AUTHORIZATION TO DISCHARGE UNDER THE
RHODE ISLAND POLLUTANT DISCHARGE ELIMINATION SYSTEM

In compliance with the provisions of Chapter 46-12 of the Rhode Island General Laws, as amended, the

**Town of Jamestown**
P.O. Box 377
Jamestown, Rhode Island 02835

is authorized to discharge from a facility located at the

**Jamestown Wastewater Treatment Facility**
Taylor Point
Jamestown, Rhode Island 02835

to receiving waters named

Narragansett Bay

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

This permit shall become effective on _____, 201_.

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

This permit supersedes the permit issued on March 18, 2011

This permit consists of sixteen (16) pages in Part I including effluent limitations, monitoring requirements, etc. and ten (10) pages in Part II including General Conditions.

Signed this _____ day of _____, 201_.

DRAFT

_____
Angelo S. Liberti, P.E., Chief of Surface Water Protection
Office of Water Resources
Rhode Island Department of Environmental Management
Providence, Rhode Island

## A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

1. During the period beginning on the effective date and lasting through permit expiration, the permittee is authorized to discharge from outfall serial number 001A (final discharge after chlorination).

   Such discharges shall be limited and monitored by the permittee as specified below:

| Effluent Characteristic | Discharge Limitations | | | | | Monitoring Requirement | |
|---|---|---|---|---|---|---|---|
| | Quantity - lbs./day | | Concentration - specify units | | | | |
| | Average Monthly | Maximum Daily | Average Monthly *(Minimum) | Average Weekly *(Average) | Maximum Daily *(Maximum) | Measurement Frequency | Sample Type |
| Flow | 0.73 MGD | --- MGD | | | | Continuous | Recorder |
| $BOD_5$ | 183 | 304 | 30 mg/l | 45 mg/l | 50 mg/l | 3/Week | 24-Hr. Comp. |
| $BOD_5$ - % Removal | 85% | | | | | 1/Month | Calculated |
| TSS | 183 | 304 | 30 mg/l | 45 mg/l | 50 mg/l | 3/Week | 24-Hr. Comp. |
| TSS - % Removal | 85% | | | | | 1/Month | Calculated |
| Settleable Solids | | | | --- ml/l | --- ml/l | 1/Day | Grab |

--- Signifies a parameter which must be monitored and data must be reported; no limit has been established at this time.

Sampling for TSS and $BOD_5$ shall be performed Tuesday, Thursday, and either Saturday or Sunday. All $BOD_5$ and TSS samples shall be taken on the influent and effluent with appropriate allowances for hydraulic detention (flow-through) time.

Sampling for Flow and Settleable Solids shall be performed Sunday-Saturday.

Samples taken in compliance with the monitoring requirements specified above shall be taken at the following location: Outfall 001A (final discharge after chlorination).

## A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

2. During the period beginning on the effective date and lasting through permit expiration, the permittee is authorized to discharge from outfall serial number 001A (final discharge after chlorination).

   Such discharges shall be limited and monitored by the permittee as specified below:

| Effluent Characteristic | Discharge Limitations | | | | | Monitoring Requirement | |
|---|---|---|---|---|---|---|---|
| | Quantity - lbs./day | | Concentration - specify units | | | | |
| | Average Monthly | Maximum Daily | Average Monthly *(Minimum) | Average Weekly *(Average) | Maximum Daily *(Maximum) | Measurement Frequency | Sample Type |
| Fecal Coliform | | | --- MPN[1] 100 ml | --- MPN[1] 100 ml | --- MPN[1] 100 ml | 3/Week | Grab |
| Enterococci | | | 35 cfu[1] 100 ml | | 276 cfu[1] 100 ml | 3/Week | Grab |
| Total Residual Chlorine (TRC) | | | 2.0 mg/l | | 2.0 mg/l | Continuous | Recorder[2] |
| pH | | | (6.0 SU) | | (9.0 SU) | 1/Day | Grab |

1

[1]Two (2) of the three (3) Enterococci samples are to be taken on Wednesday and Friday. The Fecal Coliform samples shall be taken at the same time as the Enterococci samples. The Geometric Mean shall be used to obtain the "average monthly" and "average weekly" values. The facility shall report any fecal coliform sample result that exceeds 400 mpn/100 ml to the RIDEM in accordance with the 24-hour reporting requirements under Part II(I)(5) of the permit.

[2]The use of a continuous TRC recorder after chlorination is required to provide a record that proper disinfection was achieved at all times. Compliance with these limitations shall be determined by taking three grab samples per day, Monday - Friday (except holidays), equally spaced over one (1) eight hour working shift with a minimum of three hours between grabs, and on Saturdays, Sundays, and Holidays by taking at least two (2) grab samples each day with a minimum of two (2) hours between grabs. The maximum daily and average monthly values are to be computed from the averaged grab sample results for each day. The following methods may be used to analyze the grab samples: (1) DPD spectrophotometric, EPA No. 330.5 or Standard Methods (18th Edition) No.4500-Cl G; (2) DPD Titrimetric, EPA No. 330.4 or Standard Methods (18th Edition) No. 4500-Cl F; (3) Amperometric Titration, EPA No. 330.1 or Standard Methods (18th Edition) No. 4500-Cl D or ASTM No. D1253-86(92); (4) Iodometric Direct Titration, EPA No. 330.3 or Standard Methods (18th Edition) No. 4500-Cl B; (5) Iodometric Back Titration (either end-point), EPA No. 330.2 or Standard Methods (18th Edition) No. 4500-Cl C.

*Values in parentheses () are to be reported as Minimum/Maximum for the reporting period rather than Average Monthly/Maximum Daily.

Sampling for pH and Chlorine Residual shall be performed Sunday-Saturday.

Samples taken in compliance with the monitoring requirements specified above shall be taken at the following location: Outfall 001A (final discharge after chlorination).

## A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

3. During the period beginning on the effective date and lasting through permit expiration, the permittee is authorized to discharge from outfall serial number 001A (final discharge after chlorination).

   Such discharges shall be monitored by the permittee as specified below:

| Effluent Characteristic | Discharge Limitations | | | | | Monitoring Requirement | |
|---|---|---|---|---|---|---|---|
| | Quantity - lbs. per day | | Concentration - specify units | | | | |
| | Average Monthly | Maximum Daily | Average Monthly | Average Weekly | Maximum Daily | Measurement Frequency | Sample Type |
| Oil and Grease | | | | | --- mg/l | 1/Month | Grab |
| TKN (May 1 – October 31) | | | --- mg/l | | --- mg/l | 1/Month | 24-Hr. Comp. |
| Nitrate, Total (as N) (May 1 – October 31) | | | --- mg/l | | --- mg/l | 1/Month | 24-Hr. Comp. |
| Nitrite, Total (as N) (May 1 – October 31) | | | --- mg/l | | --- mg/l | 1/Month | 24-Hr. Comp. |
| Nitrogen, Total (TKN + Nitrate + Nitrite, as N) (May 1 – October 31) | --- lbs/d | | --- mg/l | | --- mg/l | 1/Month | Calculated |

--- signifies a parameter which must be monitored and data must be reported; no limit has been established at this time.

Samples taken in compliance with the monitoring requirements specified above shall be taken Monday through Friday at the following location: Outfall 001A (final discharge after chlorination).

## A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

4. During the period beginning on the effective date and lasting through permit expiration, the permittee is authorized to discharge from outfall serial number(s) 001A.

   Such discharges shall be monitored by the permittee as specified below:

| Effluent Characteristic | Discharge Limitations | | | | | Monitoring Requirement | |
|---|---|---|---|---|---|---|---|
| | Quantity - lbs. per day | | Concentration - specify units | | | | |
| | Average Monthly | Maximum Daily | Average Monthly | Average Weekly | Maximum Daily | Measurement Frequency | Sample Type |
| $LC50^{1}$ (Mysids) | | | | | 50% or Greater[2] | 1/Quarter | 24-Hr. Comp. |

[1] $LC_{50}$ is defined as the concentration of wastewater that causes mortality to 50% of the test organisms.

[2] The 50% or greater limit is defined as a sample which is composed of 50% effluent.

Samples taken in compliance with the monitoring requirements specified above shall be taken at the following locations: Outfall 001A in accordance with Part I.B. of the permit.

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

5. During the period beginning on the effective date and lasting through permit expiration, the permittee is authorized to discharge from outfall serial number 001A (final discharge after chlorination).

   Such discharges shall be monitored by the permittee as specified below:

| Effluent Characteristic | Discharge Limitations | | | | | Monitoring Requirement | |
|---|---|---|---|---|---|---|---|
| | Quantity - lbs. per day | | Concentration - specify units | | | | |
| | Average Monthly | Maximum Daily | Average Monthly | Average Weekly | Maximum Daily | Measurement Frequency | Sample Type |
| Total Copper[1] | | | --- ug/L | | --- ug/L | 1/Quarter | 24-Hr. Composite |
| Total Cadmium[1] | | | --- ug/L | | --- ug/L | 1/Quarter | 24-Hr. Composite |
| Hexavalent Chromium[1] | | | --- ug/L | | --- ug/L | 1/Quarter | 24-Hr. Composite |
| Total Lead[1] | | | --- ug/L | | --- ug/L | 1/Quarter | 24-Hr. Composite |
| Total Zinc[1] | | | --- ug/L | | --- ug/L | 1/Quarter | 24-Hr. Composite |
| Total Nickel[1] | | | --- ug/L | | --- ug/L | 1/Quarter | 24-Hr. Composite |
| Total Aluminum[1] | | | --- ug/L | | --- ug/L | 1/Quarter | 24-Hr. Composite |
| Cyanide[1] | | | --- ug/L | | --- ug/L | 1/Quarter | Composite[2] |
| Total Ammonia[1] | | | --- ug/L | | --- ug/L | 1/Quarter | 24-Hr. Composite |

[1] Monitoring data may be obtained in conjunction with the bioassay testing required in Part I.B of the permit.

