UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION I
JOHN F. KENNEDY FEDERAL BUILDING
BOSTON, MASSACHUSETTS 02203

FACT SHEET

DRAFT NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) PERMIT TO DISCHARGE TO WATERS OF THE UNITED STATES.

NPDES PERMIT NO.: **MA0101605**

STATE PERMIT NO.: **M-35**

NAME AND ADDRESS OF APPLICANT:

Town of Dartmouth
Dartmouth, MA

NAME AND ADDRESS OF FACILITY WHERE DISCHARGE OCCURS:

Water Pollution Control Facility
759 Russells Mills Road
South Dartmouth, MA 02748

RECEIVING WATERS: **Buzzards Bay**

CLASSIFICATION: **SA**

I. Proposed Action, Type of Facility, and Discharge Location.

The above named applicant has requested that the U.S. Environmental Protection Agency ("EPA") reissue its NPDES permit to discharge into the designated receiving waters, a coastal zone. The facility is engaged in the collection and treatment of domestic wastewater. The facility provides secondary treatment and disinfection of all flows prior to discharge.

The Water Pollution Control Facility may be expanded and upgraded in the near future, increasing the average monthly capacity from 2.0 mgd to 4.2 mgd. Dartmouth received a waiver from the Ocean Sanctuaries Act (C. 369, Acts of 1984) to increase the ocean discharge of wastewater provided that there is not other disposal method, including land application, that may be approved by state and federal agencies and the increased flow will not significantly degrade water quality.

Dartmouth plans to add primary settling tanks, preliminary treatment facilities, septage/leachate receiving facilities, final settling tanks, one aeration tank, an operation and maintenance building, and a composting facility, and plans to modify the sludge handling building. A new pump station will be installed and modifications will be made to three others. The existing outfall located in Buzzards Bay (discharging approximately 3000 feet south-southeast of Salter's Point and 800 feet east of Mishaum Point) will not be modified (Attachment C).

National studies conducted by the EPA have demonstrated that domestic sources, as well as industrial sources, contribute toxic constituents to POTWs. These constituents include metals, chlorinated solvents, aromatic hydrocarbons and others. Based on the potential for toxicity from domestic contributions, the state narrative water quality criterion, the level of dilution at the discharge location, and in accordance with EPA national and regional policy and 40 CFR 122.44(d), the draft permit includes **whole effluent chronic and acute toxicity limitations** (C-NOEC and LC50) and quarterly **chronic** and (modified) **acute biomonitoring** requirements. (See "Policy for the Development of Water Quality-Based Permit Limitations for Toxic Pollutants", 49 Fed. Reg. 9016 March 9, 1984, and EPA's "Technical Support Document for Water Quality-Based Toxics Control", September, 1985.) If no chronic (survival, growth, or reproduction) or acute (lethality) toxic effects are demonstrated during the initial series of toxicity tests, EPA may modify the permit to provide for a reduced level of toxicity testing.

The principal advantages of biological techniques are: (1) the effects of complex discharges of many known and unknown constituents can be measured only by biological analyses; (2) bioavailability of pollutants after discharge is best measured by toxicity testing; and (3) pollutants for which there are inadequate chemical analytical methods or criteria can be addressed.

Chlorine and chlorine compounds produced by the chlorination of wastewater can be extremely toxic to aquatic life. The receiving water may or may not provide sufficient dilution of these compounds discharged by the Dartmouth Water Pollution Control Facility to meet the EPA recommended instream criteria for acute and chronic toxicity levels specified in the water quality criteria document (**"Gold Book"**). The criteria states that the average total residual chlorine (TRC) concentration in the receiving water should not exceed 7.5 ug/l for chronic toxicity protection and the maximum TRC concentration should not exceed 11 ug/l to protect marine aquatic life from acute toxicity.

Limits of chlorine necessary to protect aquatic life in a given stream may differ from the national suggested criteria due to specific effluent or receiving water characteristics. Based on the potential for toxicity as a result of chlorine disinfection, the permit is conditioned to include a prohibition regarding toxicity. The permit is further conditioned to limit the maximum daily chlorine concentration at 0.07 mg/l. (See Attachment B.)

The chlorinated effluent from the Dartmouth W.W.T.F. travels approximately 6.4 miles through an outfall consisting of pressure and gravity sewers before it discharges into Buzzards Bay. It is expected that the chlorine concentration will be reduced due to this detention time inside the outfall sewer. The permit calls for residual chlorine testing of the effluent at the outfall any place before it discharges into the Buzzards Bay. The permittee

ocean's ecosystem in the vicinity of the outfall. On the basis of available information, EPA performed an Ocean Discharge Criteria Evaluation for Dartmouth's Sewage Treatment Plant and made a determination of no unreasonable degradation to the marine environment for their increase in design flow from 2.0 to 4.2 MGD. This determination was made following regulations described in 40 CFR Part 125, Subpart M--Ocean Discharge Criteria and in 45 Federal Register 65942, October 3, 1980. EPA's summary finding is included here as Attachment D.

