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 City of Lebanon, New Hampshire

is authorized to discharge from the facility located at

28 Market Street and Seven Combined Sewer Overflows
West Lebanon, New Hampshire 03784

to receiving waters named

Connecticut River, Mascoma River and Great Brook (Hydrologic Basin Code: 01080106)

in accordance with effluent limitations, monitoring requirements and other conditions set forth herein.

The Town listed below is a co-permittee for activities required in Part I.B. (Unauthorized Discharges), Part I.C. (Operation and Maintenance of the Sewer System) and Part I.D. (Alternate Power Source). The co-permittee is subject to the requirements of these Parts only for those portions of the collection system it owns and operates.

Town of Enfield
Water and Sewer Dept.
74 Lockehaven Road
PO Box 373
Enfield, NH 03748

This permit shall become effective on December 1, 2015.

This permit and the authorization to discharge expire at midnight, five (5) years from last day of the month preceding the effective date.

This permit supersedes the permit issued on November 23, 2005.

This permit consists of **Part I** (19 pages including effluent limitations, monitoring requirements); **Attachment A** (USEPA Region 1 Freshwater Acute Toxicity Test Procedure and Protocol, February 2011, 8 pages), **Attachment B** (Map of Facility, Outfall, and CSOs) and **Part II** (25 pages including Standard Conditions and Definitions).

Signed this 30th day of September, 2015.

_/S/ SIGNATURE ON FILE_____
Ken Moraff, Director
Office of Ecosystem Protection
U.S. Environmental Protection Agency (EPA)
Boston, Massachusetts

PART I.
A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

1.a During the period beginning on the effective date and lasting through the expiration date, the permittee is authorized to discharge treated wastewater from Outfall Serial Number 001 into the receiving water (Connecticut 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 effluent.

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 (lb/day)	30 (796)	45 (1194)	50 (1327)	2/Week[3]	24 Hour Composite
TSS; mg/l (lb/day)	30 (796)	45 (1194)	50 (1327)	2/Week[3]	24 Hour Composite
pH Range[2]; Standard Units	6.5 to 8.0 (See I.J.5, State Permit Conditions)			1/Day	Grab
Total Residual Chlorine[5]; mg/l	1.0	---	1.0	1/Day	Grab
Escherichia coli[4]; Colonies/100 ml	126	---	406	3/Week	Grab
March 1 – September 30 Total Kjeldahl Nitrogen[12] mg/L (lb/day) Total Nitrate + Nitrite Nitrogen[12], mg/L (lb/day) Total Nitrogen, mg/L[12,13] (lb/day)	Report (Report) [12]	---	Report (Report)	1/Week	24-Hour Composite
October 1 – February 28 Total Kjeldahl Nitrogen[12] mg/L (lb/day) Total Nitrate + Nitrite Nitrogen[12], mg/L (lb/day) Total Nitrogen, mg/L[12,13] (lb/day)	Report (Report) [12]	---	Report (Report)	1/Month	24-Hour Composite
Whole Effluent Toxicity LC50 [6,7,8,9]; Percent	≥50			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 4 and 5 for footnotes

Part I.A continued:

EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

1.b. During the period beginning on the effective date of the permit and lasting through the expiration date, the permittee is authorized to discharge storm water/waste water from combined sewer outfalls Serial Number ZZ, 022, 023, and 026 into the Mascoma River; Serial Number 024 into the Connecticut River; and Serial Number 010 and 027 into Great Brook (Refer to Attachment A of the Fact Sheet for a map of CSO locations). These discharges are authorized only during wet weather. Such discharges shall be limited from only the outfalls listed, and be 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 effluent. A map showing the treatment plant and CSO outfalls is shown in Attachment B.

Effluent Characteristic	Discharge Limitation	Monitoring Requirement	
		Measurement Frequency	Sample Type
Escherichia coli **(Colonies per 100 ml)**	**1000**	**1/Year** [4,11]	**Grab**

See pages 4 and 5 for footnotes

Footnotes to Parts I.A.1.a and b

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

2. State Certification Requirement.

3. The influent concentrations of both five-day biochemical oxygen demand (BOD_5) and total suspended solids (TSS) shall be monitored twice per month (2/Month) using a 24-Hour Composite sample and the results reported as average monthly values.

4. 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.

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

5. Total residual chlorine shall be measured using any one of the approved methods listed in 40 CFR Part 136. The minimum level (ML) for total residual chlorine is defined as 20 ug/l. Sample results of 20 ug/l or less shall be reported as zero on the discharge monitoring reports.

6. The permittee shall conduct 48 hour acute toxicity tests on effluent samples using two species, Daphnid (Ceriodaphnia dubia) and Fathead Minnow (Pimephales promelas) following the protocol in **Attachment A** (Freshwater Acute Toxicity Test Procedure and Protocol dated February 2011). Dilution water is to be performed according to conditions set forth in Attachment A, Section IV, Dilution Water.

7. Toxicity test samples shall be collected and tests completed during the third quarter of each year. Toxicity test results are to be submitted with the Discharge Monitoring Report (DMR) for the following month.

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

9. LC50 (Lethal Concentration 50 Percent) is the concentration of wastewater causing mortality to 50 percent of the test organisms at a specified time of observations. The 50 % is defined as a sample which is composed of 50 percent effluent (See A.1.a. on Page 2 of **PART I** and Attachment A of **PART I**). Therefore, a 50 % limit means that a sample of 50 % effluent shall cause no greater that a 50 % mortality rate in that effluent sample. The limit is considered to be a maximum daily limit.

10. For each Whole Effluent Toxicity (WET) test the permittee shall report on the appropriate Discharge Monitoring Report (DMR), the concentrations of the hardness, ammonia nitrogen as N, and total recoverable aluminum, cadmium, copper, lead, nickel, and zinc.

11. The permittee shall monitor CSOs 022, 023, 026, 024, 010, and 027 according to the Lebanon, NH Combined Sewer Overflow (CSO) Sampling Program (revised December 2009).

    In addition, Outfall ZZ shall be sampled once per year during a wet weather discharge event. One grab sample shall be obtained within 2 hours after the outfall starts discharging. The maximum value of *Escherichia coli* for each wet weather discharge event shall be reported in the DMR for the month which the sampling occurred.

12. Total Kjeldahl nitrogen and total nitrate + nitrite nitrogen shall be collected concurrently. The results of these analyses shall be used to calculate both the concentration and mass loadings of total nitrogen (total nitrogen = total Kjeldahl nitrogen + total nitrate/nitrite nitrogen).

    The total nitrogen loading values reported each month shall be calculated as follows: Calculate daily loads of total nitrogen (lb/day) for each day that nitrogen sampling takes place. Loading (lb/day) = total nitrogen concentration (mg/l) * daily flow (mgd) * 8.345. The average monthly loading shall be the average of the daily loading results

13. See **Part I.F**. for optimization and reporting requirements for total nitrogen.

Part I.A. continued:

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 of 85 percent removal of both BOD_5 and TSS. The percent removal shall be based on a comparison of

average monthly influent versus effluent concentrations.

5. When the effluent discharged for a period of 3 consecutive months exceeds 80 percent of the 3.18 MGD design flow (2.54 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. All POTWs must provide adequate notice to both EPA-Region 1 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.

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

8. The permittee shall submit to EPA and NHDES-WD the name of any Industrial User (IU) who commences discharge to the POTW after the effective date of this permit:

    a. That discharges an average of 25,000 gallons per day or more of process wastewater into the POTW (excluding sanitary, non-contact cooling and boiler blow-down wastewater).

    b. That contributes a process wastewater which makes up five (5) percent or more of the average dry weather hydraulic or organic capacity of the POTW.

    c. That is designated as an IU 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 waste water treatment facility's operation, or violate any pretreatment standard or requirement in accordance with 40 CFR § 403.8(f)(6).

9. In the event that the permittee receives reports (baseline monitoring reports, 90-day compliance reports periodic reports on continued compliance, etc.) from Categorical Industrial Facilities regulated in 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

The permit only authorizes discharges in accordance with the terms and conditions of this permit and only from the outfalls listed in Part I.A.1.a. and b. 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 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 and co-permittee are required to complete the following activities for the collection system which it owns:

1. Maintenance Staff

   The permittee and co-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 Operation and Maintenance (O&M) Plan required pursuant to Section C.5. below.

2. Preventative Maintenance Program

   The permittee and co-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 and co-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 and co-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 (O&M) Plan

The permittee and co-permittee shall develop and implement Collection System Plans. In accordance with a consent decree, the permittee prepared and submitted a Collection System Operation and Maintenance Plan on January 28, 2011. This plan shall be kept up-to-date and available for review by federal, state, or local agencies.

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

(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. **Within twenty four (24) months from the effective date of this permit**, the co-permittee shall submit to EPA and NHDES and implement its full Collection System O&M Plan. The permittee shall submit an updated Collection System O&M Plan to its original January 28, 2011 submittal. 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 permittee and co-permittee's programs 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 and co-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 February 15th. The first annual report for the co-permittee is due the first February 15th 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 3.18 mgd design flow (2.54 mgd) 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 and co-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.

Dry metric Tons/Year	Frequency
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 both addresses (EPA and NHDES-WD) contained in the reporting section of the permit.

F. NITROGEN OPTIMIZATION

The permittee shall optimize its facility to maintain the mass discharge of total nitrogen less than the existing annual discharge load. The annual average total nitrogen load from this facility (2004-2005) is estimated to be **315 lb/day.**

The permittee shall also submit an annual report to EPA and NHDES, **by February 15th** of each year, that summarizes activities related to optimizing nitrogen removal efficiencies, documents the annual nitrogen discharge load from the facility, and tracks trends relative to the previous year.

G. COMBINED SEWER OVERFLOWS

1. Effluent Limitations

   a. During wet weather, the permittee is authorized to discharge

stormwater/wastewater from combined sewer outfalls listed in Part I.A.1.b above, subject to the following effluent limitations.

(1) The discharges shall receive treatment at a level providing Best Practicable Control Technology Currently Available (BPT), Best Conventional Pollutant Control Technology (BCT) to control and abate conventional pollutants and Best Available Technology Economically Achievable (BAT) to control and abate non-conventional and toxic pollutants. The EPA has made a Best Professional Judgment (BPJ) determination that BPT, BCT, and BAT for combined sewer overflow (CSO) control include the implementation of Nine Minimum Controls (NMC) specified below:

(a) Proper operation and regular maintenance programs for the sewer system and the combined sewer overflows.

(b) Maximum use of the collection system for storage.

(c) Review and modification of the pretreatment program to assure CSO impacts are minimized.

(d) Maximization of flow to the POTW for treatment.

(e) Prohibition of dry weather overflows from CSOs.

(f) Control of solid and floatable materials in CSOs.

(g) Pollution prevention programs that focus on contaminant reduction activities.

(h) Public notification to ensure that the public receives adequate notification of CSO occurrences and CSO impacts.

(i) Monitoring to effectively characterize CSO impacts and the efficacy of CSO controls.

(2) The Permittee shall continue implementation of the NMCs listed in Section I.G.1.a.(1) of this permit. These NMCs provided the basis for the Permittee's NMC document originally submitted to the EPA on May 29, 1997, and subsequently updated on October 28, 1998.

b. The permittee shall submit to the EPA **by February 15th** of each year a report that demonstrates the continual implementation of the NMCs for the previous twelve months. This report must include a detailed description and evaluation of specific activities the permittee has undertaken in the past year to continue implementation and maintenance of the NMCs. The

report must include the minimum requirements set forth in Part I.G. This report shall detail, if the case arises, why the permittee was unable to monitor any of the CSOs listed in Part I.A.1.b of this permit. The report shall also document planned activities and any additional controls the permittee can feasibly implement.

2. Unauthorized Discharges

   a. The permittee is authorized to discharge only in accordance with the terms and conditions of this permit and only from those outfalls listed in Part I.A.1.b of this permit. Discharges of wastewater from any other point source are not authorized under this permit

   b. Dry weather overflows are prohibited. All dry weather domestic, commercial or industrial discharges from a CSO must be reported to the EPA and NHDES within 24 hours in accordance with the reporting requirements for a plant bypass (Part II.B.4 Bypass of this permit).

   c. The State of New Hampshire and EPA have the right to inspect any CSO related structure or outfall at any time without prior notification to the permittee.

   d. The CSO discharges shall not cause violations of Federal or State Water Quality Standards.

3. Monitoring Requirements

   a. The permittee shall continue to quantify and record all discharges from combined sewer outfalls. Quantification may be through direct measurement or estimation. When estimating, the permittee shall make reasonable efforts, i.e. gaging, measurements, to verify the validity of the estimation technique. The following information must be recorded for each combined sewer outfall for each discharge event:

      (1) Date of discharge
      (2) Estimated duration (hours) of discharge;
      (3) Estimated volume (gallons) of discharge; and
      (4) National Weather Service precipitation data from the nearest gage where precipitation is available at daily (24- hour) intervals and the nearest gage where precipitation is available at one-hour intervals. Cumulative precipitation per discharge event shall be calculated.

   b. The permittee shall submit to the EPA on February 15th of each year a certification to the State and EPA which states that the previous twelve monthly inspections were conducted, results recorded, and records maintained.

The permittee shall maintain all records of discharges for at least six years after the effective date of this permit.

H. SPECIAL CONDITIONS

pH Limit Adjustment

The permittee may submit a written request to the EPA-Region 1 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-Region 1 indicating the pH limit range has been changed, the permittee is required to meet the permitted pH limit range in the respective permit.

I. 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.I.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.I.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, hard copies to EPA and NHDES will no longer be required.

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. This includes NHDES Monthly Operating Reports (MORs). (See Part I.I.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 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).

A. Request for changes in sampling location
B. Request for reduction in testing frequency
C. Request for reduction in WET testing requirement
D. Report on unacceptable dilution water / request for alternative dilution water for WET testing

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

4. 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. Collection System Operation and Maintenance Plan (from co-permittee)
D. Report on annual activities related to O&M Plan (from co-permittee)
E. 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

Please note, that co-permittee submittals under Part 1 B (Unauthorized Discharges), C (Operation and Maintenance of the Sewer System) and D (Alternate Power Source) shall also be sent to the City of Lebanon at the following address

Lebanon Public Works
193 Dartmouth College Highway
Labanon, NH 03766
Attn: Wastewater Superintendent

All sludge monitoring reports required herein and submitted prior to the use of NetDMR shall be submitted to:

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

5. 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.I.2, I.I.2, and I.I.4 also shall be submitted to the State electronically via email to the permittee's assigned NPDES inspector at NHDES-WD or in hard copy to the following address:

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

6. 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

7. 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
617-918-1510

Verbal reports and verbal notifications shall also be made to the permittee's assigned NPDES inspector at NHDES –WD.

J. 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. The pH range of 6.5 to 8.0 Standard Units (S.U.) must be achieved in the final effluent unless the permittee can demonstrate to NHDES-WD: (1) that the range should be widened due to naturally occurring conditions in the receiving water or (2) that the naturally occurring receiving water pH is not significantly altered by the permittee's discharge. The scope of any demonstration project must receive prior approval from NHDES-WD. In no case, shall the above procedure result in pH limits outside the range of 6.0 – 9.0 S.U., which is the federal effluent limitation guideline regulation for pH for secondary treatment and is found in 40 CFR 133.102(c).

6. 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.

7. 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.

8. 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.

7. 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

ATTACHMENT A

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°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 (°C)	20 ± 1°C or 25 ± 1°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	≥ 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 (°C)	20 ± 1 ° C or 25 ± 1°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	≥ 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)

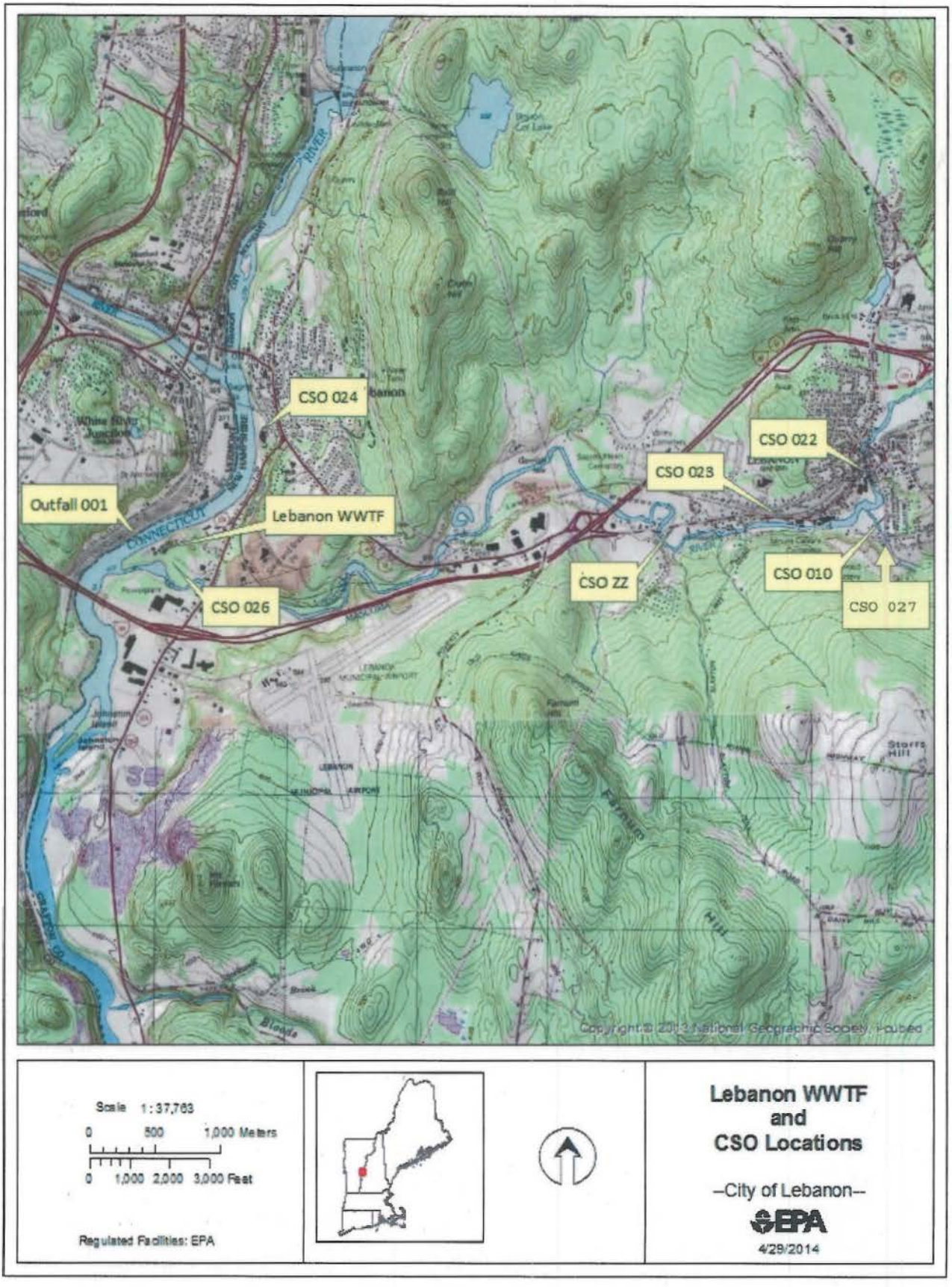
See the flow chart in Figure 13 on p. 87 of EPA-821-R-02-012.

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.

ATTACHMENT B – MAP OF FACILITY, OUTFALL AND CSOs



NPDES PART II STANDARD CONDITIONS
(January, 2007)

TABLE OF CONTENTS

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND - REGION I
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

PUBLIC NOTICE START AND END DATE: September 26, 2014 – October 25, 2015

PUBLIC NOTICE NUMBER: NH-011-14

NPDES PERMIT NO.: NH0100366

CONTENTS: 36 pages including 3 attachments

NAME AND MAILING ADDRESS OF APPLICANT:

City of Lebanon Department of Public Works
193 Dartmouth College Highway
Lebanon, New Hampshire 03766

NAME AND ADDRESS OF FACILITY WHERE DISCHARGE OCCURS:

Lebanon Wastewater Treatment Plant 28 Market Street West Lebanon, New Hampshire 03784	and	Seven Combined Sewer Overflow Outfalls (Refer to Section IV.H.)

The Towns listed below are co-permittees for activities required in Part I.B. (Unauthorized Discharges), Part I.C. (Operation and Maintenance of the Sewer System) and Part I.D. (Alternate Power Source).

Town of Enfield
Water and Sewer Dept.
74 Lockehaven Road
PO Box 373
Enfield, NH 03748

RECEIVING WATER: Connecticut River, Mascoma River and Great Brook
(Hydrologic Unit Code: 01080104)

CLASSIFICATION: B (all)

TABLE OF CONTENTS:

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

The above named applicant has applied to the U.S. Environmental Protection Agency (EPA) for reissuance of its NPDES permit to discharge treated effluent into the designated receiving waters (Connecticut River, Mascoma River and Great Brook). The facility collects and treats domestic, commercial and industrial wastewater from the City of Lebanon and the Town of Enfield. Currently about 25 percent of the collection system consists of combined sewers, which are designed to collect and transport wastewater and storm water runoff. There are six active combined sewer overflow discharges in the collection system (two have been eliminated during the term of the current permit), which may discharge during wet weather events. The facility also accepts septage.

