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"),

Exeter Mill Apartments

is authorized to discharge from the facility located at

10 Chestnut Street
Exeter, New Hampshire 03833

to receiving waters named

Clemson Pond

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

This permit will become effective on the first day of the calendar month immediately following sixty days after signature.

This permit and authorization to discharge expires at midnight, five (5) years from the effective date.

This permit supersedes the noncontact cooling water general permit authorization to discharge, effective on April 1, 2011.

This permit consists of **Part I** (8 pages including effluent limitations and monitoring requirements) and **Part II (**25 pages including NPDES Part II Standard Conditions).

Signed this 28th day of September, 2015.

___/S/ SIGNATURE ON FILE_____
Ken Moraff, Director
Office of Ecosystem Protection
U.S. Environmental Protection Agency
Region 1
Boston, Massachusetts

PART I.

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

1. During the period beginning on the effective date of this permit and lasting through the expiration date, the permittee is authorized to discharge non-contact cooling water from **Outfall Serial Number 001** into the Clemson Mill Lagoon (Clemson Pond). Such discharge 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	Units	Discharge Limitations		Monitoring Requirements	
		Avg. Monthly	Max Daily	Monitoring Frequency	Sample Type
Flow	MGD	Report	1.1	1 Day/Week	Totalizer[1]
Discharge Temperature[2]	°F	Report	85°F	1/Week	Grab
pH[2,3]	S.U.	------	6.5-8.0	1/Week	Grab

Footnotes:

[1] Effluent discharge flow shall be monitored for at least one 24 hour "day" per week when the cooling system is in operation by a continuous recording flow meter containing a totalizer, located at the cooling system intake in the mechanical room.

[2] As monitored at Manhole DMH-6 under dry weather conditions.

[3] This is a state of New Hampshire certification requirement. Refer to Part I.C.2. for specific monitoring requirements. The pH of the effluent shall not be less than 6.5 S.U. or greater than 8.0 S.U. at any time unless in compliance with the conditions specified in Part I.C.2.

2. Any change in sampling locations must be reviewed and approved in writing by EPA and NHDES. All samples shall be tested using the analytical methods found in 40 CFR Section 136 or alternative methods approved by EPA in accordance with the procedures in 40 CFR Section 136.

3. "Dry weather conditions" are defined as a sampling event preceded by 72 continuous hours of weather where a total of no more than 0.1 inches of rainfall has occurred at the facility.

4. Any discharge or intake that causes a violation of the water quality standards of the receiving waters is prohibited.

5. No biocides, solutions or chemicals are to be added to the non-contacting cooling water. This permit does not allow the discharge of any chemicals.

6. The discharge must remain free from pollutants in concentrations or combinations that settle to form harmful deposits, float as foam, debris, scum or other visible pollutants. It shall 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.

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

8. All existing manufacturing, commercial, mining and silvicultural dischargers must notify EPA as soon as they know or have reason to believe:

a. That any activity has occurred or will occur which would result in the discharge, on a routine basis, of any toxic pollutant which is not limited in the permit, if that discharge will exceed the highest of the following "notification levels":

(1) One hundred micrograms per liter (100 µg/l);
(2) Two hundred micrograms per liter (200 µg/l) for acrolein and acrylonitrite; five hundred micrograms per liter (500 µg/l) for 2,4-dinitrophenol; and one milligram per liter (1 mg/l) for antimony;
(3) Five (5) times the maximum concentration value reported for that pollutant in the permit application in accordance with 40 C.F.R. §122.21(g)(7); or
(4) Any other notification level established by EPA in accordance with 40 CFR §122.44(f).

b. That any activity has occurred or will occur which would result in the discharge, on a non-routine or infrequent basis, of any toxic pollutant which is not limited in the permit, if that discharge will exceed the highest of the following "notification levels":

(1) Five hundred micrograms per liter (500 µg/l);
(2) One milligram per liter (1 mg/l) for antimony;
(3) Ten (10) times the maximum concentration value reported for that pollutant in the permit application in accordance with 40 C.F.R. §122.21(g)(7).
(4) Any other notification level established by EPA in accordance with 40 C.F.R. §122.44(f).

c. That they have begun or expect to begin to use or manufacture as an intermediate or final product or byproduct any toxic pollutant which was not reported in the permit application.

9. This permit shall be modified, or alternatively, revoked and reissued, to comply with any applicable standard or limitation promulgated or approved under sections 301(b)(2)(C) and (d), 304(b)(2),and 307(a)(2) of the Clean Water Act, if the effluent standard or limitation so issued or approved:

a. Contains different conditions or is otherwise more stringent than the effluent limitation in the permit; or,
b. Controls any pollutants not limited in the permit.

The permit as modified or reissued under this paragraph shall also contain any other requirements of the Act then applicable.

B. MONITORING AND REPORTING

1. For a period of 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, a web-based tool that allows permittees to electronically submit discharge monitoring reports (DMRs) and other required reports via a secure internet connection. **Beginning no later than six months after the effective date of the permit,** the permittee shall begin reporting using NetDMR, unless the facility is able to demonstrate a reasonable basis that precludes the use of NetDMR for submitting DMRs and reports. Specific requirements regarding submittal of data and reports in hard copy form and for submittal using NetDMR are described below:

a. Submittal of Reports Using NetDMR

NetDMR is accessed from: http://www.epa.gov/netdmr. **Within six months of the effective date of this permit**, the permittee shall begin submitting DMRs and reports required under this permit electronically to EPA using NetDMR, unless the facility 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").

DMRs shall be submitted electronically to EPA 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, including the NHDES Monthly Operating Reports (MORs), 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.

b. Submittal of NetDMR Opt-Out Requests

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

c. Submittal of Reports in Hard Copy Form

Monitoring results shall be summarized for each calendar month and reported on separate hard copy Discharge Monitoring Report Form(s) (DMRs) postmarked no later than the 15th day of the month following the completed reporting period. All reports required under the permit, including NHDES Monthly Operating Reports, shall be submitted as an attachment to the DMRs. Signed and dated original DMRs and all other reports or notifications required herein or in Part II shall be submitted to the Director at the following address:

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

Duplicate signed copies of all reports or notifications required above shall be submitted to the State at the following address:

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

Any verbal reports, if required in **Parts I** and/or **II** of this permit, shall be made to both EPA-New England and to NHDES-WD.

C. State Permit Conditions

The permittee shall comply with the following conditions, which are included as State certification requirements.

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 use assigned to said water by the New Hampshire Legislature (RSA 485-A:12).

2. The pH of the discharge shall be in the range of 6.5 to 8.0 Standard Units (S.U.) unless the upstream ambient pH in the receiving water is outside of this range and it is not altered by the facility's discharge or activities. If the permittee's discharge pH is lower than 6.5 S.U., the permittee may demonstrate compliance by showing that the discharge pH was either higher than, or no more than 0.5 S.U. lower than, the ambient upstream receiving water pH. If the permittee's discharge pH is higher than 8.0 S.U., the permittee may demonstrate compliance by showing that the discharge pH is either lower than, or no more than 0.5 S.U. higher than, the upstream receiving water pH. For this demonstration the upstream receiving water sample must be collected on the same day as the discharge pH is measured. The location where the upstream ambient pH sample is collected shall be representative of upstream conditions unaffected by the facility's discharge(s) or activities.

3. This NPDES Permit is issued by the EPA under Federal law. Upon final issuance by the EPA, the NHDES may adopt this permit, including all terms and conditions, as a State permit pursuant to RSA 485-A:13. Each agency shall have the independent right to enforce the terms and conditions of this permit. 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, unless and until each Agency has concurred in writing with such modification, suspension or revocation.

In the event any portion of this permit is declared, invalid, illegal or otherwise issued in violation of state law, such permit shall remain in full force and effect under federal law as a NPDES Permit issued by the U.S. Environmental Protection Agency.

D. Special Conditions – Cooling Water Intake Structure (CWIS)

1. The permittee's non-contact cooling water intake structure (CWIS) shall reflect the best technology available (BTA) for minimizing the adverse environmental impacts due to the CWIS. In order to satisfy this BTA requirement, the permittee shall comply with the following requirements:

a. The CWIS maximum daily intake shall not exceed the maximum daily permitted discharge flow of 1.1 MGD. The permittee shall cease the intake of cooling water whenever withdrawal of source water is not necessary.

b. Maintain a physical screening at the opening of the CWIS with a grate size openings of approximately 7/8-inch wide by 3-1/2-inches high.

c. Limit the maximum through screen velocity to no more than 0.013 feet per second.

d. There shall be no changes to the CWIS, including any of the BTA requirements listed in Part I.D.1, above, unless approved by EPA as providing equivalent or greater protection for fish species.

2. Upon authorization of this permit, the permittee shall implement an Impingement Monitoring Program at the CWIS. The Impingement Monitoring Program shall include the following:

a. All locations in and around the CWIS and the associated cooling water system where fish and organisms could potentially be impinged or trapped shall be included as inspection sites when the cooling water system is operating.

b. Visual inspection of these sites shall take place at least three times per week at varying times of day, operating conditions and source water conditions. Monitoring shall be for all fish species.

c. A monitoring log must be maintained on-site to document the program and shall include the following information:

i. Date and time of each inspection;
ii. Name of observer/operator; and,
iii. The presence or absence of impinged fish and organisms.

d. If any adult or juvenile fish are observed against the impingement screens, the following information shall also be collected, if possible:

i. The number of fish; and for each fish observed:

1. The identification of each fish species;
2. The total length of each fish;
3. The condition of the fish (alive, injured, dead);
4. The treatment of the fish (released or discarded); and,

ii. Any additional actions taken by the permittee (i.e., cooling water intake flow reduced).

e. The log book shall contain appropriate reference material to ensure that those involved in planning and conducting the inspection have the necessary knowledge and ability to (1) ensure sampling accuracy and effectiveness, including the ability to identify all fish found in this area to the species level, and (2) return trapped organisms to the river by means designed to maximize their survival.

The monitoring log must be made available for review by EPA, NHDES or New Hampshire Fish & Game Department (NHFGD) when requested.

f. All live adult and juvenile fish and other aquatic organisms impinged or trapped on or in the CWIS shall be returned to the river by means designed to maximize their survival. All solid materials except for naturally occurring materials such as leaves, branches, and grass will be removed from the screen and will not be discharged to the water.

g. Any unusual impingement event must be reported to the EPA, the NHDES, and the NHFGD within 24 hours by telephone. If the permittee observes four (4) or more fish on the CWIS during any one of the following situations, this would qualify as an unusual impingement event, warranting notification: 1) during a required impingement monitoring program observation event, 2) at any time the CWIS is viewed, or 3) when the cumulative number of individual fish observed on the CWIS totals four (4) or more based on multiple observations over the course of any 24-hour period. The 24-hour notice must be followed with a written report.

The written report, to be submitted within five working days of the event, shall include the following information:

i. The time and date of the occurrence.
ii. The species, sizes, and approximate number of fish involved in the incident.
iii. The condition of the fish (dead or alive).
iv. The actions taken by the facility (i.e., fish returned to river, fish collected, cooling water intake flow reduced, etc.).
v. The remedial action the permittee will take to prevent or reduce the likelihood of a recurrence of the incident, to the maximum extent practicable.

NPDES PART II STANDARD CONDITIONS
(January, 2007)

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PART II. A. GENERAL REQUIREMENTS

1. Duty to Comply

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

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

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

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

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

2. Permit Actions

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

3. Duty to Provide Information

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

4. Reopener Clause

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

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

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

5. Oil and Hazardous Substance Liability

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

6. Property Rights

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

7. Confidentiality of Information

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

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

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

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

8. Duty to Reapply

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

9. State Authorities

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

10. Other Laws

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

PART II. B. OPERATION AND MAINTENANCE OF POLLUTION CONTROLS

1. Proper Operation and Maintenance

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

2. Need to Halt or Reduce Not a Defense

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

3. Duty to Mitigate

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

4. Bypass

a. Definitions

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

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

b. Bypass not exceeding limitations

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

c. Notice

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

d. Prohibition of bypass

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

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

5. Upset

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

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

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

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

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

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

PART II. C. MONITORING REQUIREMENTS

1. Monitoring and Records

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

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

c. Records of monitoring information shall include:

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

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

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

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

2. Inspection and Entry

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

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

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

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

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

PART II. D. REPORTING REQUIREMENTS

1. Reporting Requirements

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

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

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

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

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

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

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

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

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

e. Twenty-four hour reporting.

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

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

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

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

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

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

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

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

2. Signatory Requirement

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

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

3. Availability of Reports.

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

PART II. E. DEFINITIONS AND ABBREVIATIONS

1. Definitions for Individual NPDES Permits including Storm Water Requirements

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

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

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

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

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

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

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

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

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

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

Construction Activities - The following definitions apply to construction activities:

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

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

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

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

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

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

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

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

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

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

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

Discharge of a pollutant means:

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

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

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

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

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

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

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

EPA means the United States "Environmental Protection Agency".

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

NPDES means "National Pollutant Discharge Elimination System".

