State of Vermont

Department of Fish and Wildlife
Department of Forests, Parks, and Recreation
Department of Environmental Conservation
State Geologist
RELAY SERVICES FOR THE HEARING IMPAIRED
1-800-253-0191 TDD>Voice
1-800-253-0195 Voice>TDD

AGENCY OF NATURAL RESOURCES
Department of Environmental Conservation
Wastewater Management Division
103 South Main St. - Sewing Bldg.
Waterbury VT 05671-0405
Telephone: (802) 241-3822
FAX: (802) 241-2596

May 18, 2006

City of Barre
Attn: Steve Micheli, Director of Water & Sewer
6 North Main Street
Barre, VT 05641

Re: Discharge Permit No. 3-1272
Barre Wastewater Treatment Facility

Dear Mr. Micheli,

Enclosed is your copy of Discharge Permit No. 3-1272, which has been signed on behalf of the Commissioner of the Department of Environmental Conservation. This permit authorizes the discharge of treated and disinfected wastewater from the Barre Wastewater Treatment Facility to the Stevens Branch.

Please review the permit carefully and make note of the effluent limitations, monitoring requirements, and other special conditions. As stated in the cover letter for the draft permit that was placed on public notice, there are several changes in this permit from the permit that currently authorizes your discharge. Specifically:

1. The phosphorus limitations have been modified to reflect allocation for this discharge by the Lake Champlain Phosphorus TMDL and the requirements of 10 V.S.A. 1266a.

2. Whole Effluent Toxicity testing and annual conventional pollutant sampling has been added to comply with the new federal application requirements contained in 40 CFR Part 121.j.

3. The ammonia effluent limitations have been revised based on the current EPA ammonia criteria.

4. Sampling requirements have been modified to be consistent with other similarly sized discharges.

5. With respect to Condition I.H. Emergency Action, it will be necessary have your Emergency Action Plan approved within 30 days after the effective date of the permit.

With respect to public comments, we received comments from the Conservation Law Foundation on the draft permit. The basis of their comments was to request modifications of the phosphorus limitations and we have included our response to their comments with this letter.

Please note that this permit does not become effective until October 1, 2006 and if you have any questions regarding this permit, please contact Randy Bean at our office.

Sincerely,

Brian D. Kooiker, Chief
Direct Discharge and O&M Section

attachments

cc w/attachments
Liz Dickson, VT DEC WWMD
Joe Rouleau, City of Barre

State of Vermont

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May 18, 2006

Tim Burke, Lake Champlain Lakekeeper
Conservation Law Foundation
15 East State St., Suite 4
Montpelier, Vermont 05602-3010

Dear Mr. Burke,

We have reviewed your May 11, 2006 letter to Commissioner Wennberg concerning the phosphorus effluent limitations in the City of Barre NPDES permit. We conclude that the essence of CLF's comments pertain to the issue of whether the duly adopted Lake Champlain TMDL and the statutorily mandated phosphorus concentration limitations (see 10 VSA, Section 1266a) are adequate and appropriate. We therefore conclude that the changes requested by CLF can not be granted unless the Lake Champlain TMDL and/or state statute is amended and therefore the requested changes are outside the jurisdiction of the current permit process.

The Department notes that numerous opportunities for public comment on the Lake Champlain TMDL were provided, including several public hearings. The Department proposed and presented a full range of treatment options during the public process and received and considered numerous public comments on that issue It is our understanding CLF was integrally involved in the Lake Champlain TMDL public comment process. The Lake Champlain TMDL was subsequently finalized by the Department and approved by both EPA Region I and II.

For the above stated reasons the Department declines to amend the phosphorus limitations in the City of Barre permit and concludes the letter does not provide a sufficient basis for holding a public hearing.

