

**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. Chap. 21, §§26-53),

Brox Industries, Inc.

is authorized to discharge from a facility located at

**Brox Industries, Inc.
1480 Methuen Street
Dracut, MA 01826**

to receiving water named

**Wetland system adjacent to the Merrimack River and its tributaries
Merrimack River Watershed**

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 immediately following 60 days after signature.

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

This permit supersedes the permit issued on March 22, 2007.

This permit consists of **Part I** (12 pages); **Attachment A** (Freshwater Acute Toxicity Test Procedure and Protocol, February 2011, 8 pages); **Attachment B** (Freshwater Chronic Toxicity Test Procedure and Protocol, March 2013, 7 pages); and **Part II** (NPDES Part II Standard Conditions, April 2018, 21 pages).

Signed this 12th day of April , 2019.

/S/SIGNATURE ON FILE

Ken Moraff, Director
Office of Ecosystem Protection
Environmental Protection Agency
Region 1
Boston, MA

/S/SIGNATURE ON FILE

Lealdon Langley, Director
Division of Watershed Management
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 treated process wastewater from aggregate washing operations, dust suppression water, and stormwater through Outfall Serial Number 003 to a wetland system adjacent to the Merrimack River and its tributaries. The discharge shall be limited and monitored as specified below; the receiving water shall be monitored as specified below.

Effluent Characteristic	Effluent Limitation		Monitoring Requirements ^{1,2,3}	
	Average Monthly	Maximum Daily	Measurement Frequency ⁴	Sample Type ⁵
Effluent Flow ⁶	Report gpd	1100 gpm	Continuous	Meter
Total Suspended Solids (TSS)	20 mg/L	40 mg/L	1/week	Grab
Oil and Grease	10 mg/L	15 mg/L	1/month	Grab
pH ⁷	6.5 - 8.3 S.U.		1/week	Grab
Turbidity	---	25 NTU	1/month	Grab
Total Nitrogen		Report mg/L	1/quarter	Composite
Perchlorate ⁸	---	Report mg/L	1/quarter	Composite
<i>Escherichia coli</i> ⁹	---	Report MPN/100 ml	1/year	Grab
Total Phosphorus ⁹	---	Report mg/L	1/year	Grab

Effluent Characteristic	Effluent Limitation		Monitoring Requirements ^{1,2,3}	
	Average Monthly	Maximum Daily	Measurement Frequency ⁴	Sample Type ⁵
Whole Effluent Toxicity (WET) Testing^{10,11,12}				
LC ₅₀	---	Report %	1/year	Composite
C-NOEC	---	Report %	1/year	Composite
Hardness	---	Report mg/L	1/year	Composite
Ammonia Nitrogen	---	Report mg/L	1/year	Composite
Total Aluminum	---	Report mg/L	1/year	Composite
Total Cadmium	---	Report mg/L	1/year	Composite
Total Copper	---	Report mg/L	1/year	Composite
Total Nickel	---	Report mg/L	1/year	Composite
Total Lead	---	Report mg/L	1/year	Composite
Total Zinc	---	Report mg/L	1/year	Composite
Receiving Water Chemical Analysis^{11,12}				
Hardness	---	Report mg/L	1/year	Grab
Ammonia Nitrogen	---	Report mg/L	1/year	Grab
Total Aluminum	---	Report mg/L	1/year	Grab
Total Cadmium	---	Report mg/L	1/year	Grab

Effluent Characteristic	Effluent Limitation		Monitoring Requirements ^{1,2,3}	
	Average Monthly	Maximum Daily	Measurement Frequency ⁴	Sample Type ⁵
Receiving Water Chemical Analysis (continued) ^{11,12}				
Total Copper	---	Report mg/L	1/year	Grab
Total Nickel	---	Report mg/L	1/year	Grab
Total Lead	---	Report mg/L	1/year	Grab
Total Zinc	---	Report mg/L	1/year	Grab
pH ¹³	---	Report S.U.	1/year	Grab
Temperature ¹³	---	Report ° C	1/year	Grab

Footnotes:

1. Effluent samples shall yield data representative of the discharge. A routine sampling program shall be developed in which samples are taken at the discharge point to the receiving water after treatment in a series of up to four treatment ponds, prior to co-mingling with any other waste stream. Changes in sampling location must be approved in writing by the Environmental Protection Agency Region 1 (EPA) and the State. The Permittee shall report the results to EPA and the State of any additional testing above that required herein, if testing is done in accordance with 40 C.F.R. § 136.

2. In accordance with 40 C.F.R. § 122.44(i)(1)(iv), the Permittee shall monitor according to sufficiently sensitive test procedures (i.e., methods) approved under 40 C.F.R. Part 136 or required under 40 C.F.R. Chapter I, Subchapter N or O, for the analysis of pollutants or pollutant parameters (except WET). A method is “sufficiently sensitive” when: 1) The method minimum level (ML) is at or below the level of the effluent limitation established in the permit for the measured pollutant or pollutant parameter; or 2) The method has the lowest ML of the analytical methods approved under 40 C.F.R. Part 136 or required under 40 C.F.R. Chapter I, Subchapter N or O for the measured pollutant or pollutant parameter. The term “minimum level” refers to either the sample concentration equivalent to the lowest calibration point in a method or a multiple of the method detection limit (MDL), whichever is higher. Minimum levels may be obtained in several ways: They may be published in a method; they may be based on the lowest acceptable calibration point used by a laboratory; or they may be calculated by multiplying the MDL in a method, or the MDL determined by a laboratory, by a factor.
3. When a parameter is not detected above the ML, the Permittee must report the data qualifier signifying less than the ML for that parameter (e.g., < 50 µg/L, if the ML for a parameter is 50 µg/L).
4. Measurement frequency of 1/week is defined as the sampling of one discharge event in each seven-day calendar week. Measurement frequency of 1/month is defined as the sampling of one discharge event in each calendar month. Measurement frequency of 1/quarter is defined as the sampling of one discharge event in each calendar quarter. Calendar quarters are defined as January through March, inclusive, April through June, inclusive, July through September, inclusive and October through December, inclusive. If no sample is collected during the measurement frequencies defined above, the Permittee must report an appropriate No Data Indicator Code (e.g., “C” for “No Discharge”).
5. Each composite sample will consist of at least one (1) grab sample per hour with a minimum of four (4) grab samples taken at roughly equal time intervals during a working day. The timing of the grab samples shall coincide with the timing of composite sampling.
6. The daily maximum effluent flow rate is limited at 1100 gpm. The Permittee shall also report the monthly total and weekly average flow for each month, as measured by meter prior to the discharge point.
7. The pH shall be within the specified range at all times. The minimum and maximum pH sample measurement values for the month shall be reported in standard units (S.U.).
8. Perchlorate shall be monitored in conjunction with total nitrogen.

9. Monitoring for total phosphorus and *E. coli* must be conducted annually consistent with the requirement to monitor discharges of stormwater associated with industrial activity to impaired waters without an EPA-approved or established total maximum daily load (TMDL) under Parts 2.2.2 and 6.2.4.1 of EPA's Multi-Sector General Permits for Stormwater Discharges Associated with Industrial Activities (MSGP). If the pollutant of concern is not detected and not expected to be present in the discharge, or it is detected but the Permittee demonstrates that its presence is caused solely by natural background sources, the Permittee may provide sampling data and any determination that the presence of the pollutant is due solely to natural background sources to EPA and MassDEP with a request to discontinue monitoring. The Permittee must continue monitoring until written authorization to discontinue monitoring is provided by the Agencies. Documentation of the data and supporting rationale must be maintained in the stormwater pollution prevention plan (SWPPP).
10. The Permittee shall conduct acute and chronic toxicity tests in accordance with test procedures and protocols specified in **Attachments A and B** of this permit. LC₅₀ and C-NOEC are defined in Part II.E. of this permit. The Permittee shall test the daphnid, *Ceriodaphnia dubia*, and the fathead minnow, *Pimephales promelas*. Toxicity test samples shall be collected and tests completed during the calendar quarters ending September 30th. The test results shall be submitted as an attachment to the monthly DMR submittal immediately following the completion of the test.
11. The receiving water chemical analysis represents analysis of the receiving water sample collected as part of the WET testing requirements. Such samples shall be taken at a location in the Merrimack River that provides a representative analysis of the receiving water upstream of the permitted discharge's zone of influence as specified in **Attachment A**. If toxicity test(s) using the receiving water as diluent show the receiving water to be toxic or unreliable, the permittee shall either follow procedures outlined in **Attachment A (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 (see page 4 in <https://www3.epa.gov/region1/npdes/permits/generic/Alternatedilutionwaterguidance.pdf>).
12. The Permittee shall conduct the analyses specified in **Attachment A**, Part VI. CHEMICAL ANALYSIS, of this permit. For Part I.A.1., Whole Effluent Toxicity Testing, the Permittee shall report the results for the effluent sample. For Part I.A.1., Receiving Water Chemical Analysis, the Permittee shall report the results for the receiving water sample. Minimum levels and test methods are specified in **Attachment A**, Part VI. CHEMICAL ANALYSIS.
13. A pH and temperature measurement shall be taken of each receiving water sample at the time of collection and the results reported on the appropriate DMR. These pH and temperature measurements are independent from any pH and temperature measurements required by the WET testing protocols.

Part I.A. continued

2. The discharge shall not cause a violation of the water quality standards of the receiving water.
3. The discharge shall be free from pollutants in concentrations or combinations that, in the receiving water, settle to form objectionable deposits; float as debris, scum or other matter to form nuisances; produce objectionable odor, color, taste or turbidity; or produce undesirable or nuisance species of aquatic life.
4. The discharge shall be free from pollutants in concentrations or combinations that adversely affect the physical, chemical, or biological nature of the bottom.
5. The discharge shall not result in pollutants in concentrations or combinations in the receiving water that are toxic to humans, aquatic life or wildlife.
6. The discharge shall be free from floating, suspended and settleable solids in concentrations or combinations that would impair any use assigned to the receiving water.
7. The discharge 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.
8. All existing manufacturing, commercial, mining, and silvicultural dischargers must notify the Director as soon as they know or have reason to believe (40 C.F.R. § 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”:
 - (1) 100 micrograms per liter ($\mu\text{g/L}$);
 - (2) 200 $\mu\text{g/L}$ for acrolein and acrylonitrile; 500 $\mu\text{g/L}$ for 2,4-dinitrophenol; and one milligram per liter (mg/L) for antimony;
 - (3) Five times the maximum concentration value reported for that pollutant in the permit application in accordance with 40 C.F.R. § 122.21(g)(7); or
 - (4) Any other notification level established by the Director in accordance with 40 C.F.R. § 122.44(f) and State 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”:
 - (1) 500 $\mu\text{g/L}$;
 - (2) One mg/L for antimony;

- (3) 10 times the maximum concentration value reported for that pollutant in the permit application in accordance with 40 C.F.R. § 122.21(g)(7); or
- (4) Any other notification level established by the Director in accordance with 40 C.F.R. § 122.44(f) and State 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.

B. UNAUTHORIZED DISCHARGES

- 1. This permit authorizes discharges only from the outfall(s) listed in Part I.A.1, in accordance with the terms and conditions of this permit. Discharges of wastewater from any other point sources are not authorized by this permit and shall be reported in accordance with Part D.1.e.(1) of the Standard Conditions of this permit (24-hour reporting).
- 2. The discharge of any bottom deposits from any storage tank or detention basin at the Facility to the receiving water is prohibited.
- 3. The discharge of process wastewater from hot mix asphalt process operations to the receiving water is prohibited.

C. SPECIAL CONDITIONS

- 1. Best Management Practices

The Permittee shall design, install, and implement control measures, including best management practices (BMPs), to minimize pollutant discharges from stormwater associated with quarry operations to the receiving water. At a minimum, the Permittee must implement control measures consistent with those described in Part 2.1 and any Sector specific control measures in Part 8 of EPA's Multi-Sector General Permit (MSGP) effective on June 4, 2015 (available at <https://www.epa.gov/npdes/final-2015-msgp-documents>). Specifically, BMPs must be selected and implemented to comply with the following non-numeric technology-based effluent limitations from Parts 2.1.2 and 8.J.5 of EPA's 2015 MSGP:

- a. Minimize exposure
- b. Good housekeeping
- c. Maintenance
- d. Spill prevention and response
- e. Erosion and sediment control
- f. Management of runoff
- g. Salt storage piles or piles containing salt
- f. Employee training
- g. Dust generation and vehicle tracking of industrial materials
- h. Sector specific non-numeric technology-based effluent limitations included in Sector J (Non-Metallic Mineral Mining and Dressing) of the 2015 MSGP.

2. Stormwater Pollution Prevention Plan

The Permittee shall maintain a Stormwater Pollution Prevention Plan (SWPPP) to document the selection, design and installation of BMPs developed under Part I.C.1 and consistent with Parts 2.1.2 and 8.J.5 of the 2015 MSGP, to minimize the discharge of pollutants from the quarry operation to the receiving water. The SWPPP shall be a written document and be consistent with the terms of this Permit.

- a. The SWPPP shall be updated and signed consistent with the signatory requirements in Part II.D.2 of this Permit within ninety (90) days after the effective date of this Permit.
- b. The SWPPP shall be consistent with the general provisions for SWPPPs included in Part 5 of EPA's 2015 MSGP. The SWPPP shall be prepared in accordance with good engineering practices, identify potential sources of pollution that may reasonably be expected to affect the quality of the stormwater discharges, and document implementation of non-numeric technology based effluent limitations described in Part I.C.1 that will be used to reduce the pollutants and assure compliance with this Permit. Specifically, the SWPPP shall contain the elements listed in Parts 5.2.1 through 5.2.5 and Part 8.J.6 of the 2015 MSGP that are briefly described below:
 - (1) Stormwater pollution prevention team;
 - (2) Site description;
 - (3) Summary of potential pollutant sources;
 - (4) Description of all stormwater control measures; and
 - (5) Schedules and procedures pertaining to implementation of stormwater control measures, inspections and assessments, and monitoring.
- c. The Permittee shall inspect quarterly all areas identified as: being exposed to stormwater, potential pollutant sources, discharge points, and control measures. Inspections shall occur beginning the first full calendar quarter after the effective date of the Permit. EPA considers quarters as follows: January through March; April through June; July through September; and October through December. Inspections shall be performed by qualified personnel with participation of at least one member of the stormwater pollution prevention team. At least once each calendar year, the routine inspection must be conducted during a period when stormwater discharge is occurring.
- d. The Permittee shall amend and update the SWPPP within fourteen (14) days of any changes at the facility affecting the SWPPP. Changes that may affect the SWPPP include, but are not limited to: a change in design, construction, operation, or maintenance, which has a significant effect on the potential for the discharge of pollutants to the waters of the United States; a release of a reportable quantity of pollutants as described in 40 C.F.R. § 302; and a determination by the Permittee or EPA that the SWPPP appears to be ineffective in achieving the general objective of controlling pollutants in stormwater discharges associated with industrial activity. Any amended or new versions of the SWPPP shall be re-certified by the Permittee. Such re-certifications also shall be signed in accordance with the requirements identified in Part II.D.2 of this Permit.

e. The Permittee shall certify at least annually that the previous year's inspections, maintenance, and training activities were conducted, results were recorded, and records were maintained, as described in the SWPPP. If the facility is not in compliance with any BMPs and/or activities described in the SWPPP, the annual certification shall state the non-compliance and the remedies which are being undertaken. Such annual certifications also shall be signed in accordance with the requirements identified in Part II.D.2 of this Permit. The Permittee shall keep a copy of the current SWPPP and all SWPPP certifications (i.e., the initial certification, recertifications, and annual certifications) signed during the effective period of this Permit at the Facility and shall make them available for inspection by EPA and MassDEP. All documentation of SWPPP activities shall be kept at the Facility for at least three years and provided to EPA or MassDEP upon request.

3. Discharges of Chemicals and Additives

The discharge of any chemical or additive, including chemical substitution, which was not reported in the application submitted to EPA and the State or provided through a subsequent written notification submitted to EPA and the State is prohibited. Upon the effective date of this permit, chemicals and/or additives which have been disclosed to EPA and the State may be discharged up to the frequency and level disclosed, provided that such discharge does not violate §§ 307 or 311 of the CWA or applicable State water quality standards. Discharges of a new chemical or additive are authorized under this permit 30 days following written notification to EPA and the State unless otherwise notified by EPA and/or the State. To request authorization to discharge a new chemical or additive, the Permittee must submit a written notification to EPA and the State in accordance with Part I.D.3 of this permit. The written notification must include the following information, at a minimum:

a. The following information for each chemical and/or additive that will be discharged:

- (1) Product name, chemical formula, general description, and manufacturer of the chemical/additive;
- (2) Purpose or use of the chemical/additive;
- (3) Safety Data Sheet (SDS), Chemical Abstracts Service (CAS) Registry number, and EPA registration number, if applicable, for each chemical/additive;
- (4) The frequency (e.g., daily), magnitude (i.e., maximum application concentration), duration (e.g., hours), and method of application for the chemical/additive;
- (5) The maximum discharge concentration; and
- (6) The vendor's reported aquatic toxicity, if available (i.e., NOAEL and/or LC₅₀ in percent for aquatic organism(s)).

b. A written rationale which demonstrates that the discharge of such chemicals and/or additives as proposed will not: 1) Add any pollutants in concentrations which exceed permit effluent limitations; 2) Exceed any applicable water quality standard; and 3) Add any pollutants that would justify the application of permit conditions that are different from or absent in this permit.

D. REPORTING REQUIREMENTS

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

1. Submittal of DMRs Using NetDMR

The Permittee shall continue to submit its monthly monitoring data in discharge monitoring reports (DMRs) to EPA and the State no later than the 15th day of the month electronically using NetDMR. When the Permittee submits DMRs using NetDMR, it is not required to submit hard copies of DMRs to EPA or the State. NetDMR is accessed from the internet at <https://netdmr.zendesk.com/hc/en-us>.

2. Submittal of Reports as NetDMR Attachments

Unless otherwise specified in this permit, the Permittee shall electronically submit all reports to EPA as NetDMR attachments rather than as hard copies. Because the due dates for reports described in this permit may not coincide with the due date for submitting DMRs (which is no later than the 15th day of the month), a report submitted electronically as a NetDMR attachment shall be considered timely if it is electronically submitted to EPA using NetDMR with the next DMR due following the particular report due date specified in this permit.

3. Submittal of Requests and Reports to EPA/OEP

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

- (1) Transfer of Permit notice;
- (2) Request for changes in sampling location;
- (3) SWPPP certifications;
- (4) Request to discharge new chemicals or additives;
- (5) Request to discontinue monitoring for total phosphorus and/or *E. coli*.

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

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

4. Submittal of Reports in Hard Copy Form

a. The following notifications and reports shall be signed and dated originals, submitted in hard copy, with a cover letter describing the submission:

(1) Written notifications required under Part II.

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

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

5. State Reporting

a. *See* Part I.D.2 regarding the submittal of all other reports.

b. Copies of toxicity tests only shall be submitted to:

**Massachusetts Department of Environmental Protection
Bureau of Water Resources
Division of Watershed Management
8 New Bond Street
Worcester, Massachusetts 01606**

6. Verbal Reports and Verbal Notifications

a. Any verbal reports or verbal notifications, if required in Parts I and/or II of this permit, shall be made to both EPA and to the State. This includes verbal reports and notifications which require reporting within 24 hours (e.g., Part II.B.4.c. (2), Part II.B.5.c. (3), and Part II.D.1.e.).

b. Verbal reports and verbal notifications shall be made to:

EPA's Office of Environmental Stewardship: **617-918-1510**

and to

MassDEP's Emergency Response: **888-304-1133**

E. STATE PERMIT CONDITIONS

1. This authorization to discharge includes two separate and independent permit authorizations. The two permit authorizations are: 1) 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 2) 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 CMR 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 EPA. 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.

Response to Public Comments
Reissuance of NPDES Permit No. MA0040177

Brox Industries, Inc.
1480 Methuen Street
Dracut, MA 01826

The U.S. Environmental Protection Agency's New England Region (EPA) and the Massachusetts Department of Environmental Protection (MassDEP) are issuing a Final National Pollutant Discharge Elimination System (NPDES) Permit for the Brox Industries, Inc. ("Brox") facility located in Dracut, Massachusetts. This permit is being issued under the Federal Clean Water Act (CWA), 33 U.S.C., §§ 1251 et. seq., and the Massachusetts Clean Water Act, M.G.L. Ch. 21, §§ 26-35.

In accordance with the provisions of 40 C.F.R. §124.17, this document presents EPA's responses to comments (RTC) received on Draft NPDES Permit No. MA0040177. The RTC explains and supports EPA's determinations that form the basis of the Final Permit. From February 15, 2019 through March 16, 2019, EPA and MassDEP (together, the "Agencies") solicited public comments on the Draft Permit, which was developed to regulate the discharge of treated process wastewater from aggregate washing operations, dust suppression water, and stormwater through Outfall Serial Number 003 to a wetland system adjacent to the Merrimack River and its tributaries.

Although EPA's decision-making process has benefited from the comments submitted, the information and arguments presented did not raise any substantial new questions concerning the permit. The Final Permit is substantially identical to the Draft Permit that was available for public comment, with the exception of three changes which are listed in Part I below and explained in the responses in Part II below.

The changes to the Final Permit from the Draft Permit are not considered changes warranting the Agencies to exercise their discretion to reopen the public comment period under 40 C.F.R. § 124.14(b), but rather are considered a logical outgrowth of the comments received and necessary clarification of requirements regarding the sector-specific requirements of the 2015 Multi-Sector General Permit (MSGP).

A copy of the Final Permit may be obtained by calling or writing George Papadopoulos, United States Environmental Protection Agency, 5 Post Office Square – Suite 100, Mail Code OEP06-1, Boston, Massachusetts 02109-3912, Telephone (617) 918-1579. Copies of the Final Permit and the Response to Comments may also be obtained from the EPA Region I website at https://www3.epa.gov/region1/npdes/permits_listing_ma.html.

I. Summary of Changes to the Final Permit

1. Part I.C.1 of the Final Permit clarifies that compliance with sector-specific, non-numeric technology-based limits from Part 8.J.5 of the 2015 MSGP is required but eliminates the requirement to include non-numeric technology-based limits from Sector D because the 2015 MSGP does not include such limitations for this sector. See Response to Comment 1.
2. Part I.C.2 of the Final Permit clarifies that sector-specific elements from Part 8.J.6 of the 2015 MSGP must be included in the Facility's stormwater pollution prevention plan (SWPPP). See Response to Comment 1.
3. Footnote 9 in Part I.A.1 has been revised to explain the process by which the Permittee can request discontinuing the monitoring for total phosphorus and *E. coli*. This change is also reflected in the addition of Part I.D.3.a.(5) as another example of a request submittal that could be made by the Permittee.

II. Comments

Comments submitted by Erik Stevenson of Brox Industries on March 8, 2019:

Comment 1:

Brox understands that the “Effluent Limitations and Monitoring Requirements” has incorporated an annual monitoring requirement for *Escherichia coli* (e-coli) and *Total Phosphorus* because our discharge is to an impaired water without an EPA-approved or established total maximum daily load for these parameters. Brox has no reason to expect that these parameters are present in our discharge. Therefore, consistent with 6.2.4.1 of the MSGP, Brox would like to request that we monitor for the impaired water parameters (i.e., e-coli and phosphorus) during the first full quarter of the permit term. If the results from the initial monitoring event indicate e-coli and/or phosphorus is not detected or is detected but that its presence is caused solely by background sources, we request that Brox may discontinue further monitoring for the pollutant(s).

Response to Comment 1:

EPA has considered the Permittee's comment requesting that sampling for the parameters *E. coli* and total phosphorus be discontinued if results from the first monitoring event indicate that the parameters are not detected or their presence is caused solely by background sources.