The Connecticut River is used for fishing, swimming, boating and other primary contact recreation. The effluent from the facility does not discharge directly to a designated beach area. The Mascoma River and Great Brook are used for fishing and swimming. The Mascoma River also provides drinking water for Lebanon, but the intakes for the drinking water treatment plant are in the upper reaches of the Mascoma River above all CSO discharges.

The Lebanon Wastewater Treatment Plant has a design flow of 3.18 million gallon per day (mgd) and utilizes an extended aeration activated sludge treatment process. Influent wastewater passes through a mechanical bar screen and a grit collector, and is pumped to two primary settling tanks. Settled primary sludge is pumped to a sludge storage tank and dewatered by centrifuges; clarified wastewater flows to two aeration basins for biological treatment. The discharge from the two aeration basins is settled in two secondary settling tanks. The majority of the settled sludge is returned to the aeration basins as activated sludge, with the remaining portion wasted from the system, thickened by dissolved air floatation thickeners, sent to the sludge storage tank, and ultimately dewatered by centrifuges. The treated wastewater from the two secondary settling tanks is disinfected with sodium hypochlorite and discharged into the Connecticut River via Outfall 001.

Dewatered sludge and grit is transported for disposal to the Lebanon Secure Solid Waste Landfill, a double lined municipal solid waste landfill.

As previously indicated, the City of Lebanon owns and operates a combined sewer system that has seven active Combined Sewer Overflows (CSOs). CSOs are discharges of untreated wastewater and storm water into a receiving water. CSOs occur when the flow in the combined sewer system exceeds interceptor or regulator capacity. CSO Serial Nos. ZZ, 022, 023, and 026 discharge to the Mascoma River; CSO Serial No. 024 discharges to the Connecticut River; and CSO Serial No. 010 and 027 discharges to the Great Brook. Approximately 25% of Lebanon's sewer system is combined, carrying domestic, commercial and industrial wastewater plus storm water runoff.

The City of Lebanon is in the design phase of a wastewater treatment plant upgrade intended to replace original or worn-out equipment. Upgrades will include de-chlorination, odor control, instrumentation, biological nutrient removal, and laboratory and administrative facilities.

The existing permit was issued on November 23, 2005. Map locations of the treatment plant and Outfalls, both for the treatment plant and the CSOs, are contained in **Attachment A.**

II. Description of Discharge.

A quantitative description of the discharge in terms of effluent monitoring data from Discharge Monitoring Reports (DMRs) submitted to EPA from January 2009 to November 2013 is shown in **Attachment B**. The draft permit contains limitations for pH, total suspended solids (TSS), 5-day biochemical oxygen demand (BOD_5), total residual chlorine (TRC), *Escherichia coli* (*E. coli*) and whole effluent toxicity (WET).

III. Limitations and Conditions.

Effluent limitations, monitoring requirements, and any implementation schedule (if required) are found in PART I of the draft NPDES permit. The basis for each limit and condition is discussed in sections IV.C through IV.J of this fact sheet.

IV. Permit Basis and Explanation of Effluent Limitations Derivation.

A. General Regulatory Background

The Clean Water Act (CWA) prohibits the discharge of pollutants to waters of the United States without a National Pollutant Discharge Elimination System (NPDES) permit unless such a discharge is otherwise authorized by the CWA. The NPDES permit is the mechanism used to implement technology and water quality-based effluent limitations and other requirements, including monitoring and reporting. The draft NPDES permit is developed in accordance with various statutory and regulatory requirements established pursuant to the CWA and any applicable State administrative rules. The regulations governing EPA's NPDES permit program are generally found in 40 CFR Parts 122, 124, 125 and 136.

EPA is required to consider technology and water-quality based requirements as well as those requirements and limitations included in the existing permit when developing the revised permit's effluent limits. Technology-based treatment requirements represent the minimum level of control that must be imposed under Sections 301(b) and 402 of the CWA. Secondary treatment technology guidelines (i.e., effluent limitations for POTWs) can be found at 40 CFR § 133.

In the absence of published technology-based effluent guidelines, the permit writer is authorized under Section 402(a)(1)(B) of the Act to establish effluent limitations on a case-by-case basis using Best Professional Judgment (BPJ).

In general, all statutory deadlines for meeting various treatment technology-based effluent limitations established pursuant to the CWA have expired. When technology-based effluent limits are included in a permit, compliance with those limitations is effective from the date the revised permit is issued (See 40 CFR § 125.3(a)(1)). Compliance schedules and deadlines not in accordance with the statutory provisions of the Act cannot be authorized by a NPDES permit.

EPA regulations require NPDES permits to contain effluent limits more stringent than technology-based limits where more stringent limits are necessary to maintain or achieve state or federal water-quality standards (See Section 301(b)(1)(C) of the CWA). A water quality standard consists of three elements: (1) beneficial designated use or uses for a water body or a segment of a water body; (2) a numeric or narrative water-quality criteria sufficient to protect the assigned designated use(s); and (3) an anti-degradation requirement to ensure that once a use is attained it will not be eroded.

Receiving water requirements are established according to numerical and narrative standards adopted under state law for each receiving water classification. When using chemical-specific numeric criteria from the state's water-quality standards to develop permit limits both the acute and chronic aquatic-life criteria, expressed in terms of maximum allowable in-stream pollutant concentration, are used. Acute aquatic-life criteria are considered applicable to daily time periods (maximum daily limit) and chronic aquatic-life criteria are considered applicable to monthly time periods (average monthly limit). Chemical-specific limits are allowed under 40 CFR § 122.44(d)(1) and are implemented under 40 CFR § 122.45(d).

B. Introduction

The NPDES permit shall limit any pollutant or pollutant parameter (conventional, non-conventional, toxic and whole effluent toxicity) that is or may be discharged at a level that causes or has "reasonable potential" to cause or contribute to an excursion above any water-quality criterion. An excursion occurs if the projected or actual in-stream concentration exceeds the applicable criterion.

Reasonable Potential

In determining reasonable potential, EPA considers: (1) existing controls on point and non-point sources of pollution; (2) pollutant concentration and variability in the effluent and receiving water as determined from permit's reissuance application, Monthly Discharge Monitoring Reports (DMRs), and State and Federal Water Quality Reports; (3) sensitivity of the species to toxicity testing; (4) statistical approach outlined in Technical Support Document for Water Quality-based Toxics Controls, EPA/505/2-90-001, March 1991; and, where appropriate, (5) dilution of the effluent in the receiving water. In accordance with New Hampshire statutes and administrative rules [RSA 485-A:8,VI, Env-Wq 1705.01 and 1705.02], available dilution is based on a known or estimated value of the lowest average annual flow which occurs for seven (7) consecutive days with a recurrence interval of once in ten (10) years (7Q10) for aquatic life or the long term harmonic mean flow for human health (carcinogens only) in the receiving water at the point just upstream of the outfall. Furthermore, 10 percent (%) of the receiving water's assimilative capacity is held in reserve for future needs in accordance with New Hampshire's Surface Water Quality Regulation Env-Wq 1705.01.

Antibacksliding

Sections 402(o) and 303(d)(4) of the CWA and 40 CFR § 122.44(l)(1 and 2) contain anti-backsliding provisions, which generally prohibit the relaxation of permit limits, standards, and

conditions in NPDES permits unless certain conditions are met. Unless those conditions are met the limits in the reissued permit must be at least as stringent as those in the previous permit.

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).

C. Conventional Pollutants

i. Flow

The Lebanon WWTP has a design flow of 3.18 mgd. This flow rate is used to calculate available dilution as discussed below. If the effluent flow rate exceeds 80 percent of the 3.18 mgd design flow (2.54 mgd) for a period of three (3) consecutive months then the permittee must notify EPA and the NHDES-WD and implement a program to maintain satisfactory treatment levels.

The facility's design flow rate of 3.18 MGD is also used to calculate the mass and concentration limits for five-day biochemical oxygen demand (BOD_5) and total suspended solids (TSS), as discussed below.

ii. BOD_5 and TSS

The average monthly and weekly concentration-based limitations for biochemical oxygen demand (BOD_5) and total suspended solids (TSS) are based on requirements under Section 301(b)(1)(B) of the CWA as defined in 40 CFR § 133.102; mass-based effluent limitations for monthly average and weekly average BOD_5 and TSS average are based on requirements found at 40 CFR § 122.45(f). The calculations of maximum allowable loads for BOD_5 and TSS are based on the following equation.

$$L = C \times Q_{PDF} \times 8.345$$

where:

L = Maximum allowable load, in lb/day
C = Maximum allowable effluent concentration for reporting period, in mg/l
Q_{PDF} = Treatment plant's design flow, 3.18 mgd
8.345 = Factor to convert effluent concentration times design flow to lb/day

Monthly average, weekly average, and daily maximum mass effluent limitation are calculated as follows:

Monthly Average = (30 mg/l)(3.18 mgd)(8.345) = 796 lb/d
Weekly Average = (45 mg/l)(3.18 mgd)(8.345) = 1194 lb/d
Maximum Daily = (50 mg/l)(3.18 mgd)(8.345) = 1327 lb/d

Effluent limitations in the draft permit for BOD_5 and TSS are the same as the limits in the 2006 permit, and thus are consistent with antibacksliding requirements. The permittee has been able to achieve consistent compliance with these limitations. Compliance monitoring frequency for BOD_5 and TSS in the draft permit is twice per week

iii. pH and E. Coli

Effluent limitations in the draft permit for pH and Escherichia coli bacteria are the same as the limits in the existing permit. Continuing these limitations is consistent with antibacksliding requirements.

Historically, the NHDES-WD has required pH and bacteria limits to be satisfied at end-of-pipe with no allowance for dilution. The pH range and the average monthly and maximum daily limits for Escherichia coli bacteria are based upon State Certification Requirements.

Effluent limitations for Escherichia coli bacteria are 126 colonies/100 ml for a monthly average and 406 colonies/100 ml for a daily maximum. Calculation for compliance with the average monthly limit for Escherichia coli shall be determined by using the geometric mean. These limits are for Class B waters not designated as beach areas. The original basis for this limitation is found in New Hampshire's State statutes (N.H. RSA 485-A:8) and State certification requirements for POTWs under section 401(d) of the CWA, 40 CFR §§ 124.53 and 124.55). Compliance monitoring frequency for E. Coli in the draft permit is three times per week (3/week).

The pH limitation of 6.0 – 8.0 SU is based on the NHDES Surface Water Quality Regulations for Class B waters (see Env-Wq 1703.18(b)). The monitoring frequency is once per day, the same as in the current permit. The language to the State Permit Conditions in the current permit allowing for a change in pH limit(s) under certain conditions will continue in the draft permit. A change will be considered if the applicant can demonstrate to the satisfaction of NHDES-WD that the in-stream pH standard will be protected when the discharge is outside the permitted range, then the applicant or NHDES-WD may request (in writing) that the permit limits be modified by EPA to incorporate the results of the demonstration. Anticipating the situation where NHDES-WD grants a formal approval changing the pH limit(s) to outside the 6.5 to 8.0 Standard Units (S.U.), EPA has included a provision to this draft permit (See SPECIAL CONDITIONS section). That provision will allow EPA to modify the pH limit(s) using a certified letter approach. This change will be allowed as long as it can be demonstrated that the revised pH limit range does not alter the naturally occurring receiving water pH. Reference Part I.E.1.a. STATE PERMIT CONDITIONS in that permit. However, the pH limit range cannot be less restrictive than 6.0 - 9.0 S.U. found in the applicable National Effluent Limitation Guideline (Secondary Treatment Regulations in 40 CFR Part 133) for the facility.

If the State approves results from a pH demonstration study, this permit's pH limit range can be relaxed in accordance with 40 CFR § 122.44(l)(2)(i)(B) because it will be based on new information not available at the time of this permit's issuance. This new information includes results from the pH demonstration study that justifies the application of a less stringent effluent limitation. EPA anticipates that the limit determined from the demonstration study as approved by the NHDES-WD will satisfy all effluent requirements for this discharge category and will comply with NH Standards adopted on December 10, 1999.

D. Non-Conventional and Toxic Pollutants

Water-quality based limits for specific toxic pollutants such as chlorine, ammonia, etc. are determined from chemical specific numeric criteria derived from extensive scientific studies. The specific toxic pollutants and their associated toxicity criteria are popularly known as the "Gold Book Criteria" which EPA summarized and published in **Quality Criteria for Water, 1986, EPA 440/5-86-001** as amended). On December 10, 1998 EPA amended the water quality criteria. The State of New Hampshire adopted these "Gold Book Criteria", with few exceptions, and included them as part of the State's Revised Water Quality Regulations adopted on December 10, 1999. EPA and State use these pollutant specific criteria along with available dilution in the receiving water to determine a specific pollutant's draft permit limit, such as the fast acting toxicant chlorine. Available dilution and its relation to the limits for total residual chlorine for this facility are discussed below under separate subheadings.

i. Available Dilution

A dilution factor of 164 was used to calculate water quality–based limits in the current permit. In developing the draft permit, the receiving water 7Q10 flow was updated, resulting in an increase in the receiving water 7Q10 and a corresponding increase in the dilution factor. The available dilution factor in the receiving water has been determined to be 193. This calculation is

based on using the plant's design flow of 3.18 MGD (4.92 cfs), an estimate of the 7Q10 low flow in the Connecticut River nearest to the treatment plant's outfall of 678 MGD (1049 cfs), and a State of New Hampshire prescribed minimum 10% set aside or reserve. The Connecticut River's 7Q10 flow data (April 1, 1979 – March 31, 2010) was taken from the U.S. Geological Survey (USGS) gaging station (stream flow measuring site) at West Lebanon, NH (01144500). The West Lebanon station is about one mile upstream from the POTW's outfall; the new 7Q10 flow is 1,049 cfs (678 mgd). The State has reserved 10 percent of the Assimilative Capacity of the receiving water for future uses pursuant to RSA 485-A:13,I.(a) and Env-Wq 1705.01.

ii. Total Residual Chlorine

The total residual chlorine (TRC) limits in the draft permit are the same as the limits in the current permit. The December 10, 1998 EPA chronic and acute water quality criteria for chlorine are 0.011 mg/l and 0.019 mg/l, respectively. The State's Water Quality Criteria for chlorine found under Part Env-Wq 1703.21 of NHDES's Surface Water Quality Regulations are the same as the EPA criteria. With an available dilution of 193 in the receiving water, the calculated average monthly and maximum daily limits are 2.12 mg/l and 3.67 mg/l, respectively. In the current permit, the 1.0 mg/l limitation for both monthly average and maximum daily effluent limitations are more stringent than the 2.12 and 3.67 mg/l, respectively. Based on EPA's anti-backsliding regulation [40 CFR 122.44(l)], the current limits will continue in the draft permit.

Inspection of discharge monitoring reports (DMR's) from June 2009 to August 2011 shows that the permittee has consistently achieved the existing permit's limits.

iii. Nitrogen

The current permit requires monitoring of ammonia nitrogen at a frequency of once per year, but does not require reporting of total nitrogen and its compounds. The draft permit proposes monitoring once per month during the months of October through February and once per week March through September with reporting of maximum daily effluent concentrations and masses of total nitrogen, total ammonia nitrogen, total Kjeldahl nitrogen, and total nitrate + nitrite nitrogen consistent with other permits that discharge to the Long Island Sound watershed. These changes are further explained below.

Excessive nitrogen loadings are causing significant water quality problems in Long Island Sound, including low dissolved oxygen. In December 2000, the Connecticut Department of Energy and Environmental Protection (CT DEEP) completed a total maximum daily Load (TMDL) for addressing nitrogen-driven eutrophication impacts in Long Island Sound. The TMDL included a waste load allocation (WLA) for point sources and a load allocation (LA) for non-point sources. The point source WLA for out-of-basin sources (Massachusetts, New Hampshire and Vermont wastewater facilities discharging to the Connecticut, Housatonic and Thames River watersheds) requires an aggregate 25% reduction from the baseline total nitrogen loading estimated in the TMDL.

Please note, the aggregate 25% reduction has already been achieved through nitrogen optimization efforts; therefore no reductions below the 2005 baseline levels are needed at this

time. The intent of nitrogen monitoring and optimization is to ensure that the 25% reduction is maintained.

The baseline total nitrogen point source loadings estimated for the Connecticut, Housatonic, and Thames River watersheds were 21,672 lbs/day, 3,286 lbs/day, and 1,253 lbs/day respectively (see table below). The estimated point source total nitrogen loadings for the Connecticut, Housatonic, and Thames Rivers respectively are 13,836 lbs/day, 2,151 lbs/day, and 1,015 lbs/day, based on recent information and including all POTWs in the watershed. The following table summarizes the estimated baseline loadings, TMDL target loadings, and estimated current loadings.

Basin	Baseline Loading[1] (lbs/day)	TMDL Target[2] (lbs/day)	Loading[3] (lbs/day)
Connecticut River	21,672	16,254	13,836
Housatonic River	3,286	2,464	2,151
Thames River	1,253	939	1,015
Total	26,211	19,657	17,002

The TMDL target of a 25 percent aggregate reduction from baseline loadings is currently being met.

The estimated current loading for the Lebanon WWTP used in the above analysis was 315 lb/day, based upon a total nitrogen concentration of 19.06 mg/l and the average flow of 1.98 mgd (19.06 mg/L *1.98 mgd * 8.34), as indicated in the Facility's 2004 through 2005 DMRs.

The current permit does not require monitoring of total nitrogen, so the baseline values cannot be compared to current discharge values. However, the effluent ammonia concentration is quite low (averaging 0.085 mg/l), indicating that the facility is nitrifying very effectively.

To ensure that the aggregate nitrogen loading from out-of-basin point sources does not exceed the TMDL target of a 25% reduction over baseline loadings, EPA intends to include a permit condition for all existing treatment facilities in Massachusetts and New Hampshire that discharge to the Connecticut, Housatonic, and Thames River watersheds, requiring the permittees to evaluate alternative methods of operating their treatment plants to optimize the removal of nitrogen, and to describe previous and ongoing optimization efforts. Facilities not currently engaged in optimization efforts will also be required to implement optimization measures sufficient to ensure that their nitrogen loads do not increase, and that their aggregate 25% reduction target loading is maintained. Such a requirement has been included in this permit. EPA has worked with the State of Vermont to ensure that similar requirements are included in its discharge permits.

Specifically, the permit requires an evaluation of alternative methods of operating the existing wastewater treatment facility to control total nitrogen levels, including, but not limited to, operational

1 Estimated loading from TMDL (see Appendix 3 to CT DEEP "Report on Nitrogen Loads to Long Island Sound", April 1998).
2 Reduction of 25% from baseline loading.
3 Estimated current loading from 2004 – 2005 DMR data.

changes designed to enhance nitrification (seasonal and year-round), incorporation of anoxic zones, septage receiving policies and procedures, and side stream management. This evaluation is required to be completed and submitted to EPA and NHDES within one year of the effective date of the permit, along with a description of past and ongoing optimization efforts. The permit also requires implementation of optimization methods sufficient to ensure that there is no increase in total nitrogen compared to the average daily load (i.e. 315 lbs/day). The permit requires annual reports to be submitted that summarize progress and activities related to optimizing nitrogen removal efficiencies, document the annual nitrogen discharge load from the facility, and track trends relative to previous years. To better monitor the nitrogen removal in this optimization level, the draft permit requires total nitrogen monitoring once per week from March through September of each year, and once per month from October through February. The annual average target loading for the Lebanon WWTP is 315 lb/day as an annual average from January through December of each year.

The agencies will annually update the estimate of all out-of-basin total nitrogen loads and may incorporate total nitrogen limits in future permit modifications or reissuances as necessary to address increases in discharge loads, a revised TMDL, or other new information that may warrant the incorporation of numeric permit limits. There have been significant efforts by the New England Water Pollution Control Commission (NEIWPCC) work group and others since completion of the 2000 TMDL, which are anticipated to result in revised wasteload allocations for in-basin and out-of-basin facilities. Although not a permit requirement, EPA strongly recommends that permittees consider alternatives for further enhancing nitrogen reduction in their facility planning.

iv. 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 August 2009 through August 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 40.3 mg/l as $CaCO_3$, using a mass balance equation with the design flow, receiving water

7Q10, an upstream median hardness of 40 mg/l as $CaCO_3$ and an effluent median hardness of 110 mg/l as $CaCO_3$. The following table presents the factors used to determine the acute and chronic total recoverable criteria for each metal:

Metal	Parameters				Total Recoverable Criteria	
	m_a	b_a	m_c	b_c	Acute Criteria (CMC)* (ug/L)	Chronic Criteria (CCC)** (ug/L)
Aluminum	--	--	--	--	750	87
Cadmium	1.1280	-3.6867	0.7852	-2.7150	1.62	1.21
Chromium III	0.819	3.7256	0.819	0.6848	856.55	40.94
Copper	0.9422	-1.7000	0.8545	-1.702	5.95	4.29
Lead	1.273	-1.46	1.273	-4.705	25.67	1.00
Nickel	0.846	2.255	0.846	0.0584	217.48	24.18
Zinc	0.8473	0.884	0.8473	0.884	55.47	55.47

* Acute Criteria (CMC) = $\exp\{m_a*\ln(\text{hardness})+b_a\}$

** Chronic Criteria (CCC) = $\exp\{m_c*\ln(\text{hardness})+b_c\}$

In order 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 = effluent flow (design flow = 3.18 mgd = 4.92 cfs)
C_d = effluent metals concentration in ug/L (maximum reported[4])
Q_S = stream flow upstream (Q_S = 1049 cfs)
C_S = median upstream metals concentration in ug/L
Q_r = stream flow downstream, after discharge (Q_r = 1049 + 4.92 = 1053.92 cfs)
C_r = downstream pollutant concentration in ug/L

4 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 in determining reasonable potential.