[2] Composite shall be obtained by taking three grab samples per day, spaced over one (1) day with a minimum of three hours between grabs, and preserved immediately upon collection. All three (3) samples shall be composited, then analyzed for available Cyanide.

6. a. The pH of the effluent shall not be less than 6.0 nor greater than 9.0 standard units at any time, unless these values are exceeded due to natural causes or as a result of the approved treatment processes.

   b. The discharge shall not cause visible discoloration of the receiving waters.

   c. The effluent shall contain neither a visible oil sheen, foam, nor floating solids at any time.

   d. The permittee's treatment facility shall maintain a minimum of 85 percent removal of both total suspended solids and 5-day biochemical oxygen demand. The percent removal shall be based on monthly average values.

   e. When the effluent discharged for a period of 90 consecutive days exceeds 80 percent of the designed flow, the permittee shall submit to the permitting authorities a projection of loadings up to the time when the design capacity of the treatment facility will be reached, and a program for maintaining satisfactory treatment levels consistent with approved water quality management plans.

7. The permittee shall analyze its effluent annually for the EPA Priority Pollutants as listed in 40 CFR 122, Appendix D, Tables II and III. These priority pollutant scans shall be coordinated with the 3rd quarter bioassay sample and the results of these analyses shall be submitted to the Department of Environmental Management by October 15th of each year. All sampling and analysis shall be done in accordance with EPA Regulations, including 40 CFR, Part 136; grab and composite samples shall be taken as appropriate.

8. This permit serves as the State's Water Quality Certificate for the discharges described herein.

## B. BIOMONITORING REQUIREMENTS AND INTERPRETATION OF RESULTS

1. General

Beginning on the effective date of the permit, the permittee shall perform four (4) acute toxicity tests per year on samples collected from discharge outfall 001A prior to chlorination. The permittee shall conduct the tests during dry weather periods (no rain within forty-eight (48) hours prior to or during sampling unless approved by RIDEM) according to the following test frequency and protocols. Acute data shall be reported as outlined in Part I.B.9. The State may require additional screening, range finding, definitive acute or chronic bioassays as deemed necessary based on the results of the initial bioassays required herein. Indications of toxicity could result in requiring a Toxicity Reduction Evaluation (TRE) to investigate the causes and to identify corrective actions necessary to eliminate or reduce toxicity to an acceptable level.

2. Test Frequency

On four (4) sampling events, (one (1) each calendar quarter) the permittee shall conduct forty-eight-hour (48) acute definitive toxicity tests on the specie, listed below, for a total of four (4) acute toxicity tests per year. This requirement entails performing one (1) specie testing as follows:

| Species | Type Test<br>One Specie Test<br>(Four Times Annually) | Frequency |
|---|---|---|
| Mysids<br>(Mysidopsis Bahia) | Definative 48-Hour<br>Acute Static ($LC_{50}$) | Quarterly |

3. Testing Methods

Acute definitive toxicity tests shall be conducted in accordance with protocols listed in 40 CFR Part 136.

4. Sample Collection

For each sampling event a twenty-four- (24) hour flow-proportioned composite effluent sample shall be collected at a location just prior to chlorination during dry weather (no rain forty-eight (48) hours prior to or during sampling unless approved by RIDEM). This sample shall be kept cool (at 4°C) and testing shall begin within twenty-four (24) hours after the last sample of the composite is collected. In the laboratory, the sample will be split into two (2) subsamples, after thorough mixing, for the following:

A. Chemical Analysis
B. Acute Toxicity Testing

All samples held overnight shall be refrigerated at 4°C. Grab samples must be used for pH and temperature.

5. Salinity Adjustment

Prior to the initiation of testing, the effluent must be adjusted to make the salinity of the effluent equal to that of the marine dilution water. The test solution must be prepared by adding non-toxic dried ocean salts to a sufficient quantity of 100% effluent to raise the salinity to the desired level. After the addition of the dried salts, stir gently for thirty (30) to sixty (60) minutes, preferably with a magnetic stirrer, to ensure that the salts are in solution. It is important to check the final salinity with a refractometer or salinometer. Salinity adjustments following this procedure and in accordance with EPA protocol will ensure that the concentrations (% effluent) of each dilution are real and allow for an accurate evaluation with the acute $LC_{50} \geq 50\%$ permit limit and acute monitoring requirements.

6. Dilution Water

Dilution water used for marine acute toxicity analyses should be of sufficient quality to meet minimum acceptability of test results (See Part I.B.7). For these tests, natural seawater shall be used as the dilution water. This water shall be collected from Narragansett Bay off the dock at the URI's Graduate School of Oceanography of South Ferry Road, Narragansett. It is noted that the University claims no responsibility for the personal safety of this dock. The permittee shall observe the rules posted at the dock. If this natural seawater diluent is found to be, or suspected to be toxic or unreliable, an alternate source of natural seawater or, deionized water mixed with hypersaline brine or artificial sea salts of known quality with a salinity and pH similar to that of the receiving water may be substituted AFTER RECEIVING WRITTEN APPROVAL FROM RIDEM.

7. Effluent Toxicity Test Conditions for Mysids[1] (Mysidopsis bahia)

| | | |
|---|---|---|
| a. | Test Type | 48-Hour Static Acute Definitive |
| b. | Salinity | 25 ppt ± 10% for all dilutions |
| c. | Temperature ( C ) | 25° ± 1° C |
| d. | Light Quality | Ambient laboratory illumination |
| e. | Photoperiod | 8 – 16 Hour Light / 24-Hour |
| f. | Test Chamber Size | 250 ml |
| g. | Test Solution Volume | 200 ml |
| h. | Age of Test Organisms | 1 – 5 Days |
| i. | No. Mysids Per Test Chamber | 10 |
| j. | No. of Replicate Test Chamber Per Concentration | 2 |
| k. | Total No. Mysids Per Test Concentration | 20 |
| l. | Feeding Regime | Light feeding (two (2) drops concentrated brine shrimp nauplii, approx. 100 nauplii per mysid twice daily). |
| m. | Aeration | None, unless dissolved oxygen concentration falls below 40% of saturation at which time gentle single-bubble aeration should be started. |
| n. | Dilution Water | Narragansett Bay water as discussed above. |
| o. | Dilutions | Five (5) dilutions plus a control: 100%, 50%, 25%, 12.5%, 6.25% and 0% effluent. |
| p. | Effect Measured and Test | Mortality – no movement of body test duration or appendages on gentle prodding, 48-hour $LC_{50}$ and NOAEL. |
| q. | Test Acceptability | 90% or greater survival of test organisms in control solution. |
| r. | Sampling Requirements | Samples are collected and used within 24 hours after the last sample of the composite is collected. |
| s. | Sample Volume Required | Minimum four (4) liters |

8. Chemical Analysis

The following chemical analysis shall be performed for every sampling event.

| Parameter | Effluent | Saline Diluent | Detection Limit (mg/l) |
|---|---|---|---|
| pH | X | X | --- |
| Specific Conductance | X | X | --- |
| Total Solids and Suspended Solids | X | X | --- |
| Total Ammonia | X | | 0.1 |
| Total Organic Carbon | X | | 0.5 |
| Available Cyanide | X | | 0.01 |
| Total Phenols | X | | 0.05 |
| Salinity | X | X | PPT(0/00) |

During the first, second, and fourth calendar quarter bioassay sampling event, the following chemical analyses shall be performed:

| Total Metals | Effluent | Saline Diluent | Detection Limit (ug/L) |
|---|---|---|---|
| Total Aluminum | x | x | 5.0 |
| Total Cadmium | x | x | 0.1 |
| Total Copper | x | x | 1.0 |
| Hexavalent Chromium | x | x | 20.0 |
| Total Lead | x | x | 1.0 |
| Total Nickel | x | x | 1.0 |
| Total Zinc | x | x | 5.0 |

During the third calendar quarter bioassay sampling event, the final effluent sample collected during the same twenty-four (24) hour period as the bioassay sample, shall be analyzed for priority pollutants (as listed in Tables II and III of Appendix D of 40 CFR 122). The bioassay priority pollutant scan shall be a full scan and may be coordinated with the other permit conditions to fulfill any priority pollutant scan requirements.

9. Toxicity Test Report Elements

A report of results will include the following:

- Description of sample collection procedures and site description.
- Names of individuals collecting and transporting samples, times, and dates of sample collection and analysis.
- General description of tests: age of test organisms, origin, dates and results of standard toxicant tests (quality assurance); light and temperature regime; dilution water description; other information and test conditions if different than procedures recommended.
- The method used to adjust the salinity of the effluent must be reported.

- All chemical and physical data generated (include detection limits).

- Raw data and bench sheets.

- Any other observations or test conditions affecting test outcome.

Toxicity test data shall include the following:

- Survival for each concentration and replication at time twenty-four (24) and forty-eight (48) hours.