The Draft Permit requires sampling for parameters for which the receiving water is impaired once per year, consistent with Parts 2.2.2 and 6.2.4.1 of EPA's 2015 Multi-Sector General Permit (MSGP). The Draft Permit at Part I.A.1 (footnote 9) requires annual monitoring be continued for the permit term and allows the permittee to provide sampling data and any determination that the presence of the pollutant is due solely to natural background sources. As the permittee notes in its comment, Part 6.2.4.1 of the 2015 MSGP states that “If any such pollutant is not detected and not expected to be present in the discharge, or it is detected but you have determined that its

presence is caused solely by natural background sources, you may discontinue monitoring for that pollutant.” To support a determination that the pollutant’s presence is caused solely by natural background sources, the permittee must document and maintain the following items with its stormwater pollution prevention plan (SWPPP):

- An explanation of why the Permittee believes that the presence of such pollutant in its discharge is not related to the activities or materials at its facility, and
- Date and/or studies that tie the presence of such pollutant in its discharge to natural background sources in the watershed.

Natural background pollutants include those that occur naturally as a result of native soils, and vegetation, wildlife, or groundwater and do not include legacy pollutants from earlier activity on the site or pollutants in run-on from neighboring sources that are not naturally occurring.

To be consistent with the MSGP, the Final Permit at Part I.A.1 (footnote 9) has been revised to allow the Permittee to discontinue monitoring for total phosphorus and *E. coli* after sampling during the first full quarter following the effective date of the permit. If the pollutant is not detected and not expected to be present in the discharge, or is detected and its presence is caused solely by natural background sources, the Permittee must provide the sampling data and its supporting rationale to EPA and MassDEP for review. The Agencies will review the information and provide written documentation that monitoring for total phosphorus and/or *E. coli* may be discontinued, if warranted. Following written authorization from EPA and MassDEP, the Permittee should enter the No Data Indicator (NODI) code “9” (Conditional Monitoring – Not Required This Period) for any pollutants for which monitoring is discontinued. The written request and authorization to discontinue monitoring is consistent with the requirements for changing a Notice of Intent under Part 7.4 of the 2015 MSGP but is adapted for individual permit coverage. The sampling data and supporting rationale must be maintained with the Facility’s SWPPP consistent with Part 5.5 of the 2015 MSGP.

While reviewing the MSGP with regard to the comment, EPA noted that Part I.C.1.h of the Draft Permit required the Facility to comply with sector-specific non-numeric technology-based effluent limitations in Sectors D and J of the 2015 MSGP. Part I.C.1 of the Final Permit clarifies that the sector-specific non-numeric technology based effluent limitations from Part 8.J.5 of the MSGP shall be implemented as BMPs but eliminates the requirement to include Sector D non-numeric technology-based limitations as Sector D of the 2015 MSGP does not include any such limits. In addition, the Final Permit clarifies that sector-specific elements from Part 8.J.6 of the MSGP shall be included in the Facility’s SWPPP.

Comment 2:

EPA has stated that “there is no data available to determine if reasonable potential exists to cause or contribute to an excursion of a numeric or narrative water quality criterion” because no WET testing was required by the 2007 Permit. Please note that WET testing was performed during the initial permitting effort in 2003; a copy of those results is attached. Brox acknowledges the

benefit for current WET testing to confirm the previous findings. However, Brox requests that the annual monitoring requirement for *Whole Effluent Toxicity (WET) Testing* in “Effluent Limitations and Monitoring Requirements” be revised to require future sampling based on the results of the first permit year. If the results of the initial sampling event support the finding that no reasonable potential exists to cause or contribute to an excursion of a numeric or narrative water quality criterion, additional annual WET testing can be discontinued for the duration of the permit. Otherwise, annual WET sampling will be required.

Response to Comment 2:

EPA evaluated the discharge to determine compliance with Section 301(b)(1)(C) of the Clean Water Act by establishing limitations and monitoring requirements necessary to meet water quality standards. The regulations at 40 C.F.R. §122.44(d)(1) implement section 301(b)(1)(C) of the Clean Water Act. These regulations require that NPDES permits include limits for all pollutants or parameters which “are or may be discharged at a level which will cause, have the reasonable potential to cause, or contribute to an excursion above any State water quality standard, including State narrative criteria for water quality.” When information is insufficient to make this determination, as EPA’s *Technical Support Document for Water Quality-based Toxics Control* recommends, the collection of this information is required, either through an information request during permit development, or incorporated into permit conditions.¹ Section 308(a), 33 U.S.C. §1318(a), authorizes EPA to require the owner or operator of any point source to provide information as may reasonably be required to carry out the objectives of the Clean Water Act. Therefore, the collection of WET testing information for discharges from the Facility to ensure compliance with water quality standards are being required to carry out the objectives of the Clean Water Act. Further, MassDEP’s *Implementation Policy for the Control of Toxic Pollutants in Surface Waters* includes whole effluent testing requirements as part of its interpretation of the State narrative criteria. Specifically, 314 CMR 4.05(5)(e) states, “All surface waters shall be free from pollutants in concentrations or combinations that are toxic to humans, aquatic life or wildlife.” Therefore, WET testing is being required to ensure State water quality standards for toxicity are met.

WET testing is used to measure the response to a whole effluent without concern for its specific chemical makeup. Because multiple chemicals and/or additives used at the site contain toxic ingredients for which chemical-specific effluent limitations have not been included, the effects of these chemicals and/or additives have not been assessed in the effluent. In addition, combinations of chemicals may have additive, synergistic or antagonistic effects. WET testing directly measures aggregate effects. In addition, the bioavailability of toxic pollutants can vary with site-specific factors. WET testing addresses these factors by using site-specific receiving water for dilution. Under MassDEP’s *Implementation Policy*, “At dilution factors less than 10, effluent toxicity poses a high risk to receiving waters.” In addition, if perchlorate is not used as a blasting agent, perchlorate may still be present as an impurity in nitrogen-based blasting compounds, along with other potential impurities. WET testing will capture any toxicity related to the cumulative discharge of unknown impurities and ensure that the discharge is in compliance with water quality standards for toxicity.

¹ See Chapter 3 of EPA/505/2-90-001.

Finally, when determining whether there is reasonable potential for a discharge to cause or contribute to an excursion above water quality standards, EPA uses three approaches: biological assessment, chemical specific criteria, and WET testing. WET testing has not been previously required in the Facility's permit and, as the comment notes, the single, existing WET test for this Facility was conducted more than 15 years ago. A single sample, such as the Permittee suggests, is not sufficient to determine if current effluent conditions cause, or have the reasonable potential to cause, or contribute to an excursion above water quality standards in accordance with 40 C.F.R. § 122.44(d)(1)(i). Monitoring requirements in NPDES permits are established on a case-by-case basis at a frequency necessary to determine compliance with permit limitations and conditions, and to evaluate the effectiveness of treatment and control measures, and permit limitations. Regardless, regulations at 40 C.F.R. § 122.44(i)(2) establish a floor, or minimum frequency for monitoring results of no less than once per year. In establishing the WET testing frequency, EPA considered WET testing training guidance provided by EPA's Office of Wastewater Management² which notes that the likelihood of detecting at least one toxic event when the true probability of toxic occurrence is 10% is 0.10 when one sample is required, but increases to 0.41 when five samples are required. If the true probability of toxic occurrence is 30%, the likelihood of detecting at least one toxic event is 0.30 when one sample is required, but increases to 0.83 when five samples are required. Five samples will be collected for WET over a five-year permit term, which EPA determined will ensure a higher likelihood of detecting a toxic event in the discharge and meets the requirement of 40 C.F.R. § 122.44(d)(1)(i).

Therefore, EPA has determined that it is necessary to conduct annual WET testing for this Facility for the permit term in order to have a sufficient baseline of effluent and ambient data to measure the current aggregate toxic effect of the Facility's discharge and to determine whether the Facility's discharges cause, or have a reasonable potential to cause, or contribute to an excursion above water quality standards. These data will be used to determine if WET limits are required, or if the WET testing can be reduced or eliminated entirely. The WET testing requirements proposed in the draft permit remain unchanged.

Comment 3:

Brox previously provided the Agency with Material Safety Data Sheets (MSDS) for blasting products used by our blasting contractor Maine Drilling & Blasting, Inc. (MD&B) on our site. Upon review, Brox noted that a MSDS for "Non-Electric" detonators manufactured by Dyno Nobel was erroneously included in the package. MD&B subsequently confirmed that they only use electronic detonators on our property which do not contain any quantities of potassium perchlorate. It should be further noted that MD&B only uses bulk emulsion and not ammonium nitrate/fuel oil (ANFO). Emulsion is a more effective explosive and it is water resistant, so it does not break down. The Agency refers to the mistakenly provided Dyno Nobel product in the fact sheet on pp. 20 of 40, specifically in footnote #14, as justification for the requirement for perchlorate monitoring; however, the possible presence of perchlorate is not an accurate representation of our discharge. Brox requests that the monitoring requirement for Perchlorate be eliminated in its entirety from the "Effluent Limitations and Monitoring Requirements."

² See WET training website for guidance and training documents at <https://www.epa.gov/npdes/whole-effluent-toxicity-wet>

Response to Comment 3:

According to the Permittee, only electric detonators manufactured by Dyno Nobel are used at Brox, which do not contain potassium perchlorate. As such, the Permittee does not expect that perchlorate will be present in the discharge and requested that the Final Permit remove monitoring for perchlorate.

Section 5.2.3 of the Fact Sheet lists possible additives potentially used at Brox (as disclosed by the Permittee), including electric detonators, Packaged Emulsion Explosives, and ammonium nitrate/fuel oil (ANFO). Section 5.1.7 of the Fact Sheet recognizes that perchlorate-based explosive agents have not been used at the Facility under the 2007 Permit, and further explains that perchlorate may be found as a co-contaminant with nitrogen-based explosives, which is a main component in explosives. The comment indicates that MD&B does not use ANFO, but ANFO is not the only nitrogen-based compound used as a blasting agent at the Facility.³ The Final Permit maintains the quarterly perchlorate monitoring requirement in conjunction with nitrogen monitoring.

Section 5.1.7 of the Fact Sheet also explains that perchlorate may be present in nitrogen-based explosives as an impurity. The WET testing discussed in Response to Comment 2, above, will ensure that any impurities or other undisclosed parameters that may be present in chemicals used at the Facility will not cause, or contribute to an excursion above State water quality standards for toxicity.

April 4, 2019

³ EPA Technical Fact Sheet – Perchlorate. November 2017. EPA 505-F-17-003.

https://www.epa.gov/sites/production/files/2017-10/documents/perchlorate_factsheet_9-15-17_508.pdf

**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. Chap. 21, §§26-53),

Brox Industries, Inc.

is authorized to discharge from a facility located at

**Brox Industries, Inc.
1480 Methuen Street
Dracut, MA 01826**

to receiving water named

**Wetland system adjacent to the Merrimack River and its tributaries
Merrimack River Watershed**

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 immediately following 60 days after signature.¹

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

This permit supersedes the permit issued on March 22, 2007.

This permit consists of **Part I** (12 pages); **Attachment A** (Freshwater Acute Toxicity Test Procedure and Protocol, February 2011, 8 pages); **Attachment B** (Freshwater Chronic Toxicity Test Procedure and Protocol, March 2013, 7 pages); and **Part II** (NPDES Part II Standard Conditions, April 2018, 21 pages).

Signed this day of , 2019.

Ken Moraff, Director
Office of Ecosystem Protection
Environmental Protection Agency
Region 1
Boston, MA

Lealdon Langley, Director
Massachusetts Wetlands and Wastewater Programs
Department of Environmental Protection
Commonwealth of Massachusetts
Boston, MA

¹ Pursuant to 40 Code of Federal Regulations (C.F.R.) § 124.15(b)(3), if no comments requesting a change to the Draft Permit are received, this permit shall become effective upon the date of signature.

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 treated process wastewater from aggregate washing operations, dust suppression water, and stormwater through Outfall Serial Number 003 to a wetland system adjacent to the Merrimack River and its tributaries. The discharge shall be limited and monitored as specified below; the receiving water shall be monitored as specified below.

Effluent Characteristic	Effluent Limitation		Monitoring Requirements ^{1,2,3}	
	Average Monthly	Maximum Daily	Measurement Frequency ⁴	Sample Type ⁵
Effluent Flow ⁶	Report gpd	1100 gpm	Continuous	Meter
Total Suspended Solids (TSS)	20 mg/L	40 mg/L	1/week	Grab
Oil and Grease	10 mg/L	15 mg/L	1/month	Grab
pH ⁷	6.5 - 8.3 S.U.		1/week	Grab
Turbidity	---	25 NTU	1/month	Grab
Total Nitrogen		Report mg/L	1/quarter	Composite
Perchlorate ⁸	---	Report mg/L	1/quarter	Composite
<i>Escherichia coli</i> ⁹	---	Report MPN/100 ml	1/year	Grab
Total Phosphorus ⁹	---	Report mg/L	1/year	Grab

Effluent Characteristic	Effluent Limitation		Monitoring Requirements ^{1,2,3}	
	Average Monthly	Maximum Daily	Measurement Frequency ⁴	Sample Type ⁵
Whole Effluent Toxicity (WET) Testing^{10,11,12}				
LC ₅₀	---	Report %	1/year	Composite
C-NOEC	---	Report %	1/year	Composite
Hardness	---	Report mg/L	1/year	Composite
Ammonia Nitrogen	---	Report mg/L	1/year	Composite
Total Aluminum	---	Report mg/L	1/year	Composite
Total Cadmium	---	Report mg/L	1/year	Composite
Total Copper	---	Report mg/L	1/year	Composite
Total Nickel	---	Report mg/L	1/year	Composite
Total Lead	---	Report mg/L	1/year	Composite
Total Zinc	---	Report mg/L	1/year	Composite
Receiving Water Chemical Analysis^{11,12}				
Hardness	---	Report mg/L	1/year	Grab
Ammonia Nitrogen	---	Report mg/L	1/year	Grab
Total Aluminum	---	Report mg/L	1/year	Grab
Total Cadmium	---	Report mg/L	1/year	Grab

Effluent Characteristic	Effluent Limitation		Monitoring Requirements ^{1,2,3}	
	Average Monthly	Maximum Daily	Measurement Frequency ⁴	Sample Type ⁵
Receiving Water Chemical Analysis (continued) ^{11,12}				
Total Copper	---	Report mg/L	1/year	Grab
Total Nickel	---	Report mg/L	1/year	Grab
Total Lead	---	Report mg/L	1/year	Grab
Total Zinc	---	Report mg/L	1/year	Grab
pH ¹³	---	Report S.U.	1/year	Grab
Temperature ¹³	---	Report ° C	1/year	Grab

Footnotes:

1. Effluent samples shall yield data representative of the discharge. A routine sampling program shall be developed in which samples are taken at the discharge point to the receiving water after treatment in a series of up to four treatment ponds, prior to co-mingling with any other waste stream. Changes in sampling location must be approved in writing by the Environmental Protection Agency Region 1 (EPA) and the State. The Permittee shall report the results to EPA and the State of any additional testing above that required herein, if testing is done in accordance with 40 C.F.R. § 136.

2. In accordance with 40 C.F.R. § 122.44(i)(1)(iv), the Permittee shall monitor according to sufficiently sensitive test procedures (i.e., methods) approved under 40 C.F.R. Part 136 or required under 40 C.F.R. Chapter I, Subchapter N or O, for the analysis of pollutants or pollutant parameters (except WET). A method is “sufficiently sensitive” when: 1) The method minimum level (ML) is at or below the level of the effluent limitation established in the permit for the measured pollutant or pollutant parameter; or 2) The method has the lowest ML of the analytical methods approved under 40 C.F.R. Part 136 or required under 40 C.F.R. Chapter I, Subchapter N or O for the measured pollutant or pollutant parameter. The term “minimum level” refers to either the sample concentration equivalent to the lowest calibration point in a method or a multiple of the method detection limit (MDL), whichever is higher. Minimum levels may be obtained in several ways: They may be published in a method; they may be based on the lowest acceptable calibration point used by a laboratory; or they may be calculated by multiplying the MDL in a method, or the MDL determined by a laboratory, by a factor.
3. When a parameter is not detected above the ML, the Permittee must report the data qualifier signifying less than the ML for that parameter (e.g., < 50 µg/L, if the ML for a parameter is 50 µg/L).
4. Measurement frequency of 1/week is defined as the sampling of one discharge event in each seven-day calendar week. Measurement frequency of 1/month is defined as the sampling of one discharge event in each calendar month. Measurement frequency of 1/quarter is defined as the sampling of one discharge event in each calendar quarter. Calendar quarters are defined as January through March, inclusive, April through June, inclusive, July through September, inclusive and October through December, inclusive. If no sample is collected during the measurement frequencies defined above, the Permittee must report an appropriate No Data Indicator Code (e.g., “C” for “No Discharge”).
5. Each composite sample will consist of at least one (1) grab sample per hour with a minimum of four (4) grab samples taken at roughly equal time intervals during a working day. The timing of the grab samples shall coincide with the timing of composite sampling.
6. The daily maximum effluent flow rate is limited at 1100 gpm. The Permittee shall also report the monthly total and weekly average flow for each month, as measured by meter prior to the discharge point.
7. The pH shall be within the specified range at all times. The minimum and maximum pH sample measurement values for the month shall be reported in standard units (S.U.).
8. Perchlorate shall be monitored in conjunction with total nitrogen.

9. Monitoring for total phosphorus and *E. coli* must be conducted annually consistent with the requirement to monitor discharges of stormwater associated with industrial activity to impaired waters without an EPA-approved or established total maximum daily load (TMDL) under Parts 2.2.2 and 6.2.4.1 of EPA's Multi-Sector General Permits for Stormwater Discharges Associated with Industrial Activities (MSGP). If the pollutant of concern is not detected and not expected to be present in the discharge, or it is detected but the Permittee demonstrates that its presence is caused solely by natural background sources, the Permittee may provide sampling data and any determination that the presence of the pollutant is due solely to natural background sources with the next application for permit reissuance.
10. The Permittee shall conduct acute and chronic toxicity tests in accordance with test procedures and protocols specified in **Attachments A and B** of this permit. LC₅₀ and C-NOEC are defined in Part II.E. of this permit. The Permittee shall test the daphnid, *Ceriodaphnia dubia*, and the fathead minnow, *Pimephales promelas*. Toxicity test samples shall be collected and tests completed during the calendar quarter ending September 30th. The test results shall be submitted as an attachment to the October DMR submittal which no later than November 15th.
11. The receiving water chemical analysis represents analysis of the receiving water sample collected as part of the WET testing requirements. Such samples shall be taken at a location in the Merrimack River that provides a representative analysis of the receiving water upstream of the permitted discharge's zone of influence as specified in **Attachment A**. If toxicity test(s) using the receiving water as diluent show the receiving water to be toxic or unreliable, the permittee shall either follow procedures outlined in **Attachment A (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 (see page 4 in <https://www3.epa.gov/region1/npdes/permits/generic/Alternatedilutionwaterguidance.pdf>).
12. The Permittee shall conduct the analyses specified in **Attachment A**, Part VI. CHEMICAL ANALYSIS, of this permit. For Part I.A.1., Whole Effluent Toxicity Testing, the Permittee shall report the results for the effluent sample. For Part I.A.1., Receiving Water Chemical Analysis, the Permittee shall report the results for the receiving water sample. Minimum levels and test methods are specified in **Attachment A**, Part VI. CHEMICAL ANALYSIS.
13. A pH and temperature measurement shall be taken of each receiving water sample at the time of collection and the results reported on the appropriate DMR. These pH and temperature measurements are independent from any pH and temperature measurements required by the WET testing protocols.

Part I.A. continued

2. The discharge shall not cause a violation of the water quality standards of the receiving water.
3. The discharge shall be free from pollutants in concentrations or combinations that, in the receiving water, settle to form objectionable deposits; float as debris, scum or other matter to form nuisances; produce objectionable odor, color, taste or turbidity; or produce undesirable or nuisance species of aquatic life.
4. The discharge shall be free from pollutants in concentrations or combinations that adversely affect the physical, chemical, or biological nature of the bottom.
5. The discharge shall not result in pollutants in concentrations or combinations in the receiving water that are toxic to humans, aquatic life or wildlife.
6. The discharge shall be free from floating, suspended and settleable solids in concentrations or combinations that would impair any use assigned to the receiving water.
7. The discharge 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.
8. All existing manufacturing, commercial, mining, and silvicultural dischargers must notify the Director as soon as they know or have reason to believe (40 C.F.R. § 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”:
 - (1) 100 micrograms per liter ($\mu\text{g/L}$);
 - (2) 200 $\mu\text{g/L}$ for acrolein and acrylonitrile; 500 $\mu\text{g/L}$ for 2,4-dinitrophenol; and one milligram per liter (mg/L) for antimony;
 - (3) Five times the maximum concentration value reported for that pollutant in the permit application in accordance with 40 C.F.R. § 122.21(g)(7); or
 - (4) Any other notification level established by the Director in accordance with 40 C.F.R. § 122.44(f) and State 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”:
 - (1) 500 $\mu\text{g/L}$;
 - (2) One mg/L for antimony;

- (3) 10 times the maximum concentration value reported for that pollutant in the permit application in accordance with 40 C.F.R. § 122.21(g)(7); or
- (4) Any other notification level established by the Director in accordance with 40 C.F.R. § 122.44(f) and State 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.

B. UNAUTHORIZED DISCHARGES

- 1. This permit authorizes discharges only from the outfall(s) listed in Part I.A.1, in accordance with the terms and conditions of this permit. Discharges of wastewater from any other point sources are not authorized by this permit and shall be reported in accordance with Part D.1.e.(1) of the Standard Conditions of this permit (24-hour reporting).
- 2. The discharge of any bottom deposits from any storage tank or detention basin at the Facility to the receiving water is prohibited.
- 3. The discharge of process wastewater from hot mix asphalt process operations to the receiving water is prohibited.

C. SPECIAL CONDITIONS

- 1. Best Management Practices

The Permittee shall design, install, and implement control measures, including best management practices (BMPs), to minimize pollutant discharges from stormwater associated with quarry operations to the receiving water. At a minimum, the Permittee must implement control measures consistent with those described in Part 2.1 and any Sector specific control measures in Part 8 of EPA's Multi-Sector General Permit (MSGP) effective on June 4, 2015 (available at <https://www.epa.gov/npdes/final-2015-msgp-documents>). Specifically, BMPs must be selected and implemented to comply with the following non-numeric technology-based effluent limitations from Part 2.1.2 of EPA's 2015 MSGP:

- a. Minimize exposure
- b. Good housekeeping
- c. Maintenance
- d. Spill prevention and response
- e. Erosion and sediment control
- f. Management of runoff
- g. Salt storage piles or piles containing salt
- f. Employee training
- g. Dust generation and vehicle tracking of industrial materials
- h. Comply with sector specific non-numeric technology-based effluent limitations included in Sector D (Asphalt Paving and Roofing Materials and Lubricant Manufacturing) and Sector J (Non-Metallic Mineral Mining and Dressing) of the 2015 MSGP.

2. Stormwater Pollution Prevention Plan

The Permittee shall maintain a Stormwater Pollution Prevention Plan (SWPPP) to document the selection, design and installation of BMPs developed under Part I.C.1, required to minimize the discharge of pollutants from the quarry operation to the receiving water. The SWPPP shall be a written document and be consistent with the terms of this Permit. The Permittee shall comply with the BMPs, schedules, and activities described in its SWPPP.