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. If there is reasonable potential (for either acute or chronic conditions), the appropriate limit is then calculated by rearranging the above mass balance to solve for the effluent concentration (C_d) using the criterion times 0.9 as the resultant in-stream concentration (C_r). See the table below for the results of this analysis with respect to aluminum, cadmium, chromium, copper, lead, nickel and zinc.

Metal	Qd	Cd^1 (Max)	Q_s	Cs^2 (Median)	Qr	$Cr = (QdCd+QsCs)/Q_r$	Total Recoverable Criterion * 0.9		Reasonable Potential
	cfs	ug/l	cfs	ug/l	cfs	ug/l	Acute (ug/l)	Chronic (ug/l)	Cr > Criteria
Aluminum	4.92	60	1049	70	1054	70	675	78.3	No
Cadmium		0		0		0	1.46	1.09	No
Chromium		0		0		0	770.89	36.85	No
Copper		17		1		1.1	5.35	3.86	No
Lead		1		0		0	23.11	0.90	No
Nickel		5		0		0.02	195.73	21.76	No
Zinc		74		0		0.3	49.93	49.93	No

[1] Values represent the maximum measured concentration from the 2009-2013 whole effluent toxicity (WET) measurements (see Attachment B).

[2] Median upstream data taken from 2009-2013 WET testing results on Connecticut River upstream of the Lebanon WWTF (see Attachment B).

As indicated in the table above, 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, copper, lead, nickel, or zinc will cause or contribute to an exceedance of the applicable water quality criteria.

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 methodology 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 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 Attachment C 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	Qd	Cd[1] (95th Percentile)	Qs	Cs[2] (Median)	Qr	Cr = (QdCd+QsCs)/Q_r	Total Recoverable Criterion * 0.9		Criteria * 0.9 Exceeeded?
	cfs	ug/l	cfs	ug/l	cfs	ug/l	Acute (ug/l)	Chronic (ug/l)	Cr > Criteria
Aluminum		126		70		70	675	78.3	No
Cadmium		0		0		0	1.46	1.09	No
Chromium		0		0		0	770.89	36.85	No
Copper	4.92	36	1049	1	1054	1	5.35	3.86	No
Lead		2		0		0.01	23.11	0.90	No
Nickel		10.5		0		0.05	195.73	21.76	No
Zinc		155.4		0		0.7	49.93	49.93	No

[1] Values calculated using procedures in Attachment C, using the WET measurements from the 2009-2013 WET testing noted above.

[2] Median upstream data taken from WET testing results on the Connecticut River upstream of the Lebanon WWTF (see Attachment B).

As indicated in the table above, 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, copper, lead, nickel, or zinc will cause or contribute to an exceedance of the applicable water quality criteria. Hence, the draft permit does not contain additional monitoring for any of these metals. Monitoring and reporting for all metals will continue to be required as part of the WET tests.

E. Whole Effluent Toxicity

EPA's Technical Support Document for Water Quality-based Toxics Control, EPA/505/2-90-001, March 1991, 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. Pollutant specific approaches, as those in the Gold Book and State regulations, address individual chemicals. A Whole Effluent Toxicity (WET) approach, alternatively, evaluates interactions between pollutants thus rendering an "overall" or "aggregate" toxicity assessment of the effluent. WET testing measures the "additive" and/or "antagonistic" effects of individual chemical pollutants which pollutant specific approaches do not. WET testing also provides the best means to discover the presence of an unknown toxic pollutant. An integrated strategy, consisting of both specific pollutant and WET testing, is required to protect aquatic life and human health.

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;...." (N.H. RSA 485-A:8, VI and the N.H. Code of Administrative Rules, PART Env-Wq 1703.21(a)). The 2006 permit required WET testing. Since there has been no change in the operating conditions at the Lebanon WWTP and the permittee continues to successfully meet the permitted limits for toxicity, the draft permit's WET limit remains the same as those in the 2006 permit. This is in accordance with the antibacksliding requirements found in 40 CFR § 122.44.

EPA-Region 1's current policy requires toxicity testing in all municipal permits. The type of whole effluent toxicity (WET) test, acute and/or chronic and effluent limitations (LC50 and/or C-NOEC), are based on available dilution. The 2006 permit requires the permittee to perform one acute toxicity test per year. EPA – Region 1's policy for frequency of WET testing for available dilutions greater than 100:1 requires that two WET test per year be conducted. The reduction in testing was granted because the previous WET tests demonstrated consistent compliance with the effluent limit. The current requirement (i.e. one acute toxicity test per year) will continue in the draft permit.

The acute toxicity test is conducted using two (2) species; daphnid (Ceriodaphnia dubia) and fathead minnow (Pimephales promelas). The permit contains an LC50 limit of 50% effluent concentration. The LC50 is defined as the percentage of effluent lethal to 50% of the test organisms during a specific length of time (Refer to **Attachment A** of draft permit). The annual sample for the WET test shall be taken, and the tests completed, during the third quarter (July-September). Results are to be submitted to the EPA and the NHDES-WD with the DMR report for October.

If the annual toxicity test demonstrates non-compliance with the effluent limit, the permit may be modified and monitoring frequency and testing requirements increased. The permit may also be modified, or alternatively, revoked and reissued to incorporate additional toxicity testing requirements or chemical specific limits. These actions will occur if the Regional Administrator determines it is necessary to protect the State's surface water quality and the users of the waterways during the remaining life of the permit. Results of these toxicity tests are considered "new information not available at permit development"; therefore, the permitting authority is

allowed to use said information to modify an issued permit under authority in 40 CFR § 122.62(a)(2).

This draft permit requires the reporting of selected parameters determined from the chemical analysis of the WET tests effluent samples. Specifically, parameters for the constituents of ammonia nitrogen as nitrogen, hardness, and total recoverable aluminum, cadmium, copper, lead, nickel, and zinc are to be reported on the appropriate Discharge Monitoring Reports for entry into the EPA's Permit Compliance Systems Data Base. EPA – Region 1 does not consider reporting these requirements an unnecessary burden as the reporting of these constituents is required with the submission of each toxicity report (See Draft Permit, Attachment A).

F. Sludge

Section 405(d) of the 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. The permit contains conditions intended to implement Section 405(d). Conditions include: required compliance by the statutory deadlines; causes for modification of the permit; and, appropriate and necessary conditions to ensure that EPA and NHDES-WD are notified 180 days prior to a change in the sludge use or disposal method and receive appropriate sewage sludge monitoring results for all parameters associated with disposal method chosen including pollutants, pathogens and vectors.

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-Region 1 has included with the draft permit a 72-page Sludge Compliance Guidance document for use by the permittee in determining their appropriate sludge conditions for their chosen method of sludge disposal.

The permittee is also required to submit to EPA and to NHDES-WD annually, on February 19th, an annual report containing the information specified in the Sludge Compliance Guidance Document for the permittee's chosen method of sludge disposal once that happens.

G. 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 307 of the Act. However, the draft permit contains conditions that are necessary to allow EPA and NHDES-WD to ensure that pollutants from industrial users will not pass through the facility and cause water-quality standards violations and/or sludge use and disposal difficulties or cause interference with the operation of the treatment facility. In October 2000, the City of Lebanon updated its Sewer use Ordinance (SUO) to include technically based local limits and the authority to issue permits to its industrial users.

The permittee is required to notify EPA and NHDES-WD whenever a process wastewater discharge to the facility from a primary industrial category (see 40 CFR § 122 Appendix A for list) is planned 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 contains the requirements to: (1) report to EPA and NHDES-WD the name(s) of all Industrial Users (IU) subject to Categorical Pretreatment Standards pursuant to 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) and/or New Hampshire Pretreatment Standards (Env-Wq 904) who currently discharge to the POTW as well as those who commence discharge to the POTW after the effective date of the finally issued permit, and (2) submit to EPA and NHDES-WD copies of Baseline Monitoring Reports and other pretreatment reports submitted by industrial users.

H. Combined Sewer Overflows (CSO)

i. General Information

Combined Sewer Overflows (CSOs) are overflows from a combined sewer and storm water system that are discharged into a receiving water without going to the headworks of a POTW. CSOs occur when the flow in the combined sewer system exceeds interceptor or regulator capacity. CSOs are distinguished from bypasses which are "intentional diversions of waste streams from any portion of a treatment facility" (40 CFR § 122.41(m)). The permittee has a combined storm and sanitary sewer collection system with seven CSOs, identified in the draft permit as Outfalls ZZ, 010, 022, 023, 024, 026, and 027.

Flows in combined sewers can be classified into two categories: wet weather flow and dry weather flow. Wet weather flow is a combination of domestic and industrial sewage, infiltration from groundwater, and storm water flow including snow melt. Dry weather flow is the flow in a combined sewer that results from domestic sewage, groundwater infiltration and industrial wastes with no contribution from storm water runoff or storm water induced infiltration.

Dry weather overflows from CSOs are illegal. They must be reported immediately to EPA and eliminated as expeditiously as possible.

The objectives of the National CSO Control Policy are the following:

1) To ensure that if the CSO discharges occur, they are only as a result of wet weather;

2) To bring all wet weather CSO discharge points into compliance with the technology based requirements of the CWA and applicable Federal and State water quality standards; and

3) To minimize water quality, aquatic biota, and human health impacts from wet weather flows.

ii. Effluent Limitations

CSOs are point sources subject to NPDES permit requirements for both water quality based and technology based requirements; but are not subject to secondary treatment regulations applicable to publicly owned treatment works. Section 301(b)(1)(C) of the CWA of 1977 mandates compliance with Federal and State Water Quality Standards by July 1, 1977. Technology based permit limits must be established for best conventional pollutant control technology (BCT) and best available technology economically achievable (BAT) based on best professional judgment (BPJ) in accordance with Section 301(b) and Section 402(a) of the Water Quality Act Amendments of 1987 (WQA).

iii. Conditions for Discharge

The draft permit prohibits dry weather discharges from CSO outfalls. During wet weather, the discharges must not cause violation of Federal and State Water Quality Standards. Dry weather discharges must be reported immediately to EPA and the State. Wet weather discharges must be monitored and reported as specified in the permit.

iv. Nine Minimum Controls (NMC) Measures

A permittee must comply with BPJ derived BCT/BAT controls, which at a minimum include the following:

1. Proper operation and maintenance of the sewer system and outfalls;
2. Maximum use of the collection systems for storage;
3. Review pretreatment programs to assure CSO impacts are minimized;
4. Maximization of flow to the POTW for treatment;
5. Prohibition of dry weather overflows;
6. Control of solid and floatable materials in the discharge;
7. Pollution prevention programs which focus on contaminant reduction activities;
8. Public notification to ensure that the public receives adequate notification of CSO occurrences and CSO impacts; and
9. Monitoring to effectively characterize CSO impacts and the efficacy of CSO controls.

v. Documentation

1. Combined Sewer Outfalls Discharge Reports

The draft permit requires, at a minimum, annual sampling of all Lebanon's combined sewer outfall discharges during a wet weather event. This monitoring is required to ensure compliance with NHDES regulation Env-Wq 1703.06. This regulation limits the bacteria levels in the combined sewer overflow discharges to 1000 Escherichia coli per 100 milliliters. The sampling requires one grab sample from each CSO one half an hour after the discharge begins. The results of the month's discharge shall be included in that month's DMRs.

2. Nine Minimum Controls Measures Implementation Documentation

Lebanon first submitted a plan for implementing the NMC measures to the EPA on May 29, 1997. A subsequent progress report concerning the implementation of the NMC measures was included in Lebanon's Master CSO Plan draft submitted to EPA – Region 1 on October 28, 1998.

The draft permit requires appropriate documentation, no later than August 31st of each year, that demonstrates the continued implementation of the NMCs. This report must include a detailed analysis of specific activities the permittee has undertaken in the past calendar year to continue implementation and maintenance of the NMCs. The documentation must include the minimum requirements set forth in Part I.C. of the draft permit. The report shall also document those activities planned to implement the NMCs, and any additional controls beyond the NMCs the permittee can feasibly implement.

Documentation may include operation and maintenance plans, revised sewer use ordinances for industrial users, sewer system inspection reports, infiltration/inflow studies, pollution prevention programs, public notification plans and facility plans for maximizing the capacities of the existing collection and treatment system, as well as contracts and schedules for minor construction programs for improving the existing systems operation. The permittee should also submit information which indicates the degree to which the controls achieve compliance with water quality standards.

3. CSO Monitoring Requirements

The permittee is required to quantify and record all discharges from combined sewer outfalls. Quantification may be through direct measurement or estimation. This requirement is in the existing permit and is carried over to the draft permit. When estimating, the permittee shall make reasonable efforts, i.e. gaging, measurements, to verify the validity of the estimation technique. The following information must be recorded for each combined sewer outfall for each discharge event:

(1) Date of discharge
(2) Estimated duration (hours) of discharge;
(3) Estimated volume (gallons) of discharge; and
(4) National Weather Service precipitation data from the nearest gage where precipitation is available at daily (24-hour) intervals and the nearest gage where precipitation is available at one-hour intervals. Cumulative precipitation per discharge event shall be calculated.

The draft permit requires the permittee to submit a certification to the State and EPA by August 31st of each year which states that the previous twelve monthly inspections were conducted, results recorded, and records maintained. The permittee is also required to maintain all records of discharges for at least six years after the effective date of this permit.

vi. <u>CSO Abatement</u>

On June 6, 2000, EPA issued Administrative Order Docket No. 00-72 (“Order”) to the City of Lebanon. The Order required the City to eliminate six (#5, #10, #22, #23, #26 and #27) of its seven CSOs by December 31, 2008, through sewer separation, and required that an engineering study be submitted by December 31, 2005 to identify sewer separation projects to eliminate the seventh CSO (#24) by December 31, 2012. The City submitted a draft engineering study and requested additional time for eliminating its CSOs. CSOs #5 and #27 were eliminated in 2004 and 2007. Since then CSO #27 has again become part of the city’s registered CSO discharge locations. When the CSO was originally capped a storm event caused an incident of a sewer system back up into a residence. The pipe was routed again between the manhole and the river.

There have been no discharges to CSO #27 since but the location is not capped and continues to be part of the inspection routine. In 2009, EPA, NHDES and Lebanon entered into a Consent Decree that superseded the Order, with a schedule for eliminating all remaining CSOs and achieving full compliance by November 1, 2020.

According to the permittee, CSOs No. 022 and 010 were eliminated on October 2011 and November 2011 respectively. However, the outfalls have not yet been permanently sealed pending monitoring and testing to ensure complete elimination.

I. Operation and Maintenance

Regulations regarding proper operation and maintenance are found at 40 C.F.R. § 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 "facilities and systems of treatment and control" and are therefore subject to proper operation and maintenance requirements.

Similarly, a permittee has a "duty to mitigate" pursuant to 40 C.F.R. § 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 permit. Specific permit conditions have also been included in Part I.B., I.C., and I.D. of the draft permit. These requirements include mapping of the wastewater collection system, reporting of unauthorized discharges including SSOs, maintaining an adequate maintenance staff, performing preventative maintenance, controlling inflow and infiltration to the extent necessary to prevent SSOs and I/I related effluent violations at the wastewater treatment plant, and maintaining alternate power where necessary.

J. Essential Fish Habitat

Under the 1996 Amendments (PL 104-267) to the Magnuson-Stevens Fishery Conservation and Management Act (16 U.S.C. § 1801 et seq.(1998)), EPA is required to consult with NMFS if EPA's action or proposed actions that it funds, permits, or undertakes, "may adversely impact any essential fish habitat." 16 U.S.C. § 1855(b). The Amendments broadly define "essential fish habitat" (EFH) as: "waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity." 16 U.S.C. § 1802(10). Adversely impact means any impact which reduces the quality and/or quantity of EFH. 50 C.F.R. § 600.910(a). Adverse effects may include direct (e.g., contamination or physical disruption), indirect (e.g., loss of prey, reduction in species' fecundity), site-specific or habitat-wide impacts, including individual, cumulative, or synergistic consequences of actions. Id.

Essential fish habitat is only designated for fish species for which federal Fisheries Management Plans exist. 16 U.S.C. § 1855(b)(1)(A). EFH designations for New England were approved by the U.S. Department of Commerce on March 3, 1999.

Atlantic salmon (*Salmo salar*) is the only species for which essential fish habitat (EFH) is

designated in the Connecticut River.

Based on the permit requirements identified in this Fact Sheet that are designed to be protective of cold water aquatic species, including Atlantic salmon, the EPA has determined that a formal EFH consultation with NMFS is not required because the proposed discharge will not adversely affect Atlantic salmon EFH. If adverse effects to EFH do occur as a result of this permit action, or if new information becomes available that changes the basis for this determination, then NMFS will be notified and consultation will be promptly initiated.

K. Endangered Species

The Dwarf Wedge Mussel (*Alasmidonta heterodon*) was added to the Federal endangered species list on March 4, 1990 and is found in the following areas in New Hampshire:

1. Connecticut River and Johns River in the Towns of Northumberland, Lancaster, and Dalton in Coos County.
2. Connecticut River in the Towns of Haverhill, Piermont, Orford, and Lyme in Grafton County.
3. Connecticut River in the Towns of Plainfield, Cornish, Claremont, and Charlestown in Sullivan County.
4. Ashuelot River and South Branch of the Ashuelot River in the Towns of Swanzey Keene, and Surry in Cheshire County, New Hampshire.

The Endangered Species Act (16 USC 1451 et seq) requires the EPA ensure that any action authorized by the EPA is not likely to jeopardize the continued existence of any endangered or threatened species or adversely affect its critical habitat. Further, 40 CFR 122.49(c) requires the EPA to consult with the U.S. Fish and Wildlife Service (USFWS) to determine particular permit conditions when the regulations of the Endangered Species Act may apply.

EPA is reissuing the existing permit without any changes of flow and pollutants loading. EPA determined that the Dwarf Wedge Mussel is not located in the action area therefore consultation with USFWS is not necessary.

V. 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 six months 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 six months 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.

VI. Antidegradation

This draft permit is being reissued with limitations that are at least as stringent as those in the 2006 permit and there is no change in the outfall location. Since the State of New Hampshire has indicated there will be no lowering of water quality and no loss of existing uses, no additional anti-degradation review is warranted.

VII. State Certification Requirements

EPA may not issue a permit unless the State Water Pollution Control Agency with jurisdiction over the receiving water(s) 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 NH Standards or waives its right to certify as set

forth in 40 CFR Part 124.53.

Upon public noticing of the draft permit, EPA is formally requesting that the State's certifying authority make a written determination concerning certification. The State will be deemed to have waived its right to certify unless certification is received within 60 days of receipt of this request.

The NHDES-WD, Wastewater Engineering Bureau is the certifying authority. EPA has discussed this draft permit with the Staff of the Wastewater Engineering Bureau and expects that the draft permit will be certified. Regulations governing state certification are set forth in 40 CFR Parts 124.53 and 124.55.

The State's certification should include the specific conditions necessary to assure compliance with applicable provisions of the Clean Water Act (CWA), Sections 208(e), 301, 302, 303, 306 and 307 and with appropriate requirements of State law. In addition, the State should provide 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. Since the State's certification is provided prior to permit issue, any failure by the State to provide this statement waives the State's right to certify or object to any less stringent condition. These less stringent conditions may be established by EPA during the permit issuance process based on information received following the public noticing. If the State believes that any conditions more stringent than those contained in the draft permit are necessary to meet the requirements of either the CWA or State law, the State should include such conditions and, in each case, cite the CWA or State law reference upon which that condition is based. Failure to provide such a citation waives the right to certify as to that condition. The only exception to this is the sludge conditions/requirements implementing Section 405(d) of the CWA are not subject to the Section 401 State Certification requirements.

Reviews and appeals of limitations and conditions attributable to State certification shall be made through the applicable procedures of the State and may not be made through the applicable procedures of 40 CFR Part 124.

VIII. Comment Period, Hearing Requests, and Procedures for Final Decisions

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:

Mr. Dan Arsenault
U.S. Environmental Protection Agency
5 Post Office Square
Suite 100 (OEP06-1)
Boston, Massachusetts 02109-3912.

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 in 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 comments period, and after a public hearing, if such hearing is held, 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. Within 30 days following the notice of the final permit decision, any interested person may submit a request for a formal hearing to reconsider or contest the final decision. Requests for formal hearing must satisfy the requirement of 40 CFR Part 124.74.