In addition to the 403(c) assessment performed by EPA, the Town has completed an evaluation of the water quality in Buzzards Bay due to the proposed increase in POTW design flow from 2.0 mgd to 4.2 mgd and surveyed the physical condition of the existing outfall pipe. This analysis was required by the Anti-degradation Provisions of the Massachusetts Water Quality Standards which are intended to protect high quality waters (314 CMR 4.04(2)) such as Buzzards Bay. After a careful review, EPA and MA DEP have determined that the effect of the increased discharge is insignificant because it will not impair the existing water uses and will not cause any significant lowering of water quality.

VII. State Certification Requirements.

The staff of the State Water Pollution Control Agency has reviewed the draft permit. EPA has requested permit certification by the State pursuant to 40 CFR 124.53 and expects that the draft permit will be certified.

VIII. Public Comment Period, Public Hearing, and Procedures for Final Decision

All persons, including applicants, who believe any condition of the draft permit is inappropriate must raise all issues and submit all available arguments and all supporting material for their arguments in full by the close of the public comment period, to the U.S. EPA, Wastewater Management Branch, JFK Federal Building, Boston, Massachusetts 02203. Any person, prior to such date, may submit a request in writing for a public hearing to consider the draft permit to EPA and the State Agency. Such requests shall state the nature of the issues proposed to be raised in the hearing. A public 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 the draft permit the Regional Administrator 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 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. Within 30 days following

Attachment A
Dartmouth Water Pollution Control Facility
Discharge Monitoring Data Summary
NPDES Permit No. MA0101605
Dartmouth, MA

Discharge Monitoring Data (8/89 - 8/90):

BOD (5 day), Total Suspended Solid, Fecal Coliform and Flow

Date	MONTHLY AVERAGE BOD mg/l	SS mg/l	Fec.Col. MPN/100ml	Flow mgd	DAILY MAXIMUM BOD mg/l	SS mg/l	Fec.Col. MPN/IPOml	Flow mgd
Aug. 89	19	20	14	1.706	27	24	56	2.259
Sept.89	22	12	4	1.688	36	18	56	2.207
Oct. 89	20	12	24	1.96	22	14	60	2.725
Nov. 89	21	20	12	2.274	24	26	36	2.576
Dec. 89	23	20	8	1.731	44	38	24	2.563
Jan. 90	29	20	4	2.063	35	32	172	3.416
Feb. 90	30	18	8	2.482	36	29	36	2.949
Mar. 90	40	19	2	2.006	47	28	32	2.383
Apr. 90	32	12	12	2.352	38	15	34	3.490
May 90	21	11	19	1.915	26	20	74	2.194
June 90	19	16	24	1.519	20	22	80	1.740
July 90	18	17	56	1.475	19	18	100	2.504
Aug. 90	19	18	12	1.851	23	22	312	3.571

