

**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", and the Massachusetts Clean Waters Act, as amended, (M.G.L. c. 21, §§26-53),

**Quabbin Wire & Cable Company, Inc.**

is authorized to discharge from a facility located at

**10 Maple Street  
Ware, Massachusetts 01082**

to receiving water named

**Ware River (Segment MA36-06)  
Chicopee River Watershed (Hydrologic Unit Code 01080204)**

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

This permit shall become effective on the first day of the calendar month following 60 days after signature.

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

This permit supersedes the permit issued on May 1, 2007.

This permit consists of 10 pages in Part I including effluent limitations, monitoring requirements, 8 pages in Attachment A – Freshwater Acute Toxicity Test Procedure and Protocol (2011), and 25 pages in Part II including Standard Conditions.

Signed this 7<sup>th</sup> day of February, 2013

**/s/SIGNATURE ON FILE**

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Stephen S. Perkins, Director  
Office of Ecosystem Protection  
Environmental Protection Agency  
Region I  
Boston, MA

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David Ferris, Director  
Massachusetts Wastewater Management Program  
Department of Environmental Protection  
Commonwealth of Massachusetts  
Boston, MA

**PART I**

**A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS**

1. During the period beginning on the effective date and lasting through the expiration date, the Permittee is authorized to discharge contact cooling water through Outfall Serial Number 003 to the Ware River. The discharge shall be limited and monitored by the Permittee as specified below:

PARAMETER	Discharge Limitation		Monitoring Requirements <sup>1,2</sup>	
	Average Monthly	Maximum Daily	Average Monthly	Maximum Daily
FLOW <sup>3</sup>	0.01 MGD	0.025 MGD	Continuous	Meter
pH RANGE <sup>4,5</sup>	6.5 ≤ pH ≤ 8.3 Standard Units at any time		Monthly	Grab
TEMPERATURE	-----	83° F	Monthly	Grab
BIOCHEMICAL OXYGEN DEMAND (BOD <sub>5</sub> )	-----	2.01 lbs/day	Quarterly	Composite
TOTAL SUSPENDED SOLIDS	-----	1.47 lbs/day	Quarterly	Composite
OIL AND GREASE	-----	15 mg/L	Quarterly	Grab
TOTAL COPPER	-----	Report mg/L	Quarterly	Composite
TOTAL ZINC	-----	Report mg/L	Quarterly	Composite
BIS (2-ETHYLHEXYL) PHTHALATE	-----	Non-Detect	1/Year	Grab
TOTAL RESIDUAL CHLORINE <sup>6</sup>	-----	Report mg/L	Monthly	Grab
WHOLE EFFLUENT TOXICITY <sup>7,8,9</sup>				
LC <sub>50</sub>	-----	Report %	2/Year	Composite
Hardness	-----	Report mg/L	2/Year	Composite
Total Residual Chlorine	-----	Report mg/L	2/Year	Grab
Alkalinity	-----	Report mg/L	2/Year	Composite
pH	-----	Report SU	2/Year	Grab
Specific Conductance	-----	Report µmhos/cm	2/Year	Composite

Total Solids	-----	Report mg/L	2/Year	Composite
Total Dissolved Solids	-----	Report mg/L	2/Year	Composite
Ammonia	-----	Report mg/L	2/Year	Composite
Total Organic Carbon	-----	Report mg/L	2/Year	Composite
Total Cadmium	-----	Report mg/L	2/Year	Composite
Total Lead	-----	Report mg/L	2/Year	Composite
Total Copper <sup>10</sup>	-----	Report mg/L	2/Year	Composite
Total Zinc <sup>10</sup>	-----	Report mg/L	2/Year	Composite
Total Nickel	-----	Report mg/L	2/Year	Composite
Total Aluminum	-----	Report mg/L	2/Year	Composite
Total Calcium	-----	Report mg/L	2/Year	Composite
Total Magnesium	-----	Report mg/L	2/Year	Composite
<b>DILUENT WHOLE EFFLUENT TOXICITY<sup>11</sup></b>				
Hardness	-----	Report mg/L	2/Year	Grab
Alkalinity	-----	Report mg/L	2/Year	Grab
pH	-----	Report SU	2/Year	Grab
Specific Conductance	-----	Report µmhos/cm	2/Year	Grab
Ammonia	-----	Report mg/L	2/Year	Grab
Total Organic Carbon	-----	Report mg/L	2/Year	Grab
Total Cadmium	-----	Report mg/L	2/Year	Grab
Total Lead	-----	Report mg/L	2/Year	Grab
Total Copper	-----	Report mg/L	2/Year	Grab
Total Zinc	-----	Report mg/L	2/Year	Grab
Total Nickel	-----	Report mg/L	2/Year	Grab
Total Aluminum	-----	Report mg/L	2/Year	Grab

The effluent samples for Outfall 003 shall be collected at the discharge point to the Ware River. Any changes in sampling location must be approved in writing by EPA and MassDEP. All samples shall be tested in accordance with the procedures in 40 Code of Federal Regulations (CFR) §136, unless specified elsewhere in the permit.

**Footnotes:**

<sup>1</sup> The composite samples shall consist of at least 8 grab samples collected at equal intervals during a normal eight-hour workday and during the time at which the discharge is entering the receiving water. The timing of grab samples for pH shall correspond with the timing of composite sampling for the other parameters.

<sup>2</sup> Sampling frequency of quarterly is defined as the interval of time between the months of January through March, inclusive; April through June, inclusive; July through September, inclusive; and October through December, inclusive. The Permittee shall submit the results to EPA and MassDEP of any additional testing done to that required herein, if it is conducted in accordance with EPA approved methods consistent with the provisions of 40 CFR §122.41 (l)(4)(ii).4.

<sup>3</sup> The Permittee shall report the average monthly and maximum daily flow in million gallons per day (MGD) for each sampling period. The flow measurements are based on the daily intake rate of the municipal water supply.

<sup>4</sup> Requirement for State Certification.

<sup>5</sup> The pH of the effluent shall be in the range of 6.5 to 8.3 standard units and not more than 0.5 standard units outside of the naturally occurring range. There shall be no change from natural background conditions that would impair any use assigned to the class of the receiving water.

<sup>6</sup> The minimum level (ML) for Total Residual Chlorine (TRC) is defined as 20 µg/l using EPA approved methods found in 40 CFR Part 136. The ML is not the minimum level of detection, but rather the lowest point on the curve used to calibrate the test equipment for the pollutant of concern. If EPA approves a more sensitive method of analysis for TRC, the permit may be modified to require the use of the new method with a corresponding lower ML. When reporting sample data at or below the ML, see the latest EPA Region 1 *NPDES Permit Program Instructions for the Discharge Monitoring Report Forms (DMRs)* for guidance.

<sup>7</sup> All WET test data shall be reported in Discharge Monitoring Reports (DMRs) submitted to EPA and MassDEP. When reporting sample data at or below the ML, see the latest EPA Region 1 *NPDES Permit Program Instructions for the Discharge Monitoring Report Forms (DMRs)* for guidance. The ML is not the minimum level of detection, but rather the lowest point on the curve used to calibrate the test equipment for the pollutant of concern.

<sup>8</sup> The LC<sub>50</sub> (Lethal Concentration 50 percent) is the concentration of wastewater (cooling water discharges) causing mortality to 50 percent (%) of the test organisms.

<sup>9</sup> The Permittee shall conduct acute toxicity tests twice per year following the effective date of the permit. The Permittee shall test the daphnid, *Ceriodaphnia dubia*, only. Toxicity test samples shall be collected during June and September. The test results shall be submitted by the last day of the month following the completion of the test. The tests must be performed in accordance with test procedures and protocols specified in Attachment A of this permit.

<sup>10</sup> Copper and zinc analyses conducted for the wet chemistry portion of the WET test may also be submitted to satisfy the quarterly sampling requirements for those parameters.

<sup>11</sup> The dilution water sample for the WET test shall be collected from the Ware River at a point immediately upstream of Outfall 003's zone of influence at a reasonably accessible location. If toxicity test(s) using receiving water as diluent show the receiving water to be toxic or unreliable, the Permittee shall either follow procedures outlined in Attachment A – Freshwater Acute Toxicity Test Procedure and Protocol ) Section IV., DILUTION WATER in order to obtain an individual approval for use of an alternate dilution water, or the Permittee shall follow the Self-Implementing Alternative Dilution Water Guidance which may be used to obtain automatic approval of an alternate dilution water, including the appropriate species for use with that water. This guidance is found in Attachment G of *NPDES Permit Program Instructions for the Discharge Monitoring Report Forms (DMRs)*, which may be found on the EPA Region I web site at <http://www.epa.gov/Region1/enforcementandassistance/dmr.html>. If this guidance is revoked, the Permittee shall revert to obtaining individual approval as outlined in Attachment A. Any modification or revocation to this guidance will be transmitted to the permittees. However, at any time, the Permittee may choose to contact EPA-NewEngland directly using the approach outlined in Attachment A. In the case where an alternate dilution water has been agreed upon an additional receiving water control (0% effluent) must be tested.

**PART I.A.1. (continued)**

- a. The discharge shall not cause a violation of the water quality standards of the receiving waters.
  - b. The effluent shall not impart taste, turbidity, toxicity, radioactivity, or other properties which cause those waters to be unsuitable for the designated uses and characteristics ascribed to their use.
  - c. The effluent shall not cause objectionable discoloration of the receiving waters.
  - d. The effluent shall contain neither a visible oil sheen, foam, nor floating or settleable solids at any time.
  - e. The effluent shall not contain materials in concentrations or in combinations which would impair the uses designated by the classification of the receiving water.
  - f. The effluent must not lower the quality of any classified body of water below such classification, or lower the existing quality of any body of water if the existing quality is higher than the classification.
  - g. The results of sampling for any parameter above its required frequency must also be reported.
2. All existing manufacturing, commercial, mining, and silvicultural dischargers must notify the Director as soon as they know or have reason to believe (40 CFR §122.42):
- a. That any activity has occurred or will occur which would result in the discharge, on a routine or frequent basis, of any toxic pollutant which is not limited in the permit, if that discharge will exceed the highest of the following "notification levels":
    - i. One hundred micrograms per liter (100 ug/l);
    - ii. Five (5) times the maximum concentration value reported for that pollutant in the permit application in accordance with 40 CFR §122.21(g)(7); or
    - iii. Any other notification level established by the Director in accordance with 40 CFR §122.44(f) and Massachusetts regulations.
  - 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":
    - i. Five hundred micrograms per liter (500 µg/l);
    - ii. One milligram per liter (1 mg/l) for antimony;
    - iii. Ten (10) times the maximum concentration value reported for that pollutant in the permit application in accordance with 40 CFR §122.21(g)(7); or
    - iv. Any other notification level established by the Director in accordance with 40 CFR §122.44(f) and Massachusetts regulations.
  - 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.
3. Numerical Effluent Limitations for Toxicants
- a. U.S. Environmental Protection Agency (EPA) or the Massachusetts Department of Environmental Protection (MassDEP) may use the results of the chemical analyses conducted pursuant to this permit, as well as national water quality criteria developed

pursuant to Section 304(a)(1) of the CWA, state water quality criteria, and any other appropriate information or data, to develop numerical effluent limitations for any pollutants, including but not limited to those pollutants listed in Appendix D of 40 CFR Part 122.