- $LC_{50}$ and 95% confidence limits shall be calculated using one of the following methods in order of preference: Probit, Trimmed Spearman Karber, Moving Average Angle, or the graphical method. All printouts (along with the name of the program, the date, and the author(s)) and graphical displays must be submitted. When data is analyzed by hand, worksheets should be submitted. The report shall also include the No Observed Acute Effect Level (NOAEL) which is defined as the highest concentration of the effluent (in % effluent) in which 90% or more of the test animals survive.

- The Probit, Trimmed Spearman Karber, and Moving Average Angle methods of analyses can only be used when mortality of some of the test organisms are observed in at least two (2) of the (percent effluent) concentrations tested (i.e., partial mortality). If a test results in a 100% survival and a 100% mortality in adjacent treatments ("all or nothing" effect), an $LC_{50}$ may be estimated using the graphical method.

10. Special Condition

Due to the fact that the suggested dilution water for this facility to use in conducting the bioassays is from the end of the dock at the URI's Narragansett Bay Campus, a Letter of Agreement must be signed and submitted to the Graduate School of Oceanography. Requests to use another source of dilution water will have to be approved by the Department of Environmental Management, Office of Water Resources.

11. Reporting of Bioassay Testing

Bioassay Testing shall be conducted as follows:

| Quarter Testing To be Performed | Report Due No Later Than | Results Submitted on DMR for |
|---|---|---|
| January 1 – March 31 | April 15 | March |
| April 1 – June 30 | July 15 | June |
| July 1 – September 30 | October 15 | September |
| October 1 – December 31 | January 15 | December |

Reports shall be maintained by the permittee and shall be made available upon request by RIDEM.

## C. OPERATION AND MAINTENANCE OF THE SEWER SYSTEM

Operation and maintenance of the sewer system shall be in compliance with the General Requirements of Part II and the following terms and conditions:

1. Maintenance Staff

The permittee shall provide an adequate staff to carry out the operation, maintenance, repair, and testing functions required to ensure compliance with the terms and conditions of this permit.

2. Infiltration/Inflow

The permittee shall minimize infiltration/inflow to the sewer system. A summary report of all actions taken to minimize infiltration/inflow during the previous six (6) months shall be submitted to RIDEM, Office of Water Resources, by the 15th day of January and July of each year. The first report is due _____, 20__.

## D. SLUDGE

The permittee shall conform and adhere to all conditions, practices and regulations as contained in the State of Rhode Island Rules and Regulations for the Treatment, Disposal, Utilization and Transportation of Sewage Sludge. The permittee shall comply with its RIDEM Order of Approval for the disposal of sludge.

## E. DETECTION LIMITS

The permittee shall assure that all wastewater testing required by this permit, is performed in conformance with the method detection limits listed below. In accordance with 40 CFR Part 136, EPA approved analysis techniques, quality assurance procedures and quality control procedures shall be followed for all reports required to be submitted under the RIPDES program. These procedures are described in "Methods for the Determination of Metals in Environmental Samples" (EPA/600/4-91/010) and "Methods for Chemical Analysis of Water and Wastes" (EPA/600/4-79/020).

The report entitled "Methods for the Determination of Metals in Environmental Samples" includes a test which must be performed in order to determine if matrix interferences are present, and a series of tests to enable reporting of sample results when interferences are identified. Each step of the series of tests becomes increasingly complex, concluding with the complete Method of Standard

Additions analysis. The analysis need not continue once a result which meets the applicable quality control requirements has been obtained. Documentation of all steps conducted to identify and account for matrix interferences shall be documented and maintained onsite.

If, after conducting the complete Method of Standard Additions analysis, the laboratory is unable to determine a valid result, the laboratory shall report "could not be analyzed". Documentation supporting this claim shall be maintained onsite. If valid analytical results are repeatedly unobtainable, DEM may require that the permittee determine a method detection limit (MDL) for their effluent or sludge as outlined in 40 CFR Part 136, Appendix B.

When calculating sample averages for reporting on discharge monitoring reports (DMRs):

1. "could not be analyzed" data shall be excluded, and shall not be considered as failure to comply with the permit sampling requirements;
2. results reported as less than the MDL shall be reported as zero in accordance with the DEM's DMR Instructions, provided that all appropriate EPA approved methods were followed.

Therefore, all sample results shall be reported as: an actual value, "could not be analyzed", or zero. The effluent or sludge specific MDL must be calculated using the methods outlined in 40 CFR Part 136, Appendix B. Samples which h have been diluted to ensure that the sample concentration will be within the linear dynamic range shall not be diluted to the extent that the analyte is not detected. If this should occur the analysis shall be repeated using a lower degree of dilution.

## LIST OF TOXIC POLLUTANTS

The following list of toxic pollutants has been designated pursuant to Section 307(a)(1) of the Clean Water Act. The Method Detection Limits (MDLs) represent the required Rhode Island MDLs.

| Volatiles - EPA Method 624 | | MDL ug/l (ppb) |
|---|---|---|
| 1V | acrolein | 10.0 |
| 2V | acrylonitrile | 5.0 |
| 3V | benzene | 1.0 |
| 5V | bromoform | 1.0 |
| 6V | carbon tetrachloride | 1.0 |
| 7V | chlorobenzene | 1.0 |
| 8V | chlorodibromomethane | 1.0 |
| 9V | chloroethane | 1.0 |
| 10V | 2-chloroethylvinyl ether | 5.0 |
| 11V | chloroform | 1.0 |
| 12V | dichlorobromomethane | 1.0 |
| 14V | 1,1-dichloroethane | 1.0 |
| 15V | 1,2-dichloroethane | 1.0 |
| 16V | 1,1-dichloroethylene | 1.0 |
| 17V | 1,2-dichloropropane | 1.0 |
| 18V | 1,3-dichloropropylene | 1.0 |
| 19V | ethylbenzene | 1.0 |
| 20V | methyl bromide | 1.0 |
| 21V | methyl chloride | 1.0 |
| 22V | methylene chloride | 1.0 |
| 23V | 1,1,2,2-tetrachloroethane | 1.0 |
| 24V | tetrachloroethylene | 1.0 |
| 25V | toluene | 1.0 |
| 26V | 1,2-trans-dichloroethylene | 1.0 |
| 27V | 1,1,1-trichloroethane | 1.0 |
| 28V | 1,1,2-trichloroethane | 1.0 |
| 29V | trichloroethylene | 1.0 |
| 31V | vinyl chloride | 1.0 |

| Acid Compounds - EPA Method 625 | | MDL ug/l (ppb) |
|---|---|---|
| 1A | 2-chlorophenol | 1.0 |
| 2A | 2,4-dichlorophenol | 1.0 |
| 3A | 2,4-dimethylphenol | 1.0 |
| 4A | 4,6-dinitro-o-cresol | 1.0 |
| 5A | 2,4-dinitrophenol | 2.0 |
| 6A | 2-nitrophenol | 1.0 |
| 7A | 4-nitrophenol | 1.0 |
| 8A | p-chloro-m-cresol | 2.0 |
| 9A | pentachlorophenol | 1.0 |
| 10A | phenol | 1.0 |
| 11A | 2,4,6-trichlorophenol | 1.0 |

| Pesticides - EPA Method 608 | | MDL ug/l (ppb) |
|---|---|---|
| 1P | aldrin | 0.059 |
| 2P | alpha-BHC | 0.058 |
| 3P | beta-BHC | 0.043 |
| 4P | gamma-BHC | 0.048 |
| 5P | delta-BHC | 0.034 |
| 6P | chlordane | 0.211 |
| 7P | 4,4'-DDT | 0.251 |
| 8P | 4,4'-DDE | 0.049 |
| 9P | 4,4'-DDD | 0.139 |
| 10P | dieldrin | 0.082 |
| 11P | alpha-endosulfan | 0.031 |
| 12P | beta-endosulfan | 0.036 |
| 13P | endosulfan sulfate | 0.109 |
| 14P | endrin | 0.050 |
| 15P | endrin aldehyde | 0.062 |
| 16P | heptachlor | 0.029 |
| 17P | heptachlor epoxide | 0.040 |

| Pesticides - EPA Method 608 | | MDL ug/l (ppb) |
|---|---|---|
| 18P | PCB-1242 | 0.289 |
| 19P | PCB-1254 | 0.298 |
| 20P | PCB-1221 | 0.723 |
| 21P | PCB-1232 | 0.387 |
| 22P | PCB-1248 | 0.283 |
| 23P | PCB-1260 | 0.222 |
| 24P | PCB-1016 | 0.494 |
| 25P | toxaphene | 1.670 |