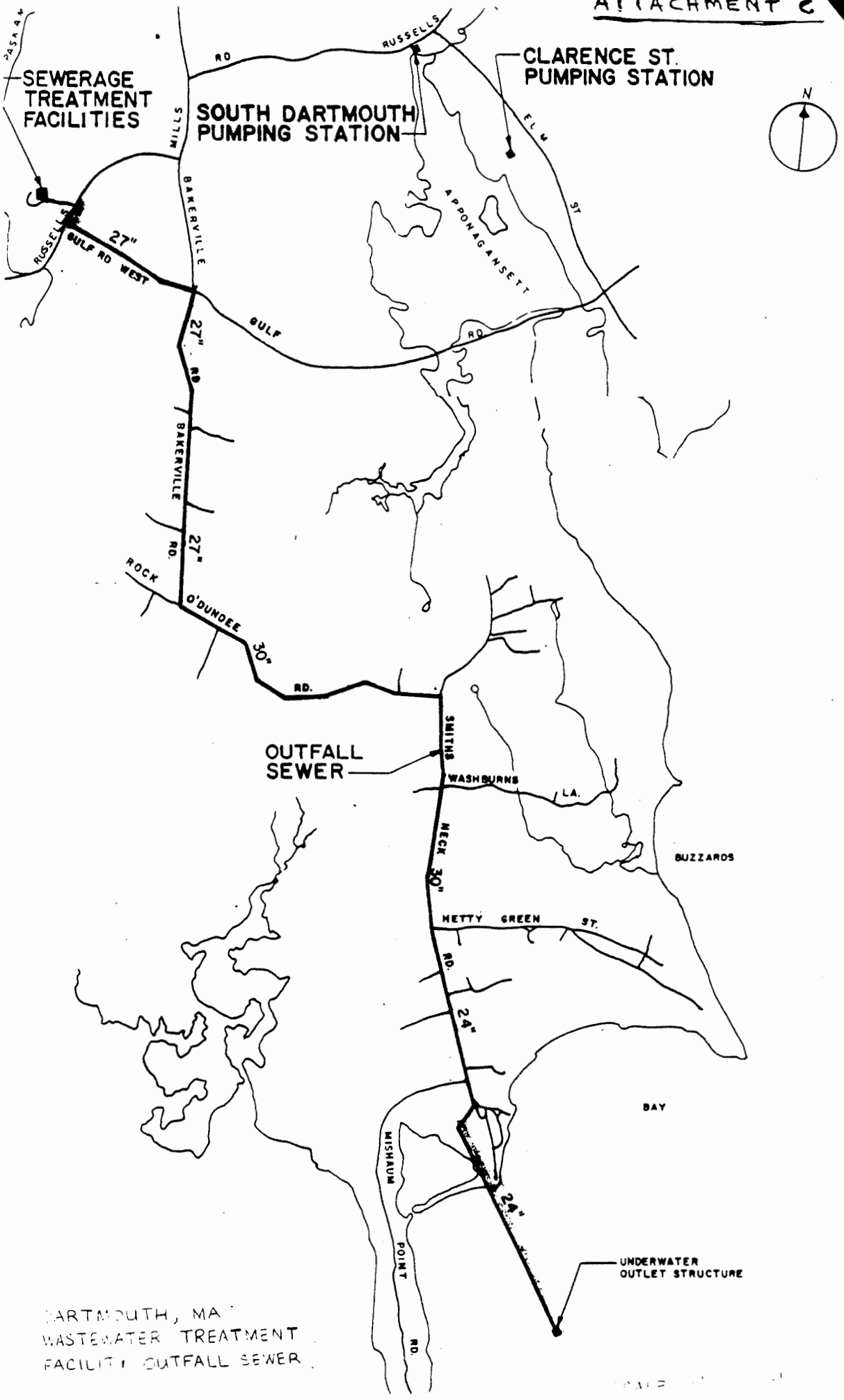
Ph (SU)	6.5 - 7.2
Settleable Solids - mg/l	0.0 -0.1
Total Residual Chlorine (mg/l)	0.5-1.5
BOD% Removal	80*
TSS% Removal	84*

* Average of the monthly average values.

Discharge Monitoring Data Summary (8/89 -8/90)

Parameter	Average of the Monthly Average Values	Highest of the Daily Maximum Values
BOD-mg/l	24	38, 44, 47
TSS-mg/l	16	29, 32, 38
pH Range-s.u.	6.5-7.2	-----
Settleable solids-mg/l	-----	0.1
Fecal coliform Bacteria-MPN/100ml	15	100, 172, 312
Total Residual Chlorine-mg/l	0.56	1.5
Flow-MGD	1.92	3.41,3.49,3.59
BOD % Removal	80	-----
TSS % Removal	84	-----

ATTACHMENT C



DARTMOUTH, MA
WASTEWATER TREATMENT
FACILITY OUTFALL SEWER

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., and the Massachusetts Clean Waters Act, as amended, Mass. Gen. Laws. ch. 21, §§26-53, the

Town of Dartmouth
Department of Public Works

is authorized to discharge from the

Dartmouth Water Pollution Control Facility
759 Russell Mills Road
South Dartmouth, MA 02748

to receiving waters named **Buzzards Bay**

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

This permit shall become effective on date of signature.

This permit and the authorization to discharge expire at midnight, five years from date of issuance.

This permit supersedes the permit issued **December 12, 1984.**

This permit consists of 8 pages and Attachments A and B in Part I including effluent limitations, monitoring requirements, etc., and 22 pages in Part II including General Conditions and Definitions.

Signed this 28th day of June, 1991

David A. Fierra
Director
Water Management Division
Environmental Protection Agency
Boston, MA

Brian Donahue
Director, Division of Water
Pollution Control
Department of Environmental
Protection
Commonwealth of Massachusetts
Boston, MA

Footnotes:

*1. Required for state certification.

*2. Report maximum and minimum daily rates and total flow for each operating date.

*3. Report both influent and effluent results for this parameter.

*4. Total Residual Chlorine shall be tested using Amperometric Titration. The EPA approved method is found in Standard Methods for the Examination of Water and Wastewater, 16th Edition, Method 408C or U.S.E.P.A. Manual of Methods of Analysis of Water and Wastes, Method 330.1.

*5. LC50 is the concentration of effluent in a sample that causes mortality to 50% of the test population at a specific time of observation.

*6. "100% or greater" is defined as a sample of undiluted effluent. This limit is considered to be a maximum day limit.

