

**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),

**Bioshelters, Inc.**

is authorized to discharge from the facility located at

**Bioshelters, Inc.  
Route 116  
500 Sunderland Road  
Amherst, MA 01002**

to receiving waters named

**Great Swamp to an Unnamed Tributary of the Mill River**  
(Connecticut River Watershed - MA34)

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

This permit shall become effective on the date of signature.

This permit and the authorization to discharge expires at midnight, three (3) years from the effective date.

This permit supercedes the permit issued February 23, 1994.

This permit consists of 10 pages in PART I including effluent limitations, monitoring requirements, and 35 pages in PART II including General Conditions and Definitions.

Signed this 17<sup>th</sup> day of December, 2002

Signature on File

Linda M. Murphy, Director  
Office of Ecosystem Protection  
U.S. Environmental Protection Agency  
Boston, Massachusetts

Director  
Division of Watershed Management  
Department of Environmental Protection  
Commonwealth of Massachusetts  
Boston, Massachusetts

**PART I**

**A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS**

1. During the period beginning the effective date and lasting through expiration, the permittee is authorized to discharge from outfall serial number **001**, treated effluent to the Great Swamp to an Unnamed Tributary of the Mill River. Such discharges shall be limited and monitored by the permittee as specified below. Samples taken in compliance with the monitoring requirements specified below shall be taken at a location that provides a representative analysis of the effluent prior to mixing with any other wastestreams.

<u>EFFLUENT CHARACTERISTIC</u>		<u>EFFLUENT LIMITS</u>			<u>MONITORING REQUIREMENTS</u>	
<u>PARAMETER</u>	<u>UNITS</u>	<u>AVERAGE MONTHLY</u>	<u>AVERAGE WEEKLY</u>	<u>MAXIMUM DAILY</u>	<u>MEASUREMENT FREQUENCY</u>	<u>SAMPLE<sup>3</sup> TYPE</u>
FLOW	GPD	86,400	***	86,400	Continuous <sup>1</sup>	Recorder
BOD <sub>5</sub>	mg/l lbs/day	5	***	10	Monthly <sup>2</sup>	8-Hour Composite <sup>3</sup>
TSS	mg/l lbs/day	3	***	6	Monthly	8-Hour Composite <sup>3</sup>
pH	SU	(See Condition I.A.1.b on Page 3)			Monthly <sup>2</sup>	Grab
Total Phosphorus	mg/l	***	***	0.2	Monthly <sup>2</sup>	8-Hour Composite <sup>3</sup>
Total Ammonia	mg/l	4.15	***	24.1	Quarterly <sup>2</sup>	8-Hour Composite <sup>3</sup>
Total Kjeldahl Nitrogen	mg/l	*** Report Only ***			Quarterly <sup>2</sup>	8-Hour Composite <sup>3</sup>
Nitrate + Nitrite	mg/l	*** Report Only ***			Quarterly <sup>2</sup>	8-Hour Composite <sup>3</sup>
Ozone, Residual	mg/l	***	***	>0.02	Daily	Grab
Dissolved Oxygen	mg/l	≥ 5.0 mg/l			Monthly <sup>2</sup>	Grab

See page 3 for explanation of superscripts

Footnotes:

1. The flow shall be continuously measured and recorded using a flow meter and totalizer. Measurement of influent flow is acceptable, as there is no water loss in the process.
2. The BOD, TSS, pH, Total Phosphorus, Total Ammonia, Total Kjeldahl Nitrogen, Nitrate + Nitrite and Dissolved Oxygen samples shall be taken when pollutant concentrations in the discharge are at their maximum rather than at a random operating times during the month or quarter, as required. The permittee must conduct an analysis and/or run a model to determine when the concentrations of these pollutants are at a maximum based on variations in operation, facility flow, etc. The effluent sample shall be representative of the maximum concentration of pollutant levels in the final effluent.
3. An 8-hour composite sample will consist of at least eight (8) grab samples taken during one working day.

Part I.A.1. (continued)

- a. The discharge shall not cause a violation of the water quality standards of the receiving waters.
  - b. The pH of the effluent shall not be less than 6.5 nor greater than 8.3 and not more than 0.5 units outside of the background range. There shall be no change from background conditions that would impair any use assigned to this class.
  - c. The discharge shall not cause objectionable discoloration of the receiving waters.
  - d. The effluent shall contain neither a visible oil sheen, foam, nor floating solids at any time.
  - e. The permittee shall not discharge into the receiving water any pollutant or combination of pollutants in toxic amounts.
  - f. The permittee shall notify EPA and the State within 24-hours upon the occurrence of a water quality induced mortality of greater than 25 percent in any aquatic species under culture at the facility in accordance with reporting requirements in General Conditions PART II.D.1.e.
  - g. Samples taken in compliance with the monitoring requirements specified in this permit shall be taken at the outlet of the constructed wetlands complex prior to mixing with any receiving water or any other waste stream.
2. All existing manufacturing, commercial, mining, and silvicultural dischargers must notify the Director as soon as they know or have reason to believe (40 Code of Federal Regulations (CFR) §122.42):
    - a. That any activity has occurred or will occur which would result in the discharge of any toxic pollutant which is not limited in the permit, if that discharge will exceed the highest of the following "notification levels:"