Sincerely,

Brian D Kooiker
Chief, Discharging Treatment Facilities Section

Cc: Steve Micheli, Director of Water and Sewer, City of Barre

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

Permit No.: 3-1272
File No.: 12-01
PIN: BR95-0061
NPDES No.: VT0100889

Name of Applicant: City of Barre
6 North Main Street Suite 1
Barre, VT 05641

Expiration Date: September 30, 2011

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 City of Barre, Vermont (hereinafter referred to as the "permittee") is authorized by the Secretary, Agency of Natural Resources, Waterbury, Vermont, to discharge from the Barre Wastewater Treatment Facility to the Stevens Branch in accordance with the following general and special conditions.

This permit shall become effective on October 1, 2006 and shall expire on September 30, 2011.

Jeffrey Wennberg, Commissioner
Department of Environmental Conservation

By: Roger Thompson for
Christine Thompson, Director
Wastewater Management Division

Date: 5/18/06

I. SPECIAL CONDITIONS

A. EFFLUENT LIMITS

1. From October 1, 2006 through September 30, 2011, the permittee is authorized to discharge from S/N 001 – outfall of the Barre Wastewater Treatment Facility Wastewater Treatment Facility, to the Stevens Branch, an effluent whose characteristics shall not exceed the values listed below ***during the period of June 1 through September 30:***

DISCHARGE LIMITATIONS								
Effluent Characteristic	**Annual Limitation**	**Monthly Average**	**Weekly Average**	**Maximum Day**	**Monthly Average**	**Weekly Average**	**Maximum Day**	**Instantaneous Maximum**
		..... (lbs / day)			..... (Concentration)			
Flow (Annual Avg)	4.0 MGD							
Ultimate Oxygen Demand [a]		1000		1,500				
Biochemical Oxygen Demand, 5-day, 20° C [b,c]		600	1100		30 mg/l	45 mg/l	50 mg/l	
Total Suspended Solids [b]		600	1100		30 mg/l	45 mg/l	50 mg/l	
Settleable Solids								1.0 ml/l
Total Phosphorus (total pounds) [b,d]	7,306				0.8 mg/l			
Ammonia Nitrogen		44		182				
Total Residual Chlorine								0.1 mg/l
Escherichia coli Bacteria								77/100 ml
Total Kjeldahl Nitrogen [c]				Monitor only			Monitor only	
pH					Between 6.5 and 8.5 Standard Units			

a) Ultimate Oxygen Demand shall be calculated by the following equation: UOD (lbs/day) = [(BOD (lbs/day) * 1.43) + (TKN (lbs/day) * 4.57)].

b) The permittee shall operate the facility to meet the concentration limitation or the pounds limitation, whichever is more restrictive.

c) The quantity of BOD and TKN discharged shall be limited so as not to exceed the UOD limitation or BOD limitation, whichever is more restrictive.

d) Total Annual Pounds of Phosphorus discharge 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.)

I. SPECIAL CONDITIONS

A. EFFLUENT LIMITS

2. From October 1, 2006 through September 30, 2011, the permittee is authorized to discharge from S/N 001 – outfall of the Barre Wastewater Treatment Facility Wastewater Treatment Facility, to the Stevens Branch, an effluent whose characteristics shall not exceed the values listed below ***during the period of October 1 through May 31:***

DISCHARGE LIMITATIONS								
Effluent Characteristic	**Annual Limitation**	**Monthly Average**	**Weekly Average**	**Maximum Day**	**Monthly Average**	**Weekly Average**	**Maximum Day**	**Instantaneous Maximum**
	..... (lbs / day)				..... (Concentration)			
Flow (Annual Avg)	4.0 MGD							
Biochemical Oxygen Demand, 5-day, 20° C [a]		600	1100		30 mg/l	45 mg/l	50 mg/l	
Total Suspended Solids [a]		600	1100		30 mg/l	45 mg/l	50 mg/l	
Settleable Solids								1.0 ml/l
Total Phosphorus (total pounds) [a,b]	7,306				0.8 mg/l			
Ammonia Nitrogen		142		278				
Total Residual Chlorine								0.1 mg/l
Escherichia coli Bacteria								77/100 ml
pH					Between 6.5 and 8.5 Standard Units			

a) The permittee shall operate the facility to meet the concentration limitation or the pounds limitation, whichever is more restrictive.

b) Total Annual Pounds of Phosphorus discharge 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.)

