AUTHORIZATION TO DISCHARGE UNDER THE NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM

In compliance with the provisions of the Federal Clean Water Act, as amended, (33 U.S.C. §1251 et seq.; the "CWA"),

The Town of Warner, New Hampshire

is authorized to discharge from the Wastewater Treatment Plant located at

55 West Joppa Road
Warner, New Hampshire 03278

to receiving waters named

Warner River

in accordance with effluent limitations, monitoring requirements and other conditions set forth herein including, but not limited to, conditions requiring the proper operation and maintenance of the Warner Wastewater Treatment Plant collection system.

This permit will become effective upon the date signature.

This permit expires at midnight, five (5) years from the last day of the month preceding the effective date.

This permit supersedes the permit issued on December 22, 2006.

This permit consists of **Part I (**15 pages including effluent limitations and monitoring requirements); **Attachment A** (USEPA Region 1 Freshwater Acute Toxicity Test Procedure and Protocol, February 2011, 8 pages); and **Part II (**25 pages including NPDES Part II Standard Conditions).

Signed this 28th day of September, 2015

/S/SIGNATURE ON FILE

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Ken Moraff, Director
Office of Ecosystem Protection
U.S. Environmental Protection Agency (EPA)
Region I
Boston, Massachusetts

PART I
A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

1. During the period beginning on the effective date and lasting through expiration, the permittee is authorized to discharge treated domestic and industrial wastewater from outfall serial number 001 to the Warner River. Such discharges shall be limited and monitored by the permittee, as specified below. Samples taken in compliance with the monitoring requirements specified below shall be taken at a location that provides a representative analysis of the discharge.

Effluent Characteristic	Discharge Limitations			Monitoring Requirements	
	Average Monthly	Average Weekly	Maximum Daily	Measurement Frequency	Sample Type
Flow; mgd	Report		Report	Continuous Recorder[1]	
BOD_5; mg/l (lbs/day)	30 (27.5)	45 (41.3)	50 (45.9)	2/Week[2]	24 Hour Composite
TSS; mg/l (lbs/day)	30 (27.5)	45 (41.3)	50 (45.9)	2/Week[2]	24 Hour Composite
Total Phosphorus; lbs/day[12] (April 1-October 31)	1.75	----	Report	1/Week	24 Hour Composite
pH Range[3]; Standard Units	6.5 to 8.0 (See I.H.5., State Permit Conditions)			1/Day	Grab
Total Residual Chlorine[4,6]; mg/l	0.25	---	0.43	1/Day	Grab
Escherichia coli[4,5]; Colonies/100 ml	126	---	406	3/Week	Grab
Total Recoverable Copper; µg/L[11]	2.9		3.8	2/Month	24 Hour Composite
Whole Effluent Toxicity LC50 [7,8,9]; Percent	$\geq$ 100			1/Year	24 Hour Composite
Hardness[10]; mg/l	---	---	Report	1/Year	24 Hour Composite
Ammonia Nitrogen as N[10]; mg/l	---	---	Report	1/Year	24 Hour Composite
Total Recoverable Aluminum[10]; mg/l	---	---	Report	1/Year	24 Hour Composite
Total Recoverable Cadmium[10]; mg/l	---	---	Report	1/Year	24 Hour Composite
Total Recoverable Copper[10] mg/l	---	---	Report	1/Year	24 Hour Composite
Total Recoverable Lead[10]; mg/l	---	---	Report	1/Year	24 Hour Composite
Total Recoverable Nickel[10]; mg/l	---	---	Report	1/Year	24 Hour Composite
Total Recoverable Zinc[10]; mg/l	---	---	Report	1/Year	24 Hour Composite

See pages 3 and 4 for footnotes

FOOTNOTES

1. The effluent flow shall be continuously measured and recorded using a flow meter and totalizer.

2. Effluent sampling frequency. The influent shall be sampled twice per month using 24-hour composite samples.

3. State certification requirement.

4. Monitoring for *Escherichia coli* bacteria as described in footnote (5) below shall be conducted concurrently with the daily monitoring for total residual chlorine (TRC) as described in footnote (6) below.

5. The average monthly value for *Escherichia coli* shall be calculated as a geometric mean. *Escherichia coli* shall be tested using an approved method as specified in 40 Code of Federal Regulations (CFR) Part 136, List of Approved Biological Methods for Wastewater and Sewage Sludge.

6. Total residual chlorine shall be measured using any one of the following three methods listed in 40 CFR Part 136:
   a. Amperometric direct.
   b. DPD-FAS.
   c. Spectrophotometric, DPD.

7. LC50 (lethal concentration 50 percent) is the concentration of wastewater causing mortality to 50 % of the test organisms. Therefore, a 100 % limit means that a sample of 100 % effluent (no dilution) shall cause no greater than a 50 % mortality rate in that effluent sample.

8. The permittee shall conduct 48-hour static acute toxicity tests on effluent samples following the February 2011 USEPA Region 1 Freshwater Acute Toxicity Test Procedure and Protocol (**Attachment A**). The two species for these tests are the Daphnids (*Ceriodaphnia dubia*) and the Fathead Minnow (*Pimephales promelas*). Toxicity test samples shall be collected and tests completed once per year during the calendar quarter ending September 30th. Toxicity test results are to be postmarked by the 15th day of the month following the end of the quarter sampled.

9. This permit shall be modified, or alternatively, revoked and reissued to incorporate additional toxicity testing requirements, including chemical specific limits such as for metals, if the results of the toxicity tests indicate the discharge causes an exceedance of any State water quality criterion. Results from these toxicity tests are considered "New Information" and the permit may be modified as provided in 40 CFR Section 122.62(a)(2).

10. For each whole effluent toxicity test the permittee shall report on the appropriate

discharge monitoring report, (DMR), the concentrations of the hardness, total phosphorus, ammonia nitrogen as nitrogen, total recoverable aluminum, total recoverable cadmium, total recoverable copper, total recoverable lead, total recoverable nickel, and total recoverable zinc found in the 100 percent effluent sample. All these aforementioned chemical parameters shall be determined to at least the minimum quantification level shown in **Attachment A**. Also the permittee should note that all chemical parameter results must still be reported in the appropriate toxicity report.

11. The permittee may use the copper result in the WET test report as one of the required two monthly samples for copper.

12. The permittee must analyze one sample per year from the Warner River upstream of the discharge for total phosphorus during the calendar quarter ending September 30th and report the result to EPA. This sample may be collected as part of dilution water sampling for the WET test.

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (continued)

2. The discharge shall not cause a violation of the water quality standards of the receiving water.

3. The discharge shall be adequately treated to ensure that the surface water remains free from pollutants in concentrations or combinations that settle to form harmful deposits, float as foam, debris, scum or other visible pollutants. It shall be adequately treated to ensure that the surface waters remain free from pollutants which produce odor, color, taste or turbidity in the receiving waters which is not naturally occurring and would render it unsuitable for its designated uses.

4. The permittee's treatment facility shall maintain a minimum monthly average of 85 percent removal of both BOD_5 and TSS. The percent removal shall be calculated using the average monthly influent and effluent concentrations.

5. When the effluent discharged for a period of 3 consecutive months exceeds 80 percent of the 0.11 mgd design flow (0.088 mgd), the permittee shall submit to the permitting authorities a projection of loadings up to the time when the design capacity of the treatment facility will be reached, and a program for maintaining satisfactory treatment levels consistent with approved water quality management plans. Before the design flow will be reached, or whenever treatment necessary to achieve permit limits cannot be assured, the permittee may be required to submit plans for facility improvements.

6. The permittee shall not discharge into the receiving water any pollutant or combination of pollutants in toxic amounts.

7. All POTWs must provide adequate notice to both EPA-New England and the New Hampshire Department of Environmental Services, Water Division (NHDES-WD) of the following:

a. Any new introduction of pollutants into the POTW from an indirect discharger in a primary industry category (see 40 CFR §122 Appendix A as amended) discharging process water; and

b. Any substantial change in the volume or character of pollutants being introduced into that POTW by a source introducing pollutants into the POTW at the time of issuance of the permit.

c. For purposes of this paragraph, adequate notice shall include information on:

(1) the quantity and quality of effluent introduced into the facility; and

(2) any anticipated impact of the change on the quantity or quality of effluent to be discharged from the facility.

8. Limitations for Industrial Users

a. Pollutants introduced into the POTW by a non-domestic source (user) shall not pass through the POTW or interfere with the operation or performance of the works.

b. The permittee shall submit to EPA and NHDES-WD the name of any Industrial User (IU) subject to Categorical Pretreatment Standards under 40 CFR § 403.6 and 40 CFR Chapter I, Subchapter N (Parts 405-415, 417-436, 439-440, 443, 446-447, 454-455, 457-461, 463-469, and 471 as amended) who commences discharge to the POTW after the effective date of this permit.

This reporting requirement also applies to any other IU who discharges an average of 25,000 gallons per day or more of process wastewater into the POTW (excluding sanitary, noncontact cooling and boiler blowdown wastewater); contributes a process wastewater which makes up five (5) percent or more of the average dry weather hydraulic or organic capacity of the POTW; or is designated as such by the Control Authority as defined in 40 CFR § 403.12(a) on the basis that the industrial user has a reasonable potential to adversely affect the wastewater treatment facility's operation, or for violating any pretreatment standard or requirement (in accordance with 40 CFR § 403.8(f)(6)).

c. In the event that the permittee receives reports (baseline monitoring reports, 90-day compliance reports, periodic reports on continued compliance, etc.) from industrial users subject to Categorical Pretreatment Standards under 40 CFR § 403.6 and 40 CFR Chapter I, Subchapter N (Parts 405-415, 417-436, 439-440, 443, 446-447, 454-455, 457-461, 463-469, and 471 as amended), the permittee shall forward all copies of these reports within ninety (90) days of their receipt to EPA and NHDES-WD.

B. UNAUTHORIZED DISCHARGES

This permit authorizes discharges only from the outfall(s) listed in Part I.A.1, in accordance with the terms and conditions of this permit. Discharges of wastewater from any other point sources, including sanitary sewer overflows (SSOs), are not authorized by this permit and shall be reported to EPA and NHDES in accordance with Part II, Section D.1.e of the General Requirements of this permit (twenty four hour reporting).

C. OPERATION AND MAINTENANCE OF THE SEWER SYSTEM

Operation and maintenance of the sewer system shall be in compliance with the General Requirements of Part II and the following terms and conditions. The permittee is required to complete the following activities for the collection system which it owns:

1 Maintenance Staff

The permittee shall provide an adequate staff to carry out the operation, maintenance, repair, and testing functions required to ensure compliance with the terms and conditions of this permit. This requirement shall be described in the Collection System O & M Plan required pursuant to Section C.5. below.

2. Preventative Maintenance Program

The permittee shall maintain an ongoing preventative maintenance program to prevent overflows and bypasses caused by malfunctions or failures of the sewer system infrastructure. The program shall include an inspection program designed to identify all potential and actual unauthorized discharges. This requirement shall be described in the Collection System O & M Plan required pursuant to Section C.5. below.

3. Infiltration/Inflow

The permittee shall control infiltration and inflow (I/I) into the sewer system as necessary to prevent high flow related unauthorized discharges from their collection systems and high flow related violations of the wastewater treatment plant's effluent limitations. Plans and programs to control I/I shall be described in the Collection System O & M Plan required pursuant to Section C.5. below.

4. Collection System Mapping

Within 30 months of the effective date of this permit, the permittee shall prepare a map of the sewer collection system it owns (see page 1 of this permit for the effective date). The map shall be on a street map of the community, with sufficient detail and at a scale to allow easy interpretation. The collection system information shown on the map shall be based on current conditions and shall be kept up to date and available for review

by federal, state, or local agencies. Such map(s) shall include, but not be limited to the following:

a. All sanitary sewer lines and related manholes;
b. All combined sewer lines, related manholes, and catch basins;
c. All combined sewer regulators and any known or suspected connections between the sanitary sewer and storm drain systems (e.g. combined manholes);
d. All outfalls, including the treatment plant outfall(s), CSOs, combined manholes, and any known or suspected SSOs;
e. All pump stations and force mains;
f. The wastewater treatment facility(ies);
g. All surface waters (labeled);
h. Other major appurtenances such as inverted siphons and air release valves;
i. A numbering system which uniquely identifies manholes, catch basins, overflow points, regulators and outfalls;
j. The scale and a north arrow; and
k. The pipe diameter, date of installation, type of material, distance between manholes, and the direction of flow.

5. Collection System Operation and Maintenance Plan

The permittee shall develop and implement a Collection System Operation and Maintenance Plan.

a. **Within six (6) months of the effective date of the permit**, the permittee shall submit to EPA and NHDES

(1) A description of the collection system management goals, staffing, information management, and legal authorities;
(2) A description of the overall condition of the collection system including a list of recent studies and construction activities; and
(3) A schedule for the development and implementation of the full Collection System O & M Plan including the elements in paragraphs b.1. through b.7. below.

b. The full Collection System O & M Plan shall be submitted to EPA and NPDES and implemented **within twenty four (24) months from the effective date of this permit**. The Plan shall include:

(1) The required submittal from paragraph 5.a. above, updated to reflect current information;
(2) A preventative maintenance and monitoring program for the collection system;
(3) Sufficient staffing to properly operate and maintain the sanitary sewer collection system;
(4) Sufficient funding and the source(s) of funding for implementing the plan;

(5) Identification of known and suspected overflows and back-ups, including combined manholes, a description of the cause of the identified overflows and back-ups, and a plan for addressing the overflows and back-ups consistent with the requirements of this permit;

(6) A description of the permittees program for preventing I/I related effluent violations and all unauthorized discharges of wastewater, including overflows and by-passes and the ongoing program to identify and remove sources of I/I. The program shall include an inflow identification and control program that focuses on the disconnection and redirection of illegal sump pumps and roof down spouts; and

(7) An educational public outreach program for all aspects of I/I control, particularly private inflow.

6. Annual Reporting Requirement

The permittee shall submit a summary report of activities related to the implementation of its Collection System O & M Plan during the previous calendar year. The report shall be submitted to EPA and NHDES **annually by March 31**. The first annual report is due the first March 31st following submittal of the collection system O&M Plan required by Part I.C.5.b. of this permit. The summary report shall, at a minimum, include:

a. A description of the staffing levels maintained during the year;
b. A map and a description of inspection and maintenance activities conducted and corrective actions taken during the previous year;
c. Expenditures for any collection system maintenance activities and corrective actions taken during the previous year;
d. A map with areas identified for investigation/action in the coming year;
e. If treatment plant flow has reached 80% of the 0.11 mgd design flow (0.088 mgd) based on the daily flow for three consecutive months or there have been capacity related overflows, submit a calculation of the maximum daily, weekly, and monthly infiltration and the maximum daily, weekly, and monthly inflow for the reporting year; and
f. A summary of unauthorized discharges during the past year and their causes and a report of any corrective actions taken as a result of the unauthorized discharges reported pursuant to the Unauthorized Discharges section of this permit.

D. ALTERNATE POWER SOURCE

In order to maintain compliance with the terms and conditions of this permit, the permittee shall provide an alternate power source with which to sufficiently operate the wastewater facility, as defined at 40 C.F.R. § 122.2, which references the definition at 40 C.F.R. § 403.3(o). Wastewater facility is defined by RSA 485A:2.XIX as the structures, equipment, and processes required to collect, convey, and treat domestic and industrial wastes, and dispose of the effluent and sludge.

E. SLUDGE CONDITIONS

1. The permittee shall comply with all existing federal & state laws and regulations that apply to sewage sludge use and disposal practices and with the CWA Section 405(d) technical standards.

2. The permittee shall comply with the more stringent of either the state (Env-Wq 800) or federal (40 CFR Part 503) requirements.

3. The requirements and technical standards of 40 CFR Part 503 apply to facilities which perform one or more of the following use or disposal practices.

   a. Land application - the use of sewage sludge to condition or fertilize the soil.
   b. Surface disposal - the placement of sewage sludge in a sludge only landfill.
   c. Sewage sludge incineration in a sludge only incinerator.

4. The 40 CFR Part 503 conditions do not apply to facilities which place sludge within a municipal solid waste landfill. These conditions do not apply to facilities which do not dispose of sewage sludge during the life of the permit, but rather treat the sludge (lagoons-reed beds), or are otherwise excluded under 40 CFR Section 503.6.

5. The permittee shall use and comply with the NPDES Permit Sludge Compliance Guidance, November 1999, to determine appropriate conditions. This guidance document is available upon request from EPA Region 1 and may also be found at: http://www.epa.gov/region1/npdes/permits/generic/sludgeguidance.pdf. Appropriate conditions contain the following elements.

   - General requirements
   - Pollutant limitations
   - Operational Standards (pathogen reduction requirements and vector attraction reduction requirements)
   - Management practices
   - Record keeping
   - Monitoring
   - Reporting

   Depending upon the quality of material produced by a facility, all conditions may not apply to the facility.

6. The permittee shall monitor the pollutant concentrations, pathogen reduction and vector attraction reduction for the permittee's chosen sewage sludge use or disposal practices at the following frequency. This frequency is based upon the volume of sewage sludge generated at the facility in dry metric tons per year.

• less than 290	1/Year
• 290 to less than 1,500	1/Quarter
• 1,500 to less than 15,000	6/Year

- 15,000 plus 1/Month

7. The permittee shall sample the sewage sludge using the procedures detailed in 40 CFR Section 503.8.

8. The permittee shall submit an annual report containing the information specified in the attached Sludge Compliance Guidance document. Reports are **due annually by February 19th**. Reports shall be submitted to the following address:

U.S. Environmental Protection Agency, Region 7
Biosolids Center
Water Enforcement Branch
11201 Renner Boulevard
Lenexa, Kansas 66219

F. SPECIAL CONDITIONS

The permittee may submit a written request to the EPA-New England requesting a change in the permitted pH limit range to be not less restrictive than 6.0 to 9.0 Standard Units found in the applicable National Effluent Limitation Guideline (Secondary Treatment Regulations in 40 CFR Part 133) for this facility. The permittee's written request must include the State's approval letter containing an original signature (no copies). The State's letter shall state that the permittee has demonstrated to the State's satisfaction that as long as discharges to the receiving water from a specific outfall are within a specific numeric pH range the naturally occurring receiving water pH will be unaltered. That letter must specify for each outfall the associated numeric pH limit range. Until written notice is received by certified mail from the EPA-New England indicating the pH limit range has been changed, the permittee is required to meet the permitted pH limit range in the respective permit.

G. MONITORING AND REPORTING

The monitoring program in the permit specifies sampling and analysis, which will provide continuous information on compliance and the reliability and effectiveness of the installed pollution abatement equipment. The approved analytical procedures found in 40 CFR Part 136 are required unless other procedures are explicitly required in the permit. The Permittee is obligated to monitor and report sampling results to EPA and the NHDES within the time specified within the permit.

Unless otherwise specified in this permit, the permittee shall submit reports, requests, and information and provide notices in the manner described in this section.

1. Submittal of DMRs and the Use of NetDMR

Beginning the effective date of the permit the permittee must submit its monthly monitoring data in discharge monitoring reports (DMRs) to EPA and NHDES no later than the 15th day of the month following the completed reporting period. For a period of six months from the effective

date of the permit, the permittee may submit its monthly monitoring data in DMRs to EPA and NHDES either in hard copy form, as described in Part I.G.5, or in DMRs electronically submitted using NetDMR. NetDMR is a web-based tool that allows permittees to electronically submit DMRs and other required reports via a secure internet connection. NetDMR is accessed from: http://www.epa.gov/netdmr. Beginning no later than six months after the effective date of the permit, the permittee shall begin reporting monthly monitoring data using NetDMR, unless, in accordance with Part I.G.7, the facility is able to demonstrate a reasonable basis, such as technical or administrative infeasibility, that precludes the use of NetDMR for submitting DMRs. The permittee must continue to use the NetDMR after the permittee begins to do so. When a permittee begins submitting reports using NetDMR, it will no longer be required to submit hard copies of DMRs to EPA or NHDES.

2. Submittal of Reports as NetDMR Attachments

After the permittee begins submitting DMR reports to EPA and NHDES electronically using NetDMR, the permittee shall electronically submit all reports to EPA and NHDES as NetDMR attachments rather than as hard copies, unless otherwise specified in this permit. (See Part I.G.6. for more information on state reporting.) Because the due dates for reports described in this permit may not coincide with the due date for submitting DMRs (which is no later than the 15th day of the month), a report submitted electronically as a NetDMR attachment shall be considered timely if it is electronically submitted to EPA using NetDMR with the next DMR due following the particular report due date specified in this permit.

3. Submittal of Pre-treatment Related Reports (for permittees with pretreatment programs)

All reports and information required of the permittee in the Industrial Users and Pretreatment Program section of this permit shall be submitted to the Office of Ecosystem Protection's Pretreatment Coordinator in Region 1 EPA's Office of Ecosystem Protection (OEP). These requests, reports and notices include:

A. Annual Pretreatment Reports,
B. Pretreatment Reports Reassessment of Technically Based Industrial Discharge Limits Form,
C. Revisions to Industrial Discharge Limits,
D. Report describing Pretreatment Program activities, and
E. Proposed changes to a Pretreatment Program

This information shall be submitted to EPA/OEP as a hard copy at the following address:

U.S. Environmental Protection Agency
Office of Ecosystem Protection
Regional Pretreatment Coordinator
5 Post Office Square - Suite 100 (OEP06-03)
Boston, MA 02109-3912

4. Submittal of Requests and Reports to EPA/OEP

The following requests, reports, and information described in this permit shall be submitted to the EPA/OEP NPDES Applications Coordinator in the EPA Office Ecosystem Protection (OEP).