- a. The SWPPP shall be updated and signed consistent with the signatory requirements in Part II.D.2 of this Permit within ninety (90) days after the effective date of this Permit.
- b. The SWPPP shall be consistent with the general provisions for SWPPPs included in Part 5 of EPA's 2015 MSGP. The SWPPP shall be prepared in accordance with good engineering practices, identify potential sources of pollution that may reasonably be expected to affect the quality of the stormwater discharges, and describe and ensure implementation of practices that will be used to reduce the pollutants and assure compliance with this Permit. Specifically, the SWPPP shall contain the elements listed below:
 - (1) Stormwater pollution prevention team;
 - (2) Site description;
 - (3) Summary of potential pollutant sources;
 - (4) Description of all stormwater control measures; and
 - (5) Schedules and procedures pertaining to implementation of stormwater control measures, inspections and assessments, and monitoring.
- c. The Permittee shall inspect quarterly all areas identified as: being exposed to stormwater, potential pollutant sources, discharge points, and control measures. Inspections shall occur beginning the first full calendar quarter after the effective date of the Permit. EPA considers quarters as follows: January through March; April through June; July through September; and October through December. Inspections shall be performed by qualified personnel with participation of at least one member of the stormwater pollution prevention team. At least once each calendar year, the routine inspection must be conducted during a period when stormwater discharge is occurring.
- d. The Permittee shall amend and update the SWPPP within fourteen (14) days of any changes at the facility affecting the SWPPP. Changes that may affect the SWPPP include, but are not limited to: a change in design, construction, operation, or maintenance, which has a significant effect on the potential for the discharge of pollutants to the waters of the United States; a release of a reportable quantity of pollutants as described in 40 C.F.R. § 302; and a determination by the Permittee or EPA that the SWPPP appears to be ineffective in achieving the general objective of controlling pollutants in stormwater discharges associated with industrial activity. Any amended or new versions of the SWPPP shall be re-certified by the Permittee. Such re-certifications also shall be signed in accordance with the requirements identified in Part II.D.2 of this Permit.

e. The Permittee shall certify at least annually that the previous year's inspections, maintenance, and training activities were conducted, results were recorded, and records were maintained, as described in the SWPPP. If the facility is not in compliance with any BMPs and/or activities described in the SWPPP, the annual certification shall state the non-compliance and the remedies which are being undertaken. Such annual certifications also shall be signed in accordance with the requirements identified in Part II.D.2 of this Permit. The Permittee shall keep a copy of the current SWPPP and all SWPPP certifications (i.e., the initial certification, recertifications, and annual certifications) signed during the effective period of this Permit at the Facility and shall make them available for inspection by EPA and MassDEP. All documentation of SWPPP activities shall be kept at the Facility for at least three years and provided to EPA or MassDEP upon request.

3. Discharges of Chemicals and Additives

The discharge of any chemical or additive, including chemical substitution, which was not reported in the application submitted to EPA and the State or provided through a subsequent written notification submitted to EPA and the State is prohibited. Upon the effective date of this permit, chemicals and/or additives which have been disclosed to EPA and the State may be discharged up to the frequency and level disclosed, provided that such discharge does not violate §§ 307 or 311 of the CWA or applicable State water quality standards. Discharges of a new chemical or additive are authorized under this permit 30 days following written notification to EPA and the State unless otherwise notified by EPA and/or the State. To request authorization to discharge a new chemical or additive, the Permittee must submit a written notification to EPA and the State in accordance with Part I.D.3 of this permit. The written notification must include the following information, at a minimum:

a. The following information for each chemical and/or additive that will be discharged:

- (1) Product name, chemical formula, general description, and manufacturer of the chemical/additive;
- (2) Purpose or use of the chemical/additive;
- (3) Safety Data Sheet (SDS), Chemical Abstracts Service (CAS) Registry number, and EPA registration number, if applicable, for each chemical/additive;
- (4) The frequency (e.g., daily), magnitude (i.e., maximum application concentration), duration (e.g., hours), and method of application for the chemical/additive;
- (5) The maximum discharge concentration; and
- (6) The vendor's reported aquatic toxicity, if available (i.e., NOAEL and/or LC₅₀ in percent for aquatic organism(s)).

b. A written rationale which demonstrates that the discharge of such chemicals and/or additives as proposed will not: 1) Add any pollutants in concentrations which exceed permit effluent limitations; 2) Exceed any applicable water quality standard; and 3) Add any pollutants that would justify the application of permit conditions that are different from or absent in this permit.

D. REPORTING REQUIREMENTS

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

1. Submittal of DMRs Using NetDMR

The Permittee shall continue to submit its monthly monitoring data in discharge monitoring reports (DMRs) to EPA and the State no later than the 15th day of the month electronically using NetDMR. When the Permittee submits DMRs using NetDMR, it is not required to submit hard copies of DMRs to EPA or the State. NetDMR is accessed from the internet at <https://netdmr.zendesk.com/hc/en-us>.

2. Submittal of Reports as NetDMR Attachments

Unless otherwise specified in this permit, the Permittee shall electronically submit all reports to EPA as NetDMR attachments rather than as hard copies. Because the due dates for reports described in this permit may not coincide with the due date for submitting DMRs (which is no later than the 15th day of the month), a report submitted electronically as a NetDMR attachment shall be considered timely if it is electronically submitted to EPA using NetDMR with the next DMR due following the particular report due date specified in this permit.

3. Submittal of Requests and Reports to EPA/OEP

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

- (1) Transfer of Permit notice;
- (2) Request for changes in sampling location;
- (3) SWPPP certifications;
- (4) Request to discharge new chemicals or additives;

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

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

4. Submittal of Reports in Hard Copy Form

a. The following notifications and reports shall be signed and dated originals, submitted in hard copy, with a cover letter describing the submission:

(1) Written notifications required under Part II.

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

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

5. State Reporting

a. *See* Part I.D.2 regarding the submittal of all other reports.

b. Copies of toxicity tests only shall be submitted to:

**Massachusetts Department of Environmental Protection
Bureau of Water Resources
Division of Watershed Management
8 New Bond Street
Worcester, Massachusetts 01606**

6. Verbal Reports and Verbal Notifications

a. Any verbal reports or verbal notifications, if required in Parts I and/or II of this permit, shall be made to both EPA and to the State. This includes verbal reports and notifications which require reporting within 24 hours (e.g., Part II.B.4.c. (2), Part II.B.5.c. (3), and Part II.D.1.e.).

b. Verbal reports and verbal notifications shall be made to:

EPA's Office of Environmental Stewardship: **617-918-1510**

and to

MassDEP's Emergency Response: **888-304-1133**

E. STATE PERMIT CONDITIONS

1. This authorization to discharge includes two separate and independent permit authorizations. The two permit authorizations are: 1) 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 2) 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 CMR 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 EPA. 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.

USEPA REGION 1 FRESHWATER ACUTE TOXICITY TEST PROCEDURE AND PROTOCOL

I. GENERAL REQUIREMENTS

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

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

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

II. METHODS

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

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

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

III. SAMPLE COLLECTION

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

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

All samples held overnight shall be refrigerated at 1- 6°C.

IV. DILUTION WATER

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

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

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

and

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

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

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

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

V. TEST CONDITIONS

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

**EPA NEW ENGLAND EFFLUENT TOXICITY TEST CONDITIONS FOR THE
DAPHNID, CERIODAPHNIA DUBIA 48 HOUR ACUTE TESTS¹**

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

series.

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

Footnotes:

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

**EPA NEW ENGLAND TEST CONDITIONS FOR THE FATHEAD MINNOW
(PIMEPHALES PROMELAS) 48 HOUR ACUTE TEST¹**

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

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

Footnotes:

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

VI. CHEMICAL ANALYSIS

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

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

Notes:

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

VII. TOXICITY TEST DATA ANALYSIS

LC50 Median Lethal Concentration (Determined at 48 Hours)

Methods of Estimation:

- Probit Method
- Spearman-Kärber
- Trimmed Spearman-Kärber
- Graphical

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

No Observed Acute Effect Level (NOAEL)

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

VIII. TOXICITY TEST REPORTING

A report of the results will include the following:

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

FRESHWATER CHRONIC TOXICITY TEST PROCEDURE AND PROTOCOL USEPA Region 1

I. GENERAL REQUIREMENTS

The permittee shall be responsible for the conduct of acceptable chronic toxicity tests using three fresh samples collected during each test period. The following tests shall be performed as prescribed in Part 1 of the NPDES discharge permit in accordance with the appropriate test protocols described below. (Note: the permittee and testing laboratory should review the applicable permit to determine whether testing of one or both species is required).

- **Daphnid (Ceriodaphnia dubia) Survival and Reproduction Test.**
- **Fathead Minnow (Pimephales promelas) Larval Growth and Survival Test.**

Chronic toxicity data shall be reported as outlined in Section VIII.

II. METHODS

Methods to follow are those recommended by EPA in: Short Term Methods For Estimating The Chronic Toxicity of Effluents and Receiving Water to Freshwater Organisms, Fourth Edition, October 2002. United States Environmental Protection Agency. Office of Water, Washington, D.C., EPA 821-R-02-013. The methods are available on-line at <http://www.epa.gov/waterscience/WET/> . Exceptions and clarification are stated herein.

III. SAMPLE COLLECTION AND USE

A total of three fresh samples of effluent and receiving water are required for initiation and subsequent renewals of a freshwater, chronic, toxicity test. The receiving water control sample must be collected immediately upstream of the permitted discharge's zone of influence. Fresh samples are recommended for use on test days 1, 3, and 5. However, provided a total of three samples are used for testing over the test period, an alternate sampling schedule is acceptable. The acceptable holding times until initial use of a sample are 24 and 36 hours for on-site and off-site testing, respectively. A written waiver is required from the regulating authority for any hold time extension. All test samples collected may be used for 24, 48 and 72 hour renewals after initial use. All samples held for use beyond the day of sampling shall be refrigerated and maintained at a temperature range of 0-6° C.

All samples submitted for chemical and physical analyses will be analyzed according to Section VI of this protocol.

Sampling guidance dictates that, where appropriate, aliquots for the analysis required in this protocol shall be split from the samples, containerized and immediately preserved, or analyzed as per 40 CFR Part 136. EPA approved test methods require that samples collected for metals analyses be preserved immediately after collection. Testing for the presence of total residual chlorine (TRC) must be analyzed immediately or as soon as possible, for all effluent samples, prior to WET testing. TRC analysis may be performed on-site or by the toxicity testing laboratory and the samples must be dechlorinated, as necessary, using sodium thiosulfate prior to sample use for toxicity testing.

If any of the renewal samples are of sufficient potency to cause lethality to 50 percent or more of the test organisms in any of the test treatments for either species or, if the test fails to meet its permit limits, then chemical analysis for total metals (originally required for the initial sample only in Section VI) will be required on the renewal sample(s) as well.

IV. DILUTION WATER

Samples of receiving water must be collected from a location in the receiving water body immediately upstream of the permitted discharge's zone of influence at a reasonably accessible location. Avoid collection near areas of obvious road or agricultural runoff, storm sewers or other point source discharges and areas where stagnant conditions exist. EPA strongly urges that screening for toxicity be performed prior to the set up of a full, definitive toxicity test any time there is a question about the test dilution water's ability to achieve test acceptability criteria (TAC) as indicated in Section V of this protocol. The test dilution water control response will be used in the statistical analysis of the toxicity test data. All other control(s) required to be run in the test will be reported as specified in the Discharge Monitoring Report (DMR) Instructions, Attachment F, page 2, Test Results & Permit Limits.

The test dilution water must be used to determine whether the test met the applicable TAC. When receiving water is used for test dilution, an additional control made up of standard laboratory water (0% effluent) is required. This control will be used to verify the health of the test organisms and evaluate to what extent, if any, the receiving water itself is responsible for any toxic response observed.

If dechlorination of a sample by the toxicity testing laboratory is necessary a "sodium thiosulfate" control, representing the concentration of sodium thiosulfate used to adequately dechlorinate the sample prior to toxicity testing, must be included in the test.

If the use of an alternate dilution water (ADW) is authorized, in addition to the ADW test control, the testing laboratory must, for the purpose of monitoring the receiving water, also run a receiving water control.

If the receiving water diluent is found to be, or suspected to be toxic or unreliable an ADW of known quality with hardness similar to that of the receiving water may be substituted. Substitution is species specific meaning that the decision to use ADW is made for each species and is based on the toxic response of that particular species. Substitution to an ADW is authorized in two cases. The first is the case where repeating a test due to toxicity in the site dilution water requires an **immediate decision** for ADW use be made by the permittee and toxicity testing laboratory. The second is in the case where two of the most recent documented incidents of unacceptable site dilution water toxicity requires ADW use in future WET testing.

For the second case, written notification from the permittee requesting ADW use **and** written authorization from the permit issuing agency(s) is required **prior to** switching to a long-term use of ADW for the duration of the permit.

Written requests for use of ADW must be mailed with supporting documentation to the following addresses:

Director
Office of Ecosystem Protection (CAA)
U.S. Environmental Protection Agency, Region 1
Five Post Office Square, Suite 100
Mail Code OEP06-5
Boston, MA 02109-3912

and

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

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

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

V. TEST CONDITIONS AND TEST ACCEPTABILITY CRITERIA

Method specific test conditions and TAC are to be followed and adhered to as specified in the method guidance document, EPA 821-R-02-013. If a test does not meet TAC the test must be repeated with fresh samples within 30 days of the initial test completion date.

V.1. Use of Reference Toxicity Testing

Reference toxicity test results and applicable control charts must be included in the toxicity testing report.

If reference toxicity test results fall outside the control limits established by the laboratory for a specific test endpoint, a reason or reasons for this excursion must be evaluated, correction made and reference toxicity tests rerun as necessary.

If a test endpoint value exceeds the control limits at a frequency of more than one out of twenty then causes for the reference toxicity test failure must be examined and if problems are identified corrective action taken. The reference toxicity test must be repeated during the same month in which the exceedance occurred.

If two consecutive reference toxicity tests fall outside control limits, the possible cause(s) for the exceedance must be examined, corrective actions taken and a repeat of the reference toxicity test must take place immediately. Actions taken to resolve the problem must be reported.

V.1.a. Use of Concurrent Reference Toxicity Testing

In the case where concurrent reference toxicity testing is required due to a low frequency of testing with a particular method, if the reference toxicity test results fall slightly outside of laboratory established control limits, but the primary test met the TAC, the results of the primary test will be considered acceptable. However, if the results of the concurrent test fall well outside the established **upper** control limits i.e. ≥ 3 standard deviations for IC25 values and \geq two concentration intervals for NOECs, and even though the primary test meets TAC, the primary test will be considered unacceptable and must be repeated.

V.2. For the *C. dubia* test, the determination of TAC and formal statistical analyses must be performed using only the first three broods produced.

V.3. Test treatments must include 5 effluent concentrations and a dilution water control. An additional test treatment, at the permitted effluent concentration (% effluent), is required if it is not included in the dilution series.

VI. CHEMICAL ANALYSIS

As part of each toxicity test's daily renewal procedure, pH, specific conductance, dissolved oxygen (DO) and temperature must be measured at the beginning and end of each 24-hour period in each test treatment and the control(s).

The additional analysis that must be performed under this protocol is as specified and noted in the table below.

<u>Parameter</u>	Effluent	Receiving Water	ML (mg/l)
Hardness ^{1, 4}	x	x	0.5
Total Residual Chlorine (TRC) ^{2, 3, 4}	x		0.02
Alkalinity ⁴	x	x	2.0
pH ⁴	x	x	--
Specific Conductance ⁴	x	x	--
Total Solids ⁶	x		--
Total Dissolved Solids ⁶	x		--
Ammonia ⁴	x	x	0.1
Total Organic Carbon ⁶	x	x	0.5
Total Metals ⁵			
Cd	x	x	0.0005
Pb	x	x	0.0005
Cu	x	x	0.003
Zn	x	x	0.005
Ni	x	x	0.005
Al	x	x	0.02

Other as permit requires

Notes:

1. Hardness may be determined by:

- APHA Standard Methods for the Examination of Water and Wastewater , 21st Edition
 - Method 2340B (hardness by calculation)
 - Method 2340C (titration)
2. Total Residual Chlorine may be performed using any of the following methods provided the required minimum limit (ML) is met.
- APHA Standard Methods for the Examination of Water and Wastewater , 21st Edition
 - Method 4500-CL E Low Level Amperometric Titration
 - Method 4500-CL G DPD Colorimetric Method
 - USEPA 1983. Manual of Methods Analysis of Water and Wastes
 - Method 330.5
3. Required to be performed on the sample used for WET testing prior to its use for toxicity testing
4. Analysis is to be performed on samples and/or receiving water, as designated in the table above, from all three sampling events.
5. Analysis is to be performed on the initial sample(s) only unless the situation arises as stated in Section III, paragraph 4
6. Analysis to be performed on initial samples only

VII. TOXICITY TEST DATA ANALYSIS AND REVIEW

A. Test Review

1. Concentration / Response Relationship

A concentration/response relationship evaluation is required for test endpoint determinations from both Hypothesis Testing and Point Estimate techniques. The test report is to include documentation of this evaluation in support of the endpoint values reported. The dose-response review must be performed as required in Section 10.2.6 of EPA-821-R-02-013. Guidance for this review can be found at <http://water.epa.gov/scitech/methods/cwa/> . In most cases, the review will result in one of the following three conclusions: (1) Results are reliable and reportable; (2) Results are anomalous and require explanation; or (3) Results are inconclusive and a retest with fresh samples is required.

2. Test Variability (Test Sensitivity)

This review step is separate from the determination of whether a test meets or does not meet TAC. Within test variability is to be examined for the purpose of evaluating test sensitivity. This evaluation is to be performed for the sub-lethal hypothesis testing endpoints reproduction and growth as required by the permit. The test report is to include documentation of this evaluation to support that the endpoint values reported resulted from a toxicity test of adequate sensitivity. This evaluation must be performed as required in Section 10.2.8 of EPA-821-R-02-013.

To determine the adequacy of test sensitivity, USEPA requires the calculation of test percent minimum significant difference (PMSD) values. In cases where NOEC determinations are made based on a non-parametric technique, calculation of a test PMSD value, for the sole purpose of assessing test sensitivity, shall be calculated using a comparable parametric statistical analysis technique. The calculated test PMSD is then compared to the upper and lower PMSD bounds shown for freshwater tests in Section 10.2.8.3, p. 52, Table 6 of EPA-821-R-02-013. The comparison will yield one of the following determinations.

- The test PMSD exceeds the PMSD upper bound test variability criterion in Table 6, the test results are considered highly variable and the test may not be sensitive enough to determine the presence of toxicity at the permit limit concentration (PLC). If the test results indicate that the discharge is not toxic at the PLC, then the test is considered insufficiently sensitive and must be repeated within 30 days of the initial test completion using fresh samples. If the test results indicate that the discharge is toxic at the PLC, the test is considered acceptable and does not have to be repeated.
- The test PMSD falls below the PMSD lower bound test variability criterion in Table 6, the test is determined to be very sensitive. In order to determine which treatment(s) are statistically significant and which are not, for the purpose of reporting a NOEC, the relative percent difference (RPD) between the control and each treatment must be calculated and compared to the lower PMSD boundary. See *Understanding and Accounting for Method Variability in Whole Effluent Toxicity Applications Under the NPDES Program*, EPA 833-R-00-003, June 2002, Section 6.4.2. The following link: [Understanding and Accounting for Method Variability in Whole Effluent Toxicity Applications Under the NPDES Program](#) can be used to locate the USEPA website containing this document. If the RPD for a treatment falls below the PMSD lower bound, the difference is considered statistically insignificant. If the RPD for a treatment is greater than the PMSD lower bound, then the treatment is considered statistically significant.
- The test PMSD falls within the PMSD upper and lower bounds in Table 6, the sub-lethal test endpoint values shall be reported as is.

B. Statistical Analysis

1. General - Recommended Statistical Analysis Method

Refer to general data analysis flowchart, EPA 821-R-02-013, page 43

For discussion on Hypothesis Testing, refer to EPA 821-R-02-013, Section 9.6

For discussion on Point Estimation Techniques, refer to EPA 821-R-02-013, Section 9.7

2. *Pimephales promelas*

Refer to survival hypothesis testing analysis flowchart, EPA 821-R-02-013, page 79

Refer to survival point estimate techniques flowchart, EPA 821-R-02-013, page 80

Refer to growth data statistical analysis flowchart, EPA 821-R-02-013, page 92

3. *Ceriodaphnia dubia*

Refer to survival data testing flowchart, EPA 821-R-02-013, page 168

Refer to reproduction data testing flowchart, EPA 821-R-02-013, page 173

VIII. TOXICITY TEST REPORTING

A report of results must include the following:

- Test summary sheets (2007 DMR Attachment F) which includes:
 - Facility name
 - NPDES permit number
 - Outfall number
 - Sample type
 - Sampling method
 - Effluent TRC concentration
 - Dilution water used
 - Receiving water name and sampling location
 - Test type and species
 - Test start date
 - Effluent concentrations tested (%) and permit limit concentration
 - Applicable reference toxicity test date and whether acceptable or not
 - Age, age range and source of test organisms used for testing
 - Results of TAC review for all applicable controls
 - Test sensitivity evaluation results (test PMSD for growth and reproduction)
 - Permit limit and toxicity test results
 - Summary of test sensitivity and concentration response evaluation

In addition to the summary sheets the report must include:

- A brief description of sample collection procedures
- Chain of custody documentation including names of individuals collecting samples, times and dates of sample collection, sample locations, requested analysis and lab receipt with time and date received, lab receipt personnel and condition of samples upon receipt at the lab(s)
- Reference toxicity test control charts
- All sample chemical/physical data generated, including minimum limits (MLs) and analytical methods used
- All toxicity test raw data including daily ambient test conditions, toxicity test chemistry, sample dechlorination details as necessary, bench sheets and statistical analysis
- A discussion of any deviations from test conditions
- Any further discussion of reported test results, statistical analysis and concentration-response relationship and test sensitivity review per species per endpoint

NPDES PART II STANDARD CONDITIONS
(April 26, 2018)¹

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¹ Updated July 17, 2018 to fix typographical errors.

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A. GENERAL REQUIREMENTS

1. Duty to Comply

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

- a. The Permittee shall comply with effluent standards or prohibitions established under Section 307(a) of the Clean Water Act for toxic pollutants and with standards for sewage sludge use or disposal established under Section 405(d) of the CWA within the time provided in the regulations that establish these standards or prohibitions, or standards for sewage sludge use or disposal, even if the permit has not yet been modified to incorporate the requirement.
- b. Penalties for Violations of Permit Conditions: The Director will adjust the civil and administrative penalties listed below in accordance with the Civil Monetary Penalty Inflation Adjustment Rule (83 Fed. Reg. 1190-1194 (January 10, 2018) and the 2015 amendments to the Federal Civil Penalties Inflation Adjustment Act of 1990, 28 U.S.C. § 2461 note. See Pub. L. 114-74, Section 701 (Nov. 2, 2015)). These requirements help ensure that EPA penalties keep pace with inflation. Under the above-cited 2015 amendments to inflationary adjustment law, EPA must review its statutory civil penalties each year and adjust them as necessary.