| Base/Neutral - EPA Method 625 | | MDL ug/l (ppb) |
|---|---|---|
| 1B | acenaphthene * | 1.0 |
| 2B | acenaphthylene * | 1.0 |
| 3B | anthracene * | 1.0 |
| 4B | benzidine | 4.0 |
| 5B | benzo(a)anthracene * | 2.0 |
| 6B | benzo(a)pyrene * | 2.0 |
| 7B | 3,4-benzofluoranthene * | 1.0 |
| 8B | benzo(ghi)perylene * | 2.0 |
| 9B | benzo(k)fluoranthene * | 2.0 |
| 10B | bis(2-chloroethoxy)methane | 2.0 |
| 11B | bis(2-chloroethyl)ether | 1.0 |
| 12B | bis(2-chloroisopropyl)ether | 1.0 |
| 13B | bis(2-ethylhexyl)phthalate | 1.0 |
| 14B | 4-bromophenyl phenyl ether | 1.0 |
| 15B | butylbenzyl phthalate | 1.0 |
| 16B | 2-chloronaphthalene | 1.0 |
| 17B | 4-chlorophenyl phenyl ether | 1.0 |
| 18B | chrysene * | 1.0 |
| 19B | dibenzo (a,h)anthracene * | 2.0 |
| 20B | 1,2-dichlorobenzene | 1.0 |
| 21B | 1,3-dichlorobenzene | 1.0 |
| 22B | 1,4-dichlorobenzene | 1.0 |
| 23B | 3,3'-dichlorobenzidine | 2.0 |
| 24B | diethyl phthalate | 1.0 |
| 25B | dimethyl phthalate | 1.0 |
| 26B | di-n-butyl phthalate | 1.0 |
| 27B | 2,4-dinitrotoluene | 2.0 |
| 28B | 2,6-dinitrotoluene | 2.0 |
| 29B | di-n-octyl phthalate | 1.0 |
| 30B | 1,2-diphenylhydrazine (as azobenzene) | 1.0 |
| 31B | fluoranthene * | 1.0 |
| 32B | fluorene * | 1.0 |
| 33B | hexachlorobenzene | 1.0 |
| 34B | hexachlorobutadiene | 1.0 |
| 35B | hexachlorocyclopentadiene | 2.0 |
| 36B | hexachloroethane | 1.0 |
| 37B | indeno(1,2,3-cd)pyrene * | 2.0 |
| 38B | isophorone | 1.0 |
| 39B | naphthalene * | 1.0 |
| 40B | nitrobenzene | 1.0 |
| 41B | N-nitrosodimethylamine | 1.0 |
| 42B | N-nitrosodi-n-propylamine | 1.0 |
| 43B | N-nitrosodiphenylamine | 1.0 |
| 44B | phenanthrene * | 1.0 |
| 45B | pyrene * | 1.0 |
| 46B | 1,2,4-trichlorobenzene | 1.0 |

## OTHER TOXIC POLLUTANTS

| | MDL ug/l (ppb) |
|---|---|
| Antimony, Total | 3.0 |
| Arsenic, Total | 1.0 |
| Beryllium, Total | 0.2 |
| Cadmium, Total | 0.1 |
| Chromium, Total | 5.0 |
| Chromium, Hexavalent | 20.0 |
| Copper, Total | 20.0 |
| Lead, Total | 3.0 |
| Mercury, Total | 0.5 |
| Nickel, Total | 10.0 |
| Selenium, Total | 5.0 |
| Silver, Total | 1.0 |
| Thallium, Total | 5.0 |
| Zinc, Total | 20.0 |
| Asbestos | ** |
| Cyanide, Total | 10.0 |
| Phenols, Total | 50.0 |
| TCDD | ** |
| MTBE (Methyl Tert Butyl Ether) | 1.0 |

* Polynuclear Aromatic Hydrocarbons
** No Rhode Island Department of Environmental Management (RIDEM) MDL

**NOTE**:

The MDL for a given analyte may vary with the type of sample. MDLs which are determined in reagent water may be lower than those determined in wastewater due to fewer matrix interferences. Wastewater is variable in composition and may therefore contain substances (interferents) that could affect MDLs for some analytes of interest. Variability in instrument performance can also lead to inconsistencies in determinations of MDLs.

To help verify the absence of matrix or chemical interference the analyst is required to complete specific quality control procedures. For the metals analyses listed above the analyst must withdraw from the sample two equal aliquots; to one aliquot add a known amount of analyte, and then dilute both to the same volume and analyze. The unspiked aliquot multiplied by the dilution factor should be compared to the original. Agreement of the results within 10% indicates the absence of interference. Comparison of the actual signal from the spiked aliquot to the expected response from the analyte in an aqueous standard should help confirm the finding from the dilution analysis. (Methods for Chemical Analysis of Water and Wastes EPA-600/4-79/020).

For Methods 624 and 625 the laboratory must on an ongoing basis, spike at least 5% of the samples from each sample site being monitored. For laboratories analyzing 1 to 20 samples per month, at least one spiked sample per month is required. The spike should be at the discharge permit limit or 1 to 5 times higher than the background concentration determined in Section 8.3.2, whichever concentration would be larger. (40 CFR Part 136 Appendix B Method 624 and 625 subparts 8.3.1 and 8.3.11).

## F. MONITORING AND REPORTING

The monitoring program in the permit specifies sampling and analysis, which will provide continuous information on compliance and the reliability and effectiveness of the installed pollution abatement equipment. The approved analytical procedures found in 40 CFR Part 136 are required unless other procedures are explicitly required in the permit. The Permittee is obligated to monitor and report sampling results to the DEM within the time specified within the permit.

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 DEM 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 DEM.

2. Submittal of Reports as NetDMR Attachments

   Unless otherwise specified in this permit, the permittee must submit electronic copies of documents in NetDMR that are directly related to the DMR. These include the following:

   - DMR Cover Letters
   - Below Detection Limit summary tables
   - Monthly Operating Reports

   *All other reports (i.e. I/I reports, Priority Pollutant Scans, etc.) should be submitted to DEM hard copy via regular US mail (see Part I.F.3 below).*

3. Submittal of Reports in Hard Copy Form

   The following notifications and reports shall be submitted as hard copy with a cover letter describing the submission. These reports shall be signed and dated originals submitted to DEM.

   A. Written notifications required under Part II
   B. Notice of unauthorized discharges, including Sanitary Sewer Overflow (SSO) reporting
   C. Priority Pollutant Scan results
   D. Infiltration/Inflow Reports

   This information shall be submitted to DEM at the following address:

   Rhode Island Department of Environmental Management
   RIPDES Program
   235 Promenade Street
   Providence, Rhode Island 02908

4. Verbal Reports and Verbal Notifications

   Any verbal reports or verbal notifications, if required in Parts I and/or II of this permit, shall be made to the DEM. This includes verbal reports and notifications which require reporting within 24 hours. (See Part II.(I)(5) General Requirements for 24-hour reporting) Verbal reports and verbal notifications shall be made to DEM at (401) 222-4700 or (401) 222-3070 at night.

RHODE ISLAND DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
235 PROMENADE STREET
PROVIDENCE, RHODE ISLAND 02908-5767

# FACT SHEET

RHODE ISLAND POLLUTANT DISCHARGE ELIMINATION SYSTEM (RIPDES) PERMIT TO DISCHARGE TO WATERS OF THE STATE

RIPDES PERMIT NO. **RI0100366**

NAME AND ADDRESS OF APPLICANT:

**Town of Jamestown**
P.O. Box 377
Jamestown, Rhode Island 02835

NAME AND ADDRESS OF FACILITY WHERE DISCHARGE OCCURS:

**Jamestown Wastewater Treatment Facility**
Taylor Point
Jamestown, Rhode Island 02835

RECEIVING WATER: **Narragansett Bay**

CLASSIFICATION: **SB1** (water body ID #:RI0007029E-01F)

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

The above named applicant has applied to the Rhode Island Department of Environmental Management for reissuance of a RIPDES Permit to discharge into the designated receiving water. The facility is engaged in the treatment of domestic and commercial sewage. The discharge is from the Jamestown Wastewater Treatment Facility (WWTF) at Outfall 001A.

## II. Description of Discharge

A quantitative description of the discharge in terms of significant effluent parameters based on DMR data from April 2011 through March 2016 is shown on Attachment A-1.

## III. Permit and Administrative Compliance Order Limitations and Conditions

The final effluent limitations and monitoring requirements may be found in the permit.

## IV. Permit Basis and Explanation of Effluent Limitation Derivation

The Town of Jamestown owns and operates the Jamestown WWTF located at Taylor Point in Jamestown, Rhode Island. The discharge to Narragansett Bay consists of treated sanitary sewage contributed by the Town of Jamestown. Treatment consists of coarse screening, grit removal using an aerated grit chamber, extended aeration, secondary clarification, and chlorination. A diagram of the facility is included in Attachment A-2.

Jamestown's most recent RIPDES permit, authorizing discharges from the above-mentioned facility, was issued on March 18, 2011. The permit became effective on May 1, 2011 and was

subsequently modified on November 12, 2014. The permit expired on May 1, 2016. Jamestown submitted an application for permit reissuance to the DEM on October 19, 2015. On October 28, 2015 the DEM issued an application complete letter to Jamestown. In accordance with Rule 13(a) of the Regulations for the Rhode Island Pollutant Discharge Elimination System, Jamestown's 2011 permit remains in effect since the DEM has determined that a timely and complete permit application was submitted. Once this permit is reissued, it will supersede the 2011 permit.

Receiving Water Description

The water body segment that receives the discharge from the Jamestown WWTF is described as Narragansett Bay. The waterbody identification # for this water body is RI0007029E-01F. This segment is located in Jamestown and is classified as a class SB1 water body according to the Rhode Island Water Quality Regulations. SB1 waters are designated for primary and secondary contact recreational activities and fish and wildlife habitat. They shall be suitable for aquacultural uses, navigation, and industrial cooling. These waters shall have good aesthetic value. Primary contact recreational activities may be impacted due to pathogens from approved wastewater discharges. However, all Class SB criteria must be met. Currently, this segment is not listed as impaired in the DEM's 2014 303(d) List of Impaired Waters.

Permit Development

Development of RIPDES permit limitations is a multi-step process consisting of the following steps: calculating allowable water quality-based discharge levels using instream criteria, background data and available dilution; determining if technology based limits apply; developing Best Professional Judgment (BPJ)-based limits; taking the most stringent of the water quality-based, technology-based, and BPJ-based limits as the new allowable discharge levels; comparing existing permit limits to the new allowable discharge levels and performing an antidegradation/antibacksliding analysis to determine the final permit limits; and evaluating the ability of the facility to meet the final permit limits.