Permit writer: remove reports that are not required in your permit, and, if appropriate, add permit-specific reports.

A. Transfer of Permit notice
B. Request for changes in sampling location
C. Request for reduction in testing frequency
D. Request for Reduction in WET Testing Requirement
E. Report on unacceptable dilution water / request for alternative dilution water for WET testing
F. Change in location, design or capacity of outfall

These reports, information, and requests shall be submitted to EPA/OEP electronically at R1NPDES.Notices.OEP@epa.gov or by hard copy mail to the following address:

U.S. Environmental Protection Agency
Office of Ecosystem Protection
EPA/OEP NPDES Applications Coordinator
5 Post Office Square - Suite 100 (OEP06-03)
Boston, MA 02109-3912

5. Submittal of Reports in Hard Copy Form

The following notifications and reports shall be submitted as hard copy with a cover letter describing the submission. These reports shall be signed and dated originals submitted to EPA.

A. Written notifications required under Part II
B. Notice of unauthorized discharges, including Sanitary Sewer Overflow (SSO) reporting
C. Reports and DMRs submitted prior to the use of NetDMR

This information shall be submitted to EPA/OES at the following address:

U.S. Environmental Protection Agency
Office or Environmental Stewardship (OES)
Water Technical Unit
5 Post Office Square, Suite 100 (OES04-4)
Boston, MA 02109-3912

6. State Reporting

Unless otherwise specified in this permit, duplicate signed copies of all reports, information, requests or notifications described in this permit, including the reports, information, requests or notifications described in Parts I.G.3, I.G.4, and I.G.5 also shall be submitted to the State at the

following addresses:

New Hampshire Department of Environmental Services
Water Division
Wastewater Engineering Bureau
P.O. Box 95
Concord, New Hampshire 03302-0095

7. Submittal of NetDMR Opt-Out Requests

NetDMR opt-out requests must be submitted in writing to EPA for written approval at least sixty (60) days prior to the date a facility would be required under this permit to begin using NetDMR. This demonstration shall be valid for twelve (12) months from the date of EPA approval and shall thereupon expire. At such time, DMRs and reports shall be submitted electronically to EPA unless the permittee submits a renewed opt-out request and such request is approved by EPA. All opt-out requests should be sent to the following addresses:

Attn: NetDMR Coordinator
U.S. Environmental Protection Agency, Water Technical Unit
5 Post Office Square, Suite 100 (OES04-4)
Boston, MA 02109-3912

And

Attn**: Compliance Supervisor**
New Hampshire Department of Environmental Services (NHDES)
Water Division
Wastewater Engineering Bureau
P.O. Box 95
Concord, New Hampshire 03302-0095

8. Verbal Reports and Verbal Notifications

Any verbal reports or verbal notifications, if required in Parts I and/or II of this permit, shall be made to both EPA and to NHDES. This includes verbal reports and notifications which require reporting within 24 hours. (As examples, see Part II.B.4.c. (2), Part II.B.5.c. (3), and Part II.D.1.e.) Verbal reports and verbal notifications shall be made to EPA's Office of Environmental Stewardship at:

U.S. Environmental Protection Agency
Office of Environmental Stewardship
5 Post Office Square, Suite 100 (OES04-4)
Boston, MA 02109-3912
617-918-1510

H. STATE PERMIT CONDITIONS

1. The permittee shall not at any time, either alone or in conjunction with any person or persons, cause directly or indirectly the discharge of waste into the said receiving water unless it has been treated in such a manner as will not lower the legislated water quality classification or interfere with the uses assigned to said water by the New Hampshire Legislature (RSA 485-A:12).

2. This NPDES discharge permit is issued by EPA under federal and state law. Upon final issuance by EPA, the New Hampshire Department of Environmental Services-Water Division (NHDES-WD) may adopt this permit, including all terms and conditions, as a state permit pursuant to RSA 485-A:13.

3. EPA shall have the right to enforce the terms and conditions of this permit pursuant to federal law and NHDES-WD shall have the right to enforce the permit pursuant to state law, if the permit is adopted. Any modification, suspension, or revocation of this permit shall be effective only with respect to the agency taking such action, and shall not affect the validity or status of the permit as issued by the other agency.

4. Pursuant to New Hampshire Statute RSA 485-A13,I(c), any person responsible for a bypass or upset at a *wastewater facility* shall give immediate notice of a bypass or upset to all public or privately owned water systems drawing water from the same receiving water and located within 20 miles downstream of the point of discharge regardless of whether or not it is on the same receiving water or on another surface water to which the receiving water is tributary. Wastewater facility is defined at RSA 485-A:2XIX as the structures, equipment, and processes required to collect, convey, and treat domestic and industrial wastes, and dispose of the effluent and sludge. The permittee shall maintain a list of persons, and their telephone numbers, who are to be notified immediately by telephone. In addition, written notification, which shall be postmarked within 3 days of the bypass or upset, shall be sent to such persons.

5. Pursuant to New Hampshire Code of Administrative Rules, Env-Wq 703.07(a):

   a. Any person proposing to construct or modify any of the following shall submit an application for a sewer connection permit to the department:

      (1) Any extension of a collector or interceptor, whether public or private, regardless of flow;

      (2) Any wastewater connection or other discharge in excess of 5,000 gpd;

      (3) Any wastewater connection or other discharge to a WWTP operating in excess of 80 percent design flow capacity based on actual average flow for 3 consecutive months;

(4) Any industrial wastewater connection or change in existing discharge of industrial wastewater, regardless of quality or quantity; and

(5) Any sewage pumping station greater than 50 gpm or serving more than one building.

6. For each new or increased discharge of industrial waste to the POTW, the permittee shall submit, in accordance with Env-Wq 305.10(b) an "Industrial Wastewater Discharge Request Application" approved by the permittee in accordance with Env-Wq 305.14(a). The "Industrial Wastewater Discharge Request Application" shall be prepared in accordance with Env-Wq 305.10.

7. Pursuant to Env-Wq 305.21, at a frequency no less than every five years, the permittee shall submit to NHDES:

   a. A copy of its current sewer use ordinance. The sewer use ordinance shall include local limits pursuant to Env-Wq 305.04(a).

   b. A current list of all significant indirect dischargers to the POTW. At a minimum, the list shall include for each significant indirect discharger, its name and address, the name and daytime telephone number of a contact person, products manufactured, industrial processes used, existing pretreatment processes, and discharge permit status.

   c. A list of all permitted indirect dischargers; and

   d. A certification that the municipality is strictly enforcing its sewer use ordinance and all discharge permits it has issued.

8. In addition to submitting DMRs, monitoring results shall also be summarized for each calendar month and reported on separate Monthly Operations Report Form(s) (MORs) postmarked or submitted electronically using NetDMR no later than the 15th day of the month following the completed reporting period. Signed and dated MORs, which are not submitted electronically using NetDMR shall be submitted to:

New Hampshire Department of Environmental Services (NHDES)
Water Division
Wastewater Engineering Bureau
29 Hazen Drive, P.O. Box 95
Concord, New Hampshire 03302-0095

USEPA REGION 1 FRESHWATER ACUTE TOXICITY TEST PROCEDURE AND PROTOCOL

I. GENERAL REQUIREMENTS

The permittee shall conduct acceptable acute toxicity tests in accordance with the appropriate test protocols described below:

- **Daphnid (Ceriodaphnia dubia) definitive 48 hour test.**
- **Fathead Minnow (Pimephales promelas) definitive 48 hour test.**

Acute toxicity test data shall be reported as outlined in Section VIII.

II. METHODS

The permittee shall use 40 CFR Part 136 methods. Methods and guidance may be found at:

http://water.epa.gov/scitech/methods/cwa/wet/disk2_index.cfm

The permittee shall also meet the sampling, analysis and reporting requirements included in this protocol. This protocol defines more specific requirements while still being consistent with the Part 136 methods. If, due to modifications of Part 136, there are conflicting requirements between the Part 136 method and this protocol, the permittee shall comply with the requirements of the Part 136 method.

III. SAMPLE COLLECTION

A discharge sample shall be collected. Aliquots shall be split from the sample, containerized and preserved (as per 40 CFR Part 136) for chemical and physical analyses required. The remaining sample shall be measured for total residual chlorine and dechlorinated (if detected) in the laboratory using sodium thiosulfate for subsequent toxicity testing. (Note that EPA approved test methods require that samples collected for metals analyses be preserved immediately after collection.) Grab samples must be used for pH, temperature, and total residual chlorine (as per 40 CFR Part 122.21).

Standard Methods for the Examination of Water and Wastewater describes dechlorination of samples (APHA, 1992). Dechlorination can be achieved using a ratio of 6.7 mg/L anhydrous sodium thiosulfate to reduce 1.0 mg/L chlorine. If dechlorination is necessary, a thiosulfate control (maximum amount of thiosulfate in lab control or receiving water) must also be run in the WET test.

All samples held overnight shall be refrigerated at 1- 6^{o}C.

IV. DILUTION WATER

A grab sample of dilution water used for acute toxicity testing shall be collected from the receiving water at a point immediately upstream of the permitted discharge's zone of influence at a reasonably accessible location. Avoid collection near areas of obvious road or agricultural runoff, storm sewers or other point source discharges and areas where stagnant conditions exist. In the case where an alternate dilution water has been agreed upon an additional receiving water control (0% effluent) must also be tested.

If the receiving water diluent is found to be, or suspected to be toxic or unreliable, an alternate standard dilution water of known quality with a hardness, pH, conductivity, alkalinity, organic carbon, and total suspended solids similar to that of the receiving water may be substituted **AFTER RECEIVING WRITTEN APPROVAL FROM THE PERMIT ISSUING AGENCY(S)**. Written requests for use of an alternate dilution water should be mailed with supporting documentation to the following address:

Director
Office of Ecosystem Protection (CAA)
U.S. Environmental Protection Agency-New England
5 Post Office Sq., Suite 100 (OEP06-5)
Boston, MA 02109-3912

and

Manager
Water Technical Unit (SEW)
U.S. Environmental Protection Agency
5 Post Office Sq., Suite 100 (OES04-4)
Boston, MA 02109-3912

Note: USEPA Region 1 retains the right to modify any part of the alternate dilution water policy stated in this protocol at any time. Any changes to this policy will be documented in the annual DMR posting.

See the most current annual DMR instructions which can be found on the EPA Region 1 website at http://www.epa.gov/region1/enforcement/water/dmr.html *for further important details on alternate dilution water substitution requests.*

It may prove beneficial to have the proposed dilution water source screened for suitability prior to toxicity testing. EPA strongly urges that screening be done prior to set up of a full definitive toxicity test any time there is question about the dilution water's ability to support acceptable performance as outlined in the 'test acceptability' section of the protocol.

V. TEST CONDITIONS

The following tables summarize the accepted daphnid and fathead minnow toxicity test conditions and test acceptability criteria:

EPA NEW ENGLAND EFFLUENT TOXICITY TEST CONDITIONS FOR THE DAPHNID, CERIODAPHNIA DUBIA 48 HOUR ACUTE TESTS[1]

1.	Test type	Static, non-renewal
2.	Temperature (^{o}C)	20 $\pm$ 1^{o}C or 25 $\pm$ 1^{o}C
3.	Light quality	Ambient laboratory illumination
4.	Photoperiod	16 hour light, 8 hour dark
5.	Test chamber size	Minimum 30 ml
6.	Test solution volume	Minimum 15 ml
7.	Age of test organisms	1-24 hours (neonates)
8.	No. of daphnids per test chamber	5
9.	No. of replicate test chambers per treatment	4
10.	Total no. daphnids per test concentration	20
11.	Feeding regime	As per manual, lightly feed YCT and Selenastrum to newly released organisms while holding prior to initiating test
12.	Aeration	None
13.	Dilution water[2]	Receiving water, other surface water, synthetic water adjusted to the hardness and alkalinity of the receiving water (prepared using either Millipore Milli-Q^{R} or equivalent deionized water and reagent grade chemicals according to EPA acute toxicity test manual) or deionized water combined with mineral water to appropriate hardness.
14.	Dilution series	$\geq$ 0.5, must bracket the permitted RWC
15.	Number of dilutions	5 plus receiving water and laboratory water control and thiosulfate control, as necessary. An additional dilution at the permitted effluent concentration (% effluent) is required if it is not included in the dilution

		series.
16.	Effect measured	Mortality-no movement of body or appendages on gentle prodding
17.	Test acceptability	90% or greater survival of test organisms in dilution water control solution
18.	Sampling requirements	For on-site tests, samples must be used within 24 hours of the time that they are removed from the sampling device. For off-site tests, samples must first be used within 36 hours of collection.
19.	Sample volume required	Minimum 1 liter

Footnotes:

1. Adapted from EPA-821-R-02-012.
2. Standard prepared dilution water must have hardness requirements to generally reflect the characteristics of the receiving water.

EPA NEW ENGLAND TEST CONDITIONS FOR THE FATHEAD MINNOW (PIMEPHALES PROMELAS) 48 HOUR ACUTE TEST[1]

1.	Test Type	Static, non-renewal
2.	Temperature (^{o}C)	20 $\pm$ 1 ^{o} C or 25 $\pm$ 1^{o}C
3.	Light quality	Ambient laboratory illumination
4.	Photoperiod	16 hr light, 8 hr dark
5.	Size of test vessels	250 mL minimum
6.	Volume of test solution	Minimum 200 mL/replicate
7.	Age of fish	1-14 days old and age within 24 hrs of each other
8.	No. of fish per chamber	10
9.	No. of replicate test vessels per treatment	4
10.	Total no. organisms per concentration	40
11.	Feeding regime	As per manual, lightly feed test age larvae using concentrated brine shrimp nauplii while holding prior to initiating test
12.	Aeration	None, unless dissolved oxygen (D.O.) concentration falls below 4.0 mg/L, at which time gentle single bubble aeration should be started at a rate of less than 100 bubbles/min. (Routine D.O. check is recommended.)
13.	dilution water[2]	Receiving water, other surface water, synthetic water adjusted to the hardness and alkalinity of the receiving water (prepared using either Millipore Milli-Q^{R} or equivalent deionized and reagent grade chemicals according to EPA acute toxicity test manual) or deionized water combined with mineral water to appropriate hardness.
14.	Dilution series	$\geq$ 0.5, must bracket the permitted RWC

15.	Number of dilutions	5 plus receiving water and laboratory water control and thiosulfate control, as necessary. An additional dilution at the permitted effluent concentration (% effluent) is required if it is not included in the dilution series.
16.	Effect measured	Mortality-no movement on gentle prodding
17.	Test acceptability	90% or greater survival of test organisms in dilution water control solution
18.	Sampling requirements	For on-site tests, samples must be used within 24 hours of the time that they are removed from the sampling device. For off-site tests, samples are used within 36 hours of collection.
19.	Sample volume required	Minimum 2 liters

Footnotes:

1. Adapted from EPA-821-R-02-012
2. Standard dilution water must have hardness requirements to generally reflect characteristics of the receiving water.

VI. CHEMICAL ANALYSIS

At the beginning of a static acute toxicity test, pH, conductivity, total residual chlorine, oxygen, hardness, alkalinity and temperature must be measured in the highest effluent concentration and the dilution water. Dissolved oxygen, pH and temperature are also measured at 24 and 48 hour intervals in all dilutions. The following chemical analyses shall be performed on the 100 percent effluent sample and the upstream water sample for each sampling event.

Parameter	Effluent	Receiving Water	ML (mg/l)
Hardness[1]	x	x	0.5
Total Residual Chlorine (TRC)[2, 3]	x		0.02
Alkalinity	x	x	2.0
pH	x	x	--
Specific Conductance	x	x	--
Total Solids	x		--
Total Dissolved Solids	x		--
Ammonia	x	x	0.1
Total Organic Carbon	x	x	0.5
Total Metals			
Cd	x	x	0.0005
Pb	x	x	0.0005
Cu	x	x	0.003
Zn	x	x	0.005
Ni	x	x	0.005
Al	x	x	0.02
Other as permit requires			

Notes:

1. Hardness may be determined by:
   - APHA Standard Methods for the Examination of Water and Wastewater , 21st Edition
     - Method 2340B (hardness by calculation)
     - Method 2340C (titration)
2. Total Residual Chlorine may be performed using any of the following methods provided the required minimum limit (ML) is met.
   - APHA Standard Methods for the Examination of Water and Wastewater , 21st Edition
     - Method 4500-CL E Low Level Amperometric Titration
     - Method 4500-CL G DPD Colorimetric Method
3. Required to be performed on the sample used for WET testing prior to its use for toxicity testing.

VII. TOXICITY TEST DATA ANALYSIS

LC50 Median Lethal Concentration (Determined at 48 Hours)

Methods of Estimation:

- Probit Method
- Spearman-Karber
- Trimmed Spearman-Karber
- Graphical

See the flow chart in Figure 6 on p. 73 of EPA-821-R-02-012 for appropriate method to use on a given data set.

No Observed Acute Effect Level (NOAEL)

See the flow chart in Figure 13 on p. 87 of EPA-821-R-02-012.

VIII. TOXICITY TEST REPORTING

A report of the results will include the following:

- Description of sample collection procedures, site description
- Names of individuals collecting and transporting samples, times and dates of sample collection and analysis on chain-of-custody
- General description of tests: age of test organisms, origin, dates and results of standard toxicant tests; light and temperature regime; other information on test conditions if different than procedures recommended. Reference toxicant test data should be included.
- All chemical/physical data generated. (Include minimum detection levels and minimum quantification levels.)
- Raw data and bench sheets.
- Provide a description of dechlorination procedures (as applicable).
- Any other observations or test conditions affecting test outcome.

NPDES PART II STANDARD CONDITIONS
(January, 2007)

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PART II. A. GENERAL REQUIREMENTS

1. Duty to Comply

The permittee must comply with all conditions of this permit. Any permit noncompliance constitutes a violation of the Clean Water Act (CWA) and is grounds for enforcement action; for permit termination, revocation and reissuance, or modification; or for denial of a permit renewal application.

a. The permittee shall comply with effluent standards or prohibitions established under Section 307(a) of the sludge use or disposal established under Section 405(d) of the CWA within the time provided in the regulations that establish these standards or prohibitions, even if the permit has not yet been modified to incorporate the requirements.

b. The CWA provides that any person who violates Section 301, 302, 306, 307, 308, 318, or 405 of the CWA or any permit condition or limitation implementing any of such sections in a permit issued under Section 402, or any requirement imposed in a pretreatment program approved under Section 402 (a)(3) or 402 (b)(8) of the CWA is subject to a civil penalty not to exceed $25,000 per day for each violation. Any person who negligently violates such requirements is subject to a fine of not less than $2,500 nor more than $25,000 per day of violation, or by imprisonment for not more than 1 year, or both. Any person who knowingly violates such requirements is subject to a fine of not less than $5,000 nor more than $50,000 per day of violation, or by imprisonment for not more than 3 years, or both.

c. Any person may be assessed an administrative penalty by the Administrator for violating Section 301, 302, 306, 307, 308, 318, or 405 of the CWA, or any permit condition or limitation implementing any of such sections in a permit issued under Section 402 of the CWA. Administrative penalties for Class I violations are not to exceed $10,000 per violation, with the maximum amount of any Class I penalty assessed not to exceed $25,000. Penalties for Class II violations are not to exceed $10,000 per day for each day during which the violation continues, with the maximum amount of any Class II penalty not to exceed $125,000.

Note: See 40 CFR §122.41(a)(2) for complete “Duty to Comply” regulations.

2. Permit Actions

This permit may be modified, revoked and reissued, or terminated for cause. The filing of a request by the permittee for a permit modification, revocation and reissuance, or termination, or notifications of planned changes or anticipated noncompliance does not stay any permit condition.

3. Duty to Provide Information

The permittee shall furnish to the Regional Administrator, within a reasonable time, any information which the Regional Administrator may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit, or to determine compliance with this permit. The permittee shall also furnish to the Regional Administrator, upon request, copies of records required to be kept by this permit.

4. Reopener Clause

The Regional Administrator reserves the right to make appropriate revisions to this permit in order to establish any appropriate effluent limitations, schedules of compliance, or other provisions which may be authorized under the CWA in order to bring all discharges into compliance with the CWA.

For any permit issued to a treatment works treating domestic sewage (including "sludge-only facilities"), the Regional Administrator or Director shall include a reopener clause to incorporate any applicable standard for sewage sludge use or disposal promulgated under Section 405 (d) of the CWA. The Regional Administrator or Director may promptly modify or revoke and reissue any permit containing the reopener clause required by this paragraph if the standard for sewage sludge use or disposal is more stringent than any requirements for sludge use or disposal in the permit, or contains a pollutant or practice not limited in the permit.

Federal regulations pertaining to permit modification, revocation and reissuance, and termination are found at 40 CFR §122.62, 122.63, 122.64, and 124.5.

5. Oil and Hazardous Substance Liability

Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the permittee from responsibilities, liabilities or penalties to which the permittee is or may be subject under Section 311 of the CWA, or Section 106 of the Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA).

6. Property Rights

The issuance of this permit does not convey any property rights of any sort, nor any exclusive privileges.

7. Confidentiality of Information

a. In accordance with 40 CFR Part 2, any information submitted to EPA pursuant to these regulations may be claimed as confidential by the submitter. Any such claim must be asserted at the time of submission in the manner prescribed on the application form or instructions or, in the case of other submissions, by stamping the words "confidential business information" on each page containing such information. If no claim is made at the time of submission, EPA may make the information available to the public without further notice. If a claim is asserted, the information will be treated in accordance with the procedures in 40 CFR Part 2 (Public Information).

b. Claims of confidentiality for the following information will be denied:

(1) The name and address of any permit applicant or permittee;
(2) Permit applications, permits, and effluent data as defined in 40 CFR §2.302(a)(2).

c. Information required by NPDES application forms provided by the Regional Administrator under 40 CFR §122.21 may not be claimed confidential. This includes information submitted on the forms themselves and any attachments used to supply information required by the forms.