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

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

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

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

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

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

(a) Sewage from vessels; or

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Waters of the United States means:

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

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

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

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

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

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

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

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

(f) The territorial sea; and

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Feed crops are crops produced primarily for consumption by animals.

Fiber crops are crops such as flax and cotton.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Range land is open land with indigenous vegetation.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

3. Commonly Used Abbreviations

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

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

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

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 1
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 ENDS DATES: **June 29, 2015 – July 28, 2015**

PUBLIC NOTICE NUMBER: **NH-07-15**

NPDES PERMIT NUMBER: **NH0023559**

NAME AND ADDRESS OF APPLICANT:

Chinburg Management, LLC
10 Chestnut Street
Exeter, New Hampshire 03833

NAME AND ADDRESS OF FACILITY WHERE DISCHARGE OCCURS:

Exeter Mill Apartments
10 Chestnut Street
Exeter, New Hampshire 03833

RECEIVING WATER: **Clemson Pond**

CLASSIFICATION: **Class B**

SIC CODE: **6513**

Table of Contents

I. Proposed Action, Type of Facility and Discharge Location

Representatives of Chinburg Management, LLC, the operators of the Exeter Mill Apartments (Exeter Mill, facility) have applied to the U.S. Environmental Protection Agency (EPA) for issuance of a National Pollutant Discharge Elimination System (NPDES) individual permit to discharge effluent into the designated receiving water, a man-made mill pond identified as Clemson Pond (Pond). The Pond ultimately discharges into the Squamscott River. Exeter Mill is a collection of mill buildings that have been converted to 161 multi-family residential rental units. The facility is located in Exeter, New Hampshire, along the eastern bank of the Squamscott River. Non-contact cooling water (NCCW) is withdrawn from the Exeter River via the former mill's intake structure, located to the east of the existing spillway on the upstream face of the Town of Exeter's "Great Dam" (Exeter Dam). The dam was built in 1828. The freshwater portion of the river above the Exeter Dam is referred to as the Exeter River and the tidal, saltwater river below the dam is referred to as the Squamscott River. The facility discharges NCCW into Clemson Pond via Outfall 001. The outfall is located on the south end of the pond, downstream of the Exeter Dam. As part of a previous NPDES permit renewal analysis for the Exeter Wastewater Treatment Plant (WWTP), EPA classified Clemson Pond as a "Water of the United States" (Exeter WWTP NPDES Permit, issued July 5, 2000). In addition, the New Hampshire Fish and Game Department (NHFGD) determined that Clemson Pond was a warm water fishery (e-mail from J. Andrews, NHDES to A. Frawley, EPA, December 17, 2010). Water from Clemson Pond is ultimately discharged to the Squamscott River via a tidal gate located at the north end of the pond.

NCCW is water that is used to reduce the temperature of industrial operations and equipment. By definition, this water does not come into direct contact with any raw material, intermediate product, waste product (other than heat), or finished product. Exeter Mill incorporates the use of a once-through non-contact cooling water system to provide cooling for the facility's air conditioning system, which services 134 of the 161 residential units. Non-contact cooling water is discharged at Outfall 001 only when the facility's air conditioning system is in operation, typically from May through October. The location of the facility's NCCW intake, outfall and the receiving water are shown in Attachment A.

Exeter Mill reported that under wet weather conditions, stormwater from a portion of the facility property to the south, along with stormwater from the Exeter Town Library property, drains into a closed underground drainage system where it mixes with the facility's NCCW. The comingled water then travels through a 24-inch diameter underground pipe for approximately 1,000 feet before discharging into Clemson Pond at Outfall 001. The pipe is submerged at the point where it discharges to the south end of the pond. The facility has reported that because of the limited access characteristics of the discharge pipe, they are not able to establish a NCCW monitoring point that samples only the NCCW discharge under wet weather conditions.

The discharge monitoring location for this facility could not be located at the expected point, namely the terminus of the 1,000 foot underground discharge pipe into Clemson Pond (Outfall 001). That is because, as noted above, under most expected conditions at the pond, the terminus of the discharge pipe into the receiving water remains submerged. A discrete measurement of the effluent water from the Exeter Mill NCCW before mixing with the receiving water cannot be taken at a submerged pipe that has already allowed the effluent to mix with the receiving water of Clemson Pond. The point of the underground discharge pipe closest to the Outfall 001 that allowed monitoring access to the discharge

water was determined to be Manhole DMH-6. It was expected that this monitoring location would measure effluent water not yet diluted by Clemson Pond under most weather and tidal conditions. Manhole DMH-6 is approximately 140 feet from the point where the end of the discharge pipe meets Clemson Pond (Outfall 001).

Historically, Exeter Mill had been authorized to discharge NCCW from Outfalls 001 to Clemson Pond under the EPA NCCW General Permit (GP), NPDES Number NHG250572. The General Permit was issued on July 31, 2008. The authorization to discharge for the facility was effective on April 1, 2011. Discharge Monitoring Report (DMR) discharge temperature data submitted by the facility as required by the NCCW GP indicated that the facility's thermal discharge exceeded the GP daily maximum temperature limit of 83°F in July of 2011 and 2012. Also, during the summers of 2011 and 2012, the New Hampshire Department of Environmental Services (NHDES) Wastewater Engineering Bureau investigated the affect of the thermal discharge on Clemson Pond. The DMR data, along with additional data collected by the permittee, confirmed that the temperature of the NCCW discharge periodically exceeded the daily maximum temperature limit for warm water fisheries specified in the NCCW GP. Therefore, the facility could not be covered under the NCCW GP. EPA instructed the permittee to submit an NPDES individual permit application for the thermal discharge at Outfall 001. The permittee's application, dated February 27, 2013, was received by EPA on March 1, 2013. EPA submitted a letter to the permittee, dated May 22, 2013, stating that Exeter Mill's NPDES individual permit application had been reviewed and appeared to be complete. The letter further stated that coverage of the facility's discharge is administratively continued under the NCCW GP in accordance with the Administrative Procedures act and will remain in force until EPA issues an individual permit for the facility.

II. Description of Discharge

A quantitative summary of monitoring results for those effluent parameters limited and monitored in the existing general permit for the 41-month period June 2011 through October 2014 is presented in Attachment B. The information was compiled from monthly Discharge Monitoring Report (DMR) data submitted by the facility to the New Hampshire Department of Environmental Services, Water Division, (NHDES) and EPA. During the continuous 41 month span, monitoring data was only collected and reported when the cooling system of the Exeter Mill was in operation, which encompassed 24-warmer weather months within the 41-month timeframe. This warm weather time span included, at a minimum, the months of June through October of each of the four years. The monitoring information presented in Attachment B represents the entire data set collected by Exeter Mill under the NCCW GP.

The parameters of maximum daily flow, average monthly and maximum daily discharger temperature, pH of the effluent discharge, as well as the pH of the upstream receiving water, were all included in the monitoring requirements of the NCCW GP. Of these, the maximum daily flow in the GP was restricted to a discharge limit of 0.09 million gallons per day (mgd). This limit was exceeded in 15 of the 24 monthly data reports. The highest maximum daily flow reported was 3.30 mgd in April 2012 (see Attachment B). The permittee surmised that this reported flow value was an error caused by a flow meter malfunction, since this value is approximately 36 times the stated capacity of the pressurized cooling system. EPA recognizes that at the current flow monitoring location (Manhole DMH-6) under wet weather conditions, the measured flow is a combination of the NCCW discharge comingled with non-industrial, non-construction stormwater. EPA proposes a flow monitoring location in the individual permit that measures only NCCW (see Section V.B.1 of this fact sheet).

The NCCW GP also contained a daily maximum discharge temperature limit. Because the receiving water of Clemson Pond has been identified as a warm water fishery by NHFGD, the maximum daily

temperature was set at 83°F (see NCCW GP Fact Sheet). The DMR recorded exceedances of this limit in five of the monthly reports, with a maximum reported value of 101°F in July 2012 (see Attachment B). The permittee suspects this temperature value represents an inaccurate reading. EPA has no way to verify this. A review of the data set reveals a maximum temperature of 85.8°F, with an average of all maximum daily temperatures (excluding the 101°F value) of 76.2°F. This general review of the DMR data set does indicate that the 101°F value appears to be an outlier.

EPA has proposed a site-specific maximum daily discharge temperature that meets New Hampshire Water Quality Standards (NHWQS), based on temperature data analysis performed by NHDES (see Section V.B.3).

The NCCW GP also contained pH limits. The maximum daily pH value was limited to a range of 6.5-8.0 s.u. Under this requirement, there would have been seven monthly exceedances of a pH value of 8.0 over the 24 months of NCCW operation. However, since the pH value could also be in compliance if it was within 0.5 s.u. of the upstream intake water, the actual number of pH exceedances over 8.0 s.u dropped to one, in June 2013. There was also one exceedance of the lower pH range, a value of 4.8 s.u. from June 2014.

As indicated above, stormwater was detected as part of the discharge at Outfall 001 under the NCCW GP monitoring program. Industrial stormwater has been regulated since the promulgation of EPA's 1990 stormwater regulations, which established NPDES permit requirements for "stormwater discharges associated with industrial activity." However, the routine activities associated with the management of a residential apartment complex and the operation of a town library are not considered industrial activities, and no construction activity is underway at the properties. Therefore, the stormwater discharged from Outfall 001 as a result of wet weather does not require an NPDES permit. Therefore, no stormwater related limits or monitoring have been included in the draft permit.

III. Receiving Water Description

Clemson Mill Lagoon is a man-made mill pond, over 100 years old. It is located along the east bank of the Squamscott River, downstream of the Exeter Dam. The elongated pond is approximately 1,100 feet long, with a width that varies from a minimum of approximately 170 feet to a width of approximately 400 feet at it widest point. The surface area of the pond is approximately 9.5 acres (see Attachment A). The pond is generally shallow in the vicinity of the outfall, ranging from a depth of 0.5 feet to approximately 4 feet. The Pond is separated from the river by an earthen berm that is approximately 60 feet wide at its base and approximately 15 feet high along its crest. Inflow to the Clemson Pond consists of direct precipitation (which averages 47 inches per year), stormwater runoff, NCCW from the facility and a combined sewer overflow from the Town of Exeter's permitted CSO control structure, located on Water Street. CSO flow can last several days during prolonged periods of wet weather or snow melt, but more abbreviated rain events usually result in a CSO contribution to the pond lasting less than 24 hours. These inflows result in the Pond having overall freshwater characteristics. However, tidal water from the Squamscott River has been documented to enter the pond via seepage from the tidal gate or under flood stage conditions, introducing potentially brackish water to the pond.

As part of a previous NPDES permit renewal analysis for the Exeter Wastewater Treatment Plant (WWTP), EPA classified Clemson Pond as a "Water of the United States" (Exeter WWTP NPDES Permit, issued July 5, 2000). As discussed previously, NHFGD determined that Clemson Pond was a warm water fishery. Both Clemson Pond and the Squamscott River are designated as Class B waters by

NHDES. Class B waterbodies are designated as suitable for fishing, swimming and other recreational purposes, and for use as a water supply after adequate treatment.

Section 303(d) of the Federal Clean Water Act requires states to identify those waterbodies that are not expected to meet surface water quality standards (WQSs) after the implementation of technology-based controls and, as such, require the development of total maximum daily loads (TMDL). Clemson Pond has not been assessed as impaired, and does not require a TMDL, based on NHDES's *Final 2010 Section 303(d) Surface Water Quality List,* approved by EPA.

Water from Clemson Pond is ultimately discharged to the Squamscott River via a tidal gate located at the north end of the Pond. Clemson Pond contributes a small volume of freshwater to the Squamscott River and accepts brackish water from the river through seepage from the tidal gate as well as under flood stage conditions, when the Squamscott River overflows the earthen berm and enters the pond. Because of the close association of Clemson pond with the Exeter and Squamscott Rivers, a general characterization of the rivers is included below.

The Squamscott River is a Class B waterbody pursuant to New Hampshire Statutes RSA 485-A:8. Class B waterbodies are considered suitable for fishing, swimming and other recreational purposes, and for use as a water supply after adequate treatment. The state has identified this section of the river as a warm water fishery.

The Squamscott River is one of five tidal rivers that discharge into Great Bay and Little Bay, the others being the Winnicut, Lamprey, Oyster, and Bellamy Rivers. Other parts of the overall Great Bay Estuary include the Upper Piscataqua River (fed by the Cocheco, Salmon Falls, and Great Works Rivers), the Lower Piscataqua River, Portsmouth Harbor, and Little Harbor/Back Channel.

The lower Exeter River and Squamscott Rivers provide critical and diverse habitat for fish spawning and juvenile fish. Both anadromous and freshwater fish species use the significant spawning habitat in the freshwater and saltwater. Diadromous fish species migrate between the salt water of the Squamscott River and fresh water of the Exeter River through the fish ladder located alongside the Great Dam (Exeter Dam). Fish use the ladder to migrate upstream and downstream throughout the year and include alewives, blueback herring, American shad, sea lamprey, rainbow smelt, and American eel. Beginning in 2009, the NHFGD began stocking the Exeter River with brook trout, eastern brook trout, and rainbow trout. In all, twenty-six species of fish are known to use the river. (Lower Exeter and Squamscott Rivers Report to the General Court (LESRR), February 2011).

