

TATA & HOWARD

INCORPORATED

May 3, 2010

US EPA, Region 1
Dewatering GP Processing
Municipal Assistance Unit (CMU)
1 Congress Street, Suite 1100
Boston, MA 02114-2023

Subject: NOI Surface Water Discharge under General Permit
Bomil Wells Water Treatment Facility (T&H No. 2000)
Transmittal No. X224181 (filed in October 2008)

MAY - 7 2010

To Whom It May Concern,

Please find enclosed the Notice of Intent for Surface Water Discharge from the proposed Bomil Wells Water Treatment Facility in North Chelmsford, Massachusetts. We are requesting coverage of the discharge under the Massachusetts General Permit (No. MAG640000).

The proposed water treatment facility is a new facility which will treat the North Chelmsford Water Districts sole water supply. Construction began this spring and is expected to go on line in the fall of 2011. The facility and discharge location are indicated on Figure 2, attached. As shown, the discharge will not discharge directly into a water body and will therefore provide a dilution factor of zero which has been confirmed with Kathleen Keohane of the Massachusetts Department of Environmental Protection. The discharge will travel overland flow to Cold Spring Brook, a tributary to Stony Brook.

The enclosed information does not include actual effluent test results which will be forwarded to the Agency once the plant goes on-line in 2011. As an alternative to the 2011 results, representative samples can be taken from the pilot testing currently being performed and forwarded at your request. The flow characteristics included in the application were estimated from jar testing performed previously in the design process.

The proposed facility and outfall are not located within an area identified as a priority or estimated habitat by the Natural Heritage and Endangered Species Program as shown on the attached letter from the Division of Fisheries and Wildlife. As noted in Figure No. 3,

CONSULTING ENGINEERS

MAIN OFFICE

67 Forest Street, Marlborough, MA 01752
508-303-9400 Fax: 508-303-9500

OTHER OFFICES

Lakeville, MA • Meriden, CT • Nashua, NH • Goodyear, AZ • Portland, ME
www.tataandhoward.com

the Massachusetts Historical Commission does not identify a historical place within the project area.

We appreciate your assistance on this project. We look forward to hearing from you in regards to the representative sampling. Should you have any other questions or comments regarding this request, please do not hesitate to contact our office.

Sincerely,
TATA & HOWARD, INC.

A handwritten signature in dark ink, reading "Paul B. Howard". The signature is fluid and cursive, with the first letters of each name being capitalized and prominent.

Paul B. Howard, P.E.
Senior Vice President

Enclosures

Cc: Katleen Keohane, MassDEP Central Region
MassDEP, Division of Watershed Management

**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND - REGION I
ONE CONGRESS STREET, SUITE 1100
BOSTON, MASSACHUSETTS 02114-2023**

**Request for General Permit Authorization to Discharge Wastewater
(Notice of Intent to be covered by the General Permit (NOI))**

**Potable Water Treatment Facility (PWTF)
NPDES General Permit No. MAG640000 and NHG640000**

A. Facility Information

1. Facility Owner:

Name North Chelmsford Water District e-mail NORTHCHELMSFORDW@aol.com
Street/PO Box 64 Washington Street City North Chelmsford
State MA Zip Code 01863
Contact Person Bruce Harper Telephone Number (978) 251-3931

2. Facility Operator (if different from above):

Name _____ e-mail (optional) _____
Street/PO Box _____ City _____
State _____ Zip Code _____
Contact Person _____ Telephone Number _____

3. Facility Data (attach topographic map or other map showing facility and discharge location(s)):

Name Bomil Wells Water Treatment Facility e-mail (optional) _____
Street/PO Box 55 Richardson Road City North Chelmsford
State MA Zip Code 01863
Contact Person Bruce Harper Telephone Number (978) 251-3931
Facility Latitude N 42° 37' 40.59" Facility Longitude W 71° 22' 50.49"