Water quality criteria are comprised of numeric and narrative criteria. Numeric criteria are scientifically derived ambient concentrations developed by EPA or the State for various pollutants of concern to protect human health and aquatic life. Narrative criteria are statements that describe the desired water quality goal. A technology-based limit is a numeric limit, which is determined by examining the capability of a treatment process to reduce or eliminate pollutants.The requirements set forth in this permit are from the State's Water Quality Regulations and the State's Regulations for the Rhode Island Pollutant Discharge Elimination System, both filed pursuant to RIGL Chapter 46-12, as amended. RIDEM's primary authority over the permit comes from EPA's delegation of the program in September 1984 under the Federal Clean Water Act (CWA).

**WWTF Conventional Pollutant Permit Limitations**

Flow limits

The basis for the facility's flow limit of 0.73 MGD is the facility's 2009 Operations and Maintainance Manual approved April 17, 2013. This flow is consistent with the monthly average design flow from the WWTF's Facilities Plan that was approved by the DEM on June 24, 2003.

$BOD_5$, TSS, Settleable Solids, and pH

The "Average Monthly" and "Average Weekly" $BOD_5$ and TSS limitations plus the pH limitations are based upon the secondary treatment requirements of Section 301 (b)(1)(B) of the CWA as defined in 40 CFR 133.102 (a) – (c). The "Maximum Daily" $BOD_5$ and TSS limits are based on Rhode Island requirements for Publicly Owned Treatment Works (POTWs) under Section 401 (a)(1) of the CWA and in 40 CFR 124.53 and 124.56. The "Percent Removal" requirements are in accordance with 40 CFR 133.103. Settleable Solids monitoring has been included as a process-control parameter that can aid in the assessment of the operation of the plant but need not have an effluent limit.

Oil and Grease

Oil and Grease monitoring requirements have been maintained in this permit in order to serve as a process control parameter. Monitoring data will serve as an indicator of excessive levels of Oil and Grease in the collection system that is typically attributed to restaurants and other sources of Oil and Grease loading which discharge to the sewer collection system. Jamestown and DEM will be able to use this data to track and potentially initiate corrective action if necessary to prevent backups and blockages within the sewer collection system.

Bacteria

Table 2.8.D(3) of the Rhode Island Water Quality Regulations includes Enterococci criteria for primary contact/swimming of a geometric mean of 35 colonies/100 ml and a single sample maximum of 104 colonies/100 ml. However, the "single sample maximum" value is only used by the Rhode Island Department of Health to evaluate swimming advisories at public beaches and is not applied to the receiving water in the area of the Jamestown WWTF's outfall. EPA's November 12, 2008 memorandum regarding "Initial Zones of Dilution for Bacteria in Rivers and Streams Designated for Primary Contact Recreation" specifies that it is not appropriate to use dilution for bacteria criteria in receiving waters that are designated for primary contact recreation. Therefore, because the receiving water is designated for primary contact recreation, the DEM has assigned a monthly average Enterococci limit of 35 colonies/100 ml. This limit is consistent with the water quality criteria from Table 2.8.D(3) of the Rhode Island Water Quality Regulations. The daily maximum enterococci limit has been set at the 90% upper confidence level value for "lightly used full body contact recreation" of 276 colonies/100 ml. The DEM has assigned Fecal Coliform monitoring to ensure that the discharge from the WWTF will not have an impact on any areas designated for shellfish harvesting outside of the immediate vicinity of the outfall.

**WWTF Toxic Pollutant Limits**

The allowable effluent limitations were established on the basis of acute and chronic aquatic life criteria and human health criteria using the following: available instream dilution; an allocation factor; and background concentrations when available and/or appropriate. The aquatic life and human health criteria are specified in the Rhode Island Water Quality Regulations. Aquatic life criteria have been established to ensure the protection and propagation of aquatic life while human health criteria represent the pollutant levels that would not result in a significant risk to public health from ingestion of aquatic organisms. The more stringent of the two criteria was then used in establishing allowable effluent limitations. Details concerning the calculation of potential permit limitations, selection of factors, which influence their calculation, and the selection of final permit limitations are included below or in the attached documents.
Mixing Zones and Dilution Factors

In order to evaluate the need for water quality-based limits, it is necessary to determine the mixing which occurs in the immediate vicinity of the discharge (initial dilution). The Jamestown WWTF effluent is discharged through a pipe which is approximately 350 feet offshore and is fitted with a diffuser. The diffuser consists of seven (7) ports that are four (4) inches in diameter and have approximately twelve (12) feet of spacing between each port. Rule 17 of the RIPDES Regulations requires the use of design flow when establishing limits for POTWs. During development of the August 3, 1994 permit, the RIDEM Division of Water Resources determined the initial dilution using the EPA computer model UMERGE. Based upon the design flow of 0.73 MGD (as noted in the Order of Approval No. 430), the mean low water depth at the outfall of fifty (50) feet, and stagnant receiving water conditions, an initial dilution of 273:1 was determined. The UMERGE model output files are presented in Attachment A-3.

Using the above-mentioned dilution factors the allowable discharge levels were calculated as follows:

a) Background concentration unknown or available data is impacted by sources that have not yet achieved water quality based limits.

$$Limit_1 = (DF) * (Criteria) * (80\%)$$

Where: DF = acute or chronic dilution factor, as appropriate

b) Using available background concentration data[1].

$$Limit_1 = (DF) * (Criteria) * 90\% - (Background) * (DF - 1)$$

Where: DF = acute or chronic dilution factor, as appropriate

Based on the above dilution factors and the saltwater aquatic life and non-Class A human health criteria from the Rhode Island Water Quality regulations, allowable discharge concentrations were established using 80% allocation when no background data was available. 90% allocation was used when background data was available. Background data for Cadmium, Chromium, Copper, Lead, Nickel, and Silver was obtained from the four (4) SINBADD cruises in "Cruise and Data Report", SINBADD 1, 2, 3 and 4.

The formulas and data noted above were applied with the following exceptions:

A) Pollutants that, based on the acute and chronic dilution factors, have a higher allowable chronic limit than allowable acute limit. For this situation, both the "Monthly Average" and "Daily Maximum" limits were set at the allowable acute limit.

B) Total Residual Chlorine (TRC). The limits for TRC were established in accordance with the DEM Effluent Disinfection Policy. The "Monthly Average" and "Daily Maximum" were based on a 100% allocation, a zero background concentration, and the appropriate dilution factors. The 100% allocation factor for TRC was used due to the non-conservative nature of chlorine and the improbability of the receiving water having a detectable background TRC concentration. When these procedures are used to calculate water quality-based TRC limits, it results in allowable discharge levels greater than DEM's technology-based limit of 2.0 mg/L. Therefore, the DEM has maintained the WWTF's TRC limits at 2.0 mg/L.

The potential ammonia limitations were derived from acute and chronic water quality criteria for saltwater from the Rhode Island Water Quality Regulations, which are based upon salinity, pH, and temperature. A salinity equal to 30 ppt., pH equal to 8.0 standard units, and average temperatures equal to 20°C and 5°C during Summer and Winter seasons, respectively, were used to calculate the allowable water quality-based discharge levels for ammonia. Salinity and temperature values were based upon data contained in the Narragansett Bay Project Reports, #NBP-89-22 and #NBP-89-24, titled "Water Quality Survey of Narragansett Bay-A Summary of the SINBADD 1985-1986" and "SPRAY Cruise-Dissolved Oxygen and Chlorophyll", respectively. The pH value was determined from data contained in a report titled "Monitoring of the Providence and Seekonk Rivers for Trace Metals and Associated Parameters-SPRAY Cruises I, II, III" [Deoring et al., 1988], and from a University of Rhode Island Graduate School of Oceanography research paper titled "Co-occurrence of Dinoflagellate Blooms and High pH in Marine Enclosures", [Hinga, 1992].

Reference Attachment A-4 for calculations of allowable limits based on Aquatic Life and Human Health Criteria.

**Antibacksliding**

[1]Source of background data is *Water Quality Survey of Narragansett Bay - A Summary of Results from the SINBADD 1985-1986*; Pilson, Michael E.Q. and Hunt, Carlton, D.; March 1989; Report #NBP-89-22.

Antibacksliding restricts the level of relaxation of water quality based limits from the previous permit. Section 303(d)(4) of the Clean Water Act addresses antibacksliding as the following:

*Section 303(d)(4)*

A) Standards not attained - For receiving waters that have not attained the applicable water quality standards, limits based on a TMDL or WLA can only be revised if the water quality standards will be met. This may be done by (i) determining that the cumulative effect of all such revised limits would assure the attainment of such water quality standards; or (ii) removing the designated use which is not being attained in accordance with regulations under Section 303.

B) Standards attained - For receiving waters achieving or exceeding applicable water quality standards, limits can be relaxed if the revision is consistent with the State's Antidegradation Policy.

Therefore, in order to determine whether backsliding is permissible, the first question that must be answered is whether or not the receiving water is attaining the water quality standard. The Office has determined the most appropriate evaluation of existing water quality is by calculating the pollutant levels, which would result after consideration of all currently valid RIPDES permit limits or historic discharge data (whichever is greater), background data (when available), and any new information (i.e.: dilution factors).

Antidegradation

The RIDEM's "Policy on the Implementation of the Antidegradation Provisions of the Rhode Island Water Quality Regulations July 2006" (the Policy) establishes four tiers of water quality protection:

**Tier 1**. In all surface waters, existing uses and the level of water quality necessary to protect the existing uses shall be maintained and protected.