4. The Permittee shall not use or manufacture as an intermediate or final product or byproduct any toxic pollutant which was not reported in the permit application. Pollutants which are not limited by this permit, but which have been specifically disclosed in the permit application, may be discharged up to the frequency and level disclosed in the application, provided that such discharge does not violate Section 307 or 311 of the CWA or applicable state water quality standards.
5. The Permittee shall not add chemicals (i.e. disinfectant agents, detergents, emulsifiers, etc.), bioremedial agents, including microbes, to the cooling water without prior approval from EPA and MassDEP. The Permittee shall notify EPA and MassDEP at the addresses in Part I.D.1.c. when it proposes to add or replace any chemicals, bio-remedial agents, including microbes, to the cooling water.
6. Toxics Control
  - a. The Permittee shall not discharge any pollutant or combination of pollutants in toxic amounts.
  - b. Any toxic components of the effluent shall not result in any demonstrable harm to aquatic life or violate any state or federal water quality standard which has been or may be promulgated. Upon promulgation of any such standard, this permit may be revised or amended in accordance with such standards.

## **B. UNAUTHORIZED DISCHARGES**

This permit authorizes the Permittee to discharge only in accordance with the terms and conditions of this permit and only from the outfalls listed in Part I.A.1 of this permit. Discharges of wastewater from any other point sources which are not authorized by this permit or other NPDES permits shall be reported in accordance with Section D.1.e.(1) of the Standard Conditions of this permit (twenty-four hour reporting).

## **C. REOPENER CLAUSE**

This permit may be modified, or revoked and reissued in accordance with 40 CFR §122.62. The reason for modification or revocation may include, but is not limited to:

1. Material and substantial alterations or additions to the Facility or activity have occurred;
2. New information is received which was not available at the time of permit issuance and that would have justified the application of different permit conditions at the time of issuance; or
3. An applicable effluent standard or limitation is issued or approved under Sections 301(b)(2)(C) and (D), 304(b)(2), and 307(a)(2) of the CWA, which:
  - a. contains different conditions or is otherwise more stringent than any effluent limitation in this permit; or

- b. controls any pollutant not limited by this permit.

If the permit is modified or reissued, it shall be revised to reflect all currently applicable requirements of the CWA.

#### D. MONITORING AND REPORTING

1. **For a period of one year from the effective date of the permit**, the Permittee may either submit monitoring data and other reports to EPA in hard copy form or report electronically using NetDMR, 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 one year 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 one year 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 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 and will no longer be required to submit hard copies of DMRs to MassDEP. However, permittees shall continue to send hard copies of reports other than DMRs to MassDEP until further notice from MassDEP.

- 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 (OES04-1)  
Boston, MA 02109-3912

and

Massachusetts Department of Environmental Protection  
Surface Water Discharge Permit Program  
627 Main Street, 2<sup>nd</sup> Floor  
Worcester, Massachusetts 01608

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 Forms (DMRs) postmarked no later than the 15<sup>th</sup> day of the month following the completed reporting period. All reports required under this permit shall be submitted as an attachment to the DMRs. Signed and dated originals of the 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 **DMRs, and all reports or notifications** required above shall be submitted to the State at the following address:

MassDEP – Western Region  
Bureau of Waste Prevention  
436 Dwight Street, Suite 402  
Springfield, MA 01103

And, **without DMRs**, to the State at the following address:

Massachusetts Department of Environmental Protection  
Surface Water Discharge Permit Program  
627 Main Street, 2<sup>nd</sup> Floor  
Worcester, Massachusetts 01608

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

**E. STATE PERMIT CONDITIONS**

1. This authorization to discharge includes two separate and independent permit authorizations. The two permit authorizations are (i) a federal National Pollutant Discharge Elimination System permit issued by the U.S. Environmental Protection Agency (EPA) pursuant to the Federal Clean Water Act, 33 U.S.C. §§1251 et seq.; and (ii) an identical state surface water discharge permit issued by the Commissioner of the Massachusetts Department of Environmental Protection (MassDEP) pursuant to the Massachusetts Clean Waters Act,

M.G.L. c. 21, §§ 26-53, and 314 C.M.R. 3.00. All of the requirements contained in this authorization, as well as the standard conditions contained in 314 CMR 3.19, are hereby incorporated by reference into this state surface water discharge permit.

2. This authorization also incorporates the state water quality certification issued by MassDEP under § 401(a) of the Federal Clean Water Act, 40 C.F.R. 124.53, M.G.L. c. 21, § 27 and 314 CMR 3.07. All of the requirements (if any) contained in MassDEP's water quality certification for the permit are hereby incorporated by reference into this state surface water discharge permit as special conditions pursuant to 314 CMR 3.11.
3. 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 this 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. In the event this permit is declared invalid, illegal or otherwise issued in violation of federal law, this permit shall remain in full force and effect under state law as a permit issued by the Commonwealth of Massachusetts.

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

**FACT SHEET**

**DRAFT NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)  
PERMIT TO DISCHARGE TO WATERS OF THE UNITED STATES PURSUANT TO THE  
CLEAN WATER ACT (CWA)**

**NPDES PERMIT NUMBER:** MA0030571

**PUBLIC NOTICE START AND END DATES:** August 28, 2012 – September 26, 2012

**NAME AND MAILING ADDRESS OF APPLICANT:**

Quabbin Wire & Cable Company, Inc.  
10 Maple Street  
Ware, MA 01082

**NAME AND ADDRESS OF FACILITY WHERE DISCHARGE OCCURS:**

Quabbin Wire & Cable Company, Inc.  
10 Maple Street  
Ware, MA 01082

**RECEIVING WATER:** Ware River (MA36-06)

**RECEIVING WATER CLASSIFICATION:** B

**SIC CODES:** 3357

**Table of Contents**

1.0	Proposed Action, Type of Facility, and Discharge Location.....	4
1.1	Proposed Action .....	4
1.2	Type of Facility .....	4
1.3	Discharge Location .....	4
2.0	Description of Discharge .....	4
3.0	Receiving Water Description.....	4
4.0	Permit Limitations and Conditions .....	5
5.0	Permit Basis: Statutory and Regulatory Authority .....	6
5.1	General Requirements .....	6
5.2	Technology-Based Requirements .....	6
5.3	Water Quality-Based Requirements.....	6
5.4	Anti-Backsliding .....	7
5.5	Anti-Degradation.....	7
6.0	Explanation of the Permit’s Effluent Limitations.....	8
6.1	Facility Information.....	8
6.2	Permitted Outfall and Dilution Factor.....	9
7.0	Derivation of Effluent Limits under the Federal CWA and the Commonwealth of Massachusetts’ Water Quality Standards.....	10
7.1	Flow.....	10
7.2	pH.....	10
7.3	Temperature .....	10
7.4	Biochemical Oxygen Demand (BOD <sub>5</sub> ).....	11
7.5	Total Suspended Solids (TSS).....	11
7.6	Oil and Grease (O&G) .....	12
7.7	Metals.....	12
7.8	Total Residual Chlorine (TRC).....	16
7.9	Whole Effluent Toxicity Testing (LC-50) .....	16
8.0	Essential Fish Habitat (EFH) .....	17
9.0	Endangered Species Act (ESA) .....	18
10.0	Monitoring .....	19

11.0 State Certification Requirements .....20  
12.0 Comment Period, Hearing Requests, and Procedures for Final Decisions .....21  
13.0 EPA and MassDEP Contacts .....21

Attachments:

- Attachment 1: Quabbin Wire and Cable Company, Inc. Location Map
- Attachment 2: Quabbin Wire and Cable Company, Inc. Site Plan
- Attachment 3: Available Discharge Monitoring Data
- Attachment 4: Quabbin Wire and Cable Company, Inc. Process Flow Diagram
- Attachment 5: Calculation of Estimated 7Q10 and Dilution Factor for Outfall 003
- Attachment 6: Reasonable Potential Analysis for Outfall 003 Metals

## **1.0 Proposed Action, Type of Facility, and Discharge Location**

### **1.1 Proposed Action**

The above applicant has applied to the U.S. Environmental Protection Agency (EPA) and the Massachusetts Department of Environmental Protection (MassDEP) for re-issuance of a National Pollutant Discharge Elimination System (NPDES) permit to discharge their contact cooling water into the designated receiving water. The current permit (“2007 permit”), issued on February 22, 2007, became effective on May 1, 2007, and expired April 30, 2012. EPA received a completed permit renewal application from the facility dated August 22, 2011. Since the permit renewal application was deemed timely and complete by EPA, the permit has been administratively continued pursuant to 40 CFR § 122.6.

### **1.2 Type of Facility**

The Quabbin Wire and Cable Company, Inc. facility (“The Facility”) in Ware is engaged in the manufacture and distribution of thermoplastic shielded and unshielded cables for the global technology market. The Facility location map is shown in Attachment 1. Raw materials brought into the site include plain and tin-coated copper wire, polyvinyl chloride (PVC), high density polyethylene (HDPE) and low density polyethylene (LDPE) plastic pellets, dyes, and inks, and polyethylene terephthalate (PET), aluminum and copper braids for woven sheathing.

### **1.3 Discharge Location**

The Facility is located in a former textile mill between the Ware River and Maple Street in downtown Ware, Massachusetts (see Attachment 1). The manufacturing and distribution buildings form the south bank of the Ware River. A hydroelectric power plant abuts the river on the north bank. The Facility is located downstream of the Lower Canal Dam and upstream of the confluence with Muddy Brook. Outfall 003 is located at Latitude 42° 15’ 29” Longitude 72° 14’ 22.” Attachment 2 shows the site plan for the Facility, and the location of Outfall 003.