4. Standard Industrial Classification (SIC Codes) and Descriptions of Processes:

SIC Code(s) 4940/4941
Description(s) _____

5. Current Permitting Status (please check yes or no):

1. Has a prior NPDES permit been granted for the discharge? Yes _____ (Permit Number: _____)
No ☒
2. Is the discharge a "new discharge" as defined by 40 CFR Section 122.22? Yes ☒ No _____
3. Is the facility covered by an individual NPDES permit? Yes _____ (Permit Number _____) No ☒
4. Is there a pending application on file with EPA for this discharge? Yes ☒ (Date of submittal: 10/13/08) No _____

B. Discharge Information

1. Name of Receiving Waterbody N/A
2. Type of Receiving Waterbody (e.g. stream, lake, reservoir, estuary etc) N/A
3. State Water Quality Classification: _____ Freshwater: _____ Marine Water: _____
4. Describe the discharge activities for which the owner/applicant is seeking coverage, including process discharges not specifically authorized in the PWTF GP which need to be authorized for discharge (and which attain the

effluent limits and other conditions of the general permit). This description should include all treatment methods used on the wastewater prior to discharge including lagoons, baffles, filter presses etc. If lagoons are used at the facility, please include the number and size of lagoons; the size and elevation of the entry pipe; the time of travel from the entry point of the discharge into the lagoon to the entry point to the receiving water; and the length of backwash cycle for any combination of number of filters. (attach extra sheets if necessary):

See attached Project Narrative.

5. Please provide a diagram depicting the treatment methods, outfalls, and receiving water.

6. Number of outfalls: 1 Latitude and Longitude for each outfall (attach additional pages if necessary)

OUTFALL # Latitude N 42° 37' 43.38" Longitude W 71° 23' 2.6"

OUTFALL # Latitude _____ Longitude _____

For each outfall:

7. What is the proposed sampling location(s) and proposed consistent times of the month for collecting samples:

Off pipe to Neutralization Tank, once per month.

C. Effluent Characteristics

1. List here and attach information on any water additives used at the facility (Including chemicals for pH adjustment, dechlorination, control of biological growth, and control of corrosion and scale in water pipes): See attached Project Narrative.

2. Please report here any known remediation activities or water-quality issues in the vicinity of the discharge.

None

3. Are aluminum-containing coagulants used at this facility? Yes _____ No ☒

4. Does the discharge contain residual chlorine? Yes _____ No ☒

5. Does the facility provide treatment to remove arsenic from the raw water source? Yes _____ No ☒

6. Are phosphorus-containing chemicals added to the treated water at this facility? Yes _____ No ☒

7. All applicants must attach a separate sheet listing all laboratory results (minimum of five) for total recoverable aluminum (in micrograms per liter) taken within the last six months. Do not include dilution when recording your results. See Section 4.4.5 of General Permit for more information.

8. Please include the following effluent data for each outfall:

Characteristic (report if measured)	Average Monthly	Maximum Daily
Discharge Flow (gpd)	<u>20,000</u>	<u>100,000</u>
TSS (mg/l)	<u>0</u>	<u>0</u>
pH (s.u.)	(min) <u>8.3</u>	(max) <u>8.5</u>
Total Recoverable Aluminum (ug/l)	<u>0.05</u>	<u>0.2</u>
Total Residual Chlorine (ug/l)	<u>0</u>	<u>0</u>

(continued on next page)

8. Continued

Characteristic (report if measured)

Whole Effluent Toxicity (%) LC50 N/A and/or C-NOEC N/A

9. If the discharge contains aluminum and/or residual chlorine, please provide the reported or calculated seven day-ten year low flow (7Q10) of the receiving water, the dilution factor, and attach any calculations used to support stream flow and dilution calculations (See Appendix VII for dilution calculations and additional information):

7Q10 N/A cfs Dilution Factor 0 cfs

D. Endangered Species Act Eligibility

1. Using the instructions in Appendix I of the PWTF GP, under which criterion listed in Part II are you eligible for coverage under this general permit?