IX. EPA Contact

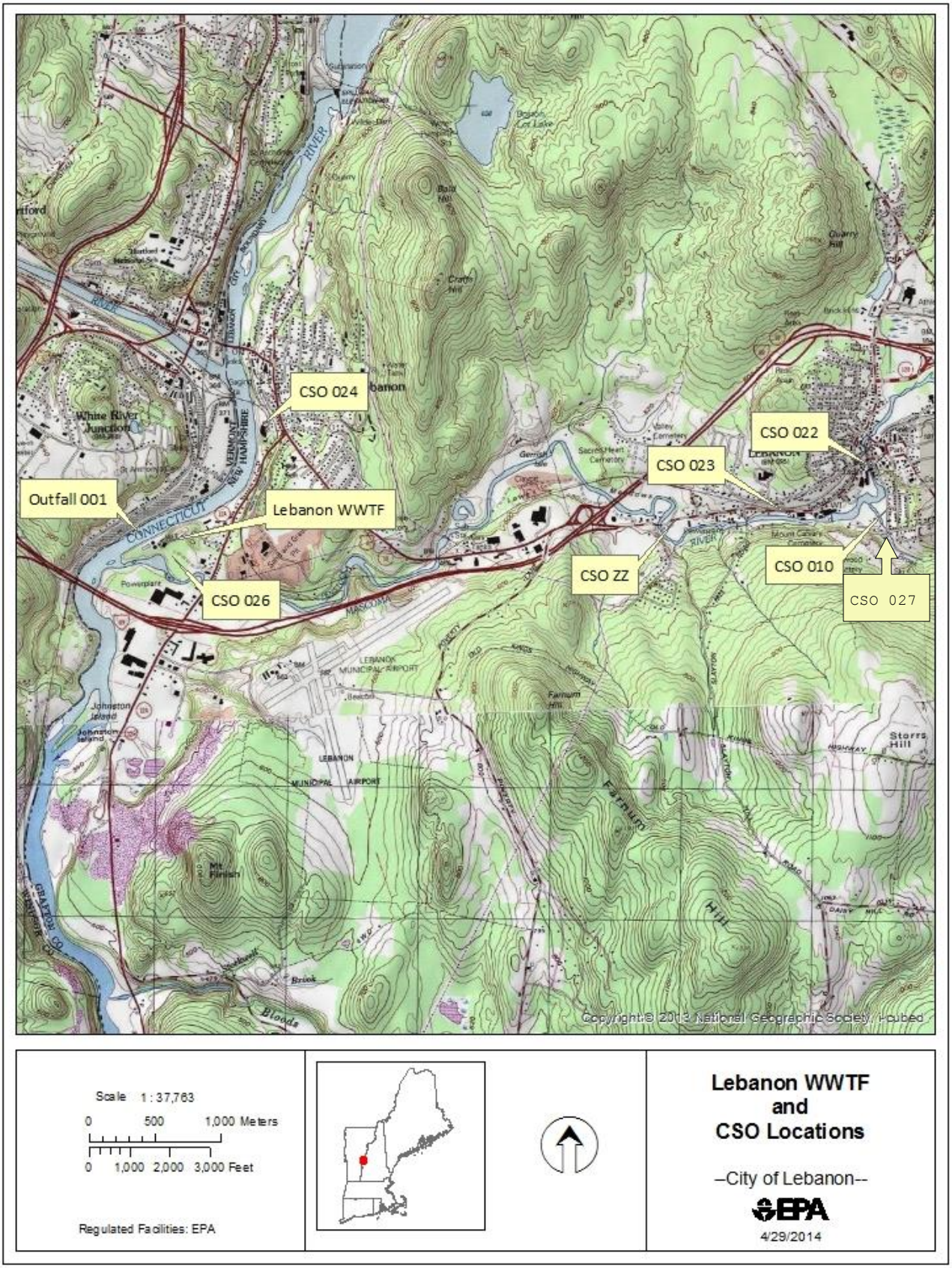
Additional information concerning the draft permit may be obtained between the hours of 9:00 a.m. and 5:00 p.m., Monday through Friday, excluding holidays from:

Mr. Dan Arsenault
U.S. Environmental Protection Agency
5 Post Office Square
Suite 100 (OEP06-1)
Boston, Massachusetts 02109-3912.
Telephone: (617) 918-1562
E-Mail: arsenault.dan@epa.gov

9/22/2014
_____
Date

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

ATTACHMENT A – MAP OF FACILITY, OUTFALL AND CSOs



ATTACHMENT B – SUMMARY OF DISCHARGE MONITORING REPORTS

The following data are from the Discharge Monitoring Reports (DMRs) for the period from January 2009 to November 2013.

Outfall 001	BOD5						
Monitoring Period End Date	lb/d	mg/l	lb/d	mg/l	lb/d	mg/l	%
	MO AVG	MO AVG	WKLY AVG	WKLY AVG	DAILY MX	DAILY MX	MO AV MN
01/31/2009	95.	7.	109.	8.	117.	8.	98.
02/28/2009	100.	8.	117.	9.	128.	10.	97.
03/31/2009	116.	6.	144.	8.	144.	9.	97.
04/30/2009	110.	6.	154.	6.	175.	7.	97.
05/31/2009	126.	9.	155.	11.	185.	13.	96.
06/30/2009	69.	5.	84.	6.	102.	7.	98.
07/31/2009	134.	8.	168.	10.	214.	11.	97.
08/31/2009	87.	4.	200.	8.	257.	10.	98.
09/30/2009	58.	4.	76.	6.	83.	7.	98.
10/31/2009	63.	4.	96.	5.	98.	5.	98.
11/30/2009	51.	3.	57.	4.	67.	4.	99.
12/31/2009	81.	5.	110.	8.	114.	8.	98.
01/31/2010	92.	6.	146.	7.	178.	8.	98.
02/28/2010	88.	7.	101.	8.	102.	8.	97.
03/31/2010	117.	6.	138.	6.	211.	7.	97.
04/30/2010	93.	5.	178.	6.	147.	7.	97.
05/31/2010	82.	6.	106.	8.	139.	10.	98.
06/30/2010	105.	8.	152.	10.	176.	12.	97.
07/31/2010	74.	6.	133.	10.	149.	11.	98.
08/31/2010	81.	8.	126.	14.	141.	14.	98.
09/30/2010	100.	10.	130.	12.	163.	16.	97.
10/31/2010	87.	6.	144.	14.	155.	12.	98.
11/30/2010	144.	10.	276.	20.	316.	23.	97.
12/31/2010	84.	6.	109.	6.	114.	7.	98.
01/31/2011	87.	7.	96.	8.	99.	9.	98.
02/28/2011	100.	9.	130.	12.	146.	13.	97.
03/31/2011	119.	5.	156.	6.	184.	7.	97.
04/30/2011	151.	6.	175.	6.	211.	7.	97.
05/31/2011	86.	5.	100.	5.	131.	9.	98.
06/30/2011	97.	7.	131.	10.	150.	10.	98.
07/31/2011	78.	7.	100.	9.	117.	10.	98.
08/31/2011	67.	4.	86.	7.	99.	7.	99.
09/30/2011	93.	6.	110.	6.	125.	7.	98.
10/31/2011	120.	7.	195.	10.	205.	13.	98.
11/30/2011	83.	5.	88.	6.	135.	7.	98.
12/31/2011	215.	12.	250.	14.	288.	15.	95.
01/31/2012	236.	17.	330.	24.	356.	26.	95.
02/29/2012	98.	9.	234.	16.	131.	12.	97.
03/31/2012	190.	12.	228.	14.	249.	15.	95.

Outfall 001	BOD5						
Monitoring Period End Date	lb/d	mg/l	lb/d	mg/l	lb/d	mg/l	%
	MO AVG	MO AVG	WKLY AVG	WKLY AVG	DAILY MX	DAILY MX	MO AV MN
04/30/2012	90.	6.	110.	8.	112.	8.	98.
05/31/2012	75.	4.	92.	6.	128.	7.	98.
06/30/2012	70.	5.	105.	6.	105.	6.	98.
07/31/2012	70.	5.	120.	8.	123.	9.	98.
08/31/2012	54.	4.	49.	4.	73.	6.	99.
09/30/2012	88.	7.	116.	9.	135.	11.	98.
10/31/2012	88.	7.	118.	10.	133.	10.	98.
11/30/2012	72.	6.	96.	6.	94.	8.	98.
12/31/2012	107.	8.	134.	10.	175.	14.	97.
01/31/2013	95.	8.	140.	11.	167.	13.	97.
02/28/2013	77.	7.	103.	9.	103.	9.	98.
03/31/2013	95.	7.	121.	8.	149.	8.	97.
04/30/2013	81.	5.	97.	6.	104.	6.	98.
05/31/2013	116.	8.	160.	11.	162.	11.	97.
06/30/2013	159.	9.	186.	11.	229.	13.	96.
07/31/2013	163.	7.	248.	10.	309.	12.	96.
08/31/2013	98.	7.	110.	8.	144.	8.	98.
09/30/2013	109.	8.	136.	10.	178.	13.	97.
10/31/2013	192.	16.	256.	21.	281.	23.	95.
11/30/2013	273.	23.	366.	31.	423.	32.	93.
Permit Limit	**796**	**30**	**1194**	**45**	**1327**	**50**	**85**
Minimum	51.0	3.0	49.0	4.0	67.0	4.0	93.0
Maximum	273.0	23.0	366.0	31.0	423.0	32.0	99.0
Average	105.6	7.3	143.7	9.6	163.2	10.6	97.3
# of Samples	59	59	59	59	59	59	59
# of Violations	0	0	0	0	0	0	0

Outfall 001	TSS						
Monitoring Period End Date	lb/d	mg/l	lb/d	mg/l	lb/d	mg/l	%
	MO AVG	MO AVG	WKLY AVG	WKLY AVG	DAILY MX	DAILY MX	MO AV MN
01/31/2009	66.	5.	75.	6.	82.	6.	98.
02/28/2009	81.	7.	98.	8.	103.	8.	98.
03/31/2009	124.	7.	164.	9.	202.	10.	97.
04/30/2009	92.	5.	134.	6.	175.	6.	98.
05/31/2009	234.	18.	410.	31.	421.	31.	94.
06/30/2009	65.	5.	116.	8.	143.	8.	99.
07/31/2009	128.	8.	140.	10.	167.	10.	97.
08/31/2009	106.	5.	344.	14.	354.	15.	98.
09/30/2009	36.	3.	52.	3.	50.	3.	99.
10/31/2009	54.	4.	79.	4.	80.	4.	99.
11/30/2009	51.	3.	56.	4.	69.	4.	98.
12/31/2009	61.	4.	56.	4.	124.	7.	98.
01/31/2010	70.	5.	118.	6.	178.	8.	99.
02/28/2010	115.	8.	141.	7.	329.	22.	97.
03/31/2010	79.	4.	135.	9.	124.	6.	97.
04/30/2010	72.	4.	119.	6.	126.	6.	97.
05/31/2010	73.	5.	95.	6.	96.	6.	97.
06/30/2010	199.	13.	245.	19.	505.	28.	94.
07/31/2010	74.	6.	446.	26.	179.	14.	98.
08/31/2010	55.	6.	96.	10.	97.	12.	98.
09/30/2010	161.	16.	214.	22.	320.	26.	95.
10/31/2010	110.	8.	284.	25.	199.	12.	97.
11/30/2010	96.	7.	124.	8.	200.	11.	98.
12/31/2010	66.	4.	97.	5.	99.	5.	99.
01/31/2011	50.	4.	56.	5.	60.	5.	99.
02/28/2011	53.	5.	70.	6.	75.	6.	98.
03/31/2011	95.	4.	150.	5.	189.	6.	98.
04/30/2011	104.	5.	120.	4.	139.	5.	98.
05/31/2011	86.	5.	165.	8.	176.	8.	99.
06/30/2011	83.	6.	110.	8.	133.	10.	99.
07/31/2011	69.	6.	127.	12.	138.	12.	99.
08/31/2011	72.	4.	88.	6.	127.	6.	99.
09/30/2011	102.	6.	144.	8.	144.	9.	98.
10/31/2011	161.	9.	494.	24.	557.	26.	98.
11/30/2011	66.	5.	88.	6.	92.	6.	99.
12/31/2011	203.	12.	278.	15.	326.	17.	96.
01/31/2012	234.	17.	276.	20.	418.	32.	94.
02/29/2012	92.	8.	285.	21.	129.	10.	96.
03/31/2012	234.	15.	344.	22.	369.	24.	94.
04/30/2012	97.	7.	120.	8.	139.	8.	97.
05/31/2012	58.	4.	94.	7.	91.	5.	98.
06/30/2012	62.	4.	84.	5.	88.	5.	98.
07/31/2012	60.	5.	114.	8.	153.	10.	98.
08/31/2012	32.	3.	51.	4.	62.	5.	99.
09/30/2012	58.	5.	108.	10.	110.	11.	98.

Outfall 001	TSS						
Monitoring Period End Date	lb/d	mg/l	lb/d	mg/l	lb/d	mg/l	%
	MO AVG	MO AVG	WKLY AVG	WKLY AVG	DAILY MX	DAILY MX	MO AV MN
10/31/2012	68.	6.	84.	7.	90.	7.	98.
11/30/2012	68.	6.	76.	6.	81.	7.	98.
12/31/2012	85.	7.	91.	8.	109.	10.	97.
01/31/2013	76.	6.	90.	8.	139.	13.	98.
02/28/2013	56.	5.	99.	9.	71.	7.	98.
03/31/2013	57.	4.	68.	6.	68.	6.	98.
04/30/2013	52.	3.	58.	4.	67.	4.	98.
05/31/2013	107.	8.	154.	11.	177.	12.	97.
06/30/2013	134.	8.	166.	10.	177.	10.	97.
07/31/2013	136.	7.	237.	10.	321.	12.	97.
08/31/2013	53.	4.	70.	5.	68.	5.	98.
09/30/2013	58.	4.	64.	4.	65.	5.	98.
10/31/2013	236.	20.	310.	28.	494.	41.	93.
11/30/2013	355.	**31.**	450.	40.	574.	41.	91.
Permit Limit	**796**	**30**	**1194**	**45**	**1327**	**50**	**85**
Minimum	32.0	3.0	51.0	3.0	50.0	3.0	91.0
Maximum	355.0	31.0	494.0	40.0	574.0	41.0	99.0
Average	99.7	7.1	156.3	10.6	180.3	11.4	97.4
# of Samples	59	59	59	59	59	59	59
# of Violations	0	1	1	0	0	0	0

Outfall 001	Flow		pH		TRC		E. coli	
Monitoring Period End Date	MGD	MGD	S.U.	S.U.	mg/l	mg/l	CFU/100mL	CFU/100mL
	MO AVG	DAILY MX	MINIMUM	MAXIMUM	MO AVG	DAILY MX	MO GEO	DAILY MX
01/31/2009	1.5898	1.8809	6.8	7.	0.68	1.	21.	36.
02/28/2009	1.4917	1.9784	6.8	7.	0.69	0.88	16.	26.
03/31/2009	2.2513	3.1463	6.8	7.1	0.75	1.	13.	48.
04/30/2009	2.2797	3.4919	6.8	7.1	0.66	0.98	9.	26.
05/31/2009	1.6473	2.3157	6.7	7.2	0.86	1.	17.	78.
06/30/2009	1.678	2.4557	6.8	7.2	0.75	0.92	9.	48.
07/31/2009	2.2403	3.666	6.9	7.3	0.78	1.	9.	**613.**
08/31/2009	2.0772	3.0838	6.9	7.3	0.75	1.	4.	13.
09/30/2009	1.461	2.0013	6.7	7.2	0.7	0.86	17.	91.
10/31/2009	1.7733	3.6179	6.8	7.2	0.75	0.89	9.	26.
11/30/2009	1.7998	2.2133	6.8	7.3	0.71	0.96	6.	21.
12/31/2009	1.7527	2.429	6.9	7.1	0.71	0.96	17.	88.
01/31/2010	1.6166	3.0519	6.8	7.2	0.68	0.98	10.3	13.5
02/28/2010	1.5851	3.1681	6.8	7.1	0.71	0.88	6.5	8.4
03/31/2010	2.2978	3.653	6.7	7.1	0.7	1.	13.	52.
04/30/2010	2.2055	3.3296	6.9	7.2	0.69	0.98	3.6	8.6
05/31/2010	1.7455	2.1841	6.8	7.1	0.72	0.88	7.7	18.7
06/30/2010	1.6546	2.1623	6.9	7.1	0.77	0.97	10.	344.8
07/31/2010	1.4579	1.881	7.	7.3	0.77	0.94	14.2	**410.6**
08/31/2010	1.2549	1.6347	6.9	7.3	0.89	1.	14.3	**547.5**
09/30/2010	1.2019	2.6884	6.7	7.2	0.89	1.	32.2	172.5
10/31/2010	1.8137	3.1853	6.9	7.2	0.89	1.	11.9	35.5
11/30/2010	1.7172	2.2166	6.8	7.1	0.78	0.95	19.3	360.9
12/31/2010	1.7205	2.3691	6.8	7.	0.74	0.92	8.6	34.1
01/31/2011	1.382	1.645	6.8	7.	0.82	1.	5.4	19.9
02/28/2011	1.3852	1.8362	6.8	7.1	0.75	1.	11.4	43.2
03/31/2011	2.6743	3.9189	6.9	7.6	0.71	0.94	6.1	28.8
04/30/2011	2.7682	3.9449	6.8	7.1	0.73	0.97	4.9	27.2
05/31/2011	2.1106	2.0451	6.8	7.3	0.71	0.91	10.8	27.2
06/30/2011	1.6267	2.0556	6.8	7.2	0.77	0.97	11.3	65.7
07/31/2011	1.3222	2.3428	6.9	7.2	0.8	0.95	7.5	15.8
08/31/2011	1.9019	4.8572	6.9	7.4	0.78	0.93	6.9	17.5
09/30/2011	2.0504	3.0109	6.8	7.1	0.85	0.98	10.1	35.9
10/31/2011	2.0312	2.6851	6.9	7.2	0.89	1.	13.4	43.2
11/30/2011	1.7362	2.3191	6.8	7.1	0.84	0.98	14.7	**2419.6**
12/31/2011	2.0547	2.7081	6.5	7.2	0.86	0.99	7.4	13.5
01/31/2012	1.6669	2.6596	6.7	7.2	0.82	1.	29.1	**517.2**
02/29/2012	1.3751	1.6876	7.	7.4	0.82	0.95	30.4	129.1
03/31/2012	1.8757	2.253	6.9	7.3	0.86	1.	20.7	34.5
04/30/2012	1.6164	2.0778	6.5	7.2	0.8	0.98	10.3	24.3
05/31/2012	1.9365	2.5878	6.9	7.3	0.83	1.	4.3	33.5
06/30/2012	1.6536	2.1028	6.8	7.1	0.8	0.94	7.6	16.
07/31/2012	1.4746	1.8402	6.8	7.1	0.84	1.	8.4	49.2
08/31/2012	1.488	2.0542	6.9	7.2	0.89	1.	3.	8.6
09/30/2012	1.3729	1.8039	6.8	7.1	0.92	0.99	5.4	17.3

Outfall 001	Flow		pH		TRC		E. coli	
Monitoring Period End Date	MGD	MGD	S.U.	S.U.	mg/l	mg/l	CFU/100mL	CFU/100mL
	MO AVG	DAILY MX	MINIMUM	MAXIMUM	MO AVG	DAILY MX	MO GEO	DAILY MX
10/31/2012	1.4714	2.1451	6.8	7.1	0.92	1.	12.9	70.8
11/30/2012	1.4201	1.8246	6.7	7.2	0.87	0.99	7.9	20.1
12/31/2012	1.5396	2.3684	6.8	7.2	0.87	1.	8.7	14.6
01/31/2013	1.4769	2.1483	6.8	7.1	0.82	0.95	6.5	25.9
02/28/2013	1.372	1.6218	6.8	7.6	0.81	0.97	3.9	7.4
03/31/2013	1.6566	2.5562	6.8	7.2	0.8	0.96	4.	8.4
04/30/2013	1.9216	2.1907	6.8	7.	0.77	0.97	7.2	14.7
05/31/2013	1.7595	2.2947	6.7	7.2	0.87	0.99	18.	88.4
06/30/2013	2.1071	2.5687	6.9	7.2	0.88	0.99	8.3	16.1
07/31/2013	2.5781	4.6766	7.	7.3	0.82	0.98	11.3	46.5
08/31/2013	1.6	2.41	7.	7.2	0.88	0.99	13.9	24.6
09/30/2013	1.7214	2.4386	6.9	7.2	0.9	1.	14.3	**1413.6**
10/31/2013	1.4313	1.8546	6.8	7.1	0.85	0.99	35.4	**416.**
11/30/2013	1.3625	1.803	6.8	7.1	0.88	0.99	**175.7**	**1299.7**
Permit Limit	**N/A**	**N/A**	**6.5**	**8.0**	**1**	**1**	**126**	**406**
Minimum	1.2	1.6	6.5	7.0	0.7	0.9	3.0	7.4
Maximum	2.8	4.9	7.0	7.6	0.9	1.0	175.7	2419.6
Average	1.7	2.5	6.8	7.2	0.8	1.0	14.5	172.5
# of Samples	59	59	59	59	59	59	59	59
# of Violations	N/A	N/A	0	0	0	0	1	8