8. Duty to Reapply

If the permittee wishes to continue an activity regulated by this permit after its expiration date, the permittee must apply for and obtain a new permit. The permittee shall submit a new application at least 180 days before the expiration date of the existing permit, unless permission for a later date has been granted by the Regional Administrator. (The Regional Administrator shall not grant permission for applications to be submitted later than the expiration date of the existing permit.)

9. State Authorities

Nothing in Part 122, 123, or 124 precludes more stringent State regulation of any activity covered by these regulations, whether or not under an approved State program.

10. Other Laws

The issuance of a permit does not authorize any injury to persons or property or invasion of other private rights, nor does it relieve the permittee of its obligation to comply with any other applicable Federal, State, or local laws and regulations.

PART II. B. OPERATION AND MAINTENANCE OF POLLUTION CONTROLS

1. Proper Operation and Maintenance

The permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the permittee to achieve compliance with the conditions of this permit and with the requirements of storm water pollution prevention plans. Proper operation and maintenance also includes adequate laboratory controls and appropriate quality assurance procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems only when the operation is necessary to achieve compliance with the conditions of the permit.

2. Need to Halt or Reduce Not a Defense

It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

3. Duty to Mitigate

The permittee shall take all reasonable steps to minimize or prevent any discharge or sludge use or disposal in violation of this permit which has a reasonable likelihood of adversely affecting human health or the environment.

4. Bypass

a. Definitions

(1) *Bypass* means the intentional diversion of waste streams from any portion of a treatment facility.

(2) *Severe property damage* means substantial physical damage to property, damage to the treatment facilities which causes them to become inoperable, or substantial and permanent loss of natural resources which can be reasonably expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production.

b. Bypass not exceeding limitations

The permittee may allow any bypass to occur which does not cause effluent limitations to be exceeded, but only if it also is for essential maintenance to assure efficient operation. These bypasses are not subject to the provision of Paragraphs B.4.c. and 4.d. of this section.

c. Notice

(1) Anticipated bypass. If the permittee knows in advance of the need for a bypass, it shall submit prior notice, if possible at least ten days before the date of the bypass.
(2) Unanticipated bypass. The permittee shall submit notice of an unanticipated bypass as required in paragraph D.1.e. of this part (Twenty-four hour reporting).

d. Prohibition of bypass

Bypass is prohibited, and the Regional Administrator may take enforcement action against a permittee for bypass, unless:

(1) Bypass was unavoidable to prevent loss of life, personal injury, or severe property damage;
(2) There were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate back-up equipment should have been installed in the exercise of reasonable engineering judgment to prevent a bypass which occurred during normal periods of equipment downtime or preventative maintenance; and
(3) i) The permittee submitted notices as required under Paragraph 4.c. of this section.
ii) The Regional Administrator may approve an anticipated bypass, after considering its adverse effects, if the Regional Administrator determines that it will meet the three conditions listed above in paragraph 4.d. of this section.

5. Upset

a. Definition. *Upset* means an exceptional incident in which there is an unintentional and temporary noncompliance with technology-based permit effluent limitations because of factors beyond the reasonable control of the permittee. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, or careless or improper operation.

b. Effect of an upset. An upset constitutes an affirmative defense to an action brought for noncompliance with such technology-based permit effluent limitations if the requirements of paragraph B.5.c. of this section are met. No determination made during

administrative review of claims that noncompliance was caused by upset, and before an action for noncompliance, is final administrative action subject to judicial review.

c. Conditions necessary for a demonstration of upset. A permittee who wishes to establish the affirmative defense of upset shall demonstrate, through properly signed, contemporaneous operating logs, or other relevant evidence that:

(1) An upset occurred and that the permittee can identify the cause(s) of the upset;
(2) The permitted facility was at the time being properly operated;
(3) The permittee submitted notice of the upset as required in paragraphs D.1.a. and 1.e. (Twenty-four hour notice); and
(4) The permittee complied with any remedial measures required under B.3. above.

d. Burden of proof. In any enforcement proceeding the permittee seeking to establish the occurrence of an upset has the burden of proof.

PART II. C. MONITORING REQUIREMENTS

1. Monitoring and Records

a. Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity.

b. Except for records for monitoring information required by this permit related to the permittee's sewage sludge use and disposal activities, which shall be retained for a period of at least five years (or longer as required by 40 CFR Part 503), the permittee shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by this permit, and records of all data used to complete the application for this permit, for a period of at least 3 years from the date of the sample, measurement, report or application except for the information concerning storm water discharges which must be retained for a total of 6 years. This retention period may be extended by request of the Regional Administrator at any time.

c. Records of monitoring information shall include:

(1) The date, exact place, and time of sampling or measurements;
(2) The individual(s) who performed the sampling or measurements;
(3) The date(s) analyses were performed;
(4) The individual(s) who performed the analyses;
(5) The analytical techniques or methods used; and
(6) The results of such analyses.

d. Monitoring results must be conducted according to test procedures approved under 40 CFR Part 136 or, in the case of sludge use or disposal, approved under 40 CFR Part 136 unless otherwise specified in 40 CFR Part 503, unless other test procedures have been specified in the permit.

e. The CWA provides that any person who falsifies, tampers with, or knowingly renders inaccurate any monitoring device or method required to be maintained under this permit shall, upon conviction, be punished by a fine of not more than $10,000, or by

imprisonment for not more than 2 years, or both. If a conviction of a person is for a violation committed after a first conviction of such person under this paragraph, punishment is a fine of not more than $20,000 per day of violation, or by imprisonment of not more than 4 years, or both.

2. Inspection and Entry

The permittee shall allow the Regional Administrator or an authorized representative (including an authorized contractor acting as a representative of the Administrator), upon presentation of credentials and other documents as may be required by law, to:

a. Enter upon the permittee's premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of this permit;

b. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;

c. Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this permit; and

d. Sample or monitor at reasonable times, for the purposes of assuring permit compliance or as otherwise authorized by the CWA, any substances or parameters at any location.

PART II. D. REPORTING REQUIREMENTS

1. Reporting Requirements

a. Planned Changes. The permittee shall give notice to the Regional Administrator as soon as possible of any planned physical alterations or additions to the permitted facility. Notice is only required when:

(1) The alteration or addition to a permitted facility may meet one of the criteria for determining whether a facility is a new source in 40 CFR§122.29(b); or
(2) The alteration or addition could significantly change the nature or increase the quantities of the pollutants discharged. This notification applies to pollutants which are subject neither to the effluent limitations in the permit, nor to the notification requirements at 40 CFR§122.42(a)(1).
(3) The alteration or addition results in a significant change in the permittee's sludge use or disposal practices, and such alteration, addition or change may justify the application of permit conditions different from or absent in the existing permit, including notification of additional use or disposal sites not reported during the permit application process or not reported pursuant to an approved land application plan.

b. Anticipated noncompliance. The permittee shall give advance notice to the Regional Administrator of any planned changes in the permitted facility or activity which may result in noncompliance with permit requirements.

c. Transfers. This permit is not transferable to any person except after notice to the Regional Administrator. The Regional Administrator may require modification or revocation and reissuance of the permit to change the name of the permittee and

incorporate such other requirements as may be necessary under the CWA. (See 40 CFR Part 122.61; in some cases, modification or revocation and reissuance is mandatory.)

d. Monitoring reports. Monitoring results shall be reported at the intervals specified elsewhere in this permit.

(1) Monitoring results must be reported on a Discharge Monitoring Report (DMR) or forms provided or specified by the Director for reporting results of monitoring of sludge use or disposal practices.

(2) If the permittee monitors any pollutant more frequently than required by the permit using test procedures approved under 40 CFR Part 136 or, in the case of sludge use or disposal, approved under 40 CFR Part 136 unless otherwise specified in 40 CFR Part 503, or as specified in the permit, the results of the monitoring shall be included in the calculation and reporting of the data submitted in the DMR or sludge reporting form specified by the Director.

(3) Calculations for all limitations which require averaging or measurements shall utilize an arithmetic mean unless otherwise specified by the Director in the permit.

e. Twenty-four hour reporting.

(1) The permittee shall report any noncompliance which may endanger health or the environment. Any information shall be provided orally within 24 hours from the time the permittee becomes aware of the circumstances.

A written submission shall also be provided within 5 days of the time the permittee becomes aware of the circumstances. The written submission shall contain a description of the noncompliance and its cause; the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance.

(2) The following shall be included as information which must be reported within 24 hours under this paragraph.

(a) Any unanticipated bypass which exceeds any effluent limitation in the permit. (See 40 CFR §122.41(g).)
(b) Any upset which exceeds any effluent limitation in the permit.
(c) Violation of a maximum daily discharge limitation for any of the pollutants listed by the Regional Administrator in the permit to be reported within 24 hours. (See 40 CFR §122.44(g).)

(3) The Regional Administrator may waive the written report on a case-by-case basis for reports under Paragraph D.1.e. if the oral report has been received within 24 hours.

f. Compliance Schedules. Reports of compliance or noncompliance with, any progress reports on, interim and final requirements contained in any compliance schedule of this permit shall be submitted no later than 14 days following each schedule date.

g. Other noncompliance. The permittee shall report all instances of noncompliance not reported under Paragraphs D.1.d., D.1.e., and D.1.f. of this section, at the time monitoring reports are submitted. The reports shall contain the information listed in Paragraph D.1.e. of this section.

h. Other information. Where the permittee becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application or in any report to the Regional Administrator, it shall promptly submit such facts or information.

2. Signatory Requirement

a. All applications, reports, or information submitted to the Regional Administrator shall be signed and certified. (See 40 CFR §122.22)

b. The CWA provides that any person who knowingly makes any false statement, representation, or certification in any record or other document submitted or required to be maintained under this permit, including monitoring reports or reports of compliance or noncompliance shall, upon conviction, be punished by a fine of not more than $10,000 per violation, or by imprisonment for not more than 2 years per violation, or by both.

3. Availability of Reports.

Except for data determined to be confidential under Paragraph A.8. above, all reports prepared in accordance with the terms of this permit shall be available for public inspection at the offices of the State water pollution control agency and the Regional Administrator. As required by the CWA, effluent data shall not be considered confidential. Knowingly making any false statements on any such report may result in the imposition of criminal penalties as provided for in Section 309 of the CWA.

PART II. E. DEFINITIONS AND ABBREVIATIONS

1. Definitions for Individual NPDES Permits including Storm Water Requirements

Administrator means the Administrator of the United States Environmental Protection Agency, or an authorized representative.

Applicable standards and limitations means all, State, interstate, and Federal standards and limitations to which a “discharge”, a “sewage sludge use or disposal practice”, or a related activity is subject to, including “effluent limitations”, water quality standards, standards of performance, toxic effluent standards or prohibitions, “best management practices”, pretreatment standards, and “standards for sewage sludge use and disposal” under Sections 301, 302, 303, 304, 306, 307, 308, 403, and 405 of the CWA.

Application means the EPA standard national forms for applying for a permit, including any additions, revisions, or modifications to the forms; or forms approved by EPA for use in "approved States", including any approved modifications or revisions.

Average means the arithmetic mean of values taken at the frequency required for each parameter over the specified period. For total and/or fecal coliforms and Escherichia coli, the average shall be the geometric mean.

Average monthly discharge limitation means the highest allowable average of "daily discharges" over a calendar month calculated as the sum of all "daily discharges" measured during a calendar month divided by the number of "daily discharges" measured during that month.

Average weekly discharge limitation means the highest allowable average of "daily discharges" measured during the calendar week divided by the number of "daily discharges" measured during the week.

Best Management Practices (BMPs) means schedules of activities, prohibitions of practices, maintenance procedures, and other management practices to prevent or reduce the pollution of "waters of the United States." BMPs also include treatment requirements, operating procedures, and practices to control plant site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material storage.

Best Professional Judgment (BPJ) means a case-by-case determination of Best Practicable Treatment (BPT), Best Available Treatment (BAT), or other appropriate technology-based standard based on an evaluation of the available technology to achieve a particular pollutant reduction and other factors set forth in 40 CFR §125.3 (d).

Coal Pile Runoff means the rainfall runoff from or through any coal storage pile.

Composite Sample means a sample consisting of a minimum of eight grab samples of equal volume collected at equal intervals during a 24-hour period (or lesser period as specified in the section on Monitoring and Reporting) and combined proportional to flow, or a sample consisting of the same number of grab samples, or greater, collected proportionally to flow over that same time period.

Construction Activities - The following definitions apply to construction activities:

(a) Commencement of Construction is the initial disturbance of soils associated with clearing, grading, or excavating activities or other construction activities.

(b) Dedicated portable asphalt plant is a portable asphalt plant located on or contiguous to a construction site and that provides asphalt only to the construction site that the plant is located on or adjacent to. The term dedicated portable asphalt plant does not include facilities that are subject to the asphalt emulsion effluent limitation guideline at 40 CFR Part 443.

(c) Dedicated portable concrete plant is a portable concrete plant located on or contiguous to a construction site and that provides concrete only to the construction site that the plant is located on or adjacent to.

(d) Final Stabilization means that all soil disturbing activities at the site have been complete, and that a uniform perennial vegetative cover with a density of 70% of the cover for unpaved areas and areas not covered by permanent structures has been established or equivalent permanent stabilization measures (such as the use of riprap, gabions, or geotextiles) have been employed.

(e) Runoff coefficient means the fraction of total rainfall that will appear at the conveyance as runoff.

Contiguous zone means the entire zone established by the United States under Article 24 of the Convention on the Territorial Sea and the Contiguous Zone.

Continuous discharge means a "discharge" which occurs without interruption throughout the operating hours of the facility except for infrequent shutdowns for maintenance, process changes, or similar activities.

CWA means the Clean Water Act (formerly referred to as the Federal Water Pollution Control Act or Federal Water Pollution Control Act Amendments of 1972) Pub. L. 92-500, as amended by Pub. L. 95-217, Pub. L. 95-576, Pub. L. 96-483, and Pub. L. 97-117; 33 USC §§1251 et seq.

Daily Discharge means the discharge of a pollutant measured during the calendar day or any other 24-hour period that reasonably represents the calendar day for purposes of sampling. For pollutants with limitations expressed in units of mass, the "daily discharge" is calculated as the total mass of the pollutant discharged over the day. For pollutants with limitations expressed in other units of measurements, the "daily discharge" is calculated as the average measurement of the pollutant over the day.

Director normally means the person authorized to sign NPDES permits by EPA or the State or an authorized representative. Conversely, it also could mean the Regional Administrator or the State Director as the context requires.

Discharge Monitoring Report Form (DMR) means the EPA standard national form, including any subsequent additions, revisions, or modifications for the reporting of self-monitoring results by permittees. DMRs must be used by "approved States" as well as by EPA. EPA will supply DMRs to any approved State upon request. The EPA national forms may be modified to substitute the State Agency name, address, logo, and other similar information, as appropriate, in place of EPA's.

Discharge of a pollutant means:

(a) Any addition of any "pollutant" or combination of pollutants to "waters of the United States" from any "point source", or

(b) Any addition of any pollutant or combination of pollutants to the waters of the "contiguous zone" or the ocean from any point source other than a vessel or other floating craft which is being used as a means of transportation (See "Point Source" definition).

This definition includes additions of pollutants into waters of the United States from: surface runoff which is collected or channeled by man; discharges through pipes, sewers, or other conveyances owned by a State, municipality, or other person which do not lead

to a treatment works; and discharges through pipes, sewers, or other conveyances leading into privately owned treatment works.

This term does not include an addition of pollutants by any "indirect discharger."

Effluent limitation means any restriction imposed by the Regional Administrator on quantities, discharge rates, and concentrations of "pollutants" which are "discharged" from "point sources" into "waters of the United States", the waters of the "contiguous zone", or the ocean.

Effluent limitation guidelines means a regulation published by the Administrator under Section 304(b) of CWA to adopt or revise "effluent limitations".

EPA means the United States "Environmental Protection Agency".

Flow-weighted composite sample means a composite sample consisting of a mixture of aliquots where the volume of each aliquot is proportional to the flow rate of the discharge.

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

Hazardous Substance means any substance designated under 40 CFR Part 116 pursuant to Section 311 of the CWA.

Indirect Discharger means a non-domestic discharger introducing pollutants to a publicly owned treatment works.

Interference means a discharge which, alone or in conjunction with a discharge or discharges from other sources, both:

(a) Inhibits or disrupts the POTW, its treatment processes or operations, or its sludge processes, use or disposal; and

(b) Therefore is a cause of a violation of any requirement of the POTW's NPDES permit (including an increase in the magnitude or duration of a violation) or of the prevention of sewage sludge use or disposal in compliance with the following statutory provisions and regulations or permits issued thereunder (or more stringent State or local regulations): Section 405 of the Clean Water Act (CWA), the Solid Waste Disposal Act (SWDA) (including Title II, more commonly referred to as the Resources Conservation and Recovery Act (RCRA), and including State regulations contained in any State sludge management plan prepared pursuant to Subtitle D of the SDWA), the Clean Air Act, the Toxic Substances Control Act, and the Marine Protection Research and Sanctuaries Act.

Landfill means an area of land or an excavation in which wastes are placed for permanent disposal, and which is not a land application unit, surface impoundment, injection well, or waste pile.

Land application unit means an area where wastes are applied onto or incorporated into the soil surface (excluding manure spreading operations) for treatment or disposal.

Large and Medium municipal separate storm sewer system means all municipal separate storm sewers that are either: (i) located in an incorporated place (city) with a population of 100,000 or more as determined by the latest Decennial Census by the Bureau of Census (these cities are listed in Appendices F and 40 CFR Part 122); or (ii) located in the counties with unincorporated urbanized

populations of 100,000 or more, except municipal separate storm sewers that are located in the incorporated places, townships, or towns within such counties (these counties are listed in Appendices H and I of 40 CFR 122); or (iii) owned or operated by a municipality other than those described in Paragraph (i) or (ii) and that are designated by the Regional Administrator as part of the large or medium municipal separate storm sewer system.

Maximum daily discharge limitation means the highest allowable "daily discharge" concentration that occurs only during a normal day (24-hour duration).

Maximum daily discharge limitation (as defined for the Steam Electric Power Plants only) when applied to Total Residual Chlorine (TRC) or Total Residual Oxidant (TRO) is defined as "maximum concentration" or "Instantaneous Maximum Concentration" during the two hours of a chlorination cycle (or fraction thereof) prescribed in the Steam Electric Guidelines, 40 CFR Part 423. These three synonymous terms all mean "a value that shall not be exceeded" during the two-hour chlorination cycle. This interpretation differs from the specified NPDES Permit requirement, 40 CFR § 122.2, where the two terms of "Maximum Daily Discharge" and "Average Daily Discharge" concentrations are specifically limited to the daily (24-hour duration) values.

Municipality means a city, town, borough, county, parish, district, association, or other public body created by or under State law and having jurisdiction over disposal of sewage, industrial wastes, or other wastes, or an Indian tribe or an authorized Indian tribe organization, or a designated and approved management agency under Section 208 of the CWA.

National Pollutant Discharge Elimination System means the national program for issuing, modifying, revoking and reissuing, terminating, monitoring and enforcing permits, and imposing and enforcing pretreatment requirements, under Sections 307, 402, 318, and 405 of the CWA. The term includes an "approved program".

New Discharger means any building, structure, facility, or installation:

(a) From which there is or may be a "discharge of pollutants";

(b) That did not commence the "discharge of pollutants" at a particular "site" prior to August 13, 1979;

(c) Which is not a "new source"; and

(d) Which has never received a finally effective NPDES permit for discharges at that "site".

This definition includes an "indirect discharger" which commences discharging into "waters of the United States" after August 13, 1979. It also includes any existing mobile point source (other than an offshore or coastal oil and gas exploratory drilling rig or a coastal oil and gas exploratory drilling rig or a coastal oil and gas developmental drilling rig) such as a seafood processing rig, seafood processing vessel, or aggregate plant, that begins discharging at a "site" for which it does not have a permit; and any offshore rig or coastal mobile oil and gas exploratory drilling rig or coastal mobile oil and gas developmental drilling rig that commences the discharge of pollutants after August 13, 1979, at a "site" under EPA's permitting jurisdiction for which it is not covered by an individual or general permit and which is located in an area determined by the Regional Administrator in the issuance of a final permit to be in an area of biological concern. In determining whether an area is an area of biological concern, the Regional Administrator shall consider the factors specified in 40 CFR §§125.122 (a) (1) through (10).

An offshore or coastal mobile exploratory drilling rig or coastal mobile developmental drilling rig will be considered a "new discharger" only for the duration of its discharge in an area of biological concern.

New source means any building, structure, facility, or installation from which there is or may be a "discharge of pollutants", the construction of which commenced:

(a) After promulgation of standards of performance under Section 306 of CWA which are applicable to such source, or

(b) After proposal of standards of performance in accordance with Section 306 of CWA which are applicable to such source, but only if the standards are promulgated in accordance with Section 306 within 120 days of their proposal.

NPDES means "National Pollutant Discharge Elimination System".

Owner or operator means the owner or operator of any "facility or activity" subject to regulation under the NPDES programs.

Pass through means a Discharge which exits the POTW into waters of the United States in quantities or concentrations which, alone or in conjunction with a discharge or discharges from other sources, is a cause of a violation of any requirement of the POTW's NPDES permit (including an increase in the magnitude or duration of a violation).