A ☒ B ☐ C ☐ D ☐ E ☐ F ☐

2. If you selected criteria D or F, has consultation with the federal services been completed? Yes ☐ No ☐

3. If consultation with U.S. Fish and Wildlife Service and/or NOAA Fisheries Service was completed, was a written concurrence finding that the discharge is "not likely to adversely affect" listed species or critical habitat received? Yes ☒ No ☐

4. Attach documentation of ESA eligibility as described below and required at Part 3.4.1 and Appendix I, Part III, Step 4, of the General Permit.

Criterion A - No federally-listed threatened or endangered species or federally-designated critical habitat are present: A copy of the most current county species list pages for the county(ies) where your site or facility and discharges are located. You must also include a statement on how you determined that no listed species or critical habitat are in proximity to your site or facility or discharge locations.

Criterion B - Section 7 consultation completed with the Service(s) on a prior project: A copy of the USFWS's and/or NMFS's, as appropriate, biological opinion or concurrence on a finding of "unlikely to adversely effect" regarding the ESA Section 7 consultation.

Criterion C - Activities are covered by a Section 10 Permit: A copy of the USFWS's and/or the NMFS's, as appropriate, letter transmitting the ESA Section 10 authorization.

Criterion D - Concurrence from the Service(s) that the discharge is "not likely to adversely affect" federally-listed species or federally-designated critical habitat (not including the four species of concern identified in Section I of Appendix I): A copy of the USFWS's and/or the NMFS's, as appropriate, letter or memorandum concluding that the discharge is consistent with the general permit's "not likely to adversely affect" determination.

Criterion E - Activities are covered by certification of eligibility: A copy of the documents originally used by the other operator of your site or facility (or area including your site) to satisfy the documentation requirement of Criteria A, B, C or D.

Criterion F - Concurrence from the Service(s) that the discharge is "not likely to adversely affect" species of concern, as identified in Section I of Appendix I: A copy of the USFWS and/or the NMFS, as appropriate, concurrence with the applicant's determination that the discharge is "not likely to adversely affect" listed species.

E. National Historic Properties Act Eligibility

1. Using the instructions in Appendix III of the PWTF GP, under which criterion listed in Part III are you eligible for coverage under this general permit?

1 ☒ 2 ☐ 3 ☐

2. Have any State or Tribal historic preservation officers been consulted in this determination? Yes ☐ No ☒
If yes, attach the results of the consultation(s).

F. Certification

I certify that the discharge for which I am seeking coverage under the general permit consists solely of a surface water discharge from a potable water treatment facility. I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Signature

Paul B. Howard

Date

3/29/10

Printed Name and Title

Paul B. Howard Senior Vice President

Federal regulations require this application to be signed as follows:

1. For a corporation, by a principal executive officer of at least the level of vice president;
2. For partnership or sole proprietorship, by a general partner or the proprietor, respectively, or,
3. For a municipality, State, Federal or other public facility, by either a principal executive officer or ranking elected official.

Note: Permits No. MAG640000 and NHG640000 may be found at www.epa.gov/region1/npdes/pwtfgp.html

Project Narrative
Request for General Permit Authorization to Discharge Wastewater
Bomil Wells Water Treatment Facility
Chelmsford, Massachusetts

Background

The North Chelmsford Water District (NCWD) owns and operates four groundwater well supplies within the Merrimack Watershed to serve its customers. The four wells are located at the Bomil Well site, and they are critical sources for the Water District.

In November 2005, the Massachusetts Department of Environmental Protection (MassDEP) issued an Administrative Consent Order (ACO) - (ACOP-NE-05-5D011), based on recurring positive coliform bacteria results in routine water distribution samples. Historically, occasional raw water samples collected from the Bomil Wells have tested positive for coliform bacteria. As a means of addressing water quality issues, the North Chelmsford Water District contracted Tata & Howard to design an ultrafiltration water treatment facility at the Bomil Wells site. The construction of the Bomil Wells Water Treatment Facility has been bid and was awarded on February 1, 2010.