WET - Effluent	Al	Cd	Cr	Cu	Pb	Ni	Zn	Hardness	Ammonia	LC50 Ceriodaphnia	LC50 Pimephales
Monitoring Period End Date	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	%	%
	DAILY MX	DAILY MX	DAILY MX	DAILY MX	DAILY MX	DAILY MX	DAILY MX	DAILY MX	DAILY MX	DAILY MN	DAILY MN
09/30/2009	0.06	0.	0.	0.007	0.	0.003	0.035	110.	0.06	100.	100.
09/30/2010	0.05	0.	0.	0.013	0.001	0.005	0.074	130.	0.11	100.	100.
09/30/2011	0.01	0.	0.	0.009	0.001	0.	0.05	110.	0.22	100.	100.
09/30/2012	0.01	0.	0.	0.011	0.	0.004	0.04	110.	0.1	100.	100.
09/30/2013	0.04	0.	0.	0.017	0.	0.004	0.048	51.	0.1	100.	100.
Permit Limit	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**50**	**50**
Maximum	0.060	0.000	0.000	0.017	0.001	0.005	0.074	130	0.22	100	100
Average	0.034	0.000	0.000	0.011	0.000	0.003	0.049	102.2	0.118	100.0	100.0
# of Samples	5	5	5	5	5	5	5	5	5	5	5
# of Violations	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0	0

WET - Upstream	Al	Cd	Cr	Cu	Pb	Ni	Zn	Hardness
Monitoring Period End Date	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l
	DAILY MX	DAILY MX	DAILY MX	DAILY MX	DAILY MX	DAILY MX	DAILY MX	DAILY MX
9/30/2009	0.15	---	---	0.001	0	0	0	29
9/30/2010	0.07	---	---	0.001	0	0	0	40
9/30/2011	0.04	0	0	0	0	0	0	44
9/30/2012	0.06	0	0	0	0	0	0	41
9/30/2013	0.12	0	0	0.001	0	0	0.006	37
Median	0.07	0	0	0.001	0	0	0	40
# of Samples	5	5	5	5	5	5	5	5

CSO Outfalls	010A	022A	023A	024A	026A	027A
Monitoring Period End Date	E. coli	E. coli	E. coli	E. coli	E. coli	E. coli
	CFU/100mL	CFU/100mL	CFU/100mL	CFU/100mL	CFU/100mL	CFU/100mL
	DAILY MX	DAILY MX	DAILY MX	DAILY MX	DAILY MX	DAILY MX
01/31/2009	No discharge	Not required	No discharge	2420.	No discharge	No discharge
01/31/2010	No discharge	2420.	2420.	Analysis Not Conducted	No discharge	No discharge
01/31/2011	Not required	2420.	2420.	Not required	Not required	Not required
01/31/2012	Not required	2420.	Not required	Not required	Not required	Not required
01/31/2013	Not required	Analysis Not Conducted	2419.6	Not required	Not required	Not required
Permit Limit	1000	1000	1000	1000	1000	1000
Maximum	0	2420	2420	2420	0	0
# of Samples	0	3	3	1	0	0
# of Violations	0	4	3	2	0	0

ATTACHMENT C – STATISTICAL ANALYSIS FOR METALS

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.

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:

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

TSD at 52. 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.

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.

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
NEW ENGLAND - REGION I
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

PUBLIC NOTICE START AND END DATE: September 26, 2014 – October 25, 2015

PUBLIC NOTICE NUMBER: NH-011-14

NPDES PERMIT NO.: NH0100366

CONTENTS: 36 pages including 3 attachments

NAME AND MAILING ADDRESS OF APPLICANT:

City of Lebanon Department of Public Works
193 Dartmouth College Highway
Lebanon, New Hampshire 03766

NAME AND ADDRESS OF FACILITY WHERE DISCHARGE OCCURS:

Lebanon Wastewater Treatment Plant 28 Market Street West Lebanon, New Hampshire 03784	and	Seven Combined Sewer Overflow Outfalls (Refer to Section IV.H.)

The Towns listed below are co-permittees for activities required in Part I.B. (Unauthorized Discharges), Part I.C. (Operation and Maintenance of the Sewer System) and Part I.D. (Alternate Power Source).

Town of Enfield
Water and Sewer Dept.
74 Lockehaven Road
PO Box 373
Enfield, NH 03748

RECEIVING WATER: Connecticut River, Mascoma River and Great Brook
(Hydrologic Unit Code: 01080104)

CLASSIFICATION: B (all)

TABLE OF CONTENTS:

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

The above named applicant has applied to the U.S. Environmental Protection Agency (EPA) for reissuance of its NPDES permit to discharge treated effluent into the designated receiving waters (Connecticut River, Mascoma River and Great Brook). The facility collects and treats domestic, commercial and industrial wastewater from the City of Lebanon and the Town of Enfield. Currently about 25 percent of the collection system consists of combined sewers, which are designed to collect and transport wastewater and storm water runoff. There are six active combined sewer overflow discharges in the collection system (two have been eliminated during the term of the current permit), which may discharge during wet weather events. The facility also accepts septage.

The Connecticut River is used for fishing, swimming, boating and other primary contact recreation. The effluent from the facility does not discharge directly to a designated beach area. The Mascoma River and Great Brook are used for fishing and swimming. The Mascoma River also provides drinking water for Lebanon, but the intakes for the drinking water treatment plant are in the upper reaches of the Mascoma River above all CSO discharges.

The Lebanon Wastewater Treatment Plant has a design flow of 3.18 million gallon per day (mgd) and utilizes an extended aeration activated sludge treatment process. Influent wastewater passes through a mechanical bar screen and a grit collector, and is pumped to two primary settling tanks. Settled primary sludge is pumped to a sludge storage tank and dewatered by centrifuges; clarified wastewater flows to two aeration basins for biological treatment. The discharge from the two aeration basins is settled in two secondary settling tanks. The majority of the settled sludge is returned to the aeration basins as activated sludge, with the remaining portion wasted from the system, thickened by dissolved air floatation thickeners, sent to the sludge storage tank, and ultimately dewatered by centrifuges. The treated wastewater from the two secondary settling tanks is disinfected with sodium hypochlorite and discharged into the Connecticut River via Outfall 001.

Dewatered sludge and grit is transported for disposal to the Lebanon Secure Solid Waste Landfill, a double lined municipal solid waste landfill.

As previously indicated, the City of Lebanon owns and operates a combined sewer system that has seven active Combined Sewer Overflows (CSOs). CSOs are discharges of untreated wastewater and storm water into a receiving water. CSOs occur when the flow in the combined sewer system exceeds interceptor or regulator capacity. CSO Serial Nos. ZZ, 022, 023, and 026 discharge to the Mascoma River; CSO Serial No. 024 discharges to the Connecticut River; and CSO Serial No. 010 and 027 discharges to the Great Brook. Approximately 25% of Lebanon's sewer system is combined, carrying domestic, commercial and industrial wastewater plus storm water runoff.

The City of Lebanon is in the design phase of a wastewater treatment plant upgrade intended to replace original or worn-out equipment. Upgrades will include de-chlorination, odor control, instrumentation, biological nutrient removal, and laboratory and administrative facilities.

The existing permit was issued on November 23, 2005. Map locations of the treatment plant and Outfalls, both for the treatment plant and the CSOs, are contained in **Attachment A.**

II. Description of Discharge.

A quantitative description of the discharge in terms of effluent monitoring data from Discharge Monitoring Reports (DMRs) submitted to EPA from January 2009 to November 2013 is shown in **Attachment B**. The draft permit contains limitations for pH, total suspended solids (TSS), 5-day biochemical oxygen demand (BOD_5), total residual chlorine (TRC), *Escherichia coli* (*E. coli*) and whole effluent toxicity (WET).

III. Limitations and Conditions.

Effluent limitations, monitoring requirements, and any implementation schedule (if required) are found in PART I of the draft NPDES permit. The basis for each limit and condition is discussed in sections IV.C through IV.J of this fact sheet.

IV. Permit Basis and Explanation of Effluent Limitations Derivation.

A. General Regulatory Background

The Clean Water Act (CWA) prohibits the discharge of pollutants to waters of the United States without a National Pollutant Discharge Elimination System (NPDES) permit unless such a discharge is otherwise authorized by the CWA. The NPDES permit is the mechanism used to implement technology and water quality-based effluent limitations and other requirements, including monitoring and reporting. The draft NPDES permit is developed in accordance with various statutory and regulatory requirements established pursuant to the CWA and any applicable State administrative rules. The regulations governing EPA's NPDES permit program are generally found in 40 CFR Parts 122, 124, 125 and 136.

EPA is required to consider technology and water-quality based requirements as well as those requirements and limitations included in the existing permit when developing the revised permit's effluent limits. Technology-based treatment requirements represent the minimum level of control that must be imposed under Sections 301(b) and 402 of the CWA. Secondary treatment technology guidelines (i.e., effluent limitations for POTWs) can be found at 40 CFR § 133.

In the absence of published technology-based effluent guidelines, the permit writer is authorized under Section 402(a)(1)(B) of the Act to establish effluent limitations on a case-by-case basis using Best Professional Judgment (BPJ).

In general, all statutory deadlines for meeting various treatment technology-based effluent limitations established pursuant to the CWA have expired. When technology-based effluent limits are included in a permit, compliance with those limitations is effective from the date the revised permit is issued (See 40 CFR § 125.3(a)(1)). Compliance schedules and deadlines not in accordance with the statutory provisions of the Act cannot be authorized by a NPDES permit.

EPA regulations require NPDES permits to contain effluent limits more stringent than technology-based limits where more stringent limits are necessary to maintain or achieve state or federal water-quality standards (See Section 301(b)(1)(C) of the CWA). A water quality standard consists of three elements: (1) beneficial designated use or uses for a water body or a segment of a water body; (2) a numeric or narrative water-quality criteria sufficient to protect the assigned designated use(s); and (3) an anti-degradation requirement to ensure that once a use is attained it will not be eroded.

Receiving water requirements are established according to numerical and narrative standards adopted under state law for each receiving water classification. When using chemical-specific numeric criteria from the state's water-quality standards to develop permit limits both the acute and chronic aquatic-life criteria, expressed in terms of maximum allowable in-stream pollutant concentration, are used. Acute aquatic-life criteria are considered applicable to daily time periods (maximum daily limit) and chronic aquatic-life criteria are considered applicable to monthly time periods (average monthly limit). Chemical-specific limits are allowed under 40 CFR § 122.44(d)(1) and are implemented under 40 CFR § 122.45(d).

B. Introduction

The NPDES permit shall limit any pollutant or pollutant parameter (conventional, non-conventional, toxic and whole effluent toxicity) that is or may be discharged at a level that causes or has "reasonable potential" to cause or contribute to an excursion above any water-quality criterion. An excursion occurs if the projected or actual in-stream concentration exceeds the applicable criterion.

Reasonable Potential

In determining reasonable potential, EPA considers: (1) existing controls on point and non-point sources of pollution; (2) pollutant concentration and variability in the effluent and receiving water as determined from permit's reissuance application, Monthly Discharge Monitoring Reports (DMRs), and State and Federal Water Quality Reports; (3) sensitivity of the species to toxicity testing; (4) statistical approach outlined in Technical Support Document for Water Quality-based Toxics Controls, EPA/505/2-90-001, March 1991; and, where appropriate, (5) dilution of the effluent in the receiving water. In accordance with New Hampshire statutes and administrative rules [RSA 485-A:8,VI, Env-Wq 1705.01 and 1705.02], available dilution is based on a known or estimated value of the lowest average annual flow which occurs for seven (7) consecutive days with a recurrence interval of once in ten (10) years (7Q10) for aquatic life or the long term harmonic mean flow for human health (carcinogens only) in the receiving water at the point just upstream of the outfall. Furthermore, 10 percent (%) of the receiving water's assimilative capacity is held in reserve for future needs in accordance with New Hampshire's Surface Water Quality Regulation Env-Wq 1705.01.

Antibacksliding

Sections 402(o) and 303(d)(4) of the CWA and 40 CFR § 122.44(l)(1 and 2) contain anti-backsliding provisions, which generally prohibit the relaxation of permit limits, standards, and

conditions in NPDES permits unless certain conditions are met. Unless those conditions are met the limits in the reissued permit must be at least as stringent as those in the previous permit.

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).

C. Conventional Pollutants

i. Flow

The Lebanon WWTP has a design flow of 3.18 mgd. This flow rate is used to calculate available dilution as discussed below. If the effluent flow rate exceeds 80 percent of the 3.18 mgd design flow (2.54 mgd) for a period of three (3) consecutive months then the permittee must notify EPA and the NHDES-WD and implement a program to maintain satisfactory treatment levels.

The facility's design flow rate of 3.18 MGD is also used to calculate the mass and concentration limits for five-day biochemical oxygen demand (BOD_5) and total suspended solids (TSS), as discussed below.

ii. BOD_5 and TSS

The average monthly and weekly concentration-based limitations for biochemical oxygen demand (BOD_5) and total suspended solids (TSS) are based on requirements under Section 301(b)(1)(B) of the CWA as defined in 40 CFR § 133.102; mass-based effluent limitations for monthly average and weekly average BOD_5 and TSS average are based on requirements found at 40 CFR § 122.45(f). The calculations of maximum allowable loads for BOD_5 and TSS are based on the following equation.

$$L = C \times Q_{PDF} \times 8.345$$

where:

L = Maximum allowable load, in lb/day
C = Maximum allowable effluent concentration for reporting period, in mg/l
Q_{PDF} = Treatment plant's design flow, 3.18 mgd
8.345 = Factor to convert effluent concentration times design flow to lb/day

Monthly average, weekly average, and daily maximum mass effluent limitation are calculated as follows:

Monthly Average = (30 mg/l)(3.18 mgd)(8.345) = 796 lb/d
Weekly Average = (45 mg/l)(3.18 mgd)(8.345) = 1194 lb/d
Maximum Daily = (50 mg/l)(3.18 mgd)(8.345) = 1327 lb/d

Effluent limitations in the draft permit for BOD_5 and TSS are the same as the limits in the 2006 permit, and thus are consistent with antibacksliding requirements. The permittee has been able to achieve consistent compliance with these limitations. Compliance monitoring frequency for BOD_5 and TSS in the draft permit is twice per week

iii. pH and E. Coli

Effluent limitations in the draft permit for pH and Escherichia coli bacteria are the same as the limits in the existing permit. Continuing these limitations is consistent with antibacksliding requirements.

Historically, the NHDES-WD has required pH and bacteria limits to be satisfied at end-of-pipe with no allowance for dilution. The pH range and the average monthly and maximum daily limits for Escherichia coli bacteria are based upon State Certification Requirements.

Effluent limitations for Escherichia coli bacteria are 126 colonies/100 ml for a monthly average and 406 colonies/100 ml for a daily maximum. Calculation for compliance with the average monthly limit for Escherichia coli shall be determined by using the geometric mean. These limits are for Class B waters not designated as beach areas. The original basis for this limitation is found in New Hampshire's State statutes (N.H. RSA 485-A:8) and State certification requirements for POTWs under section 401(d) of the CWA, 40 CFR §§ 124.53 and 124.55). Compliance monitoring frequency for E. Coli in the draft permit is three times per week (3/week).

The pH limitation of 6.0 – 8.0 SU is based on the NHDES Surface Water Quality Regulations for Class B waters (see Env-Wq 1703.18(b)). The monitoring frequency is once per day, the same as in the current permit. The language to the State Permit Conditions in the current permit allowing for a change in pH limit(s) under certain conditions will continue in the draft permit. A change will be considered if the applicant can demonstrate to the satisfaction of NHDES-WD that the in-stream pH standard will be protected when the discharge is outside the permitted range, then the applicant or NHDES-WD may request (in writing) that the permit limits be modified by EPA to incorporate the results of the demonstration. Anticipating the situation where NHDES-WD grants a formal approval changing the pH limit(s) to outside the 6.5 to 8.0 Standard Units (S.U.), EPA has included a provision to this draft permit (See SPECIAL CONDITIONS section). That provision will allow EPA to modify the pH limit(s) using a certified letter approach. This change will be allowed as long as it can be demonstrated that the revised pH limit range does not alter the naturally occurring receiving water pH. Reference Part I.E.1.a. STATE PERMIT CONDITIONS in that permit. However, the pH limit range cannot be less restrictive than 6.0 - 9.0 S.U. found in the applicable National Effluent Limitation Guideline (Secondary Treatment Regulations in 40 CFR Part 133) for the facility.

If the State approves results from a pH demonstration study, this permit's pH limit range can be relaxed in accordance with 40 CFR § 122.44(l)(2)(i)(B) because it will be based on new information not available at the time of this permit's issuance. This new information includes results from the pH demonstration study that justifies the application of a less stringent effluent limitation. EPA anticipates that the limit determined from the demonstration study as approved by the NHDES-WD will satisfy all effluent requirements for this discharge category and will comply with NH Standards adopted on December 10, 1999.

D. Non-Conventional and Toxic Pollutants

Water-quality based limits for specific toxic pollutants such as chlorine, ammonia, etc. are determined from chemical specific numeric criteria derived from extensive scientific studies. The specific toxic pollutants and their associated toxicity criteria are popularly known as the "Gold Book Criteria" which EPA summarized and published in **Quality Criteria for Water, 1986, EPA 440/5-86-001** as amended). On December 10, 1998 EPA amended the water quality criteria. The State of New Hampshire adopted these "Gold Book Criteria", with few exceptions, and included them as part of the State's Revised Water Quality Regulations adopted on December 10, 1999. EPA and State use these pollutant specific criteria along with available dilution in the receiving water to determine a specific pollutant's draft permit limit, such as the fast acting toxicant chlorine. Available dilution and its relation to the limits for total residual chlorine for this facility are discussed below under separate subheadings.

i. Available Dilution

A dilution factor of 164 was used to calculate water quality–based limits in the current permit. In developing the draft permit, the receiving water 7Q10 flow was updated, resulting in an increase in the receiving water 7Q10 and a corresponding increase in the dilution factor. The available dilution factor in the receiving water has been determined to be 193. This calculation is

based on using the plant's design flow of 3.18 MGD (4.92 cfs), an estimate of the 7Q10 low flow in the Connecticut River nearest to the treatment plant's outfall of 678 MGD (1049 cfs), and a State of New Hampshire prescribed minimum 10% set aside or reserve. The Connecticut River's 7Q10 flow data (April 1, 1979 – March 31, 2010) was taken from the U.S. Geological Survey (USGS) gaging station (stream flow measuring site) at West Lebanon, NH (01144500). The West Lebanon station is about one mile upstream from the POTW's outfall; the new 7Q10 flow is 1,049 cfs (678 mgd). The State has reserved 10 percent of the Assimilative Capacity of the receiving water for future uses pursuant to RSA 485-A:13,I.(a) and Env-Wq 1705.01.

ii. Total Residual Chlorine

The total residual chlorine (TRC) limits in the draft permit are the same as the limits in the current permit. The December 10, 1998 EPA chronic and acute water quality criteria for chlorine are 0.011 mg/l and 0.019 mg/l, respectively. The State's Water Quality Criteria for chlorine found under Part Env-Wq 1703.21 of NHDES's Surface Water Quality Regulations are the same as the EPA criteria. With an available dilution of 193 in the receiving water, the calculated average monthly and maximum daily limits are 2.12 mg/l and 3.67 mg/l, respectively. In the current permit, the 1.0 mg/l limitation for both monthly average and maximum daily effluent limitations are more stringent than the 2.12 and 3.67 mg/l, respectively. Based on EPA's anti-backsliding regulation [40 CFR 122.44(l)], the current limits will continue in the draft permit.

Inspection of discharge monitoring reports (DMR's) from June 2009 to August 2011 shows that the permittee has consistently achieved the existing permit's limits.

iii. Nitrogen

The current permit requires monitoring of ammonia nitrogen at a frequency of once per year, but does not require reporting of total nitrogen and its compounds. The draft permit proposes monitoring once per month during the months of October through February and once per week March through September with reporting of maximum daily effluent concentrations and masses of total nitrogen, total ammonia nitrogen, total Kjeldahl nitrogen, and total nitrate + nitrite nitrogen consistent with other permits that discharge to the Long Island Sound watershed. These changes are further explained below.

Excessive nitrogen loadings are causing significant water quality problems in Long Island Sound, including low dissolved oxygen. In December 2000, the Connecticut Department of Energy and Environmental Protection (CT DEEP) completed a total maximum daily Load (TMDL) for addressing nitrogen-driven eutrophication impacts in Long Island Sound. The TMDL included a waste load allocation (WLA) for point sources and a load allocation (LA) for non-point sources. The point source WLA for out-of-basin sources (Massachusetts, New Hampshire and Vermont wastewater facilities discharging to the Connecticut, Housatonic and Thames River watersheds) requires an aggregate 25% reduction from the baseline total nitrogen loading estimated in the TMDL.