- (1) One hundred micrograms per liter (100 ug/L);
    - (2) Two hundred micrograms per liter (200 ug/L) for acrolein and acrylonitrile; five hundred micrograms per liter (500 ug/L) for 2,4-dinitrophenol; and one milligram per liter (1 mg/L) for antimony;
    - (3) Five (5) times the maximum concentration value reported for that pollutant in the permit application in accordance with 40 CFR §122.21(g)(7); or
    - (4) Any other notification level established by the Director in accordance with 40 CFR §122.44(f) and Massachusetts regulations.
  - b. That any activity has occurred or will occur which would result in the discharge, on a non-routine or infrequent basis, of any toxic pollutant which is not limited in the permit, if that discharge will exceed the highest of the following "notification levels:"
    - (1) Five hundred micrograms per liter (500 ug/L);
    - (2) One milligram per liter (1 mg/L) for antimony;
    - (3) Ten (10) times the maximum concentration value reported for that pollutant in the permit application in accordance with 40 CFR §122.21(g)(7); or
    - (4) Any other notification level established by the Director in accordance with 40 CFR §122.44(f) and Massachusetts regulations.
  - c. That they have begun or expect to begin to use or manufacture as an intermediate or final product or byproduct any toxic pollutant which was not reported in the permit application.
3. No components of the effluent shall result in any demonstrable harm to aquatic life or violate any water quality standard which has been or may be promulgated. Upon promulgation of any such standard, this permit may be revised or amended in accordance with such standards, with the permittee being so notified.
  4. This permit shall be modified, or alternatively, revoked and reissued, to comply with any applicable standard or limitation promulgated or approved under sections 301(b)(2)(C) and (d), 304(b)(2), and 307(a)(2) of the Clean Water Act, if the effluent standard or limitation so issued or approved:
    - a. Contains different conditions or is otherwise more stringent than any effluent limitation in the permit; or
    - b. Controls any pollutants not limited in the permit.

5. Any change in: 1) the fish species to be raised at this facility or, 2) the development stage to be attained at this facility, will require written notification to EPA and the State and possible permit modification.
6. There shall be no discharge of untreated wastewaters resulting from cleaning accumulated solids in the raceways, culture tanks, screens and associated equipment.
7. Medication
  - a. The permittee shall use only medications and disease control chemicals in dosages and combinations as approved by the U.S. Food and Drug Administration (USFDA), U.S. Fish and Wildlife Service (USF&WS), EPA, MA DEP and MA Division of Fisheries and Wildlife.
  - b. The permittee shall use these medications and chemicals as needed to treat a disease or disease-causing conditions. The prophylactic use of disease control medications is prohibited.
  - c. The permittee shall notify within 24 hours by telephone and within 5 working days in writing the Regional Administrator at EPA-New England, U.S. Fish and Wildlife Service, the Massachusetts Division of Fisheries and Wildlife, the Massachusetts Department of Environmental Protection of the emergency use or the immediate intended use of any medication and/or chemical not specifically identified in the Best Management Practices Plan as described below.
  - d. The Regional Administrator or the Director will notify the permittee when the use of a specific chemical described in *PART I.A.7.c.*, immediately above, is unacceptable or that the dosage concentration or frequency level must be modified to protect the aquatic community in the receiving water.
8. Best Management Practices (BMP) Plan
  - a. The Best Management Practices (BMP) Plan to be followed in operating the facility, cleaning tanks, raceways, and other equipment must be updated to represent the current facility and operations. The purpose of the plan is to identify and describe the practices which minimize the amounts of pollutants discharged to surface waters.
  - b. The BMP Plan shall be completed, dated, signed and submitted to EPA and the MA DEP within 90 days after the effective date of this permit; the plan shall be modified as necessary during the life of the permit.
  - c. The BMP Plan will be considered acceptable if EPA and the State have not responded within forty-five (45) days of its receipt. The BMP Plan shall be submitted directly to the Director, Office of Ecosystem Protection at EPA New England and to the Director, Division of Watershed Management at the MA DEP.