## **2.0 Description of Discharge**

The 2007 permit authorized the discharge of contact cooling water from Outfall 003. The receiving water is the Ware River, which flows from east to west on the northern edge of manufacturing building. The discharge is contact cooling water which overflows from a cooling water system used to cool plastic coated wire and wire bundles after extrusion. Discharge monitoring data from May 1, 2007 through April 30, 2012 for Outfall 003 is included in Attachment 3.

This permit does not address storm water discharges from this site authorized under the Storm Water Multi-Sector General Permit for Industrial Activities (MSGP) with tracking number MAR05CT21.

## **3.0 Receiving Water Description**

The Facility discharges through Outfall 003 to the Ware River (Segment MA36-06). This segment is 10.1 miles in length from the Ware Dam, in Ware to the Thorndike Dam, in Palmer. The Facility is approximately one mile downstream of the Ware Dam and just below the smaller Lower Canal Dam, part of the Ware River Hydroelectric Project. MassDEP classifies this segment of the Ware River as

Class B (warm water fishery)<sup>1</sup> and CSO. Class B waters are described in the Commonwealth of Massachusetts Water Quality Standards (314 CMR 4.05(3)(b)) as follows: “*designated as a habitat for fish, other aquatic life, and wildlife, including for their reproduction, migration, growth and other critical functions, and for primary and secondary contact recreation. Where designated in 314 CMR 4.06, they shall be suitable as a source of public water supply with appropriate treatment (Treated Water Supply). Class B waters shall be suitable for irrigation and other agricultural uses and for compatible industrial cooling and process uses. These waters shall have consistently good aesthetic value.*” The Ware River is a tributary to the Chicopee River. The Ware River is also part of the Massachusetts Water Resources Authority drinking water system for the Boston area.

The Ware River segment MA36-06 is listed as a Category 5 “Waters Requiring a TMDL” on the Final Massachusetts Year 2010 Integrated List of Waters (CWA Sections 303d and 305b)<sup>2</sup>. The pollutant requiring a TMDL is fecal coliform. The status of each designated use described in the Chicopee River Basin 2003 Water Quality Assessment Report<sup>3</sup> is presented in Table 1.

Table 1: Summary of Designated Uses for Ware River Segment MA36-06

Designated Use	Status
Aquatic Life	Support on Alert Status
Aesthetics	Support
Primary Contact Recreation	Not Assessed
Secondary Contact Recreation	Not Assessed
Fish Consumption	Not Assessed

The Aquatic Life use is supported in this segment based on the presence of fish and wildlife protection and propagation. This use is on “Alert Status” because of Whole Effluent Toxicity from the Ware Wastewater Treatment Plant discharge, located approximately one mile downstream of the Facility. Benthic macroinvertebrate surveys conducted by MassDEP in 1998 indicated that in the vicinity of the Facility, the benthic community was non-impaired. The Aesthetics use is supported in this segment based on the overall lack of objectionable conditions. The Aquatic Life use is given an “Alert Status” due to the acute and chronic whole effluent toxicity from the Ware Wastewater Treatment Plant (WWTP) discharge, located approximately one mile downstream of the Facility. The Primary Contact Recreation, Secondary Contact Recreation, and Fish Consumption uses have not been assessed.

#### 4.0 Permit Limitations and Conditions

The effluent limitations, and all other requirements may be found in the Draft Permit. The basis for the limits and other permit requirements are described below.

<sup>1</sup> <http://www.mass.gov/dep/water/laws/tblfig.pdf>

<sup>2</sup> Massachusetts Year 2010 Integrated List of Waters. MassDEP Division of Watershed Management Watershed Planning Program, Worcester, Massachusetts; November 2011.

<sup>3</sup> Chicopee River Watershed 2003 Water Quality Assessment Report. MassDEP Division of Watershed Management, Worcester, Massachusetts; October 2008, Report Number: 36-AC-3.

## **5.0 Permit Basis: Statutory and Regulatory Authority**

### **5.1 General Requirements**

The Clean Water Act (CWA) prohibits the discharge of pollutants to waters of the United States without a National Pollutant Discharge Elimination System (NPDES) permit unless such a discharge is otherwise authorized by the CWA. The NPDES permit is the mechanism used to implement technology and water quality-based effluent limitations and other requirements including monitoring and reporting. The NPDES Draft Permit was developed in accordance with various statutory and regulatory requirements established pursuant to the CWA and applicable State regulations. The regulations governing the EPA NPDES permit program are generally found at 40 CFR § 122, 124, 125, and 136. In this permit, EPA considered (a) technology-based requirements, (b) water quality-based requirements, and (c) all limitations and requirements in the current/existing permit, when developing the permit limits.

### **5.2 Technology-Based Requirements**

Subpart A of 40 CFR §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 case-by-case determinations of effluent limitations under Section 402(a)(1) of the CWA.

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 CFR §125 Subpart A) to meet best practicable control technology currently available (BPT) for conventional pollutants and some metals, best conventional control technology (BCT) for conventional pollutants, and best available technology economically achievable (BAT) for toxic and non-conventional pollutants. In general, technology-based effluent guidelines for non-POTW facilities must be complied with as expeditiously as practicable, but in no case later than three years after the date such limitations are established, and in no case later than March 31, 1989 (see 40 CFR §125.3(a)(2)). A NPDES permit cannot authorize compliance schedules and deadlines which are not in accordance with the statutory provisions of the CWA.

EPA has promulgated technology-based National Effluent Guidelines in 40 CFR § 463.12 for contact cooling water in the Plastics Molding and Forming Point Source Category.

### **5.3 Water Quality-Based Requirements**

Section 301(b)(1)(C) of the CWA requires that effluent limitations based on water quality considerations be established for point source discharges when such limitations are necessary to meet state or federal water quality standards that are applicable to the designated receiving water. This is necessary when technology-based limitations would interfere with the attainment or maintenance of water quality in the receiving water.

Under Section 301(b)(1)(C) of the CWA and EPA regulations, NPDES permits must contain effluent limits more stringent than technology-based limits where more stringent limits are necessary to maintain or achieve state or federal water quality standards. Water quality standards consist of three

parts: (1) beneficial designated uses for a water-body or a segment of a water-body; (2) numeric and/or narrative water quality criteria sufficient to protect the assigned designated use(s); and (3) anti-degradation requirements to ensure that once a use is attained it will not be degraded. The Massachusetts Surface Water Quality Standards (WQSs), found at 314 CMR 4.00, include these elements. The State will limit or prohibit discharges of pollutants to surface waters to assure that surface water quality standards of the receiving waters are protected and maintained or attained. These standards also include requirements for the regulation and control of toxic constituents and require that EPA criteria, established pursuant to Section 304(a) of the CWA, shall be used unless site specific criteria are established.

The draft permit must limit any pollutant or pollutant parameter (conventional, non-conventional, and toxic) that is or may be discharged at a level that causes or has the "reasonable potential" to cause or contribute to an excursion above any water quality standard (40 CFR §122.44(d)). An excursion occurs if the projected or actual in-stream concentration exceeds an applicable water quality criterion. In determining "reasonable potential," EPA considers: (1) existing controls on point and non-point sources of pollution; (2) pollutant concentration and variability in the effluent and receiving water as determined from the permit's re-issuance application, monthly discharge monitoring reports (DMRs), and State and Federal Water Quality Reports; (3) sensitivity of the indicator species used in toxicity testing; (4) known water quality impacts of processes on waste waters; and (5) where appropriate, dilution of the effluent in the receiving water.

#### **5.4 Anti-Backsliding**

Anti-backsliding as defined in 40 CFR §122.44(l)(1) requires reissued permits to contain limitations as stringent as or more stringent than those of an permit, unless the circumstances allow application of one of the defined exceptions to this regulation. Anti-backsliding applies to limits contained in the existing permit and, therefore, these limits are continued in the draft permit. However, this Draft Permit contains less stringent limitations or conditions in compliance with the anti-backsliding requirements of the CWA [see Sections 402(o) and 303(d)(4) of the CWA and 40 CFR §122.44(l)(1 and 2)].

According to Section 122.44(l)(2)(i) of the CWA, a permit limit may not be less stringent unless one or more of the anti-backsliding exceptions is met: (1) material and substantial alterations or additions occurred since the time the permit was issued; and (2) information is available which was not available at the time of permit issuance. Such changes would constitute a cause for permit modification or revocation and reissuance under 40 CFR §122.62. The Draft Permit includes less stringent limitations or conditions for average monthly and maximum daily flow. See Section 7.1 for a description.

#### **5.5 Anti-Degradation**

Federal regulations found at 40 CFR § 131.12 require that all existing uses in the receiving water, along with the level of water quality necessary to protect those existing uses, are maintained and protected. The Commonwealth of Massachusetts' anti-degradation provisions found in 314 CMR 4.04 ensure that provisions in 40 CFR Section 131.12 are met. The effluent limits in the draft permit should ensure that provisions in 314 CMR 4.04 are met. In accordance with Section 301(b)(1)(C) of

the CWA, EPA is required to obtain certification from the state in which the discharge is located that WQSs or other applicable requirements of state law are met.

## 6.0 Explanation of the Permit’s Effluent Limitations

### 6.1 Facility Information

The Facility is located on an industrial site, in a former 19<sup>th</sup> century textile mill. Quabbin Wire and Cable Company, Inc. has been manufacturing and distributing plastic coated wire and cable at the Facility since 1975.

The Facility manufactures a variety of shielded and unshielded cables for computer, data transmission, instrumentation, and other electronic applications. The Facility produces electrical wire by insulating non-ferrous wire through extrusion of plastic in a mass melt process. Plastic coatings may be applied to a single wire or over a bundle of copper wires that have been previously coated with color-coded plastic at the Facility. Additional shields such as PET, Aluminum and Copper Braids are also applied. The Facility buys copper wire of various gauges and extrudes a plastic coating onto them made of Polyvinyl chloride (PVC), high-density polyethylene (HDPE) and low-density polyethylene (LDPE). The plastic coating material is delivered in large boxes of plastic pellets. Pellets are generally white upon delivery but water insoluble color concentrate can be added to the extrusion hopper for coloring. Copper wire is either bare or pre-coated with tin. The coating materials include metal stabilizer additives.

Plastic pellets are fed into a hopper above a spiral extruder where, under high pressure and heat, the plastic tube is formed around the wire cable. Immediately following formation, the wire-coated cable passes through a long re-circulating cooling bath until the plastic has cured enough to maintain its shape for marking and coiling. After the cooling bath, the cable is dried, stamped with identifying information and coiled on large spools. The Facility uses approximately eight extrusion machines, rarely all at once. The coated wire travels through cooling water troughs in each production line that immerse or spray the coated wire, gradually lowering its temperature.