The NHFGD had maintained a fish restoration program for river herring and shad since the fish ladder was built alongside the Great Dam in the early 1970's. The fish return numbers collected by the NHFGD at the ladder at the Great Dam are far below average, indicating a restoration problem. The number of returning fish has decreased steadily since 2000. For example, 513 adult river herring passed through the fish ladder in Exeter in 2009, as compared to 42,425 at the Lamprey River fish ladder in Newmarket. The fish ladder at the Great Dam and water quality in the lower Exeter River, above the impoundment, do not provide optimal conditions for anadromous fish. There are many variables impacting successful fish migration upstream and downstream, as well as spawning. Water levels in and around the fish ladder, dissolved oxygen levels above the Great Dam, and water flow during downstream migration all contribute to fish passage. The NHFGD records show a decline in river herring, American shad, rainbow smelt and American eel in the past decade in the river corridor. (LESRR, February 2011).

IV. Permit Basis and Explanation of Effluent Limitations

The facility's discharge effluent limitations and monitoring requirements are found in Part 1 (Effluent Limitations and Monitoring Requirements) of the draft permit. The permit application and any supplemental information submissions are part of the administrative file.

A. General Requirements

The Clean Water Act (CWA) prohibits the discharge of pollutants to waters of the United States without a 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. This Draft Permit was developed in accordance with various statutory and regulatory requirements established pursuant to the CWA and applicable state regulations. During development, EPA considered the most recent technology-based treatment requirements, water quality-based requirements, and all limitations and requirements in the current permit. The regulations governing the EPA NPDES permit program are generally found at 40 CFR Parts 122, 124, 125, and 136. The standard conditions of the Draft Permit are based on 40 CFR §122.41 and consist primarily of management requirements common to all permits. 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(i) and 122.48.

EPA is required to consider technology and water-quality based criteria in addition to the current permit conditions when developing permit limits.

B. Technology-Based Requirements

Technology-based treatment requirements represent the minimum level of control that must be imposed under Sections 301(b) and 402 of the CWA (*See* 40 C.F.R. Part 125, Subpart A). Subpart A of 40 C.F.R. Part 125 establishes criteria and standards for the imposition of technology-based treatment requirements in permits under Section 301(b) of the CWA, including the application of EPA promulgated effluent limitations and, in the absence of promulgated technology-based effluent guidelines, Best Professional Judgment (BPJ) for case-by-case determinations of effluent limitations under Section 402(a)(1)(B) of the CWA.

In general, statutory deadlines for meeting technology-based guidelines (effluent limitations) established pursuant to the CWA have expired. Compliance schedules and deadlines not in accordance with the statutory provisions of the CWA cannot be authorized by a NPDES permit.

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

C. Water Quality-Based Requirements

Water-quality based limitations are required in NPDES permits when EPA and the State determine that effluent limits more stringent than technology-based 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 waterbody or a segment of a waterbody; (2) a numeric or narrative water-quality criteria sufficient to protect the assigned designated use(s); and (3) an antidegradation 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 in the state's water-quality standards adopted under state law for each stream classification. When using chemical-specific numeric criteria to develop permit limits both the aquatic-life acute and chronic criteria, expressed in terms of maximum allowable in-stream pollutant concentration, are used. Aquatic-life acute criteria are considered applicable to daily time periods (maximum daily limit) and aquatic-life chronic criteria are considered applicable to monthly time periods (average monthly limit). Chemical-specific limits are allowed under 40 CFR Section 122.44 (d)(1) and are implemented under 40 CFR Sections 122.45(d) and (f). Therefore, the Region establishes maximum daily and average monthly limits for chemical specific toxic pollutants based, in part, on a reasonable measure of the facility's actual or projected flow rates on an average monthly and a maximum daily basis for all production-based facilities that have a continuous discharge. Also, the dilution provided by the receiving water is factored into this process. Furthermore, narrative criteria from the state's water-quality standards are often used to limit toxicity in discharges where: (1) a specific pollutant can be identified as causing or contributing to the toxicity but the state has no numeric standard; or (2) toxicity cannot be traced to a specific pollutant.

The NPDES permit must 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. See CFR Section 122.44(d)(1). An excursion occurs if the projected or actual in-stream concentration exceeds the applicable criterion. In determining reasonable potential, EPA considers: (1) existing and planned 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 Control, March 1991, EPA/505/2-90-001 in Section 3; and, where appropriate, (5) dilution of the effluent in the receiving water. In accordance with New Hampshire statutes and administrative rules (50 RSA 485-A:8, Env-Ws 1705.02), available dilution for discharges to freshwater receiving waters is based on a known or estimated value of the annual seven consecutive-day mean low flow at the 10-year recurrence interval (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 discharge. Furthermore, 10 % of the receiving water's assimilative capacity is held in reserve for future needs in accordance with New Hampshire's Surface Water Quality Regulations Env-Wq 1705.01. The current set of these Regulations, newly revised, were readopted and became effective on May 21, 2008. Hereinafter, these New Hampshire's Surface Water Quality Regulations are referred to as the NH Standards.

The effluent limits established in the draft permit assure that the surface water quality standards of the receiving water are protected, maintained, and/or attained. The effluent limits established in the permit are based on the New Hampshire Water Quality Standards Env-Wq 1703 in accordance with RSA 485-A:8. Specifically, RSA 485-A8 II. states that "Any stream temperature increase associated with the discharge of treated sewage, waste or cooling water, water diversions, or releases shall not be such as to

appreciably interfere with the uses assigned to this class". In the absence of numeric temperature limits in NHWQS, EPA relied on interpretation of the NHSWQS by NHDES, in coordination with NHFGD. EPA was also informed by the initial issuance and renewal of the NCCW General Permit, which previously authorized the facility's discharge. EPA determined, with NHDES concurrence, that the effluent temperature limit of 83.0°F, as specified in the NCCW General Permit, is protective of the designated uses for Clemson Pond, a Class B, warm water fishery in New Hampshire. The inclusion of a small mixing zone in this permit re-issuance is confirmed by a correspondence from NHDES to EPA and the permittee (e-mail from J. Andrews, NHDES, to T. Sidore, Exeter Mill and A. Frawley, EPA, 29 January, 2013). A mixing zone is allowed under the New Hampshire site specific mixing zone criteria. In this case, the temperature at the edge of the small mixing zone is not projected to rise above 83°F. This is consistent with the state's mixing zone regulations (Env-Wq 1707.02).

D. Anti-Backsliding

EPA's anti-backsliding provision as identified in Section 402(o) of the CWA and at 40 CFR §122.44(l) prohibits the relaxation of permit limits, standards, and conditions unless the circumstances on which the previous permit was based have materially and substantially changed since the time the permit was issued. Anti-backsliding provisions apply to effluent limits based on technology, water quality, best professional judgment (BPJ), and State Certification requirements. Relief from anti-backsliding provisions can only be granted under one of the defined exceptions [See 40 CFR §122.44(l)(i)].

In this case, Exeter Mill's Outfall 001 is authorized to discharge under the NCCW GP number NHG250572. The authorization was effective as of April 1, 2011. The authorization was based on the facility's discharge meeting the warm water temperature limit of 83.0°F. This limit was included in the general permit as a water quality based standard established by NHDES and NHFGD. EPA is proposing a site-specific temperature limit in the draft permit that is higher than 83.0°F. EPA does not consider this action to be a violation of the anti-backsliding provision for the following reasons.

No temperature data from the outfall at Clemson Pond had been collected prior to the authorization to discharge under the GP. Subsequent to the authorization of the discharge GP, NHDES directed the permittee to perform two thermal studies of Clemson Pond. CMA Engineers, acting on behalf of the permittee, conducted a study on August 23 and 25, 2011, and transmitted a report summarizing the information, dated October 2011. A second Clemson Pond thermal Study was conducted on August 21, 2012, and reported in a letter from CMA, dated October 16, 2012. The temperature information included in these reports, along with the DMR monthly data, constituted new information that was not available when the authorization to discharge under the GP was granted. Under §122.62.(2)(i)(B)(1), an exception to anti-backsliding may be allowed, if:

> Information is available which was not available at the time of permit issuance (other than revised regulations, guidance, or test methods) and which would have justified the application of a less stringent effluent limitation at the time of permit issuance;

In addition, the receiving water is not listed as a nonattainment water for heat in NHDES's *Final 2010 Section 303(d) Surface Water Quality List,* the proposed thermal discharge meets NHWQSs, and the higher limit does not violate the state's anti-degradation policy. Therefore, the permitted temperature limit may be relaxed in this case without triggering EPA's anti-backsliding provision.

EPA has also proposed that the flow limit included in the draft permit be increased above the limit specified in the GP. EPA does not consider this action to be a violation of the anti-backsliding provision because the exception regarding new information (§122.62.(2)(i)(B)(1)) also applies in the case of flow. No flow data was available when the facility was authorized under the GP. Flow data collected as part of the GP monitoring program and submitted in the DMRs, as well as flow data collected under dry weather conditions as part of the August 2012 Clemson Pond Study constituted new flow information that was not available when the authorization to discharge under the GP was granted. Therefore, the permitted flow limit may also be relaxed in this case without triggering EPA's anti-backsliding provision.

The pH limit included in the general permit has been brought forward into the draft permit without change.

E. Antidegradation

Federal regulations found at 40 CFR § 131.12 require states to develop and adopt a statewide antidegradation policy which maintains and protects existing instream water uses and the level of water quality necessary to protect the existing uses, and maintains the quality of waters which exceed levels necessary to support propagation of fish, shellfish, and wildlife and to support recreation in and on the water. The New Hampshire Antidegradation Regulations, which are found at Env-Wq 1708, apply to any new or increased activity that would lower water quality or affect existing or designated uses, including increased loadings to a waterbody from an existing activity.

This Draft Permit is being issued with allowable effluent limits established to protect the existing and designated uses of Clemson Pond. NHDES has made a preliminary antidegradation determination that there shall be no significant adverse impacts to the receiving waters and no loss of existing uses as a result of the discharge authorized by this permit.

F. CWA § 316(a)

Heat is defined as a pollutant under Section 502(6) of the CWA. 33 U.S.C. § 1362(6). As with other pollutants, discharges of heat (or "thermal discharges") generally must satisfy both technology-based standards (specifically, the BAT standard) and any more stringent water quality-based requirements that may apply. State WQS may include numeric temperature criteria, as well as narrative criteria and designated uses that apply to particular water body classifications and may necessitate restrictions on thermal discharges. New Hampshire WQS provide that "(I)n prescribing minimum treatment provisions for thermal wastes discharged to interstate waters, the Department shall adhere to the water quality requirements and recommendations of the New Hampshire Fish and Game Department, the New England Interstate Water Pollution Control Commission, or the United States Environmental Protection Agency, whichever requirements and recommendations provide the most effective level of thermal pollution control." See NH Statute 485-A:8.VIII.

Section 316(a) of the CWA, 33 U.S.C. § 1326(a), provides, however, that thermal discharge limits less stringent than technology-based and/or water quality-based requirements may be authorized if the biological criteria of Section 316(a) are satisfied. The approval of less stringent thermal discharge limits under CWA § 316(a) is referred to as a "Section 316(a) variance." Thermal discharge variances, and the demonstration that an applicant must make to obtain one, are addressed in CWA§ 316(a) and EPA regulations, including those promulgated at 40 CFR § 125, Subpart H. In essence, the applicant must demonstrate that the alternative, less stringent effluent limitations it desires, considering the cumulative

impact of its thermal discharge together with all other significant impacts on the species affected, will assure the protection and propagation of a balanced, indigenous population of shellfish, fish, and wildlife in and on the water body (BIP) receiving the thermal discharge. See 33 USC § 1326(a); 40 CFR § 125.73(a) and (c)(1)(i). An existing thermal discharger can perform either a predictive or retrospective analysis in an effort to demonstrate that the protection and propagation of the BIP will be assured despite its proposed thermal discharge variance. If the applicant makes this demonstration to the satisfaction of EPA (or, if appropriate, the State), then the permitting authority may issue the permit with the requested alternative, variance-based thermal discharge limits. Conversely, if the demonstration does not adequately support the requested variance-based thermal discharge limits, the permitting authority shall deny the requested variance. In that case, the permitting authority shall either impose limits based on the otherwise applicable technology-based and water quality-based requirements or, at its discretion, impose alternative variance-based limits that the permit record demonstrates will assure the protection and propagation of the BIP.