- d. Upon acceptance, the BMP Plan becomes an enforceable element of this permit and shall be implemented by the permittee.
- e. The permittee shall amend the BMP Plan whenever there is a change in facility design, construction, operation or maintenance which affects the potential for discharge of pollutants into surface waters. Amendments to the BMP Plan shall be submitted directly to the Director, Office of Ecosystem Protection at EPA New England and to the Director, Division of Watershed Management at the MA DEP. Amendments shall be considered acceptable if EPA and the MA DEP have not responded after forty-five (45) days of its receipt.
- f. The BMP Plan shall include, as a minimum, the following items:
  - i. During operations:
    - (1) A description of the pollution control equipment or methods used to enhance solids collection.
    - (2) A description of how excessive solids buildup will be identified to trigger more frequent cleaning of the raceways/culture tanks and equipment thereby preventing more suspended and dissolved materials in the discharge.
    - (3) A description of feeding methods used to minimize the amount of feed residual in the discharge.
    - (4) A description of the preventative maintenance program for cleaning equipment so that delays in cleaning due to equipment failures are avoided.
    - (5) A description of the analyses and model (if one is used) used to determine the time of maximum concentration based on dosage, injection point, facility flow, etc (See Footnote #2).
  - ii. Biological Pollution
    - (1) Describe, in detail, the precautions that will be exercised by the facility to prevent aquatic organisms that are not indigenous to the New England area and/or the United States from becoming established in the local surface waters.
    - (2) A description for storage and treatment of Outfall 001 discharge during plant upsets to prevent biological pollution (non-native organism, fish parasites and fish diseases) from entering the receiving water in the case of an untreated discharge bypass.
  - iii. Cleaning of culture tanks/raceways and other equipment:

- (1) Describe in detail how the accumulated solids are to be removed, dewatered and methods of disposal.
- (2) Describe where the removed material is to be placed and the techniques used to prevent it from re-entering the surface waters from any on-site storage. If the material is removed from the site, describe who received the material and its method of disposal and/or reuse.

iv. Medications and chemicals used in the facility:

- (1) List in the plan all medications and chemicals that are expected to be used in the culture tanks/raceways. For each medication or chemical, identify:
  - (a) Product name of the medication or chemical.
  - (b) The chemical formulation of the medication or chemical
  - (c) The purpose or use of the chemical.
  - (d) The dosage concentration, frequency of application (hourly, daily, etc.) and the duration (hours, days) of treatment.
  - (e) The method of application.
  - (f) Material Safety Data Sheets (MSDS), Chemical Abstracts Service (CAS) Registry number for each active therapeutic ingredient.
  - (g) The method or methods used to detoxify the wastewater prior to discharge following application of chemical and/or medication.
  - (h) Information on the persistence and toxicity of each medication or chemical.
  - (i) Information on the Food and Drug Administration (USFDA) approval for the use of said medication or chemical on fish or fish related products used for human consumption.
  - (j) Available aquatic toxicity data for each medication or chemical used (vendor data, literature data, etc.); LC<sub>50</sub> at 48 and/or 96 hours and No Effect Level (NOEL) concentrations for typical aquatic organisms (salmon, trout, daphnia, fathead minnow, etc.).

- v. Personnel Training
  - (1) Describe the training to be provided for employees to assure they understand the goals and objectives of the BMPs, the requirements of the NPDES Permit and their individual responsibilities for complying with the goals and objectives of the BMP Plan and the NPDES permit.
- vi. BMP Records Maintenance
  - (1) Records of the calculations done at the time of sampling must be maintained at the facility in order that an inspector may verify that the sampling was properly conducted

## B. MONITORING AND REPORTING

### 1. Reporting

Monitoring results obtained during each calendar month shall be summarized and reported on Discharge Monitoring Form(s) postmarked no later than the 15<sup>th</sup> day of the following month.

Signed and dated originals of these, and all other reports required herein, shall be submitted to the Director and the State at the following addresses:

U.S. Environmental Protection Agency  
Water Technical Unit (SEW)  
P.O. Box 8127  
Boston, Massachusetts 02114-8127

The State Agency is:

Massachusetts Department of Environmental Protection  
Western Regional Office-BRP  
436 Dwight Street  
Suite 402  
Springfield, MA 01103

and to:

Massachusetts Department of Environmental Protection  
Division of Watershed Management  
627 Main Street, 2<sup>nd</sup> Floor  
Worcester, MA 01608

A copy of all technical information associated with medications and chemicals used for disease/parasite control and complementary aquatic toxicology and biological pollution shall be submitted to the following:



U.S. Fish and Wildlife Service  
300 Westgate Center Drive  
Hadley, Massachusetts 01035-9589

to:

Massachusetts Department of Environmental Protection  
Division of Watershed Management  
627 Main Street, 2<sup>nd</sup> Floor  
Worcester, MA 01608

and to:

Massachusetts Department of Fisheries, Wildlife and Environmental Law Enforcement  
Massachusetts Division of Fisheries and Wildlife  
Field Headquarters  
One Rabbit Hill Road  
Westborough, Massachusetts 01581

**C. STATE PERMIT CONDITIONS**

1. This Discharge Permit is issued jointly by the U. S. Environmental Protection Agency (EPA) and the Massachusetts Department of Environmental Protection (DEP) under Federal and State law, respectively. As such, all the terms and conditions of this permit are hereby incorporated into and constitute a discharge permit issued by the Commissioner of the MA DEP pursuant to M.G.L. Chap.21, §43.
2. 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 an NPDES Permit issued by the U.S. Environmental Protection Agency. In the event this Permit is declared invalid, illegal or otherwise issued in violation of Federal law, this Permit shall remain in full force and effect under State law as a Permit issued by the Commonwealth of Massachusetts.