Permit means an authorization, license, or equivalent control document issued by EPA or an "approved" State.

Person means an individual, association, partnership, corporation, municipality, State or Federal agency, or an agent or employee thereof.

Point Source means any discernible, confined, and discrete conveyance, including but not limited to any pipe ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operation, landfill leachate collection system, vessel, or other floating craft, from which pollutants are or may be discharged. This term does not include return flows from irrigated agriculture or agricultural storm water runoff (see 40 CFR §122.2).

Pollutant means dredged spoil, solid waste, incinerator residue, filter backwash, sewage, garbage, sewage sludge, munitions, chemical wastes, biological materials, radioactive materials (except those regulated under the Atomic Energy Act of 1954, as amended (42 U.S.C. §§2011 et seq.)), heat, wrecked or discarded equipment, rock, sand, cellar dirt and industrial, municipal, and agricultural waste discharged into water. It does not mean:

(a) Sewage from vessels; or

(b) Water, gas, or other material which is injected into a well to facilitate production of oil or gas, or water derived in association with oil and gas production and disposed of in a well, if the well is used either to facilitate production or for disposal purposes is approved by the authority of the State in which the well is located, and if the State determines that the injection or disposal will not result in the degradation of ground or surface water resources.

Primary industry category means any industry category listed in the NRDC settlement agreement (Natural Resources Defense Council et al. v. Train, 8 E.R.C. 2120 (D.D.C. 1976), modified 12 E.R.C. 1833 (D. D.C. 1979)); also listed in Appendix A of 40 CFR Part 122.

Privately owned treatment works means any device or system which is (a) used to treat wastes from any facility whose operation is not the operator of the treatment works or (b) not a "POTW".

Process wastewater means any water which, during manufacturing or processing, comes into direct contact with or results from the production or use of any raw material, intermediate product, finished product, byproduct, or waste product.

Publicly Owned Treatment Works (POTW) means any facility or system used in the treatment (including recycling and reclamation) of municipal sewage or industrial wastes of a liquid nature which is owned by a "State" or "municipality".

This definition includes sewers, pipes, or other conveyances only if they convey wastewater to a POTW providing treatment.

Regional Administrator means the Regional Administrator, EPA, Region I, Boston, Massachusetts.

Secondary Industry Category means any industry which is not a "primary industry category".

Section 313 water priority chemical means a chemical or chemical category which:

(1) is listed at 40 CFR §372.65 pursuant to Section 313 of the Emergency Planning and Community Right-To-Know Act (EPCRA) (also known as Title III of the Superfund Amendments and Reauthorization Act (SARA) of 1986);

(2) is present at or above threshold levels at a facility subject to EPCRA Section 313 reporting requirements; and

(3) satisfies at least one of the following criteria:

(i) are listed in Appendix D of 40 CFR Part 122 on either Table II (organic priority pollutants), Table III (certain metals, cyanides, and phenols), or Table V (certain toxic pollutants and hazardous substances);
(ii) are listed as a hazardous substance pursuant to Section 311(b)(2)(A) of the CWA at 40 CFR §116.4; or
(iii) are pollutants for which EPA has published acute or chronic water quality criteria.

Septage means the liquid and solid material pumped from a septic tank, cesspool, or similar domestic sewage treatment system, or a holding tank when the system is cleaned or maintained.

Sewage Sludge means any solid, semisolid, or liquid residue removed during the treatment of municipal wastewater or domestic sewage. Sewage sludge includes, but is not limited to, solids removed during primary, secondary, or advanced wastewater treatment, scum, septage, portable toilet pumpings, Type III Marine Sanitation Device pumpings (33 CFR Part 159), and sewage sludge products. Sewage sludge does not include grit or screenings, or ash generated during the incineration of sewage sludge.

Sewage sludge use or disposal practice means the collection, storage, treatment, transportation, processing, monitoring, use, or disposal of sewage sludge.

Significant materials includes, but is not limited to: raw materials, fuels, materials such as solvents, detergents, and plastic pellets, raw materials used in food processing or production, hazardous substance designated under section 101(14) of CERCLA, any chemical the facility is required to report pursuant to EPCRA Section 313, fertilizers, pesticides, and waste products such as ashes, slag, and sludge that have the potential to be released with storm water discharges.

Significant spills includes, but is not limited to, releases of oil or hazardous substances in excess of reportable quantities under Section 311 of the CWA (see 40 CFR §110.10 and §117.21) or Section 102 of CERCLA (see 40 CFR § 302.4).

Sludge-only facility means any "treatment works treating domestic sewage" whose methods of sewage sludge use or disposal are subject to regulations promulgated pursuant to Section 405(d) of the CWA, and is required to obtain a permit under 40 CFR §122.1(b)(3).

State means any of the 50 States, the District of Columbia, Guam, the Commonwealth of Puerto Rico, the Virgin Islands, American Samoa, the Trust Territory of the Pacific Islands.

Storm Water means storm water runoff, snow melt runoff, and surface runoff and drainage.

Storm water discharge associated with industrial activity means the discharge from any conveyance which is used for collecting and conveying storm water and which is directly related to manufacturing, processing, or raw materials storage areas at an industrial plant. (See 40 CFR §122.26 (b)(14) for specifics of this definition.

Time-weighted composite means a composite sample consisting of a mixture of equal volume aliquots collected at a constant time interval.

Toxic pollutants means any pollutant listed as toxic under Section 307 (a)(1) or, in the case of "sludge use or disposal practices" any pollutant identified in regulations implementing Section 405(d) of the CWA.

Treatment works treating domestic sewage means a POTW or any other sewage sludge or wastewater treatment devices or systems, regardless of ownership (including federal facilities), used in the storage, treatment, recycling, and reclamation of municipal or domestic sewage, including land dedicated for the disposal of sewage sludge. This definition does not include septic tanks or similar devices.

For purposes of this definition, "domestic sewage" includes waste and wastewater from humans or household operations that are discharged to or otherwise enter a treatment works. In States where there is no approved State sludge management program under Section 405(f) of the CWA, the Regional Administrator may designate any person subject to the standards for sewage sludge use and disposal in 40 CFR Part 503 as a "treatment works treating domestic sewage", where he or she finds that there is a potential for adverse effects on public health and the environment from poor sludge quality or poor sludge handling, use or disposal practices, or where he or she finds that such designation is necessary to ensure that such person is in compliance with 40 CFR Part 503.

Waste Pile means any non-containerized accumulation of solid, non-flowing waste that is used for treatment or storage.

Waters of the United States means:

(a) All waters which are currently used, were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of tide;

(b) All interstate waters, including interstate "wetlands";

(c) All other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, "wetlands", sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds the use, degradation, or destruction of which would affect or could affect interstate or foreign commerce including any such waters:

(1) Which are or could be used by interstate or foreign travelers for recreational or other purpose;

(2) From which fish or shellfish are or could be taken and sold in interstate or foreign commerce; or

(3) Which are used or could be used for industrial purposes by industries in interstate commerce;

(d) All impoundments of waters otherwise defined as waters of the United States under this definition;

(e) Tributaries of waters identified in Paragraphs (a) through (d) of this definition;

(f) The territorial sea; and

(g) "Wetlands" adjacent to waters (other than waters that are themselves wetlands) identified in Paragraphs (a) through (f) of this definition.

Waste treatment systems, including treatment ponds or lagoons designed to meet the requirements of the CWA (other than cooling ponds as defined in 40 CFR §423.11(m) which also meet the criteria of this definition) are not waters of the United States.

Wetlands means those areas that are inundated or saturated by surface or ground water at a frequency and duration to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas.

Whole Effluent Toxicity (WET) means the aggregate toxic effect of an effluent measured directly by a toxicity test. (See Abbreviations Section, following, for additional information.)

2. Definitions for NPDES Permit Sludge Use and Disposal Requirements.

Active sewage sludge unit is a sewage sludge unit that has not closed.

Aerobic Digestion is the biochemical decomposition of organic matter in sewage sludge into carbon dioxide and water by microorganisms in the presence of air.

Agricultural Land is land on which a food crop, a feed crop, or a fiber crop is grown. This includes range land and land used as pasture.

Agronomic rate is the whole sludge application rate (dry weight basis) designed:

(1) To provide the amount of nitrogen needed by the food crop, feed crop, fiber crop, cover crop, or vegetation grown on the land; and

(2) To minimize the amount of nitrogen in the sewage sludge that passes below the root zone of the crop or vegetation grown on the land to the ground water.

Air pollution control device is one or more processes used to treat the exit gas from a sewage sludge incinerator stack.

Anaerobic digestion is the biochemical decomposition of organic matter in sewage sludge into methane gas and carbon dioxide by microorganisms in the absence of air.

Annual pollutant loading rate is the maximum amount of a pollutant that can be applied to a unit area of land during a 365 day period.

Annual whole sludge application rate is the maximum amount of sewage sludge (dry weight basis) that can be applied to a unit area of land during a 365 day period.

Apply sewage sludge or sewage sludge applied to the land means land application of sewage sludge.

Aquifer is a geologic formation, group of geologic formations, or a portion of a geologic formation capable of yielding ground water to wells or springs.

Auxiliary fuel is fuel used to augment the fuel value of sewage sludge. This includes, but is not limited to, natural gas, fuel oil, coal, gas generated during anaerobic digestion of sewage sludge, and municipal solid waste (not to exceed 30 percent of the dry weight of the sewage sludge and auxiliary fuel together). Hazardous wastes are not auxiliary fuel.

Base flood is a flood that has a one percent chance of occurring in any given year (i.e. a flood with a magnitude equaled once in 100 years).

Bulk sewage sludge is sewage sludge that is not sold or given away in a bag or other container for application to the land.

Contaminate an aquifer means to introduce a substance that causes the maximum contaminant level for nitrate in 40 CFR §141.11 to be exceeded in ground water or that causes the existing concentration of nitrate in the ground water to increase when the existing concentration of nitrate in the ground water exceeds the maximum contaminant level for nitrate in 40 CFR §141.11.

Class I sludge management facility is any publicly owned treatment works (POTW), as defined in 40 CFR §501.2, required to have an approved pretreatment program under 40 CFR §403.8 (a) (including any POTW located in a state that has elected to assume local program responsibilities pursuant to 40 CFR §403.10 (e) and any treatment works treating domestic sewage, as defined in 40 CFR § 122.2,

classified as a Class I sludge management facility by the EPA Regional Administrator, or, in the case of approved state programs, the Regional Administrator in conjunction with the State Director, because of the potential for sewage sludge use or disposal practice to affect public health and the environment adversely.

Control efficiency is the mass of a pollutant in the sewage sludge fed to an incinerator minus the mass of that pollutant in the exit gas from the incinerator stack divided by the mass of the pollutant in the sewage sludge fed to the incinerator.

Cover is soil or other material used to cover sewage sludge placed on an active sewage sludge unit.

Cover crop is a small grain crop, such as oats, wheat, or barley, not grown for harvest.

Cumulative pollutant loading rate is the maximum amount of inorganic pollutant that can be applied to an area of land.

Density of microorganisms is the number of microorganisms per unit mass of total solids (dry weight) in the sewage sludge.

Dispersion factor is the ratio of the increase in the ground level ambient air concentration for a pollutant at or beyond the property line of the site where the sewage sludge incinerator is located to the mass emission rate for the pollutant from the incinerator stack.

Displacement is the relative movement of any two sides of a fault measured in any direction.

Domestic septage is either liquid or solid material removed from a septic tank, cesspool, portable toilet, Type III marine sanitation device, or similar treatment works that receives only domestic sewage. Domestic septage does not include liquid or solid material removed from a septic tank, cesspool, or similar treatment works that receives either commercial wastewater or industrial wastewater and does not include grease removed from a grease trap at a restaurant.

Domestic sewage is waste and wastewater from humans or household operations that is discharged to or otherwise enters a treatment works.

Dry weight basis means calculated on the basis of having been dried at 105 degrees Celsius (°C) until reaching a constant mass (i.e. essentially 100 percent solids content).

Fault is a fracture or zone of fractures in any materials along which strata on one side are displaced with respect to the strata on the other side.

Feed crops are crops produced primarily for consumption by animals.

Fiber crops are crops such as flax and cotton.

Final cover is the last layer of soil or other material placed on a sewage sludge unit at closure.

Fluidized bed incinerator is an enclosed device in which organic matter and inorganic matter in sewage sludge are combusted in a bed of particles suspended in the combustion chamber gas.

Food crops are crops consumed by humans. These include, but are not limited to, fruits, vegetables, and tobacco.

Forest is a tract of land thick with trees and underbrush.

Ground water is water below the land surface in the saturated zone.

Holocene time is the most recent epoch of the Quaternary period, extending from the end of the Pleistocene epoch to the present.

Hourly average is the arithmetic mean of all the measurements taken during an hour. At least two measurements must be taken during the hour.

Incineration is the combustion of organic matter and inorganic matter in sewage sludge by high temperatures in an enclosed device.

Industrial wastewater is wastewater generated in a commercial or industrial process.

Land application is the spraying or spreading of sewage sludge onto the land surface; the injection of sewage sludge below the land surface; or the incorporation of sewage sludge into the soil so that the sewage sludge can either condition the soil or fertilize crops or vegetation grown in the soil.

Land with a high potential for public exposure is land that the public uses frequently. This includes, but is not limited to, a public contact site and reclamation site located in a populated area (e.g., a construction site located in a city).

Land with low potential for public exposure is land that the public uses infrequently. This includes, but is not limited to, agricultural land, forest and a reclamation site located in an unpopulated area (e.g., a strip mine located in a rural area).

Leachate collection system is a system or device installed immediately above a liner that is designed, constructed, maintained, and operated to collect and remove leachate from a sewage sludge unit.

Liner is soil or synthetic material that has a hydraulic conductivity of 1×10^{-7} centimeters per second or less.

Lower explosive limit for methane gas is the lowest percentage of methane gas in air, by volume, that propagates a flame at 25 degrees Celsius and atmospheric pressure.

Monthly average (Incineration) is the arithmetic mean of the hourly averages for the hours a sewage sludge incinerator operates during the month.

Monthly average (Land Application) is the arithmetic mean of all measurements taken during the month.

Municipality means a city, town, borough, county, parish, district, association, or other public body (including an intermunicipal agency of two or more of the foregoing entities) created by or under State law; an Indian tribe or an authorized Indian tribal organization having jurisdiction over sewage sludge management; or a designated and approved management agency under section 208 of the CWA, as amended. The definition includes a special district created under state law, such as a water district, sewer district, sanitary district, utility district, drainage district, or similar entity, or an integrated waste management facility as defined in section 201 (e) of the CWA, as amended, that has as one of its principal responsibilities the treatment, transport, use or disposal of sewage sludge.

Other container is either an open or closed receptacle. This includes, but is not limited to, a bucket, a box, a carton, and a vehicle or trailer with a load capacity of one metric ton or less.

Pasture is land on which animals feed directly on feed crops such as legumes, grasses, grain stubble, or stover.

Pathogenic organisms are disease-causing organisms. These include, but are not limited to, certain bacteria, protozoa, viruses, and viable helminth ova.

Permitting authority is either EPA or a State with an EPA-approved sludge management program.

Person is an individual, association, partnership, corporation, municipality, State or Federal Agency, or an agent or employee thereof.

Person who prepares sewage sludge is either the person who generates sewage sludge during the treatment of domestic sewage in a treatment works or the person who derives a material from sewage sludge.

pH means the logarithm of the reciprocal of the hydrogen ion concentration; a measure of the acidity or alkalinity of a liquid or solid material.

Place sewage sludge or sewage sludge placed means disposal of sewage sludge on a surface disposal site.

Pollutant (as defined in sludge disposal requirements) is an organic substance, an inorganic substance, a combination or organic and inorganic substances, or pathogenic organism that, after discharge and upon exposure, ingestion, inhalation, or assimilation into an organism either directly from the environment or indirectly by ingestion through the food chain, could on the basis on information available to the Administrator of EPA, cause death, disease, behavioral abnormalities, cancer, genetic mutations, physiological malfunctions (including malfunction in reproduction) or physical deformations in either organisms or offspring of the organisms.

Pollutant limit (for sludge disposal requirements) is a numerical value that describes the amount of a pollutant allowed per unit amount of sewage sludge (e.g., milligrams per kilogram of total solids); the amount of pollutant that can be applied to a unit of land (e.g., kilograms per hectare); or the volume of the material that can be applied to the land (e.g., gallons per acre).

Public contact site is a land with a high potential for contact by the public. This includes, but is not limited to, public parks, ball fields, cemeteries, plant nurseries, turf farms, and golf courses.

Qualified ground water scientist is an individual with a baccalaureate or post-graduate degree in the natural sciences or engineering who has sufficient training and experience in ground water hydrology and related fields, as may be demonstrated by State registration, professional certification, or completion of accredited university programs, to make sound professional judgments regarding ground water monitoring, pollutant fate and transport, and corrective action.

Range land is open land with indigenous vegetation.

Reclamation site is drastically disturbed land that is reclaimed using sewage sludge. This includes, but is not limited to, strip mines and construction sites.

Risk specific concentration is the allowable increase in the average daily ground level ambient air concentration for a pollutant from the incineration of sewage sludge at or beyond the property line of a site where the sewage sludge incinerator is located.

Runoff is rainwater, leachate, or other liquid that drains overland on any part of a land surface and runs off the land surface.

Seismic impact zone is an area that has 10 percent or greater probability that the horizontal ground level acceleration to the rock in the area exceeds 0.10 gravity once in 250 years.

Sewage sludge is a solid, semi-solid, or liquid residue generated during the treatment of domestic sewage in a treatment works. Sewage sludge includes, but is not limited to:, domestic septage; scum or solids removed in primary, secondary, or advanced wastewater treatment processes; and a material derived from sewage sludge. Sewage sludge does not include ash generated during the firing of sewage sludge in a sewage sludge incinerator or grit and screening generated during preliminary treatment of domestic sewage in treatment works.

Sewage sludge feed rate is either the average daily amount of sewage sludge fired in all sewage sludge incinerators within the property line of the site where the sewage sludge incinerators are located for the number of days in a 365 day period that each sewage sludge incinerator operates, or the average daily design capacity for all sewage sludge incinerators within the property line of the site where the sewage sludge incinerators are located.

Sewage sludge incinerator is an enclosed device in which only sewage sludge and auxiliary fuel are fired.

Sewage sludge unit is land on which only sewage sludge is placed for final disposal. This does not include land on which sewage sludge is either stored or treated. Land does not include waters of the United States, as defined in 40 CFR §122.2.

Sewage sludge unit boundary is the outermost perimeter of an active sewage sludge unit.

Specific oxygen uptake rate (SOUR) is the mass of oxygen consumed per unit time per unit mass of total solids (dry weight basis) in sewage sludge.

Stack height is the difference between the elevation of the top of a sewage sludge incinerator stack and the elevation of the ground at the base of the stack when the difference is equal to or less than 65 meters. When the difference is greater than 65 meters, stack height is the creditable stack height determined in accordance with 40 CFR §51.100 (ii).

State is one of the United States of America, the District of Columbia, the Commonwealth of Puerto Rico, the Virgin Islands, Guam, American Samoa, the Trust Territory of the Pacific Islands, the Commonwealth of the Northern Mariana Islands, and an Indian tribe eligible for treatment as a State pursuant to regulations promulgated under the authority of section 518(e) of the CWA.

Store or storage of sewage sludge is the placement of sewage sludge on land on which the sewage sludge remains for two years or less. This does not include the placement of sewage sludge on land for treatment.

Surface disposal site is an area of land that contains one or more active sewage sludge units.

Total hydrocarbons means the organic compounds in the exit gas from a sewage sludge incinerator stack measured using a flame ionization detection instrument referenced to propane.

Total solids are the materials in sewage sludge that remain as residue when the sewage sludge is dried at 103 to 105 degrees Celsius.

Treat or treatment of sewage sludge is the preparation of sewage sludge for final use or disposal. This includes, but is not limited to, thickening, stabilization, and dewatering of sewage sludge. This does not include storage of sewage sludge.

Treatment works is either a federally owned, publicly owned, or privately owned device or system used to treat (including recycle and reclaim) either domestic sewage or a combination of domestic sewage and industrial waste of a liquid nature.

Unstable area is land subject to natural or human-induced forces that may damage the structural components of an active sewage sludge unit. This includes, but is not limited to, land on which the soils are subject to mass movement.

Unstabilized solids are organic materials in sewage sludge that have not been treated in either an aerobic or anaerobic treatment process.

Vector attraction is the characteristic of sewage sludge that attracts rodents, flies, mosquitoes, or other organisms capable of transporting infectious agents.

Volatile solids is the amount of the total solids in sewage sludge lost when the sewage sludge is combusted at 550 degrees Celsius in the presence of excess air.

Wet electrostatic precipitator is an air pollution control device that uses both electrical forces and water to remove pollutants in the exit gas from a sewage sludge incinerator stack.

Wet scrubber is an air pollution control device that uses water to remove pollutants in the exit gas from a sewage sludge incinerator stack.

3. Commonly Used Abbreviations

BOD	Five-day biochemical oxygen demand unless otherwise specified
CBOD	Carbonaceous BOD
CFS	Cubic feet per second
COD	Chemical oxygen demand
Chlorine	
Cl_2	Total residual chlorine
TRC	Total residual chlorine which is a combination of free available chlorine (FAC, see below) and combined chlorine (chloramines, etc.)