(1) Criminal Penalties

- (a) *Negligent Violations.* The CWA provides that any person who negligently violates permit conditions implementing Sections 301, 302, 306, 307, 308, 318, or 405 of the Act is subject to criminal penalties of not less than \$2,500 nor more than \$25,000 per day of violation, or imprisonment of not more than 1 year, or both. In the case of a second or subsequent conviction for a negligent violation, a person shall be subject to criminal penalties of not more than \$50,000 per day of violation or by imprisonment of not more than 2 years, or both.
- (b) *Knowing Violations.* The CWA provides that any person who knowingly violates permit conditions implementing Sections 301, 302, 306, 307, 308, 318, or 405 of the Act is subject to a fine of not less than \$5,000 nor more than \$50,000 per day of violation, or by imprisonment for not more than 3 years, or both. In the case of a second or subsequent conviction for a knowing violation, a person shall be subject to criminal penalties of not more than \$100,000 per day of violation, or imprisonment of not more than 6 years, or both.
- (c) *Knowing Endangerment.* The CWA provides that any person who knowingly violates permit conditions implementing Sections 301, 302, 303, 306, 307, 308, 318, or 405 of the Act and who knows at that time that he or she is placing another person in imminent danger of death or serious bodily injury shall upon conviction be subject to a fine of not more than \$250,000 or by imprisonment of not more than 15 years, or both. In the case of a second or subsequent conviction for a knowing

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endangerment violation, a person shall be subject to a fine of not more than \$500,000 or by imprisonment of not more than 30 years, or both. An organization, as defined in Section 309(c)(3)(B)(iii) of the Act, shall, upon conviction of violating the imminent danger provision, be subject to a fine of not more than \$1,000,000 and can be fined up to \$2,000,000 for second or subsequent convictions.

- (d) *False Statement.* The CWA provides that any person who falsifies, tampers with, or knowingly renders inaccurate any monitoring device or method required to be maintained under this permit shall, upon conviction, be punished by a fine of not more than \$10,000, or by imprisonment for not more than 2 years, or both. If a conviction of a person is for a violation committed after a first conviction of such person under this paragraph, punishment is a fine of not more than \$20,000 per day of violation, or by imprisonment of not more than 4 years, or both. The Act further provides that any person who knowingly makes any false statement, representation, or certification in any record or other document submitted or required to be maintained under this permit, including monitoring reports or reports of compliance or non-compliance shall, upon conviction, be punished by a fine of not more than \$10,000 per violation, or by imprisonment for not more than 6 months per violation, or by both.
- (2) *Civil Penalties.* The CWA provides that any person who violates a permit condition implementing Sections 301, 302, 306, 307, 308, 318, or 405 of the Act is subject to a civil penalty not to exceed the maximum amounts authorized by Section 309(d) of the Act, the 2015 amendments to the Federal Civil Penalties Inflation Adjustment Act of 1990, 28 U.S.C. § 2461 note, and 40 C.F.R. Part 19. *See* Pub. L.114-74, Section 701 (Nov. 2, 2015); 83 Fed. Reg. 1190 (January 10, 2018).
- (3) *Administrative Penalties.* The CWA provides that any person who violates a permit condition implementing Sections 301, 302, 306, 307, 308, 318, or 405 of the Act is subject to an administrative penalty as follows:
 - (a) *Class I Penalty.* Not to exceed the maximum amounts authorized by Section 309(g)(2)(A) of the Act, the 2015 amendments to the Federal Civil Penalties Inflation Adjustment Act of 1990, 28 U.S.C. § 2461 note, and 40 C.F.R. Part 19. *See* Pub. L.114-74, Section 701 (Nov. 2, 2015); 83 Fed. Reg. 1190 (January 10, 2018).
 - (b) *Class II Penalty.* Not to exceed the maximum amounts authorized by Section 309(g)(2)(B) of the Act the 2015 amendments to the Federal Civil Penalties Inflation Adjustment Act of 1990, 28 U.S.C. § 2461 note, and 40 C.F.R. Part 19. *See* Pub. L.114-74, Section 701 (Nov. 2, 2015); 83 Fed. Reg. 1190 (January 10, 2018).

2. Permit Actions

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

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condition.

3. Duty to Provide Information

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

4. Oil and Hazardous Substance Liability

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

5. Property Rights

This permit does not convey any property rights of any sort, or any exclusive privilege.

6. Confidentiality of Information

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

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

- (1) The name and address of any permit applicant or Permittee;
- (2) Permit applications, permits, and effluent data.

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

7. Duty to Reapply

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

8. State Authorities

Nothing in Parts 122, 123, or 124 precludes more stringent State regulation of any activity

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covered by the regulations in 40 C.F.R. Parts 122, 123, and 124, whether or not under an approved State program.

9. Other Laws

The issuance of a permit does not authorize any injury to persons or property or invasion of other private rights, or any infringement of State or local law or regulations.

B. OPERATION AND MAINTENANCE OF POLLUTION CONTROLS

1. Proper Operation and Maintenance

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

2. Need to Halt or Reduce Not a Defense

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

3. Duty to Mitigate

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

4. Bypass

a. Definitions

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

- b. *Bypass not exceeding limitations.* The Permittee may allow any bypass to occur which does not cause effluent limitations to be exceeded, but only if it also is for essential maintenance to assure efficient operation. These bypasses are not subject to the provisions of paragraphs (c) and (d) of this Section.

c. Notice

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- (1) *Anticipated bypass.* If the Permittee knows in advance of the need for a bypass, it shall submit prior notice, if possible at least ten days before the date of the bypass. As of December 21, 2020 all notices submitted in compliance with this Section must be submitted electronically by the Permittee to the Director or initial recipient, as defined in 40 C.F.R. § 127.2(b), in compliance with this Section and 40 C.F.R. Part 3 (including, in all cases, Subpart D to Part 3), § 122.22, and 40 C.F.R. Part 127. Part 127 is not intended to undo existing requirements for electronic reporting. Prior to this date, and independent of Part 127, Permittees may be required to report electronically if specified by a particular permit or if required to do so by state law.
- (2) *Unanticipated bypass.* The Permittee shall submit notice of an unanticipated bypass as required in paragraph D.1.e. of this part (24-hour notice). As of December 21, 2020 all notices submitted in compliance with this Section must be submitted electronically by the Permittee to the Director or initial recipient, as defined in 40 C.F.R. § 127.2(b), in compliance with this Section and 40 C.F.R. Part 3 (including, in all cases, Subpart D to Part 3), § 122.22, and 40 C.F.R. Part 127. Part 127 is not intended to undo existing requirements for electronic reporting. Prior to this date, and independent of Part 127, Permittees may be required to report electronically if specified by a particular permit or required to do so by law.

d. *Prohibition of bypass.*

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

5. Upset

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

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improper operation.

- b. *Effect of an upset.* An upset constitutes an affirmative defense to an action brought for noncompliance with such technology based permit effluent limitations if the requirements of paragraph B.5.c. of this Section are met. No determination made during administrative review of claims that noncompliance was caused by upset, and before an action for noncompliance, is final administrative action subject to judicial review.
- c. *Conditions necessary for a demonstration of upset.* A Permittee who wishes to establish the affirmative defense of upset shall demonstrate, through properly signed, contemporaneous operating logs, or other relevant evidence that:
 - (1) An upset occurred and that the Permittee can identify the cause(s) of the upset;
 - (2) The permitted facility was at the time being properly operated; and
 - (3) The Permittee submitted notice of the upset as required in paragraph D.1.e.2.b. (24-hour notice).
 - (4) The Permittee complied with any remedial measures required under B.3. above.
- d. *Burden of proof.* In any enforcement proceeding the Permittee seeking to establish the occurrence of an upset has the burden of proof.

C. MONITORING REQUIREMENTS

1. Monitoring and Records

- a. Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity.
- b. Except for records of monitoring information required by this permit related to the Permittee's sewage sludge use and disposal activities, which shall be retained for a period of at least 5 years (or longer as required by 40 C.F.R. § 503), the Permittee shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by this permit, and records of all data used to complete the application for this permit, for a period of at least 3 years from the date of the sample, measurement, report or application. This period may be extended by request of the Director at any time.
- c. Records of monitoring information shall include:
 - (1) The date, exact place, and time of sampling or measurements;
 - (2) The individual(s) who performed the sampling or measurements;
 - (3) The date(s) analyses were performed;
 - (4) The individual(s) who performed the analyses;
 - (5) The analytical techniques or methods used; and
 - (6) The results of such analyses.
- d. Monitoring must be conducted according to test procedures approved under 40 C.F.R. § 136 unless another method is required under 40 C.F.R. Subchapters N or O.
- e. The Clean Water Act provides that any person who falsifies, tampers with, or

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knowingly renders inaccurate any monitoring device or method required to be maintained under this permit shall, upon conviction, be punished by a fine of not more than \$10,000, or by imprisonment for not more than 2 years, or both. If a conviction of a person is for a violation committed after a first conviction of such person under this paragraph, punishment is a fine of not more than \$20,000 per day of violation, or by imprisonment of not more than 4 years, or both.

2. Inspection and Entry

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

- a. Enter upon the Permittee's premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of this permit;
- b. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;
- c. Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this permit; and
- d. Sample or monitor at reasonable times, for the purposes of assuring permit compliance or as otherwise authorized by the Clean Water Act, any substances or parameters at any location.

D. REPORTING REQUIREMENTS

1. Reporting Requirements

- a. *Planned Changes.* The Permittee shall give notice to the Director as soon as possible of any planned physical alterations or additions to the permitted facility. Notice is required only when:
 - (1) The alteration or addition to a permitted facility may meet one of the criteria for determining whether a facility is a new source in 40 C.F.R. § 122.29(b); or
 - (2) The alteration or addition could significantly change the nature or increase the quantity of pollutants discharged. This notification applies to pollutants which are subject neither to effluent limitations in the permit, nor to notification requirements at 40 C.F.R. § 122.42(a)(1).
 - (3) The alteration or addition results in a significant change in the Permittee's sludge use or disposal practices, and such alteration, addition, or change may justify the application of permit conditions that are different from or absent in the existing permit, including notification of additional use or disposal sites not reported during the permit application process or not reported pursuant to an approved land application plan.
- b. *Anticipated noncompliance.* The Permittee shall give advance notice to the Director of any planned changes in the permitted facility or activity which may result in noncompliance with permit requirements.

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- c. *Transfers.* This permit is not transferable to any person except after notice to the Director. The Director may require modification or revocation and reissuance of the permit to change the name of the Permittee and incorporate such other requirements as may be necessary under the Clean Water Act. *See* 40 C.F.R. § 122.61; in some cases, modification or revocation and reissuance is mandatory.
- d. *Monitoring reports.* Monitoring results shall be reported at the intervals specified elsewhere in this permit.
 - (1) Monitoring results must be reported on a Discharge Monitoring Report (DMR) or forms provided or specified by the Director for reporting results of monitoring of sludge use or disposal practices. As of December 21, 2016 all reports and forms submitted in compliance with this Section must be submitted electronically by the Permittee to the Director or initial recipient, as defined in 40 C.F.R. § 127.2(b), in compliance with this Section and 40 C.F.R. Part 3 (including, in all cases, Subpart D to Part 3), § 122.22, and 40 C.F.R. Part 127. Part 127 is not intended to undo existing requirements for electronic reporting. Prior to this date, and independent of Part 127, Permittees may be required to report electronically if specified by a particular permit or if required to do so by State law.
 - (2) If the Permittee monitors any pollutant more frequently than required by the permit using test procedures approved under 40 C.F.R. § 136, or another method required for an industry-specific waste stream under 40 C.F.R. Subchapters N or O, the results of such monitoring shall be included in the calculation and reporting of the data submitted in the DMR or sludge reporting form specified by the Director.
 - (3) Calculations for all limitations which require averaging or measurements shall utilize an arithmetic mean unless otherwise specified by the Director in the permit.
- e. *Twenty-four hour reporting.*
 - (1) The Permittee shall report any noncompliance which may endanger health or the environment. Any information shall be provided orally within 24 hours from the time the Permittee becomes aware of the circumstances. A written report shall also be provided within 5 days of the time the Permittee becomes aware of the circumstances. The written report shall contain a description of the noncompliance and its cause; the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance. For noncompliance events related to combined sewer overflows, sanitary sewer overflows, or bypass events, these reports must include the data described above (with the exception of time of discovery) as well as the type of event (combined sewer overflows, sanitary sewer overflows, or bypass events), type of sewer overflow structure (e.g., manhole, combined sewer overflow outfall), discharge volumes untreated by the treatment works treating domestic sewage, types of human health and environmental impacts of the sewer overflow event, and whether the noncompliance was related to wet weather. As of December 21, 2020 all

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reports related to combined sewer overflows, sanitary sewer overflows, or bypass events submitted in compliance with this section must be submitted electronically by the Permittee to the Director or initial recipient, as defined in 40 C.F.R. § 127.2(b), in compliance with this Section and 40 C.F.R. Part 3 (including, in all cases Subpart D to Part 3), § 122.22, and 40 C.F.R. Part 127. Part 127 is not intended to undo existing requirements for electronic reporting. Prior to this date, and independent of Part 127, Permittees may be required to electronically submit reports related to combined sewer overflows, sanitary sewer overflows, or bypass events under this section by a particular permit or if required to do so by state law. The Director may also require Permittees to electronically submit reports not related to combined sewer overflows, sanitary sewer overflows, or bypass events under this section.

- (2) The following shall be included as information which must be reported within 24 hours under this paragraph.
 - (a) Any unanticipated bypass which exceeds any effluent limitation in the permit. *See* 40 C.F.R. § 122.41(g).
 - (b) Any upset which exceeds any effluent limitation in the permit.
 - (c) Violation of a maximum daily discharge limitation for any of the pollutants listed by the Director in the permit to be reported within 24 hours. *See* 40 C.F.R. § 122.44(g).
 - (3) The Director may waive the written report on a case-by-case basis for reports under paragraph D.1.e. of this Section if the oral report has been received within 24 hours.
- f. *Compliance Schedules.* Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule of this permit shall be submitted no later than 14 days following each schedule date.
- g. *Other noncompliance.* The Permittee shall report all instances of noncompliance not reported under paragraphs D.1.d., D.1.e., and D.1.f. of this Section, at the time monitoring reports are submitted. The reports shall contain the information listed in paragraph D.1.e. of this Section. For noncompliance events related to combined sewer overflows, sanitary sewer overflows, or bypass events, these reports shall contain the information described in paragraph D.1.e. and the applicable required data in Appendix A to 40 C.F.R. Part 127. As of December 21, 2020 all reports related to combined sewer overflows, sanitary sewer overflows, or bypass events submitted in compliance with this section must be submitted electronically by the Permittee to the Director or initial recipient, as defined in 40 C.F.R. § 127.2(b), in compliance with this Section and 40 C.F.R. Part 3 (including, in all cases, Subpart D to Part 3), § 122.22, and 40 C.F.R. Part 127. Part 127 is not intended to undo existing requirements for electronic reporting. Prior to this date, and independent of Part 127, Permittees may be required to electronically submit reports related to combined sewer overflows, sanitary sewer overflows, or bypass events under this section by a particular permit or if required to do so by state law. The Director may also require Permittees to electronically submit reports not related to combined sewer overflows, sanitary sewer overflows, or bypass events under this Section.
- h. *Other information.* Where the Permittee becomes aware that it failed to submit any

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relevant facts in a permit application, or submitted incorrect information in a permit application or in any report to the Director, it shall promptly submit such facts or information.

- i. *Identification of the initial recipient for NPDES electronic reporting data.* The owner, operator, or the duly authorized representative of an NPDES-regulated entity is required to electronically submit the required NPDES information (as specified in Appendix A to 40 C.F.R. Part 127) to the appropriate initial recipient, as determined by EPA, and as defined in 40 C.F.R. § 127.2(b). EPA will identify and publish the list of initial recipients on its Web site and in the FEDERAL REGISTER, by state and by NPDES data group (see 40 C.F.R. § 127.2(c) of this Chapter). EPA will update and maintain this listing.

2. Signatory Requirement

- a. All applications, reports, or information submitted to the Director shall be signed and certified. *See* 40 C.F.R. §122.22.
- b. The CWA provides that any person who knowingly makes any false statement, representation, or certification in any record or other document submitted or required to be maintained under this permit, including monitoring reports or reports of compliance or non-compliance shall, upon conviction, be punished by a fine of not more than \$10,000 per violation, or by imprisonment for not more than 6 months per violation, or by both.

3. Availability of Reports.

Except for data determined to be confidential under paragraph A.6. above, all reports prepared in accordance with the terms of this permit shall be available for public inspection at the offices of the State water pollution control agency and the Director. As required by the CWA, effluent data shall not be considered confidential. Knowingly making any false statements on any such report may result in the imposition of criminal penalties as provided for in Section 309 of the CWA.

E. DEFINITIONS AND ABBREVIATIONS

1. General Definitions

For more definitions related to sludge use and disposal requirements, see EPA Region 1's NPDES Permit Sludge Compliance Guidance document (4 November 1999, modified to add regulatory definitions, April 2018).

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

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

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

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“approved States,” including any approved modifications or revisions.

Approved program or *approved State* means a State or interstate program which has been approved or authorized by EPA under Part 123.

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

Average weekly discharge limitation means the highest allowable average of “daily discharges” over a calendar week, calculated as the sum of all “daily discharges” measured during a calendar week divided by the number of “daily discharges” measured during that week.

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

Bypass see B.4.a.1 above.

C-NOEC or “*Chronic (Long-term Exposure Test) – No Observed Effect Concentration*” means the highest tested concentration of an effluent or a toxicant at which no adverse effects are observed on the aquatic test organisms at a specified time of observation.

Class I sludge management facility is any publicly owned treatment works (POTW), as defined in 40 C.F.R. § 501.2, required to have an approved pretreatment program under 40 C.F.R. § 403.8 (a) (including any POTW located in a State that has elected to assume local program responsibilities pursuant to 40 C.F.R. § 403.10 (e)) and any treatment works treating domestic sewage, as defined in 40 C.F.R. § 122.2, classified as a Class I sludge management facility by the EPA Regional Administrator, or, in the case of approved State programs, the Regional Administrator in conjunction with the State Director, because of the potential for its sewage sludge use or disposal practice to affect public health and the environment adversely.

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

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

CWA means the Clean Water Act (formerly referred to as the Federal Water Pollution Control Act or Federal Water Pollution Control Act Amendments of 1972) Public Law 92-500, as amended by Public Law 95-217, Public Law 95-576, Public Law 96-483 and Public Law 97-117, 33 U.S.C. 1251 *et seq.*

CWA and regulations means the Clean Water Act (CWA) and applicable regulations promulgated thereunder. In the case of an approved State program, it includes State program requirements.

Daily Discharge means the “discharge of a pollutant” measured during a calendar day or any

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other 24-hour period that reasonably represents the calendar day for purposes of sampling. For pollutants with limitations expressed in units of mass, the “daily discharge” is calculated as the total mass of the pollutant discharged over the day. For pollutants with limitations expressed in other units of measurements, the “daily discharge” is calculated as the average measurement of the pollutant over the day.

Direct Discharge means the “discharge of a pollutant.”

Director means the Regional Administrator or an authorized representative. In the case of a permit also issued under Massachusetts’ authority, it also refers to the Director of the Division of Watershed Management, Department of Environmental Protection, Commonwealth of Massachusetts.

Discharge

- (a) When used without qualification, *discharge* means the “discharge of a pollutant.”
- (b) As used in the definitions for “interference” and “pass through,” *discharge* means the introduction of pollutants into a POTW from any non-domestic source regulated under Section 307(b), (c) or (d) of the Act.

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

Discharge of a pollutant means:

- (a) Any addition of any “pollutant” or combination of pollutants to “waters of the United States” from any “point source,” or
- (b) Any addition of any pollutant or combination of pollutants to the waters of the “contiguous zone” or the ocean from any point source other than a vessel or other floating craft which is being used as a means of transportation.

This definition includes additions of pollutants into waters of the United States from: surface runoff which is collected or channeled by man; discharges through pipes, sewers, or other conveyances owned by a State, municipality, or other person which do not lead to a treatment works; and discharges through pipes, sewers, or other conveyances, leading into privately owned treatment works. This term does not include an addition of pollutants by any “indirect discharger.”

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

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

Environmental Protection Agency (“EPA”) means the United States Environmental Protection

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Agency.

Grab Sample means an individual sample collected in a period of less than 15 minutes.

Hazardous substance means any substance designated under 40 C.F.R. Part 116 pursuant to Section 311 of CWA.

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

Indirect discharger means a nondomestic discharger introducing “pollutants” to a “publicly owned treatment works.”

Interference means a discharge (see definition above) which, alone or in conjunction with a discharge or discharges from other sources, both:

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

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

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

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

LC₅₀ means the concentration of a sample that causes mortality of 50% of the test population at a specific time of observation. The *LC₅₀* = 100% is defined as a sample of undiluted effluent.

Maximum daily discharge limitation means the highest allowable “daily discharge.”

Municipal solid waste landfill (MSWLF) unit means a discrete area of land or an excavation that receives household waste, and that is not a land application unit, surface impoundment, injection well, or waste pile, as those terms are defined under 40 C.F.R. § 257.2. A MSWLF unit also may receive other types of RCRA Subtitle D wastes, such as commercial solid waste, nonhazardous sludge, very small quantity generator waste and industrial solid waste. Such a landfill may be

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publicly or privately owned. A MSWLF unit may be a new MSWLF unit, an existing MSWLF unit or a lateral expansion. A construction and demolition landfill that receives residential lead-based paint waste and does not receive any other household waste is not a MSWLF unit.

Municipality

- (a) When used without qualification *municipality* means a city, town, borough, county, parish, district, association, or other public body created by or under State law and having jurisdiction over disposal of sewage, industrial wastes, or other wastes, or an Indian tribe or an authorized Indian tribal organization, or a designated and approved management agency under Section 208 of CWA.
- (b) As related to sludge use and disposal, *municipality* means a city, town, borough, county, parish, district, association, or other public body (including an intermunicipal Agency of two or more of the foregoing entities) created by or under State law; an Indian tribe or an authorized Indian tribal organization having jurisdiction over sewage sludge management; or a designated and approved management Agency under Section 208 of the CWA, as amended. The definition includes a special district created under State law, such as a water district, sewer district, sanitary district, utility district, drainage district, or similar entity, or an integrated waste management facility as defined in Section 201 (e) of the CWA, as amended, that has as one of its principal responsibilities the treatment, transport, use or disposal of sewage sludge.

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

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

- (a) From which there is or may be a “discharge of pollutants;”
- (b) That did not commence the “discharge of pollutants” at a particular “site” prior to August 13, 1979;
- (c) Which is not a “new source;” and
- (d) Which has never received a finally effective NPDES permit for discharges at that “site.”

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

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

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

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

NPDES means “National Pollutant Discharge Elimination System.”

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

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

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

Permit means an authorization, license, or equivalent control document issued by EPA or an “approved State” to implement the requirements of Parts 122, 123, and 124. “Permit” includes an NPDES “general permit” (40 C.F.R. § 122.28). “Permit” does not include any permit which has not yet been the subject of final agency action, such as a “draft permit” or “proposed permit.”

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

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

pH means the logarithm of the reciprocal of the hydrogen ion concentration measured at 25° Centigrade or measured at another temperature and then converted to an equivalent value at 25° Centigrade.

Point Source means any discernible, confined, and discrete conveyance, including but not limited to, any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operation, landfill leachate collection system, vessel or other floating craft from which pollutants are or may be discharged. This term does not include return flows from irrigated agriculture or agricultural storm water runoff (see 40 C.F.R. § 122.3).

Pollutant means dredged spoil, solid waste, incinerator residue, filter backwash, sewage, garbage, sewage sludge, munitions, chemical wastes, biological materials, radioactive materials

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(except those regulated under the Atomic Energy Act of 1954, as amended (42 U.S.C. 2011 *et seq.*)), heat, wrecked or discarded equipment, rock, sand, cellar dirt and industrial, municipal, and agricultural waste discharged into water. It does not mean:

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

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

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

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

Publicly owned treatment works (POTW) means a treatment works as defined by Section 212 of the Act, which is owned by a State or municipality (as defined by Section 504(4) of the Act). This definition includes any devices and systems used in the storage, treatment, recycling and reclamation of municipal sewage or industrial wastes of a liquid nature. It also includes sewers, pipes and other conveyances only if they convey wastewater to a POTW Treatment Plant. The term also means the municipality as defined in Section 502(4) of the Act, which has jurisdiction over the indirect discharges to and the discharges from such a treatment works.