In this case, two Clemson Pond thermal studies requested by NHDES and temperature data submitted as part of the monthly DMRs documented that Exeter Mill was unable to meet the NCCW GP temperature limit of 83°F at the monitoring location (Manhole DMH-6). This monitoring location was approximately 140 feet upstream of the NCCW outfall to Clemson Pond. Based on this information, EPA directed the permittee to submit an application for an NPDES individual permit. NHDES analyzed temperature monitoring data from the two Clemson Pond thermal studies submitted by the permittee to identify a discharge temperature at the outfall monitoring location that would meet NHWQS at the pond outfall. This information was incorporated into the proposed permit.

G. CWA § 316(b)

Technology-based NPDES permit requirements for cooling water intake structures (CWISs) are based on CWA § 316(b), 33 USC § 1326(b), which requires that "the location, design, construction, and capacity of the facility's cooling water intake structure(s) (CWIS) reflect the BTA for minimizing adverse environmental impact." As with effluent discharge limits, CWIS requirements must also comply with any more stringent conditions that might be necessary to achieve compliance with any applicable State WQS. See 40 CFR § 125.84(e).

The operation of CWISs can cause or contribute to a variety of adverse environmental effects, such as (a) killing or injuring tiny aquatic organisms, including but not limited to fish larvae and eggs, by entraining them in the water withdrawn from a water body and sent through the cooling system and (b) killing or injuring larger organisms, including but not limited to juvenile and adult fish, by impinging them against the intake structure's screens, racks, or other structures. Section 316(b) applies to discharge permits seeking to withdraw cooling water from a water of the United States.

In this case, CWA § 316(b) applies due to the withdrawal of fresh water from the upstream side of the Exeter Dam to be used for non-contact cooling as part of an air conditioning system. At this time there are no national categorical standards in effect that apply to Exeter Mill's CWIS. As a result, EPA developed technology-based requirements by applying Section 316(b) on a site-specific basis using BPJ. A detailed discussion of the requirements pertaining to this regulation is presented in Section VI of this Fact Sheet.

V. Explanation of Permit's Effluent Limitations

A. Facility Information

The Exeter Mill buildings have been at their current location for more than 100 years. Historically, when the mills were engaged in manufacturing, the facility used water from the Exeter River for a variety of processes. The facility is located along the eastern bank of the Squamscott River. Non-contact cooling water (NCCW) is withdrawn from the Exeter River via the former mill's intake structure. The structure is located on the upstream face of the Town of Exeter's "Great Dam" (Exeter Dam). Specifically, the intake is positioned to the east of the existing spillway. The dam was originally built in 1828 to provide water power for the Exeter Manufacturing Company's cotton mill. The freshwater portion of the river above the Exeter Dam is referred to as the Exeter River and the tidal, saltwater river below the dam is referred to as the Squamscott River. The NCCW source water is moved by a pump system with a maximum design rating of 1.1 mgd. The water is used as part of the air conditions system to cool 134 residential units during the warm summer months.

The Exeter Mill's cooling system is operated under pressure when the cooling system is functioning. This closed system also lacks a sampling port in the mechanical room, the last segment of the cooling system before the water leaves the pressurized system. Because of this, there is no reasonable way to monitor the temperature, flow or pH while the water is moving through the facility's internal cooling water system. When the once-through NCCW does exit the Exeter Mill's cooling system at the mechanical room, it is immediately discharged to a drainage structure on-site, located outside the garage door of the main facility building, in a driveway. According to the permittee, the velocity of the discharge water at this point made it difficult to collect a representative sample. Also, the permittee reported that the location of the discharge structure in a high traffic area made it unsafe to attempt to sample at this location on a regular basis. The permittee also reported that under wet weather conditions, non-industrial, non-construction stormwater from a portion of the facility property to the south, along with non-industrial, non-construction stormwater from the Exeter Town Library property, empties into the drainage structure as well. The comingled water then follows a down grade through a closed system, made up of a 24-inch diameter underground pipe. The water flows through this pipe for approximately 1,000 feet before discharging into the south end of Clemson Pond at Outfall 001. Under most conditions, the pipe is submerged at the point where it discharges to the pond.

The discharge monitoring location for this facility could not be located at the expected point, namely the terminus of the 1,000 foot underground discharge pipe into Clemson Pond (Outfall 001). That is because, as noted above, under most expected conditions at the pond, the terminus of the discharge pipe into the receiving water remains submerged. A discrete measurement of the effluent water from the Exeter Mill NCCW before mixing with the receiving water cannot be taken at a submerged pipe that has already allowed the effluent to mix with the receiving water of Clemson Pond. Also, because of an absence of reasonable sampling access points to the NCCW before it enters the drainage structure, there is the potential that any sampling performed under wet weather conditions will likely include stormwater. After conducting an inspection of the underground discharge pipe, the permittee located an access point of the underground discharge pipe closest to the Outfall 001 that allowed monitoring of the discharge water. This access point was identified as Manhole DMH-6 (Attachment A). It is expected that this monitoring location will measure effluent water not yet diluted by Clemson Pond under most weather and tidal conditions (but may be co-mingled with stormwater under wet weather conditions). Manhole DMH-6 is approximately 140 feet from the point where the end of the discharge pipe meets Clemson Pond (Outfall 001).

B. Derivation of Effluent Limits under the Federal CWA and/or the State of New Hampshire's Water Quality Standards

Outfall 001

1. Flow

As noted earlier, the permitted maximum daily flow limit in the NCCW GP of 0.09 mgd was exceeded in 15 of the 24 monthly data reports. The highest maximum daily flow reported was 3.30 mgd in April 2012 (see Attachment B). The permittee surmised that this reported flow value was an error caused by a flow meter malfunction, since this value is approximately 36 times the established flow limit.

Exeter Mill reported that under wet weather conditions, stormwater from a portion of the facility property to the south, along with stormwater from the Exeter Town Library property, flows into the drainage structure where it mixes with the facility's NCCW. The permittee has reported that because of the limited access characteristics of the cooling water system and drainage structure, they are not able to establish a NCCW monitoring point that records the flow of the NCCW discharge without the comingled stormwater under wet weather conditions. In reviewing the DMR information, EPA was unable to determine whether the maximum daily flow values were recorded during wet weather events.

Since the current location of the flow monitoring position does not allow a dedicated NCCW flow sample to be taken, EPA asked the permittee to re-examine the NCCW system to determine if a more representative flow location could be identified. The permittee has proposed a new flow monitoring location at the intake of the cooling system in the mechanical room of the facility. A flow totalizer will be used to record the NCCW flow in the closed, once through system. EPA has accepted this flow monitoring location. It has been included in the draft permit. Since the maximum capacity of the cooling system pumps is 1.1 mgd, EPA has proposed this value as the daily maximum limit in the draft permit.

Flow shall be sampled by using the mechanical room totalizer. Flow monitoring shall be conducted once a week while NCCW is being discharged.

2. pH

The draft permit contains a pH limitation of 6.5 to 8.0 standard units (s.u.) for Outfall 001, in accordance with the NH Standards, Env-Wq 1703.18(b), governing the pH of effluent discharging to Class B waters. As stated previously, NCCW does not come in direct contact with any raw material, intermediate product, waste product (other than heat) or finished product. Since the effluent discharged by the Exeter Mill facility is not treated, it can be surmised that the pH of the effluent will be nearly the same, allowing for sampling accuracy, as the pH of the intake water. The draft permit prohibits the addition of chemicals to the non-contact cooling water.

The monthly maximum values for pH provided by Exeter Mill for the period June 2011 through October 2014 show that in six cases, effluent pH can be above the maximum limit of 8.0 s.u. pH range as a result of natural causes.

If the permittee's discharge pH is lower than 6.5 s.u., the permittee may demonstrate compliance by showing that the discharge pH was either higher than, or no more than 0.5 s.u. lower than, the ambient

upstream receiving water pH. If the permittee's discharge pH is higher than 8.0 s.u., the permittee may demonstrate compliance by showing that the discharge pH is either lower than, or no more than 0.5 s.u. higher than, the upstream receiving water pH. For this demonstration the upstream receiving water sample (the Exeter River, upstream of the Exeter dam) must be collected on the same day as the discharge pH is measured. The location where the upstream ambient pH sample is collected shall be representative of upstream conditions unaffected by the facility's discharge or activities.

EPA proposes to carry forward the pH limit range of 6.5 to 8.0 s.u. at the monitoring location of Manhole DNH-6. The draft permit proposes a weekly monitoring requirement for pH under dry weather conditions while NCCW is being discharged. A grab sample shall be taken to record the pH.

3. Temperature

As noted in Section I. of the fact sheet, the discharge monitoring location for this facility could not be located at the expected point, namely the terminus of the 1,000 foot underground discharge pipe into Clemson Pond (Outfall 001). That is because under most environmental conditions at the pond, the terminus of the discharge pipe into the receiving water remains submerged. A discrete measurement of the effluent water from the Exeter Mill NCCW before mixing with the receiving water cannot be taken at a submerged pipe that has already allowed the effluent to mix with the receiving water of Clemson Pond. The point of the underground discharge pipe closest to Outfall 001 that allowed monitoring access to the discharge water was determined to be Manhole DMH-6 (see Attachment A). NHDES and EPA judged that this monitoring location would measure effluent water not yet diluted by Clemson Pond water under most weather and tidal conditions. Manhole DMH-6 is approximately 140 feet "upstream" from the point where the end of the discharge pipe meets Clemson Pond (Outfall 001). The position of this site-specific monitoring location plays a role in the thermal limit derived for the facility.

Thermal Discharge Analysis

NHDES used field data collected by the permittee to estimate the thermal plume characteristics of an elevated temperature event that occurred on August 25, 2011. The state first attempted to predict thermal conditions in the pond using the Cornel Mixing Zone Expert System (CORMIX) model, which is a hydrodynamic mixing zone model approved for use by EPA. While some preliminary modeling was conducted on Clemson Pond in 2011, the modeling effort could not be finalized. A number of factors inhibited the model from yielding useful predictions. Because of the shallow depth of the pond at the outfall, the lack of any significant ambient current within the pond and the lack of any significant decay in temperature along pre-plotted gridlines from the outfall into the pond, hydrodynamic mixing zone modeling could not be used in this case as a predictive tool to estimate temperature limits necessary meet water quality standards for temperature (e-mail from J. Andrews, NHDES, to T. Sidore, Exeter Mill and A. Frawley, EPA, 29 January, 2013). An inspection of the temperature monitoring data did show that discharge temperatures were reduced fairly rapidly after a small mixing zone in the near field (e-mail from Jeff Andrews, NHDES to Joseph Ducharme, CMA Engineers, November 2, 2011).

A review of Discharge Monitoring Report data from July 2011 also showed a daily maximum value of 85.8°F at Manhole DMH-6. Temperature data and physical measurements for 30 feet beyond the outfall pipe into Clemson Pond were requested by NHDES Wastewater Engineering Bureau in order to obtain a better characterization of the Exeter Mill's cooling water affects on the temperature in the pond. During the following summer, on August 21, 2012, the permittee conducted field measurements at Exeter Mill and Clemson Pond to measure the temperature of the Exeter Mill's NCCW at discrete locations in the NCCW system (CMA letter dated October 16, 2012). The temperature monitoring data informed DES

and EPA that the NCCW discharge had the potential to exceed the 83°F GP limit at the effluent monitoring point.

As reported, the DMR data and field data collection efforts of August 21, 2012, confirmed that the temperature of the NCCW discharge water at the discharge monitoring location (Sampling Manhole DMH-6) periodically exceeded 83.0°F, the protective maximum temperature for a warm water fishery identified by NHDES and NHFGD. Clemson Pond is considered a non-flowing water body, so the cooling water is being discharged to a receiving water that typically would not provide dilution.

However, the field data collection revealed that there was generally a 2.0°F drop in temperature from the monitoring point of Manhole DMH-6 (approximately 140 feet from the submerged outlet to the pond) to the pond surface temperatures in the near-field of the pond (25 to 50 feet into the pond from the submerged outlet). Therefore, NHDES and EPA are satisfied that a temperature limit of 85.0°F, as measured from Manhole DMH-6, would be protective of the water quality standards for warm water fish of 83.0°F in Clemson Pond in the near-field of the pond, after a small mixing zone (e-mail from Jeff Andrews, NHDES to Austine Frawley, EPA and Tim Sidore, Exeter Mill, January 29, 2013).

Water Quality-Based Limit
EPA and NHDES propose a maximum daily discharge temperature limit of 85.0°F, as measured at Manhole DMH-6. Based on the thermal discharge analysis conducted by NHDES, this thermal limit will ensure that temperatures at the surface of Clemson Pond will not exceed 83.0°F as a result of the effluent, at the edge of a 25 to 50 foot mixing zone extending out from Outfall 001.

The draft permit proposes a weekly monitoring requirement for temperature at the Manhole DMH-6 monitoring location, while NCCW is being discharged. A grab sample shall be taken at the location to obtain the water temperature data.

Biologically Based Mixing Zone Criteria
In order to verify that the biological criteria of the state's mixing regulations are satisfied, EPA examined the biologically based components of the mixing zone criteria listed in Env-Wq 1707.02. (b) – (g)). A general discussion is presented below.