The 2007 Permit noted that the Facility uses water provided by two on-site artesian water supply wells in their cooling baths. On April 26, 2007, the facility formally requested the option to use municipal water supply in their cooling water system because of iron bacteria buildup in one of the artesian water supply wells. EPA confirmed this option on May 30, 2007. The use of municipal water began August 1, 2007. The water enters the cooling bath system through the three large cooling water tanks located on the ground floor of the manufacturing building. Table 2 presents the maximum capacity of each of the holding tanks.

Table 2: Summary of Cooling Water Tank Capacities

<b>Tank Name</b>	<b>Capacity</b>	<b>Purpose</b>
Q-1 Tank	250 gallons	Discharge tank
DataMax Tank	450 gallons	Holding tank
DataMax Cooling Tank	200 gallons	Cooling water reservoir

The Facility re-circulates the cooling water in the cooling water system. Water is pumped from the three large tanks described above to 11 small holding tanks and 21 cooling trays in the Facility. The Facility only adds additional water when the temperature of the cooling water in the holding tanks rises to 82°F. Discharge to the Ware River occurs when the discharge tank overflows onto the floor in the small room in which it sits. The water flows to a floor drain approximately 15 feet from the discharge tank and out the side of the building into the Ware River. The room entrance is elevated above the floor by approximately seven inches, providing some capacity for flood control and spill protection for the outfall.

Water supplementation is not constant, and depends on the size and number of extrusion machines in use at any one time. The Facility does not add chemicals to the water but because the Facility uses municipal water, residual chlorine may be present. A filter sock attached to the return line from the cooling trays collects iron accumulation. Occasionally, the Facility drains the tanks one at a time for cleaning. Iron buildup from the sides and bottom of the holding tanks is disposed of as a solid waste.

Because the Facility manufactures wire and cable for distribution around the world, their products must meet hazardous substance standards including the RoHS Directive set by the European Union (EU). The RoHS Directive stands for "the restriction of the use of certain hazardous substances in electrical and electronic equipment." This Directive bans the placing of new electrical and electronic equipment containing more than agreed levels of lead, cadmium, mercury, hexavalent chromium, polybrominated biphenyl (PBB) and polybrominated diphenyl ether (PBDE) flame retardants on the EU market. As a result, the Facility has eliminated or significantly reduced the content of metals such as lead and chromium in process materials.

## **6.2 Permitted Outfall and Dilution Factor**

The Facility discharges contact cooling water via Outfall 003 to the Ware River. As described above, the Ware River is a Class B freshwater waterbody and a Category 5 "Water requiring a TMDL" for fecal coliform.

Attachment 4 includes a flow diagram of the processes contributing to Outfall 003. Cooling water from the municipal water supply system enters the Facility at a maximum flow rate of approximately 50 gallons per minute. Flow meters connected in line with the system regulate the pumping rate for the water supply. The process controls are set to keep the discharge temperature under 82° F.

EPA calculates available dilution to determine water quality based limitations in a NPDES permit. 314 CMR 4.03(3)(a) requires that effluent dilution be calculated based on the receiving water lowest observed mean river flow for seven consecutive days, recorded over a 10-year recurrence interval, or 7-day 10-year low flow (7Q10) (see Attachment 5).

EPA calculated the 7Q10 for the Ware River based on data from the United States Geological Survey (USGS) low-flow frequency statistics for the nearest USGS gauging station to the Facility along the Ware River (station number 01173500 at Gibbs Crossing<sup>4</sup>). EPA determined the estimated drainage

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<sup>4</sup> USGS StreamStats National Data Collection Station Report for Station 01173500:  
<http://streamstatsags.cr.usgs.gov/gagepages/html/01173500.htm>

area for the Facility using the USGS StreamStats for Massachusetts watershed delineation tool.<sup>5</sup> Since the maximum flow recorded at the Facility over the last five years is less than the permitted daily maximum in the Draft Permit, EPA used the permitted daily maximum value to calculate available effluent dilution. The calculated dilution factor for the Facility is 478:1.

## **7.0 Derivation of Effluent Limits under the Federal CWA and the Commonwealth of Massachusetts' Water Quality Standards**

### **7.1 Flow**

From May 1, 2007 through April 30, 2012, the maximum flow reported was 0.0208 MGD and the minimum flow reported was 0.0018 MGD.

As described above, the Facility no longer uses two on-site artesian wells for its water supply. The municipal water system serves as the water supply for the contact cooling water. The draft of the 2007 Permit contained a flow limit of 0.025 MGD, which is the current design flow of the cooling water system. However, EPA lowered this limit to 0.020 MGD based on a response to comment regarding the safe yield of the artesian wells used at the Facility at the time and maximum recorded flows for the previous permit cycle.

EPA has determined that the circumstances upon which the previous permit was based have materially and substantially changed since the Facility has replaced the artesian well water supply with municipal water supply. As a result, the limiting factor for flow under current operating conditions at the Facility is the design flow of the cooling water system, 0.025 MGD. Therefore, the Draft Permit contains a maximum daily flow limit of 0.025 MGD and a monthly average flow limit of 0.01 MGD. EPA does not expect this change will violate applicable effluent limitations guidelines (ELGs) or Massachusetts WQSs. This determination is also in compliance with Section 122.44(l)(2)(i) of the CWA. If subsequent monitoring at the Facility demonstrates conditions are significantly different from those used in EPA's determination, the Draft Permit may be modified pursuant to 40 CFR §122.62.

### **7.2 pH**

From May 1, 2007 through April 30, 2012, pH levels have ranged from 7.5 SU to 8.16 SU. Effluent limit guidelines for contact cooling water from plastics molding and forming point sources (40 CFR 463.12) require effluent pH to be between 6.0 and 9.0 SU at all times. However, the Massachusetts Surface WQSs, 314 CMR 4.00, for Class B waters require pH to be within the range of 6.5 to 8.3 standard units (SU) and prohibit discharges that cause the in-stream pH to change more than 0.5 SU outside of the background range. The Draft Permit maintains a pH range of 6.5 to 8.3 SU, and specifies that the pH cannot change the naturally occurring pH range by more than 0.5 SU, consistent with Massachusetts WQSs.

### **7.3 Temperature**

As described above, cooling water re-circulates through the large holding tanks, small holding tanks, and cooling trays in the Facility. Thermocouples inside the holding tanks monitor the temperature of

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<sup>5</sup> USGS StreamStats for Massachusetts Interactive Map: <http://water.usgs.gov/osw/streamstats/massachusetts.html>

the re-circulating water. If the temperature of the water in the holding tanks rises to 82° F, the Facility adds supplemental municipal water to cool the water in the holding tanks. The resulting overflow from the holding tanks discharges to the Ware River through Outfall 003. The thermocouple attached to the discharge tank measures the actual discharge temperature.

The Massachusetts WQSs for class B waters (314 CMR 4.05(3)(b)) pertaining to temperature in warm water fisheries states that

- a. *“Temperature shall not exceed 83°F (28.3°C) in warm water fisheries. The rise in temperature due to a discharge shall not exceed...5°F (2.8°C) in rivers and streams designated as warm water fisheries(based on the minimum expected flow for the month);”* and
- b. *“natural seasonal and daily variations that are necessary to protect existing and designated uses shall be maintained. There shall be no changes from natural background conditions that would impair any use assigned to this Class, including those conditions necessary to protect normal species diversity, successful migration, reproductive functions or growth of aquatic organisms.”*

From May 1, 2007 through April 30, 2012, the temperature of the effluent has averaged 80° F and ranged from 79 to 82° F. Upstream and downstream monitoring conducted between 2001 and 2006 has indicated 1° F or less temperature difference at locations upstream and downstream of Outfall 003. As a result, the requirement for monitoring and reporting upstream and downstream temperature was not included in the 2007 permit. Further, EPA has determined that the current discharge flows and temperature are consistent with those used in the determination that a temperature impact on the Ware River close to 5° F does not occur. The Draft Permit maintains a daily maximum temperature limit of 82°F, and requires reporting the average monthly temperature. EPA considers temperature monitoring requirements sufficiently stringent to achieve Massachusetts WQSs.

#### **7.4 Biochemical Oxygen Demand (BOD<sub>5</sub>)**

An excess of oxygen demanding substances (measured as BOD<sub>5</sub>) can cause depletion of the in-stream dissolved oxygen levels thereby causing harm to aquatic life. The effluent limit guidelines established for Plastics Molding and Forming Point Source Category (40 CFR §463.12) include a maximum daily limit of 26 mg/L for BOD<sub>5</sub>. From May 1, 2007 through April 30, 2012, BOD<sub>5</sub> levels have ranged from below the laboratory Practical Quantitation Limits (PQLs) to 18 mg/L. The Draft Permit maintains a maximum daily limit of 26 mg/L, consistent with this technology-based limit, monitored quarterly.

#### **7.5 Total Suspended Solids (TSS)**

TSS discharged to receiving water may contribute to turbidity, oxygen depletion, or loading of nutrients and other pollutants. The effluent limit guidelines established for Plastics Molding and Forming Point Source Category (40 CFR §463.12) include a maximum daily limit of 19 mg/L for TSS. From May 1, 2007 through April 30, 2012, TSS has not been detected above laboratory PQLs. The Draft Permit maintains a maximum daily limit of 19 mg/L, consistent with this technology-based limit, monitored quarterly.

**7.6 Oil and Grease (O&G)**

The effluent limit guidelines established for Plastics Molding and Forming Point Source Category (40 CFR §463.12) include a maximum daily limit for O&G of 29 mg/L. However, the Massachusetts Surface WQSs, 314 CMR 4.05(3)(b)(7), state “*These waters shall be free from oil, grease and petrochemicals that produce a visible film on the surface of the water, impart an oily taste to the water or an oily or other undesirable taste to the edible portions of aquatic life, coat the banks or bottom of the water course, or are deleterious or become toxic to aquatic life.*” A concentration of 15 mg/L is recognized as the level at which many oils produce a visible sheen and/or cause an undesirable taste in fish (EPA Water Quality Criteria, 1972). From May 1, 2007 through April 30, 2012, O & G levels have ranged from below the laboratory PQLs to 1.4 mg/L. The Draft Permit maintains a maximum daily limit for oil and grease of 15 mg/L, monitored quarterly, to ensure compliance with Massachusetts WQSs.