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

Secondary industry category means any industry which is not a “primary industry category.”

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

Sewage Sludge means any solid, semi-solid, or liquid residue removed during the treatment of municipal waste water or domestic sewage. Sewage sludge includes, but is not limited to, solids removed during primary, secondary, or advanced waste water treatment, scum, septage, portable toilet pumpings, type III marine sanitation device pumpings (33 C.F.R. Part 159), and sewage sludge products. Sewage sludge does not include grit or screenings, or ash generated during the incineration of sewage sludge.

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

Sewage sludge unit is land on which only sewage sludge is placed for final disposal. This does

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not include land on which sewage sludge is either stored or treated. Land does not include waters of the United States, as defined in 40 C.F.R. § 122.2.

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

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

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

Sludge-only facility means any “treatment works treating domestic sewage” whose methods of sewage sludge use or disposal are subject to regulations promulgated pursuant to section 405(d) of the CWA, and is required to obtain a permit under 40 C.F.R. § 122.1(b)(2).

State means any of the 50 States, the District of Columbia, Guam, the Commonwealth of Puerto Rico, the Virgin Islands, American Samoa, the Commonwealth of the Northern Mariana Islands, the Trust Territory of the Pacific Islands, or an Indian Tribe as defined in the regulations which meets the requirements of 40 C.F.R. § 123.31.

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

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

Storm water discharge associated with industrial activity means the discharge from any conveyance that is used for collecting and conveying storm water and that is directly related to manufacturing, processing, or raw materials storage areas at an industrial plant.

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

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

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

For purposes of this definition, “domestic sewage” includes waste and waste water from humans or household operations that are discharged to or otherwise enter a treatment works. In States where there is no approved State sludge management program under Section 405(f) of the CWA, the Director may designate any person subject to the standards for sewage sludge use and

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disposal in 40 C.F.R. Part 503 as a “treatment works treating domestic sewage,” where he or she finds that there is a potential for adverse effects on public health and the environment from poor sludge quality or poor sludge handling, use or disposal practices, or where he or she finds that such designation is necessary to ensure that such person is in compliance with 40 C.F.R. Part 503.

Upset see B.5.a. above.

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

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

Waters of the United States or *waters of the U.S.* means:

- (a) All waters which are currently used, were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide;
- (b) All interstate waters, including interstate “wetlands;”
- (c) All other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, “wetlands”, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds the use, degradation, or destruction of which would affect or could affect interstate or foreign commerce including any such waters:
 - (1) Which are or could be used by interstate or foreign travelers for recreational or other purpose;
 - (2) From which fish or shellfish are or could be taken and sold in interstate or foreign commerce; or
 - (3) Which are used or could be used for industrial purposes by industries in interstate commerce;
- (d) All impoundments of waters otherwise defined as waters of the United States under this definition;
- (e) Tributaries of waters identified in paragraphs (a) through (d) of this definition;
- (f) The territorial sea; and
- (g) “Wetlands” adjacent to waters (other than waters that are themselves wetlands) identified in paragraphs (a) through (f) of this definition.

Waste treatment systems, including treatment ponds or lagoons designed to meet the requirements of CWA (other than cooling ponds as defined in 40 C.F.R. § 423.11(m) which also meet the criteria of this definition) are not waters of the United States. This exclusion applies only to manmade bodies of water which neither were originally created in waters of the United States (such as disposal area in wetlands) nor resulted from the impoundment of waters of the United States. Waters of the United States do not include prior converted cropland.

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Notwithstanding the determination of an area's status as prior converted cropland by any other federal agency, for the purposes of the Clean Water Act, the final authority regarding Clean Water Act jurisdiction remains with EPA.

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

Whole Effluent Toxicity (WET) means the aggregate toxic effect of an effluent measured directly by a toxicity test.

Zone of Initial Dilution (ZID) means the region of initial mixing surrounding or adjacent to the end of the outfall pipe or diffuser ports, provided that the ZID may not be larger than allowed by mixing zone restrictions in applicable water quality standards.

2. Commonly Used Abbreviations

BOD	Five-day biochemical oxygen demand unless otherwise specified
CBOD	Carbonaceous BOD
CFS	Cubic feet per second
COD	Chemical oxygen demand
Chlorine	
Cl ₂	Total residual chlorine
TRC	Total residual chlorine which is a combination of free available chlorine (FAC, see below) and combined chlorine (chloramines, etc.)
TRO	Total residual chlorine in marine waters where halogen compounds are present
FAC	Free available chlorine (aqueous molecular chlorine, hypochlorous acid, and hypochlorite ion)
Coliform	
Coliform, Fecal	Total fecal coliform bacteria
Coliform, Total	Total coliform bacteria
Cont.	Continuous recording of the parameter being monitored, i.e. flow, temperature, pH, etc.
Cu. M/day or M ³ /day	Cubic meters per day
DO	Dissolved oxygen

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kg/day	Kilograms per day
lbs/day	Pounds per day
mg/L	Milligram(s) per liter
mL/L	Milliliters per liter
MGD	Million gallons per day
Nitrogen	
Total N	Total nitrogen
NH ₃ -N	Ammonia nitrogen as nitrogen
NO ₃ -N	Nitrate as nitrogen
NO ₂ -N	Nitrite as nitrogen
NO ₃ -NO ₂	Combined nitrate and nitrite nitrogen as nitrogen
TKN	Total Kjeldahl nitrogen as nitrogen
Oil & Grease	Freon extractable material
PCB	Polychlorinated biphenyl
Surfactant	Surface-active agent
Temp. °C	Temperature in degrees Centigrade
Temp. °F	Temperature in degrees Fahrenheit
TOC	Total organic carbon
Total P	Total phosphorus
TSS or NFR	Total suspended solids or total nonfilterable residue
Turb. or Turbidity	Turbidity measured by the Nephelometric Method (NTU)
µg/L	Microgram(s) per liter
WET	“Whole effluent toxicity”
ZID	Zone of Initial Dilution

**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND - REGION 1
5 POST OFFICE SQUARE, SUITE 100
BOSTON, MASSACHUSETTS 02109-3912**

FACT SHEET

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

NPDES PERMIT NUMBER: MA0040177

PUBLIC NOTICE START AND END DATES: February 15, 2019 – March 16, 2019

NAME AND MAILING ADDRESS OF APPLICANT:

Brox Industries, Inc.
1471 Methuen Street
Dracut, MA 01826

NAME AND ADDRESS OF FACILITY WHERE DISCHARGE OCCURS:

Brox Industries, Inc.
1480 Methuen Street
Dracut, MA 01826

RECEIVING WATER AND CLASSIFICATION:

Wetland System adjacent to the Merrimack River and its tributaries (MA84A-03);
Class B

SIC CODE: 1429 Crushed and Broken Stone (not elsewhere classified)
2951 Asphalt Paving Mixtures and Blocks

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1.0 Proposed Action

The above-named applicant (the “Permittee”) has applied to the U.S. Environmental Protection Agency (EPA) and the Massachusetts Department of Environmental Protection (MassDEP) for reissuance of a National Pollutant Discharge Elimination System (NPDES) permit to discharge from the Brox Industries, Inc. site (the “Facility”) into the wetlands system adjacent to the Merrimack River and its tributaries.

The permit currently in effect was issued on March 22, 2007 with an effective date of June 1, 2007 and expired on May 31, 2012 (the “2007 Permit”). The Permittee filed an application for permit reissuance with EPA dated November 28, 2011, as required by 40 Code of Federal Regulations (C.F.R.) § 122.6. Since the permit application was deemed timely and complete by EPA on April 26, 2012, the Facility’s 2007 Permit has been administratively continued pursuant to 40 C.F.R. § 122.6 and § 122.21(d). EPA and the State conducted a site visit on November 8, 2018.

This NPDES Permit is issued jointly by EPA and MassDEP under federal and state law, respectively. As such, all the terms and conditions of the permit are, therefore, incorporated into and constitute a discharge permit issued by the Director of the Division of Watershed Management pursuant to M.G.L. Chap. 21, § 43.

2.0 Statutory and Regulatory Authority

Congress enacted the Clean Water Act (CWA), “to restore and maintain the chemical, physical, and biological integrity of the Nation’s waters.” *See* CWA § 101(a). To achieve this objective, the CWA makes it unlawful for any person to discharge any pollutant into the waters of the United States from any point source, except as authorized by specific permitting sections of the CWA, one of which is § 402. *See* CWA §§ 303(a), 402(a). Section 402(a) established one of the CWA’s principal permitting programs, the NPDES Permit Program. Under this section, EPA may “issue a permit for the discharge of any pollutant or combination of pollutants” in accordance with certain conditions. *See* CWA § 402(a). NPDES permits generally contain discharge limitations and establish related monitoring and reporting requirements. *See* CWA § 402(a)(1) and (2). The regulations governing EPA’s NPDES permit program are generally found in 40 C.F.R. §§ 122, 124, 125, and 136.

Section 301 of the CWA provides for two types of effluent limitations to be included in NPDES permits: “technology-based” effluent limitations (TBELs) and “water quality-based” effluent limitations (WQBELs). *See* CWA §§ 301, 304(b); 40 C.F.R. §§ 122, 125, and 131.

2.1 Technology-Based Requirements

Technology-based treatment requirements represent the minimum level of control that must be imposed under §§ 301(b) and 402 of the CWA 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. *See* 40 C.F.R. § 125 Subpart A.

Subpart A of 40 C.F.R. § 125 establishes criteria and standards for the imposition of technology-based treatment requirements in permits under § 301(b) of the CWA, including the application of EPA promulgated Effluent Limitation Guidelines (ELGs) and case-by-case determinations of effluent limitations under § 402(a)(1) of the CWA.

In general, ELGs 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 C.F.R. § 125.3(a)(2). Compliance schedules and deadlines not in accordance with the statutory provisions of the CWA cannot be authorized by a NPDES permit. In the absence of published technology-based effluent guidelines, the permit writer is authorized under § 402(a)(1)(B) of the CWA to establish effluent limitations on a case-by-case basis using best professional judgment (BPJ).

2.2 Water Quality-Based Requirements

The CWA and federal regulations require 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 less stringent TBELs would interfere with the attainment or maintenance of water quality criteria in the receiving water. *See* § 301(b)(1)(C) of the CWA and 40 C.F.R. §§ 122.44(d)(1) and 122.44(d)(5).

2.2.1 Water Quality Standards

The CWA requires that each state develop water quality standards (WQSs) for all water bodies within the State. *See* CWA § 303 and 40 C.F.R. §§ 131.10-12. Generally, WQSs consist of three parts: 1) beneficial designated use or uses for a water-body or a segment of a water-body; 2) numeric 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 and to protect high quality and National resource waters. *See* CWA § 303(c)(2)(A) and 40 C.F.R. § 131.12. The applicable State WQSs can be found in 314 of the Code of Massachusetts Regulations, Chapter 4 (314 CMR 4.00).

Receiving water requirements are established according to numerical and narrative standards in WQSs adopted under State law for each water body classification. When using chemical-specific numeric criteria to develop permit limits, acute and chronic aquatic life criteria and human health criteria are used and expressed in terms of maximum allowable in-stream pollutant concentrations. In general, aquatic-life acute criteria are considered applicable to daily time periods (maximum daily limit) and aquatic-life chronic criteria are considered applicable to monthly time periods (average monthly limit). Chemical-specific human health criteria are typically based on lifetime chronic exposure and are therefore typically applicable to monthly average limits.

When permit effluent limits are necessary for a pollutant to meet narrative water quality criteria, the permitting authority must establish effluent limits in one of three ways: based on a “calculated numeric criterion for the pollutant which the permitting authority demonstrates will attain and maintain applicable narrative water quality criteria and fully protect the designated use;” on a “case-by-case basis” using CWA § 304(a) recommended water quality criteria, supplemented as necessary by other relevant information; or, in certain circumstances, based on an indicator parameter. *See* 40 C.F.R. § 122.44(d)(1)(vi)(A-C).

2.2.2 Anti-degradation

Federal regulations found at 40 C.F.R. § 131.12 require states to develop and adopt a statewide anti-degradation policy that maintains and protects existing in-stream water uses and the level of water quality necessary to protect these existing uses. In addition, the anti-degradation policy ensures that high quality waters which exceed levels necessary to support propagation of fish, shellfish, and wildlife and support recreation in and on the water, are maintained unless the State finds that allowing degradation is necessary to accommodate important economic or social development in the area in which the waters are located.

Massachusetts’ statewide anti-degradation policy, entitled “Antidegradation Provisions”, is found in the State’s WQSs at 314 CMR 4.04. Massachusetts guidance for the implementation of this policy is in an associated document entitled “Implementation Procedure for the Anti-degradation Provisions of the State Water Quality Standards”, dated October 21, 2009. According to the policy, no lowering of water quality is allowed, except in accordance with the anti-degradation policy, and all existing in-stream uses and the level of water quality necessary to protect the existing uses of a receiving water must be maintained and protected.

This permit is being reissued with effluent limitations sufficiently stringent to protect the exiting uses of the receiving water.

2.2.3 Assessment and Listing of Waters and Total Maximum Daily Loads

The objective of the CWA is to restore and maintain the chemical, physical and biological integrity of the Nation’s waters. To meet this goal, the CWA requires states to develop information on the quality of their water resources and report this information to EPA, the U.S. Congress, and the public. To this end, the EPA released guidance on November 19, 2001, for the preparation of an integrated “List of Waters” that could combine reporting elements of both § 305(b) and § 303(d) of the CWA. The integrated list format allows states to provide the status of all their assessed waters in one list. States choosing this option must list each water body or segment in one of the following five categories: 1) Unimpaired and not threatened for all designated uses; 2) Unimpaired waters for some uses and not assessed for others; 3) Insufficient information to make assessments for any uses; 4) Impaired or threatened for one or more uses but not requiring the calculation of a Total Maximum Daily Load (TMDL); and 5) Impaired or threatened for one or more uses and requiring a TMDL.

A TMDL is a planning tool and potential starting point for restoration activities with the ultimate goal of attaining water quality standards. A TMDL is essentially a pollution budget designed to restore the health of an impaired water body. A TMDL typically identifies the source(s) of the pollutant from direct and indirect discharges, determines the maximum load of the pollutant that can be discharged to a specific water body while maintaining WQSs for designated uses, and allocates that load to the various pollutant sources, including point source discharges, subject to NPDES permits. *See* 40 C.F.R. § 130.7.

For impaired waters where a TMDL has been developed for a particular pollutant and the TMDL includes a waste load allocation for a NPDES permitted discharge, the effluent limit in the permit may not exceed the waste load allocation. *See* 40 C.F.R. § 122.44(d)(1)(vii)(B).

2.2.4 Reasonable Potential

Pursuant to 40 C.F.R. § 122.44(d)(1), NPDES permits must contain any requirements in addition to TBELs necessary to achieve water quality standards established under § 303 of the CWA. In addition, limitations “must control any pollutant or pollutant parameter (conventional, non-conventional, or toxic) which the Director determines are or may be discharged at a level which will cause, have the reasonable potential to cause, or contribute to an excursion above any water quality standard, including State narrative criteria for water quality”. *See* 40 C.F.R. § 122.44(d)(1)(i). There is reasonable potential to cause or contribute to an excursion if the projected or actual in-stream concentration exceeds the applicable criterion. If the permitting authority determines that a discharge causes, has the reasonable potential to cause, or contributes to such an excursion, the permit must contain WQBELs for the pollutant. *See* 40 C.F.R. § 122.44(d)(1)(iii).

In determining reasonable potential, EPA considers: 1) existing controls on point and non-point sources of pollution; 2) the variability of the pollutant or pollutant parameter in the effluent; 3) the sensitivity of the species to toxicity testing (when evaluating whole effluent toxicity); and 4) where appropriate, the dilution of the effluent in the receiving water. EPA typically considers the statistical and/or qualitative approach outlined in *Technical Support Document for Water Quality-based Toxics Control* (TSD)¹ to determine if the discharge causes, or has the reasonable potential to cause, or contribute to an excursion above any WQS. *See* 40 C.F.R. § 122.44(d). EPA’s quantitative approach statistically projects effluent concentrations based on available effluent data, which are then compared to the applicable water quality criteria.

2.2.5 State Certification

EPA may not issue a permit unless the State Water Pollution Control Agency with jurisdiction over the receiving water(s) either certifies that the effluent limitations contained in the permit are stringent enough to assure that the discharge will not cause the receiving water to violate the State WQSs or it is deemed that the state has waived its right to certify. Regulations governing state certification are set forth in 40 C.F.R. § 124.53 and § 124.55. EPA has requested permit

¹ March 1991, EPA/505/2-90-001.

certification by the State pursuant to 40 C.F.R. § 124.53 and expects that the Draft Permit will be certified.

If the State believes that any conditions more stringent than those contained in the Draft Permit are necessary to meet the requirements of either the CWA §§ 208(e), 301, 302, 303, 306 and 307 or the appropriate requirements of State law, the State should include such conditions and, in each case, cite the CWA or State law reference upon which that condition is based. Failure to provide such a citation waives the right to certify as to that condition. The only exception to this is that the sludge conditions/requirements implementing § 405(d) of the CWA are not subject to the § 401 State Certification requirements. Reviews and appeals of limitations and conditions attributable to State certification shall be made through the applicable procedures of the State and may not be made through the applicable procedures of 40 C.F.R. § 124.

In addition, the State should provide a statement of the extent to which any condition of the Draft Permit can be made less stringent without violating the requirements of State law. Since the State's certification is provided prior to permit issuance, any failure by the State to provide this statement waives the State's right to certify or object to any less stringent condition.

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

2.3 Effluent Flow Requirements

Generally, EPA uses effluent flow both to determine the necessity for effluent limitations in a permit that comply with the CWA, and to calculate the effluent limitations themselves. EPA practice is to use effluent flow as a reasonable and important worst-case condition in EPA's reasonable potential and WQBEL calculations to ensure compliance with WQSs under § 301(b)(1)(C) of the CWA. Should the effluent flow exceed the flow assumed in these calculations, the in-stream dilution would decrease and the calculated effluent limitations may not be protective (i.e., meet WQSs). Further, pollutants that do not have the reasonable potential to exceed WQSs at a lower discharge flow may have reasonable potential at a higher flow due to the decreased dilution. In order to ensure that the assumptions underlying EPA's reasonable potential analyses and derivation of permit effluent limitations remain sound for the duration of the permit, EPA may ensure its "worst-case" effluent flow assumption through imposition of permit conditions for effluent flow.² In this regard, the effluent flow limit is a component of

² EPA's reasonable potential regulations require EPA to consider "where appropriate, the dilution of the effluent in the receiving water," which is a function of both the effluent flow and receiving water flow. 40 C.F.R. § 122.44(d)(1)(ii). EPA guidance directs that this "reasonable potential" analysis be based on "worst-case" conditions. In *re Washington Aqueduct Water Supply Sys.*, 11 E.A.D. 565, 584 (EAB 2004).

WQBELs because the WQBELs are premised on a maximum level flow. The effluent flow limit also is necessary to ensure that other pollutants remain at levels that do not have a reasonable potential to exceed WQSs.

The limitation on effluent flow is within EPA's authority to condition a permit in order to carry out the objectives of the CWA. *See* CWA §§ 402(a)(2) and 301(b)(1)(C); 40 C.F.R. §§ 122.4(a) and (d); 122.43 and 122.44(d). A condition on the discharge designed to protect EPA's WQBEL and reasonable potential calculations is encompassed by the references to "condition" and "limitations" in §§ 402 and 301 and implementing regulations, as they are designed to assure compliance with applicable water quality regulations, including anti-degradation. Regulating the quantity of pollutants in the discharge through a restriction on the quantity of effluent is consistent with the overall structure and purposes of the CWA.

In addition, as provided in Part II.B.1 of this permit and 40 C.F.R. § 122.41(e), the Permittee is required to properly operate and maintain all facilities and systems of treatment and control. Operating the Facility's wastewater treatment systems as designed includes operating within the Facility's design effluent flow. Thus, the effluent flow limitation is necessary to ensure proper facility operation, which in turn is a requirement applicable to all NPDES permits. *See* 40 C.F.R. § 122.41.

2.4 Monitoring and Reporting Requirements

2.4.1 Monitoring Requirements

EPA has the authority in accordance with several statutory and regulatory requirements established pursuant to the CWA, 33 USC § 1251 *et seq.*, the NPDES program (*see* § 402 and the implementing regulations generally found at 40 C.F.R. §§ 122, 124, 125, and 136), CWA § 308(a), 33 USC § 1318(a), and applicable state regulations to include requirements such as monitoring and reporting in NPDES permits.

The monitoring requirements included in this permit have been established to yield data representative of the discharges under the authority of §§ 308(a) and 402(a)(2) of the CWA, and consistent with 40 C.F.R. §§ 122.41(j), 122.43(a), 122.44(i) and 122.48. The monitoring requirements included in this permit specify routine sampling and analysis, which will provide ongoing, representative information on the levels of regulated constituents in the wastewater discharge streams. The monitoring program is needed to assess effluent characteristics, evaluate permit compliance, and determine if additional permit conditions are necessary to ensure compliance with technology-based and water quality-based requirements, including WQSs. EPA and/or the state may use the results of the chemical analyses conducted pursuant to this permit, as well as national water quality criteria developed pursuant to § 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 C.F.R. § 122. Therefore, the monitoring requirements in this permit are included for specific regulatory use in carrying out the CWA.

NPDES permits require that the approved analytical procedures found in 40 C.F.R. § 136 be used for sampling and analysis unless other procedures are explicitly specified. Permits also include requirements necessary to comply with the *National Pollutant Discharge Elimination System (NPDES): Use of Sufficiently Sensitive Test Methods for Permit Applications and Reporting Rule*.³ This Rule requires that where EPA-approved methods exist, NPDES applicants must use sufficiently sensitive EPA-approved analytical methods when quantifying the presence of pollutants in a discharge. Further, the permitting authority must prescribe that only sufficiently sensitive EPA-approved methods be used for analyses of pollutants or pollutant parameters under the permit. The NPDES regulations at 40 C.F.R. § 122.21(e)(3) (completeness), 40 C.F.R. § 122.44(i)(1)(iv) (monitoring requirements) and/or as cross referenced at 40 C.F.R. § 136.1(c) (applicability) indicate that an EPA-approved method is sufficiently sensitive where:

- The method minimum level⁴ (ML) is at or below the level of the effluent limitation established in the permit for the measured pollutant or pollutant parameter; or
- In the case of permit applications, the ML is above the applicable water quality criterion, but the amount of the pollutant or pollutant parameter in a facility's discharge is high enough that the method detects and quantifies the level of the pollutant or parameter in the discharge; or
- The method has the lowest ML of the analytical methods approved under 40 C.F.R. Part 136 or required under 40 C.F.R. Chapter I, Subchapter N or O for the measured pollutant or pollutant parameter.

2.4.2 Reporting Requirements

The Draft Permit requires the Permittee to electronically report monitoring results obtained during each calendar month as a Discharge Monitoring Report (DMR) to EPA and the State using NetDMR no later than the 15th day of the month following the completed reporting period.

NetDMR is a national web-based tool for regulated CWA permittees to submit DMRs electronically via a secure internet application to EPA through the Environmental Information Exchange Network. NetDMR has allowed participants to discontinue mailing in hard copy forms to EPA under 40 C.F.R. §§ 122.41 and 403.12. NetDMR is accessed from the following website: <https://netdmr.zendesk.com/hc/en-us>. Further information about NetDMR can be found on the EPA Region 1 NetDMR website.⁵

³ Federal Register, Vol. 79, No. 160, Tuesday, August 19, 2014; FR Doc. 2014–19557.