Please note, the aggregate 25% reduction has already been achieved through nitrogen optimization efforts; therefore no reductions below the 2005 baseline levels are needed at this

time. The intent of nitrogen monitoring and optimization is to ensure that the 25% reduction is maintained.

The baseline total nitrogen point source loadings estimated for the Connecticut, Housatonic, and Thames River watersheds were 21,672 lbs/day, 3,286 lbs/day, and 1,253 lbs/day respectively (see table below). The estimated point source total nitrogen loadings for the Connecticut, Housatonic, and Thames Rivers respectively are 13,836 lbs/day, 2,151 lbs/day, and 1,015 lbs/day, based on recent information and including all POTWs in the watershed. The following table summarizes the estimated baseline loadings, TMDL target loadings, and estimated current loadings.

Basin	Baseline Loading[1] (lbs/day)	TMDL Target[2] (lbs/day)	Loading[3] (lbs/day)
Connecticut River	21,672	16,254	13,836
Housatonic River	3,286	2,464	2,151
Thames River	1,253	939	1,015
Total	26,211	19,657	17,002

The TMDL target of a 25 percent aggregate reduction from baseline loadings is currently being met.

The estimated current loading for the Lebanon WWTP used in the above analysis was 315 lb/day, based upon a total nitrogen concentration of 19.06 mg/l and the average flow of 1.98 mgd (19.06 mg/L *1.98 mgd * 8.34), as indicated in the Facility's 2004 through 2005 DMRs.

The current permit does not require monitoring of total nitrogen, so the baseline values cannot be compared to current discharge values. However, the effluent ammonia concentration is quite low (averaging 0.085 mg/l), indicating that the facility is nitrifying very effectively.

To ensure that the aggregate nitrogen loading from out-of-basin point sources does not exceed the TMDL target of a 25% reduction over baseline loadings, EPA intends to include a permit condition for all existing treatment facilities in Massachusetts and New Hampshire that discharge to the Connecticut, Housatonic, and Thames River watersheds, requiring the permittees to evaluate alternative methods of operating their treatment plants to optimize the removal of nitrogen, and to describe previous and ongoing optimization efforts. Facilities not currently engaged in optimization efforts will also be required to implement optimization measures sufficient to ensure that their nitrogen loads do not increase, and that their aggregate 25% reduction target loading is maintained. Such a requirement has been included in this permit. EPA has worked with the State of Vermont to ensure that similar requirements are included in its discharge permits.

Specifically, the permit requires an evaluation of alternative methods of operating the existing wastewater treatment facility to control total nitrogen levels, including, but not limited to, operational

1 Estimated loading from TMDL (see Appendix 3 to CT DEEP "Report on Nitrogen Loads to Long Island Sound", April 1998).
2 Reduction of 25% from baseline loading.
3 Estimated current loading from 2004 – 2005 DMR data.

changes designed to enhance nitrification (seasonal and year-round), incorporation of anoxic zones, septage receiving policies and procedures, and side stream management. This evaluation is required to be completed and submitted to EPA and NHDES within one year of the effective date of the permit, along with a description of past and ongoing optimization efforts. The permit also requires implementation of optimization methods sufficient to ensure that there is no increase in total nitrogen compared to the average daily load (i.e. 315 lbs/day). The permit requires annual reports to be submitted that summarize progress and activities related to optimizing nitrogen removal efficiencies, document the annual nitrogen discharge load from the facility, and track trends relative to previous years. To better monitor the nitrogen removal in this optimization level, the draft permit requires total nitrogen monitoring once per week from March through September of each year, and once per month from October through February. The annual average target loading for the Lebanon WWTP is 315 lb/day as an annual average from January through December of each year.

The agencies will annually update the estimate of all out-of-basin total nitrogen loads and may incorporate total nitrogen limits in future permit modifications or reissuances as necessary to address increases in discharge loads, a revised TMDL, or other new information that may warrant the incorporation of numeric permit limits. There have been significant efforts by the New England Water Pollution Control Commission (NEIWPCC) work group and others since completion of the 2000 TMDL, which are anticipated to result in revised wasteload allocations for in-basin and out-of-basin facilities. Although not a permit requirement, EPA strongly recommends that permittees consider alternatives for further enhancing nitrogen reduction in their facility planning.

iv. 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 August 2009 through August 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 40.3 mg/l as $CaCO_3$, using a mass balance equation with the design flow, receiving water

7Q10, an upstream median hardness of 40 mg/l as $CaCO_3$ and an effluent median hardness of 110 mg/l as $CaCO_3$. The following table presents the factors used to determine the acute and chronic total recoverable criteria for each metal:

Metal	Parameters				Total Recoverable Criteria	
	m_a	b_a	m_c	b_c	Acute Criteria (CMC)* (ug/L)	Chronic Criteria (CCC)** (ug/L)
Aluminum	--	--	--	--	750	87
Cadmium	1.1280	-3.6867	0.7852	-2.7150	1.62	1.21
Chromium III	0.819	3.7256	0.819	0.6848	856.55	40.94
Copper	0.9422	-1.7000	0.8545	-1.702	5.95	4.29
Lead	1.273	-1.46	1.273	-4.705	25.67	1.00
Nickel	0.846	2.255	0.846	0.0584	217.48	24.18
Zinc	0.8473	0.884	0.8473	0.884	55.47	55.47

* Acute Criteria (CMC) = $\exp\{m_a*\ln(\text{hardness})+b_a\}$

** Chronic Criteria (CCC) = $\exp\{m_c*\ln(\text{hardness})+b_c\}$

In order 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 = effluent flow (design flow = 3.18 mgd = 4.92 cfs)
C_d = effluent metals concentration in ug/L (maximum reported[4])
Q_S = stream flow upstream (Q_S = 1049 cfs)
C_S = median upstream metals concentration in ug/L
Q_r = stream flow downstream, after discharge (Q_r = 1049 + 4.92 = 1053.92 cfs)
C_r = downstream pollutant concentration in ug/L

4 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 in determining reasonable potential.

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. If there is reasonable potential (for either acute or chronic conditions), the appropriate limit is then calculated by rearranging the above mass balance to solve for the effluent concentration (C_d) using the criterion times 0.9 as the resultant in-stream concentration (C_r). See the table below for the results of this analysis with respect to aluminum, cadmium, chromium, copper, lead, nickel and zinc.

Metal	Qd	Cd^1 (Max)	Q_s	Cs^2 (Median)	Qr	$Cr = (QdCd+QsCs)/Q_r$	Total Recoverable Criterion * 0.9		Reasonable Potential
	cfs	ug/l	cfs	ug/l	cfs	ug/l	Acute (ug/l)	Chronic (ug/l)	Cr > Criteria
Aluminum	4.92	60	1049	70	1054	70	675	78.3	No
Cadmium		0		0		0	1.46	1.09	No
Chromium		0		0		0	770.89	36.85	No
Copper		17		1		1.1	5.35	3.86	No
Lead		1		0		0	23.11	0.90	No
Nickel		5		0		0.02	195.73	21.76	No
Zinc		74		0		0.3	49.93	49.93	No

[1] Values represent the maximum measured concentration from the 2009-2013 whole effluent toxicity (WET) measurements (see Attachment B).

[2] Median upstream data taken from 2009-2013 WET testing results on Connecticut River upstream of the Lebanon WWTF (see Attachment B).

As indicated in the table above, 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, copper, lead, nickel, or zinc will cause or contribute to an exceedance of the applicable water quality criteria.

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 methodology 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 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 Attachment C 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	Qd	Cd[1] (95th Percentile)	Qs	Cs[2] (Median)	Qr	Cr = (QdCd+QsCs)/Q_r	Total Recoverable Criterion * 0.9		Criteria * 0.9 Exceeeded?
	cfs	ug/l	cfs	ug/l	cfs	ug/l	Acute (ug/l)	Chronic (ug/l)	Cr > Criteria
Aluminum		126		70		70	675	78.3	No
Cadmium		0		0		0	1.46	1.09	No
Chromium		0		0		0	770.89	36.85	No
Copper	4.92	36	1049	1	1054	1	5.35	3.86	No
Lead		2		0		0.01	23.11	0.90	No
Nickel		10.5		0		0.05	195.73	21.76	No
Zinc		155.4		0		0.7	49.93	49.93	No

[1] Values calculated using procedures in Attachment C, using the WET measurements from the 2009-2013 WET testing noted above.

[2] Median upstream data taken from WET testing results on the Connecticut River upstream of the Lebanon WWTF (see Attachment B).

As indicated in the table above, 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, copper, lead, nickel, or zinc will cause or contribute to an exceedance of the applicable water quality criteria. Hence, the draft permit does not contain additional monitoring for any of these metals. Monitoring and reporting for all metals will continue to be required as part of the WET tests.

E. Whole Effluent Toxicity

EPA's Technical Support Document for Water Quality-based Toxics Control, EPA/505/2-90-001, March 1991, 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. Pollutant specific approaches, as those in the Gold Book and State regulations, address individual chemicals. A Whole Effluent Toxicity (WET) approach, alternatively, evaluates interactions between pollutants thus rendering an "overall" or "aggregate" toxicity assessment of the effluent. WET testing measures the "additive" and/or "antagonistic" effects of individual chemical pollutants which pollutant specific approaches do not. WET testing also provides the best means to discover the presence of an unknown toxic pollutant. An integrated strategy, consisting of both specific pollutant and WET testing, is required to protect aquatic life and human health.

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;...." (N.H. RSA 485-A:8, VI and the N.H. Code of Administrative Rules, PART Env-Wq 1703.21(a)). The 2006 permit required WET testing. Since there has been no change in the operating conditions at the Lebanon WWTP and the permittee continues to successfully meet the permitted limits for toxicity, the draft permit's WET limit remains the same as those in the 2006 permit. This is in accordance with the antibacksliding requirements found in 40 CFR § 122.44.

EPA-Region 1's current policy requires toxicity testing in all municipal permits. The type of whole effluent toxicity (WET) test, acute and/or chronic and effluent limitations (LC50 and/or C-NOEC), are based on available dilution. The 2006 permit requires the permittee to perform one acute toxicity test per year. EPA – Region 1's policy for frequency of WET testing for available dilutions greater than 100:1 requires that two WET test per year be conducted. The reduction in testing was granted because the previous WET tests demonstrated consistent compliance with the effluent limit. The current requirement (i.e. one acute toxicity test per year) will continue in the draft permit.

The acute toxicity test is conducted using two (2) species; daphnid (Ceriodaphnia dubia) and fathead minnow (Pimephales promelas). The permit contains an LC50 limit of 50% effluent concentration. The LC50 is defined as the percentage of effluent lethal to 50% of the test organisms during a specific length of time (Refer to **Attachment A** of draft permit). The annual sample for the WET test shall be taken, and the tests completed, during the third quarter (July-September). Results are to be submitted to the EPA and the NHDES-WD with the DMR report for October.

If the annual toxicity test demonstrates non-compliance with the effluent limit, the permit may be modified and monitoring frequency and testing requirements increased. The permit may also be modified, or alternatively, revoked and reissued to incorporate additional toxicity testing requirements or chemical specific limits. These actions will occur if the Regional Administrator determines it is necessary to protect the State's surface water quality and the users of the waterways during the remaining life of the permit. Results of these toxicity tests are considered "new information not available at permit development"; therefore, the permitting authority is

allowed to use said information to modify an issued permit under authority in 40 CFR § 122.62(a)(2).

This draft permit requires the reporting of selected parameters determined from the chemical analysis of the WET tests effluent samples. Specifically, parameters for the constituents of ammonia nitrogen as nitrogen, hardness, and total recoverable aluminum, cadmium, copper, lead, nickel, and zinc are to be reported on the appropriate Discharge Monitoring Reports for entry into the EPA's Permit Compliance Systems Data Base. EPA – Region 1 does not consider reporting these requirements an unnecessary burden as the reporting of these constituents is required with the submission of each toxicity report (See Draft Permit, Attachment A).

F. Sludge

Section 405(d) of the 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. The permit contains conditions intended to implement Section 405(d). Conditions include: required compliance by the statutory deadlines; causes for modification of the permit; and, appropriate and necessary conditions to ensure that EPA and NHDES-WD are notified 180 days prior to a change in the sludge use or disposal method and receive appropriate sewage sludge monitoring results for all parameters associated with disposal method chosen including pollutants, pathogens and vectors.

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-Region 1 has included with the draft permit a 72-page Sludge Compliance Guidance document for use by the permittee in determining their appropriate sludge conditions for their chosen method of sludge disposal.

The permittee is also required to submit to EPA and to NHDES-WD annually, on February 19th, an annual report containing the information specified in the Sludge Compliance Guidance Document for the permittee's chosen method of sludge disposal once that happens.

G. 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 307 of the Act. However, the draft permit contains conditions that are necessary to allow EPA and NHDES-WD to ensure that pollutants from industrial users will not pass through the facility and cause water-quality standards violations and/or sludge use and disposal difficulties or cause interference with the operation of the treatment facility. In October 2000, the City of Lebanon updated its Sewer use Ordinance (SUO) to include technically based local limits and the authority to issue permits to its industrial users.

The permittee is required to notify EPA and NHDES-WD whenever a process wastewater discharge to the facility from a primary industrial category (see 40 CFR § 122 Appendix A for list) is planned 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 contains the requirements to: (1) report to EPA and NHDES-WD the name(s) of all Industrial Users (IU) subject to Categorical Pretreatment Standards pursuant to 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) and/or New Hampshire Pretreatment Standards (Env-Wq 904) who currently discharge to the POTW as well as those who commence discharge to the POTW after the effective date of the finally issued permit, and (2) submit to EPA and NHDES-WD copies of Baseline Monitoring Reports and other pretreatment reports submitted by industrial users.

H. Combined Sewer Overflows (CSO)

i. General Information

Combined Sewer Overflows (CSOs) are overflows from a combined sewer and storm water system that are discharged into a receiving water without going to the headworks of a POTW. CSOs occur when the flow in the combined sewer system exceeds interceptor or regulator capacity. CSOs are distinguished from bypasses which are "intentional diversions of waste streams from any portion of a treatment facility" (40 CFR § 122.41(m)). The permittee has a combined storm and sanitary sewer collection system with seven CSOs, identified in the draft permit as Outfalls ZZ, 010, 022, 023, 024, 026, and 027.

Flows in combined sewers can be classified into two categories: wet weather flow and dry weather flow. Wet weather flow is a combination of domestic and industrial sewage, infiltration from groundwater, and storm water flow including snow melt. Dry weather flow is the flow in a combined sewer that results from domestic sewage, groundwater infiltration and industrial wastes with no contribution from storm water runoff or storm water induced infiltration.

Dry weather overflows from CSOs are illegal. They must be reported immediately to EPA and eliminated as expeditiously as possible.

The objectives of the National CSO Control Policy are the following:

1) To ensure that if the CSO discharges occur, they are only as a result of wet weather;

2) To bring all wet weather CSO discharge points into compliance with the technology based requirements of the CWA and applicable Federal and State water quality standards; and

3) To minimize water quality, aquatic biota, and human health impacts from wet weather flows.

ii. Effluent Limitations

CSOs are point sources subject to NPDES permit requirements for both water quality based and technology based requirements; but are not subject to secondary treatment regulations applicable to publicly owned treatment works. Section 301(b)(1)(C) of the CWA of 1977 mandates compliance with Federal and State Water Quality Standards by July 1, 1977. Technology based permit limits must be established for best conventional pollutant control technology (BCT) and best available technology economically achievable (BAT) based on best professional judgment (BPJ) in accordance with Section 301(b) and Section 402(a) of the Water Quality Act Amendments of 1987 (WQA).

iii. Conditions for Discharge

The draft permit prohibits dry weather discharges from CSO outfalls. During wet weather, the discharges must not cause violation of Federal and State Water Quality Standards. Dry weather discharges must be reported immediately to EPA and the State. Wet weather discharges must be monitored and reported as specified in the permit.

iv. Nine Minimum Controls (NMC) Measures

A permittee must comply with BPJ derived BCT/BAT controls, which at a minimum include the following:

1. Proper operation and maintenance of the sewer system and outfalls;
2. Maximum use of the collection systems for storage;
3. Review pretreatment programs to assure CSO impacts are minimized;
4. Maximization of flow to the POTW for treatment;
5. Prohibition of dry weather overflows;
6. Control of solid and floatable materials in the discharge;
7. Pollution prevention programs which focus on contaminant reduction activities;
8. Public notification to ensure that the public receives adequate notification of CSO occurrences and CSO impacts; and
9. Monitoring to effectively characterize CSO impacts and the efficacy of CSO controls.

v. Documentation

1. Combined Sewer Outfalls Discharge Reports

The draft permit requires, at a minimum, annual sampling of all Lebanon's combined sewer outfall discharges during a wet weather event. This monitoring is required to ensure compliance with NHDES regulation Env-Wq 1703.06. This regulation limits the bacteria levels in the combined sewer overflow discharges to 1000 Escherichia coli per 100 milliliters. The sampling requires one grab sample from each CSO one half an hour after the discharge begins. The results of the month's discharge shall be included in that month's DMRs.

2. Nine Minimum Controls Measures Implementation Documentation

Lebanon first submitted a plan for implementing the NMC measures to the EPA on May 29, 1997. A subsequent progress report concerning the implementation of the NMC measures was included in Lebanon's Master CSO Plan draft submitted to EPA – Region 1 on October 28, 1998.

The draft permit requires appropriate documentation, no later than August 31st of each year, that demonstrates the continued implementation of the NMCs. This report must include a detailed analysis of specific activities the permittee has undertaken in the past calendar year to continue implementation and maintenance of the NMCs. The documentation must include the minimum requirements set forth in Part I.C. of the draft permit. The report shall also document those activities planned to implement the NMCs, and any additional controls beyond the NMCs the permittee can feasibly implement.

Documentation may include operation and maintenance plans, revised sewer use ordinances for industrial users, sewer system inspection reports, infiltration/inflow studies, pollution prevention programs, public notification plans and facility plans for maximizing the capacities of the existing collection and treatment system, as well as contracts and schedules for minor construction programs for improving the existing systems operation. The permittee should also submit information which indicates the degree to which the controls achieve compliance with water quality standards.

3. CSO Monitoring Requirements

The permittee is required to quantify and record all discharges from combined sewer outfalls. Quantification may be through direct measurement or estimation. This requirement is in the existing permit and is carried over to the draft permit. When estimating, the permittee shall make reasonable efforts, i.e. gaging, measurements, to verify the validity of the estimation technique. The following information must be recorded for each combined sewer outfall for each discharge event:

(1) Date of discharge
(2) Estimated duration (hours) of discharge;
(3) Estimated volume (gallons) of discharge; and
(4) National Weather Service precipitation data from the nearest gage where precipitation is available at daily (24-hour) intervals and the nearest gage where precipitation is available at one-hour intervals. Cumulative precipitation per discharge event shall be calculated.

The draft permit requires the permittee to submit a certification to the State and EPA by August 31st of each year which states that the previous twelve monthly inspections were conducted, results recorded, and records maintained. The permittee is also required to maintain all records of discharges for at least six years after the effective date of this permit.

vi. <u>CSO Abatement</u>

On June 6, 2000, EPA issued Administrative Order Docket No. 00-72 (“Order”) to the City of Lebanon. The Order required the City to eliminate six (#5, #10, #22, #23, #26 and #27) of its seven CSOs by December 31, 2008, through sewer separation, and required that an engineering study be submitted by December 31, 2005 to identify sewer separation projects to eliminate the seventh CSO (#24) by December 31, 2012. The City submitted a draft engineering study and requested additional time for eliminating its CSOs. CSOs #5 and #27 were eliminated in 2004 and 2007. Since then CSO #27 has again become part of the city’s registered CSO discharge locations. When the CSO was originally capped a storm event caused an incident of a sewer system back up into a residence. The pipe was routed again between the manhole and the river.

There have been no discharges to CSO #27 since but the location is not capped and continues to be part of the inspection routine. In 2009, EPA, NHDES and Lebanon entered into a Consent Decree that superseded the Order, with a schedule for eliminating all remaining CSOs and achieving full compliance by November 1, 2020.

According to the permittee, CSOs No. 022 and 010 were eliminated on October 2011 and November 2011 respectively. However, the outfalls have not yet been permanently sealed pending monitoring and testing to ensure complete elimination.

I. Operation and Maintenance

Regulations regarding proper operation and maintenance are found at 40 C.F.R. § 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 "facilities and systems of treatment and control" and are therefore subject to proper operation and maintenance requirements.

Similarly, a permittee has a "duty to mitigate" pursuant to 40 C.F.R. § 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 permit. Specific permit conditions have also been included in Part I.B., I.C., and I.D. of the draft permit. These requirements include mapping of the wastewater collection system, reporting of unauthorized discharges including SSOs, maintaining an adequate maintenance staff, performing preventative maintenance, controlling inflow and infiltration to the extent necessary to prevent SSOs and I/I related effluent violations at the wastewater treatment plant, and maintaining alternate power where necessary.