*7. Definitive acute toxicity tests using the Mysid Shrimp (Mysidopsis bahia) and the Inland Silverside (Menidia beryllina). The tests must be performed annually in **January, April, July, and October** in accordance with Test Protocols specified in **Attachment A** of the permit and Composite Sample shall be taken at effluent wet well. Toxicity test reports shall be submitted annually **by March 15, June 15, September 15, and December 15** respectively.

*8. "C-NOEC" is defined as the concentration of effluent in a sample where no observed adverse effects on fertilization or sexual reproduction are observed.

*9. "11% or greater" is defined as a sample containing 11% or more effluent, the remainder being dilution water.

*10. Chronic toxicity tests using the Sea Urchin (Arbacia punctulata) and the Sheepshead Minnow (Cyprinodon variegatus). The tests must be performed annually in **January, April, July, and October** in accordance with the Test Protocols specified in **Attachment B** of the permit and Composite Sample shall be taken at effluent wet well. Toxicity test reports shall be submitted annually **by March 15, June 15, September 15, and December 15** respectively.

4. Numerical Effluent Limitations for Toxicants

EPA or MA DEP may use the results of the toxicity tests and chemical analyses conducted pursuant to this permit, as well as national water quality criteria developed pursuant to Section 304(a)(1) of the Clean Water Act, state water quality criteria, and any other appropriate information or data, to develop numerical effluent limitations for any pollutants, including but not limited to those pollutants listed in Appendix D of 40 CFR Part 122.

B. SLUDGE CONDITIONS

1. The permittee shall comply with all existing federal and state laws and regulations that apply to sewage sludge use and disposal practices and with the CWA Section 405(d) technical standards when promulgated.

   If an applicable management practice or numerical limitation for pollutants in sewage sludge more stringent than existing federal and state regulations is promulgated under Section 405(d) of the Clean Water Act (CWA), this permit shall be modified or revoked and reissued to conform to the promulgated regulations.

   The permittee shall comply with the limitations no later than the compliance specified in the applicable regulations as required by Section 405(d) of the Clean Water Act.

2. The permittee shall give **prior notice** to the Director of any change(s) planned in the permittee's sludge use or disposal practice.

3. A change in the permittee's sludge use or disposal practice is a cause for modification of the permit. It is a cause for revocation and reissuance of the permit if the permittee requests or agrees.

4. Each year the permitee shall collect a sample of the sludge that is to be removed from the POTW for disposal and analyze it for the following pollutants: cadmium, copper, chromium, lead, nickel, and zinc. The results shall be reported to EPA and the MA DEP by **June 15.**

E. MONITORING AND REPORTING

1. Monitoring

Monitoring shall be conducted pursuant to Section C (Monitoring and Records) on pages 8 and 9 of Part II of the permit, unless otherwise required by Part I of the permit. The permittee shall identify the exact location of the effluent sampling point used for each discharge.

2. Reporting

a. All reports shall be in writing and shall be postmarked no later than the 15th day of the month following the completed reporting period, unless otherwise required by Section D (Reporting Requirements) on pages 9, 10, and 11 of Part II of the permit. The first reports must be postmarked by the 15th day of the month following the effective date of the permit. Monitoring results shall be reported on separate Discharge Monitoring Report forms and on any other forms designated by EPA or the MA DEP.

b. Duplicate signed copies of all Discharge Monitoring Reports and all other reports required herein, shall be submitted to the Director at the following address:

U. S. Environmental Protection Agency
Permit Processing Operations Section
P.O. Box 8127
Boston, Massachusetts 02114

c. Duplicate signed copies of all the Discharge Monitoring reports and all other reports required herein, except for Toxicity Test Reports, shall be submitted to the State at the following address:

Massachusetts Department of Environmental Protection
Massachusetts Division of Water Pollution Control
Southeastern Regional Office
Lakeville Hospital
Lakeville, Massachusetts 02346

d. Copies of all Toxicity Test Reports, only, shall be submitted to the following address:

Technical Services Branch, Biology Section
Massachusetts Division of Water Pollution Control
76 North Drive
Westboro, Massachusetts 01581

ATTACHMENT A

Acute Toxicity Test Procedure and Protocol:

- **Mysid Shrimp (Mysidopsis bahia) definitive 48 hour test.**
- **Inland Silverside (Menidia beryllina) definitive 48 hour test.**

I. GENERAL REQUIREMENTS

The permittee shall conduct acceptable toxicity tests in accordance with the appropriate test protocols described below. The permittee shall collect discharge samples and perform the toxicity tests that are required by Part I of the NPDES permit. Acute toxicity data shall be reported as outlined in Section IX.

II. TEST FREQUENCY AND SAMPLING REQUIREMENTS

See Part I of the NPDES permit for sampling location, sample type, test frequency, test species, and test date(s) requirements. Chain of Custody information should be provided for each sample tested.

A sampling event is defined as a single discharge (composite or grab) sample.