⁴ The term “minimum level” refers to either the sample concentration equivalent to the lowest calibration point in a method or a multiple of the method detection limit (MDL), whichever is higher. Minimum levels may be obtained in several ways: They may be published in a method; they may be based on the lowest acceptable calibration point used by a laboratory; or they may be calculated by multiplying the MDL in a method, or the MDL determined by a laboratory, by a factor. EPA is considering the following terms related to analytical method sensitivity to be synonymous: “quantitation limit,” “reporting limit,” “level of quantitation,” and “minimum level.” See Federal Register, Vol. 79, No. 160, Tuesday, August 19, 2014; FR Doc. 2014–19557.

⁵ <https://netdmr.zendesk.com/hc/en-us/articles/209616266-EPA-Region-1-NetDMR-Information>.

With the use of NetDMR, the Permittee is no longer required to submit hard copies of DMRs and reports to EPA and the State unless otherwise specified in the Draft Permit. In most cases, reports required under the permit shall be submitted to EPA as an electronic attachment through NetDMR. Certain exceptions are provided in the permit such as for providing written notifications required under the Part II Standard Conditions.

2.5 Anti-backsliding

A permit may not be renewed, reissued or modified with less stringent limitations or conditions than those contained in a previous permit unless in compliance with the anti-backsliding requirements of the CWA. *See* §§ 402(o) and 303(d)(4) of the CWA and 40 C.F.R. § 122.44(l)(1 and 2). Anti-backsliding provisions apply to effluent limits based on technology, water quality, and/or state certification requirements.

All proposed limitations in the Draft Permit are at least as stringent as limitations included in the 2007 Permit unless specific conditions exist to justify one of the exceptions listed in 40 C.F.R. § 122.44(l)(2)(i) and/or in accordance with § 303(d)(4). Discussion of any applicable exceptions are discussed in sections that follow. Therefore, the Draft Permit complies with the anti-backsliding requirements of the CWA.

3.0 Description of Facility and Discharge

3.1 Location and Type of Facility

The Facility is located along the western bank of Merrimack River on Methuen Street in Dracut, Massachusetts. A location map is provided in Figure 1. The main activities that are conducted at the site include the following, which are further described below:

- Blasting and Crushing Activities
- Recycling of Non-Hazardous Soil Containing Petroleum
- Recycling of Asphalt Paving Products
- Concrete Recycling
- Salt/Sand Storage and Handling
- Aggregate Wash System

Brox Industries, Inc. is a bituminous concrete batching facility that has been in operation since the 1950's. The facility covers more than 400 acres and includes a quarry, an aggregate crushing plant, an aggregate washing plant, two hot mix asphalt (HMA) plants, stockpiles of material, and various treatment ponds. A site plan is provided in Figure 2.

The Facility remains open year-round for the sale of materials. The HMA plants, the quarry, the aggregate crushing plant, and the aggregate washing plant generally operate only from April to December.

The HMA process uses recycled asphalt and recycled non-hazardous petroleum contaminated soil (PCS) as well as aggregate that was crushed at the facility to form asphalt paving mixtures in two HMA plants (one batch type and one drum type). A portion of the recycled asphalt is also sold as a base product for surface preparation prior to the application of hot mix asphalt. The use of recycled PCS is authorized by a Class A- Level III permit (No. NEX236801) last issued in May 24, 2011, from the MassDEP. The PCS stockpiles are located in a storage building with a pitched floor that does not allow contact with any stormwater that could result in a discharge from the site. Periodically, the soil is screened and any rock, asphalt pavement and concrete are deposited in a separate area in the storage building. These materials are crushed to less than $\frac{3}{4}$ of an inch and either added to the hot mix asphalt or sold as a base product. The finished HMA, which is emptied into tanker trucks from overhead silos, is transported off-site and is therefore not exposed to stormwater.

The Brox facility also receives recycled concrete and asphalt, but no longer accepts wood products. A portable crusher is used to crush these materials, which are then separated into stockpiles from which stormwater drains to areas of no discharge, either in detention basins or grassy swales. The crushed recycled concrete is sold as a base material for paving.

Rock is blasted from granite bedrock in the quarry and transported for crushing at the aggregate crushing plant. Blasting takes place periodically, typically during the period of April through October. There, the stone is reduced to fragments measuring 5-6 inches and transported by an overhead conveyer belt to a screen deck equipped with spray nozzles. The spray nozzles suppress the dust generated during the crushing process and the screen separates out the coarse aggregate. Fragments of 0.75 inches or smaller are transported to stockpiles separated according to size, while larger fragments pass through a secondary crusher. The final crushed product passes through a sand screw, which further separates out the coarse aggregate from the fine and deposits the latter in 'washed sand' stockpiles. These piles are allowed to dry for a month before the 'washed sand' is incorporated into product in the HMA plant. The finest aggregate and excess wash water from the aggregate washing plant are mixed with a flocculant chemical to enhance settling and transported by pipe to a series of treatment/settling ponds (Attachment C).

Stormwater runoff and water that leaches from the aggregate stockpiles and, especially, the washed sand stockpile, is channeled into catch basins. The catch basins drain to retention ponds that discharge to the treatment/settling ponds both directly via pipe and indirectly via underground leaching. For this facility, the term "process generated waste water" includes 'any waste water used in the transport of mined material, air emissions control... processing exclusive of mining...or other water which becomes commingled with such waste water...' as defined at 40 C.F.R. § 436.21.

3.2 Effluent Limitation Guidelines

EPA has promulgated the following technology-based effluent limitation guidelines (ELGs) that apply to Brox Industries: Mineral Mining and Processing Point Source Category, 40 C.F.R. Part 436, and Paving and Roofing Materials Point Source Category, 40 C.F.R. Part 443.

The applicable subpart of the Mineral Mining and Processing Point Source Category for Brox Industries is Subpart B —Crushed Stone Subcategory (SIC code 1429). For this subcategory, the revised ELGs promulgated on July 12, 1977 included limitations on the discharge of pH (6-9 standard units) and TSS (a 30-day average of 25 mg/l and a maximum daily average of 45 mg/l). However, on June 18, 1979 the TSS limitations were remanded to EPA for reconsideration and have not been re-proposed. Therefore, Subpart B contains discharge limitations for pH only as mentioned above.

The applicable subpart of the Paving and Roofing Materials Point Source Category for Brox Industries is Subpart B —Asphalt Concrete Subcategory (SIC code 2951). Both BPT and BAT limitations for this subpart indicate that “[t]here shall be no discharge of process wastewater pollutants to navigable waters.” Therefore, Brox is not authorized to discharge any process water from its hot mix asphalt process operations.

In accordance with Section 402(a)(1)(B) of the CWA, EPA has the authority to establish effluent limitations on a case-by-case basis using best professional judgement (BPJ). To the extent applicable to Brox Industries, EPA has incorporated technology-based limitations and conditions based on 1) performance data from the Facility; 2) individual permits issued to similar facilities in Region 1 that discharge comparable wastewater; and 3) EPA’s Multi-Sector General Permit for Stormwater Discharges Associated with Industrial Activity (MSGP), specifically for facilities engaged in asphalt paving and mineral mining (Sector D and Sector J, respectively of EPA’s MSGP).

3.3 Location and Type of Discharge

Outfall 003 is located at Latitude 42° 40’ 37.5” Longitude 71° 14’ 29” in the wetlands system adjacent to the Merrimack River in Dracut, MA. The approximate linear distance measured from Outfall 003 to the Merrimack River is about ½ mile.

The drainage area for Outfall 003 consists of 4,600,000 square feet, approximately 484,000 square feet of which is impervious. The outfall is located after a series of five (5) treatment ponds and one (1) detention basin, which receive aggregate wash water directly from the aggregate washing plant as well as stormwater and stockpile runoff from the retention ponds. The water that is used in the aggregate washing operation and dust suppression is taken from detention pond #4. The Permittee has a water withdrawal permit with the MassDEP, as this is considered a consumptive use of water.

Both the quarry and the HMA plants have areas that drain stormwater that is ultimately discharged through Outfall 003. Both the quarry and the hot mixed asphalt (HMA) plants have areas that drain stormwater that is ultimately discharged through Outfall 003. The road on which trucks travel that leads to the overhead silos from which they accept the HMA product has a series of catch basins. These catch basins drain the stormwater from this road that contains solids that fall from trucks or that may be spilled during the filling operation. These catch basins are connected to an oil/water separator that discharges to a detention basin along the left side of the roadway. If water from this basin spills over, as can happen during a heavy precipitation event, it

would be directed to grassy swale which would eventually be directed to either detention basin 1 or 1A.

Water flows between the ponds via stone weirs, pipes, and underground leaching. Discharge from the last treatment pond (TP), designated TP #4 occurs via a 1,100 GPM pump that operates four to six hours per day and pumps to a manhole located in the southwest corner of the facility. The flow continues through an 18-inch culvert, the end of which is designated as Outfall 003 and empties into a wetland system that is adjacent to the Merrimack River and its tributaries (*see* Figure 2). Flows are metered prior to discharge and the Permittee keeps track of total weekly effluent flows. A schematic of water flow is provided in Figure 3. Water is also recycled from TP #4 back to the aggregate wash plant via a 1,500 GPM pump. Water is applied to the surfaces of processed stone to control potential particulate emissions. Water is also dispensed from water trucks and sprinklers for dust control along service roads and other areas.

The solids that collect in detention basins 1 and 1A are typically dredged out during periods when the aggregate washing operation is not operating, typically November through March. These dredged solids are piled near these detention basins and given away for certain uses.

A quantitative description of the discharge in terms of effluent parameters, based on monitoring data submitted by the Permittee, including Discharge Monitoring Reports (DMRs), from August 1, 2013 through August 31, 2018 is provided in Appendix A of this Fact Sheet.

4.0 Description of Receiving Water and Dilution

4.1 Receiving Water

The Facility discharges through Outfall 003 to the wetlands system adjacent to the Merrimack River and its tributaries (Segment ID MA84A-03), which is part of the Merrimack River Watershed. The Merrimack River is formed in central New Hampshire by the confluence of the Pemigewasset and Winnepesaukee Rivers. It flows through central New Hampshire into Massachusetts and discharges to the Atlantic Ocean in Newburyport, MA.

The Merrimack River segment receiving the discharge is classified as Class B, warm water fishery in the Massachusetts WQSs, 314 CMR 4.05(4)(a). 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 segment is also listed as a treated water supply and combined sewer overflow (CSO).

Merrimack River segment MA84A-03 is listed in the final *Massachusetts Year 2014 Integrated List of Waters* (“303(d) List”) as a Category 5 “Waters Requiring a TMDL.”⁶ The listed impairments include *Escherichia coli* (“*E. coli*”), mercury in fish tissue, PCB in fish tissue, and total phosphorus. The segment is included in the 2007 Northeast Regional Mercury TMDL for mercury in fish tissue. A draft TMDL for pathogens in the Merrimack River watershed, including *E. coli*, has not been finalized. The status of each designated use is shown in Table 1.

Table 1: Summary of Designated Uses and Listing Status

Designated Use	Status
Aquatic Life	Impaired
Aesthetics	Support
Primary Contact Recreation	Impaired
Secondary Contact Recreation	Impaired
Fish Consumption	Impaired

According to the *2014 Integrated List of Waters Map*⁷ this waterbody segment is attaining designated uses for aesthetics. The Aquatic Life designated use for aquatic life is impaired due to total phosphorus and PCB in fish tissue. Designated uses for primary and secondary contact recreation are impaired due to exceedances of criteria for *E. coli*, likely resulting from wet weather discharges from point and non-point sources (e.g., stormwater, sanitary sewer overflows, and CSOs). The Fish Consumption Use is listed as impaired and the Merrimack River is included under the Massachusetts Department of Public Health statewide fish consumption advisory for freshwater fish for mercury.⁸

4.2 Available Dilution

To ensure that discharges do not cause or contribute to violations of WQSs under all expected conditions, WQBELs are derived assuming critical conditions for the receiving water.⁹ State WQSs specify that, “*The Department will determine the most severe hydrologic condition at which water quality criteria must be applied.*” See 314 CMR 4.03(3). The wetland system adjacent to the Merrimack River and its tributaries would afford no dilution to this discharge. Therefore, the State determined that the dilution factor for the Facility is zero (i.e., 1:1). EPA used this dilution factor (DF) in its quantitative derivation of WQBELs for pollutants in the Draft Permit.

⁶ *Massachusetts Year 2014 Integrated List of Waters*. MassDEP Division of Watershed Management Watershed Planning Program, Worcester, Massachusetts; December 2015.

⁷ MassDEP Online Map Viewer: 2014 Integrated List of Waters Map.
<http://maps.massgis.state.ma.us/images/dep/omv/il2014viewer.htm>.

⁸ Freshwater Fish Consumption Advisory. Massachusetts Department of Public Health Bureau of Environmental Health; <https://www.mass.gov/files/documents/2016/11/ol/freshwater-fish-consumption-advisories.pdf>

⁹ [EPA Permit Writer’s Manual, Section 6.2.4](#)

5.0 Proposed Effluent Limitations and Conditions

The proposed effluent limitations and conditions derived under the CWA and State WQSs are described below. These proposed effluent limitations and conditions, the basis of which is discussed throughout this Fact Sheet, may be found in Part I of the Draft Permit. In accordance with 40 CFR § 122.45(b)(2), EPA bases the calculation of effluent limitations on either the reasonable measure of actual production for a facility or the flow from the facility. Since this discharge is made to a wetlands system, there would be no dilution available. However, there are no permit limits which are based on dilution.

5.1 Effluent Limitations and Monitoring Requirements

The State and Federal regulations and data regarding discharge characteristics described above, were used during the effluent limitations development process. Discharge data are included in Appendix A.

5.1.1 Effluent Flow

From August 1, 2013 through August 31, 2018 (Appendix A) effluent flow has ranged from 500 to 1100 gallons per minute (gpm). The Facility's 2007 Permit limits the discharge to a maximum flow rate of 1100 gpm. This limit was based on the maximum discharge capacity of the pump associated with Outfall 003, which, during dry weather, activates daily for four to six hours. During certain conditions, such as heavy storms and snow melt, the pump may operate for longer periods.

The existing maximum daily flow limit of 1100 gpm will be maintained in the Draft Permit. The Permittee is required to report the monthly average flow. The use of a supplemental pump during extreme storm conditions resulted in maximum daily flow limit exceedances of 1400 gpm twice in 2011, but there have been no exceedances since that time.

5.1.2 Total Suspended Solids

Solids could include inorganic (e.g., silt, sand, clay, and insoluble hydrated metal oxides) and organic matter (e.g., flocculated colloids and compounds that contribute to color). Suspended solids can increase turbidity in receiving waters and reduce light penetration through the water column or settle to form bottom deposits in the receiving water. Suspended solids also provide a medium for the transport of other adsorbed pollutants, such as metals, which may accumulate in settled deposits that can have a long-term impact on the water column through cycles of re-suspension.

From August 1, 2013 through August 31, 2018 (Appendix A), daily maximum total suspended solids (TSS) concentrations have ranged from below detection limits to 13 mg/L and monthly average concentrations have ranged from below detection limits to 5.75 mg/L. The Draft Permit contains monthly average and daily maximum TSS limitations of 20 mg/L and 40 mg/L, respectively, monitored once per month by grab samples, when discharging. These limitations

have been adjusted from the Facility's 2007 Permit, which contained monthly average and daily maximum TSS limitations of 24 mg/L and 43 mg/L, respectively. These limitations were established using BPJ pursuant to § 402(a)(1) of the CWA and comply with anti-backsliding requirements found in 40 C.F.R. § 122.44(1). These limitations are based upon the TSS concentrations achievable by using the series of settling ponds at the Facility to treat the aggregate washing operation process water, dust suppression water, and stormwater from the Facility. Performance data from the Facility indicate that these TBELs are routinely achievable and no material or substantial changes in operations at the Facility have occurred since these limitations were imposed. Therefore, EPA expects that the Facility will meet the TSS limitations upon permit issuance.

In response to a comment received during the public notice for the 2007 Permit, EPA added a reporting requirement for the daily maximum and monthly average TSS loading to the 2007 Permit. The maximum TSS load reported was 148.8 pounds per day (lbs/day). The Draft Permit retains these monitor-only requirements for TSS in lbs/day, when discharging, consistent with the Facility's 2007 Permit so that EPA can continue to evaluate TSS loading to the receiving water.

5.1.3 Turbidity

Turbidity is a measure of relative water clarity, with relatively higher turbidity corresponding to relatively lower water clarity. Materials such as inorganic matter (e.g., silt, sand, and clay), organisms (e.g., algae, plankton, and microbes) and detritus can contribute turbidity. Highly turbid water can influence the amount of dissolved oxygen in the water by decreasing light penetration in the water, in turn reducing photosynthesis, by increasing water temperature as suspended particles absorb heat, or by oxygen depletion as bacteria consume dead plant matter. These materials can also have physical effects on aquatic life and waterbodies, clogging fish gills, reducing growth and disease resistance, and smothering fish eggs and benthic macroinvertebrates, and causing sedimentation that may alter the nature of bottom sediments.

From August 1, 2013 through August 31, 2018 (Appendix A), daily maximum turbidity concentrations have ranged from below detection to 5.7 nephelometric turbidity units (NTUs). The Draft Permit contains a daily maximum turbidity limitation of 25 NTU, monitored once per month by grab samples, when discharging. This limitation is equal to the Facility's 2007 Permit limitation. This limitation is required by 40 C.F.R. § 122.44(d)(1)(iii) and is based on certification requirements under § 401(a)(1) of the CWA, as described in 40 C.F.R. §§ 124.53 and 124.55 and complies with anti-backsliding requirements found in 40 C.F.R. § 122.44(1).

This water quality-based limitation for turbidity is based on State WQSs for Inland Water, Class B at 314 CMR 4.05(3)(b), which states, *"These waters shall be free from color and turbidity in concentrations or combinations that are aesthetically objectionable..."* In addition, State WQSs applicable to all waters at 314 CMR 4.05(5)(a) states, *"All surface waters shall be free from pollutants in concentrations or combinations that settle to form objectionable deposits; float as*

debris, scum or other matter to form nuisances; produce objectionable odor, color, taste or turbidity; or produce undesirable or nuisance species of aquatic life." A turbidity value of 25 NTU is consistent with the upstream turbidity cited in EPA's *Quality Criteria for Water* to explain major increases in stream suspended solids.¹⁰ This value is also consistent with several states that have established numeric water quality criteria for turbidity, including the New England states of Vermont¹¹ and New Hampshire.¹²

5.1.4 pH

The hydrogen-ion (H^+) concentration in an aqueous solution is represented by the pH using a logarithmic scale of 0 to 14 standard units (S.U.). Solutions with pH 7.0 S.U. are neutral, while those with pH less than 7.0 S.U. are acidic and those with pH greater than 7.0 S.U. are basic. Discharges with pH values markedly different from the receiving water pH can have a detrimental effect on the environment. Sudden pH changes can kill aquatic life.

From August 1, 2013 through August 31, 2018 (Appendix A), pH has ranged from 7.5 to 8.2 S.U. The Draft Permit requires a pH range of 6.5 to 8.3 S.U. monitored once per month by grab samples, when discharging. These limitations have been continued from the Facility's 2007 Permit and are based on the State WQSs for Inland Water, Class B at 314 CMR 4.05(3)(b)3, which require that the pH of the receiving water be in the range of 6.5 to 8.3 S.U. This water quality-based limit has been adopted based on certification requirements under § 401(a)(1) of the CWA, as described in 40 C.F.R. §§ 124.53 and 124.55.

5.1.5 Oil and Grease

Oil and Grease is not a definitive chemical constituent, but includes a large range of organic compounds, which can be both petroleum-related (e.g., hydrocarbons) and non-petroleum (e.g., vegetable and animal oils and greases, fats, and waxes). These compounds have varying physical, chemical, and toxicological properties. Generally, oils and greases in surface waters either float on the surface, are solubilized or emulsified in the water column, adsorb onto floating or suspended solids and debris, or settle on the bottom or banks. Oil and grease, or certain compounds within an oil and grease mixture can be lethal to fish, benthic organisms and water-dwelling wildlife. State WQSs for Inland Waters, Class B at 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.¹³

¹⁰ EPA 440/5-86-001, May 1, 1986. Solids (Suspended, Settleable) and Turbidity, p. 270 of 395.

¹¹ See Vermont Water Quality Standards, Subchapter 3, § 29A-302(4), effective January 15, 2017.

¹² See "Review of New Hampshire's Water Quality Criteria for Turbidity (Env-Wq 1703.11)," State of New Hampshire Inter-Department Communication, October 6, 2011.

¹³ USEPA. 1976. *The Red Book – Quality Criteria for Water*. July 1976.

From August 1, 2013 through August 31, 2018 (Appendix A), oil and grease concentrations have ranged from below detection limits to 6 mg/L. The Draft Permit contains limitations of 10 mg/L and 15 mg/L, respectively, monitored once per month by grab samples, when discharging. These limitations have been continued from the Facility's 2007 Permit in accordance with anti-backsliding requirements found in 40 C.F.R. § 122.44(1). These limitations were established using BPJ pursuant to § 402(a)(1) of the CWA. Performance data from the Facility indicate that these TBELs are routinely achievable and no material or substantial changes in operations at the Facility have occurred since these limitations were imposed. Therefore, the oil and grease limitations remain unchanged.

5.1.6 Total Nitrogen

Nitrogen is an essential nutrient for plant growth; however, high concentrations of nitrogen can result in eutrophication, where high nutrient concentrations lead to excessive plant and algal growth. Respiration and decomposition of plants and algae under eutrophic conditions reduces dissolved oxygen in the water and can create poor habitat for aquatic organisms. Common explosives used at the Facility contain nitrogen compounds, especially nitrate, which then mix with stormwater runoff and mine dewatering.

Total Nitrogen is the sum of Total Kjeldahl Nitrogen (TKN) (ammonium, organic and reduced nitrogen) and nitrate-nitrite. It can be derived by individually monitoring for organic nitrogen compounds, ammonia, nitrate, and nitrite and adding the components together. The 2010 Permit required reporting the daily maximum concentration of total ammonia, nitrate, nitrite, and Total Kjeldahl Nitrogen (TKN). From August 1, 2013 through August 31, 2018 (Appendix A), daily maximum TKN concentrations have ranged from below detection limits to 1.2 mg/L, daily maximum ammonia concentrations have ranged from below detection limits to 0.11 mg/L, daily maximum nitrate concentrations have ranged from 1.0 to 3.1 mg/L and daily maximum nitrite concentrations have ranged from below detection limits to 0.5 mg/L.

The applicable ammonia water quality criteria are pH dependent and, for the chronic criteria, temperature dependent and can be derived using EPA-recommended ammonia criteria from the document: Update of Ammonia Water Quality Criteria for Ammonia, 1999 (EPA 822-R-99-014). These are the freshwater ammonia criteria in EPA's National Recommended Water Quality Criteria, 2002 (EPA 822-R-02-047) document, which are included by reference in the Massachusetts WQS (See 314 CMR 4.05(5)(e)). At pH of 7.0, average summer temperature of 20°C, and assuming salmonids present, the acute criteria is 24.1 mg/L and the chronic criteria is 4.15 mg/L. The maximum daily ammonia concentration of 0.11 mg/L reported by the Facility in June 2018) is substantially less than the chronic and acute ammonia criteria and demonstrates that the effluent will not cause or contribute to a violation.