**7.7 Metals**

Many types of metals occur in ground and surface waters around New England. Certain metals like copper, lead, and zinc can be toxic to aquatic life, as well as contaminating other plant and animal species. Sources of metals in the contact cooling water discharge include process materials, the municipal water supply, and process piping. The Facility uses copper wire and tin-coated copper wire. The metal stabilizers and PVC used in the plastic coating process at the Facility include zinc, and antimony. In addition, the contact cooling water passes through copper pipes and steel troughs prior to discharge.

There are no technology based effluent limit guidelines for metals in contact cooling water in the Plastics Molding and Forming Point Source Category (40 CFR 463). The Commonwealth of Massachusetts requires effluent limitations for metals be based upon the criteria published in the *National Recommended Water Quality Criteria* (WQC): EPA-822-R-02-047, 2002, unless site-specific criteria are established or MassDEP determines that natural background concentrations are higher than the criteria (see 314 CMR 4.05(5)(e)).

The 2007 Permit requires monitoring of copper, lead, zinc, and antimony on a quarterly basis. In addition, the Whole Effluent Toxicity (WET) test includes metals analysis for cadmium, chromium, nickel, aluminum, magnesium and calcium. A summary of metals monitoring completed at the Facility between 2007 and 2012 is compared to applicable criteria in Table 3 and 4 below. Median ambient metals concentrations for the Ware River are also included, if available. Data shown are the median values determined in the chemical analysis portion of WET tests conducted at the Ware WWTP between 2009 and 2012 (NPDES Permit No. MA0100889).

Table 3: Quarterly Metals Monitoring Data

Parameter	Effluent Metals Concentration 2007 through 2012 (mg/L)		Ware River Metals Concentration (mg/L)	Freshwater Water Quality Criteria (mg/L)		Human Health Criteria (mg/L)
	Average	Maximum	Median	<i>Acute</i>	<i>Chronic</i>	Organism Only
Copper	0.0584	0.137	0.0015	.00308	.00236	---

Lead	Not Detected	Not Detected	0.0	<i>0.0105</i>	<i>0.00041</i>	---
Zinc	0.03	0.0564	0.0135	<i>.030</i>	<i>.030</i>	<i>26.0</i>
Antimony	0.0008	0.008	---	---	---	<i>0.640</i>

Table 4: WET Test Metals Monitoring Data

Parameter	Effluent Metals Concentration 2007 through 2012 (mg/L)		Ware River Metals Concentration (mg/L)	Freshwater Water Quality Criteria (mg/L)		Human Health Criteria (mg/L)
	Average	Maximum	Median	<i>Acute</i>	<i>Chronic</i>	Organism Only
Aluminum	0.029	0.065	0.086	<i>0.750</i>	<i>0.087</i>	---
Cadmium	Not Detected	Not Detected	Not Detected	<i>0.0004</i>	<i>0.00008</i>	---
Chromium	Not Detected	Not Detected	0.0	<i>0.48</i>	<i>0.023</i>	---
Nickel	Not Detected	Not Detected	0.0	<i>0.12</i>	<i>0.013</i>	<i>4.6</i>

EPA has evaluated the reasonable potential of metals concentrations to cause or contribute to downstream concentrations that exceed the applicable WQC. Pursuant to 314 CMR 4.03, EPA considered background concentrations of metals when evaluating effluent limitations. Since ambient concentration data for the receiving water immediately upstream of the discharge was not available, EPA used the best available data from the Ware WWTP WET test for 2009 through 2012 (NPDES Permit No. MA0100889). Since these data were collected from a location immediately downstream of the Facility, EPA used these data to be conservative. EPA considered the median concentration most representative for the receiving water in the vicinity of the Facility's discharge for the following reasons:

- The sample location nearest the Facility is downstream (approximately one mile to the Ware WWTP) rather than upstream (approximately five miles to the Hardwick-Gilbertville WPCF – NPDES Permit No. MA0100102);
- The concentrations of metals were generally higher in the nearest downstream rather than upstream sample location;
- The receiving water is sampled more frequently at the nearest downstream rather than upstream sample location;
- The downstream sample location is situated in the same segment of the Ware River as the Facility; the upstream sample location is situated in segment MA36-05;
- There are no impoundments between the downstream sample location and the Facility; there are multiple impoundments between the upstream sample location and the Facility;
- The downstream concentrations are conservative as these data potentially indicate the effluent effect of the discharge from the Facility.

The reasonable potential analysis for metals is included in Attachment 6 and summarized below.

Copper

From May 1, 2007 through April 30, 2012, copper levels have ranged from 0.0258 mg/L to 0.137 mg/L. EPA determined that there is no reasonable potential for the Facility's discharges of copper to cause or contribute to concentrations that exceed WQC. However, because concentrations of copper are above the acute and chronic exposure limits for freshwater organisms in the effluent discharge, the Draft Permit maintains quarterly monitoring requirements for copper. In addition, copper monitoring will continue twice per year in conjunction with WET testing. Because the Facility's upstream ambient copper concentration was unavailable for EPA's analysis, if subsequent WET testing at the Facility demonstrates ambient conditions are significantly different from those used in EPA's analysis, the Draft Permit may be modified pursuant to 40 CFR §122.62.

#### Zinc

From May 1, 2007 through April 30, 2012, zinc levels have ranged from 0.013 mg/L to 0.0564 mg/L. EPA has determined that there is no reasonable potential for the Facility's discharges of zinc to cause or contribute to concentrations that exceed WQC. However, because concentrations of zinc are occasionally above the acute and chronic exposure limits for freshwater organisms in the effluent discharge, the Draft Permit maintains quarterly monitoring requirements for zinc. In addition, zinc monitoring will continue twice per year in conjunction with WET testing. Because the Facility's upstream ambient zinc concentration was unavailable for EPA's analysis, if subsequent WET testing at the Facility demonstrates ambient conditions are significantly different from those used in EPA's analysis, the Draft Permit may be modified pursuant to 40 CFR §122.62.

#### Antimony

There are currently no fresh water chronic or acute WQC for antimony. The EPA "organism only" human health WQC for antimony is 0.640 mg/L. From May 1, 2007 through April 30, 2012, antimony was detected in two of 19 effluent samples at a maximum concentration of 0.008 mg/L. Given the available dilution in the Ware River, there is no reasonable potential for concentrations of antimony in the Facility's discharge to exceed 0.640 mg/L. Therefore, the Draft Permit does not maintain monitoring requirements for antimony.

#### Aluminum

The Massachusetts WQS for aluminum sets the WQC as the allowable receiving water concentration (see 314 CMR 4.05(5)(e)). The acute and chronic WQC are 750 µg/L (0.750 mg/L) and 87 µg/L (0.087 mg/L), respectively. From May 1, 2007 through April 30, 2012, the discharge from the Facility contained less aluminum than the acute and chronic criteria. For this reason, there is no reasonable potential for the Facility's discharges of aluminum to cause or contribute to concentrations that exceed WQC.

As described above, EPA considered ambient aluminum data for the Ware River in the reasonable potential analysis. Based on EPA's review of available aluminum data for the receiving water, aluminum concentrations occasionally exceed the chronic criterion upstream and downstream of the discharge. In addition, concentrations of aluminum are generally higher upstream than downstream of the Facility. Table 5 summarizes aluminum concentrations in the Ware River downstream at the Ware WWTP (approximately one mile downstream of the Facility) and upstream at the Hardwick-Gilbertville Water Pollution Control Facility (approximately five miles upstream of the Facility).

Table 5: WET Test Aluminum Monitoring Data

Sample Date	Ware River Aluminum Concentration (mg/L)	
	Ware WWTP	Hardwick-Gilbertville WPCF
2/20/2012	0.070	---
11/14/2011	0.146	---
8/8/2011	0.038	---
5/9/2011	0.047	---
11/8/2010	0.109	---
8/11/2010	---	0.076
8/9/2010	0.090	---
5/12/2010	---	0.092
2/8/2010	0.082	---
11/9/2009	0.094	---
8/12/2009	---	0.138
5/13/2009	---	0.110
8/13/2008	---	0.184
5/14/2008	---	0.088

Because upstream ambient aluminum concentration was unavailable for the Facility for EPA’s analysis, it is not clear if the receiving water is in attainment of WQSs for aluminum in the vicinity of the discharge. Also, the extent of nutrient cycling behind impoundments in this area of the Ware River is unknown and the potential for aluminum to bind to nutrients or sediment behind these impoundments has not been quantified. As a result, the Draft Permit includes monitoring requirements for aluminum in both the effluent and the Ware River twice per year in conjunction with the WET testing. If subsequent WET testing at the Facility demonstrates ambient conditions are significantly different from those used in EPA’s analysis, the Draft Permit may be modified pursuant to 40 CFR §122.62.

Lead, Cadmium, Chromium, and Nickel

From May 1, 2007 through April 30, 2012, the discharge from the Facility did not contain concentrations of these metals above the laboratory PQLs. For this reason, there is no reasonable potential for the Facility’s discharges of cadmium, chromium or nickel to cause or contribute to concentrations that exceed WQC. Therefore, the Draft Permit does not include effluent limitations for these metals. However, because these metals are occasionally detected in the Ware River, monitoring for these metals will continue twice per year in conjunction with WET testing.

Calcium, and Magnesium

Calcium and magnesium do not have acute or chronic aquatic life criteria or human health criteria in the *National Recommended WQC* nor has Massachusetts established WQC for these metals in 314 CMR 4.00. Nevertheless, these metals have been monitored at the Facility in conjunction with WET testing. EPA’s revised Freshwater Acute Toxicity Test Procedure and Protocol no longer requires the monitoring of these metals. However, because these metals may affect the toxicity of metals such as copper and aluminum, monitoring for calcium and magnesium will continue twice per year in conjunction with WET testing.

### 7.8 Total Residual Chlorine (TRC)

Chlorine and chlorine compounds can be extremely toxic to aquatic life. As described above, the Facility uses municipal water supply for the source of its contact cooling water. Potable water sources receive chlorine treatment to minimize or eliminate pathogens. 40 CFR §141.72 stipulates that a public water system's residual disinfectant concentration in the water entering the distribution system cannot be less than 0.2 mg/l for more than 4 hours.

Massachusetts WQSs require the use of federal WQC where a specific pollutant could reasonably be expected to adversely affect existing or designated uses (314 CMR 4.05 (5)(e)). The National Recommended freshwater acute and chronic WQC for TRC are 19 µg/L (0.019 mg/L), and 11 µg/L (0.011 mg/L), respectively. EPA determines the reasonable potential for concentrations of TRC to cause or contribute to concentrations that exceed WQC based on the *Technical Support Document for Water Quality-based Toxics Control*: EPA/505/2-90-001, 1991.