(1) *the thermal mixing zone does not interfere with biological communities or populations of indigenous species*

Because Clemson Pond is a relatively small (9.5 acre), shallow freshwater pond, it is not judged to be exceptionally valuable biological habitat. The freshwater fish species that inhabit the pond are likely to include centrarchids (sunfish and bass), cyprinids (minnows and shiners) and yellow perch. During the warm summer months, these species would likely be associated with the deepest pond water in order to avoid the naturally solar heated surface waters. The approximately 0.5 surface acre area of the mixing zone is about 5% of the total surface area of the pond and is not expected to be an area where the fish species reside for long periods. Species that encounter the surface plume temperatures of from 83.0°F to 85.0°F would be able to encounter or avoid the warmer water without acute or chronic affects.
In general the thermal mixing zone is not expected to interfere with the indigenous species of the pond.

(2) *the thermal mixing zone does not result in the accumulation of pollutants in the sediments or biota*

Heat is considered a nonconventional and nontoxic pollutant. Since heat is the only pollutant allowed to be discharged at Outfall 001, no accumulation of pollutants in the sediments or biota is possible from the discharge.

(3) *the thermal mixing zone does allow a zone of passage for swimming and drifting organisms*

The discharge and mixing zone are confined to Clemson Pond. No biologically meaningful zone of passage is associated with the pond. The Squamscott River does provide biologically important fish passage of diadromous fish species. Pond water is discharged to the river at the opposite end of the pond from Outfall 001 and the 0.5 surface acre mixing zone. Any water discharged from the pond to the Squamscott River no longer contains elevated temperatures from the discharge at Outfall 001. Therefore, the thermal mixing zone does not interfere with a zone of passage for swimming and drifting organisms in the Squamscott River.

(4) *the thermal mixing zone does not interfere with existing and designated uses of Clemson Pond*

The surface area of the mixing zone only occupies approximately 5% of the pond. In addition, temperatures within the mixing zone of from 83.0°F to 85.0°F are not expected to result in acute or chronic affects to fish species in the pond. Exposure to these water temperatures are not thought to be harmful to humans. The thermal mixing zone is not expected to interfere with fishing, swimming or other designated uses of Clemson Pond.

(5) *the mixing zone does not negatively impacts spawning grounds and/or nursery areas of any indigenous aquatic species*

Any spawning that takes place in this shallow, freshwater pond is expected to be from freshwater species that are nest builders (centrarchids) or lay eggs that are demersal and adhesive (yellow perch). The summer mixing zone is associated with surface water. Also, spawning will likely take place in the spring, when there will be no discharge from Outfall 001.

(6) *the mixing zone does not result in the mortality of any plants, animals, humans, or aquatic life*

As discussed before, temperatures within the mixing zone of from 83.0°F to 85.0°F are not expected to result in acute or chronic affects to fish species in the pond. Exposure to these water temperatures are not thought to be harmful to plants, animals, humans or aquatic life.

Meeting additional NHWQS and CWA 316(a) Requirements
Based on the discussion above, EPA is satisfied that the Clemson Pond mixing zone meets the requirements of the biologically based criteria of the New Hampshire mixing zone regulations. In addition, the mixing zone must satisfy the biological and aquatic community integrity regulations of the NHWQS (Env-Wq 1703.19), which states:

> (a) The surface waters shall support and maintain a balanced, integrated, and adaptive community of organisms having a species composition, diversity, and functional organization comparable to that of similar natural habitats of a region.

The mixing zone must also meet the CWA 316(a) criteria (§ 125.73), which states:

> (a) Thermal discharge effluent limitations or standards established in permits may be less stringent than those required by applicable standards and limitations if the discharger demonstrates to the satisfaction of the director that such effluent limitations are more stringent than necessary to assure the protection and propagation of a balanced, indigenous community of shellfish, fish and wildlife in and on the body of water into which the discharge is made.

The NHWQS biological and aquatic community integrity criteria and the CWA 316(a) criteria are substantially similar to the NH WQS biologically based mixing zone criteria. Due to the overlapping and similar nature of these regulations, EPA has determined that the biological assessment above demonstrates that the mixing zone also satisfies the NHWQS biological and aquatic community integrity criteria and the CWA 316(a) criteria.

Technology-Based Limit
As discussed in Section IV.B. of this Fact Sheet, 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 technology-based temperature limits by applying the BAT standard on a case-by-case, BPJ basis in consideration of (i) the appropriate technology for the category or class of point sources of which the applicant is a member, based upon all available information; and (ii) any unique factors relating to the applicant (see 40 CFR 125.3(c)(2)).

In this site-specific case, early in the general permit phase of this facility's authorized thermal discharge (the summers of 2011 and 2012), NHDES conducted an analysis of water temperature and flow data, based on information collected by the permittee. In addition, NHDES investigated the use of a hydrodynamic mixing zone model to determine whether the thermal discharge could meet NHWQSs. While the mixing zone model could not be used in this case (see *Thermal Discharge Analysis,* above), the overall investigation ultimately provided sufficient information for NHDES and EPA to consider a water quality based effluent limit for temperature at Outfall 001 (see the section titled *Water Quality-Based Limit*, above). This approach was developed before the permitting process for an individual NPDES permit had been initiated. EPA judged that the development of a technology-based temperature limit constructed as part of the permitting process would likely be more stringent than the water quality-based limit already developed. Therefore, in this case, EPA judged that it was not necessary to also derive a technology-based limit since the discharge would likely qualify for a 316(a) variance from any such technology standard.

Variance from Technology-Based Standards
As discussed above, EPA judged that a technology-based thermal limit would likely be more stringent than the site-specific water quality-based standard already derived for the discharge. Therefore, EPA has decided to grant a variance from a technology-based standard because the water quality-based limits satisfy CWA 316(a) regulations.

Proposed Thermal Limits
Since the mixing zone meets all applicable NHWQS as well as CWA 316(a) requirements, EPA proposes the following permitted thermal limits to the draft permit. Specifically:

> The thermal limit for Outfall 001 prohibits a maximum daily discharge temperature above 85.0°F, as measured at Manhole DMH-6. In addition, the discharge shall not cause the receiving water, Clemson Pond, to exceed a maximum temperature of 83°F at the edge of a mixing zone that extends 50 feet out from Outfall 001.

4. Other Pollutants

As part of their NPDES individual permit submittal, dated February 27, 2013, the operator of Exeter Mill Apartments requested a waiver from measuring nine (9) of the twelve (12) effluent characteristics specified in Form 2E of the permit application. The nine (9) parameters were as follows: biochemical oxygen demand (BOD), total suspended solids (TSS), fecal coliform, total residual chlorine, oil and grease, chemical oxygen demand (COD), total organic carbon (TOC), ammonia (as N) and winter temperature.

EPA reviewing the permit application, the design of the once-through NCCW system, and the expected operation of the system. Based on this review, EPA was satisfied that the NCCW used at Exeter Mill did not come in contact with any process water or other potential pollutant streams as the water removed waste heat from the facility's air conditioning system. EPA granted the waiver for the nine (9) requested parameters listed above. The permittee was notified of this action in a letter sent from EPA to the permittee, dated May 22, 2013.

VI. Cooling Water Intake Structure, CWA Section 316(b)

With any NPDES permit issuance or reissuance, EPA is required to evaluate or re-evaluate compliance with applicable standards, including the technology standard specified in Section 316(b) of the CWA for cooling water intake structures (CWISs). Section 316(b) requires that:

> [a]ny standard established pursuant to Section 301 or Section 306 of this Act and applicable to a point source shall require that the location, design, construction, and capacity of cooling water intake structures reflect the best technology available for minimizing adverse environmental impact. 33 U.S.C. § 1326(b).

The operation of CWISs can cause or contribute to a variety of adverse environmental effects, such as killing or injuring fish larvae and eggs entrained in the water withdrawn from a water body and sent through the facility's cooling system, or by killing or injuring fish and other organisms by impinging them against the intake structure's screens. CWA § 316(b) applies if a point source discharger seeks to withdraw cooling water from a water of the United States through a CWIS. CWA § 316(b) applies to this permit due to the presence and operation of a CWIS at Exeter Mill.

A. Introduction and Regulatory Background

In the absence of applicable regulations, EPA has made § 316(b) determinations on a case-by-case basis using best professional judgment (BPJ), for both new and existing facilities with regulated CWISs. In December 2001, EPA promulgated new, final § 316(b) regulations that provide specific technology-based requirements for *new* facilities of any kind with a CWIS with an intake flow greater than two (2) MGD. 66 FR 65255 (Dec. 18, 2001) (Phase I rule). The Phase I rule is in effect but does not apply to this permit because Exeter Mill is not a new facility.

In July 2004, EPA published final regulations applying § 316(b) to large, *existing* power plants (Phase II rule), defined in 40 CFR § 125.91 as existing point sources employing CWISs that withdraw at least 50 MGD and generate and transmit electric power as their primary activity. Following litigation that resulted in the remand to EPA of many of the rule's provisions, *see Riverkeeper, Inc. v. U.S. EPA*, 475F.3d 83 (2d Cir. 2007); *rev'd in part, Entergy Corp. v. Riverkeeper, Inc.,*129 S. Ct. 1498, 1510 (2009), the Agency suspended the Phase II rule in July 2007. 72 FR 37107 (July 9, 2007). The

suspension left only 40 CFR § 125.90(b) in effect, which provides that in the absence of applicable categorical standards, BTA determinations are to be made on a case-by-case, BPJ basis.

On June 16, 2006, EPA published the Phase III Rule, which established categorical requirements for new offshore oil and gas extraction facilities that have a design intake flow threshold of greater than 2 MGD, but dictated that the BTA would be determined on a case-by-case, BPJ basis for existing electrical generation facilities with a design intake flow less than 50 MGD and existing manufacturing facilities. 71 FR 35006 (June 16, 2006). In 2009, EPA petitioned the 5th Circuit to remand those provisions of the Phase III Rule that established 316(b) requirements for existing electrical generators with a design intake flow less than 50 MGD and at existing manufacturing facilities on a case-by-case basis using best professional judgment. On July 23, 2010, the United States Court of Appeals for the 5th Circuit issued a decision upholding EPA's rule for new offshore oil and gas extraction facilities. Further, the Court granted the request by EPA and environmental petitioners to remand the existing facility portion of the rule back to the Agency for further rulemaking. *ConocoPhillips Co. v. U.S. Envtl. Prot. Agency*, 612 F.3d 822, 842 (5th Cir. 2010).

On August 15, 2014, EPA published the final rule establishing requirements for existing facilities under § 316(b) of the CWA. 79 Fed. Reg. 48300 (August 15, 2014) ("final rule" or "new 316(b) CWA regulations"). The final rule's requirements reflect the BTA for minimizing adverse environmental impact, applicable to the location, design, construction, and capacity of cooling water intake structures for existing power generating facilities and existing manufacturing and industrial facilities. The final rule responds to the remands of the Phase II rule and aspects of the Phase III rule that applied to existing facilities by consolidating the universe of potentially regulated facilities in a single proceeding. The final rule applies to all existing power generating facilities and existing manufacturing and industrial facilities that have the design capacity to withdraw more than two MGD of cooling water from waters of the United States and use at least twenty-five (25) percent of the water they withdraw exclusively for cooling purposes. The final rule, which became effective on October 14, 2014, does not apply to this permit because Exeter Mill is designed to withdraw less than 2 MGD. Therefore, BTA for the minimization of adverse environmental impacts must be determined on a BPJ basis for this facility.

The facility is currently authorized to discharge under the NPDES NCCW GP (MAG250000 and NHG250000). EPA took into consideration the CWA § 316(b) requirements for the design and operation of CWISs specified at Part 4.2 of the general permit as part of the development process. As a result, EPA has developed technology-based requirements for the facility's CWISs by applying CWA § 316(b) on a BPJ, site-specific basis.

1. State Water Quality Standards

In addition to satisfying technology-based requirements, NPDES permit limits for CWISs must also satisfy any more stringent provisions of state WQS or other state legal requirements that may apply, as well as any applicable conditions of a state certification under CWA § 401. *See* CWA §§ 301(b)(1)(C), 401(a)(1), 401(d), 510; 40 C.F.R. §§ 122.4(d), 122.44(d). *See also* 40 C.F.R. § 125.84(e) NH Env-Wq §§ 1701.02(b), 1703.19. This means that permit conditions for CWISs must satisfy numeric and narrative water quality criteria and protect designated uses that may apply from the state's WQS.