Massachusetts SWQS do not include numeric criteria for nitrogen. Instead, narrative criteria specify that waters "*shall be free from nutrients in concentrations that would cause or contribute to impairment of existing or designated uses and shall not exceed the site-specific criteria developed in a TMDL or as otherwise established by the Department pursuant to 314 CMR 4.00.*" 314 CMR 4.05(5)(c). Nitrogen is not listed as a cause of any of the designated use

impairments in the Merrimack River and, as such, the discharge of nitrogen compounds in the effluent will not cause or contribute to impairments downstream of the Facility. Nitrogen monitoring over the past five years demonstrates that concentrations of nitrogen compounds in the effluent are relatively low. Given this information, and because there are currently no known water quality impairments related to nitrogen in the receiving waters, the Draft Permit proposes reducing the monitoring frequency from monthly to quarterly. In addition, the Draft Permit proposes required monitoring for Total Nitrogen in place of monitoring the individual nitrogen organic compounds nitrate, nitrite, and ammonia. This change is appropriate and consistent with antibacksliding regulations because there is no reasonable potential to exceed numeric water quality criteria for ammonia. Total Nitrogen monitoring will continue to ensure that discharges of nitrogen-based blasting chemicals do not cause or contribute to water quality issues related to nitrogen in the receiving waters. Total nitrogen analysis will capture all the organic compounds reported as a single value.

5.1.7 Perchlorate

Perchlorate is both a naturally-occurring and man-made chemical that is commonly used as an oxidizer in propellants, munitions, fireworks, flares and explosives. Manufactured forms of perchlorate include salts such as ammonium perchlorate. Perchlorate is highly soluble in water and relatively stable and mobile in surface water and groundwater systems. Perchlorate may be found as a co-contaminant in water with nitrate because ammonium nitrate is a main component in explosives. Perchlorate may also be present in nitrogen-based explosives as an impurity or contained in detonators up to 4 to 60 milligrams of potassium perchlorate.¹⁴ EPA's Interim Drinking Water Health Advisory for perchlorate is 15 µg/L.

The 2007 Permit contained a monitor-only requirement for perchlorate in conjunction with blasting events. From August 1, 2013 through August 31, 2018 (Appendix A), the Permittee reported "No Discharge" for perchlorate because perchlorate-based explosive agents were not used at the Facility. However, the Facility indicated to EPA that nitrogen-based explosive agents are used at the Facility. Therefore, the Draft Permit proposes a monitor-only requirement in conjunction with total nitrogen monitoring.

5.1.8 Total Phosphorus

As described above, the receiving water is listed as impaired for one or more designated uses and phosphorus is listed as a pollutant requiring a TMDL. Parts 2.2.2 and 6.2.4.1 of EPA's MSGP requires facilities to monitor discharges of stormwater associated with industrial activity to impaired waters without an EPA-approved or established total maximum daily load (TMDL). EPA does not currently have information regarding phosphorus in discharges from the Facility. However, phosphorus is a common pollutant found in stormwater runoff. Therefore, the Draft Permit includes an annual monitor-only requirement for total phosphorus to ensure phosphorus is not present in discharges from the Facility at concentrations that could cause or contribute to an

¹⁴ *NONEL Non-electric detonators*. Dyno Nobel Asia Pacific Pty Limited, Safety Data Sheet; 8/4/2016.

excursion above State WQSs. If the total phosphorus is not detected and not expected to be present in the discharge, or it is detected but the Permittee demonstrates that its presence is caused solely by natural background sources, the Permittee may provide sampling data and any determination that the presence of total phosphorus is due solely to natural background sources with the next application for permit reissuance.

5.1.9 Bacteria

As described above, the receiving water is listed as impaired for one or more designated use and *Escherichia coli* is listed as a pollutant requiring a TMDL. Parts 2.2.2 and 6.2.4.1 of EPA's MSGP requires facilities to monitor discharges of stormwater associated with industrial activity to impaired waters without an EPA-approved or established total maximum daily load (TMDL). EPA does not currently have information regarding presence of *E. coli* in discharges from the Facility. Therefore, the Draft Permit includes an annual monitor-only requirement for *E. coli* to ensure bacteria are not present in discharges from the Facility at concentrations that could cause or contribute to an excursion above State WQSs. If *E. coli* is not detected and not expected to be present in the discharge or is detected but the Permittee demonstrates that its presence is caused solely by natural background sources, the Permittee may provide sampling data and any determination that the presence of *E. coli* is due solely to natural background sources with the next application for permit reissuance.

5.1.10 Whole Effluent Toxicity

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. Whole effluent toxicity (WET) testing is conducted to ensure that discharges do not cause toxicity to the receiving water.

In addition, under § 301(b)(1)(C) of the CWA, discharges are subject to effluent limitations based on WQSs. Under certain narrative State WQSs, and §§ 301, 303 and 402 of the CWA, EPA and the States may establish toxicity-based limitations to implement the narrative "no toxics in toxic amounts". The Massachusetts WQSs at 314 CMR 4.05(5)(e) state, "All surface waters shall be free from pollutants in concentrations or combinations that are toxic to humans, aquatic life or wildlife."

The regulations at 40 C.F.R. 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..." The regulations at 40 C.F.R. (122.44(d)(1)(v)) further require whole effluent toxicity limits in a permit when a discharge has a "reasonable potential" to cause or contribute pollutants in concentrations or combinations that are toxic to humans, aquatic life, or wildlife.

No WET testing is currently required by the 2007 Permit. Therefore, there is no data available to determine if reasonable potential exists to cause or contribute to an excursion of a numeric or narrative water quality criterion. However, in the absence of facility specific effluent monitoring data, a permitting authority may still assess reasonable potential by evaluating a variety of factors and information, including available dilution, type of industry, and type of receiving water.

Brox Industries, Inc. discharges to wetland system adjacent to the Merrimack River and its tributaries. As discussed above, the minimal flow to this system would afford no dilution to the discharge and the State determined that the dilution factor for the Facility is zero. In addition, the Merrimack River is impaired for *E. coli*, mercury in fish tissue, PCB in fish tissue, and total phosphorus, which indicates toxicity within the receiving water. Furthermore, the discharges from other similar facilities have been found to cause toxicity.

With that noted, there is no clear evidence a reasonable potential to contribute to an excursion above a numeric or narrative criterion for whole effluent toxicity exists. However, EPA has determined that WET testing is an appropriate requirement to include in the Draft Permit. The inclusion of WET requirements in the Draft Permit will assure that the Facility does not discharge pollutants into the receiving water in amounts that would affect aquatic life or human health.

EPA determined that the discharge from Brox Industries is considered a high risk because the dilution factor is less than 10:1, the Facility discharges stormwater from hot asphalt mixing operations, and it also uses a variety of chemicals at the Facility. Therefore, the Draft Permit includes the requirement to conduct annual acute and chronic WET tests, using two species. Toxicity testing must be performed in accordance with the EPA Region 1 test procedures and protocols specified in Attachment A, *Freshwater Acute Toxicity Test Procedure and Protocol* (February 2011), and Attachment B, *Freshwater Chronic Toxicity Test Procedure and Protocol* (March 2013) of the Draft Permit.

5.2 Special Conditions

5.2.1 Best Management Practices

Pursuant to § 304(a) of the Act and 40 C.F.R. § 122.44(k), best management practices (BMPs) may be expressly incorporated into a permit on a case-by-case basis where it is determined they are necessary to achieve effluent limitations and standards or to carry out the purpose and intent of the CWA under § 402(a)(1). BMPs may be necessary to meet effluent limitations because the discharge may contain pollutants listed as toxic under § 307(a)(1) of the CWA or pollutants listed as hazardous under § 311 of the CWA, for the control of stormwater discharges under § 402(p) of the CWA, or where numeric effluent limits are infeasible. Pollutants may be present because they are generated during Facility operations, which could result in significant amounts of these pollutants reaching waters of the United States via discharges of wastewater and stormwater.

In this case, the Draft Permit requires the selection, design, installation, and implementation of control measures for stormwater associated with the quarry operation to comply with the non-numeric technology-based effluent limits in the Draft Permit. These non-numeric limitations are consistent with the limitations specified in Part 2.1.2 and Part 8, Sectors D (Asphalt Paving and Roofing Materials and Lubricant Manufacturing) and J (Non-Metallic Mineral Mining and Dressing) of EPA's Multi-Sector General Permit (MSGP) effective June 4, 2015.¹⁵

Requirements include:

- Minimize exposure of processing and material storage areas to stormwater discharges;
- Design good housekeeping measures to maintain areas that are potential sources of pollutants;
- Implement preventative maintenance programs to avoid leaks, spills, and other releases of pollutants to stormwater that is discharged to receiving waters;
- Implement spill prevention and response procedures to ensure effective response to spills and leaks if or when they occur;
- Design of erosion and sediment controls to stabilize exposed areas and contain runoff using structural and/or non-structural control measures to minimize onsite erosion and sedimentation, and the resulting discharge of pollutants;
- Utilize runoff management practices to divert, infiltrate, reuse, contain, or otherwise reduce stormwater runoff;
- Develop proper handling procedures for salt or materials containing chlorides that are used for snow and ice control;
- Conduct employee training to ensure personnel understand the requirements of this permit;
- Minimize dust generation and vehicle tracking of industrial materials; and
- Comply with sector specific non-numeric technology-based effluent limitations included in Sector D (Asphalt Paving and Roofing Materials and Lubricant Manufacturing) and Sector J (Non-Metallic Mineral Mining and Dressing) of the MSGP

These non-numeric effluent limitations support, and are equally enforceable as, the numeric effluent limitations included in the Draft Permit. The purpose of these requirements is to reduce or eliminate the discharge of pollutants to waters of the United States. They have been selected on a case-by-case basis based on those appropriate for this specific facility. *See* §§ 304(e) and 402(a)(1) of the CWA and 40 C.F.R. § 122.44(k). These requirements ensure that discharges from the Facility will meet State WQSs pursuant to CWA section 301(b)(1)(C) and 40 C.F.R. 122.44(d)(1). Unless otherwise stated, the Permittee may select, design, install, implement and maintain BMPs as the Permittee deems appropriate to meet the permit requirements. The selection, design, installation, implementation and maintenance of control measures must be in accordance with good engineering practices and manufacturer's specifications.

5.2.2 Stormwater Pollution Prevention Plan

¹⁵ The MSGP is currently available at: <https://www.epa.gov/npdes/final-2015-msgp-documents>.

On September 9, 1992, EPA issued its general permit for stormwater discharges associated with industrial activity, which, among other things, required all facilities to prepare a Stormwater Pollution Prevention Plan (SWPPP) documenting the implementation of technology-based pollution prevention measures in lieu of numeric limitations [57 FR 41264]. The general permit established a process whereby the operator of the industrial facility evaluates potential pollutant sources at the site and selects and implements appropriate measures designed to prevent or control the discharge of pollutants in stormwater runoff [57 FR 41242]. This Draft Permit contains BMPs for stormwater associated with the quarry operation. In addition to BMPs, the Draft Permit also contains requirements for the Permittee to develop, implement, and maintain a SWPPP for stormwater discharges associated with the quarry operation. These requirements are consistent with EPA's MSGP effective June 4, 2015. The Draft Permit specifies that the SWPPP must include the following, at a minimum:

- Stormwater pollution prevention team;
- Site description;
- Summary of potential pollutant sources;
- Description of all stormwater control measures; and
- Schedules and procedures pertaining to implementation of stormwater control measures, inspections and assessments, and monitoring.

The development and implementation of the SWPPP is an enforceable element of the permit. The Draft Permit directs the Permittee to incorporate BMPs, as described above, directly into the SWPPP, which serves to document the selection, design and installation of control measures selected to meet the permit effluent limitations. The goal of the SWPPP is to reduce or prevent the discharge of pollutants to waters of the United States either directly or indirectly through stormwater runoff.

The Draft Permit requires the Permittee within ninety (90) days of the effective date of the permit to certify that the SWPPP has been prepared, meets the requirements of the permit, and reduces or eliminates the discharge of pollutants from stormwater associated with its quarry operation. The Permittee must also certify at least annually that the Facility has complied with the BMPs described in the SWPPP, including inspections, maintenance, and training activities. The Permittee is required to amend and update the SWPPP if any change occurs at the Facility affecting the SWPPP, such as changes in the design, construction, operation, or maintenance of the Facility. The SWPPP must be maintained on site at the Facility and provided to EPA and/or the State upon request. All SWPPP records must be maintained on-site for at least three years.

5.2.3 Discharges of Chemicals and Additives

Chemicals and additives include, but are not limited to: algaecides/biocides, antifoams, coagulants, corrosion/scale inhibitors/coatings, disinfectants, flocculants, neutralizing agents, oxidants, oxygen scavengers, pH conditioners, and surfactants. The Draft Permit allows the discharge of only those chemicals and additives specifically disclosed by the Permittee to EPA and the State, provided that such discharge does not violate § 307 or 311 of the CWA or applicable State WQSs. The following chemicals and additives were disclosed to EPA:

- Asphalt release agents – Avalanche (Meyer Laboratory, Inc.)
- Explosive agents – Trojan Cast Boosters (Dyno Nobel), Packaged Emulsion Explosives (Dyno Nobel), ANFO, Bulk or Packaged (Independent Explosives, Inc.) 1966 Emulsion Blend (Maine Drilling & Blasting), NB Gasser B and NB Gasser A (Nelson Brothers, LLC), Dynamite, and Electronic Detonators (Dyno Nobel)
- Flocculants – Flopam EM 533 (SNF Inc.)

However, EPA recognizes that chemicals and additives in use at a Facility may change during the term of the permit. As a result, the Draft Permit includes a provision that requires the Permittee to notify EPA and the State in writing of the discharge a new chemical or additive, allows for EPA and State review of the change, and provides the factors for consideration of such changes. The Draft Permit specifies that the Permittee must submit the following information for each chemical or additive, at a minimum, in writing to EPA and the State:

- Product name, chemical formula, and manufacturer of the chemical/additive.
- Purpose or use of the chemical/additive.
- Safety Data Sheet (SDS) and Chemical Abstracts Service (CAS) Registry number for each chemical/additive.
- The frequency (e.g., hourly, daily), magnitude (e.g., maximum and average), duration (e.g., hours, days), and method of application for the chemical/additive.
- If available, the vendor's reported aquatic toxicity (i.e., NOAEL and/or LC₅₀ in percent for aquatic organism(s)).

The Permittee must also provide an explanation which demonstrates that the discharge of such chemical or additive: 1) Will not add any pollutants in concentrations which exceed permit effluent limitations; 2) Will not exceed any applicable water quality standard; and 3) Will not add any pollutants that would justify the application of permit conditions that are different from or absent in this permit.

Discharges of a new chemical or additive is authorized under the permit upon notification to EPA and the State unless otherwise notified by EPA or the State.

5.3 Prohibitions

The Draft Permit prohibits the discharge of process water from the hot mix asphalt process operations at the site as required by 40 C.F.R. Part 443 Subpart B (Asphalt Concrete Subcategory).

5.4 Standard Conditions

The standard conditions of the permit are based on 40 C.F.R. § 122, Subparts A and D and 40 C.F.R. § 124, Subparts A, D, E, and F and are consistent with management requirements common to other permits.

6.0 Federal Permitting Requirements

6.1 Endangered Species Act

Section 7(a) of the Endangered Species Act of 1973, as amended (ESA), grants authority to and imposes requirements on Federal agencies regarding endangered or threatened species of fish, wildlife, or plants (listed species) and habitat of such species that has been designated as critical (a “critical habitat”).

Section 7(a)(2) of the ESA requires every Federal agency, in consultation with and with the assistance of the Secretary of Interior, to ensure that any action it authorizes, funds or carries out, in the United States or upon the high seas, is not likely to jeopardize the continued existence of any listed species or result in the destruction or adverse modification of critical habitat. The United States Fish and Wildlife Service (USFWS) administers Section 7 consultations for freshwater species. The National Marine Fisheries Service (NMFS) administers Section 7 consultations for marine and anadromous species.

The Federal action being considered in this case is EPA’s proposed NPDES permit for the Brox Industries, Inc. Facility. The Draft Permit is intended to replace the 2007 Permit in governing the Facility. Specifically, the Draft Permit proposes to regulate the discharge from Outfall 003, located at Latitude 42° 40’ 37.5” Longitude 71° 14’ 29”. The discharge flows into the wetlands system adjacent to the Merrimack River in Dracut, MA. The approximate linear distance measured from Outfall 003 to the Merrimack River (Segment ID MA84A-03) is about ½ mile. In this case, EPA considers the general action area to be the entire ½ mile length of the wetland between the outfall and the Merrimack River, as well as a two-mile segment of the mainstem of the Merrimack River downstream from the point where the wetland joins the river.

As the federal agency charged with authorizing the discharge from this Facility, EPA determines potential impacts to federally listed species, and initiates consultation, when required under § 7(a)(2) of the ESA.

EPA has reviewed the federal endangered or threatened species of fish, wildlife, and plants in the expected action area to determine if EPA’s proposed NPDES permit could potentially impact any such listed species. One species under the jurisdiction of the USFWS was identified, namely the federally listed northern long-eared bat (*Myotis septentrionalis*). This terrestrial animal species is classified as threatened.¹⁶ According to the USFWS, the northern long-eared bat is found in “winter – mines and caves, summer – wide variety of forested habitats.” This species is not aquatic, so the discharge will have no direct effect on this mammal. Further, the permit action is also expected to have no indirect effect on the species because it is not expected to

¹⁶ See Section 7 resources for USFWS at <https://ecos.fws.gov/ipac/>

impact insects, the primary prey of the northern long-eared bat. Therefore, the proposed permit action is deemed to have no impact on this listed species.

In addition, two anadromous fish species under the jurisdiction of NMFS occur in Massachusetts waters, the shortnose sturgeon (*Acipenser brevirostrom*) and Atlantic sturgeon (*Acipenser oxyrinchus*), classified as threatened and/or endangered.¹⁷ In general, these fish are not expected to be present upstream of the Essex Dam in the Merrimack River. This dam, in Lawrence, Massachusetts, is approximately 5.5 miles downstream from the point where the Dracut wetland meets the Merrimack River. Based on the expected normal distribution of these species, it is highly unlikely that they would be present in the vicinity of this discharge and the action area of the outfall. Therefore, the proposed permit action will have no impact on these listed anadromous fish species.

Based on the above review, EPA finds that adoption of the proposed permit will have no effect on any threatened or endangered species or their designated critical habitat. Therefore, consultation with NMFS or USFWS under Section 7 of the ESA is not required.

6.2 Essential Fish Habitat

Under the 1996 Amendments (PL 104-267) to the Magnuson-Stevens Fishery Conservation and Management Act (*see* 16 U.S.C. § 1801 *et seq.*, 1998), EPA is required to consult with the National Marine Fisheries Service (NMFS) if EPA's action or proposed actions that it funds, permits, or undertakes, "may adversely impact any essential fish habitat". *See* 16 U.S.C. § 1855(b).

The Amendments broadly define "essential fish habitat" (EFH) as: "waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity". *See* 16 U.S.C. § 1802(10). "Adverse impact" means any impact that reduces the quality and/or quantity of EFH, 50 C.F.R. § 600.910(a). Adverse effects may include direct (e.g., contamination or physical disruption), indirect (e.g., loss of prey, reduction in species' fecundity), site specific or habitat-wide impacts, including individual, cumulative, or synergistic consequences of actions.

EFH is only designated for fish species for which federal Fisheries Management Plans exist. *See* 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.

The Federal action being considered in this case is EPA's proposed NPDES permit for the Brox Industries, Inc. Facility. The Draft Permit is intended to replace the 2007 Permit in governing the Facility. Specifically, the Draft Permit proposes to regulate the discharge from Outfall 003, located at Latitude 42° 40' 37.5" Longitude 71° 14' 29". The discharge flows into the wetlands system adjacent to the Merrimack River in Dracut, MA. The approximate linear distance measured from Outfall 003 to the Merrimack River (Segment ID MA84A-03) is about ½ mile. In this case, EPA considers the general area potentially affected by the discharge to be the entire

¹⁷ See Section 7 resources for NMFS at <https://www.greateratlantic.fisheries.noaa.gov/protected/section7/index.html>

½ mile length of the wetland between the outfall and the Merrimack River, as well as a two-mile segment of the mainstem of the Merrimack River downstream from the point where the wetland joins the river.

EPA has determined that the Merrimack River is covered by the EFH designation for riverine systems at Latitude 42°45'36" N, Longitude 71°33'12" W.¹⁸ EPA's review of available EFH information indicated that this waterbody is designated EFH for Atlantic salmon (*Salmo salar*). No “habitat areas of particular concern”, as defined under § 600.815(a)(9) of the Magnuson-Stevens Act, have been designated for this site. Although EFH has been designated for this general location, EPA has concluded that the limits and conditions contained in this Draft Permit minimize adverse effects to Atlantic salmon EFH for the following reasons:

- This permit action does not constitute a new source of pollutants. It is the reissuance of an existing NPDES permit;
- The facility withdraws no water from the Merrimack River, so no life stages of EFH species are vulnerable to impingement or entrainment from this facility;
- The discharge flows into a ½ mile long wetlands system before reaching the mainstem of the Merrimack River. The wetland is likely to reduce total suspended solids, turbidity, and other pollutants before the discharge reaches the river;
- The Draft Permit proposes limits on total suspended solids, oil and grease, pH, and turbidity and proposes monitoring and reporting requirements to ensure that the discharge meets state water quality standards;
- The Draft Permit proposes new whole effluent toxicity (WET) testing requirement, to be conducted annually using acute and chronic WET tests to ensure that the discharge does not present toxicity problems. Daphnid (*Ceriodaphnia dubia*) and fathead minnow (*Pimephales promelas*) are the proposed test species;
- The Draft Permit prohibits the discharge of pollutants or combination of pollutants in toxic amounts;
- The effluent limitations and conditions in the Draft Permit were developed to be protective of all aquatic life; and
- The Draft Permit prohibits violations of the state water quality standards.

EPA believes that the conditions and limitations contained within the Draft Permit adequately protect all aquatic life, including the species with designated EFH in the receiving water, and that further mitigation is not warranted. Should adverse impacts to EFH be detected as a result of this permit action, or if new information is received that changes the basis for EPA's conclusions, NMFS will be contacted and an EFH consultation will be reinitiated.

7.0 Public Comments, Hearing Requests, and Permit Appeals

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

¹⁸ New England Fishery Management Council, OHA2 FEIS – Volume 2, Preferred EFH Designations, available [at https://www.habitat.noaa.gov/protection/efh/efhmapper/oa2_efh_hapc.pdf](https://www.habitat.noaa.gov/protection/efh/efhmapper/oa2_efh_hapc.pdf)

arguments in full by the close of the public comment period, to: George Papadopoulos, U.S. EPA, Office of Ecosystem Protection, Industrial Permits Branch, 5 Post Office Square, Suite 100, Boston, Massachusetts 02109-3912 or via email to Papadopoulos.george@epa.gov.

Any person, prior to the close of the public comment period, may submit a request in writing for a public hearing to consider the Draft Permit to EPA and the State Agency. Such requests shall state the nature of the issues proposed to be raised in the hearing. A public meeting may be held if the criteria stated in 40 C.F.R. § 124.12 are satisfied. In reaching a final decision on the Draft Permit, the EPA will respond to all significant comments and make these responses available to the public at EPA's Boston office.

Following the close of the comment period, and after any public hearings, if such hearings are held, the EPA will issue a Final Permit decision, forward a copy of the final decision to the applicant, and provide a copy or notice of availability of the final decision to 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 C.F.R. § 124.19 and/or submit a request for an adjudicatory hearing to MassDEP's Office of Appeals and Dispute Resolution consistent with 310 CMR 1.00.