**Tier 2**. In waters where the existing water quality exceeds levels necessary to support propagation of fish and wildlife, and recreation in and on the water, that quality shall be maintained and protected, except for insignificant changes in water quality as determined by the Director and in accordance with the Antidegradation Implementation Policy, as amended. In addition, the Director may allow significant degradation which is determined to be necessary to achieve important economic or social benefits to the State in accordance with the Antidegradation Implementation Policy, as amended.

**Tier 2½**. Where high quality waters constitute a Special Resource Protection Water SRPW[2], there shall be no measurable degradation of the existing water quality necessary to protect the characteristic(s) which cause the waterbody to be designated a SRPW. Notwithstanding that all public drinking water supplies are SRPWs, public drinking water suppliers may undertake temporary and short-term activities within the boundary perimeter of a public drinking water supply impoundment for essential maintenance or to address emergency conditions in order to prevent adverse effect on public health or safety. These activities must comply with the requirements set forth in Tier 1 and Tier 2.

**Tier 3**. Where high quality waters constitute an Outstanding Natural Resource ONRWs[3],

[2]SRPWs are surface waters identified by the Director as having significant recreational or ecological uses.

[3]ONRWs are a special subset of high quality water bodies, identified by the State as having significant recreational or ecological water uses.

that water quality shall be maintained and protected. The State may allow some limited activities that result in temporary and short-term changes in the water quality of an ONRW. Such activities must not permanently degrade water quality or result in water quality lower than necessary to protect the existing uses in the ONRW.

The formulas previously presented ensure that permit limitations are based upon water quality criteria and methodologies established to ensure that all designated uses will be met.

In terms of the applicability of Tier 2 of the Policy, a water body is assessed as being high quality on a parameter-by-parameter basis. In accordance with Part II of the Policy, "Antidegradation applies to all new or increased projects or activities which may lower water quality or affect existing water uses, including but not limited to all 401 Water Quality Certification reviews and any new, reissued, or modified RIPDES permits." Part VI.A of the Policy indicates that it is not applicable to activities which result in insignificant (i.e.: short-term minor) changes in water quality and that significant changes in water quality will only be allowed if it is necessary to accommodate important economic and social development in the area in which the receiving waters are located (important benefits demonstration). Part VI.B.4 of the Policy states that: "Theoretically, any new or increased discharge or activity could lower existing water quality and thus require the important benefits demonstration. However, RIDEM will: 1) evaluate applications on a case-by-case basis, using BPJ and all pertinent and available facts, including scientific and technical data and calculations as provided by the applicant; and 2) determine whether the incremental loss is significant enough to require the important benefits demonstration described below. [If not then as a general rule RIDEM will allocate no more than 20%.] Some of the considerations which will be made to determine if an impact is significant in each site specific decision are: 1) percent change in water quality parameter value and their temporal distribution; 2) quality and value of the resource; 3) cumulative impact of discharges and activities on water quality to-date; 4) measurability of the change; 5) visibility of the change; 6) impact on fish and wildlife habitat; and 7) impact on potential and existing uses. As a general guide, any discharge or activity which consumes greater than 20% of the remaining assimilative capacity (See Section VI.B.2) will be considered a significant impact and will be required to demonstrate important economic or social benefits to justify the activity (See Section VI.C. below). However, on a case-by-case basis, any proposed percent consumption of the remaining assimilative capacity may be deemed significant and invoke full requirements to demonstrate important economic or social benefits."

In terms of a RIPDES permit, an increased discharge is defined as an increase in any limitation, which would result in an increased mass loading to a receiving water. The baseline for this comparison would be the monthly average mass loading established by the previous permit. It would be inappropriate to use the daily maximum mass loading since the Policy is not applicable to short-term changes in water quality.

For the purposes of ensuring that the revised limit is consistent with the requirements of antidegradation, existing water quality must be defined. As explained earlier, RIDEM evaluates existing water quality by determining the pollutant levels which would result under the design conditions appropriate for the particular criteria (i.e., background water quality, when available and/or appropriate; non-point source inputs; and existing RIPDES permit limitations or recent historical discharge data, whichever is higher). In general, available data would be used to make this determination.

Using the above-mentioned criteria, the present instream water quality $C_p$ is defined as:

$$C_p = \frac{(DF - 1) * C_b + (1 * C_d)}{DF}$$

where: $C_b$ = background concentration[4]

[4]Data collected at a location that is unimpacted by significant point source discharges.

$C_d$ = discharge data[5]
DF = dilution factor

If the waterbody is a high quality water for the pollutant in question ($C_p < C_{criteria}$), then the discharge requires an evaluation under Tier 2 protection. If the waterbody is not determined to be high quality for that parameter, then antibacksliding will allow an increased permit limit only if it can be assured that water quality standards would be attained. Therefore, the permit limit would be calculated to comply with Tier 1 protection, using the procedures noted previously (i.e., $Limit_1$).

Assuming the receiving water has been designated as a high quality waterbody for the parameter under investigation, the next step is to determine whether the new or increased discharge is permissible and if so whether an important benefits demonstration is required. As explained above, for existing discharges RIDEM shall follow the general rule of allocating no more than 20% of the remaining assimilative capacity without the need to complete this demonstration (assuming the receiving water is not an SRPW or ONRW). On a case-by-case basis, the RIDEM may limit the allocation or determine that any incremental loss or impact to the receiving water is significant enough to require a detailed important benefits demonstration.

Since none of the limits proposed in this permit are less stringent than the limits from the previous permit, the proposed limits comply with the State's antibacksliding and antidegradation policies and additional analysis is not required.

A summary of DMR data for the past five (5) years and a summary of State User Fee Program data are provided in Attachments A-5 and A-6 respectively.

Attachment A-7 is a summary comparison of the allowable discharge levels vs. the DMR and State User Fee Program data.

Reasonable Potential

In accordance with 40 CFR Part 122.4(d)(1)(i), water quality-based effluent limitations are only required for those pollutants in the discharge that have the reasonable potential to cause or contribute to the exceedance of instream criteria. In order to evaluate the need for permit limitations, the most stringent calculated acute and chronic concentrations were compared to the average DMR data and the mean of the concentrations reported in the WWTF's annual priority pollutant scans. Based on this analysis, no pollutants have "reasonable potential". Therefore, this permit does not include any water quality-based limits. However, as indicated above, technology-based limits for TRC have been maintained in this permit.

**Bioassay testing**

Evaluation of the data collected for biotoxicity has revealed that the prechlorinated effluent samples from the treatment plant have consistently demonstrated acceptable acute toxicity for Mysids. Toxicity results for effluent collected prior to chlorination for the period 2nd Quarter 2014 through 1st Quarter 2016 had $LC_{50}$ values of 100% effluent or >100% effluent. The actual data can be found in Attachment A-1. Based upon past toxicity results and the high degree of instream mixing, the permit contains an $LC_{50} \geq 50\%$ effluent limit for quarterly acute tests conducted on Mysids. The biomonitoring requirements are set forth in 40 CFR 131.11 and in the State's Water Quality Regulations to assure control of toxicity in the effluent. If effluent toxicity is demonstrated in the future, then the permit requires a toxicity identification and reduction study to be conducted.

Although these pollutants did not have "reasonable potential", quarterly monitoring for Cyanide,

[5]Discharge data refers to the maximum of the permit limit or the historic discharge level. The historic discharge level is determined by calculating the upper 95th percent confidence interval for the monthly average reported data for the past five (5) years. For specific cases, changes in treatment efficiency or pretreatment limitations may support the use of an alternative period of time.

Total Ammonia, Total Aluminum, Total Cadmium, Total Copper, Hexavalent Chromium, Total Lead, Total Nickel, and Total Zinc have been included in the permit as part of the standard list of pollutants monitored as part of the quarterly toxicity testing.

**Other Limits and Conditions**

The effluent monitoring requirements have been specified in accordance with RIPDES regulations as well as 40 CFR 122.41 (j), 122.44 (i), and 122.48 to yield data representative of the discharge. At this time, nutrient criteria have not been established for the receiving water. However, seasonal (May through October) testing requirements for TKN, Nitrate, and Nitrite are being maintained to determine nutrient loadings to the receiving water, and are consistent with the Department's policy requiring all facilities to perform baseline nutrient monitoring. This information will aid the Department in the determination of the necessity for future nutrient removal from the treatment plant effluent.

The permit contains requirements for the permittee to comply with the State's Sludge Regulations and its RIDEM Order of Approval for sludge disposal in accordance with the requirements of Section 405(d) of the Clean Water Act (CWA). Permits must contain sludge conditions requiring compliance with limits, state laws, and applicable regulations as per Section 405(d) of the CWA and 40 CFR 503. The RIDEM Sludge Order of Approval sets forth the conditions to ensure this compliance.

The Office has determined that all permit limitations are consistent with the Rhode Island Antidegradation policy.

The remaining general and specific conditions of the permit are based on the RIPDES regulations as well as 40 CFR Parts 122 through 125 and consist primarily of management requirements common to all permits.

**Final Permit Limits**

Presented in Table #1 is a summary of the permit limitations.