3. 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.

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

5. The monthly average concentrations of BOD5 and total suspended solids in the discharge shall not exceed 15 percent of the monthly average concentrations of BOD5 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.

6. 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.

7. 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.

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 Barre Wastewater Treatment Facility in the Stevens Branch downstream 2.6 miles.

C. 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, 2011

D. 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.

E. WHOLE EFFLUENT TOXICITY TESTING

The permittee shall conduct and submit the results of two two-species (Pimephales promelas) or (Ceriodaphnia dubia), 48 hour acute Whole Effluent Toxicity (WET) tests to the Agency as specified below.

a. In August or September 2008, the permittee shall conduct a two-species acute WET test on S/N 001 and the results shall be submitted to the Agency by November 15, 2008.

b. In January or February 2010, the permittee shall conduct a two-species acute WET test on S/N 001 and the results shall be submitted to the Agency by April 15, 2010.

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

d. The whole effluent toxicity tests shall be conducted according to the procedures and guidelines specified in: Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms (most recent edition) USEPA document.

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 test method 9213 D. found in Standard Methods for the Examination of Water and Wastewater, 18th or subsequent edition(s), or other EPA approved methods for wastewater.

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 Barre Wastewater Treatment Facility Wastewater Treatment Facility, according to the following schedule and other provisions:

Until September 30, 2011

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

(1) UOD and TKN monitoring is not required from November 1 through May 31.

(2) Composite samples for BOD5, TSS, Total Phosphorus, and TKN (when applicable) 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.

(3) Settleable Solids samples shall be collected between 10:00 a.m. and 2:00 p.m. or during the period of peak flow.

(4) 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. Samples shall be collected between the hours of 6:00 a.m. to 6:00 p.m.

(5) Ammonia Nitrogen monitoring is only required twice per month during the period of November 1 through May 31.

(6) Total Residual Chlorine shall be monitored before and after dechlorination.

In addition to the parameters specified above, annually by December 31, the permittee shall monitor discharge S/N 001 and submit the results, including units of measure, for the following parameters:

Temperature	Dissolved Oxygen	Oil & Grease
Nitrate/Nitrite	Total Dissolved Solids	

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

3. 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 BOD5	1 x monthly	8 - hour composite, minimum (1)
Influent TSS	1 x monthly	8 - hour composite, minimum (1)

(1) Composite samples for BOD5 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.

4. Reporting

The permittee is required to submit monthly reports of monitoring results on form WR-43. 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.

5. 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.

6. 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. 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.

I. 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 t 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 application must include as a minimum; a written statement from the prospective owner or operator certifying:

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

b. 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.

c. 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.

d. The date of the sale or transfer.

The Department 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 G.), 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.

07/2000; u. 8/2003

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

FACT SHEET
May 2006

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

FILE NO.: 12-01
PROJECT ID NO.: BR95-0061
PERMIT NO.: 3-1272

NAME AND ADDRESS OF APPLICANT:

City of Barre
6 North Main Street
Suite 1
Barre, VT 05641

NAME AND ADDRESS OF FACILITY WHERE DISCHARGE OCCURS:

Barre Wastewater Treatment Facility
69 Treatment Plant Drive
Barre, Vermont

RECEIVING WATER AND CLASSIFICATION: Stevens Branch: 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 of 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 has applied to the Vermont Department of Environmental Conservation for renewal of its permit to discharge into the designated receiving water. The facility is engaged in the treatment of domestic wastewater from the City of Barre and the Town of Barre. The discharge is from the Barre Wastewater Treatment Facility outfall to the Stevens Branch.