III. METHODS

Methods to follow are those recommended by EPA in:

Peltier, W., and Weber, C.I., 1985. Methods for Measuring the Acute Toxicity of Effluents to Freshwater and Marine Organisms, Third Edition. Office of Research and Development, Cincinnati, OH. EPA/600/4-85/013.

Any exceptions are stated herein.

IV. 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 the chemical and physical analyses. The remaining sample shall be dechlorinated (if necessary) in the laboratory using sodium thiosulfate for subsequent toxicity testing. Grab samples must be used for pH, temperature, and total residual oxidants (as per 40 CFR Part 122.21).

The Methods for Aquatic Toxicity Identification Evaluations (Phase I) EPA/600/3-88/034, Section 8.7, provides detailed information regarding the use of sodium thiosulfate (i.e. dechlorination).

All samples held overnight shall be refrigerated at 4°C.

VI. REGION I RECOMMENDED EFFLUENT TOXICITY TEST CONDITIONS FOR THE MYSID (Mysidopsis bahia) 48 HOUR TEST[1]

1.	Test type	Static, non-renewal
2.	Salinity	25 ppt ± 10 percent for all dilutions
3.	Temperature (°C)	25°C ± 1°C
4.	Light quality	Ambient laboratory illumination
5.	Photoperiod	16 hour light, 8 hour dark
6.	Test chamber size	250 ml
7.	Test solution volume	200 ml
8.	Age of test organisms	1-5 days
9.	No. Mysids per test chamber	10
10.	No. of replicate test chambers per treatment	2
11.	Total no. Mysids per test concentration	20
12.	Feeding regime	Light feeding (2 drops concentrated brine shrimp nauplii, approx 100 nauplii/mysid) twice daily
13.	Aeration[2]	None
14.	Dilution water	Natural seawater, synthetic salt water, or deionized water mixed with hypersaline brine.
15.	Dilution factor	0.5
16.	Number of dilutions[3]	5 plus a control. An additional dilution at the permitted effluent concentration (% effluent) is required if it is not included in the dilution series.
17.	Effect measured	Mortality - no movement of body or appendages on gentle prodding

VII. REGION I RECOMMENDED TOXICITY TEST CONDITIONS FOR THE INLAND SILVERSIDE (*Menidia beryllina*) 48 HOUR TEST[1]

1.	Test Type	Static, non-renewal
2.	Salinity	25 ppt ± 2 ppt
3.	Temperature	25°C ± 1°C
4.	Light Quality	Ambient laboratory illumination
5.	Photoperiod	16 hr light, 8 hr dark
6.	Size of test vessel	250-1000 ml
7.	Volume of test solution	Minimum 200ml/replicate
8.	Age of fish	7-21 days
9.	No. fish per chamber	10 (not to exceed loading limits)
10.	No. of replicate test vessels per treatment	2
11.	Total no. organisms per concentration	20
12.	Aeration[2]	None
13.	Dilution water	Natural seawater, synthetic saltwater, or deionized water mixed with hypersaline brine
14.	Dilution factor	0.5
15.	Number of dilutions[3]	5 plus a control. 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 control solution.

VIII. CHEMICAL ANALYSIS

The following chemical analyses shall be performed for each sampling event.

Parameter	Effluent	Diluent	Minimum Detection Limit (mg/L)
pH	x	x	---
Specific Conductance	x	x	---
Salinity	x	x	PPT(o/oo)
Total Residual Oxidants[1]	x	x	0.02
Total Solids and Suspended Solids	x	x	---
Ammonia	x	x	0.1
Total Organic Carbon	x	x	0.5
Total Metals			
Cd	x		0.01
Cr, Ni	x		0.05
Pb, Zn, Cu	x		0.01
Al	x		0.02

Superscript:

[1] Total Residual Oxidants

Methods: either of the following methods from the 16th Edition of the APHA (1985) Standard Methods for the Examination of Water and Wastewater must be used for these analyses:

Method 408-C (Amperometric Titration Method)-the preferred method;
Method 408-D (Ferrous Titration Method).

IX. TOXICITY TEST REPORT

The following must be reported:

- Description of sample collection procedures, site description;
- Names of individuals collecting and transporting samples, times and dates of sample collection and analysis; and
- 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.

ATTACHMENT B

Chronic Toxicity Test Procedure and Protocol:
° Sea Urchin (Arbacia punctulata) 1 hour fertilization test.
° * Algal (Champia parvula) 2 day exposure, 5 to 7 day recovery, reproduction test.

I. INTRODUCTION

The permittee shall conduct acceptable toxicity tests in accordance with the appropriate test protocols described below. The permittee must collect discharge samples and perform toxicity tests that are required by Part I of the NPDES permit. Chronic toxicity data shall be reported as outlined in Section IX.

II. TEST FREQUENCY AND SAMPLING REQUIREMENTS

See Part I of the NPDES permit for sampling location, sample type, test species, and test date(s) requirements. Chain of Custody information should be provided for each sample tested.