TRO	Total residual chlorine in marine waters where halogen compounds are present
FAC	Free available chlorine (aqueous molecular chlorine, hypochlorous acid, and hypochlorite ion)
Coliform	
Coliform, Fecal	Total fecal coliform bacteria
Coliform, Total	Total coliform bacteria
Cont. (Continuous)	Continuous recording of the parameter being monitored, i.e. flow, temperature, pH, etc.
Cu. M/day or M^3/day	Cubic meters per day
DO	Dissolved oxygen
kg/day	Kilograms per day
lbs/day	Pounds per day
mg/l	Milligram(s) per liter
ml/l	Milliliters per liter
MGD	Million gallons per day
Nitrogen	
Total N	Total nitrogen
NH_3-N	Ammonia nitrogen as nitrogen
NO_3-N	Nitrate as nitrogen
NO_2-N	Nitrite as nitrogen
NO_3-NO_2	Combined nitrate and nitrite nitrogen as nitrogen
TKN	Total Kjeldahl nitrogen as nitrogen
Oil & Grease	Freon extractable material
PCB	Polychlorinated biphenyl
pH	A measure of the hydrogen ion concentration. A measure of the acidity or alkalinity of a liquid or material
Surfactant	Surface-active agent

Temp. °C	Temperature in degrees Centigrade
Temp. °F	Temperature in degrees Fahrenheit
TOC	Total organic carbon
Total P	Total phosphorus
TSS or NFR	Total suspended solids or total nonfilterable residue
Turb. or Turbidity	Turbidity measured by the Nephelometric Method (NTU)
ug/l	Microgram(s) per liter
WET	"Whole effluent toxicity" is the total effect of an effluent measured directly with a toxicity test.
C-NOEC	"Chronic (Long-term Exposure Test) – No Observed Effect Concentration". The highest tested concentration of an effluent or a toxicant at which no adverse effects are observed on the aquatic test organisms at a specified time of observation.
A-NOEC	"Acute (Short-term Exposure Test) – No Observed Effect Concentration" (see C-NOEC definition).
LC_{50}	LC_{50} is the concentration of a sample that causes mortality of 50% of the test population at a specific time of observation. The LC_{50} = 100% is defined as a sample of undiluted effluent.
ZID	Zone of Initial Dilution means the region of initial mixing surrounding or adjacent to the end of the outfall pipe or diffuser ports.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION I – NEW ENGLAND
5 POST OFFICE SQUARE – SUITE 100
BOSTON, MASSACHUSETTS 02109-3912

FACT SHEET

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

NPDES PERMIT No.: **NH0100498**

PUBLIC NOTICE START AND END DATES: September 26, 2014 – October 25, 2014

NAME AND ADDRESS OF APPLICANT:

Town of Warner
Attn. Jeremiah Menard
P.O. Box 252
Warner, New Hampshire 03278

NAME AND ADDRESS OF FACILITY WHERE DISCHARGE OCCURS:

Warner Village Water District
55 West Joppa Road
Warner, New Hampshire 03278

RECEIVING WATER: **Warner River**
(Hydrologic Code: 010700030304-16)

CLASSIFICATION: **B (Merrimack River Watershed)**

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Figure 1 Location Map

Figure 2 Flow Schematic

Appendices

Appendix A Warner Village Water District Effluent Data January 2010 - February 2014

Appendix B Metals Statistical Analysis

I. PROPOSED ACTION

The Warner Village Water District (WVWD) has applied to the U.S. Environmental Protection Agency (EPA) for reissuance of its National Pollutant Discharge Elimination System (NPDES) permit to discharge treated effluent into the designated receiving water, the Warner River. The facility collects and treats domestic, commercial and industrial wastewater from the Town of Warner. This facility does not accept septage. The collection system consists of separate sanitary sewers.

The current permit became effective December 22, 2006 and expired November 30, 2011. Because the permittee submitted a complete application per 40 Code of Federal Regulations (CFR) § 122.6, the EPA has administratively continued the permit.

II. TYPE OF FACILITY AND DISCHARGE LOCATION

The Warner Wastewater Treatment Facility (WWTF) was designed as a 0.11 million gallon per day (MGD) wastewater treatment facility using the extended aeration activated sludge process. In August 1995, the New Hampshire Department of Environmental Services (NHDES) approved a request by the Warner Village Water District to decrease their facility's design flow to 0.11 MGD.

Influent to the treatment plant first passes through a comminutor building containing grinders, an inline magnetic flow meter and a grit collector. Wastewater then flows to two oxidation ditches, which provide activated sludge biochemical treatment. Following biochemical treatment, wastewater is discharged to a secondary clarifier, where solids are settled. The majority of the settled solids are returned to the oxidation ditches; excess solids are wasted to an aerobic digester. The clarified effluent passes through a v-notch weir where the flow rate is measured and chlorine contact tanks where the effluent is disinfected with sodium hypochlorite. Following disinfection, residual chlorine is removed from the effluent by addition of sodium bisulfate. The treated effluent is then discharged to the Warner River via Outfall 001. The location of the WWTF and a process flow diagram are shown in Figures 1, and 2, respectively. The geographic coordinates of discharge outfall 001A are listed below:

Outfall No.	Description of Discharge	Outfall Location
001	Secondary Wastewater Treatment Plant Effluent	43°16'34"N/ 71º48'34"W

Excess settled solids in the aerobic digester are periodically decanted, with supernatant returned to the treatment plant influent flow and settled sludge trucked off-site. Sludge is transported to the Concord-Hall Street Wastewater Treatment Plant for final disposal. Grease and scum from the clarifier, along with the grit removed from the influent, hauled to the Concord Hall Street WWTF.

Information provided in the permittee's re-application states that the facility serves a population of approximately 500.

III. DESCRIPTION OF THE DISCHARGE

A quantitative description of the discharge in terms of significant effluent parameters based on 2010-2014 monitoring data can be found in **Appendix A**.

IV. LIMITATIONS AND CONDITIONS

The draft permit contains effluent limitations for five-day biochemical oxygen demand (BOD_5), total suspended solids (TSS), pH, *Escherichia coli (E. coli),* total residual chlorine (TRC), total phosphorus, total recoverable copper, and whole effluent toxicity (WET). In addition, the draft permit contains monitoring requirements for flow, ammonia nitrogen, hardness, and total recoverable aluminum, cadmium, copper, lead, nickel, and zinc. The effluent limitations and monitoring requirements may be found in Part I of the draft NPDES permit.

The basis for each limitation and monitoring requirement found in the draft permit is discussed further in this fact sheet.

V. PERMIT BASIS AND EXPLANATION OF EFFLUENT LIMITATION DERIVATION

General Statutory and Regulatory background

Congress enacted the Clean Water Act (CWA) "to restore and maintain the chemical, physical, and biological integrity of the Nation's waters" (CWA § 101(a)). To achieve this objective, the CWA makes it unlawful for any person to discharge any pollutant into waters of the United States from any point source, except as authorized by specified permitting sections of the CWA, one of which is Section 402 (see CWA §§ 301(a) and 402(a)). Section 402 establishes one of the CWA's principal permitting programs, the National Pollutant Discharge Elimination System (NPDES). Under this section of the CWA, EPA may "issue a permit for the discharge of any pollutant or combination of pollutants" in accordance with certain conditions (see CWA § 402(a)). NPDES permits generally contain discharge limitations and establish related monitoring and reporting requirements (see CWA § 402(a)(1) and (2)).

Section 301 of the CWA provides for two types of effluent limitations to be included in NPDES permits, technology-based effluent limitations and water quality-based effluent limitations (see CWA §§ 301, 303, and 304(b). Also see 40 CFR § Parts 122, 125, and 131). Technology-based limitations, generally developed on an industry-by-industry basis, reflect a specified level of pollutant reducing technology available and economically achievable for the type of facility being permitted (see CWA §301(b)). As a class, POTWs must meet performance-based requirements, which are based on secondary treatment. The secondary treatment technology guidelines (effluent limits) consist of technology-based requirements expressed in terms of BOD_5, TSS, and pH (see 40 CFR Part 133).

Water quality-based effluent limitations are developed and incorporated into NPDES discharge permits regardless of the decision made with respect to technology and economics in establishing technology-based limits. Specifically, Section 301(b)(1)(C) of the CWA requires achievement of "any more stringent limitation, including those necessary to meet water quality standards…established pursuant to any State law or regulation…" See 40 CFR §§ 122.4(d), 122.44(d)(1) (providing that a permit must contain effluent limits as necessary to protect State water quality standards, "including State narrative criteria for water quality") (emphasis added) and § 122.45(d)(5) providing in part that a permit incorporate any more stringent limits required by Section 301(b)(1)(C) of the CWA).

The CWA requires that states develop water quality standards for all water bodies within the state (see CWA § 303). Water quality standards consist of three elements: (1) one or more designated use for each waterbody or waterbody segment in the state; (2) water quality criteria consisting of numerical concentration levels and/or narrative statements specifying the amounts of various pollutants that may be present in each waterbody without impairing the designated use(s) of that waterbody; and (3) an

antidegradation provision focused on protecting high quality waters and protecting and maintaining the level of water quality necessary to protect existing uses (CWA § 303(c)(2)(a) and 40 CFR Part 131.12). The limits and conditions contained within the draft permit reflect the goal of the CWA and EPA to achieve and then to maintain water quality standards within the receiving water.

The applicable New Hampshire water quality standards can be found in the New Hampshire Code of Administrative Rules, Surface Water Quality Regulations, Chapter Env-Wq 1700 et seq. See generally, Title 50, Water Management and Protection, Chapter 485A, Water Pollution and Waste Disposal Section 485-A. These regulations were readopted effective May 21, 2008.

Receiving stream requirements are established according to numerical and narrative standards adopted under state law for each stream classification. When using chemical-specific numeric criteria from a state's water quality standards to develop permit limits, both the acute and chronic aquatic life criteria are used and expressed in terms of maximum allowable instream pollutant concentrations. Acute and chronic aquatic life criteria are generally implemented through maximum daily limits and average monthly limits, respectively. When a state has not established a numeric water quality criterion for a specific pollutant that is present in the effluent in a concentration that causes or has the reasonable potential to cause or contributes to a violation of a narrative criterion within a water quality standard, the permitting authority must establish limits in one or more of the following ways: (1) based on a calculated numeric criterion for the pollutant that the permitting authority demonstrates will attain and maintain applicable narrative water quality criteria and fully protect the designated uses; (2) on a case-by-case basis using CWA § 304(a) recommended water quality criteria, supplemented as necessary by other relevant information; or (3) in certain circumstances, based on an indicator parameter (40 CFR § 122.44(d)(1)(vi)(A-C)).

Under Section 301(b)(1) of the CWA, POTWs must have achieved effluent limitations based upon secondary treatment by July 1, 1977. Since all statutory deadlines for meeting technology-based effluent limitations established pursuant to the CWA have expired, the deadline for compliance with technology-based effluent limits for a POTW is the date of permit issuance (40 CFR § 125.3(a)). Extended compliance deadlines cannot be authorized by a NPDES permit if statutory deadlines have passed. The federal regulations governing EPA's NPDES program are generally found in 40 CFR Parts 122, 124, and 136.

Introduction

Pursuant to 40 CFR § 122.44(d)(1), NPDES permits must contain any requirements in addition to technology-based limits necessary to achieve water quality standards established under Section 303 of the CWA, including state narrative criteria for water quality. In addition, limitations "must control any pollutant or pollutant parameter (conventional, non-conventional, or toxic) which the Director determines are or may be discharged at a level which will cause, have the reasonable potential to cause, or contribute to an excursion above any water quality standard, including State narrative criteria for water quality (40 CFR § 122.44(d)(1)(i)). An excursion occurs if the actual or projected instream concentration exceeds the applicable criterion.

The Warner WWTF discharges treated effluent to the Warner River, which is classified by the State of New Hampshire as a Class B water. Class B waters shall be of the second highest quality and shall have no objectionable physical characteristics, and shall contain a dissolved oxygen content of at least 75 percent saturation and a minimum dissolved oxygen concentration of at least 5.0 mg/l (see RSA 485-A:8). The following designated uses are assigned to Class B waters: the protection and propagation of aquatic life and wildlife, for swimming and other recreational purposes; and, after treatment, for water supplies.

Sections 305(b) and 303(d) of the CWA require that states complete a water quality inventory and develop a list of impaired waters. Specifically, Section 303(d) of the CWA requires states to identify those water bodies that are not expected to meet surface water quality standards after the implementation of technology-based controls, and as such, require the development of a Total Maximum Daily Load (TMDL) for each pollutant that is prohibiting a designated use(s) from being attained. The results of the 305(b) assessments are used in the development of the State of New Hampshire's 303(d) lists, which are published every two years and identifies the water bodies which are not meeting (or are not expected to meet) water quality standards, identifies the designated use(s) which is impaired and also the pollutant(s) causing the impairment(s). For this section of the Warner River (010700030304-16**)** the fish consumption use is listed as impaired for mercury in fish tissue due to atmospheric deposition. The segments immediately upstream and downstream (010700030304-14 and -24, respectively**)** of the receiving water segment are listed as impaired for pH.

A statewide bacteria TMDL was approved by EPA on September 21, 2010. The TMDL includes an instantaneous *E. coli* target of 406 colonies/100 ml or less and a geometric mean target of 126 colonies/100 ml. The bacteria limits in the draft permit were developed to ensure that the Warner Village discharge complies with the TMDL requirements.

1. Reasonable Potential

In determining whether a discharge causes, has the reasonable potential to cause, or contributes to an excursion above a narrative or numeric criterion within a state water quality standard, EPA considers: (1) existing controls on point and non-point sources of pollution; (2) the variability of the pollutant or pollutant parameter in the effluent; (3) the sensitivity of the species to toxicity testing; (4) where appropriate, the dilution of the effluent in the receiving water; and (5) the statistical approach outlined in the *Technical Support Document for Water Quality-based Toxics Control, Section 3* (USEPA, March 1991 [EPA/505/2-90-001])(see also 40 CFR § 122.44(d)(1)(ii)).

2. Anti-backsliding

Section 402(o) of the CWA generally provides that the effluent limitations of a renewed, reissued, or modified permit must be at least as stringent as the comparable effluent limitations in the previous permit. EPA has also promulgated anti-backsliding regulations which are found at 40 CFR § 122.44(l). Unless applicable anti-backsliding requirements are met, the limits and conditions in the reissued permit must be at least as stringent as those in the previous permit. The limitations and conditions contained within the draft permit satisfy antibackslíding requirements.

3. State Certification

Section 401(a)(1) of the CWA requires all NPDES permit applicants to obtain a certification from the appropriate state agency stating that the permit will comply with all applicable federal effluent limitation and state water quality standards. See CWA § 401(a)(1). The regulatory provisions pertaining to state certification provide that EPA may not issue a permit until a certification is granted or waived by the state in which the discharge originates. 40 C.F.R. § 124.53(a). The regulations further provide that, "when certification is required…no final permit shall be issued…unless the final permit incorporated the requirements specified in the certification under § 124.53(e)." 40 C.F.R. § 124.55(a)(2). Section 124.53(e) in turn provides that the State certification shall include "any conditions more stringent than those in the draft permit which the State finds necessary" to assure compliance with, among other things, State water quality standards, see 40 C.F.R. 124.53(e)(2), and shall also include "[a] statement of the extent to which each condition of the draft permit can be made less stringent without violating the requirements of State law, including water quality standards," see

40 C.F.R. 124.53(e)(3).

However, when EPA reasonably believes that a State water quality standard requires a more stringent permit limitation than that reflected in a state certification, it has an independent duty under CWA §301(b)(1)(C) to include more stringent permit limitations. See 40 C.F.R. §§ 122.44(d)(1) and (5). It should be noted that under CWA § 401, EPA's duty to defer to considerations of State law is intended to prevent EPA from relaxing any requirements, limitations, or conditions imposed by State law. Therefore, "[a] State may not condition or deny a certification on the grounds that State law allows a less stringent permit condition." 40 C.F.R. § 124.55(c). In such an instance, the regulations provide that, "The Regional Administrator shall disregard any such certification conditions or denials as waivers of certification." Id. EPA regulations pertaining to permit limits based upon water quality standards and state requirements are contained in 40 C.F.R. § 122.4(d) and 40 C.F.R. § 122.44(d).

Design Flow

The Warner WWTF has a design flow of 0.11 MGD, which was used in the calculation of the available dilution as well as the effluent limitations for total residual chlorine, whole effluent toxicity, and the mass-based limits for BOD_5 and TSS, in accordance with the requirements found at 40 CFR §122.45(b).

The current permit, which became effective in 2007, requires reporting of the average monthly flows and the maximum daily flows for each month. The average monthly flow from January 2010 through February 2014 ranged from 0.042 MGD to 0.103 MGD.

The draft permit maintains the average monthly and maximum daily flow reporting requirements found in the current permit. The draft permit also maintains the requirement in the current permit for the permittee to submit to EPA and NHDES a projection of loadings, a program for maintaining satisfactory treatment levels, and plans for facility improvements whenever the effluent flow exceeds 80 percent of the facility's design flow capacity (or 0.088 MGD) for three consecutive months.

Conventional pollutants

1. Five-Day Biochemical Oxygen Demand (BOD_5)

The current permit includes BOD_5 loading limits of 27.5 lbs/day as a monthly average, 41.3 lbs/day as a weekly average, and 45.9 lbs/day as a daily maximum. The current permit also contains BOD_5 concentration limits of 30 mg/L as a monthly average, 45 mg/L as a weekly average, and 50 mg/L as a daily maximum. From January 2010 through February 2014, there were no violations of the BOD_5 limits.

The draft permit maintains the same limits as in the current permit and are consistent with antibacksliding requirements. The monitoring frequency in the draft permit is twice per week.

In accordance with the provisions of 40 CFR § 133.102(a)(4)(iii), the draft permit requires that the 30-day average percent removal of BOD_5 be no less than 85%.

2. Total Suspended Solids (TSS)

The current permit contains TSS limits, identical to those of BOD_5, of 27.5 lbs/day as a monthly average, 41.3 lbs/day as a weekly average, and 45.9 lbs/day as a daily maximum. The current permit also contains TSS concentration limits of 30 mg/L as a monthly average, 45 mg/L as a weekly average,

and 50 mg/L as a daily maximum. From January 2010 through February 2014, there were no permit exceedances of the TSS limit, with the reported values well below the permit limits.

The draft permit maintains the same limits as in the current permit coverage and are consistent with antibacksliding requirements. The monitoring frequency in the draft permit is twice per week.

In accordance with the provisions of 40 CFR § 133.102(a)(4)(iii), the draft permit requires that the 30-day average percent removal of TSS be no less than 85%.

3. pH

The current permit limits effluent pH to a range of 6.5 to 8.0. Effluent monitoring data submitted by the permittee from January 2010 through February 2014 indicates that the pH has been within this range for the last 36 months.

The draft permit limits pH to 6.5 to 8.0, based upon state certification requirements and the state's statutes found at RSA 485-A:8 II, requiring that "The pH range for said (Class B) waters shall be 6.5-8.0 except when due to natural causes." The permittee shall continue to monitor the pH of the effluent once per day.

4. Escherichia coli (E. coli)

The *E. coli* limitations in the current permit have been maintained in the draft permit, in keeping with the antibacksliding requirements of 40 CFR § 122.44(l). The limitations for *E. coli* in the draft permit are a geometric monthly mean (average monthly limit) of 126 colony forming units per 100 milliliters (cfu/ml) and a maximum daily limit of 406 cfu/100 ml, which are based on the water quality standards for Class B waters (non-designated beach areas) found at RSA 485-A:8 II. The limits in the draft permit are based on achieving water quality standards, and they are consistent with the assumptions and requirements of the statewide bacteria TMDL as required by 40 CFR 122.44(d)(1)(vii)(B). From January 2010 through February 2014, the reported levels were well below permit limits, and there were no exceedances.

The draft permit also requires *E. coli* samples to be collected concurrently with total residual chlorine samples. The monitoring frequency in the draft permit is three times per week.

<u>Available Dilution, Non-conventional and Toxic Pollutants</u>

Water quality-based effluent limitations for specific toxic pollutants are based on numeric chemical-specific criteria derived from extensive scientific studies. The EPA has summarized and published toxicity criteria for specific toxic pollutants in the *Quality Criteria for Water* (USEPA 1986 [EPA440/5-86-001]), commonly referred to as the "Gold Book". The Gold Book includes acute aquatic life criteria (to protect against the effects of short-term exposure, such as death) and chronic aquatic life criteria (to protect against the effects of long-term exposure, such as impaired growth). The State of New Hampshire adopted the Gold Book criteria (with certain exceptions) into the State's Surface Water Quality Regulations, which were readopted effective May 21, 2008. EPA uses the pollutant-specific criteria contained within the state standards along with the available dilution in the receiving water in the development of water quality-based effluent limitations.

1. Available Dilution

In accordance with New Hampshire's Water Quality Standards (RSA 485-A:8 VI, Env-Wq 1705.02), the available dilution for rivers and streams is based on a known or estimated value of the lowest

average flow which occurs for seven (7) consecutive days with a recurrence interval of once in ten (10) years (7Q10 flow). The 7Q10 is used for aquatic life and human health criteria for non-carcinogens, while the long-term harmonic mean flow is used for human health (for carcinogens only) in the receiving water (see Env-Wq 1702.44). Furthermore, ten percent of the receiving water's assimilative capacity is held in reserve for future needs in accordance with New Hampshire's Surface Water Quality Regulations (Env-Wq 1705.01).