J. Essential Fish Habitat

Under the 1996 Amendments (PL 104-267) to the Magnuson-Stevens Fishery Conservation and Management Act (16 U.S.C. § 1801 et seq.(1998)), EPA is required to consult with NMFS if EPA's action or proposed actions that it funds, permits, or undertakes, "may adversely impact any essential fish habitat." 16 U.S.C. § 1855(b). The Amendments broadly define "essential fish habitat" (EFH) as: "waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity." 16 U.S.C. § 1802(10). Adversely impact means any impact which reduces the quality and/or quantity of EFH. 50 C.F.R. § 600.910(a). Adverse effects may include direct (e.g., contamination or physical disruption), indirect (e.g., loss of prey, reduction in species' fecundity), site-specific or habitat-wide impacts, including individual, cumulative, or synergistic consequences of actions. Id.

Essential fish habitat is only designated for fish species for which federal Fisheries Management Plans exist. 16 U.S.C. § 1855(b)(1)(A). EFH designations for New England were approved by the U.S. Department of Commerce on March 3, 1999.

Atlantic salmon (*Salmo salar*) is the only species for which essential fish habitat (EFH) is

designated in the Connecticut River.

Based on the permit requirements identified in this Fact Sheet that are designed to be protective of cold water aquatic species, including Atlantic salmon, the EPA has determined that a formal EFH consultation with NMFS is not required because the proposed discharge will not adversely affect Atlantic salmon EFH. If adverse effects to EFH do occur as a result of this permit action, or if new information becomes available that changes the basis for this determination, then NMFS will be notified and consultation will be promptly initiated.

K. Endangered Species

The Dwarf Wedge Mussel (*Alasmidonta heterodon*) was added to the Federal endangered species list on March 4, 1990 and is found in the following areas in New Hampshire:

1. Connecticut River and Johns River in the Towns of Northumberland, Lancaster, and Dalton in Coos County.
2. Connecticut River in the Towns of Haverhill, Piermont, Orford, and Lyme in Grafton County.
3. Connecticut River in the Towns of Plainfield, Cornish, Claremont, and Charlestown in Sullivan County.
4. Ashuelot River and South Branch of the Ashuelot River in the Towns of Swanzey Keene, and Surry in Cheshire County, New Hampshire.

The Endangered Species Act (16 USC 1451 et seq) requires the EPA ensure that any action authorized by the EPA is not likely to jeopardize the continued existence of any endangered or threatened species or adversely affect its critical habitat. Further, 40 CFR 122.49(c) requires the EPA to consult with the U.S. Fish and Wildlife Service (USFWS) to determine particular permit conditions when the regulations of the Endangered Species Act may apply.

EPA is reissuing the existing permit without any changes of flow and pollutants loading. EPA determined that the Dwarf Wedge Mussel is not located in the action area therefore consultation with USFWS is not necessary.

V. 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 six months 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 six months 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.

VI. Antidegradation

This draft permit is being reissued with limitations that are at least as stringent as those in the 2006 permit and there is no change in the outfall location. Since the State of New Hampshire has indicated there will be no lowering of water quality and no loss of existing uses, no additional anti-degradation review is warranted.

VII. State Certification Requirements

EPA may not issue a permit unless the State Water Pollution Control Agency with jurisdiction over the receiving water(s) 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 NH Standards or waives its right to certify as set

forth in 40 CFR Part 124.53.

Upon public noticing of the draft permit, EPA is formally requesting that the State's certifying authority make a written determination concerning certification. The State will be deemed to have waived its right to certify unless certification is received within 60 days of receipt of this request.

The NHDES-WD, Wastewater Engineering Bureau is the certifying authority. EPA has discussed this draft permit with the Staff of the Wastewater Engineering Bureau and expects that the draft permit will be certified. Regulations governing state certification are set forth in 40 CFR Parts 124.53 and 124.55.

The State's certification should include the specific conditions necessary to assure compliance with applicable provisions of the Clean Water Act (CWA), Sections 208(e), 301, 302, 303, 306 and 307 and with appropriate requirements of State law. In addition, the State should provide 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. Since the State's certification is provided prior to permit issue, any failure by the State to provide this statement waives the State's right to certify or object to any less stringent condition. These less stringent conditions may be established by EPA during the permit issuance process based on information received following the public noticing. If the State believes that any conditions more stringent than those contained in the draft permit are necessary to meet the requirements of either the CWA or State law, the State should include such conditions and, in each case, cite the CWA or State law reference upon which that condition is based. Failure to provide such a citation waives the right to certify as to that condition. The only exception to this is the sludge conditions/requirements implementing Section 405(d) of the CWA are not subject to the Section 401 State Certification requirements.

Reviews and appeals of limitations and conditions attributable to State certification shall be made through the applicable procedures of the State and may not be made through the applicable procedures of 40 CFR Part 124.

VIII. Comment Period, Hearing Requests, and Procedures for Final Decisions

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:

Mr. Dan Arsenault
U.S. Environmental Protection Agency
5 Post Office Square
Suite 100 (OEP06-1)
Boston, Massachusetts 02109-3912.

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 in 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 comments period, and after a public hearing, if such hearing is held, 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. Within 30 days following the notice of the final permit decision, any interested person may submit a request for a formal hearing to reconsider or contest the final decision. Requests for formal hearing must satisfy the requirement of 40 CFR Part 124.74.

IX. EPA Contact

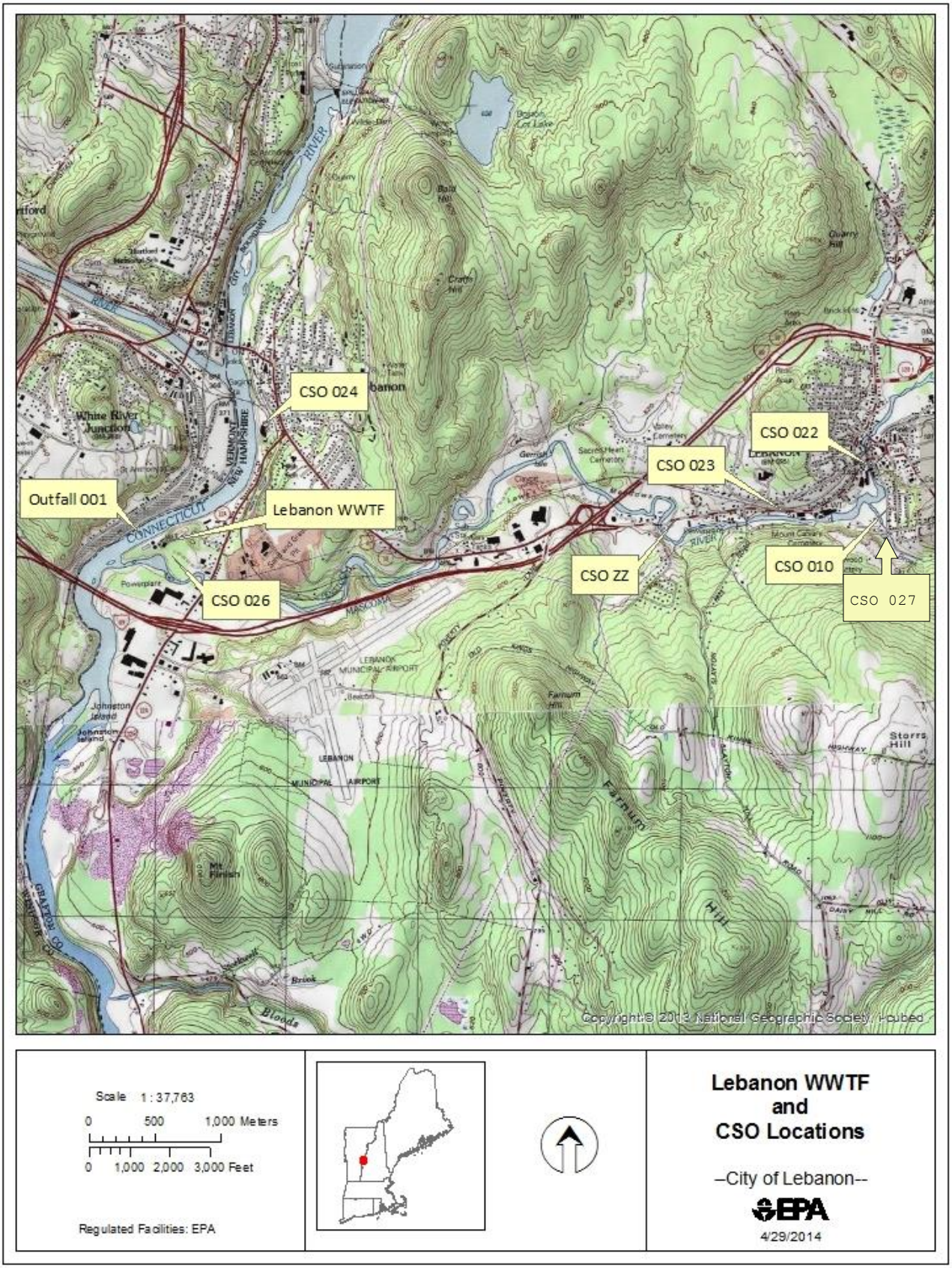
Additional information concerning the draft permit may be obtained between the hours of 9:00 a.m. and 5:00 p.m., Monday through Friday, excluding holidays from:

Mr. Dan Arsenault
U.S. Environmental Protection Agency
5 Post Office Square
Suite 100 (OEP06-1)
Boston, Massachusetts 02109-3912.
Telephone: (617) 918-1562
E-Mail: arsenault.dan@epa.gov

9/22/2014
_____
Date

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

ATTACHMENT A – MAP OF FACILITY, OUTFALL AND CSOs



ATTACHMENT B – SUMMARY OF DISCHARGE MONITORING REPORTS

The following data are from the Discharge Monitoring Reports (DMRs) for the period from January 2009 to November 2013.

Outfall 001	BOD5						
Monitoring Period End Date	lb/d	mg/l	lb/d	mg/l	lb/d	mg/l	%
	MO AVG	MO AVG	WKLY AVG	WKLY AVG	DAILY MX	DAILY MX	MO AV MN
01/31/2009	95.	7.	109.	8.	117.	8.	98.
02/28/2009	100.	8.	117.	9.	128.	10.	97.
03/31/2009	116.	6.	144.	8.	144.	9.	97.
04/30/2009	110.	6.	154.	6.	175.	7.	97.
05/31/2009	126.	9.	155.	11.	185.	13.	96.
06/30/2009	69.	5.	84.	6.	102.	7.	98.
07/31/2009	134.	8.	168.	10.	214.	11.	97.
08/31/2009	87.	4.	200.	8.	257.	10.	98.
09/30/2009	58.	4.	76.	6.	83.	7.	98.
10/31/2009	63.	4.	96.	5.	98.	5.	98.
11/30/2009	51.	3.	57.	4.	67.	4.	99.
12/31/2009	81.	5.	110.	8.	114.	8.	98.
01/31/2010	92.	6.	146.	7.	178.	8.	98.
02/28/2010	88.	7.	101.	8.	102.	8.	97.
03/31/2010	117.	6.	138.	6.	211.	7.	97.
04/30/2010	93.	5.	178.	6.	147.	7.	97.
05/31/2010	82.	6.	106.	8.	139.	10.	98.
06/30/2010	105.	8.	152.	10.	176.	12.	97.
07/31/2010	74.	6.	133.	10.	149.	11.	98.
08/31/2010	81.	8.	126.	14.	141.	14.	98.
09/30/2010	100.	10.	130.	12.	163.	16.	97.
10/31/2010	87.	6.	144.	14.	155.	12.	98.
11/30/2010	144.	10.	276.	20.	316.	23.	97.
12/31/2010	84.	6.	109.	6.	114.	7.	98.
01/31/2011	87.	7.	96.	8.	99.	9.	98.
02/28/2011	100.	9.	130.	12.	146.	13.	97.
03/31/2011	119.	5.	156.	6.	184.	7.	97.
04/30/2011	151.	6.	175.	6.	211.	7.	97.
05/31/2011	86.	5.	100.	5.	131.	9.	98.
06/30/2011	97.	7.	131.	10.	150.	10.	98.
07/31/2011	78.	7.	100.	9.	117.	10.	98.
08/31/2011	67.	4.	86.	7.	99.	7.	99.
09/30/2011	93.	6.	110.	6.	125.	7.	98.
10/31/2011	120.	7.	195.	10.	205.	13.	98.
11/30/2011	83.	5.	88.	6.	135.	7.	98.
12/31/2011	215.	12.	250.	14.	288.	15.	95.
01/31/2012	236.	17.	330.	24.	356.	26.	95.
02/29/2012	98.	9.	234.	16.	131.	12.	97.
03/31/2012	190.	12.	228.	14.	249.	15.	95.

Outfall 001	BOD5						
Monitoring Period End Date	lb/d	mg/l	lb/d	mg/l	lb/d	mg/l	%
	MO AVG	MO AVG	WKLY AVG	WKLY AVG	DAILY MX	DAILY MX	MO AV MN
04/30/2012	90.	6.	110.	8.	112.	8.	98.
05/31/2012	75.	4.	92.	6.	128.	7.	98.
06/30/2012	70.	5.	105.	6.	105.	6.	98.
07/31/2012	70.	5.	120.	8.	123.	9.	98.
08/31/2012	54.	4.	49.	4.	73.	6.	99.
09/30/2012	88.	7.	116.	9.	135.	11.	98.
10/31/2012	88.	7.	118.	10.	133.	10.	98.
11/30/2012	72.	6.	96.	6.	94.	8.	98.
12/31/2012	107.	8.	134.	10.	175.	14.	97.
01/31/2013	95.	8.	140.	11.	167.	13.	97.
02/28/2013	77.	7.	103.	9.	103.	9.	98.
03/31/2013	95.	7.	121.	8.	149.	8.	97.
04/30/2013	81.	5.	97.	6.	104.	6.	98.
05/31/2013	116.	8.	160.	11.	162.	11.	97.
06/30/2013	159.	9.	186.	11.	229.	13.	96.
07/31/2013	163.	7.	248.	10.	309.	12.	96.
08/31/2013	98.	7.	110.	8.	144.	8.	98.
09/30/2013	109.	8.	136.	10.	178.	13.	97.
10/31/2013	192.	16.	256.	21.	281.	23.	95.
11/30/2013	273.	23.	366.	31.	423.	32.	93.
Permit Limit	**796**	**30**	**1194**	**45**	**1327**	**50**	**85**
Minimum	51.0	3.0	49.0	4.0	67.0	4.0	93.0
Maximum	273.0	23.0	366.0	31.0	423.0	32.0	99.0
Average	105.6	7.3	143.7	9.6	163.2	10.6	97.3
# of Samples	59	59	59	59	59	59	59
# of Violations	0	0	0	0	0	0	0

Outfall 001	TSS						
Monitoring Period End Date	lb/d	mg/l	lb/d	mg/l	lb/d	mg/l	%
	MO AVG	MO AVG	WKLY AVG	WKLY AVG	DAILY MX	DAILY MX	MO AV MN
01/31/2009	66.	5.	75.	6.	82.	6.	98.
02/28/2009	81.	7.	98.	8.	103.	8.	98.
03/31/2009	124.	7.	164.	9.	202.	10.	97.
04/30/2009	92.	5.	134.	6.	175.	6.	98.
05/31/2009	234.	18.	410.	31.	421.	31.	94.
06/30/2009	65.	5.	116.	8.	143.	8.	99.
07/31/2009	128.	8.	140.	10.	167.	10.	97.
08/31/2009	106.	5.	344.	14.	354.	15.	98.
09/30/2009	36.	3.	52.	3.	50.	3.	99.
10/31/2009	54.	4.	79.	4.	80.	4.	99.
11/30/2009	51.	3.	56.	4.	69.	4.	98.
12/31/2009	61.	4.	56.	4.	124.	7.	98.
01/31/2010	70.	5.	118.	6.	178.	8.	99.
02/28/2010	115.	8.	141.	7.	329.	22.	97.
03/31/2010	79.	4.	135.	9.	124.	6.	97.
04/30/2010	72.	4.	119.	6.	126.	6.	97.
05/31/2010	73.	5.	95.	6.	96.	6.	97.
06/30/2010	199.	13.	245.	19.	505.	28.	94.
07/31/2010	74.	6.	446.	26.	179.	14.	98.
08/31/2010	55.	6.	96.	10.	97.	12.	98.
09/30/2010	161.	16.	214.	22.	320.	26.	95.
10/31/2010	110.	8.	284.	25.	199.	12.	97.
11/30/2010	96.	7.	124.	8.	200.	11.	98.
12/31/2010	66.	4.	97.	5.	99.	5.	99.
01/31/2011	50.	4.	56.	5.	60.	5.	99.
02/28/2011	53.	5.	70.	6.	75.	6.	98.
03/31/2011	95.	4.	150.	5.	189.	6.	98.
04/30/2011	104.	5.	120.	4.	139.	5.	98.
05/31/2011	86.	5.	165.	8.	176.	8.	99.
06/30/2011	83.	6.	110.	8.	133.	10.	99.
07/31/2011	69.	6.	127.	12.	138.	12.	99.
08/31/2011	72.	4.	88.	6.	127.	6.	99.
09/30/2011	102.	6.	144.	8.	144.	9.	98.
10/31/2011	161.	9.	494.	24.	557.	26.	98.
11/30/2011	66.	5.	88.	6.	92.	6.	99.
12/31/2011	203.	12.	278.	15.	326.	17.	96.
01/31/2012	234.	17.	276.	20.	418.	32.	94.
02/29/2012	92.	8.	285.	21.	129.	10.	96.
03/31/2012	234.	15.	344.	22.	369.	24.	94.
04/30/2012	97.	7.	120.	8.	139.	8.	97.
05/31/2012	58.	4.	94.	7.	91.	5.	98.
06/30/2012	62.	4.	84.	5.	88.	5.	98.
07/31/2012	60.	5.	114.	8.	153.	10.	98.
08/31/2012	32.	3.	51.	4.	62.	5.	99.
09/30/2012	58.	5.	108.	10.	110.	11.	98.