II. Description of Discharge

This permit authorizes the discharge of 4.0 MGD of treated municipal wastewater. The wastewater treatment facility receives wastewater from the City of Barre and the Town of Barre. The treatment system is considered advanced treatment of wastewater and consists of an extended aeration process followed by clarification and alum addition for phosphorus removal. Disinfection is achieved by chlorination followed by dechlorination prior to discharge to the Stevens Branch.

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
Monitoring Requirements:	Pages 5, 6, and 7

IV. Permit Basis and Explanation of Effluent Limitation Derivation

History & Summary

On December 22, 2001, the Department issued Discharge Permit No. 3-1272 to the City of Barre authorizing the expansion of its existing wastewater treatment facility from 3.4 MGD (million gallons per day) to an upgraded facility with a capacity of 4.0 MGD. In early June 2002, the City notified the Department that construction of the expanded wastewater treatment facility was complete. On June 12, 2002, the Department authorized the upgrade and expansion of the facility.

The wastewater treatment facility provides wastewater treatment capacity for both existing residential and commercial properties and for new development, in areas that lie within and outside the existing sewer service area.

On March 9, 2006 the City submitted an application for renewal of their discharge permit. Having completed its review of the application, the Department has made a tentative determination to renew the discharge permit for the wastewater treatment facility's discharge. Following is a discussion of the specific factors considered in the renewal of this permit.

Effluent Limitations

Flow

This permit includes a flow limitation of 4.0 MGD, annual average, based on the design capacity of the facility. This is unchanged from the previous permit. Flow monitoring is required daily. This facility maintains a continuous discharge.

Phosphorus

This draft discharge permit contains a phosphorus effluent concentration limit of 0.8 mg/l, monthly average, and a mass effluent limit of 7,306 total pounds, annual limitation. The concentration effluent limitation is based on the requirements of 10 V.S.A. 1266a and is unchanged from the previous permit. The mass annual effluent limitation is based on the Lake Champlain Phosphorus TMDL, effective November 4, 2002. The TMDL allocated 3.314 metric tons per year or 7,306 pounds per year to the Barre WWTF. This annual allocation limitation replaces the 22.7 lbs/day, monthly average, effluent limitation specified in the previous permit.

The annual total pounds are the total 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 total must be submitted with the December monthly monitoring report.

This permit requires weekly monitoring of effluent composite samples for total phosphorus.

Ultimate Oxygen Demand (UOD) and Total Kjeldahl Nitrogen (TKN)
Based on assimilative capacity modeling done on the Stevens Branch, the Department determined the assimilative capacity of the Stevens Branch to be 1500 lbs/day, daily maximum, of UOD and 1000 lbs/day, monthly average, of UOD in the water quality limited reach below the outfall of the Barre Wastewater Treatment Facility. The City's treatment facility has been designed to meet these UOD limitations and the previous permit included a daily maximum UOD limitation of 1500 lbs/day and a monthly average UOD limitation of 1000 lbs/day.

UOD is dependent on the quantity of flow, biochemical oxygen demand (BOD_5) and total kjeldahl nitrogen (TKN), as specified in the following equation:

$$UOD\ (lbs/day) = Flow\ (MGD) \times 8.34\ [(BOD_5\ (mg/l) \times 1.43) + (TKN\ (mg/l) \times 4.57)]$$

Since receiving waters are the most sensitive to oxygen depleting wastes during periods of high water temperature, the UOD limitation is in effect from June 1 - October 31 of each year.

TKN monitoring is required weekly but only during the period in which the UOD limit is in effect.

The UOD limitation in the draft permit is unchanged from the previous permit. The UOD sampling frequency in the draft permit is weekly and is unchanged from the previous permit.