To determine the 7Q10 flow at the Warner WWTF, the data at the Davisville Gage (USGS gage #01086000), located on the Warner River approximately 5.5 miles downstream of the Warner WWTF, was used. Per the NHDES-Wastewater Engineering Section's 2002 policy on calculating 7Q10, Warner WWTF's 7Q10 and dilution factor are computed with the following steps:

1) Using the data from the Davisville gage and the ratio of the 7Q10 flows calculated from the Dingman Equation, the 7Q10 at the WWTF is calculated as follows:

$$7Q10_{WWTF} = 7Q10_{Davisville\ gage} \times \frac{7Q10_{DINGMAN\ WWTF}}{7Q10_{DINGMAN\ Davisville}}$$

2) The Davisville gage recorded data from 1941 to 2012, with exception of climatic years 1978 - 2001[1]. The data was imported into DFLOW (a computer code developed by EPA to estimate design stream flows for use in water quality standards and TMDL waste load allocations) and the resulting 7Q10 is 5.28 cfs.

3) Using the watersheds' basin characteristics (area, mean basin elevation, and stratified drift area), the Dingman equation was applied at the WWTF outfall and at the Davisville gage. The computed results are 6.7 cfs and 8.3 cfs, respectively.

4) Therefore:

$7Q10_{WWTF}$ = (5.28 cfs) * (6.7 cfs) / (8.3 cfs) = 4.3 cfs or 2.8 mgd.

5) This 7Q10 is assumed to be just *downstream* of the outfall since the water source is located within the Warner WWTF's watershed. The 2006 Fact Sheet applies the 7Q10 as an upstream 7Q10, whereas it should have been a downstream 7Q10 due to the location of the water source.

6) Dilution Factor = 0.9 * $Q_{Downstream}/Q_{DesignFlow}$ = 0.9*(2.8 mgd /0.11 mgd) = 22.6. Due to the correction in the location of the 7Q10 (downstream, versus upstream), the dilution factor changes from 23.5 in the 2006 permit to 22.6 in the draft 2014 permit.

2. Total Residual Chlorine (TRC)

The acute and chronic aquatic life criteria for total residual chlorine specified in the New Hampshire water quality standards are 19 µg/l and 11 µg/l, respectively (see Env-Wq. 1703.21, Table 1703.1). The current permit includes a monthly average chlorine limit of 0.26 mg/L and a maximum daily limit of 0.45 mg/L. From January 2010 through February 2014, there were no exceedances of the total residual chlorine limits.

The draft permit includes limits on the maximum daily and average monthly concentrations of total residual chlorine in the discharge of 0.43 mg/l and 0.25 mg/l, respectively. These values were determined by multiplying the dilution factor by the criteria, as shown below.

[1] From 1978 - 2001 the gage did not operate because of funding cuts.

TRC_{Acute} = 19 µg/l * 22.6 = 429 µg/L (0.43 mg/L)

$TRC_{Chronic}$ = 11 µg/l * 22.6 = 249 µg/l (0.25 mg/L)

The average monthly and maximum daily limitations for total residual chlorine in the draft permit are 0.25 mg/L and 0.43 mg/L, respectively. The monitoring frequency continues to be once per day.

3. Ammonia Nitrogen

High levels of ammonia in the water column can be toxic to fish by making it more difficult for fish to excrete this chemical via passive diffusion from gill tissues. Ammonia toxicity varies with pH and temperature. Ammonia can also lower dissolved oxygen levels by conversion to nitrate/nitrite, which consumes oxygen.

The current permit does not contain ammonia limits but annual monitoring as part of whole effluent toxicity (WET) testing. The effluent ammonia concentration from 2008 – 2013 ranged from 0.1 mg/L to 8.4 mg/L.

The New Hampshire Surface Water Quality Regulations contain ammonia criteria that vary by pH and the presence or absence of salmonids. Because the Warner River is within Essential Fish Habitat for Atlantic salmon (*Salmo salar*), EPA will assume that salmonids could be present in the receiving water.

Dilution samples for WET tests from the past five years (2008 – 2013) indicate that the average pH for the Warner River upstream of the outfall is 7.1 s.u and the temperature used is 26 degrees Celsius. Therefore, according the NH Env-Wq. Table 1703.4, the ammonia criteria are 22.0 mg/L acute and 2.7 mg/L chronic. The upstream concentration in the equation is the median upstream concentration.

Downstream Ammonia Concentration

$$Q_rC_r = Q_dC_d + Q_sC_s$$

Where

C_r	=	Downstream ammonia concentration
Q_d	=	Facility's design flow = 0.11 mgd
C_d	=	Facility's maximum effluent ammonia concentration = 8.4 mg/l
Q_s	=	Upstream receiving water 7Q10 flow ($Q_r - Q_s$) = 2.67 mgd
C_s	=	Median upstream ammonia concentration = 0 mg/l
Q_r	=	Downstream 7Q10 flow = 2.78 mgd

Therefore,

$$C_r = \frac{(0.11 \text{ MGD} \times 8.4 \text{ mg/l}) + (2.67 \text{ mgd} \times 0 \text{ mg/l})}{2.78 \text{ mgd}}$$

= **0.33 mg/l** < 2.7 mg/l (chronic water quality standard x 0.9)

The value used as the discharge concentration, 8.4mg/l, is the highest measured effluent concentration observed from 2008 through 2013.

Because of the small sample size, EPA performed additional statistical analyses of the effluent ammonia data to determine whether increased sampling should be included to ensure a more robust data set for the next permit issuance. Using a method from the *Technical Support Document for Water Quality-based Toxics Control* ("the TSD"), EPA calculated a projected upper bound of effluent concentrations based on a statistical analysis of the facility's effluent data from its whole effluent toxicity tests and used this value to estimate the downstream ammonia concentration. The statistical analysis used on the effluent data accounts for the fact that the maximum measured concentration may not correspond to the true upper bound of effluent concentrations, particularly for small samples sizes ($n<10$) as are available here. This analysis accounts for the uncertainty that arises from small sample sizes by characterizing the maximum measured concentration as a percentile of the underlying distribution at a particular confidence level, then scaling that number upward by a "multiplying factor" in order to project an upper bound (95^{th} percentile) concentration at that confidence level. EPA uses a 95 percent confidence level for this characterization. See Appendix B for the details of this statistical derivation. The resulting effluent concentration for ammonia was put into the same mass balance described above and compared to the respective criteria. This is summarized in the table below.

Pollutant	n	RPMF	Cd max	Cd upper bound	Additional Sampling Required? (i.e. Cr > criterion)	
mg/l	---	---	mg/l	mg/l	Acute	Chronic
Ammonia	6	2.1	8.4	17.6	N	N

There is no reasonable potential for ammonia in the effluent to cause or contribute to an exceedance of water quality standards. The statistical analysis also shows no need for additional monitoring. See Section 5, Metals for more information on statistical projections of effluent data. Warner WWTF will continue to monitor ammonia as part of the yearly whole effluent toxicity test.

4. Total Phosphorus

Phosphorus and other nutrients (i.e. nitrogen) can promote the growth of nuisance algae and rooted aquatic plants. Typically, elevated levels of nutrients will cause excessive algal and/or plant growth resulting in reduced water clarity and poor aesthetic quality. Through respiration, and the decomposition of dead plant matter, excessive algae and plant growth can reduce in-stream dissolved oxygen concentrations to levels that could negatively impact aquatic life and/or produce strong unpleasant odors.

The New Hampshire Surface Water Quality Regulations contain a narrative criterion which states that phosphorus contained in effluent shall not impair a water body's designated use. Specifically, Env-Wq 1703.14(b) states that, "Class B waters shall contain no phosphorus or nitrogen in such concentrations that would impair any existing or designated uses, unless naturally occurring." Env-Wq 1703.14(c), further states that, "Existing discharges containing either phosphorus or nitrogen which encourage cultural eutrophication shall be treated to remove phosphorus or nitrogen to ensure attainment and maintenance of water quality standards." Cultural eutrophication is defined in Env-Wq 1702.15 as, "… the human-induced addition of wastes containing nutrients which results in excessive plant growth and/or a decrease in dissolved oxygen."

EPA has produced several guidance documents which contain recommended total phosphorus criteria for receiving waters. The 1986 Quality Criteria of Water (Gold Book) recommends instream phosphorus concentrations of 0.05 mg/l in any stream entering a lake or reservoir, 0.1 mg/l for any stream not discharged directly to lakes or impoundments, and 0.025 mg/l within a lake or reservoir.

In December 2000, EPA released "Ecoregional Nutrient Criteria" (USEPA 2000), which was established as part of an effort to reduce problems associated with excess nutrients in water bodies located within specific areas of the country. The published criteria represent conditions in waters within each specific ecoregion which are minimally impacted by human activities, and thus are representative of waters without cultural eutrophication. Warner is within Ecoregion VIII, *Nutrient Poor Largely Glaciated Upper Midwest and Northeast*. Recommended criteria for this ecoregion is a total phosphorus criterion of 10 µg/L (0.010 mg/l) and chlorophyll *a* criteria of 0.63 µg/L (0.00063 mg/l). These recommended criteria are found in the *Ambient Water Quality Criteria Recommendations, Information Supporting the Development of State and Tribal Nutrient Criteria, Rivers and Streams in Ecoregion VIII* (USEPA 2001).

EPA has decided to apply the Gold Book criterion rather than the more stringent ecoregional criteria, given that it was developed from an effects-based approach versus the ecoregional criteria that were developed on the basis of reference conditions. The effects-based approach is taken because it is more directly associated with an impairment to a designated use (i.e. fishing, swimming). The effects-based approach provides a threshold value above which adverse effects (i.e. water quality impairments) are likely to occur. It applies empirical observations of a causal variable (i.e. phosphorus) and a response variable (i.e. chlorophyll *a*) associated with designated use impairments. Reference-based values are statistically derived from a comparison within a population of rivers in the same ecoregional class. They are a quantitative set of river characteristics (physical, chemical, and biological) that represent minimally impacted conditions.

The permit reissuance application indicates that the highest phosphorus concentration in the discharge is 9.6 mg/L, based on 4 samples. When setting an effluent limit, EPA takes into account the concentration of the pollutant upstream of the discharge and the available dilution in the receiving water. There are no recent phosphorus data from the Warner River upstream of the discharge. Due to the lack of background phosphorus data for the Warner River, EPA used 0.015 mg/l which is the average value for minimally impacted streams in Ecoregion VIII[2]. As shown below, there is reasonable potential for the discharge to cause the Warner River downstream to exceed the Gold Book criterion (.100 mg/l), leaving 10% allocation for future needs (0.090 mg/l).

[2] See page B-8 of http://www2.epa.gov/sites/production/files/documents/rivers8.pdf

Downstream Phosphorus Concentration

$$Q_rC_r = Q_dC_d + Q_sC_s$$

Where

C_r	=	Resultant downstream phosphorus concentration
Q_d	=	Facility's design flow = 0.11 MGD
C_d	=	Facility's effluent phosphorus concentration = 9.6 mg/l
Q_s	=	Upstream receiving water 7Q10 flow ($Q_r - Q_s$) = 2.67 MGD
C_s	=	Upstream phosphorus concentration = 0.015 mg/l
Q_r	=	Downstream 7Q10 flow = 2.78 MGD

Therefore,

$$C_r = \frac{(0.11 \text{ MGD} \times 9.6 \text{ mg/l}) + (2.67 \text{ MGD} \times 0.015 \text{ mg/l}) +}{2.78 \text{ MGD}}$$

= **0.40 mg/l** > 0.090 mg/l (Gold Book criterion x 0.9)

To address this potential, an effluent limit for phosphorus will be imposed. Based on the permittee's request, this limit will be applied as a mass-based limit. To ensure a mass-based limit is protective under worst-case conditions, the limit is calculated using the lowest expected receiving water flow and effluent flow. Hence, the lowest monthly average effluent flow during the review period (0.042 mgd, see July & September 2012 in Appendix A and the upstream 7Q10 receiving water flow (2.78 MGD – 0.042 MGD = 2.74 MGD) and are used. The numeric mass-based limit is determined based upon the following mass balance equation and concentration to mass conversion equation:

$$Q_dC_d + Q_sC_s = Q_rC_r(0.9) \text{ and } M_d = Q_dC_d*8.345$$

rewritten as:

$$M_d = [Q_rC_r(0.9) - Q_sC_s] * 8.345$$

where:

M_d = Mass-based phosphorus limit
Q_r = Downstream 7Q10 flow = 2.78 mgd
C_r = In-stream Gold Book target phosphorus concentration = 0.100 mg/l
Q_S = Upstream receiving water 7Q10 flow ($Q_r - Q_s$) = 2.74 mgd
C_S = Upstream phosphorus concentration = 0.015 mg/l
Q_d = Facility's lowest effluent monthly average flow = 0.042 mgd
C_d = Facility's effluent phosphorus concentration
0.90 = factor to reserve 10 % assimilative capacity
8.345 = factor to convert from *mgd * mg/l* to *lb/d*

Solving for M_d gives the maximum allowable mass the facility may discharge without violating water quality standards. This allowable discharge is **1.75 lb/day**. This mass-based limit is applied seasonally, from April 1st through October 31st, as a monthly average limit to be monitored once per week, as indicated in the draft permit.

Finally, the draft permit requires the permittee to report phosphorus concentrations in the annual WET test dilution samples. These data will allow EPA to determine whether the proposed limit is protective of water quality and will assist in future limit development.

5. Metals

Certain metals in water can be toxic to aquatic life. There is a need to limit toxic metal concentrations in the effluent where aquatic life may be impacted. An evaluation of the concentration of metals in the facility's effluent (from Whole Effluent Toxicity reports submitted between July 2008 and July 2013) was used to determine reasonable potential for effluent discharges to cause exceedances of the water quality criteria for aluminum, cadmium, chromium, copper, lead, nickel and zinc.

Metals may be present in both dissolved and particulate forms in the water column. Extensive studies suggest that it is the dissolved fraction that is biologically available, and therefore, presents the greatest risk of toxicity to aquatic life inhabiting the water column. (Water Quality Standards Handbook: Second Edition, Chapter 3.6 and Appendix J, EPA 1994 [EPA 823-B-94-05a], http://www.epa.gov/waterscience/standards/ handbook/chapter03.html#section6). As a result, water quality criteria are established in terms of dissolved metals. However, regulations at 40 CFR 122.45(c) require, with limited exceptions, that metals limits in NPDES permits be expressed as total recoverable metals. This accounts for the potential for a transition from the particulate to dissolved form as the effluent mixes with the receiving water (*The Metals Translator: Guidance for Calculating a Total Recoverable Permit Limit from a Dissolved Criterion* (USEPA 1996 [EPA-823-B96-007]).

For metals with hardness-based water quality criteria, the criteria were determined using the equations in NH standards Env-Wq 1703.24, using the appropriate factors for the individual metals found in the NH Standards (see table below). The downstream hardness was calculated to be 15 mg/l as $CaCO_3$, using a mass balance equation with the design flow, receiving water 7Q10, an upstream median hardness of 13 mg/l as $CaCO_3$ and an effluent median hardness of 63 mg/l as $CaCO_3$. Since this downstream hardness is less than 25 mg/l, a minimum hardness of 25 mg/l was used to determine the total recoverable metals criteria, in accordance with the NH standards. The table presenting the factors used to determine the acute and chronic total recoverable criteria for each metal is included in Appendix B to the Fact Sheet.

To determine whether the effluent has the reasonable potential to cause or contribute to an exceedance above the in-stream water quality criteria for each metal, the following mass balance is used to project in-stream metal concentrations downstream from the discharge.

$$Q_d C_d + Q_S C_S = Q_r C_r$$

rewritten as:

$$C_r = \frac{Q_d C_d + Q_S C_S}{Q_r}$$

where:

Q_d = Facility's design flow (0.11 MGD)
C_d = Facility's effluent metals concentration in µg/L (maximum reported[3])
Q_S = Upstream receiving water 7Q10 flow ($Q_S = Q_r - Q_d$ = 2.67 MGD)
C_S = Upstream median metals concentration in µg/L
Q_r = Downstream 7Q10 flow (2.78 MGD)
C_r = Resultant in-stream metals concentration in µg/L

Reasonable potential is then determined by comparing this resultant in-stream concentration (for both acute and chronic conditions) with the criteria for each metal multiplied by the factor 0.9 to reserve 10% assimilative capacity. In EPA's Technical Support Document for Water Quality Based Toxics Control, EPA/505/2-90-001, March 1991, commonly known as the "TSD", box 3-2 describes the statistical approach in determining if there is reasonable potential for an excursion above the maximum allowable concentration (criteria * 0.9). If there is reasonable potential (for either acute or chronic conditions), the appropriate limit is then calculated by rearranging the above mass balance equation to solve for the maximum allowable effluent concentration (C_d) using the criterion times 0.9 as the resultant in-stream concentration (C_r). See the table on the next page for the results of this analysis with respect to aluminum, cadmium, chromium, copper, lead, nickel, and zinc.

As indicated in the table on next page, based on the maximum measured effluent concentrations and median upstream concentrations there is no reasonable potential (for either acute or chronic conditions) that the discharge of aluminum, cadmium, chromium, nickel, lead or zinc will cause or contribute to an exceedance of the applicable water quality criteria.

[3] Note that for sample sizes less than 10, the maximum reported effluent value is used for C_d. For samples sizes of 10 or greater, the 95th percentile of the effluent is calculated and used for C_d.

Metal	Qd	Cd (Max Observed)[1]	Qs	Cs (Median)[2]	Qr	Cr = (QdCd+QsCs)/Q_r	Criteria * 0.9		Reasonable Potential?	Limit = (QrCr*0.9-QsCs)/Qd	
	MGD	µg/L	MGD	µg/L	MGD	µg/L	Acute (µg/L)	Chronic (µg/L)	Cr > Criteria	Acute (µg/L)	Chronic (µg/L)
Aluminum	0.11	30	2.67	62.5	2.78	61.2	675	78.3	N	N/A	N/A
Cadmium		0		0		0	0.851	0.746	N	N/A	N/A
Chromium		0		0		0	521.39	24.92	N	N/A	N/A
Copper		33		4.5		5.63	3.41	2.57	Y	3.8 [3]	2.9 [3]
Lead		1.3		0		0.0514	12.58	0.49	N	N/A	N/A
Nickel		3.2		0		0.127	130.69	14.53	N	N/A	N/A
Zinc		100		4.5		8.28	33.31	33.31	N	N/A	N/A

1 Values represent the maximum measured concentration from the six annual toxicity measurements from the 2008-2013 WET testing noted above (see Appendix A).

2 Median upstream data are from analyses conducted on samples of the South Branch of the Warner River collected just upstream from the discharge for use as dilution water in Whole Effluent Toxicity (WET) tests from 2008-2013. (see Appendix A)

3Since the median background copper concentration and the maximum effluent from the facility both exceed the criteria, the copper limits are set at the criteria.

However, there is reasonable potential for copper (acute and chronic) to cause or contribute to an excursion from the chronic water quality criterion. Typically a limit would be calculated by solving for the maximum allowable effluent concentration (C_d) in mass balance equation, with the receiving water concentration set to 90% of the water quality criterion (Cr), along with the median upstream concentration (C_s), design flow (Q_d), and 7Q10 flows (Q_s and Q_r). However, because the upstream concentration is already higher than the copper criteria (acute and chronic), the draft permit proposes an average monthly and a maximum daily effluent limit equal to the copper criteria (2.9 µg/L and 3.8 µg/L, respectively).

The monitoring frequency will be twice per month.

Metals Statistical Analysis

Because of the small sample size, EPA performed additional statistical analyses of the effluent metals data to determine whether increased sampling should be included for any metal to ensure a more robust data set for the next permit issuance. Using a method from the *Technical Support Document for Water Quality-based Toxics Control* ("the TSD"), EPA calculated a projected upper bound of effluent concentrations based on a statistical analysis of the facility's effluent data from its whole effluent toxicity tests and used this value to estimate a downstream concentration for each metal analyzed. The statistical analysis used on the effluent data accounts for the fact that the maximum measured concentration may not correspond to the true upper bound of effluent concentrations, particularly for small samples sizes (n<10) as are available here. This analysis accounts for the uncertainty that arises from small sample sizes by characterizing the maximum measured concentration as a percentile of the underlying distribution at a particular confidence level, then scaling that number upward by a "multiplying factor" in order to project an upper bound (95th percentile) concentration at that confidence level. EPA uses a 95 percent confidence level for this characterization. See Appendix B for the details of this statistical derivation. The resulting effluent concentration for each metal was put into the same mass balance described above and compared to the respective criteria. This is summarized in the table below.

Metal	**n**	**RPMF**	**C_d Maximum**	**C_d Upper Bound (Projected 95th Percentile)**	**C_r[1]**	**Additional Sampling Required? (i.e., C_r > Criteria?)**	
	--	**--**	**µg/l**	**µg/l**	**µg/l**	**Acute**	**Chronic**
Aluminum	6	2.1	30	63	62.5	N	N
Cadmium	6	2.1	ND (<0.0005)	N/A	N/A	N	N
Chromium	6	2.1	ND (<0.001)	N/A	N/A	N	N
Copper	NA	NA	NA	NA	NA	N/A (limit proposed)	N/A (limit proposed)
Lead	6	2.1	1.3	2.7	0.11	N	N
Nickel	6	2.1	3.2	6.7	0.27	N	N
Zinc	6	2.1	100	210	12.6	N	N

[1] Resultant Cr using the mass balance equation with the design flow, 7Q10 flow, median upstream concentration, and the upper bound effluent concentration (i.e., Cd max * RPMF)

[2] Median upstream data taken from WET testing results on the South Branch of the Warner River just upstream of the Warner WWTF (see Appendix B).

As shown, the upper bound of the effluent data (as opposed to the maximum measured concentration) indicates that copper is the only metal of concern at this time, and no additional monitoring is needed for the other metals listed in the table.