The CWA authorizes states to apply their WQS to the effects of CWISs and to impose more stringent water pollution control standards than those dictated by federal technology standards.[1] The United States Supreme Court has held that once the CWA § 401 state certification process has been triggered by the existence of a discharge, then the certification may impose conditions and limitations on the activity as a whole – not merely on the discharge – to the extent that such conditions are needed to ensure compliance with state WQS or other applicable requirements of state law.[2]

With respect to cooling water withdrawals, both sections 301(b)(1)(C) and 401 authorize the Region to ensure that such withdrawals are consistent with state WQS, because the permit must assure that the overall "activity" associated with a discharge will not violate applicable WQS. *See PUD No. 1*, 511 U.S. at 711-12 (Section 401 certification); *Riverkeeper I,* 358 F.3d at 200-202; *In re Dominion Energy Brayton Point, LLC*, 12 E.A.D. 490, 619-41 (EAB 2006). Therefore, in EPA-issued NPDES permits, limits addressing CWISs must satisfy: (1) the BTA standard of CWA § 316(b); (2) applicable state water quality requirements; and (3) any applicable conditions of a state certification under CWA § 401. The standards that are most stringent ultimately determine the Final Permit limits.

The New Hampshire Fish and Game Department has designated Clemson Pond and the associated Squamscott River a warm water fishery. The NH-DES has primary responsibility for determining the permit limits that are necessary to achieve compliance with State law requirements. Since the NPDES permit that EPA expects to issue to Exeter Mill will be subject to State Certification under CWA § 401, the permit will also need to satisfy any NH-DES conditions of such a certification (See also 40 CFR §§ 124.53 and 124.55).

B. Effects of Cooling Water Intake Structures

Section 316(b) of the CWA addresses the adverse environmental impacts of a CWIS at a facility requiring an NPDES permit. The principal adverse environmental impacts typically associated with CWISs evaluated by EPA are the *entrainment* of fish eggs, larvae, and other small forms of aquatic life through the plant's cooling system, and the *impingement* of fish and other larger forms of aquatic life on the intake screens.

Entrainment of organisms occurs when a facility withdraws water into the CWIS from an adjacent water body. Fish eggs, larvae, and other planktonic organisms in the water are typically small enough to pass

[1] The regulation governing the development of WQS notes that "[a]s recognized by section 510 of the Clean Water Act, States may develop WQSs more stringent than required by this regulation." 40 C.F.R. § 131.4(a). The Supreme Court has cited this regulation in support of the view that states could adopt water quality requirements more stringent than federal requirements. *PUD No. 1 of Jefferson County v. Wash. Dep't of Ecology*, 511 U.S. 700, 705 (1994). *See also* 33 U.S.C. § 1370; 40 C.F.R. § 125.80(d). *See also* 40 C.F.R. § 125.80(d); *Riverkeeper, Inc. v. U.S. Environmental Protection Agency,* 358 F.3d 174, 200-201 (2d Cir. 2004) ("*Riverkeeper I"*).

[2] *PUD No. 1*, 511 U.S. at 711-12. holds that "in setting discharge conditions to achieve WQS, a state can and should take account of the effects of other aspects of the activity that may affect the discharge conditions that will be needed to attain WQS. The text [of CWA § 401d)] refers to the compliance of the applicant, not the discharge. Section 401(d) thus allows the State to impose "other limitations" on the project in general to assure compliance with various provisions of the Clean Water Act and with "any other appropriate requirement of State law." For example, a state could impose certification conditions related to CWISs on a permit for a facility with a discharge, if those conditions were necessary to assure compliance with a requirement of state law, such as to protect a designated use under state WQS. *See id.* at 713 (holding that § 401 certification may impose conditions necessary to comply with designated uses).

through intake screens and become entrained along with the cooling water within the facility (See 76 FR 22197). As a result, the organisms are subjected to death or damage due to high velocity and pressure, increased temperature, and chemical anti-biofouling agents.[3] The number of organisms entrained is dependent upon the volume and velocity of cooling water flow through the plant and the concentration of organisms in the source water body that are small enough to pass through the screens of CWIS. The extent of entrainment can be affected by the intake structure's location, the biological community in the water body, the characteristics of any intake screening system or other entrainment reduction equipment used by the facility, and by season.

Impingement of organisms occurs when a facility draws water through its CWIS and organisms too large to pass through the screens, and unable to swim away, become trapped against the screens and other parts of the intake structure (See 76 FR 22197). Impinged organisms may be killed, injured or weakened, depending on the nature and capacity of the plant's filter screen configuration, cleaning and backwashing operations, and fish return system used to return organisms back to the source water.[4] In some cases, contact with screens or other equipment can cause an organism to lose its protective slime and/or scales, or suffer other injuries, which may result in delayed mortality. The quantity of organisms impinged is a function of the intake structure's location and depth, the velocity of water drawn to the entrance of the intake structure (approach velocity) and through the screens (through-screen velocity), the seasonal abundance of various species of fish, and the size of various fish relative to the size of the mesh in any intake barrier system (e.g., screens). It should be noted that this discussion focuses on fish because more information is available on CWIS impacts to fish, but CWISs can also harm other types of organisms (*e.g.*, shellfish).

The most direct impact of impingement and entrainment mortality is the loss of large numbers of aquatic organisms, including fish, benthic invertebrates, phytoplankton, fish eggs and larvae, and other susceptible organisms. EPA believes that reducing impingement and entrainment mortality will contribute to the health and sustainability of fish populations by lowering the total mortality rate for these populations. For many species, these losses may not lead to measurable reductions in adult populations; however, these losses can contribute to impacts to threatened and endangered species, indigenous populations, and a reduction in ecologically critical aquatic organisms, including important elements of an ecosystem's food chain. For instance, because predation rates are often linked to concentration of prey, reductions in a prey fish from impingement and entrainment mortality may indirectly result in reductions to predator species or increases to species in apparent competition. In addition, impingement and entrainment mortality can diminish a population's compensatory reserve, which is the capacity of a species to increase survival, growth, or reproduction rates in response to environmental variability, including temperature extremes, heavy predation, disease, or years of low recruitment.

For commercially and recreationally important stocks, impingement and entrainment mortality represent an additional source of mortality to populations being harvested at unsustainable levels. Although reductions in impingement and entrainment mortality may be small in magnitude compared to fishing pressure and often difficult to measure due to the low statistical power of fisheries surveys, a reduction in mortality rates on overfished populations is likely to increase the rate of stock recovery. Thus, reducing impingement and entrainment mortality may lead to more rapid stock recovery, a long-term increase in

[3] EPA 2011. Environmental and Economic Benefits Analysis of the Proposed Section 316(b) Existing Facilities Regulation: Section 2.3 CWIS Impacts to Aquatic Ecosystems. EPA. March 28, 2011 .
[4] EPA. Environmental and Economic Benefits Analysis for Proposed Section 316(b) Existing Facilities Rule. March 28, 2011. EPA 821-R-11-002.

commercial fish catches, increased population stability following periods of poor recruitment, and, as a consequence of increased resource utilization, an increased ability to minimize the invasion of exotic species. Finally, fish and other species affected directly and indirectly by CWISs can provide other valuable ecosystem goods and services, including nutrient cycling and ecosystem stability.

C. Impingement and Entrainment at Exeter Mill

Impingement

The permittee has not conducted a formal impingement study at the facility. According to the operators of Exeter Mill, the intake structure has been located at the upstream face of the Exeter Dam for over a century and there is no history of fish impingement. No formal impingement monitoring protocol has been in place at the CWIS until 2010. During that year, in order to be authorized to discharge heated water as part of the NCCW GP, Exeter Mill was required to establish an impingement monitoring program. During weeks when NCCW was being discharged from Outfall 001 (meaning, by definition, that water was also being withdrawn from the CWIS), facility personnel were required to inspect the CWIS three days per week. In July and August of 2010, impingement monitoring contained 6 reports noting no fish impinged and 13 reports that water conditions prevented the underwater CWIS from being seen. Beginning in 2012, impingement monitoring was conducted once per week while the NCCW system was in operation. According to monitoring program data from 2010 through 2014, when the NCCW system was withdrawing water from the CWIS and when the water clarity allowed, Exeter Mill representatives observed no adult or juvenile fish impingement at the intake structure.

Entrainment

Exeter Mill has not conducted a formal entrainment study at the facility. As discussed in greater detail below, a relatively small amount of water is historically withdrawn at the CWIS during each day of operation (less than 1 MGD). As part of the NCCW GP authorization evaluation, EPA considered the amount of water withdrawn, as well as a list of other factors, to determine that a multi-year entrainment study was not necessary in this case.

One of the other factors considered in the evaluation of an entrainment monitoring program is the overall potential for early life stages to be present in the vicinity of the intake structure. The freshwater fish species that inhabit the slow flowing Exeter River are likely to include centrarchids (sunfish and bass), cyprinids (minnows and shiners) and yellow perch. The majority of resident freshwater species that spawn in the river are expected to use shallow, nest building benthic habitat (centrarchids) or lay eggs that are demersal and adhesive (yellow perch). This spawning characteristic reduces the potential for these eggs and larvae to come in contact with the approach velocity of the intake structure, thus reducing the potential for entrainment. In general, a different class of spawners that disperse their eggs throughout the water column (broadcast spawners) have a greater potential to be entrained at intake structures. Even anadromous species, which tend to be broadcast spawners, that are able to move upstream past the Exeter Dam to spawn, will likely spawn in the upper reaches of the river, rather than in the vicinity of the dam. As such, EPA judges the potential for fish egg and larvae entrainment to be low in this site-specific case. An entrainment monitoring program would yield limited useful information.

D. Cooling Water Intake Structure Description

As described previously, NCCW is withdrawn from the Exeter River via the former mill's intake structure, located to the east of the existing spillway on the upstream face of the Town of Exeter's "Great Dam" (Exeter Dam). The dam was built in 1828 and the associated intake structure dates back to the 1800's as well. The CWIS opening is approximately 24 feet wide by 7 feet high. This opening is

entirely submerged under most river stages and is made up of an angled, steel "screen", set at a slope of approximately 15-degrees from vertical. This steel "screen" or "grate" is comprised of steel bars measuring approximately 1/8-inch thick by 1-inch deep. The openings between bars measure approximately 7/8-inch wide by 3-1/2-inches high. The intake grate is arranged such that the long dimensions of the openings run vertically (Exeter Mill Letter from J. Ducharme, Jr, CMA Engineering, to D. Webster, EPA, dated December 14, 2010).

Exeter River water that passes through the steel grate is moved by gravity to two sluice gates, made from wooden timbers. Water next passes through a rough 5-inch diameter opening cut out from the timber of the sluice gate located closest to the east shore. Water is gravity fed from the sluice gate opening via a 14-foot wide by 7-foot high concrete penstock to a concrete cutoff wall approximately 400-feet downstream of the Exeter Dam. Water pools in the cutoff wall area until it is withdrawn by an 8-inch diameter cooling water feed pipe from the mechanical room of the Exeter Mill. The water is pumped under pressure through the facility's once cooling system. The pumps that moves water through the facility's cooling system have a maximum design capacity of 1.1 mgd

As discussed earlier, the flow limit for Exeter Mill established in the current NCCW GP is 0.09 mgd. This limit was based on the capacity of the pressurized cooling water system reported by the permittee. DMR records submitted by the permittee contain 15 monthly instances (out of 24 months reported) where the reported maximum daily flow was higher than 0.09 mgd. EPA notes two possible reasons for these exceedances. First, the reported capacity of the pressurized cooling water system may have been reported in error. In addition, the monitoring location in the current permit records NCCW at Manhole DMH-6. This point in the discharge flow contains NCCW discharge comingled with stormwater that drains from a portion of the Exeter Mill property and the town library. Since corresponding rainfall data was not required along with the maximum daily flow data, EPA was unable to determine whether the maximum values exceed 0.09 mgd because of the addition of stormwater to the flow. The current location of the flow monitoring position does not allow a dedicated NCCW flow sample to be taken. As part of the process to establish a site-specific individual permit, EPA asked the permittee to re-examine the NCCW system to determine if a more representative flow location could be identified. The permittee proposed a new flow monitoring location at the intake of the cooling system in the mechanical room of the facility. EPA accepted this flow monitoring location, where the NCCW can be measured without stormwater dilution. The daily maximum flow of 1.1 mgd (maximum design capacity of the system pumps) has been proposed for the draft permit flow limit.

The velocity of water entering a CWIS, or intake velocity, exerts a direct physical force against which fish and other organisms must act to avoid impingement. As intake velocity increases at a CWIS, so does the potential for impingement. EPA considers intake velocity to be one important factor that can be controlled to minimize adverse environmental impacts from impingement at CWISs. See 65 FR 49060, 49087 (Aug. 10, 2000). EPA has identified a "through-screen" velocity (TSV) threshold of 0.5 feet per second (fps) as protective to minimize impingement of most species of adult and juvenile fish. This determination is fully discussed at 65 FR 49060, 49087-88. Based on the information provided by the permittee, EPA calculated the TSV of Exeter Mill's CWIS as follows:

The "effective open area" of the intake screen was calculated to be:

A_t = 24 ft x 7.25 ft = 174 sq ft (*total screen area*)

A_o = (0.875 in x 3.5 in) = 3.06 sq in (*screen open* area)

A_T = 1.125 in x 3.75 in = 4.23 sq in (total area including 0.125 in thick grate)

P = 3.06 sq in / 4.23 sq in = 0.72 = 72 % (*percent open area*)

A_e = 0.72 x 174 sq ft = 125.9 sq ft (*effective open area*)

The minimum effective open area and the maximum intake flow rates were used to calculate the maximum TSV at the intake screen. Assuming that the withdrawal is distributed equally over the entire effective open area of the intake screen, the maximum TSV is:

Q = V x A where: Q = flow (cfs)
V = velocity (fps)
A = area (sq ft)

Q = 1.1 mgd = 1.70 cfs

A = 125.9 sq ft

V = fps

1.70 cfs = X cfs x 125.9 sq ft

The maximum calculated TSV is:

0.013 feet per second (fps)

The maximum calculated TSV of 0.013 fps (rounded to 0.02 fps) is well below the TSV of 0.5 fps, which EPA has identified as a threshold which is protective to minimize impingement of most species of adult and juvenile fish.