Biochemical Oxygen Demand (BOD_5)
The concentration limits from the previous discharge permit (20 mg/l, monthly average and 35 mg/l, weekly average) have been modified. These limitations were originally derived based on a reduction in the limitations specified for secondary treatment in 40 CFR Part 133.102 in 1974 when the facility expanded from 2.4 MGD to 3.4 MGD. These limitations were not water quality or technology based and therefore are not legally or scientifically justifiable. Consequently the Agency, to be consistent with other discharge permits and the federal secondary treatment regulations, has modified the BOD concentration limitations. The draft permit contains BOD concentration limitations of 30 mg/l monthly average and 45 mg/l weekly average, which are based on 40 CFR Part 133.102. A 50 mg/l, daily maximum, limitation has been included in the draft permit. This is a limitation which the Agency implements to supplement the federal technology based limitations to prevent a gross one-day permit effluent violation to be offset by multiple sampling events which would enable the discharger to comply with the weekly average and monthly average permit limitations. The mass limitations in the previous permit of 600 pounds per day monthly average and 1100 pounds per day weekly average have been retained and the permittee must comply with the concentration limitation or mass limitation, whichever is more stringent. Since the BOD mass limitations remain unchanged, the modifications to the BOD concentration limitations will not result in an increase in the total allowable discharge of BOD. In addition to complying with these limits, the quantity of BOD in the discharge must be limited such that the discharge meets the UOD limits during the period June 1 - October 31. The draft permit requires weekly BOD monitoring. This is an increase in sampling frequency since the previous permit only requires BOD monitoring twice per month from November 1 through May 31. This sampling frequency has been increased to be consistent with other facilities discharging 1.0 MGD or greater.

Total Suspended Solids (TSS)
The concentration limits from the previous discharge permit (20 mg/l, monthly average and 35 mg/l, weekly average, have been modified. These limitations were originally derived based on reducing the limitations specified for secondary treatment in 40 CFR Part 133.102 and were adjusted in 1974 when the facility expanded. These limitations were not water quality or technology based and are not legally or scientifically justifiable. Consequently the Agency, to be consistent with all other discharge permits and the federal secondary treatment regulations, has modified the TSS concentration limitations.

The draft permit contains TSS concentration limitations of 30 mg/l monthly average and 45 mg/l weekly average, which is based on 40 CFR Part 133.102. A 50 mg/l, daily maximum, limitation has been included in the draft permit. This is a limitation which the Agency implements to supplement the federal technology based limitations to prevent a gross one-day permit effluent violation to be offset by multiple sampling events which would enable the discharger to comply with the weekly average and monthly average permit limitations. The mass limits of 600 pounds per day, monthly average, and 1100 pounds per day, weekly average, have also been retained. Since the TSS mass limitations remain unchanged, the modifications to the TSS concentration limitations will not result in an increase in the total allowable discharge of TSS. TSS monitoring is required weekly. This is an increase in sampling frequency since the previous permit only requires TSS monitoring twice per month from November 1 through May 31. This sampling frequency has been increased to be consistent with other facilities discharging 1.0 MGD or greater.

Ammonia
The previous permit included effluent limitations and monthly sampling for total ammonia based on the US EPA 1986 chronic water quality criteria for the protection of aquatic biota. These values were expressed in the previous permit as maximum day limitations of 52 lbs/day during the summer period and 253 lbs/day during the winter period. The summer limits applied during the period June 1 - October 31; the winter limits applied from November 1 - May 31.

As part of the permit renewal process, the Department reviewed the ammonia limitations based on the US EPA 1999 Update of Ambient Water Quality Criteria for Ammonia. A summer time temperature of 26°C and winter temperature of 5°C were assumed. Based upon sampling of the Stevens Branch, a pH of 8.5 was used.

The chronic instream ammonia criteria were derived to be 0.52 mg/l summer and 1.09 mg/l winter. These values were used to derive the permit effluent limitations. The instream summer criteria and the summer time instream waste concentration of 0.392 (a 4.0 MGD discharge and a summer 7Q10 stream flow of 9.6 cfs) were used and resulted in an ammonia effluent concentration of 1.33 mg/l (summer). Adjusting for the winter instream criteria and the winter instream waste concentration of 0.256 (a 4.0 MGD discharge and a winter 7Q10 stream flow of 18.0 cfs) resulted in an effluent concentration of 4.26 mg/l (winter).