6. Whole Effluent Toxicity (WET)

EPA's *Technical Support Document for Water Quality Based Toxics Control* (USEPA 1991 [EPA/505/290-001]) recommends using an "integrated strategy" containing both pollutant (chemical) specific approaches and whole effluent (biological) toxicity approaches to control toxic pollutants in effluent discharges from entering the nation's waterways. EPA Region 1 adopted this "integrated strategy" on July 1, 1991, for use in permit development and issuance. These approaches are designed

to protect both aquatic life and human health. Pollutant-specific approaches such as those found in the Gold Book and state regulations, address individual chemicals, whereas whole effluent toxicity (WET) approaches evaluate interactions between pollutants, thus rendering an "overall" or "aggregate" toxicity assessment of the effluent. Furthermore, WET measures the "additive" and/or "antagonistic" effects of individual chemical pollutants, which pollutant-specific approaches do not; thus, the need for both approaches. In addition, the presence of an unknown toxic pollutant can be discovered and addressed through this process.

Section 101(a)(3) of the CWA specifically prohibits the discharge of toxic pollutants in toxic amounts and New Hampshire law states that, "all waters shall be free from toxic substances or chemical constituents in concentrations or combination that injure or are inimical to plants, animals, humans, or aquatic life; ...." (NH RSA 485-A:8, VI and NH Code of Administrative Rules, Part Env-Wq 1703.21). The federal NPDES regulations found at 40 CFR §122.44(d)(1)(v) require whole effluent toxicity limits in a permit when reasonable potential exists for a discharge to cause or contribute to an excursion above state narrative criteria for toxicity. Furthermore, the results of toxicity tests may be used to demonstrate compliance with the "no toxics in toxics amounts" requirement found in both the CWA and in the State of New Hampshire's regulations.

The current policy of EPA Region 1 is to require toxicity testing in all NPDES permits issued to POTWs with dilution factors of less than 1,000:1. The type of whole effluent toxicity test(s) (acute and/or chronic) and the effluent limitation(s) required by the permit are based on the available dilution in the receiving water at the point of discharge. NPDES permits issued to municipal dischargers (i.e., POTWs) having a dilution factor between 20 and 100 (as is the case with the Warner WWTF) include an acute (LC_{50}) WET limit and require that WET tests be conducted using the daphnid, *Ceriodaphnia dubia* (*C. dubia*) and the fathead minnow, *Pimephales promelas* (*P. promelas*) as the test organisms. The acute limit (LC_{50}) is the percentage of effluent in a sample that must not cause more than a 50 % mortality rate in the test organisms. An LC_{50} limit of $\geq$ 100 % means that a sample comprised of 100 % effluent shall not cause mortality to more than 50 % of the test organisms.

The draft permit carries forward the LC_{50} limit of $\geq$ 100 %. The permittee shall conduct WET testing once annually, during the calendar quarter ending September 30. The test results must be submitted to EPA and NHDES no later than the 15th day following the end of the quarter.

VI. SLUDGE

Sludge at the Warner Village Water District is treated on-site by aerobic digesters, before final disposal at the Concord Hall Street Wastewater Treatment Facility.

Section 405(d) of the Clean Water Act (CWA) requires that EPA develop technical standards regulating the use and disposal of sewage sludge. These regulations were signed on November 25, 1992, published in the Federal Register on February 19, 1993, and became effective on March 22, 1993. Domestic sludge that is land applied, disposed in a surface disposal unit, or fired in a sewage sludge incinerator is subject to federal Part 503 technical and to State Env-Wq 800 standards. Part 503 regulations have a self-implementing provision; however, the CWA requires implementation through permits. Domestic sludge that is disposed of in municipal solid waste landfills are in compliance with Part 503 regulations provided the sludge meets the quality criteria of the landfill and the landfill meets the requirements of 40 CFR Part 258.

The draft permit has been conditioned to ensure that sewage sludge use and disposal practices meet the CWA Section 405(d) Technical Standards. In addition, EPA-New England has prepared a 72-page document entitled "EPA Region I NPDES Permit Sludge Compliance Guidance" for use by the permittee in determining their appropriate sludge conditions for their chosen method of sewage sludge

use or disposal practices. This guidance document is available upon request from EPA Region 1 and may also be found at: http://www.epa.gov/region1/npdes/permits/generic/sludgeguidance.pdf . The permittee is required to submit an annual report to EPA-New England and NHDES-WD, by February 19th each year, containing the information specified in the Sludge Compliance Guidance document for their chosen method of sewage sludge use or disposal practices.

VII. INDUSTRIAL USERS

The permittee is presently not required to administer a pretreatment program based on the authority granted under 40 CFR §122.44(j), 40 CFR §403 and Section 307 of the CWA. However, the draft permit contains conditions that are necessary to allow EPA and the State of New Hampshire to ensure that pollutants from industrial users will not pass through the facility and cause violations of water quality standards in the receiving water, sludge use and disposal difficulties or cause interference with the operation of the treatment facility. The permittee is required to notify EPA and the State of New Hampshire whenever a process wastewater discharge to the facility from a primary industrial category is planned, (see 40 CFR §122 Appendix A for list) or if there is any substantial change in the volume or character of pollutants being discharged into the facility by a source that was discharging at the time of issuance of the permit. The permit also requires the permittee to: (1) report to EPA and NHDES the name(s) of all Industrial Users subject to Categorical Pretreatment Standards under 40 CFR §403.6 and 40 CFR Chapter I, Subchapter N (Parts 405-415, 417-436, 439-440, 443, 446-447, 454-455, 457-461, 463-469, and 471 as amended) who commence discharge to the POTW after the effective date of the permit, and (2) submit to EPA and NHDES copies of Baseline Monitoring Reports and other pretreatment reports submitted by industrial users.

VIII. OPERATION AND MAINTENANCE

Regulations regarding proper operation and maintenance are found at 40 CFR § 122.41(e). These regulations require, "that the permittee shall at all times operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the permittee to achieve compliance with the conditions of the permit." The treatment plant and the collection system are included in the definition of "facilities and systems of treatment and control" and are therefore subject to the proper operation and maintenance requirements of 40 CFR § 122.41(e).

Similarly, a permittee has a "duty to mitigate" pursuant to 40 CFR § 122.41(d), which requires the permittee to "take all reasonable steps to minimize or prevent any discharge in violation of the permit which has a reasonable likelihood of adversely affecting human health or the environment."

General requirements for proper operation and maintenance and mitigation have been included in Part II of the draft permit. Specific permit conditions have also been included in Parts I.B, C, and D. of the draft permit. These requirements include mapping of the wastewater collection system, reporting of unauthorized discharges (including sanitary sewer overflows (SSOs)), maintaining an adequate maintenance staff, performing preventative maintenance, controlling inflow and infiltration (I/I) to the extent necessary to prevent SSOs and I/I-related effluent violations at the wastewater treatment plant, and for maintaining alternate power where necessary.

IX. ESSENTIAL FISH HABITAT

The Magnuson-Stevens Fishery Conservation and Management Act, as amended by the Sustainable Fisheries Act of 1996 (Public Law 104267), established a new requirement to describe and identify (designate) "essential fish habitat" (EFH) in each federal fishery management plan. Only species managed under a federal fishery management plan are covered.

Fishery Management Councils determine which area will be designated as EFH. The Councils have prepared written descriptions and maps of EFH, and include them in fishery management plans or their amendments. EFH designations for New England were approved by the Secretary of Commerce on March 3, 1999.

The 1996 Sustainable Fisheries Act broadly defined EFH as "waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity." Waters include aquatic areas and their associated physical, chemical, and biological properties. Substrate includes sediment, hard bottom, and structures underlying the waters. Necessary means the habitat required to support a sustainable fishery and the managed species' contribution to a healthy ecosystem. Spawning, breeding, feeding, or growth to maturity covers all habitat types utilized by a species throughout its life cycle. Adversely affect means any impact which reduces the quality and/or quantity of EFH. Adverse impacts may include direct (i.e. contamination, physical disruption), indirect (i.e. loss of prey), site specific or habitat wide impacts including individual, cumulative, or synergistic consequences of actions.

According to the National Marine Fisheries Service (NMFS), the Merrimack River is EFH for Atlantic salmon (*Salmo salar*). Based on discussions with the New Hampshire Fish and Game Department no Atlantic salmon fry are presently stocked in any section of the Warner River, according to the New Hampshire Fish and Game Department. Adult Atlantic salmon returning to the river from the ocean do not make it up this far because they are collected at a dam in Lawrence, Massachusetts primarily for use as broodstock.

- The permit prohibits the discharge to cause a violation of State water quality standards.
- The permit contains water quality-based limits for total residual chlorine, *E. coli,* copper, and total phosphorus.
- The permit prohibits the discharge of pollutants or combinations of pollutants in toxic amounts.
- The permit requires toxicity testing once per year to ensure that the discharge does not present toxicity problems.

EPA believes the draft permit adequately protects EFH and therefore additional mitigation is not warranted. NMFS will be notified and EFH consultation will be reinitiated if adverse impact to EFH are detected as a result of this permit action or if new information becomes available that changes the basis for these conclusions.

X. ENDANGERED SPECIES ACT

Section 7(a) of the Endangered Species Act of 1973, as amended (ESA), grants authority to and imposes requirements upon Federal agencies regarding endangered or threatened species of fish, wildlife, or plants ("listed species") and habitat of such species that has been designated as critical (a "critical habitat"). The ESA requires every Federal agency, in consultation with and with the assistance of the Secretary of Interior, to insure that any action it authorizes, funds, or carries out, in the United States or upon the high seas, is not likely to jeopardize the continued existence of any listed species or result in the destruction or adverse modification of critical habitat. The USFWS administers Section 7 consultations for freshwater species. The National Marine Fisheries Service (NMFS) administers Section 7 consultations for marine species and anadromous fish.

As the federal agency charged with authorizing the discharge from this facility, EPA has conducted a review in support of our consultation responsibilities under section 7 (a)(2) of the Endangered Species Act (ESA) for potential impacts to federally listed species. Based on the information available, EPA has determined that the small whorled pogonia (*Isotria medeoloides*) and the Karner blue butterfly

(*Lycaeides melissa samuelis)* are the only federally protected species associated with the general area of the receiving water of the Warner WWTF discharge.

The small whirled pogonia, an orchid, has been identified in Warner, New Hampshire, where the Warner WWTF is located. However, the small whorled pogonia is found in "forests with somewhat poorly drained soils and/or a seasonally high water table," according to the USFWS website. This species is not aquatic; therefore it is unlikely that it would come into contact with the facility discharge. Furthermore, the primary threats to this species are habitat destruction and herbivory, factors not affected by this permit action.

The Karner blue butterfly has been identified in Merrimack County, New Hampshire, where the Warner WWTF is located; however it has not been identified in the Town of Warner itself. The Karner blue butterfly is found in oak savannas and pine barren ecosystems, according to the USFWS website. This species is not aquatic; therefore it is unlikely that it would come into contact with the facility discharge. Furthermore, the primary threats to this species are habitat destruction and collection, factors not affected by this permit action.

Based on this evaluation, EPA has determined that the project will have no effect on endangered species. Therefore, consultation under Section 7 of the ESA with USFWS is not required.

XI. ANTIDEGRADATION

The New Hampshire water quality standards include an antidegradation provision that states that the existing uses and the level of water quality necessary to protect the existing uses shall be maintained and protected (Env-Wq 1708).

The draft permit contains limitations and conditions which are at least as stringent as those contained in the existing permit. The State of New Hampshire has indicated that there will be no lowering of water quality and no loss of existing designated uses in the receiving water as a result of this permit action, and that additional antidegradation review is not warranted at this time.

XII. MONITORING AND REPORTING

The effluent monitoring requirements have been established to yield data representative of the discharge under authority of Section 308 (a) of the CWA in accordance with 40 CFR §§122.41 (j), 122.44 (l), and 122.48.

The draft permit includes new provisions related to Discharge Monitoring Report (DMR) submittals to EPA and the State. The Draft Permit requires that, no later than one year after the effective date of the permit, the permittee submit all monitoring data and other reports required by the permit to EPA using NetDMR, unless the permittee is able to demonstrate a reasonable basis, such as technical or administrative infeasibility, that precludes the use of NetDMR for submitting DMRs and reports ("opt-out request").

In the interim (until one year from the effective date of the permit), the permittee may either submit monitoring data and other reports to EPA in hard copy form, or report electronically using NetDMR.

NetDMR is a national web-based tool for regulated Clean Water Act permittees to submit discharge monitoring reports (DMRs) electronically via a secure Internet application to U.S. EPA through the Environmental Information Exchange Network. NetDMR allows participants to discontinue mailing in hard copy forms under 40 CFR § 122.41 and § 403.12. NetDMR is accessed from the following url:

http://www.epa.gov/netdmr. Further information about NetDMR, including contacts for EPA Region 1, is provided on this website.

EPA currently conducts free training on the use of NetDMR, and anticipates that the availability of this training will continue to assist permittees with the transition to use of NetDMR. To participate in upcoming trainings, visit http://www.epa.gov/netdmr for contact information for New Hampshire.

The Draft Permit requires the permittee to report monitoring results obtained during each calendar month using NetDMR, no later than the 15th day of the month following the completed reporting period. All reports required under the permit shall be submitted to EPA as an electronic attachment to the DMR. Once a permittee begins submitting reports using NetDMR, it will no longer be required to submit hard copies of DMRs or other reports to EPA or to NHDES.

The Draft Permit also includes an "opt-out" request process. Permittees who believe they cannot use NetDMR due to technical or administrative infeasibilities, or other logical reasons, must demonstrate the reasonable basis that precludes the use of NetDMR. These permittees must submit the justification, in writing, to EPA at least sixty (60) days prior to the date the facility would otherwise be required to begin using NetDMR. Opt-outs become effective upon the date of written approval by EPA and are valid for twelve (12) months from the date of EPA approval. The opt-outs expire at the end of this twelve (12) month period. Upon expiration, the permittee must submit DMRs and reports to EPA using NetDMR, unless the permittee submits a renewed opt-out request sixty (60) days prior to expiration of its opt-out, and such a request is approved by EPA.

Until electronic reporting using NetDMR begins, or for those permittees that receive written approval from EPA to continue to submit hard copies of DMRs, the Draft Permit requires that submittal of DMRs and other reports required by the permit continue in hard copy format. Hard copies of DMRs must be postmarked no later than the 15th day of the month following the completed reporting period.

XIII. STATE CERTIFICATION REQUIREMENTS

EPA may not issue a permit unless the state water pollution control agency with jurisdiction over the receiving water(s) in which the discharge originates either certifies that the effluent limitations and/or conditions contained in the permit are stringent enough to assure, among other things, that the discharge will not cause the receiving water to violate state water quality standards or the agency waives its right to certify as set forth in 40 CFR § 124.53. The NHDES is the certifying authority within the State of New Hampshire.

EPA Region 1 has requested permit certification by the state and expects that the draft permit will be certified. Regulations governing state certification are set forth in 40 CFR §§124.53 and §124.55.

XIV. COMMENT PERIOD, REQUESTS FOR PUBLIC HEARINGS AND PROCEDURES FOR FINAL DECISION

All persons, including applicants, who believe any condition of the draft permit is inappropriate must raise all issues and submit all available arguments and all supporting material for their arguments in full by the close of the public comment period to:

Robin L. Johnson
U.S. Environmental Protection Agency
5 Post Office Square - Suite 100 (OEP06-1)
Boston, Massachusetts 02109-3912
Telephone: (617) 918-1045; Fax: (617) 918-0045

Any person, prior to such date, may submit a request in writing for a public hearing to consider the draft permit to EPA and the State Agency. Such requests shall state the nature of the issue proposed to be raised at the hearing. A public hearing may be held after at least thirty (30) days public notice whenever the Regional Administrator finds that response to this notice indicates significant public interest. In reaching a final decision on the draft permit, the Regional Administrator will respond to all significant comments and make these responses available to the public at EPA's Boston office.

Following the close of the comment period, and after a public hearing (if applicable), the Regional Administrator will issue a final permit decision and forward a copy of the final decision to the applicant and each person who has submitted written comments or requested notice.

Information concerning the draft permit may be obtained between the hours of 9:00 am and 5:00 pm, excluding holidays.

9/18/2014

Date:

Ken Moraff, Director
Office of Ecosystem Protection
U.S. Environmental Protection Agency

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Warner Village WWTF
Appendix A

Monitoring Period End Date	Flow, monthly avg	Flow, daily Max	pH Min	pH Max	BOD, avg monthly loading	BOD, weekly avg loading	BOD, max daily loading	BOD, monthly avg	BOD, weekly avg	BOD, max daily
	MGD	MGD	s.u.	s.u.	lb/day	lb/day	lb/day	mg/l	mg/l	mg/L
01/31/2010	.061	.078	6.5	6.7	4.79	6.54	8.68	10.5	15.35	16.8
02/28/2010	.064	.122	6.5	6.9	5.	6.05	6.6	9.6	11.05	11.4
03/31/2010	.103	.154	6.5	6.9	9.84	14.	15.	10.5	15.	15.9
04/30/2010	.082	.168	6.5	6.7	6.8	14.5	14.	10.5	13.8	15.7
05/31/2010	.063	.092	6.5	6.7	4.5	6.5	8.49	8.26	12.15	15.2
06/30/2010	.059	.1	6.5	6.8	4.4	4.85	8.55	10.5	9.2	18.
07/31/2010	.063	.092	6.5	6.9	5.26	6.95	7.3	10.3	13.9	14.6
08/31/2010	.06	.071	6.5	7.1	3.86	6.32	6.99	7.78	12.4	13.1
09/30/2010	.056	.091	6.5	6.8	3.45	3.39	7.1	7.1	7.2	13.3
10/31/2010	.065	.125	6.5	7.	5.7	8.35	9.	11.28	15.6	18.
11/30/2010	.07	.096	6.5	7.1	6.3	9.75	11.	10.68	17.	17.
12/31/2010	.062	.098	6.5	6.9	5.8	7.3	7.3	10.68	16.25	17.7
01/31/2011	.056	.074	6.5	7.	5.6	6.23	8.56	12.46	14.5	16.3
02/28/2011	.084	.151	6.5	7.3	5.4	7.9	10.02	10.3	10.87	18.5
03/31/2011	.094	.164	6.5	7.3	12.4	16.2	17.6	16.7	18.45	19.8
04/30/2011	.09	.117	6.5	6.8	6.6	8.5	10.7	8.9	11.75	12.9
05/31/2011	.072	.136	6.5	7.	3.69	7.14	11.11	7.05	10.6	16.5
06/30/2011	.069	.087	6.5	7.	3.049	4.55	5.8	5.5	8.3	9.6
07/31/2011	.061	.086	6.5	6.7	2.75	4.3	4.9	5.45	8.3	5.5
08/31/2011	.065	.94	6.5	6.8	3.57	4.67	4.67	7.	8.45	9.2
09/30/2011	.073	.089	6.5	6.9	2.48	3.1	3.8	4.	4.95	5.8
10/31/2011	.072	.09	6.5	6.8	3.1	5.3	6.1	5.35	9.45	11.
11/30/2011	.069	.09	6.5	6.7	3.18	3.9	6.49	5.	6.	9.5
12/31/2011	.077	.125	6.5	6.8	4.55	7.38	9.87	6.38	11.05	14.8
01/31/2012	.06	.075	6.5	7.	3.2	7.25	8.1	6.36	13.75	16.5
02/29/2012	.059	.09	6.5	7.	3.27	4.19	5.8	6.9	10.5	12.7
03/31/2012	.053	.084	6.5	7.	1.13	3.	2.6	2.59	6.7	3.6
04/30/2012	.047	.062	6.5	6.8	3.6	4.47	4.58	9.	10.85	11.
05/31/2012	.051	.067	6.5	6.7	5.95	8.95	9.3	13.46	20.	20.
06/30/2012	.051	.068	6.5	6.8	3.58	5.32	6.55	8.1	11.95	12.2
07/31/2012	.042	.06	6.5	7.1	2.54	3.43	3.47	5.2	10.68	10.7
08/31/2012	.045	.069	6.5	7.	3.4	4.72	5.6	9.3	11.8	16.
09/30/2012	.042	.065	6.5	7.1	1.355	1.88	2.27	4.075	5.65	7.
10/31/2012	.049	.063	6.5	6.9	2.	3.2	3.3	5.	7.8	9.1
11/30/2012	.047	.088	6.5	6.77	2.7	6.3	8.4	7.1	17.7	21.4
12/31/2012	.049	.071	6.5	6.76	2.4	3.3	4.1	5.8	8.	10.6
01/31/2013	.049	.075	6.5	7.14	1.2	1.2	3.6	3.2	5.4	8.7
02/28/2013	.046	.068	6.5	6.96	1.2	1.2	3.7	3.2	6.3	10.5
03/31/2013	.051	.061	6.51	6.91	1.6	1.6	4.5	3.8	7.	11.6
04/30/2013	.056	.073	6.51	6.95	1.	1.	1.5	2.	2.5	3.5
05/31/2013	.049	.093	6.51	7.1	1.9	1.9	4.4	4.3	4.7	9.7
06/30/2013	.059	.101	6.5	6.89	2.7	2.7	4.7	6.1	8.5	8.6
07/31/2013	.078	.116	6.5	6.9	4.3	4.3	9.6	7.	8.1	12.4
08/31/2013	.059	.09	6.5	6.79	4.5	4.5	8.8	9.7	15.8	17.
09/30/2013	.062	.095	6.5	6.76	3.5	3.5	6.4	6.8	8.5	11.1
10/31/2013	.057	.078	6.51	6.75	2.5	2.5	4.6	5.5	9.5	9.9
11/30/2013	.055	.068	6.5	6.78	3.4	3.4	5.4	7.5	9.4	10.5
12/31/2013	.055	.062	6.5	6.88	4.	4.	5.6	9.2	12.6	14.6
01/31/2014	.06	.081	6.6	6.9	3.8	3.8	7.8	7.6	13.8	14.
02/28/2014	.062	.086	6.5	6.9	4.9	4.9	9.6	10.3	10.9	18.
Jan 2007 limits	Report	Report	6	8.0	27.5	41.3	45.9	30	45	50
Minimum	.042	.06	6.5	6.7	1.	1.	1.5	2.	2.5	3.5
Maximum	.103	.94	6.6	7.3	12.4	16.2	17.6	16.7	20.	21.4
Average	0.06	0.11	6.50	6.90	3.95	5.40	7.08	7.62	10.80	12.94
Standard Deviation	0.01	0.12	0.01	0.15	2.11	3.23	3.25	3.00	3.91	4.26
#measurement	50	50	50	50	50	50	50	50	50	50
#exceed 2007 limits	N/A	N/A	0	0	0	0	0	0	0	0