E. Assessment of Cooling Water Intake Structure Technologies

The design, location, construction and capacity of Exeter Mill's CWIS must reflect BTA for minimizing adverse impacts from impingement and entrainment, as required by CWA § 316(b). The location of a CWIS in the waterbody is an important factor in minimizing its adverse environmental impacts. EPA evaluated the location of the CWIS in the waterbody, the type of waterbody, and the depth of the intake structure to determine how to best minimize adverse environmental impacts under CWA § 316(b). The design, construction, and operation of a CWIS are additional important factors in minimizing its adverse biological impacts. Fish protection technologies, including physical exclusion systems such as barrier nets or screens, may reduce impingement and entrainment impacts if properly designed, installed, and maintained. Capacity (the quantity of receiving water being withdrawn) is another important factor that can minimize the adverse environmental impacts of a CWIS. Reducing capacity results in a corresponding reduction in the number of organisms entrained, thereby reducing entrainment mortality. A reduction in flow can be achieved through implementation of a closed-cycle cooling system (e.g., cooling towers), by using an alternative source of cooling water (e.g., stormwater), or by using a variable frequency drive (VFD) to adjust pump capacity to meet cooling water demand. EPA assumes a reduction in flow is proportional to the reduction in entrainment mortality because fewer organisms are subject to

CWIS impacts. In addition, a capacity reduction can minimize impingement if the maximum pumping volume results in a through-screen intake velocity (TSV) no greater than 0.5 fps.

Specifically at Exeter Mill, a BTA determination was performed as part of the facility's authorization to discharge under the EPA NCCW General Permit NPDES Number NHG250572. The General Permit was issued on July 31, 2008. The authorization to discharge for the facility was effective on April 1, 2011. The BTA determination under the general permit is being carried forward as the appropriate BTA determination under the proposed individual permit.

1. Existing Cooling Water Intake Structure Technology

"Location"
The location of a CWIS in the water body is an important factor in minimizing its adverse environmental impacts. EPA evaluated the location of the CWIS in the water body, the type of water body, and the depth of the intake structure to determine how to best minimize adverse environmental impacts under CWA.

The Exeter Mill CWIS is located to the east of the existing spillway on the upstream face of the Exeter Dam. The upstream face of the dam is not considered high quality habitat for fish spawning, early life stage development, juvenile or adult residence. As such, the location of the CWIS is considered to be a characteristic of the CWIS that is likely to reduce impingement and entrainment, when compared with a CWIS located in a more productive area of the freshwater Exeter River, such as a sloping shore line area containing woody structure and submerged aquatic vegetation. EPA considers this location to be one aspect of BTA.

In addition the freshwater fish species that inhabit the river are likely to include centrarchids (sunfish and bass), cyprinids (minnows and shiners) and yellow perch. Any resident freshwater species that spawn in the river are expected to use shallow, nest building benthic habitat (centrarchids) or lay eggs that are demersal and adhesive (yellow perch), rather than spawning in the water column. Even anadromous species that are able to move upstream past the dam to spawn will likely spawn in the upper reaches of the river, rather than in the vicinity of the dam. As such, the location of the CWIS in a freshwater habitat with limited free floating ichthyoplankton is likely to reduce the potential for entrainment. EPA considers this location to be one aspect of BTA as well.

"Design and Construction"
§ 316(b). The design, construction, and operation of a CWIS are additional important factors in minimizing its adverse biological impacts. Fish protection technologies, including physical exclusion systems such as barrier nets or screens, may reduce impingement and entrainment impacts if properly designed, installed, and maintained.

The design of Exeter Mill's CWIS includes an entirely submerged angled, steel "screen", set at a slope of approximately 15-degrees from vertical. This steel "screen" or "grate" is comprised of steel bars measuring approximately 1/8-inch thick by 1-inch deep. The openings between bars measure approximately 7/8-inch wide by 3-1/2-inches high. This grate size prevents adult and juvenile fish from swimming into the sluice gates and penstocks of the interior of the dam. The overall opening is calculated to result in a TSV of only 0.013 fps (rounded to 0.02 fps). EPA considers this design to be one aspect of BTA.

"Capacity"
Capacity (the quantity of surface water being withdrawn) is another important factor that can minimize the adverse environmental impacts of a CWIS. Reducing capacity results in a corresponding reduction in the number of organisms entrained, thereby reducing entrainment mortality. EPA assumes a reduction in flow is proportional to the reduction in entrainment mortality because fewer organisms are subject to CWIS impacts. In addition, a capacity reduction can minimize impingement if the maximum pumping volume results in a through-screen intake velocity (TSV) no greater than 0.5 fps.

According to information from the permittee, the Exeter Mill system pumps are limited to a maximum capacity withdrawal of 1.1 mgd. Historical DMR data recorded from 2011 through 2014 indicated that daily maximum flows were less than half of this maximum withdrawal of 1.1 mgd in all but one case (see Section II). EPA has judged that the cooling water system may withdraw and discharge a maximum flow of 1.1 mgd. The capacity of the CWIS is relatively low. It is less than 1% of the annual mean flow of the Exeter River. EPA considers this capacity technology to be one aspect of BTA.

In addition, the CWIS is usually not withdrawing water when spawning is taking place in the Exeter River in the spring. While EPA is not directly limiting the specific months of CWIS operation, the expected timing of the CWIS operation under expected weather conditions (May through September) is also considered one aspect of BTA.

F. BTA Determination

Based on current CWIS operations, information available at this time, and the location, design, capacity and construction of the CWIS, EPA has determined the adverse environmental impacts of the CWIS at Exeter Mill are low. In order to minimize adverse environmental impacts EPA is requiring the following as BTA in Part I.D of the Draft Permit.

1. Limit the facility's maximum daily intake flow to 1.1 mgd. Exeter Mill shall only withdraw water from the CWIS when the cooling system is operating.

2. Maintain a screen at the opening of the CWIS with a grate size openings of approximately 7/8-inch wide by 3-1/2-inches high.

3. Limit the maximum through screen velocity to no more than 0.02 feet per second.

The permittee is required to implement an Impingement Monitoring Program. The permittee is required to inspect all areas where adult and juvenile fish may become trapped or impinged at least three times a week. All live fish observed must be returned to the Exeter River. A log book must be kept to document the date and time of the inspection, the name of the individual performing the inspection, the species of fish impinged (if any), the total length of the fish, the condition of the fish (alive, injured, dead), and the treatment of the fish (released or discarded). The log book shall be made available to EPA and/or the State upon inspection or request.

There shall be no changes to the CWIS, including any of the BTA requirements listed above, unless approved by EPA as providing equivalent or greater protection for fish species.

As discussed earlier, the CWIS is located on the upstream face of a man-made dam. This location is not considered high quality habitat for fish spawning, early life stage development, juvenile or adult

residence. Because of the spawning characteristics of the freshwater species that inhabit the Exeter River above the dam, the density of fish eggs or larvae in the vicinity of the CWIS is judged to be low. Anadromous species that are able to move upstream past the dam to spawn will likely spawn in the upper reaches of the river, rather than in the vicinity of the dam. In addition, a relatively small volume of water is withdrawn by the CWIS. Because of these factors, EPA considers the potential to be very low for fish eggs and larvae to be entrained by Exeter Mill's CWIS. No entrainment monitoring is included in the draft permit.

VII. 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 the National Marine Fisheries Services (NMFS) if EPA's action or proposed actions that it funds, permits, or undertakes, may adversely impact any essential fish habitat (EFH) such as waters and substrate necessary for fish 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.

Essential fish habitat is only designated for 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 and are identified on the NMFS website at http://www.nero.noaa.gov/hcd/webintro.html. In some cases, a narrative identifies rivers and other waterways that should be considered EFH due to present or historic use by federally managed species.

While the receiving water of this federal permitting action, the Squamscott River, is not specifically listed as essential fish habitat, the near-by Cocheco River and the estuary associated with the Squamscott River, made up of Great Bay and Little Bay, are identified as EFH for juveniles and adult Atlantic salmon life stages. The narrative included with the EFH designations states "All aquatic habitats in the watersheds of the above listed rivers, including all tributaries to the extent that they are currently or were historically accessible for salmon migration" [are included in the EFH designation]. EPA has taken the conservative approach and judged that the Squamscott River is likely included as part of the EFH designation, based on the above information.

EPA has concluded that the limits and conditions contained in the Draft Permit minimize adverse effects to the EFH and Atlantic salmon, for the following reasons:

- This permit action does not constitute a new source of pollutants. It is the issuance of an individual NPDES permit that had previously been authorized to discharge under an NPDES General Permit;
- The draft permit prohibits the discharge to cause a violation of New Hampshire state water quality standards;
- The draft permit prohibits the discharge of any pollutant or combination of pollutants in toxic amounts;
- The facility has a seasonal and non-continuous discharge of low volume, non-contact cooling water;

- The facility withdraws water from a CWIS that meets 316(b) requirements to minimize adverse impacts to fish from impingement;
- No early life stages of Atlantic salmon are expected to be present in the Exeter River, so no entrainment is expected; and
- The effluent limitations and other permit requirements identified in the draft permit and fact sheet are designed to be protective of all aquatic species, including those with EFH designations.

EPA believes that the conditions and limitations contained within the proposed permit adequately protects all aquatic life, including those with designated EFH in the receiving water, and that further mitigation is not warranted. If adverse impacts to EFH are detected as a result of this permit action, or if new information is received that changes the basis for these conclusions, EPA will contact NMFS Habitat Division.

As the federal agency charged with authorizing the discharge from this facility, EPA has submitted the draft permit and this fact sheet, along with a letter under separate cover, to NMFS Habitat Division for their review.

VIII. Endangered Species Act

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

EPA has reviewed the federal endangered or threatened species of fish, wildlife, and plants to see if any such listed species might potentially be impacted by the re-issuance of this NPDES permit. Upon review of the current endangered and threatened species in the area, EPA has determined that, at this time, there are no federally threatened or endangered species present in the vicinity of the outfall from this facility. Furthermore, effluent limitations and other permit conditions (e.g., CWIS BTA requirements) which are in place in this draft permit should preclude any adverse effects in the unlikely event that there is any incidental contact with listed species in Clemson Pond or the Squamscott River.

Consultation under Section 7 of the ESA is not required. If new information becomes available that changes the basis for this determination, then NMFS will be notified and consultation will be promptly initiated.

IX. Additional Requirements and Conditions

The effluent monitoring requirements have been established to yield data representative of the discharge under the authority of Section 308(a) of the CWA in accordance with 40 CFR § 122.41(j), 122.44(i) and 122.48. The remaining conditions of the permit are based on the NPDES regulations 40 CFR Parts 122 through 125 and consist primarily of management requirements common to all permits.

As discussed previously, the discharge point of the effluent pipe into Clemson Pond is routinely submerged, so the monitoring location deemed to obtain a representative sample of the effluent just prior to dilution from the receiving water has been established approximately 140 feet "upstream" from Outfall 001, at DMH-6 (see Attachment A).

The draft permit requires that the permittee submit all monitoring data and other reports required by the permit to EPA using NetDMR. NetDMR is a national web-based tool for regulated CWA permittees to submit 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.

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.

X. 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 §124.53. The NHDES is the certifying authority.

Upon public noticing of the draft permit, EPA is formally requesting that the NHDES 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 State's certification should include the specific conditions necessary to assure compliance with applicable provisions of the Clean Water Act 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 issuance, 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. Review 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.

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 §§124.53 and 124.55 certification are set forth in 40 CFR §§124.53 and 124.55.

XI. 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. John H. Nagle, U.S. EPA, Office of Ecosystem Protection, Industrial Permits Branch, 5 Post Office Square, Suite 100, 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 issues proposed to be raised in the hearing. A public meeting may be held if the criteria stated in 40 C.F.R. § 124.12 are satisfied. In reaching a final decision on the draft permit, the EPA will respond to all significant comments and make these responses available to the public at EPA's Boston Office.

Following the close of the comment period, and after any public hearings, if such hearings are held, the EPA 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 petition for review of the permit to EPA's Environmental Appeals Board consistent with 40 CFR § 124.19.