The summer effluent limitation is expressed in the draft permit as a monthly average mass limitation of 44 lbs/day. The winter effluent limitation is expressed in the draft permit as a monthly average mass limitation of 142 lbs/day. The summer limits apply during the period June 1 - October 31; winter monitoring is required from November 1 - May 31. Monitoring is required once per week during the summer period and twice per month during the winter period.

The acute instream ammonia criteria was derived to be 2.14 mg/l based upon a pH of 8.5. Using this instream criteria and applying the summer instream waste concentration resulted in an effluent limitation of 5.46 mg/l and is expressed in the draft permit as a maximum day limitation of 182 lbs/day. Using the instream criteria and applying the winter instream waste concentration resulted in an effluent limitation of 8.36 mg/l and is expressed in the draft permit as a maximum day limitation of 278 lbs/day.

Escherichia coli bacteria
The *E. coli* limitation is 77/100ml, instantaneous maximum and is based on Section 3-04.B.3 of the Vermont Water Quality Standards effective July 2, 2000. This limitation is unchanged from the previous permit. E. coli monitoring is required weekly. This is an increase in sampling frequency since the previous permit only requires E. coli monitoring twice per month from November 1 through May 31. This sampling frequency has been increased to be consistent with other facilities discharging 1.0 MGD or greater.

Settleable Solids
The Settleable Solids limitation is 1.0 ml/l, instantaneous maximum and is established in support of the narrative standard in Section 3-01.B.5 of the Vermont Water Quality Standards effective July 2, 2000. This limitation is unchanged from the previous permit. Sampling is required once per day and is unchanged from the previous permit.

Total Residual Chlorine
The Total Residual Chlorine limitation is 0.1 mg/l, instantaneous maximum. This limitation will ensure that the instream water quality criteria of chlorine of 0.019 mg/l (acute) and 0.011 mg/l (chronic) of the Vermont Water Quality Standards effective July 2, 2000 is met. This limitation is unchanged from the previous permit. Total residual chlorine sampling is required once per day and is unchanged from the previous permit.

Waste Management Zone
The previous permit established a waste management zone beginning at the outfall of the Barre Wastewater Treatment Facility and extending downstream for 2.6 miles. The draft permit will maintain this waste management zone.

Additional Conditions
The following conditions are in the previous permit and also have been included in the draft permit.

Toxicity Testing and Additional Pollutant Testing
Previous Whole Effluent Toxicity (WET) tests conducted on this discharge have indicated that this discharge does not have a reasonable potential to cause an instream toxic impact.

However to ensure compliance with 40 CFR 122.21.j, at the time of permit renewal, a requirement (Condition I.E) to conduct WET testing has been included in the draft permit. This Condition requires a two species acute WET test to be done in 2008, and 2010. The species to be tested are fathead minnow and daphnia and the time of year the test will be conducted will alternate between winter and late summer to ensure representative sampling is done.

In addition, per the requirements of 40 CFR 122.21.j, annual monitoring for temperature,

Dissolved Oxygen, Oil & Grease, Nitrate/Nitrite, and Total Dissolved Solids has been included in the draft permit.

VI. Procedures for Formulation of Final Determinations

The public comment period for receiving comments on this draft permit is from April 17, 2006 through May 16, 2006 during which time interested persons may submit their written views on the draft permit. All written comments 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 draft 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 previous Secretary of State Official Fee Schedule for Copying Public Records from 8:00 am to 4:00 pm, Monday through Friday.