Outfall 001	TSS						
Monitoring Period End Date	lb/d	mg/l	lb/d	mg/l	lb/d	mg/l	%
	MO AVG	MO AVG	WKLY AVG	WKLY AVG	DAILY MX	DAILY MX	MO AV MN
10/31/2012	68.	6.	84.	7.	90.	7.	98.
11/30/2012	68.	6.	76.	6.	81.	7.	98.
12/31/2012	85.	7.	91.	8.	109.	10.	97.
01/31/2013	76.	6.	90.	8.	139.	13.	98.
02/28/2013	56.	5.	99.	9.	71.	7.	98.
03/31/2013	57.	4.	68.	6.	68.	6.	98.
04/30/2013	52.	3.	58.	4.	67.	4.	98.
05/31/2013	107.	8.	154.	11.	177.	12.	97.
06/30/2013	134.	8.	166.	10.	177.	10.	97.
07/31/2013	136.	7.	237.	10.	321.	12.	97.
08/31/2013	53.	4.	70.	5.	68.	5.	98.
09/30/2013	58.	4.	64.	4.	65.	5.	98.
10/31/2013	236.	20.	310.	28.	494.	41.	93.
11/30/2013	355.	**31.**	450.	40.	574.	41.	91.
Permit Limit	**796**	**30**	**1194**	**45**	**1327**	**50**	**85**
Minimum	32.0	3.0	51.0	3.0	50.0	3.0	91.0
Maximum	355.0	31.0	494.0	40.0	574.0	41.0	99.0
Average	99.7	7.1	156.3	10.6	180.3	11.4	97.4
# of Samples	59	59	59	59	59	59	59
# of Violations	0	1	1	0	0	0	0

Outfall 001	Flow		pH		TRC		E. coli	
Monitoring Period End Date	MGD	MGD	S.U.	S.U.	mg/l	mg/l	CFU/100mL	CFU/100mL
	MO AVG	DAILY MX	MINIMUM	MAXIMUM	MO AVG	DAILY MX	MO GEO	DAILY MX
01/31/2009	1.5898	1.8809	6.8	7.	0.68	1.	21.	36.
02/28/2009	1.4917	1.9784	6.8	7.	0.69	0.88	16.	26.
03/31/2009	2.2513	3.1463	6.8	7.1	0.75	1.	13.	48.
04/30/2009	2.2797	3.4919	6.8	7.1	0.66	0.98	9.	26.
05/31/2009	1.6473	2.3157	6.7	7.2	0.86	1.	17.	78.
06/30/2009	1.678	2.4557	6.8	7.2	0.75	0.92	9.	48.
07/31/2009	2.2403	3.666	6.9	7.3	0.78	1.	9.	**613.**
08/31/2009	2.0772	3.0838	6.9	7.3	0.75	1.	4.	13.
09/30/2009	1.461	2.0013	6.7	7.2	0.7	0.86	17.	91.
10/31/2009	1.7733	3.6179	6.8	7.2	0.75	0.89	9.	26.
11/30/2009	1.7998	2.2133	6.8	7.3	0.71	0.96	6.	21.
12/31/2009	1.7527	2.429	6.9	7.1	0.71	0.96	17.	88.
01/31/2010	1.6166	3.0519	6.8	7.2	0.68	0.98	10.3	13.5
02/28/2010	1.5851	3.1681	6.8	7.1	0.71	0.88	6.5	8.4
03/31/2010	2.2978	3.653	6.7	7.1	0.7	1.	13.	52.
04/30/2010	2.2055	3.3296	6.9	7.2	0.69	0.98	3.6	8.6
05/31/2010	1.7455	2.1841	6.8	7.1	0.72	0.88	7.7	18.7
06/30/2010	1.6546	2.1623	6.9	7.1	0.77	0.97	10.	344.8
07/31/2010	1.4579	1.881	7.	7.3	0.77	0.94	14.2	**410.6**
08/31/2010	1.2549	1.6347	6.9	7.3	0.89	1.	14.3	**547.5**
09/30/2010	1.2019	2.6884	6.7	7.2	0.89	1.	32.2	172.5
10/31/2010	1.8137	3.1853	6.9	7.2	0.89	1.	11.9	35.5
11/30/2010	1.7172	2.2166	6.8	7.1	0.78	0.95	19.3	360.9
12/31/2010	1.7205	2.3691	6.8	7.	0.74	0.92	8.6	34.1
01/31/2011	1.382	1.645	6.8	7.	0.82	1.	5.4	19.9
02/28/2011	1.3852	1.8362	6.8	7.1	0.75	1.	11.4	43.2
03/31/2011	2.6743	3.9189	6.9	7.6	0.71	0.94	6.1	28.8
04/30/2011	2.7682	3.9449	6.8	7.1	0.73	0.97	4.9	27.2
05/31/2011	2.1106	2.0451	6.8	7.3	0.71	0.91	10.8	27.2
06/30/2011	1.6267	2.0556	6.8	7.2	0.77	0.97	11.3	65.7
07/31/2011	1.3222	2.3428	6.9	7.2	0.8	0.95	7.5	15.8
08/31/2011	1.9019	4.8572	6.9	7.4	0.78	0.93	6.9	17.5
09/30/2011	2.0504	3.0109	6.8	7.1	0.85	0.98	10.1	35.9
10/31/2011	2.0312	2.6851	6.9	7.2	0.89	1.	13.4	43.2
11/30/2011	1.7362	2.3191	6.8	7.1	0.84	0.98	14.7	**2419.6**
12/31/2011	2.0547	2.7081	6.5	7.2	0.86	0.99	7.4	13.5
01/31/2012	1.6669	2.6596	6.7	7.2	0.82	1.	29.1	**517.2**
02/29/2012	1.3751	1.6876	7.	7.4	0.82	0.95	30.4	129.1
03/31/2012	1.8757	2.253	6.9	7.3	0.86	1.	20.7	34.5
04/30/2012	1.6164	2.0778	6.5	7.2	0.8	0.98	10.3	24.3
05/31/2012	1.9365	2.5878	6.9	7.3	0.83	1.	4.3	33.5
06/30/2012	1.6536	2.1028	6.8	7.1	0.8	0.94	7.6	16.
07/31/2012	1.4746	1.8402	6.8	7.1	0.84	1.	8.4	49.2
08/31/2012	1.488	2.0542	6.9	7.2	0.89	1.	3.	8.6
09/30/2012	1.3729	1.8039	6.8	7.1	0.92	0.99	5.4	17.3

Outfall 001	Flow		pH		TRC		E. coli	
Monitoring Period End Date	MGD	MGD	S.U.	S.U.	mg/l	mg/l	CFU/100mL	CFU/100mL
	MO AVG	DAILY MX	MINIMUM	MAXIMUM	MO AVG	DAILY MX	MO GEO	DAILY MX
10/31/2012	1.4714	2.1451	6.8	7.1	0.92	1.	12.9	70.8
11/30/2012	1.4201	1.8246	6.7	7.2	0.87	0.99	7.9	20.1
12/31/2012	1.5396	2.3684	6.8	7.2	0.87	1.	8.7	14.6
01/31/2013	1.4769	2.1483	6.8	7.1	0.82	0.95	6.5	25.9
02/28/2013	1.372	1.6218	6.8	7.6	0.81	0.97	3.9	7.4
03/31/2013	1.6566	2.5562	6.8	7.2	0.8	0.96	4.	8.4
04/30/2013	1.9216	2.1907	6.8	7.	0.77	0.97	7.2	14.7
05/31/2013	1.7595	2.2947	6.7	7.2	0.87	0.99	18.	88.4
06/30/2013	2.1071	2.5687	6.9	7.2	0.88	0.99	8.3	16.1
07/31/2013	2.5781	4.6766	7.	7.3	0.82	0.98	11.3	46.5
08/31/2013	1.6	2.41	7.	7.2	0.88	0.99	13.9	24.6
09/30/2013	1.7214	2.4386	6.9	7.2	0.9	1.	14.3	**1413.6**
10/31/2013	1.4313	1.8546	6.8	7.1	0.85	0.99	35.4	**416.**
11/30/2013	1.3625	1.803	6.8	7.1	0.88	0.99	**175.7**	**1299.7**
Permit Limit	**N/A**	**N/A**	**6.5**	**8.0**	**1**	**1**	**126**	**406**
Minimum	1.2	1.6	6.5	7.0	0.7	0.9	3.0	7.4
Maximum	2.8	4.9	7.0	7.6	0.9	1.0	175.7	2419.6
Average	1.7	2.5	6.8	7.2	0.8	1.0	14.5	172.5
# of Samples	59	59	59	59	59	59	59	59
# of Violations	N/A	N/A	0	0	0	0	1	8

WET - Effluent	Al	Cd	Cr	Cu	Pb	Ni	Zn	Hardness	Ammonia	LC50 Ceriodaphnia	LC50 Pimephales
Monitoring Period End Date	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	%	%
	DAILY MX	DAILY MX	DAILY MX	DAILY MX	DAILY MX	DAILY MX	DAILY MX	DAILY MX	DAILY MX	DAILY MN	DAILY MN
09/30/2009	0.06	0.	0.	0.007	0.	0.003	0.035	110.	0.06	100.	100.
09/30/2010	0.05	0.	0.	0.013	0.001	0.005	0.074	130.	0.11	100.	100.
09/30/2011	0.01	0.	0.	0.009	0.001	0.	0.05	110.	0.22	100.	100.
09/30/2012	0.01	0.	0.	0.011	0.	0.004	0.04	110.	0.1	100.	100.
09/30/2013	0.04	0.	0.	0.017	0.	0.004	0.048	51.	0.1	100.	100.
Permit Limit	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**50**	**50**
Maximum	0.060	0.000	0.000	0.017	0.001	0.005	0.074	130	0.22	100	100
Average	0.034	0.000	0.000	0.011	0.000	0.003	0.049	102.2	0.118	100.0	100.0
# of Samples	5	5	5	5	5	5	5	5	5	5	5
# of Violations	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0	0

WET - Upstream	Al	Cd	Cr	Cu	Pb	Ni	Zn	Hardness
Monitoring Period End Date	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l
	DAILY MX	DAILY MX	DAILY MX	DAILY MX	DAILY MX	DAILY MX	DAILY MX	DAILY MX
9/30/2009	0.15	---	---	0.001	0	0	0	29
9/30/2010	0.07	---	---	0.001	0	0	0	40
9/30/2011	0.04	0	0	0	0	0	0	44
9/30/2012	0.06	0	0	0	0	0	0	41
9/30/2013	0.12	0	0	0.001	0	0	0.006	37
Median	0.07	0	0	0.001	0	0	0	40
# of Samples	5	5	5	5	5	5	5	5

CSO Outfalls	010A	022A	023A	024A	026A	027A
Monitoring Period End Date	E. coli	E. coli	E. coli	E. coli	E. coli	E. coli
	CFU/100mL	CFU/100mL	CFU/100mL	CFU/100mL	CFU/100mL	CFU/100mL
	DAILY MX	DAILY MX	DAILY MX	DAILY MX	DAILY MX	DAILY MX
01/31/2009	No discharge	Not required	No discharge	2420.	No discharge	No discharge
01/31/2010	No discharge	2420.	2420.	Analysis Not Conducted	No discharge	No discharge
01/31/2011	Not required	2420.	2420.	Not required	Not required	Not required
01/31/2012	Not required	2420.	Not required	Not required	Not required	Not required
01/31/2013	Not required	Analysis Not Conducted	2419.6	Not required	Not required	Not required
Permit Limit	1000	1000	1000	1000	1000	1000
Maximum	0	2420	2420	2420	0	0
# of Samples	0	3	3	1	0	0
# of Violations	0	4	3	2	0	0

ATTACHMENT C – STATISTICAL ANALYSIS FOR METALS

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.

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:

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

TSD at 52. 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.

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.

SEPTEMBER 28, 2015

RESPONSE TO COMMENTS
REISSUANCE OF NPDES PERMIT NO. NH0100366
CITY OF LEBANON
LEBANON WASTEWATER TREATMENT PLANT
LEBANON, NEW HAMPSHIRE

From September 26, 2014 through October 25, 2014, Region 1 of the U.S. Environmental Protection Agency (EPA or Region 1) and the New Hampshire Department of Environmental Services, Water Division (NHDES) solicited public comments on the draft National Pollutant Discharge Elimination System (NPDES) permit to be reissued to the City of Lebanon, New Hampshire (the "Permittee").

Region 1 and NHDES received comments from the Permittee, the City of Lebanon, which were submitted October 22, 2014. Below are the comments received and EPA's responses to those comments.

A copy of the final permit may be obtained by writing or calling Dan Arsenault, United States Environmental Protection Agency, 5 Post Office Square, Suite 100 (Mail Code: OEP06-1), Boston, Massachusetts 02109-3912; Telephone (617) 918-1562. Copies may also be obtained from the EPA Region 1 web site at http://www.epa.gov/region1/npdes/index.html.

COMMENTS RECEIVED FROM THE CITY OF LEBANON:

COMMENT 1:

Page 1 of 19

As a co-permittee for activities under Part I.B., Part I.C, and Part I.D, the Town of Enfield is required to submit information to EPA. We specifically request that all reports provide by the co-permittee to EPA also be sent to the City of Lebanon. This can be accomplished by inserting the City's mailing address below the EPA/OES address in **Part 1.1.4, Monitoring and Reporting**. The City's mailing address should be as follows:

For Co-Permittee Submittals – Town of Enfield
Lebanon Public Works
193 Dartmouth College Hwy
Lebanon, NH 03766
Attn: Wastewater Superintendent

RESPONSE 1:

Part 1.I.4. has been modified to require the co-permittee, the Town of Enfield, to submit co-permittee activities under Part I.B, C, and D of the permit to Lebanon Public Works at the address above.

COMMENT 2:

Page 2 of 19

We are required to report effluent nitrogen species in our permit. Testing is required for TKN and nitrate-nitrogen and nitrite-nitrogen. It is not clear that Total Nitrogen is a calculated number rather than a sampling and test method. We request that the footnote 12 on page 5 be revised to make it clear. Footnote 12 edits we suggest are as follows:

> 12. Total Kjeldahl nitrogen and total nitrate + nitrite nitrogen, and total nitrogen samples shall be collected concurrently. The results of these analyses shall be used to calculate both the concentration and mass loadings of total nitrogen (total nitrogen = total Kjeldahl nitrogen+ total nitrate/nitrite nitrogen).

In addition to the above suggested changes, we ask for clarification that the Nitrate-Nitrite test method that combines the results of both parameters is allowed.

RESPONSE 2:

Total nitrogen is a calculated value and is the sum of total Kjeldahl nitrogen and total nitrate + nitrite nitrogen. It is acceptable to use a method approved under 40 CFR Part 136 that combines the results of both total nitrate and total nitrite.

Footnote 12 has been modified to read as follows:

> 12. Total Kjeldahl nitrogen and total nitrate + nitrite nitrogen shall be collected concurrently. The results of these analyses shall be used to calculate both the concentration and mass loadings of total nitrogen (total nitrogen = total Kjeldahl nitrogen + total nitrate/nitrite nitrogen).
>
> The total nitrogen loading values reported each month shall be calculated as follows: Calculate daily loads of total nitrogen (lb/day) for each day that nitrogen sampling takes place. Loading (lb/day) = total nitrogen concentration (mg/l) * daily flow (millions of gallons per day (MGD)) * 8.345. The average monthly loading shall be the average of the daily loading results.

COMMENT 3:

Page 5 of 19

Footnote 13 on page 5 and Part I.F. on page 11 require evaluation and implementation of alternative methods of operating the existing water pollution control facility to optimize the removal of nitrogen and to submit a report of the findings. We consider the evaluation to have been completed during the planning for our WWTF Improvements Project. The planning for this upgrade included communications with the EPA on anticipated future NPDES nitrogen

limitations and constructing a biological nutrient removal facility. Implementation of the recommendations will be completed once the upgrade, currently underway, is complete. We request that this footnote and the requirement for an evaluation in Part I.F be removed.

RESPONSE 3:

Lebanon's existing wastewater treatment plant is a conventional activated sludge plant and is not designed to remove nitrogen. However, as explained in the comment, the City of Lebanon has planned and finalized improvements to the Lebanon Wastewater Treatment Plant with includes biological nutrient removal by modifying the existing plant to an MLE process. The MLE process will be fully operational in the fall of 2015. During the planning process Underwood Engineers (consultant for the City of Lebanon) contacted EPA to ensure that the planned modification to the plant would be consistent with nitrogen reductions necessary to conform with the nitrogen reduction target in the Long Island Sound Total Maximum Daily Load (LIS TMDL). Given that the City has taken proactive steps to evaluate and implement steps to reduce nitrogen loadings from the treatment plant EPA agrees with the comment and the requirement in Part I.F of the permit which requires "…an evaluation of alternative methods of operating the existing water pollution control facility to optimize the removal of nitrogen, and submit a report to EPA and NHDES-WD documenting this evaluation and presenting a description of recommended operational changes" within one year of the effective date of the permit has been removed. However, the requirement to submit an annual report to EPA and NHDES, by February 15th of each year, that summarizes activities related to optimizing nitrogen removal efficiencies, documents the annual nitrogen discharge load from the facility, and tracks trends relative to the previous year remains in the permit.

COMMENT 4:

Page 5 of 19

Footnote 11 under Part I.A.1 and b requires sampling of CSO's listed in Part I.A.l.b once per year within ½ hour of the start of discharge. This requirement is contrary to approval received by the City from the USEPA in the March 9, 2010 letter to Mr. Greg Mandsager from Ms. Denny Dart (see attached). This letter allows the City to sample CSO's according to the *Lebanon, NH Combined Sewer Overflow Sampling ("CSO") Sampling Program (Revised December 2009)* submitted on behalf of the City by Mr. Roger Bedard of Wright-Pierce (see attached). The approved sampling program specifically allows the City to discontinue sampling of CSO's #010, 024, 026 and 027 and does not require the City to sample CSO ZZ. Additionally, the program does not require the City to sample within one half hour after the discharge start time but allows for two hours. We ask that the EPA modify the language in Footnote 11 to require annual sampling of CSO's 022 and 023 only and to change the one half hour requirement to within 2 hours of the discharge start time in keeping with the *Lebanon, NH Combined Sewer Overflow Sampling ("CSO") Sampling Program (Revised December 2009).*

RESPONSE 4:

In 2009, EPA, NHDES and Lebanon entered into a Consent Decree (CD) that includes a schedule for eliminating all remaining CSOs and achieving full compliance by November 1, 2020. As part of the CD, the City of Lebanon was required to submit a plan for monitoring its CSO discharges annually in accordance with Section I.A.1.b of the previous permit issued on November 23, 2005. The monitoring plan submitted by Wright-Pierce on behalf of the City is dated December 10, 2009. As stated in the comment, EPA approved the monitoring plan on March 9, 2010.

According to the Lebanon, NH Combined Sewer Overflow (CSO) Sampling Program (revised December 2009), no sampling was proposed for CSOs 027, 026, and 010 due to infrequency of overflows and lack of flow monitoring equipment at these locations. Additionally, no sampling was proposed for CSO 024 due to lack of sufficient opportunities. The plan did provide for sampling of CSOs 022 and 023.

To address this comment the footnote 11 of the permit has been modified to state that for CSOs 022, 023, 026, 024, 010, and 027 the permittee shall follow the Lebanon, NH Combined Sewer Overflow (CSO) Sampling Program (revised December 2009). However, CSO outfall ZZ is not addressed in the previous permit or the sampling plan. Since outfall ZZ is not included in the sampling plan the permit requires once per year monitoring during a wet weather discharge event with one grab sample being collected within 2 hours after the outfall starts discharging (which is the timeframe in the approved plan), and the maximum value for *Escherichia coli* bacteria for each wet weather discharge event shall be reported for the month which the sampling occurred.

COMMENT 5:

Page 8 of 19

As a point of clarification, we believe that section 4 does not require the City to include private sewerage components in this document.

RESPONSE 5:

The comment refers to Part 1.C.4 of the permit which requires the permittee and co-permittee to prepare a map of collection system it owns within 30 months of the effective date of the permit. The item raised in the comment is correct. Each entity (the permittee and co-permittee) is only responsible for mapping of the collection system which it owns. The permittee and co-permittee are not responsible for mapping collections systems which they do not own (i.e. private sewerage components).

COMMENT 6:

Page 9 of 19

Section 2 requires submittal of an annual report by January 31st of each year. We request this be changed to February 15th, due to holidays and vacations.

RESPONSE 6:

Item 2 on page 9 of 19 of the draft permit falls under Part I.C (Operation and Maintenance of the Sewer System). This item was incorrectly numbered in the draft permit and is actually item 6 of Part I.C. of the permit. This change has been made in the final permit.

Part I.C.6. of the permit requires the permittee and co-permittee to submit a summary report of activities related to the implementation of its Collection System O&M Plan during the previous calendar year. The date for the submittal of this report has been changed from January 31st of each year to February 15th of each year.

COMMENT 7:

Page 10 of 19

Section D appears to require the City to have backup power sources at all of its facilities with utility power. The City currently has 6 facilities operating on utility power that do not have backup power, including small single building pump stations that serve small commercial and retail operations (15 gpm or less) and a control valve in the collection system. Installation of backup power sources at these facilities would entail a great deal of effort, procurement of rights-of-way and undue expense. Management of these facilities without utility power has been addressed in the CMOM program approved by the USEPA and successfully implemented by the City for many years. That is to say, the City implements emergency procedures that include hauling wastewater to the WWTF in event of a power outage. In light of this, the City requests this section be changed to allow for management of collection system facilities without backup power sources through the contingency plan submitted to and approved by the EPA as part of the CMOM program required under the EPA Consent Decree.

RESPONSE 7:

The intent of the language in Part 1.D. of the permit is for the permittee and co-permittee to have adequate alternate power so that the effluent limits and condition of the permit are not violated. EPA understands that alternate power may not be necessary for all portions of the collection system and the treatment plant to maintain compliance with the permit.

COMMENT 8:

Page 11 of 19

Part I.F. requires an evaluation of alternative methods of operating the existing water pollution control facility to optimize the removal of nitrogen, and submit a report. As noted above, we consider the evaluation to be complete and will be implementing nitrogen removal upon completion of WWTF Improvements Project currently underway. Reports and documents have been submitted to EPA demonstrating the evaluation has been done (see attached copy of the e-mail from Mr. Steve Clifton and corresponding evaluation report). We ask that this section be revised to recognize this information and eliminate the need for another evaluation.

RESPONSE 8:

Refer to Response 3.

COMMENT 9:

Page 13 of 19

Part I.G.l.b requires the City to report annually on implementation of the Nine Minimum Controls outlined in Part I.G.1.a.(l). The City already is required to submit reports that encompass the activities outlined in the Nine Minimum Controls under the annual CMOM implementation report required in Part I.C.2 "Annual Reporting Requirement" on page 9, quarterly reporting required by the Consent Decree for the in-progress sewer separation project, monthly with Discharge Monitoring Reports and the annual Illicit Discharge Detection and Elimination reports submitted by the City in May. The City requests that Part I.G.l.b be eliminated as it imposes an unnecessary workload. In event the EPA will not eliminate this requirement, the City requests that the reporting deadline for the annual Nine Minimum Controls report be changed from May 31st to January 31st to coincide with the annual CMOM report required under I.C.2 on page 9 of the draft permit.

RESPONSE 9:

As a point of clarification Part I.G.1.b of the draft permit required a report by August 31st, not May 31st, of each year that demonstrates the continual implementation of the NMCs for the previous twelve month.

As stated in Response 6, Part I.C.2 (Annual Reporting Requirement) of the draft permit was incorrectly numbered and has been correctly numbered in the permit to be Part I.C.6. Also, as stated in Response 6, the date for the submittal of this report has been changed from January 31st of each year to February 15th of each year. The final permit has been changed so that the CMOM report (required on page 9 of the draft permit) and the annual Nine Minimum

Controls reports (required on page 13 of the draft permit) shall both be submitted by February 15th of each year.

COMMENT 10:

Page 16 of 19

Part 1.1.4 requires Hard Copy Form submittals. As previously noted, we request that the Town of Enfield provide us copies of any documents submitted under this section.

RESPONSE 10:

See Response 1.