The Facility has monitored concentrations of TRC monthly from May 1, 2007 to April 30, 2012. During this period, the effluent concentration of TRC ranged from below the PQL of 0.020 mg/L to 0.051 mg/L. Using the calculated available dilution in the Ware River (478:1), EPA calculated the TRC effluent limits as follows:

$$\begin{aligned}\text{Acute TRC limit} &= 0.019 \text{ mg/l} * 478 = 9.082 \text{ mg/L} \\ \text{Chronic TRC limit} &= 0.011 \text{ mg/l} * 478 = 5.258 \text{ mg/L}\end{aligned}$$

EPA has determined that concentrations of TRC do not have reasonable potential to cause or contribute to concentrations that exceed WQC. However, because concentrations of TRC in the effluent discharge are occasionally above the acute and chronic exposure limits for freshwater organisms, the Draft Permit requires monthly TRC monitoring.

### 7.9 Whole Effluent Toxicity Testing (LC-50)

Sections 402(a)(2) and 308(a) of the CWA provide EPA and States with the authority to require toxicity testing. Section 308 specifically describes biological monitoring methods as techniques that may be used to carry out objectives of the CWA. Under certain State narrative WQSs, and Sections 301, 303 and 402 of the CWA, EPA and the States may establish toxicity-based limits to implement the narrative "no toxics in toxic amounts."

Massachusetts has narrative criteria in their water quality regulations (See Massachusetts 314 CMR 4.05(5)(e)) that prohibits toxic discharges in toxic amounts. The Draft Permit prohibits the addition of toxic materials or chemicals to the discharges and prohibits the discharge of pollutants in amounts that would be toxic to aquatic life. WET testing is conducted to determine whether certain effluents, often containing potentially toxic pollutants, are discharged in a combination which produces a toxic amount of pollutants in the receiving water. Therefore, toxicity testing is being used in conjunction with pollutant-specific control procedures to minimize the discharge of toxic pollutants.

The regulations at 40 CFR Part 122.44(d)(ii) state, "*When determining whether a discharge causes, has the reasonable potential to cause, or contributes to an in-stream excursion above a narrative or numeric criteria within a State water quality standard, the permitting authority shall use procedures*

which account for existing controls on point and non-point sources of pollution...(including) the sensitivity of the species to toxicity testing..." EPA and MassDEP believe that the complexity of this effluent is such that toxicity testing is required to evaluate and address any water quality impacts. MassDEP in its "Implementation Policy for the Control of Toxic Pollutants in Surface Waters" (February 23, 1990) sets forth toxicity limits according to dilution factors based on perceived risk. Results of these toxicity tests will demonstrate compliance with the Massachusetts WQSs.

Therefore, the Draft Permit continues LC<sub>50</sub> testing requirements for **effluent and dilution water** two times a year for one species. The Permittee must collect the dilution water sample from the Ware River, at a point immediately upstream of the permitted discharge's zone of influence at a reasonably accessible location. In the case where the Permittee has received written approval to use an alternate dilution water, an additional receiving water control (0% effluent) must still be tested. To clarify the effluent characteristics required for this testing, EPA has included WET parameters on the DMRs. The Draft Permit allows for the possibility of reducing the frequency of WET testing after two tests. This reporting requirement is consistent with toxicity policy for dilution in the low risk category (>100:1), since available dilution for the Facility is 478:1.

### **8.0 Essential Fish Habitat (EFH)**

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 Service (NMFS) if EPA's actions or proposed actions that it funds, permits, or undertakes, may adversely impact any essential fish habitat, such as waters and substrate necessary to fish for spawning, breeding, feeding or growth to maturity (16 U.S.C. § 1802(10)). "Adversely impact" means any impact which reduces the quality and/or quantity of EFH (50 CFR §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.

EPA has determined that the Ware River is not covered by the EFH designation for riverine systems at Latitude 42° 15' 29" Longitude 72° 14' 22" as determined by the NOAA EFH Mapper.<sup>6</sup> However, the Ware River is a tributary of the Chicopee River, which ultimately flows into the Connecticut River. The Connecticut River system has been designated as EFH for Atlantic salmon (*Salmo salar*). The last remnant stock of Atlantic salmon indigenous to the Connecticut River is believed to have been extirpated by the early 1800's. However, an active effort has been underway throughout the Connecticut River system since 1967 to restore this historic run. This stocked anadromous EFH species has the potential to be present during one or more life stages in the Ware River within the area of the Facility's discharge.<sup>7</sup>

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<sup>6</sup> NOAA EFH Mapper available at [http://sharpfin.nmfs.noaa.gov/website/EFH\\_Mapper/map.aspx](http://sharpfin.nmfs.noaa.gov/website/EFH_Mapper/map.aspx)

<sup>7</sup>See *Juvenile Atlantic Salmon Stocking Locations in the Connecticut River*. U.S. Fish and Wildlife Service, Connecticut River Coordinator's Office: 1999. Available at <http://www.fws.gov/r5crc/images/Stuff/rgatsjv.jpg>

EPA has concluded that the limits and conditions contained in this draft permit minimize adverse effects to Atlantic salmon, if present, for the following reasons:

- The quantity of the discharge from the Facility is only 0.025 MGD;
- The available dilution in the Ware River for the Facility discharge is high (478:1);
- The facility withdraws no water from the Ware River; therefore no life stages of Atlantic salmon are vulnerable to impingement or entrainment from this facility;
- EPA has completed analysis to determine that no reasonable potential exists for concentrations of metals including copper, lead, and zinc in discharges from the Facility to exceed water quality criteria specifically protective of aquatic organisms;
- Acute toxicity testing on *Ceriodaphnia dubia* is required two (2) times per year; and
- The permit prohibits any violation of Massachusetts WQSs.

EPA believes that the conditions and limitations contained within the draft permit adequately protect all aquatic life, including those species with EFH designation in the Connecticut River system. Impacts associated with issuance of this permit to the EFH species, their habitat and forage, have been minimized to the extent that no significant adverse impacts are expected. Further mitigation is not warranted. If adverse impacts to EFH are detected because of this permit action, or if new information is received that changes the basis for EPA's conclusion, NMFS will be notified and an EFH consultation will be initiated.

#### **9.0 Endangered Species Act (ESA)**

Under Section 7(a) of the Endangered Species Act, every federal agency is required to ensure that any action it authorizes, funds, or carries out is not likely to jeopardize federally listed endangered or threatened species of fish, wildlife, or plants, or result in the adverse modification of critical habitat of such species. EPA initiates consultation concerning listed species under their purviews with the United States Fish and Wildlife Service (USFWS) for freshwater species, and the National Marine Fisheries Service (NMFS) for marine species and anadromous fish.

No federally listed threatened or endangered species have been identified for the Town of Ware.<sup>8</sup> However, EPA has reviewed the federal endangered or threatened species of fish, wildlife, and plants in Hampshire County to determine if the re-issuance of this NPDES permit could potentially impact any such listed species. Two threatened species were identified for Hampshire County.<sup>9</sup> According to the USFWS, the small whirled pogonia (*Isotria medeoloides*) is found in "forests with somewhat poorly drained soils and/or a seasonally high water table," and the Puritan tiger beetle (*Cicindela puritana*) is found in "sandy beaches along the Connecticut River." These species are not aquatic.

The federally endangered dwarf wedgemussel (*Alasmidonta heterodon*) is found in "rivers and streams" in Hatfield, Amherst and Northampton. These areas are between 6 and 13 miles northwest of the Facility, at their closest points. The hills in Pelham and Belchertown separate these areas from Ware. Tributaries in the location nearest the Facility, Amherst, generally drain westward to the

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<sup>8</sup>See listings for Ware in "Rare Species Occurrences by Town" at [http://www.mass.gov/dfwele/dfw/nhosp/info\\_by\\_town.htm](http://www.mass.gov/dfwele/dfw/nhosp/info_by_town.htm)

<sup>9</sup>See listings for Hampshire County in *Federally Listed Endangered and Threatened Species in Massachusetts* at [http://www.fws.gov/newengland/EndangeredSpec-Consultation\\_Project\\_Review.htm](http://www.fws.gov/newengland/EndangeredSpec-Consultation_Project_Review.htm)

Connecticut River and discharge upstream of the confluence with the Chicopee River. Tributaries near the Facility generally drain south toward the Ware River. Therefore, it is unlikely that discharges from the Facility would impact this species.<sup>10</sup>

The two endangered species of anadromous fish which occur in Massachusetts, shortnose sturgeon (*Acipenser brevirostrom*) and Atlantic sturgeon (*Acipenser oxyrinchus*), have not been identified in the Ware River.<sup>11</sup> However, as discussed, above, the Ware River ultimately drains to the Connecticut River, where these species occur.

According to a NMFS letter dated December 19, 2011<sup>12</sup> for the Chicopee Water Pollution Control Facility discharge to the Connecticut River, “extensive sampling and the lack of any strong evidence of Atlantic sturgeon spawning indicates that the presence of this species in the vicinity of the discharge is unlikely.” In addition, the Holyoke Dam separates shortnose sturgeon in the Connecticut River into an upriver group (above the Dam) and a lower river group that occurs below the Dam to Long Island Sound. NMFS determined that adult and juvenile shortnose sturgeon are likely to occur in the vicinity of the Chicopee facility outfall year round, but further determined that Early Life Stages are less likely to be observed in this area of the Connecticut River, since spawning occurs further upstream in the Montague area near the confluence of the Deerfield and Connecticut Rivers.

The Facility is located approximately 30 river miles upstream of the nearest confluence with the Connecticut River and the Chicopee facility discussed in the paragraph above. Multiple impoundments are located along the Chicopee River between the confluence with the Ware River and the confluence with the Connecticut River. There are no current provisions for fish passage for at least three of these dams (Chicopee Falls Dam, Indian Orchard Station, and Putts Bridge Dam).<sup>13</sup> Based on this assessment and the expected normal distribution of these species, it is highly unlikely that they would be present in the vicinity of this discharge. Therefore, consultation with NMFS under Section 7 of the ESA is not required.

## 10.0 Monitoring

The monitoring requirements have been established to yield data representative of the Facility’s pollutant discharges under the authority of Sections 308(a) and 402(a)(2) of the CWA and consistent with 40 CFR §§ 122.41 (j), 122.43(a), 122.44(i) and 122.48. The approved analytical procedures for sample analysis are found in 40 CFR Part 136 unless other procedures are explicitly required in the permit. The Permittee is obligated to monitor and report sampling results to EPA and the MassDEP within the time specified within the permit. Timely reporting is essential for the regulatory agencies to expeditiously assess compliance with permit conditions.