USGS **3 km NE of Barre, Vermont, United States** 07 May 1996

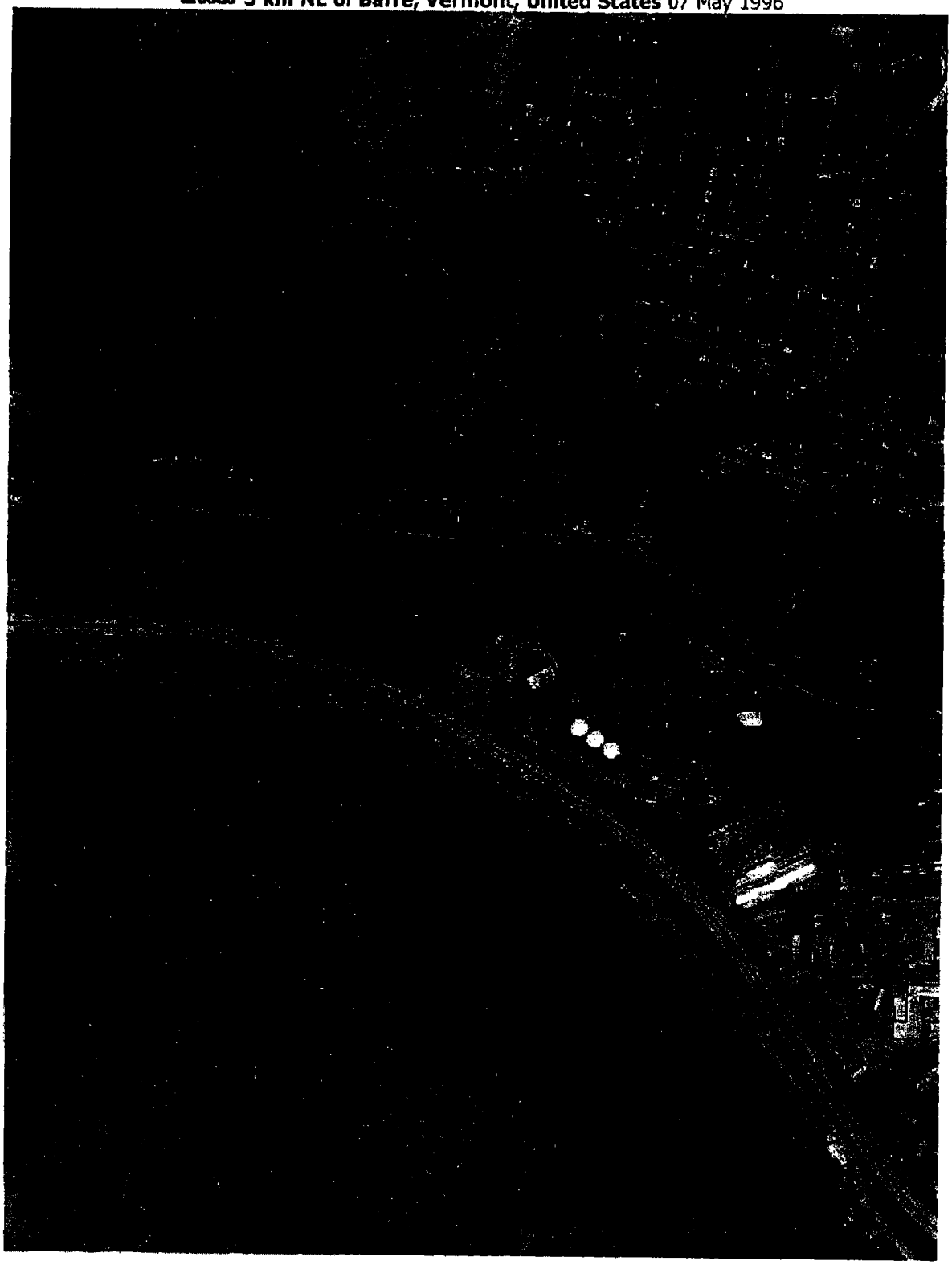

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Image courtesy of the U.S. Geological Survey

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