Project Description

The NCWD proposes to construct a new 2.5 million-gallon capacity Water Treatment Facility (WTF) at the Bomil Well Site, off Richardson Road in North Chelmsford, Massachusetts. The WTF will encompass approximately 12,500 square feet on a 57-acre parcel owned by the North Chelmsford Water District, currently used for water supply. The WTF will include a garage, loading dock, and offices in addition to its treatment processes. The approximate location of the project area is shown on Figure No. 1: Locus Map.

The completion of the WTF and associated site improvements will bring the Bomil Wells site into compliance with MassDEP drinking water standards and the Federal Safe Drinking Water Act.

Backwash Sand Filtering Beds

The proposed water treatment facility will treat water from the Bomil Well Site by adding chlorine dioxide to react with dissolved iron and manganese to produce particulates that can be removed by filters. Poly aluminum chloride will also be added to attach to suspended particles currently causing discoloration of the water to create particles large enough to be filtered out. These filters will run over a period of approximately four hours before a backwash cycle will clear the filters and deposit backwash water and particulates into the proposed neutralization tank.

The neutralization tank will retain the backwash water and other treatment process residual water (such as from sump pumps) to allow the pH to return to neutral (7.0+/-) before discharging to the backwash sand filtering beds. Discharge to the backwash sand filtering beds will occur, at maximum design capacity, approximately every other day, with an additional discharge twice a month. The backwash sand filtering beds will

contain a sand media with a pore size small enough to collect the particles contained in the backwash while allowing the clean water to collect in the perforated pipe at the bottom of the chamber to be released adjacent to the wetlands.

Cleaning of the backwash sand filtering beds is accomplished via the access ramps provided at the end of the bed. The surface of the beds will be scraped on an interval of approximately 6 months. For reference, this is similar to the design utilized at the Littleton Water Treatment Plant. The dried solids, which primarily consist of iron and manganese, would be disposed of at an appropriate solid waste landfill.

This sand bed configuration is in use at the South Deerfield Water District Treatment Facility, which discharges to Roaring Brook and has been in operation since 2003. The discharge will have a neutral pH, a chlorine residual of zero and all other parameters will be below drinking water standards and/or those standards for outstanding water resources, whichever are more stringent. Complaints of nuisance odors associated with the sand beds are not expected, as no such complaints have been received at other plants currently employing this process.



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Date: March 2010

Scale: 1"=1,000'

Locus Map

Bomil Wells Water Treatment Facility
 North Chelmsford Water District
 Chelmsford, Massachusetts

Figure No.

1



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Date: March 2010

Scale: 1"=1,000'

Proposed Surface Discharge
 Bomil Wells Water Treatment Facility
 North Chelmsford Water District
 Chelmsford, Massachusetts

Figure No.

2



MassWildlife

Commonwealth of Massachusetts

Division of Fisheries & Wildlife

Wayne F. MacCallum, *Director*

8/27/2007

Jack O'Connell
Tata & Howard
125 Turnpike Road
Westborough MA 01581

RE: Project Location: off Richardson Rd
Town: CHELMSFORD
NHESP Tracking No.: 07-22933

To Whom It May Concern:

Thank you for contacting the Natural Heritage and Endangered Species Program ("NHESP") of the MA Division of Fisheries & Wildlife for information regarding state-listed rare species in the vicinity of the above referenced site.

Based on the information provided, the NHESP has determined that at this time the site is not mapped as Priority or Estimated Habitat and the NHESP does not have any rare species concerns associated with this site.

This evaluation is based on the most recent information available in the NHESP database, which is constantly being expanded and updated through ongoing research and inventory. If you have any questions regarding this letter please contact Emily Holt, Endangered Species Review Assistant, at (508) 389-6361.

Sincerely,

Thomas W. French, Ph.D.
Assistant Director

www.masswildlife.org

Division of Fisheries and Wildlife
Field Headquarters, North Drive, Westborough, MA 01581 (508) 389-6300 Fax (508) 389-7891
An Agency of the Department of Fish and Game