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<sup>10</sup> See *The Dwarf Wedgemussel Waters of Massachusetts* at [http://www.fws.gov/newengland/pdfs/MA\\_DWM.pdf](http://www.fws.gov/newengland/pdfs/MA_DWM.pdf)

<sup>11</sup> See documents for shortnose sturgeon and Atlantic salmon at [http://www.mass.gov/dfwele/dfw/nhosp/species\\_info/mesa\\_list/mesa\\_list.htm](http://www.mass.gov/dfwele/dfw/nhosp/species_info/mesa_list/mesa_list.htm)

<sup>12</sup> December 19, 2011, Letter from Patricia A. Kurkul, Regional Administrator, NOAA, National Marine Fisheries Service, Northeast Region, to John H. Nagle, EPA Region 1 (“NOAA’s December 19, 2011, Chicopee WPCF Consultation Letter”) (addressing ESA issues concerning EPA’s proposed NPDES permit for the Chicopee, MA, WPCF).

<sup>13</sup> See Segments MA36-07, MA36-22, MA36-23, MA36-24, and MA36-25 in *Chicopee River Watershed 2003 Water Quality Assessment Report*. MassDEP Division of Watershed Management, Worcester, Massachusetts; October 2008, Report Number: 36-AC-3.

The Draft Permit includes new provisions related to DMR submittals to EPA and the State. The Draft Permit requires that, no later than one year after the effective date of the permit, the Permittee submit all monitoring data and other reports required by the permit to EPA using NetDMR, unless the Permittee is able to demonstrate a reasonable basis, such as technical or administrative infeasibility, that precludes the use of NetDMR for submitting DMRs and reports (“opt-out request”). In the interim (until one year from the effective date of the permit), the Permittee may either submit monitoring data and other reports to EPA in hard copy form, or report electronically using NetDMR.

NetDMR is a national web-based tool for regulated Clean Water Act permittees to submit DMRs electronically via a secure Internet application to 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. EPA currently conducts free training on the use of NetDMR, and anticipates that the availability of this training will continue to assist permittees with the transition to use of NetDMR. NetDMR can be accessed at <http://www.epa.gov/netdmr>. Further information about NetDMR, including contacts for EPA Region 1, information on upcoming trainings, and contact information for Massachusetts, 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. 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 and will no longer be required to submit hard copies of DMRs to MassDEP. However, permittees must continue to send hard copies of reports other than DMRs to MassDEP until further notice from MassDEP.

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

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

### **11.0 State Certification Requirements**

EPA may not issue a permit unless the MassDEP certifies that the effluent limitations contained in the permit are stringent enough to assure that the discharge will not cause the receiving water to violate State Surface Water Quality Standards or unless state certification is waived. The staff of the

MassDEP has reviewed the draft permit and advised EPA that the limitations are adequate to protect water quality. EPA has requested permit certification by the State pursuant to 40 CFR §124.53 and expects that the draft permit will be certified.

### **12.0 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 Shauna Little, U.S. EPA, Office of Ecosystem Protection, Industrial Permits Branch, 5 Post Office Square, OPE 06-1, Boston, Massachusetts 02109-3912. Any person, prior to such date, may submit a request in writing for a public hearing to consider the Draft Permit to EPA and the State Agency. Such requests shall state the nature of the issues proposed to be raised in the hearing. A public meeting may be held if the criteria stated in 40 CFR §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.

### **13.0 EPA and MassDEP Contacts**

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 the EPA and MassDEP contacts below:

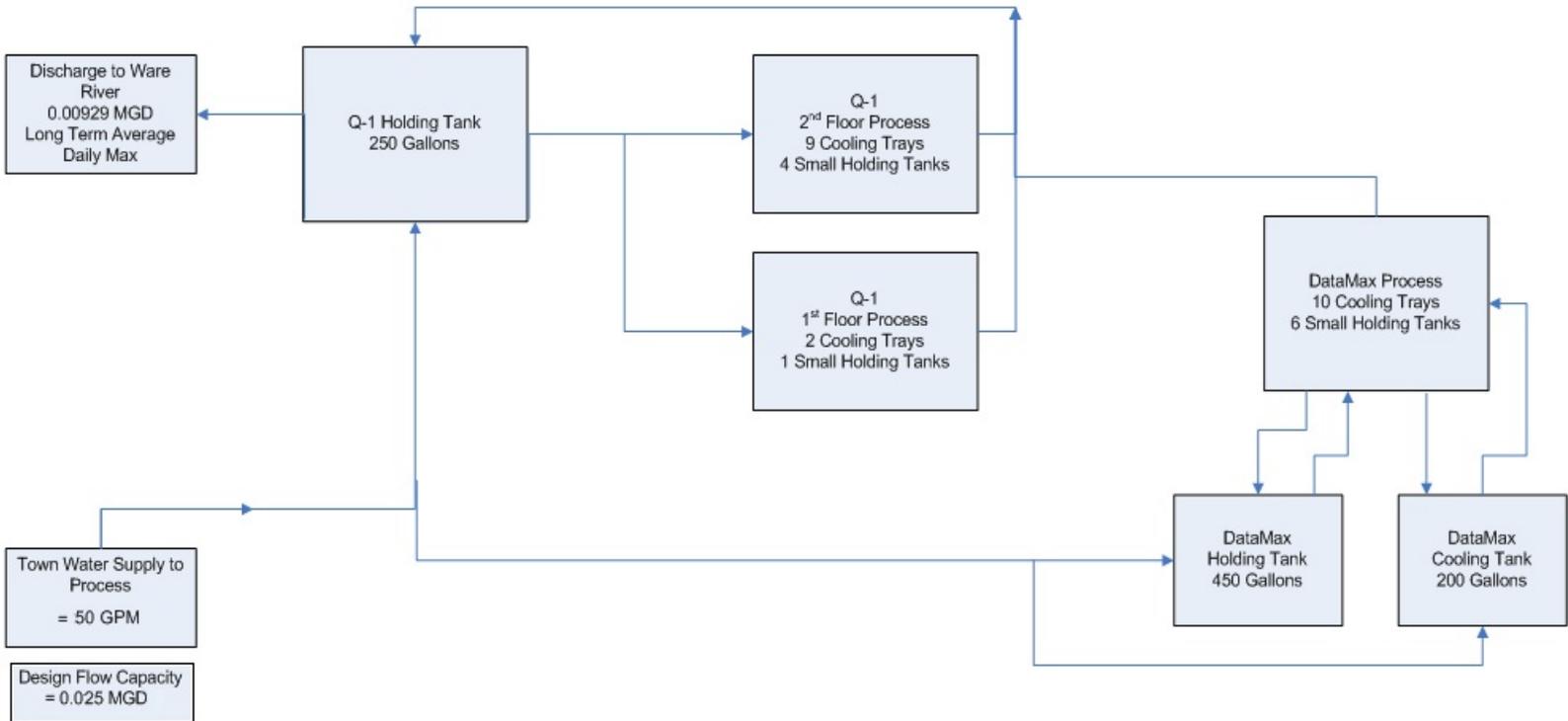
Shauna Little, EPA– Region 1  
5 Post Office Square, Suite 100 (OEP06-1)  
Boston, Massachusetts 02109-3912  
Telephone: (617) 918-1989  
FAX: (617) 918-0989  
Email: [little.shauna@epa.gov](mailto:little.shauna@epa.gov)

Claire A. Golden, MassDEP  
Surface Water Permitting Program  
205B Lowell Street  
Wilmington, Massachusetts 01887  
Telephone: (978) 694-3244  
FAX: (978) 694-3498  
Email: [claire.golden@state.ma.us](mailto:claire.golden@state.ma.us)

8/8/2012

**Stephen S. Perkins, Director**  
**Office of Ecosystem Protection**  
**U.S. Environmental Protection Agency**

Attachment 4: Quabbin Wire and Cable Company, Inc. Process Flow Diagram



Revised 9/27/2012

### **Response to Public Comments**

In accordance with the provisions of 40 C.F.R. §124.17, this document presents EPA's responses to comments received on the draft NPDES Permit, #MA0030571. The response to comments explains and supports the EPA determinations that form the basis of the final permit. From August 28, 2012 to September 26, 2012, the United States Environmental Protection Agency ("EPA") and the Massachusetts Department of Environmental Protection ("MassDEP") (together, the "Agencies") solicited public comments on a draft NPDES permit, #MA0030571, developed pursuant to an individual permit application from Quabbin Wire and Cable Company, Inc., for the re-issuance of a National Pollutant Discharge Elimination System ("NPDES") permit to discharge contact cooling water from the Quabbin Wire and Cable Company, Inc. Facility Outfall number 003 to the Ware River (Segment MA36-06) in Ware, Massachusetts.

After a review of the comments received, EPA and MassDEP have made a final decision to issue this permit authorizing these discharges. 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 minor changes in response to comments which are listed below. The analyses underlying these changes are explained in the responses to individual comments that follow and are reflected in the Final Permit. Comments are paraphrased.

Copies of the Final Permit may be obtained by writing or calling EPA's NPDES Industrial Permits Section (OEP 06-1), Office of Ecosystem Protection, 5 Post Office Square, Suite 100, Boston, MA 02109-3912; Telephone: (617) 918-1989.

### **Summary of Changes in the Final Permit**

#### **1. Cover Page**

Change: The permit effective date sentence which stated, "If no comments are received, this permit shall become effective upon signature," has been removed, as public comments were received.

Correction: The permit contents have been corrected to state "This permit consists of...25 pages in Part II including Standard Conditions."

#### **2. Part I.A.1.**

Correction: While not noted in public comments, EPA identified that the effluent limits for BOD<sub>5</sub> and TSS were expressed as concentration-based, rather than mass-based limits. The daily maximum limit for BOD<sub>5</sub> is 2.01 pounds per day (lbs/day) and the daily maximum limit for TSS is 1.47 lbs/day.

Correction: Whole Effluent Toxicity testing requirements have been corrected for pH and Total Residual Chlorine to require grab rather than composite samples.

Correction: The units required for reporting pH and Specific Conductance under Whole Effluent Toxicity testing which were expressed in mg/L have been corrected to Standard Units (SU) and micro mhos per centimeter ( $\mu\text{mhos/cm}$ ), respectively.

Deletion: The sentence included in footnote 9, pertaining to Whole Effluent Toxicity Testing which stated “If no toxicity is indicated after two tests, the Permittee may request a reduction in testing frequency which will not be less than once per year,” has been removed. The footnote numbering has been adjusted, as a result.