Table #1 Final Permit Limitations

| Parameter | Monthly Average (Minimum) | Weekly Average (Average) | Daily Maximum (Maximum) |
|---|---|---|---|
| Flow | 0.73 MGD | | --- MGD |
| $BOD_5$ | 183 lbs/d | | 304 lbs/d |
| $BOD_5$ | 30 mg/l | 45 mg/l | 50 mg/l |
| $BOD_5$ - % Removal | 85% | | |
| TSS | 183 lbs/d | | 304 lbs/d |
| TSS | 30 mg/l | 45 mg/l | 50 mg/l |
| TSS - % Removal | 85% | | |
| Settleable Solids | | --- ml/l | --- ml/l |
| Fecal Coliform | --- MPN/100 ml | --- MPN/100 ml | --- MPN/100 ml |
| Enterococci | 35 cfu/100 ml | | 276 cfu/100 ml |
| Total Residual Chlorine (TRC) | 2.0 mg/l | | 2.0 mg/l |
| pH | (6.0 SU) | | (9.0 SU) |
| Oil and Grease | | | --- mg/l |
| TKN (May 1 – October 31) | --- mg/l | | --- mg/l |
| Nitrate, Total (as N) (May 1 – October 31) | --- mg/l | | --- mg/l |
| Nitrite, Total (as N) (May 1 – October 31) | --- mg/l | | --- mg/l |
| Nitrogen, Total | --- mg/l | | --- mg/l |

| | | | |
|---|---|---|---|
| Hexavalent Chromium | --- ug/L | | --- ug/L |
| Total Lead | --- ug/L | | --- ug/L |
| Total Zinc | --- ug/L | | --- ug/L |
| Total Nickel | --- ug/L | | --- ug/L |
| Total Aluminum | --- ug/L | | --- ug/L |
| Cyanide | --- ug/L | | --- ug/L |
| Total Ammonia | --- ug/L | | --- ug/L |

## V. Comment Period, Hearing Requests, and Procedures for Final Decisions

All persons, including applicants, who believe any condition of the draft permit is inappropriate must raise all issues and submit all available arguments and all supporting material for their arguments in full by the close of the public comment period, to the Rhode Island Department of Environmental Management, Office of Water Resources, 235 Promenade Street, Providence, Rhode Island, 02908-5767. Any person, prior to such date, may submit a request in writing for a public hearing to consider the draft permit to the Rhode Island Department of Environmental Management. 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 (30) days public notice whenever the Director finds that response to this notice indicates significant public interest. In reaching a final decision on the draft permit the Director will respond to all significant comments and make these responses available to the public at DEM's Providence Office.

Following the close of the comment period, and after a public hearing, if such hearing is held, the Director 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 thirty (30) days following the notice of the final permit decision any interested person may submit a request for a formal hearing to reconsider or contest the final decision. Requests for formal hearings must satisfy the requirements of Rule 49 of the Regulations for the Rhode Island Pollutant Discharge Elimination System.

## VI. DEM Contact

Additional information concerning the permit may be obtained between the hours of 8:30 a.m. and 4:00 p.m., Monday through Friday, excluding holidays from:

Samuel Kaplan, P.E.
Engineer
Office of Water Resources
Department of Environmental Management
235 Promenade Street
Providence, Rhode Island 02908
Telephone: (401) 222-4700 ext. 7046

10/19/16
Date

Joseph B. Haberek, P.E.
Principal Sanitary Engineer
Office of Water Resources
Department of Environmental Management

## ATTACHMENT A-1

**DESCRIPTION OF DISCHARGE:** Secondary treated domestic and industrial wastewater.
**DISCHARGE:** 001A – Secondary Treatment Discharge

AVERAGE EFFLUENT CHARACTERISTICS AT POINT 0F DISCHARGE:

| PARAMETER | MONTHLY AVERAGE[1] | WEEKLY AVERAGE[2] | DAILY MAXIMUM[3] |
|---|---|---|---|
| FLOW | 0.3698 MGD | | 0.7394 MGD |
| $BOD_5$ | 2.9983 mg/l | 4.8652 mg/l | 7.3833 mg/l |
| $BOD_5$ load | 9.458 lb/d | | 31.4562 lb/d |
| TSS | 4.0718 mg/l | 7.2883 mg/l | 11.3467 mg/l |
| TSS load | 12.4553 lb/d | | 48.6392 lb/d |
| Fecal Coliform | 2.2915 MPN/100 ml | 12.7062 MPN/100 ml | 400105 MPN/100 ml |
| pH | 6.2633 S.U. (Min.) | | 6.975 S.U. (Max.) |
| Total Chlorine Residual | 1.0525 mg/l | | 1.8283 mg/l |
| Oil & Grease | | | 1.6533 mg/l |
| Nitrite, Total (as N)[4] | | | 0.0447 mg/l |
| Nitrate, Total (as N)[4] | | | 4.7053 mg/l |
| Nitrogen, Total Kjeldhal[4] | | | 2.7757 mg/l |
| Nitrogen, Total[4] | | | 7.5007 mg/l |
| Settleable Solids | | 0 ml/l | 0 ml/l |
| BOD % Removal | 98.405 | | |
| TSS % Removal | 97.6 | | |

[1]Data represents the mean of the monthly average data from April 2011-March 2016
[2]Data represents the mean of the weekly average data from April 2011-March 2016
[3]Data represents the mean of the daily maximum data from April 2011-March 2016
4Data represents the mean of daily maximum data from May-October of 2011-2015

### Biotoxicity Data $LC_{50}$ Values (in percent effluent)

Pre-Cl2 Mysid
Minnow

| 2014 | | | 2015 | | | | 2016 |
|---|---|---|---|---|---|---|---|
| 2nd qtr. | 3rd qtr. | 4th qtr. | 1st qtr. | 2nd qtr. | 3rd qtr. | 4th qtr. | 1st qtr. |
| >100% | >100% | >100% | >100% | >100% | >100% | =100% | =100% |

## ATTACHMENT A-2: Process flow diagram

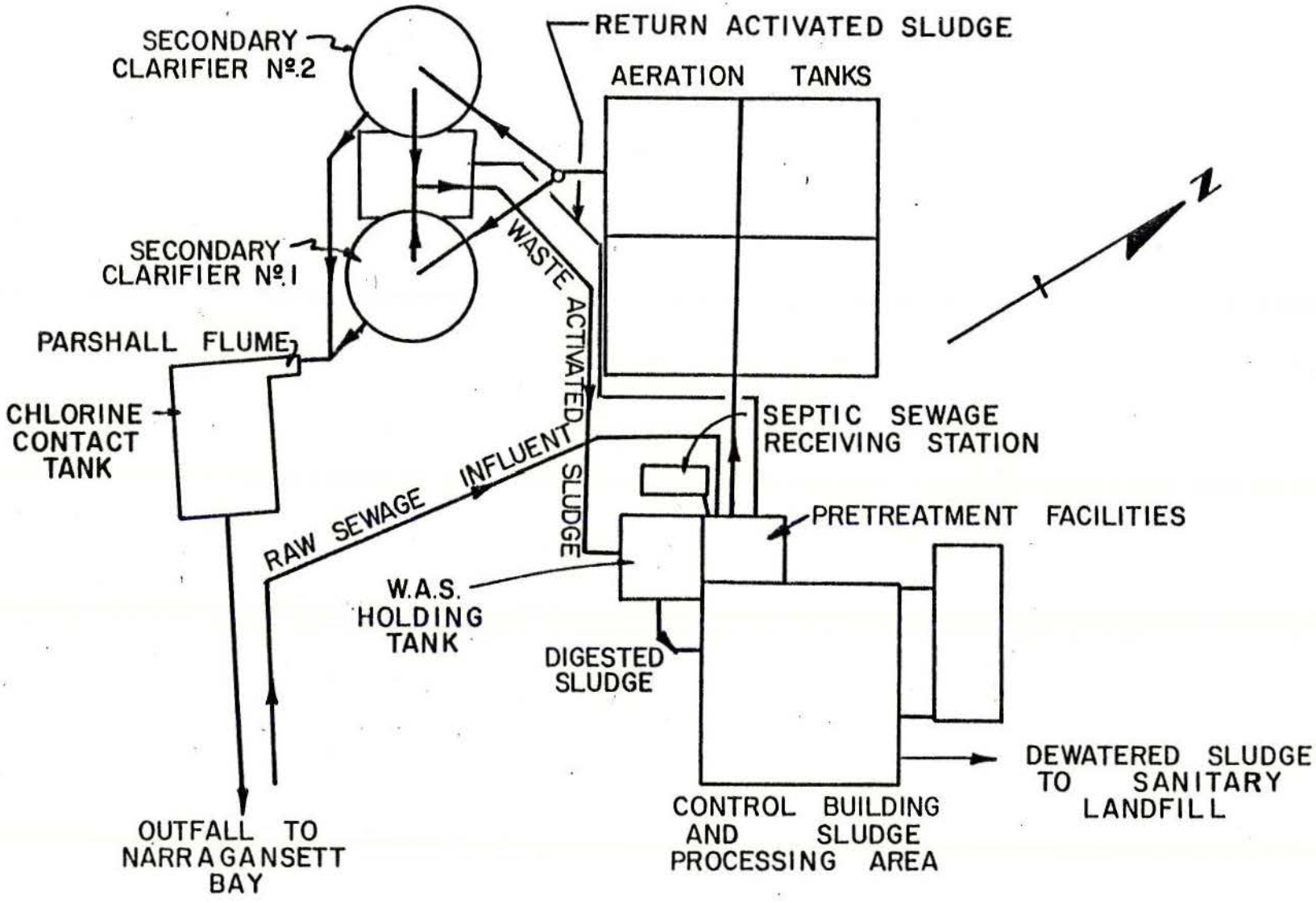


PLATE No. 1

**WHITMAN & HOWARD INC.**
ENGINEERS AND ARCHITECTS
45 WILLIAM ST. WELLESLEY, MASS.

W&H

FLOW DIAGRAM
WATER POLLUTION CONTROL FACILITY
JAMESTOWN, RHODE ISLAND

**ATTACHMENT A-3: Mixing Zone**

UMERGE OUTPUT - JAMESTOWN WWTF - OUTFALL 001A

THIS OUTPUT FILE IS PART TWO OF TWO MODEL RUNS WHICH CHARACTERIZES THE SIDE OF JAMESTOWN'S OUTFALL WHICH HAS FOUR DIFFUSERS.