8.0 EPA and MassDEP Contacts

The administrative record on which this Draft Permit is based 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:

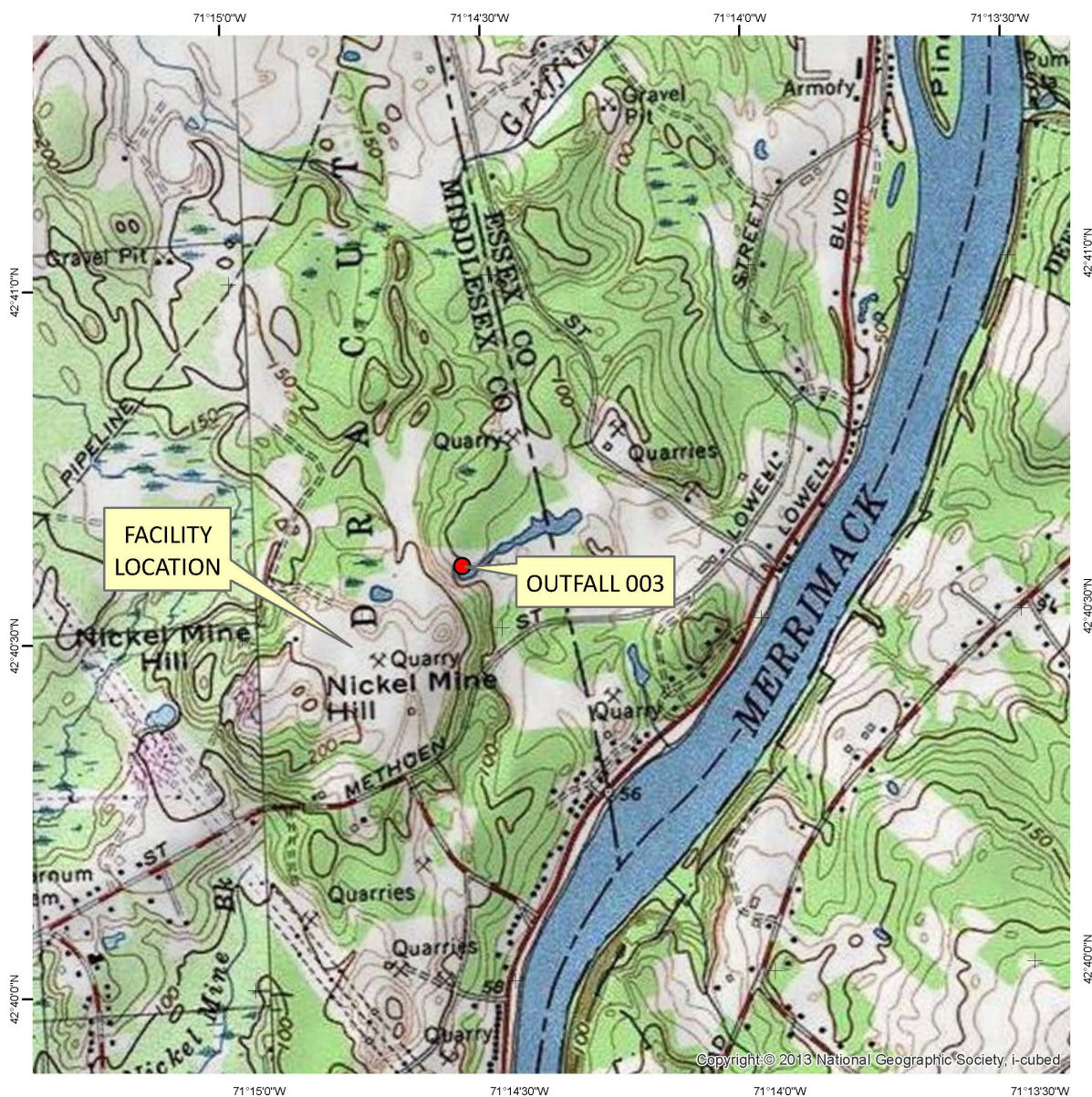
George Papadopoulos
EPA Region 1
5 Post Office Square - Suite 100 - Mailcode OEP 06-1
Boston, MA 02109-3912
Email: papadopoulos.george@epa.gov
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February 8, 2019
Date

Ken Moraff, Director
Office of Ecosystem Protection

U.S. Environmental Protection Agency

Figure 1: Location Map

Scale 1 : 13,844
0 500 Meters
0 1,000 Feet

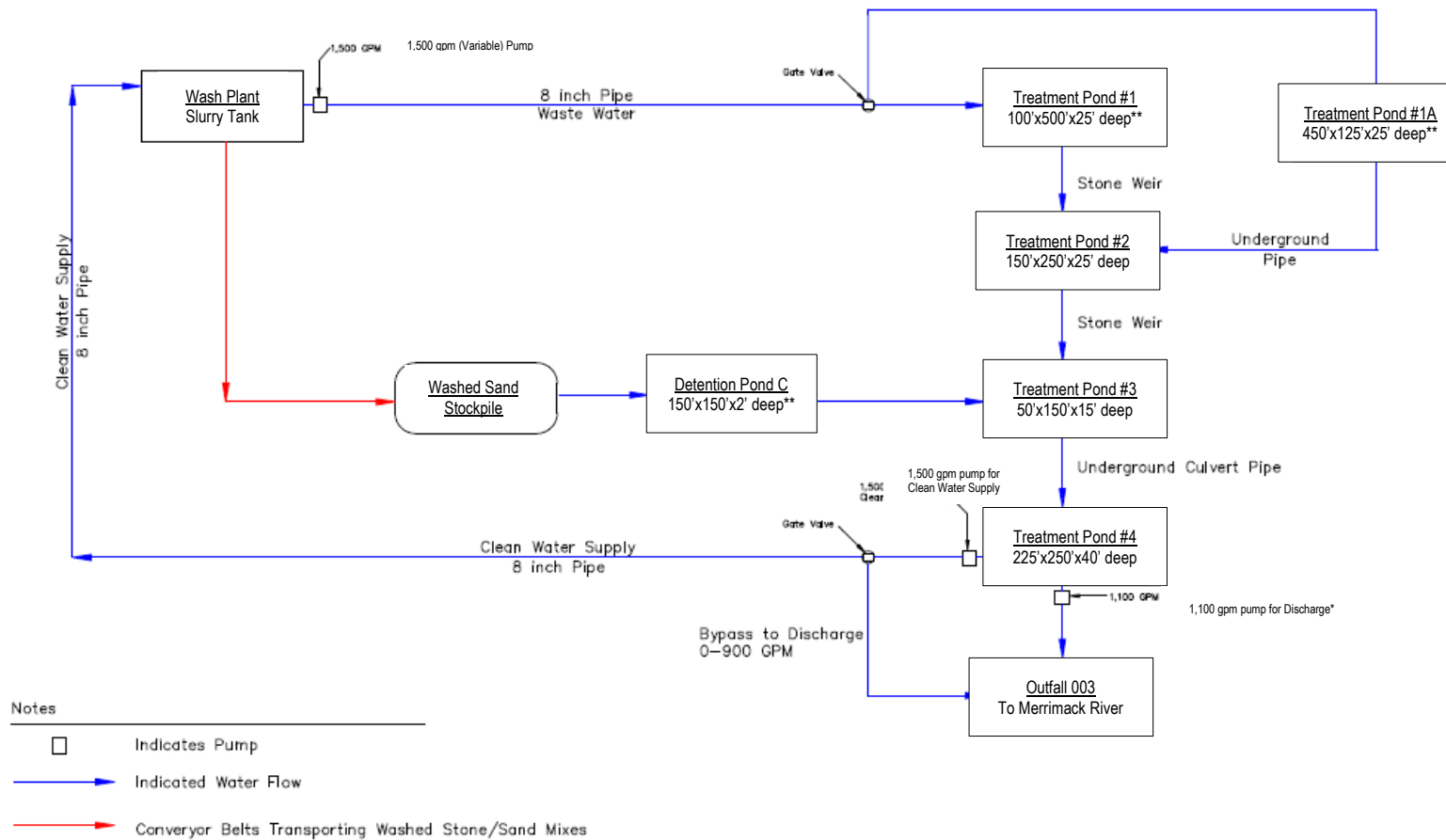
Regulated Facilities: EPA

**FIGURE 1**
Brox Industries, Inc.
Site Location

Dracut, MA

Figure 2: Site Plan



Figure 3: Schematic of Water Flow

* Discharge Pump

Generally, four to six hours per day, approximately 1,100 gallons of water per minute in Treatment Pond no. 4 is pumped to a manhole located in the southwest corner where it flows through an 18 inch culvert to Outfall DSN-003.

** Pond Depths

The depths will vary from time to time due to the build-up of silt in the ponds.

Appendix A: Discharge Monitoring Data

Brox Industries: NPDES Permit No. MA0040177									
Outfall Serial Number 001, Monthly Reporting									
Monitoring Period Range: 8/01/2013 to 8/31/2018									
Parameter	Flow, in conduit or thru treatment plant	Flow, in conduit or thru treatment plant	Solids, total suspended	Solids, total suspended	Solids, total suspended	Solids, total suspended	Turbidity	pH	pH
Reporting Units	gpm	gpm	mg/L	mg/L	lb/d	lb/d	NTU	SU	SU
Monitoring Period End Date	DAILY MX	MO AVG	MO AVG	DAILY MX	DAILY MX	MO AVG	DAILY MX	MIN	MAX
08/31/2013	780	474	0	0	0	0	0	7.7	7.9
09/30/2013	500	307	0	0	0	0	0	7.8	7.8
10/31/2013	500	112	0	0	0	0	0	7.8	7.9
11/30/2013	840	150	0	0	0	0	0	7.8	7.9
12/31/2013	872	332	0	0	0	0	0	7.9	8
01/31/2014	890	593	0	0	0	0	0	8	8
02/28/2014	850	399	0	0	0	0	0	8	8
03/31/2014	885	644	0	0	0	0	0	7.9	8
04/30/2014	890	828	0	0	0	0	1	7.9	7.9
05/31/2014	920	591	0	0	0	0	0	7.9	7.9
06/30/2014	950	490	0	0	0	0	0	7.9	7.9
07/31/2014	935	341	3.25	13	148.8	13.6	2	7.9	7.9

08/31/2014	1075	352	0	0	0	0	0	7.9	7.9
09/30/2014	1050	217	0	0	0	0	0	7.6	7.9
10/31/2014	1050	282	0	0	0	0	1	7.7	7.7
11/30/2014	1050	462	1.75	7	90	9.9	2	7.7	7.8
12/31/2014	1075	980	0	0	0	0	2	7.8	8
01/31/2015	1070	853	0	0	0	0	0	8	8.1
02/28/2015	960	473	0	0	0	0	1	8	8.1
03/31/2015	1050	654	0	0	0	0	4	8	8.2
04/30/2015	1050	761	0	0	0	0	0	7.9	8
05/31/2015	1060	412	0	0	0	0	0	7.9	7.9
06/30/2015	1075	657	0	0	0	0	0	7.9	8
07/31/2015	1075	663	0	0	0	0	0	7.9	8
08/31/2015	1050	517	0	0	0	0	0	7.9	7.9
09/30/2015	1075	178	0	0	0	0	0	7.9	7.9
10/31/2015	1050	367	1.75	7	90	7.9	0	8.1	8.2
11/30/2015	1050	321	0	0	0	0	0	8	8.1
12/31/2015	1040	364	0	0	0	0	0	8	8
01/31/2016	1000	516	0	0	0	0	2	7.9	8
02/29/2016	1025	595	0	0	0	0	4	7.9	8
03/31/2016	1025	659	0	0	0	0	0	7.9	7.9
04/30/2016	1000	712	0	0	0	0	0	7.8	8
05/31/2016	1080	895	0	0	0	0	2	7.6	7.7
06/30/2016	1100	329	0	0	0	0	0	7.9	8

07/31/2016	1050	182	0	0	0	0	0	7.8	7.9
08/31/2016	1050	425	0	0	0	0	0	7.8	8
09/30/2016	1050	120.7	0	0	0	0	0	7.9	8
10/31/2016	1050	303.42	0	0	0	0	0	7.9	8
11/30/2016	1060	281.64	0	0	0	0	3	7.9	8
12/31/2016	1000	349.76	0	0	0	0	2	7.8	7.9
01/31/2017	1010	452.02	1.4	7	86.6	7.7	1	7.9	8.1
02/28/2017	1000	799.24	0	0	7	0	0	7.9	8
03/31/2017	1050	665	0	0	0	0	0	7.9	8
04/30/2017	1100	592	1.5	6	80.8	10.9	2	7.7	7.9
05/31/2017	1080	895	0	0	0	0	2	7.6	7.7
06/30/2017	1020	920	5	5	62.4	56.3	1	7.6	7.7
07/31/2017	1030	651	5	5	63.1	39.9	1	7.6	7.6
08/31/2017	1000	421	5	5	63.1	39.9	1	7.6	7.7
09/30/2017	850	387	5	5	63.1	39.9	1	7.6	7.7
10/31/2017	850	403	5.75	8	83.3	28.4	1	7.5	7.7
11/30/2017	860	497	5	5	52.6	30.4	1	7.6	7.7
12/31/2017	800	514	5	5	49	31.5	2	7.7	7.7
01/31/2018	925	490	5	5	57	30	2	7.6	7.6
02/28/2018	865	745	2	8	84.7	18.2	3	7.6	7.7
03/31/2018	900	684	5	5	52.6	30.4	1	7.6	7.7
04/30/2018	860	804	5	5	52.6	30.4	5.7	7.6	7.7
05/31/2018	875	722	5.1	5.5	58.9	45.1	1.8	7.6	7.7

06/30/2018	870	523	5	5	5	5	1	7.6	7.7
07/31/2018	900	449	5	5	52.6	30.4	5	7.6	7.7
08/31/2018	875	538	5	5	52.6	30.4	3.6	7.6	7.7
2010 Limits	1100 gpm	Report	24 mg/L	43 mg/L	Report	Report	25 NTU	6.5 SU	8.3 SU
Minimum	500	112	0	0	0	0	0	7.5	7.6
Maximum	1100	980	5.75	13	148.8	56.3	5.7	8.1	8.2
Average	966	513	1.35	1.99	22.23	8.79	1.02	7.80	7.89
Standard Deviation	124	213	2.13	3.08	35.41	14.98	1.37	0.15	0.15
No. Measurements	61	61	61	61	61	61	61	61	61
No. Exceedances	0	---	0	0	---	---	0	0	0

Brox Industries: NPDES Permit No. MA0040177							
Outfall Serial Number 001, Monthly Reporting							
Monitoring Period Range: 8/01/2013 to 8/31/2018							
Parameter	Nitrogen, Kjeldahl, total (as N)	Nitrogen, ammonia total (as N)	Nitrogen, nitrate total (as N)	Nitrogen, nitrite total (as N)	Oil & grease	Oil & grease	Perchlorate (ClO ₄)
Reporting Units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Monitoring Period End Date	DAILY MX	DAILY MX	DAILY MX	DAILY MX	MO AVG	DAILY MX	EVENT TOT
08/31/2013	0	0	1	0	0	0	NODI: 9
09/30/2013	0.9	0	0	0	0	0	NODI: 9
10/31/2013	0.7	0	2	0	0	0	NODI: 9
11/30/2013	0	0	3.1	0	0	0	NODI: 9
12/31/2013	0	0	1.6	0	0	0	NODI: 9
01/31/2014	0.5	0	1.6	0	0	0	NODI: 9
02/28/2014	0.7	0	2.1	0	0	0	NODI: 9
03/31/2014	0	0.07	1.7	0	0	0	NODI: 9
04/30/2014	0	0	2.3	0	0	0	NODI: 9
05/31/2014	0	0	2	0	0	0	NODI: 9
06/30/2014	1	0	1.7	0	0	0	NODI: 9
07/31/2014	0.7	0	1	0	0	0	NODI: 9
08/31/2014	0	0	2.8	0	0	0	NODI: 9
09/30/2014	0	0	2.3	0	0	0	NODI: 9
10/31/2014	0	0	2.2	0	0	0	NODI: 9

11/30/2014	0	0	2.5	0	0	0	NODI: 9
12/31/2014	0	0	2	0	0	0	NODI: 9
01/31/2015	0	0	2.4	0	0	0	NODI: 9
02/28/2015	0	0	2.2	0	0	0	NODI: 9
03/31/2015	0	0	1.7	0	0	0	NODI: 9
04/30/2015	0	0	1.7	0	0	0	NODI: 9
05/31/2015	0	0	1.2	0	0	0	NODI: 9
06/30/2015	0	0	1.5	0	0	0	NODI: 9
07/31/2015	0.5	0	2.3	0	0	0	NODI: 9
08/31/2015	0.7	0	2.4	0	0	0	NODI: 9
09/30/2015	0	0	1.5	0	0	0	NODI: 9
10/31/2015	0.5	0	1.5	0	0	0	NODI: 9
11/30/2015	0	0	2.5	0	0	0	NODI: 9
12/31/2015	0.7	0	2	0	0	0	NODI: 9
01/31/2016	0	0	1.9	0	0	0	NODI: 9
02/29/2016	0	0	1.6	0	0	0	NODI: 9
03/31/2016	0.9	0	1.8	0	0	0	NODI: 9
04/30/2016	0	0	2.5	0	0	0	NODI: 9
05/31/2016	0.6	0	1.8	0	0	0	NODI: 9
06/30/2016	0.5	0	2.1	0	0	0	NODI: 9
07/31/2016	0.5	0	1.5	0	0	0	NODI: 9
08/31/2016	0.7	0	1.8	0	0	0	NODI: 9
09/30/2016	0.5	0	2.5	0	0	0	NODI: 9
10/31/2016	0	0	2.4	0	0	0	NODI: 9
11/30/2016	0.6	0	1.8	0	0	0	NODI: 9
12/31/2016	0	0	1	0	0	0	NODI: 9
01/31/2017	0.6	0	1.6	0	0	0	NODI: 9
02/28/2017	0	0	3	0	0	0	NODI: 9

03/31/2017	0.5	0	2.2	0	0	0	NODI: 9
04/30/2017	0	0	2.1	0	0	0	NODI: 9
05/31/2017	0.6	0	1.8	0	0	0	NODI: 9
06/30/2017	0.6	0.05	2	0.5	5	5	NODI: 9
07/31/2017	0.6	0.05	1.4	0.5	5	5	NODI: 9
08/31/2017	0.5	0.05	1.6	0.5	5	5	NODI: 9
09/30/2017	0.5	0.05	2	0.5	5	5	NODI: 9
10/31/2017	0.6	0.05	2.1	0.5	5	5	NODI: 9
11/30/2017	0.5	0.05	2.4	0.5	5	5	NODI: 9
12/31/2017	0.6	0.05	1.9	0.05	5	5	NODI: 9
01/31/2018	0.6	0.05	1.5	0.5	6	6	NODI: 9
02/28/2018	0.5	0.05	1.7	0.5	5	5	NODI: 9
03/31/2018	1.2	0.05	2.2	0.05	5	5	NODI: 9
04/30/2018	0.5	0.05	1.7	0.5	5	5	NODI: 9
05/31/2018	0.75	0.05	2	0.5	6	6	NODI: 9
06/30/2018	0.5	0.11	2.1	0.5	6	6	NODI: 9
07/31/2018	0.5	0.067	2.7	0.5	5	5	NODI: 9
08/31/2018	0.5	0.057	1.8	0.5	6	6	NODI: 9
2010 Limits	Report	Report	Report	Report	10 mg/L	15 mg/L	Report
Minimum	0	0	0	0	0	0	0
Maximum	1.2	0.11	3.1	0.5	6	6	0
Average	0.36	0.01	1.92	0.11	1.30	1.30	0.00
Standard Deviation	0.33	0.03	0.52	0.21	2.30	2.30	0.00
No. Measurements	61	61	61	61	61	61	0
No. Exceedances	---	---	---	---	0	0	---

MASSACHUSETTS DEPARTMENT OF
ENVIRONMENTAL PROTECTION
COMMONWEALTH OF MASSACHUSETTS
1 WINTER STREET
BOSTON, MASSACHUSETTS 02108

UNITED STATES ENVIRONMENTAL
PROTECTION AGENCY – REGION 1
OFFICE OF ECOSYSTEM PROTECTION
5 POST OFFICE SQUARE
BOSTON, MASSACHUSETTS 02109

JOINT PUBLIC NOTICE OF A DRAFT NATIONAL POLLUTANT DISCHARGE
ELIMINATION SYSTEM (NPDES) PERMIT TO DISCHARGE INTO WATERS OF THE
UNITED STATES UNDER SECTIONS 301 AND 402 OF THE CLEAN WATER ACT, AS
AMENDED, AND SECTIONS 27 AND 43 OF THE MASSACHUSETTS CLEAN WATERS
ACT, AS AMENDED, AND REQUEST FOR STATE CERTIFICATION UNDER SECTION
401 OF THE CLEAN WATER ACT.

PUBLIC NOTICE PERIOD: **February 15, 2019 – March 16, 2019**

PERMIT NUMBER: **MA0040177**

PUBLIC NOTICE NUMBER: MA-004-19

NAME AND MAILING ADDRESS OF APPLICANT:

**Brox Industries, Inc.
1471 Methuen Street
Dracut, MA 01826**

NAME AND ADDRESS OF THE FACILITY WHERE DISCHARGE OCCURS:

**Brox Industries, Inc.
1480 Methuen Street
Dracut, MA 01826**

RECEIVING WATER: **Wetland system adjacent to the Merrimack River and its
tributaries - Merrimack River Watershed (Class B)**

The U.S. Environmental Protection Agency (EPA) and the Massachusetts Department of Environmental Protection (MassDEP) have cooperated in the development of a draft permit for Brox Industries, Inc., which discharges treated process wastewater from aggregate washing operations, dust suppression water, and stormwater. The effluent limits and permit conditions imposed have been drafted to assure compliance with the Clean Water Act, 33 U.S.C. sections 1251 et seq., the Massachusetts Clean Waters Act, G.L. c. 21, §§ 26-53, 314 CMR 3.00, and State Surface Water Quality Standards at 314 CMR 4.00. EPA has requested that the State certify this draft permit pursuant to Section 401 of the Clean Water Act and expects that the draft permit will be certified.

INFORMATION ABOUT THE DRAFT PERMIT:

The draft permit and explanatory fact sheet may be obtained at no cost at http://www.epa.gov/region1/npdes/draft_permits_listing_ma.html or by contacting:

George Papadopoulos
U.S. Environmental Protection Agency – Region 1
5 Post Office Square, Suite 100 (OEP06-1)
Boston, MA 02109-3912
Telephone: (617) 918-1579
Papadopoulos.George@epa.gov

The administrative record containing all documents relating to this draft permit including all data submitted by the applicant may be inspected at the EPA Boston office mentioned above between 9:00 a.m. and 5:00 p.m., Monday through Friday, except holidays.

PUBLIC COMMENT AND REQUEST FOR PUBLIC HEARING:

All persons, including applicants, who believe any condition of this draft permit is inappropriate, must raise all issues and submit all available arguments and all supporting material for their arguments in full by **March 16, 2019**, to the address or email address listed above. Any person, prior to such date, may submit a request in writing to EPA and MassDEP for a public hearing to consider this draft permit. Such requests shall state the nature of the issues proposed to be raised in the hearing. A public hearing may be held after at least thirty days public notice whenever the Regional Administrator finds that response to this notice indicates significant public interest. In reaching a final decision on this draft permit, the Regional Administrator will respond to all significant comments and make the responses available to the public at EPA's Boston office.

FINAL PERMIT DECISION:

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

LEALDON LANGLEY, DIRECTOR
WETLANDS AND WASTEWATER
PROGRAM
MASSACHUSETTS DEPARTMENT OF
ENVIRONMENTAL PROTECTION

KEN MORAFF, DIRECTOR
OFFICE OF ECOSYSTEM PROTECTION
EPA-REGION 1