3. Attachment 4 to the Fact Sheet

Correction: While not noted in public comments, EPA corrected a typographical error for the process design flow in the process flow diagram for the facility from 0.0025 MGD to 0.025 MGD.

### **Public Comments**

#### **Comments submitted by Brian Page, Compliance and Facilities Manager, Quabbin Wire and Cable Company, Inc.:**

##### **Comment A1:**

The Effluent Limitations and Monitoring Requirements for Total Residual Chlorine and pH noted under the effluent WET testing requirements should be collected by grab sample not composite sample.

##### **Response to Comment A1:**

EPA agrees. Attachment A – Freshwater Acute Toxicity Test Procedure and Protocol (2011). Page 1, Section III, Sample Collection indicates that grab samples must be collected for pH and TRC per 40 CFR Part 122.21. The sampling requirement has been corrected in the Final Permit.

#### **Comments submitted by Andrea F. Donlon, River Steward, Connecticut River Watershed Council:**

##### **Comment B1:**

The facility has been able to achieve biochemical oxygen demand (BOD5), total suspended solids (TSS), and oil and grease levels far below the permit limits. EPA could lower the limits of these parameters based on facility performance between 2007 and 2012 to 20 mg/L for BOD5, 5 mg/L for TSS, and 5 mg/L for oil and grease without impact on the facility’s ability to meet permit limits.

**Response to Comment B1:**

Effluent limits for BOD<sub>5</sub>, TSS and Oil and Grease are determined by National Effluent Limit Guidelines (ELGs) under the Plastics Molding and Forming Point Source Category (See 40 CFR § 463.12). ELGs are developed by EPA on an industry-by-industry basis and represent the best pollutant removal achievable using pollution control technologies and/or pollution prevention practices for an industry category or subcategory. ELGs are applied to every facility within the category, regardless of their location or the nature of the receiving water body. Case-by-case technology-based effluent limits (TBELs) that are more stringent than those listed in the ELGs cannot be established. However, EPA may establish more stringent limits if required by state Water Quality Standards (WQSs), or federal regulations (i.e., a Total Maximum Daily Load (TMDL)).

In the case of Oil and Grease, Massachusetts Surface WQSs contain a narrative criteria which, when implemented on a case-by-case basis, is more stringent than the ELG. As a result, EPA applied the water quality-based effluent limit (WQBEL) for Oil and Grease. EPA determined that discharges of TSS from the Facility (which may cause or contribute to impairment for siltation) do not have reasonable potential to cause or contribute to an excursion above Massachusetts WQSs as concentrations of TSS have not been detected in discharges from the Facility between 2007 and 2012. Low concentrations of BOD<sub>5</sub> (which may cause or contribute to impairment for dissolved oxygen) have been detected in three of 19 effluent samples collected between 2007 and 2012. EPA calculated the 95<sup>th</sup> and 99<sup>th</sup> percentile projected effluent concentrations using the standard approach in *Technical Support Document for Water Quality-based Toxics Control* (1991). Given the dilution available in the receiving water (478:1), the 95<sup>th</sup> percentile projected effluent concentration, 0.0265 mg/L, and the 99<sup>th</sup> percentile projected effluent concentration, 0.0586 mg/L, do not have reasonable potential to cause or contribute to an excursion above Massachusetts WQSs. Therefore, more stringent WQBELs do not apply.

However, in reviewing the Draft Permit limits, EPA identified an error in the method used to apply the concentration-based ELGs in the previous permit (issued February 22, 2007). While the limits in the Draft Permit represent the limits from the previous permit, the limits are not expressed as mass-based limits in accordance with the ELGs. The concentrations listed in 40 CFR § 463.12, which are also the concentration-based limits included in the Draft Permit, must be used to calculate mass-based TBELs for BOD<sub>5</sub> and TSS as follows:

$$(\text{Flow}) * (\text{Concentration}) * (\text{Conversion Factor})$$

Where:

Flow = Long term average (LTA) process flow rate in million gallons per day (MGD)

Concentration = Pollutant specific concentration value listed in 40 CFR § 463.12 in mg/L

Conversion factor = Unit less factor used to convert pollutant load to lbs/day

Therefore:

$$\begin{aligned} \text{Daily Maximum Limit BOD}_5 &= (0.00929 \text{ MGD}) * (26 \text{ mg/L}) * 8.34 \\ &= 2.01 \text{ lbs/day} \end{aligned}$$

$$\begin{aligned} \text{Daily Maximum Limit TSS} &= (0.00929 \text{ MGD}) * (19 \text{ mg/L}) * 8.34 \\ &= 1.47 \text{ lbs/day} \end{aligned}$$

The Final Permit includes a mass-based limit for BOD<sub>5</sub> of 2.01 lbs/day and a mass-based limit for TSS of 1.47 lbs/day, respectively.

Since the Draft Permit established a monthly average flow limit within one standard deviation of the LTA, when the TBELs calculated for BOD<sub>5</sub> and TSS above using the LTA and concentrations listed in 40 CFR § 463.12 are compared to the TBELs calculated for BOD<sub>5</sub> and TSS using the monthly average flow limit and the BOD<sub>5</sub> and TSS limits included in the Draft Permit (i.e., 0.01 MGD, 26 mg/L and 19 mg/L, respectively), the resulting mass-based limits are substantially identical to the mass-based limits included in the Final Permit. As a result, EPA is not considering this correction a change which warrants reopening of the public notice period.

$$(\text{Flow}) * (\text{Concentration}) * (\text{Conversion Factor})$$

Where:

Flow = Monthly average flow permitted in the Draft Permit in MGD

Concentration = Pollutant specific concentration-based limit in the Draft Permit in mg/L

Conversion factor = Unit less factor used to convert pollutant load to lbs/day

Therefore:

$$\begin{aligned} \text{Daily Maximum Limit BOD}_5 &= (0.01 \text{ MGD}) * (26 \text{ mg/L}) * 8.34 \\ &= 2.16 \text{ lbs/day} \end{aligned}$$

$$\begin{aligned} \text{Daily Maximum Limit TSS} &= (0.01 \text{ MGD}) * (19 \text{ mg/L}) * 8.34 \\ &= 1.58 \text{ lbs/day} \end{aligned}$$

While also not noted in public comments, EPA identified a typographical error in the bottom left box of the process flow diagram for the facility which was included as Attachment 4 to the Fact Sheet accompanying the Draft Permit and identified when evaluating the TBELs calculated above. The process design flow was incorrectly noted as 0.0025 MGD whereas the correct design flow capacity is 0.025 MGD. Section 7.1 of the Fact Sheet notes the design flow capacity correctly.

Since Fact Sheets are final documents that accompany Draft NPDES Permits, they are not changed in response to comments. EPA's "Response to Comments" may acknowledge Fact Sheet errors or inconsistencies, and then provide the necessary rational or documentation for changes that may be required in the Final NPDES Permit.

Therefore, EPA notes the correction. In this case, no change to the NPDES Permit is necessary. The Response to Comments serves as the official correction and the correct version of Attachment 4 is included.

**Comment B2:**

It is unusual for a permit to require reporting of WET test results with no limits on the results. The draft permit includes a stipulation in footnote 9 of Part I.A.1 that would allow the facility to request reduced testing if two tests indicate no toxicity. The effluent has shown some degree of toxicity in 6 of the last 10 WET test results. To us, this highlights the need to require two tests per year, even if there are two tests that indicate no toxicity, particularly because there is no permit limit for the WET results.

**Response to Comment B2:**

The Permittee was required to conduct acute toxicity tests twice during the first full year following the effective date of the previous permit. The previous NPDES Permit also stipulated that if no toxicity was indicated after both tests, no further WET testing would be required. The Permittee continued this testing voluntarily. The Massachusetts Water Quality Standards (WQSs) include narrative criteria that prohibit toxic discharges in toxic amounts (See Massachusetts 314 CMR 4.05(5)(e)). Since WET test results indicated toxicity in six of the ten tests, with an LC<sub>50</sub> % ranging between 65.98 and 100, EPA added WET testing requirements to the Draft Permit in accordance with the Massachusetts WQSs Implementation Policy for the Control of Toxic Pollutants in Surface Waters (“Toxics Policy”). The Toxics Policy requires that for discharges to receiving waters with a dilution factor >100, WET testing must be conducted twice per year using the acute endpoint if there is reasonable potential to exceed water quality criteria.

The dilution factor determined for the facility is 478. For discharges with dilution greater than 100 the end-of-pipe effluent limit established in the Toxics Policy for acute effects in the mixing zone is 2.0 toxic units, or an LC<sub>50</sub> of 50%. To demonstrate that the facility does not have reasonable potential to exceed this level of toxicity, EPA converted the WET test results for the facility based on the definition of a toxic unit, defined as 100 divided by the LC<sub>50</sub>.

Monitoring Period End Date	LC50 Static 48Hr Acute Ceriodaphnia %	Toxic Units Equivalent T.U.
06/30/2007	100	1.0
09/30/2007	100	1.0
06/30/2008	100	1.0
09/30/2008	72	1.38
06/30/2009	66	1.515
09/30/2009	100	1.0
06/30/2010	65.98	1.516
09/30/2010	70.7	1.414
06/30/2011	70.71	1.414
09/30/2011	70.7	1.414

Using the toxic unit equivalents calculated above, EPA then determined the 95<sup>th</sup> percentile projected effluent concentration to be 1.94 toxic units, or an LC<sub>50</sub> of 51.5%. When compared to the effluent limit established in the Massachusetts WQSs Toxics Policy, the effluent does not have reasonable potential to exceed 2.0 toxic units. Therefore, WET limits are not required.

EPA's *Technical Support Document for Water Quality-based Toxics Control* (1991) recommends that toxicity testing be required even if the effluent is not determined to cause or contribute to an excursion above water quality criteria. Based on the frequent presence of toxicity in the effluent (i.e., a toxicity test result that indicates mortality in the test organism with less than 75% effluent in more than half of the WET tests) and the projected effluent toxic units calculated above, EPA has determined that WET testing is still required to fully characterize water quality impacts and to ensure that discharges from the facility do not exceed Massachusetts WQSs for toxic pollutants when discharged in combination. Furthermore, EPA agrees that WET testing twice per year for the duration of the permit is appropriate and has removed the associated portion of footnote 9 which no longer applies. For a facility with a dilution factor between 100:1 and 1,000:1, EPA's *Technical Support Document for Water Quality-based Toxics Control* (1991) recommends either acute or chronic toxicity testing. Therefore, the Final Permit maintains acute toxicity testing.