A sampling event is defined as a single discharge (composite or grab) sample.

III. METHODS

Methods to follow are those recommended by EPA in:

Weber, C.I., et al, 1988. Short Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters To Marine and Estuarine Organisms, Office of Research and Development, Cincinnati, OH. EPA/600/4-87/028.

Any exceptions are stated herein.

IV. 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 the chemical and physical analyses. The remaining sample shall be dechlorinated (if necessary) in the laboratory using sodium thiosulfate for subsequent toxicity testing. Grab samples must be used for pH, temperature, and total residual oxidants (as per 40 CFR Part 122.21).

The Methods for Aquatic Toxicity Identification Evaluations (Phase I) EPA/600/3-88/034, Section 8.7 provides detailed information regarding the use of sodium thiosulfate (i.e. dechlorination).

All samples held overnight shall be refrigerated at 4°C.

* Disregard this species. Instead use Sheepshead Minnow (Cyprinodon variegatus).

(July 1, 1990)

VI. REGION I RECOMMENDED TEST CONDITIONS FOR THE SEA URCHIN (*Arbacia punctulata*) FERTILIZATION TEST[1]

1.	Test type	Static, non-renewal
2.	Salinity	30 o/oo ± 2 o/oo
3.	Temperature	20 ± 1°C
4.	Light quality	Ambient laboratory light during test preparation
5.	Light intensity	10-20 uE/m^2/s, or 50-100 ft-c (Ambient Laboratory Levels)
6.	Test vessel size	Disposable (glass) liquid scintillation vials (20 ml capacity), not pre-cleaned
7.	Test solution volume	5 ml
8.	Number of sea urchins	Pooled sperm from four males and pooled eggs from four females are used per test
9.	Number of egg and sperm cells per chamber	About 2000 eggs and 5,000,000 sperm cells per vial
10.	Number of replicate chambers per treatment	4 (minimum of 3)
11.	Dilution water	Uncontaminated source of natural seawater; deionized water mixed with hypersaline brine or artificial sea salts
12.	Dilution factor	0.5
13.	Test duration	1 hour and 20 minutes
14.	Effects measured	Fertilization of sea urchin eggs
15.	Number of treatments per test[2]	5 and a control. An additional dilution at the permitted effluent concentration (% effluent) is required.

(July 1, 1990)

VIII. CHEMICAL ANALYSIS

The following chemical analyses shall be performed for each sampling event.

Parameter	Effluent	Diluent	Minimum Detection Limit (mg/L)
pH	x	x	---
Specific Conductance	x	x	---
Salinity	x	x	PPT (o/oo)
Total Residual Oxidants[1]	x	x	0.02
Total Solids and Suspended Solids	x	x	---
Ammonia	x	x	0.1
Total Organic Carbon	x	x	0.5
Total Metals			
Cd	x		0.01
Cr, Ni	x		0.05
Pb, Zn, Cu	x		0.01
Al	x		0.02

Superscripts:

[1] Total Residual Oxidants

Methods: either of the following methods from the 16th Edition of the APHA (1985) Standard Methods for the Examination of Water and Wastewater must be used for these analyses:

Method 408-C (Amperometric Titration Method)-the preferred method;
Method 408-D (Ferrous Titrimetric Method).

IX. TOXICITY TEST REPORT ELEMENTS

A report of 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; and
- 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.

Example

Data sheet for (1) fertilization test using Arbacia punctulata.

TEST DATE: _____

SAMPLE: _____

COMPLEX EFFLUENT SAMPLE: _____

COLLECTION DATE: _____

SALINITY/ADJUSTMENT: _____

PH/ADJUSTMENT REQUIRED: _____

PHYSICAL CHARACTERISTICS: _____

STORAGE: _____

COMMENTS: _____

_____

SINGLE COMPOUND: _____

SOLVENT (CONC): _____

TEST CONCENTRATIONS: _____

DILUTION WATER: _____

CONTROL WATER: _____

TEST TEMPERATURE: _____

TEST SALINITY: _____

COMMENTS: _____

_____

_____

_____

_____

(July 1, 1990)

ATTACHMENT B

Chronic Toxicity Test Procedure and Protocol:
o Sheepshead Minnow (Cyprinodon variegatus) growth and survival test.

I. GENERAL REQUIREMENTS

The permittee shall conduct acceptable toxicity tests in accordance with the appropriate test protocols described below. The permittee must collect discharge samples and perform the toxicity tests that are required by Part I of the NPDES permit. Chronic toxicity data shall be reported as outlined in Section VIII.

II. TEST FREQUENCY AND SAMPLING REQUIREMENTS

See Part I of the NPDES permit for sampling location, sample type, test frequency, test species, and test date(s) requirements. Chain of Custody information should be provided for each sample tested.

A chronic toxicity sampling event is defined as three discharge (composite or grab) samples collected over the seven-day period (see Section IV).