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Warner Village WWTF
Appendix A

Monitoring Period End Date	BOD, percent removal	TSS, avg monthly loading	TSS, weekly avg loading	TSS, max daily loading	TSS, avg monthly	TSS, avg weekly	TSS, percent removal	Total Chlorine Residual, avg monthly	Total Chlorine Residual, max daily	E. coli, geometric average	E. coli, daily max
	%	lb/day	lb/day	lb/day	mg/l	mg/l	%	mg/L	mg/l	#/100 ml	#/100 ml
01/31/2010	96.9	1.6	2.47	2.4	3.6	4.7	99.	.01	.02	8.	18.
02/28/2010	97.2	1.9	8.69	2.5	3.6	4.3	99.5	.01	.02	11.08	22.
03/31/2010	96.9	5.14	6.4	15.2	5.5	9.2	99.6	.01	.04	11.2	20.
04/30/2010	97.1	2.47	2.88	5.19	3.8	6.05	99.2	.01	.01	3.6	20.
05/31/2010	97.2	2.2	3.95	3.29	4.	4.85	99.	.01	.01	2.4	6.6
06/30/2010	97.1	2.9	5.6	6.59	5.6	6.9	99.1	.01	.01	4.17	24.
07/31/2010	95.1	3.49	4.7	8.05	6.9	11.25	98.3	.01	.01	6.36	20.
08/31/2010	97.2	2.87	1.49	5.3	5.8	9.4	98.5	.01	.01	6.1	18.
09/30/2010	98.3	1.06	2.87	1.75	2.21	2.55	99.6	.01	.01	5.2	25.
10/31/2010	96.7	2.15	9.25	3.77	4.24	5.4	97.8	.01	.01	6.9	20.
11/30/2010	97.	5.	3.89	10.4	8.6	16.1	97.2	.01	.01	6.59	18.
12/31/2010	97.	1.7	7.35	4.48	3.54	8.65	98.6	.01	.01	13.9	25.
01/31/2011	95.7	3.58	10.63	8.	7.8	15.8	96.7	.01	.01	11.1	20.
02/28/2011	97.	6.87	19.08	15.36	11.7	19.2	94.8	.01	.01	5.2	30.
03/31/2011	94.9	11.76	10.3	26.4	15.8	23.	97.4	.01	.01	6.98	25.
04/30/2011	94.9	6.3	10.55	13.4	8.4	13.5	96.7	.01	.01	3.	14.
05/31/2011	96.9	5.	2.34	12.	9.85	17.55	94.6	.01	.01	1.19	17.
06/30/2011	97.4	1.6	2.1	2.6	3.	4.85	98.1	.01	.01	11.	46.
07/31/2011	98.3	1.455	2.6	2.8	2.9	2.6	98.7	.01	.01	7.1	27.
08/31/2011	96.1	1.75	1.8	3.09	3.45	5.15	98.3	.01	.01	3.1	20.
09/30/2011	98.7	1.3	2.55	2.9	2.14	3.05	98.8	.01	.01	3.7	16.
10/31/2011	97.6	1.58	1.45	4.19	2.67	4.55	98.5	.01	.01	2.8	22.
11/30/2011	97.6	1.36	1.98	2.15	2.2	2.55	99.27	.01	.01	2.8	24.
12/31/2011	97.98	1.48	5.1	2.8	2.13	2.95	99.05	.01	.01	1.7	4.
01/31/2012	97.98	3.05	2.8	5.5	6.1	9.65	98.1	.01	.01	2.66	13.
02/29/2012	97.5	2.	3.05	3.36	4.2	5.65	98.	.01	.01	1.9	19.
03/31/2012	98.4	2.4	3.	3.9	5.68	7.4	98.5	.01	.01	2.1	25.
04/30/2012	97.	1.8	5.55	3.59	4.47	7.35	98.4	.01	.01	1.68	4.
05/31/2012	94.6	4.08	4.87	5.8	9.48	12.4	96.5	.01	.01	3.86	11.
06/30/2012	96.9	2.7	3.52	6.55	6.05	9.75	97.5	.01	.01	5.15	22.
07/31/2012	97.8	2.11	2.99	4.17	8.	10.45	96.	.01	.01	3.03	19.
08/31/2012	97.2	1.59	1.5	3.7	3.46	8.95	99.3	.01	.01	6.78	22.
09/30/2012	97.2	1.15	2.5	1.57	3.47	4.4	98.2	.01	.01	7.8	15.
10/31/2012	97.	1.6	3.6	2.8	4.	6.7	98.	.01	.03	2.6	7.
11/30/2012	97.	2.3	2.	5.3	6.2	11.1	99.	.01	.01	2.3	28.
12/31/2012	98.	1.3	2.9	3.3	3.	4.4	99.	.01	.01	1.6	5.
01/31/2013	99.	2.25	1.2	3.4	5.3	6.8	99.	.01	.01	2.3	7.
02/28/2013	99.	2.6	1.2	6.3	7.	13.4	98.	.01	.01	2.7	11.
03/31/2013	98.	2.2	1.6	4.3	5.1	6.3	99.	.01	.01	5.2	22.
04/30/2013	99.	1.9	1.	3.3	3.9	6.6	99.	.01	.01	4.7	23.
05/31/2013	97.	2.6	1.9	4.8	6.3	10.4	97.	.01	.01	4.8	17.
06/30/2013	98.	2.3	2.7	4.4	5.1	7.4	97.	.01	.01	8.	18.
07/31/2013	95.	4.	4.3	7.7	6.1	8.5	96.	.01	.01	6.2	27.
08/31/2013	95.	3.	4.5	5.	6.2	7.6	97.	.01	.01	12.1	32.
09/30/2013	96.	2.	3.5	3.6	4.	5.3	98.	.01	.01	8.5	24.
10/31/2013	98.	2.2	2.5	5.3	4.6	6.3	99.	.01	.01	6.7	25.
11/30/2013	96.	3.1	3.4	4.7	6.6	8.2	96.	.01	.01	7.6	18.
12/31/2013	96.	3.5	4.	5.4	8.1	9.9	96.	.01	.01	8.7	43.
01/31/2014	97.	3.5	3.8	5.4	7.3	10.6	98.	.01	.01	6.6	22.
02/28/2014	94.	3.	4.9	6.6	6.2	8.4	97.	.01	.01	4.7	18.
Jan 2007 limits	85	27.5	41.3	45.9	30	45	85	0.26	0.45	126	406
Minimum	94.	1.06	1.	1.57	2.13	2.55	94.6	.01	.01	1.19	4.
Maximum	99.	11.76	19.08	26.4	15.8	23.	99.6	.01	.04	13.9	46.
Average	97.01	2.81	4.18	5.69	5.51	8.36	97.98	0.01	0.01	5.51	19.97
Standard Deviation	1.19	1.82	3.27	4.35	2.64	4.42	1.23	0.00	0.01	3.14	8.33
#measurement	50	50	50	50	50	50	50	50	50	50	50
#exceed 2007 limits	0	0	0	0	0	0	0	0	0	0	0

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Appendix A

Whole Effluent Toxicity										
Date	LC50 Daphnid	LC50 Minnow	Aluminum (mg/l)	Ammonia (mg/L)	Chromium (mg/L)	Copper (mg/l)	Zinc (mg/l)	Lead (mg/l)	Cadmium (mg/l)	Nickel (mg/l)
September-08	100.	100.	.03	3.6	<0.001	.015	.051	.0013	<0.0005	.0032
September-09	100.	100.	.02	.1	<0.002	.031	.1	.0005	<0.0005	.003
September-10	100.	100.	.026	2.	<0.002	.011	.028	.001	<0.0005	.002
September-11	100.	100.	.022	.1	<0.002	.015	.053	.0006	<0.0005	.002
September-12	100.	100.	.02	.1	<0.002	.033	.069	.0007	<0.0005	.003
September-13	100.	100.	.021	8.4	<0.002	.016	.025	.0007	<0.0005	<0.002
Limit	100.	100.	Report	Report	Report	Report	Report	Report	Report	Report
Minimum	100.	100.	.02	.1	.	.011	.025	.0005	.	.002
Maximum	100.	100.	.03	8.4	.	.033	.1	.0013	.	.0032
# measurements	6.	6.	6.	6.	6.	6.	6.	6.	6.	6.
#exceed limit	0	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

APPENDIX B – BACKGROUND FOR STATISTICAL ANALYSIS OF METALS EFFLUENT DATA

In order to account for the uncertainty that arises from small sample sizes (n<10), EPA uses a methodology from the *Technical Support Document for Water Quality-based Toxics Control* ("the TSD") to calculate a projected upper bound of effluent concentrations based on a statistical analysis of the facility's effluent data. As the statistical parameters of the sample distribution may differ from the underlying population, this approach determines a projection of the possible upper bound effluent concentration at the 95th percentile with a 95 percent confidence level, assuming a lognormal distribution of the underlying sample population. This 95th percentile projected upper bound represents a conservative estimate of the possible upper bound concentration based on a limited dataset. Where this upper bound concentration would not result in an exceedance of water quality criteria in the receiving water, EPA can say with certainty (95 percent confidence) that the data excludes the potential for an exceedance. Where that is not the case, EPA requires additional monitoring to better characterize the effluent.

The statistical analysis characterizes the maximum measured concentration as a percentile of the underlying distribution at a particular confidence level, then scaling that number upward by a "multiplying factor" in order to project an upper bound concentration at that confidence level. For sample datasets with less than 10 data points, EPA uses the 95th percentile with a 95 percent confidence level to characterize the upper bound concentration, see table 3-2 of the TSD.

The formula for characterizing a maximum measured concentration as a percentile is:

$$p_n = (1 - \text{confidence level})^{1/n}$$

This formula gives the lowest percentile that a maximum measurement may correspond to, given a specific confidence level (EPA uses the 95 percent confidence level). For example, where n=4, we can be 95 percent confident that the maximum measurement represents at least the 47th percentile of the underlying distribution, since:

$$p_n = (1 - 0.95)^{1/4} = 0.473.$$

It should be noted that this represents the lower end of the 95 percent confidence interval. Because of the uncertainty due to the small sample size there is a significant range in interpretation of the maximum; where n=4 we can be 95 percent confident that the maximum value represents somewhere between the 47th and 99th percentile of the underlying distribution. See Section 3.3.2 of the TSD for more information.

The calculated percentile is then scaled up to a projected upper bound based on a selected probability basis (here the 95th percentile). The scaling factor (or "multiplying factor") is the ratio between the 95th percentile and the calculated percentile in a lognormal distribution with a particular coefficient of variation. These are calculated as follows:

Multiplying factor = C_{95}/ C_{pn}; where

$$C_{95} = \exp(1.645\sigma - 0.5\sigma^2);$$

$C_{pn} = \exp(z_{pn} \times \sigma - 0.5\sigma^2)$;
z_{pn} = z-score of the calculated percentile
σ^2 = variance of the log-transformed data = $\ln (CV^2 + 1)$
CV = coefficient of variation

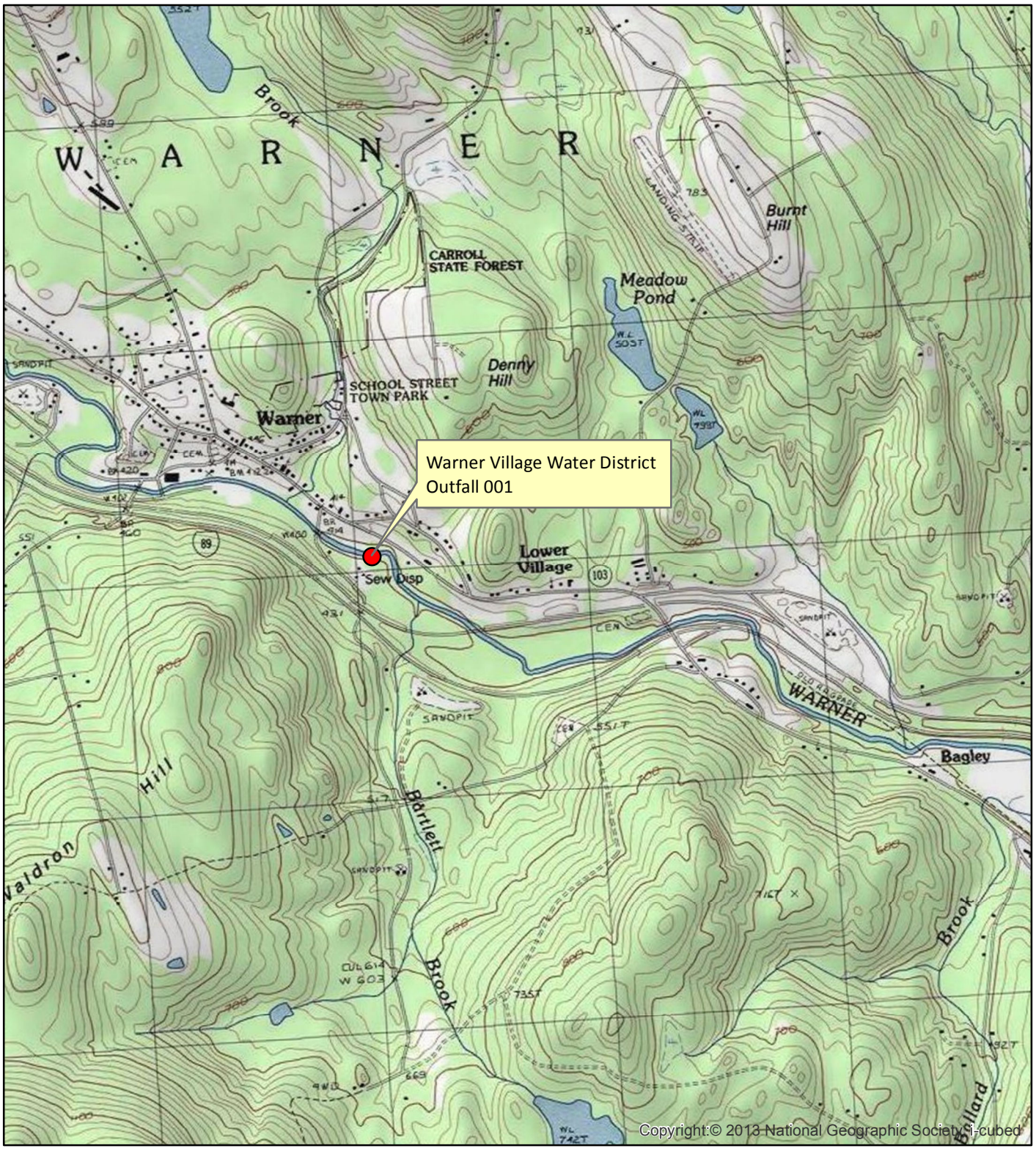
The *TSD* recommends use of a coefficient of variation of 0.6 where sample size is less than 10. Thus for n=4 the multiplying factor (for 95-percent confidence level and 95th percentile probability basis) is:

$p_n = 0.473$
$z_{pn} = -0.068$
$C_{95} = 2.135$
$C_{47} = 0.826$

Multiplying factor = 2.6

In practice this process is implemented using tables set forth in *TSD,* chapter 3 and box 3-2, as follows:

Step 1) The maximum effluent value of the samples is determined.
Step 2) Coefficient of variation (CV) = 0.6, for less than 10 samples
Step 3) The multiplying factor (MF) is determined using table 3-2 in the TSD, based on the number of samples in the data set and a CV of 0.6.
Step 4) The 95th percentile projected upper bound is the maximum effluent value multiplied by the MF.



Scale 1 : 24,000

0 500 Meters

0 1,000 2,000 Feet

Regulated Facilities: EPA

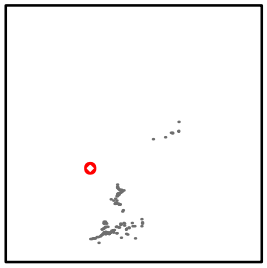
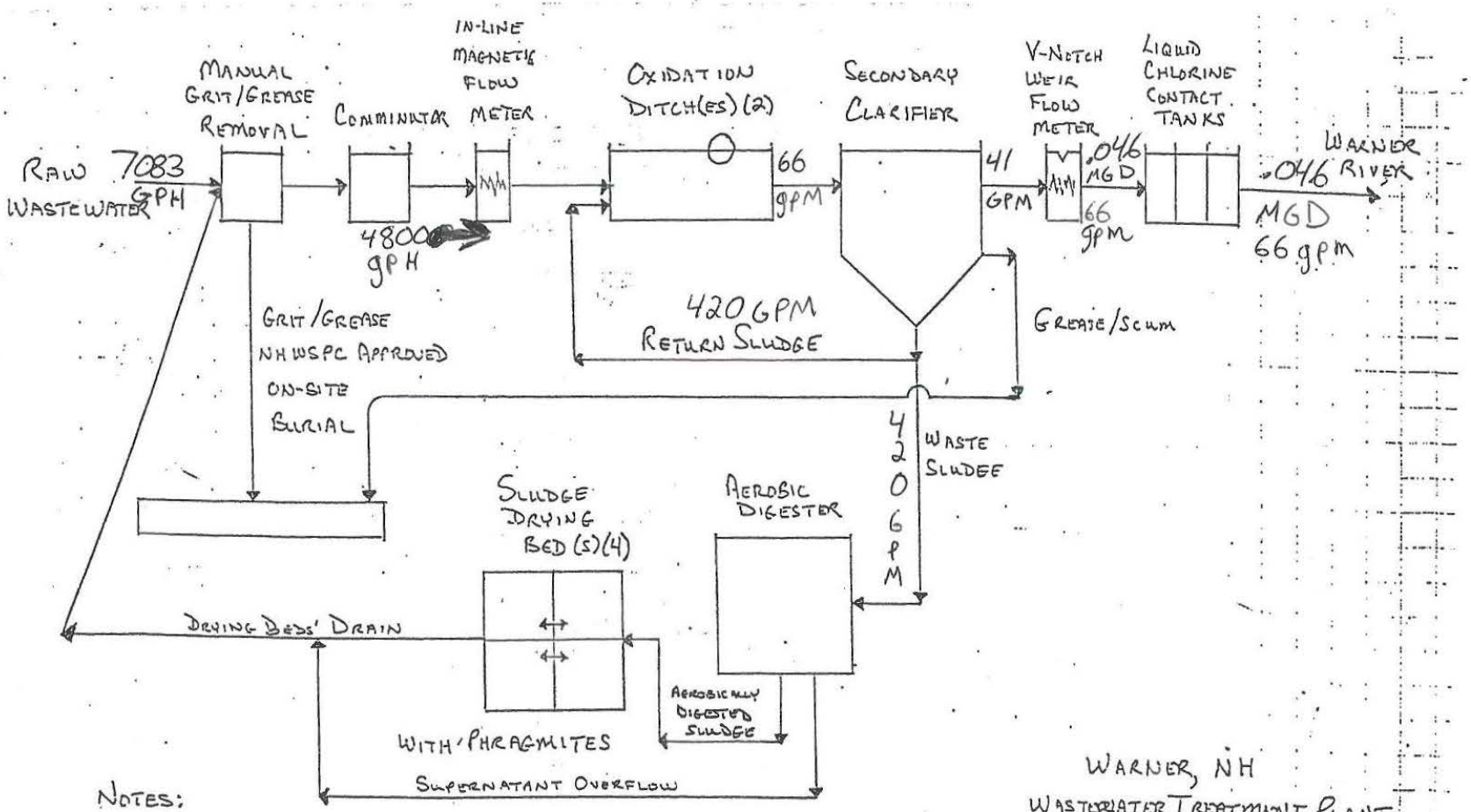


FIGURE 1
NH01000498
Warner Village Water District
Location Map

Warner, NH

EPA

4/21/2014



NOTES:

TREATMENT TYPE: OXIDATION DITCH
PROCESS CONTROL: EXTENDED AERATION
SLUDGE: HELD ON DRYING BEDS 5-10 yrs; THEN BAT
WATER SUPPLY: TOWN WELL - ROYCE WELL
WARNER RIVER USE(S): IN SEASON FISHING, CANOEING

WARNER, NH
WASTEWATER TREATMENT PLANT
UNIT PROCESS FLOW DIAGRAM AND DESIGN DATA

PREPARED BY: Jer Menard
TITLE: SUPERINTENDENT
DATE: 4-11-91

CHECKED BY: Jer Menard
TITLE: SUPERINTENDEN
DATE: 4-24-91

Figure 2 – Flow Schematic