XII. 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. John H. Nagle
U.S. Environmental Protection Agency
Office of Ecosystem Protection
5 Post Office Square, Suite 100 (OEP06-4)
Boston, Massachusetts 02109-3912
Telephone: (617) 918-1054
FAX No.: (617) 918-0054
EMAIL: nagle.john@epa.gov

XIII. Attachments

Attachment A Location of Facility, Outfall and Receiving Water

Attachment B DMR Summary Results

June 2015

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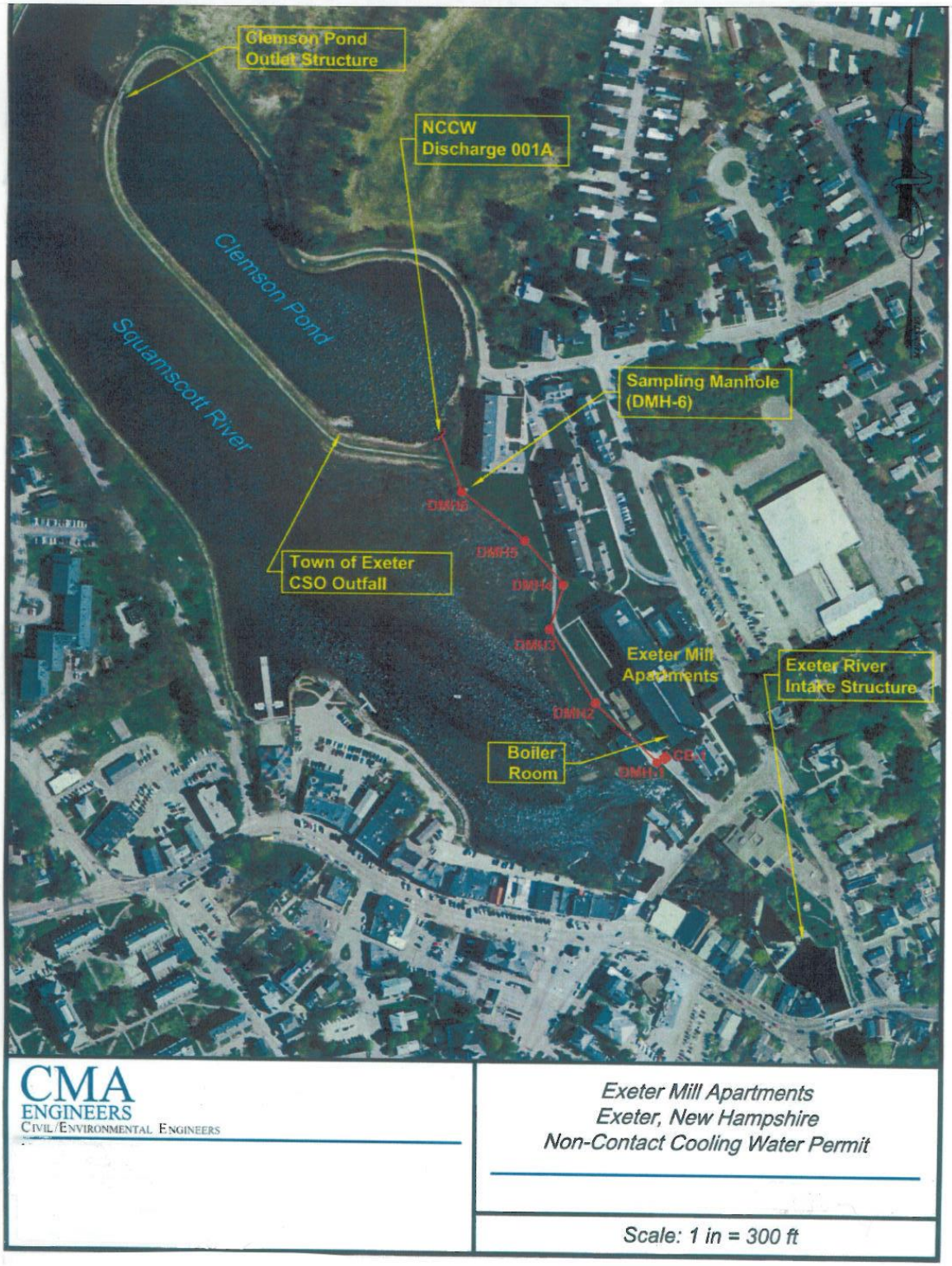
DATE

Ken Moraff, Director
Office of Ecosystem Protection
US Environmental Protection Agency

Permit No. NH0023559

Fact Sheet Attachment A



Permit No. NH0023559

Fact Sheet Attachment B

Outfall Monitoring Location - Outfall 001						Intake Monitoring At Exeter Dam
	Flow	Temperature		pH		pH
Monitoring Period End Date	Permit Limit 0.09, MGD	Permit Limit 83.0, deg F	Monitor, deg F	Permit Limit 6.5, SU	Permit Limit 8.0, SU	Monitor and Report, SU
	DAILY MAX	DAILY MAX	MO AVG	MINIMUM	MAXIMUM	DAILY MAX
6/30/2011	0.071	80.6	75.8	7.0	7.4	7.4
7/31/2011	0.013	85.8	83.9	7.2	7.2	7.4
8/31/2011	0.064	81.3	80.9	7.0	7.0	7.0
9/30/2011	0.064	81.7	80.2	7.0	7.2	7.4
10/31/2011	0.048	74.2	73.0	7.0	7.0	7.2
4/30/2012	**3.300	59.0	55.0	7.4	8.0	9.0
5/31/2012	0.038	72.0	62.0	7.5	7.8	8.0
6/30/2012	0.044	79.0	70.5	7.5	7.7	8.2
7/31/2012	0.064	*101.0	89.0	7.4	7.7	8.3
8/31/2012	**0.401	83.0	82.1	7.5	7.7	8.3
9/30/2012	**0.115	79.0	7.2	7.2	***8.1	8.5
10/31/2012	**0.122	58.0	54.0	8.2	***8.7	9.0
5/31/2013	**0.137	63.5	61.8	7.6	***8.7	8.2
6/30/2013	**0.548	80.0	71.0	7.6	8.3	8.9
7/31/2013	**0.400	85.5	80.9	7.5	7.9	8.6
8/31/2013	**0.212	82.5	78.0	8.1	***8.2	8.4
9/30/2013	**0.270	83.0	71.3	8.1	***8.3	8.6
10/31/2013	**0.103	66.0	60.7	8.1	***8.4	8.7
5/31/2014	**0.250	70.0	63.7	6.9	7.2	7.3
6/30/2014	**0.330	75.0	71.9	4.8	6.9	7.3
7/31/2014	**0.470	85.0	82.1	6.9	7.2	7.2
8/31/2014	**0.390	79.0	75.5	7.2	7.3	7.1
9/30/2014	**0.400	83.8	74.3	7.5	8.0	7.5
10/31/2014	0.070	65.8	63.1	7.7	8.0	7.8
Min	0.013	58.0	7.2	4.8	6.9	7.0
Max	3.300	101.0	89.0	8.2	8.7	9.0
Ave	0.330	77.2	69.5	N/A	N/A	N/A
# of Violations	15	5	N/A	1	1	N/A

* The permitte indicates this may be an inaccurate reading.

** This value is above the facility's stated capacity of cooling water system flow of 0.101 mgd.

*** If the pH is not within the limit of 6.5-8.0 s.u., then the value is still in compliance if it is within 0.5 s.u. of the upstream receiving water pH.

Response to Public Comments

Introduction

In accordance with the provisions of 40 C.F.R. §124.17, this document presents EPA's responses to comments received on the Draft National Pollutant Discharge Elimination System ("NPDES") Permit, No. NH0023559. The responses to comments explain and support the EPA determinations that form the basis of the Final Permit. From June 29, 2015 through July 28, 2015, the United States Environmental Protection Agency ("EPA") and the New Hampshire Department of Environmental Services, Water Division ("NHDES-WD") (together, the "Agencies") solicited public comments on the Draft NPDES Permit, No. NH0023559, developed pursuant to a permit application from Chinburg Management, LLC, for the reissuance of an NPDES permit to discharge non-contact cooling water from Exeter Mill Apartments via outfall 001 to Clemson Pond in Exeter, New Hampshire.

Changes Made in the Final Permit

After a review of the comments received, EPA has made a final decision to issue this permit authorizing this discharge. The Final Permit is substantially identical to the Draft Permit that was available for public comment.

Although EPA's decision-making process has benefitted from the comments and additional information submitted, the information and arguments presented did not raise any substantial new questions concerning the permit. EPA did, however, make a minor change in response to a comment. The analyses underlying this change is explained in the responses to the individual comment that follows and is reflected in the Final Permit. Since the Fact Sheet is a final document, no changes were made to the Fact Sheet. Instead, the single Fact Sheet comment was noted and responded to in this document.

Copies of the Final Permit may be obtained from the EPA New England website http://www.epa.gov/region1/npdes/newhampshire.html or by writing or calling EPA's NPDES Industrial Permits Branch (OEP 06-4), Office of Ecosystem Protection, 5 Post Office Square, Suite 100, Boston, MA 02109-3912; Telephone: (617) 918-1054.

The following is the single change that has been made from the Draft Permit to the Final Permit. The details and justification for the change are presented under the specific comment discussion presented later in the document.

1. The following language has been changed in Part I.D.2.d. of the Final Permit:

   If any adult or juvenile fish are observed against the impingement screens, the following information shall also be collected:

to

If any adult or juvenile fish are observed against the impingement screens, the following information shall also be collected, ***if possible****:*

Responses To Specific Comments

The following addresses two comments submitted by CMA Engineers (CMA) at the request of the permittee, Chinburg Management, LLC, Exeter Mill Apartments, in an e-mail sent to John H. Nagle, EPA, dated July 28, 2015.

Comment 1

Regarding section D [of the draft permit]. Special Conditions – Cooling Water Intake Structure (CWIS) 2.d relative to collection of information on fish impingement, we want to note that the CWIS is usually not visible due to the configuration of the intake structure. We request the addition of the phrase "if possible" after each of the items requested in [Part I] D.2.d.i, since it may not be possible to make these observations due to intake structure configuration.

Response to Comment 1

EPA is aware of the configuration of the CWIS and agrees that it may be difficult for a representative of the permittee to observe impinged fish at the intake as part of the monitoring program. EPA agrees to modify the final permit to reflect this difficulty. However, rather than adding "if possible" to each item (1- 4) in Part I.D.2.d.i., EPA has decided to make one change to Part I.D.2.d. that will apply to each of the items in 1- 4.

Part I.D.2.d. of the permit has been changed from:

If any adult or juvenile fish are observed against the impingement screens, the following information shall also be collected:

to

If any adult or juvenile fish are observed against the impingement screens, the following information shall also be collected, ***if possible****:*

Comment 2

Regarding Fact Sheet No. NH0023559, Section V Explanation of Permit's Effluent Limitations A. Facility Information relative to the ability to measure temperature, flow, etc. We suggest describing the ability to measure these parameters as follows: "While there is a means to measure temperature and flow as the river water enters the mechanical room, there is no reasonable way to monitor the temperature, flow or pH while the water is moving through the facility's internal cooling water system."

Response to Comment 2

EPA acknowledges that there is no reasonable way to monitor the temperature, flow or pH while water is moving through the facility's internal cooling water system. The information taken below, from Section V. of the Fact Sheet, was included to support this judgment:

> The Exeter Mill's cooling system is operated under pressure when the cooling system is functioning. This closed system also lacks a sampling port in the mechanical room, the last segment of the cooling system before the water leaves the pressurized system. Because of this, there is no reasonable way to monitor the temperature, flow or pH while the water is moving through the facility's internal cooling water system.

Based on this assessment, the permit does not require monitoring within this internal, closed system. Since the Fact Sheet is a final document and cannot be modified, EPA will use this Response To Comments document to further stipulate that there is no reasonable way to monitor the temperature, flow or pH while the water is moving through the facility's internal cooling water system.

EPA has made no changes to the Final Permit based on this comment.

Additional Information

As discussed in the supporting Fact Sheet to the Exeter Mill Apartments Draft Permit, non-contact cooling water (NCCW) is withdrawn by the Facility from the Exeter River via the former mill's intake structure, located to the east of the existing spillway on the upstream face of the Town of Exeter's "Great Dam". The dam was built in 1828 and the associated cooling water intake structure (CWIS), which is incorporated into the upstream face of the dam, dates back to the 1800's as well.

No comments were received from the Town of Exeter or the permittee regarding potential impacts to the CWIS as a result of the scheduled removal of the Great Dam. EPA was made aware that removal or modification of the Great Dam is scheduled for the summer of 2016 (Seacoastonline.com September 7, 2015; http://www.seacoastonline.com/article/20150907/NEWS/150909344/101017/NEWS). EPA points out to the permittee and the state agencies involved in the dam removal process that a provision of the final permit pertains to any action that may impact the CWIS. Specifically, Part I.D.1.d. of the permit states:

> *There shall be no changes to the CWIS, including any of the BTA requirements listed in Part I.D.1, above, unless approved by EPA as providing equivalent or greater protection for fish species.*