III. METHODS

Methods to follow are those recommended by EPA in:

Weber, C.I., et al, 1988. Short Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters To Marine and Estuarine Organisms, Office of Research and Development, Cincinnati, OH. EPA/600/4-87/028.

Any exceptions are stated herein.

IV. SAMPLE COLLECTION

For each sampling event, three discharge samples shall be collected over a 7-day exposure period. An initial sample (day 0) is used to start the test. The additional two samples are collected for use at the start of day 3 and 5. Renewal of test concentrations is conducted daily with the most recently collected discharge sample. The initial (day 0) sample will be analyzed chemically. Day 3 and 5 samples will be held until test completion. If either the day 3 or 5 renewal sample is of sufficient potency to cause lethality to 50 percent or more test organisms in any of the dilutions, then a chemical analysis shall be performed on the appropriate sample(s) as well.

(July 1, 1990)

VI. REGION I RECOMMENDED TEST CONDITIONS FOR THE SHEEPSHEAD MINNOW (*Cyprinodon variegatus*) LARVAL GROWTH AND SURVIVAL TEST[1]

1.	Test type	Static, renewal
2.	Salinity	20 o/oo TO 30 o/oo ± 2 o/oo
3.	Temperature	25 ± 2°C
4.	Light quality	Ambient laboratory light
5.	Light intensity	10-20 uE/m^2/s, or 50-100 ft-c (Ambient Laboratory Levels)
6.	Photoperiod	14 hr light, 10 hr darkness
7.	Test vessel size	300 - 1000 ml beakers or equivalent
8.	Test solution volume	250 - 750 ml/replicate (loading and DO restrictions must be met)
9.	Renewal of test solutions	Daily using most recently collected sample.
10.	Age of test organisms	Newly hatched larvae (less than 24 hr old
11.	Larvae/test chamber	15 (minimum of 10)
12.	Number of replicate chambers per treatment	4 (minimum of 3)
13.	Source of food	Newly hatched *Artemia* nauplii less than 24 hr old
14.	Feeding regime	Feed once a day 0.10 g wet wt *Artemia* nauplii per replicate on days 0-2; feed 0.15 g wet wt *Artemia* nauplii per replicate on days 3-6
15.	Cleaning	Siphon daily, immediately before test solution renewal
16.	Aeration[2]	None
17.	Dilution water	Uncontaminated source of natural seawater; or hypersaline brine; or artificial seawater mixed with deionized water

(July 1, 1990)

VII. CHEMICAL ANALYSIS

The following chemical analyses shall be performed for each sampling event.

Parameter	Effluent	Diluent	Minimum Detection Limit(mg/L)
pH	x	x	---
Specific Conductance	x	x	---
Salinity	x	x	PPT(o/oo)
Total Residual Oxidants[1]	x	x	0.02
Total Solids and Suspended Solids	x	x	---
Ammonia	x	x	0.1
Total Organic Carbon	x	x	0.5
Total Metals			
Cd	x		0.01
Cr, Ni	x		0.05
Pb, Zn, Cu	x		0.01
Al	x		0.02

In addition, the following chemical analyses shall be performed as part of each daily renewal procedure on each dilution and the controls.

Parameter	Beginning of 24-hr Exposure Period	End of 24-hr Exposure Period
Dissolved Oxygen	x	x
Temperature	x	
pH	x	
Specific Conductance	x	

Superscript:

[1] Total Residual Oxidants

Methods: either of the following methods from the 16th Edition of the APHA (1985) Standard Methods for the Examination of Water and Wastewater must be used for these analyses:

Method 408-C (Amperometric Titration Method)-the preferred method;
Method 408-D (Ferrous Titrimetric Method).

MODIFICATION OF
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., and the Massachusetts Clean Waters Act, as amended, Mass. Gen. Laws. ch. 21, §§26-53),

Town of Dartmouth
Department of Public Works

is authorized to discharge in accordance with effluent limitations, monitoring requirements and other conditions set in the previous permit, except as set forth herein and listed as follows:

Page 1 of 8: Revise attachments A and B
Page 2 of 8: C-NOEC, measurement frequency - change *10 to *7
page 3 of 8: Revise footnote*7 and delete footnote*10.

This modifies the permit issued on June 28, 1991.

This permit modification shall become effective on date of signature.

This permit modification and the authorization to discharge shall expire at midnight, June 27, 1996.

Signed this 23rd day of March, 1994

Director
Water Management Division
Environmental Protection Agency
Boston, MA

Director, Office of
Watershed Management
Department of Environmental
Protection
Commonwealth of Massachusetts
Boston, MA

Footnotes:

*1. Required for state certification.

*2. Report maximum and minimum daily rates and total flow for each operating date.

*3. Report both influent and effluent results for this parameter.

