole Effluent Toxicity (WET) 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. Whole Effluent Toxicity testing is being required in accordance with the 1994 Vermont Toxic Discharge Control Strategy. In addition, Part 122.21 requires all publicly owned treatment works (POTW) with flows greater than or equal to one MGD to complete a minimum of four WET tests. WET testing was conducted by the Town in August 2005 and January 2007. Also, toxicity scans, including metals, were completed in September 2005, January 2007, and April 2007. Those results indicated that this discharge did not have an instream toxic impact. Confirmation that those findings are still valid is required by the Vermont Toxic Discharge Control Strategy at permit renewal. The proposed permit includes (Part I.B.) two two-species acute WET tests (4 tests total in 2011 and 2012) during the term of the permit to ensure compliance with Part 122.21, 122.44(d)(1), and the Toxic Discharge Control Strategy.

If the results of this test indicate a reasonable potential to cause an instream toxic impact, the Department may require additional testing, establish a WET limit, or require a Toxicity Reduction Evaluation.

Additional Monitoring - For all facilities with a design flow of greater than 0.1 MGD, 40 CFR § 122.21(j), Application for a permit, requires the 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 as an attachment to that month's DMR form.

Waste Management Zone - As defined under 10 V.S.A. §1251(16), 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. Throughout the receiving waters, water quality criteria must be achieved but increased health risks exist due to the authorized discharge".

The proposed permit retains the existing waste management zone (WMZ) that extends downstream from the outfall in Wright Park for approximately one mile to Belden's Dam in Otter Creek.

Septage Capacity – (Special Condition I.A.9.) Middlebury's facility must conform to the provisions of 10 V.S.A. §1626a, awards for wastewater treatment plants with a capacity of 250,000 gallons or more per day. The facility's capacity must be sufficient to receive, treat and dispose of septage in a quantity equivalent to the ratio of 4,000 gpd of septage for each 1 MGD of facility hydraulic capacity. Thus the facility must reserve 8,800 gpd and its equivalent BOD organic capacity for septage receiving.

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 and 2008 legislative sessions, Condition 1.I. 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 the second element (the collection system) of the Plan be developed, implemented, and submitted to the Agency for review and approval by *July 1, 2010.*

Combined Sewer Overflows – The Town completed a CSO effectiveness study in 1998 which indicated that the known CSOs complied with the Agency's 1990 CSO Control Policy. Because a decade has passed it is appropriate to determine whether the remaining CSOs monitored in the 1998 study (as well as the Main Pump Station overflow) still

comply with the Policy. As a result, the proposed permit includes a requirement to monitor the remaining CSOs within the collection system until May 31, 2011 and provide a report to the Department by September 30, 2011. The report must address whether or not the CSOs comply with the Policy and include the supporting data (i.e. all CSO monitoring results tabulated). A list of the CSOs is included in Attachment A of the permit.

V. Procedures for Formulation of Final Determinations

The public comment period for receiving comments on this draft permit is from February 4 through March 5, 2008 during which time interested persons may submit their written views on the draft permit. All written comments received by 4:30 PM on March 5, 2008 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 .

Comments were received from Conservation Law Foundation during the public comment period. Those comments are addressed in the Response Summary.