*4. Total Residual Chlorine shall be tested using Amperometric Titration. The EPA approved method is found in Standard Methods for the Examination of Water and Wastewater, 16th Edition, Method 408C or U.S.E.P.A. Manual of Methods of Analysis of Water and Wastes, Method 330.1.

*5. LC50 is the concentration of effluent in a sample that causes mortality to 50% of the test population at a specific time of observation.

*6. "100% or greater" is defined as a sample of undiluted effluent. This limit is considered to be a maximum day limit.

*7. Perform a 7-day chronic and Modified Acute Toxicity test twice per year using the Inland Silverside (Menidia beryllina), perform a 1-hour fertilization test twice per year using the Sea Urchin (Arbacia punctulata). One test must be performed quarterly alternating the species in January, **April,July and October** in accordance with Test Protocols specified in **Attachment A** and B of the permit and Composite Sample shall be taken at effluent wet well. Toxicity test reports shall be submitted **by March 15, June 15, September 15 and December 15** respectively.

*8. "C-NOEC" is defined as the concentration of effluent in a sample where no observed adverse effects on fertilization or sexual reproduction are observed.

*9. "11% or greater" is defined as a sample containing 11% or more effluent, the remainder being dilution water.

III. Permit Modification Basis

Under 40 CFR 122.62 (a)(2), EPA may modify a permit upon receipt of information that was not available at the time of permit issuance (other than revised regulations, guidance, or test methods) and that would have justified the application of different permit conditions at the time of issuance.

The Town of Dartmouth has conducted quarterly, an acute and chronic toxicity tests for the last six (6) consecutive quarters. The results of the toxisicty tests have been well below the limits specified by the NPDES permit.

IV. State Certification Requirements

EPA may not issue a permit unless the State Water Pollution control Agency with jurisdiction over the receiving waters certifies that the effluent limitations contained in the permit are stringent enough to assure that the discharge will not cause the receiving water to violate State Water Quality Standards. The staff of the State Water Pollution Control Agency is reviewing the draft permit. EPA has requested permit certification by the State pursuant to 40 CFR 124.53 and expects that the draft permit will be certified.

V. EPA Contact

Additional information concerning the draft permit may be obtained between the hours of 9:00 a.m. and 5:00 p.m., Monday through Friday, excluding holidays from:

Suprokash Sarker
Wastewater Management Branch, WMM
U.S. Environmental Protection Agency
John F. Kennedy Federal Building
Boston, MA 02203
Telephone: (617) 565-3573

8/6/93
Date

David A. Fierra, Director
Water Management Division
U.S. Environmental
Protection Agency

State Permit No. M-35
Federal Permit No.MA0101605

MODIFICATION OF
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),

Town of Dartmouth
Department of Public Works

is authorized to discharge in accordance with effluent limitations, monitoring requirements and other conditions set in the previous permit, except as set forth herein and listed as follows:

Page 2 of 8

This modifies the permit issued on June 28, 1991.

This permit modification shall become effective on date of signature.

This permit modification and the authorization to discharge shall expire at midnight, June 27, 1996.

Signed this 12th day of December, 1991

Director
Water Management Division
Environmental Protection Agency
Region I
Boston, MA

Director, Division of Water
Pollution Control
Department of Environmental
Protection
Commonwealth of Massachusetts
Boston, MA

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION I
JOHN F. KENNEDY FEDERAL BUILDING
BOSTON, MASSACHUSETTS 02203

STATEMENT OF BASIS

DRAFT NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) PERMIT MODIFICATION TO DISCHARGE TO WATERS OF THE UNITED STATES.

NPDES PERMIT NO.: MA0101605

STATE PERMIT NO.: M-35

NAME AND ADDRESS OF APPLICANT:

Town of Dartmouth
Dartmouth, Massachusetts

NAME AND ADDRESS OF FACILITY WHERE DISCHARGE OCCURS:

Water Pollution Control Facility
759 Russells Mills Road
South Dartmouth, Massachusetts 02748

RECEIVING WATERS: Buzzards Bay

CLASSIFICATION: SA

I. Proposed Action, Type of Facility, and Discharge Location.

The above named applicant has applied to the U.S. Environmental Protection Agency for modification of its NPDES permit to discharge into the designated receiving waters, a coastal zone. The facility is engaged in the collection and treatment of municipal wastewater. The discharge is from a municipal secondary wastewater treatment facility.

II. Limitations and Conditions

All effluent limitations, monitoring requirements and other conditions of the existing permit will remain in effect except for a change in sampling and testing frequency for chlorine residual from three per day to one per day and five days per week. This draft permit modification is found on page 2.

III. Permit Modification Basis.

Under 40 CFR 122.62 (a)(2), EPA may modify a permit upon receipt of information that was not available at the time of permit issuance (other than revised regulations, guidance, or test methods) and that would have justified the application of different permit conditions at the time of issuance.