UMERGE VERSION 1.0 AUGUST 1985.

UNIVERSAL DATA FILE: JAMES_4.DAT;2

CASE I.D. #1 EFFLUENT & AMBIENT DENSITY AS G/CM3, NO CURRENT, IXI=IX0=ZERO

ASPIRATION ENTRAINMENT COEFFICIENT = 0.10 (DEFAULT)
NUMBER OF STEPS ALLOWED = 5000 (DEFAULT)
ITERATION PRINTOUT FREQUENCY = 150 (DEFAULT)
PRINT ARRAY AA (0=NO, 1=YES) = 0 (DEFAULT)
PRINT ARRAY AB (0=NO, 1=YES) = 0 (DEFAULT)
PRINT ARRAY AC (0=NO, 1=YES) = 0 (DEFAULT)

INITIAL DENSITY OF THE PLUME = -1.0000 SIGMAT UNITS
FROUDE NUMBER = 3.5

| DEPTH (M) | SIGMAT | U (M/S) |
|---|---|---|
| 0.00 | 25.00 | 0.000 |
| 15.20 | 25.00 | 0.000 |

TOTAL EFFLUENT FLOW = 0.0183 CMS
NUMBER OF PORTS = 4
PORT DIAMETER = 0.1020 M
PORT SPACING = 4.00 M
VERTICAL PORT ANGLE FROM HORIZONTAL = 0.0 DEGREES
PORT DEPTH = 15.20 M

FIRST LINE OF OUTPUT ARE INITIAL CONDITIONS

| X (M) | Z (M) | PLUME DIAMETER (M) | DILUTION | DENDIFF (SIGMAT) | HORIZ VEL (M/S) | VERT VEL (M/S) | TOTAL VEL (M/S) | AMBIENT CURRENT (M/S) |
|---|---|---|---|---|---|---|---|---|
| 0.00 | 15.20 | 0.102 | 1.00 | 26.00 | 0.56 | 0.00 | 0.56 | 0.000 |
| 0.00 | 15.20 | 0.102 | 1.01 | 25.82 | 0.56 | 0.00 | 0.56 | 0.000 |
| 0.42 | 15.09 | 0.262 | 2.78 | 9.19 | 0.20 | 0.13 | 0.24 | 0.000 |
| 0.94 | 14.32 | 0.479 | 7.82 | 3.25 | 0.07 | 0.19 | 0.20 | 0.000 |
| 1.32 | 12.66 | 0.870 | 22.08 | 1.15 | 0.02 | 0.17 | 0.17 | 0.000 |
| 1.61 | 9.55 | 1.613 | 62.40 | 0.41 | 0.01 | 0.14 | 0.14 | 0.000 |
| 1.85 | 3.74 | 3.005 | 176.45 | 0.14 | 0.00 | 0.11 | 0.11 | 0.000 |

COMPUTATIONS CEASE: PLUMES SURFACE

**DILUTION = 272.52**

UMERGE OUTPUT - JAMESTOWN WWTF - OUTFALL 001A

THIS OUTPUT FILE IS PART ONE OF THE TWO MODEL RUNS WHICH CHARACTERIZES THE SIZE OF JAMESTOWN'S OUTFALL WHICH HAS THREE DIFFUSERS.

UMERGE VERSION 1.0 AUGUST 1985.

UNIVERSAL DATA FILE: JAM_3_UM.DAT;1

CASE I.D. #1 EFFLUENT & AMBIENT DENSITY AS G/CM3, NO CURRENT, IXI=IX0=ZERO

| | | | |
|---|---|---|---|
| ASPIRATION ENTRAINMENT COEFFICIENT | = | 0.10 | (DEFAULT) |
| NUMBER OF STEPS ALLOWED | = | 5000 | (DEFAULT) |
| ITERATION PRINTOUT FREQUENCY | = | 150 | (DEFAULT) |
| PRINT ARRAY AA (0=NO, 1=YES) | = | 0 | (DEFAULT) |
| PRINT ARRAY AB (0=NO, 1=YES) | = | 0 | (DEFAULT) |
| PRINT ARRAY AC (0=NO, 1=YES) | = | 0 | (DEFAULT) |

| | | | |
|---|---|---|---|
| INITIAL DENSITY OF THE PLUME | = | -1.0000 | SIGMAT UNITS |
| FROUDE NUMBER | = | 3.5 | |

| DEPTH (M) | SIGMAT | U (M/S) |
|---|---|---|
| 0.00 | 25.00 | 0.000 |
| 15.20 | 25.00 | 0.000 |

| | | | |
|---|---|---|---|
| TOTAL EFFLUENT FLOW | = | 0.0137 | CMS |
| NUMBER OF PORTS | = | 3 | |
| PORT DIAMETER | = | 0.1020 | M |
| PORT SPACING | = | 4.00 | M |
| VERTICAL PORT ANGLE FROM HORIZONTAL | = | 0.0 | DEGREES |
| PORT DEPTH | = | 15.20 | M |

FIRST LINE OF OUTPUT ARE INITIAL CONDITIONS

| X (M) | Z (M) | PLUME DIAMETER (M) | DILU-TION | DENDIFF (SIGMAT) | HORIZ VEL (M/S) | VERT VEL (M/S) | TOTAL VEL (M/S) | AMBIENT CURRENT (M/S) |
|---|---|---|---|---|---|---|---|---|
| 0.00 | 15.20 | 0.102 | 1.00 | 26.00 | 0.56 | 0.00 | 0.56 | 0.000 |
| 0.00 | 15.20 | 0.102 | 1.01 | 25.82 | 0.56 | 0.00 | 0.56 | 0.000 |
| 0.42 | 15.08 | 0.262 | 2.78 | 9.19 | 0.20 | 0.13 | 0.23 | 0.000 |
| 0.94 | 14.32 | 0.479 | 7.82 | 3.25 | 0.07 | 0.19 | 0.20 | 0.000 |
| 1.32 | 12.67 | 0.869 | 22.08 | 1.15 | 0.02 | 0.17 | 0.17 | 0.000 |
| 1.61 | 9.55 | 1.612 | 62.40 | 0.41 | 0.01 | 0.14 | 0.14 | 0.000 |
| 1.84 | 3.74 | 3.003 | 176.45 | 0.14 | 0.00 | 0.11 | 0.11 | 0.000 |

COMPUTATIONS CEASE: PLUMES SURFACE

**DILUTION = 272.80**

**ATTACHMENT A-4: Water Quality Calculations**

# *CALCULATION OF WATER QUALITY BASED SALTWATER DISCHARGE LIMITS*

## *FACILITY SPECIFIC DATA INPUT SHEET*

NOTE: LIMITS BASED ON RI WATER QUALITY CRITERIA DATED JULY 2006

FACILITY NAME: **Jamestown WWTF**

RIPDES PERMIT #: **RI0100366**

| | DISSOLVED BACKGROUND DATA (ug/L) | ACUTE METAL TRANSLATOR | CHRONIC METAL TRANSLATOR |
|---|---|---|---|
| ALUMINUM | NA | NA | NA |
| ARSENIC | NA | 1 | 1 |
| CADMIUM | 0.033823777 | 0.994 | 0.994 |
| CHROMIUM III | NA | NA | NA |
| CHROMIUM VI | 0.165139975 | 0.993 | 0.993 |
| COPPER | 0.664061543 | 0.83 | 0.83 |
| LEAD | 0.048476988 | 0.951 | 0.951 |
| MERCURY | NA | 0.85 | NA |
| NICKEL | 1.139875065 | 0.99 | 0.99 |
| SELENIUM | NA | 0.998 | 0.998 |
| SILVER | 0.005729996 | 0.85 | 0.85 |
| ZINC | NA | 0.946 | 0.946 |

**USE NA WHEN NO DATA IS AVAILABLE**

NOTE 1: BACKGROUND DATA BASED ON AVERAGE CONCENTRATIONS OBTAINED FROM THE FOUR SINBADD CRUISES IN CURRENT REPORT #: NBP-89-22 (LOCATIONS B13, B14, & B16).

NOTE 2: METAL TRANSLATORS FROM RI WATER QUALITY REGS.

| DILUTION FACTORS | | |
|---|---|---|
| | ACUTE = | 273 x |
| | CHRONIC = | 273 x |
| | HUMAN HEALTH = | 273 x |

NOTE: TEST WWTF'S DILUTION FACTORS OBTAINED FROM A DYE STUDY.

| TOTAL AMMONIA CRITERIA (ug/L) | | |
|---|---|---|
| WINTER | ACUTE = | 21000 |
| | CHRONIC = | 3100 |
| SUMMER | ACUTE = | 7300 |
| | CHRONIC = | 1100 |

NOTE 1: LIMITS ARE FROM TABLE 3 IN THE RI WATER QUALITY REGS.
USING:
SALINITY = 30 g/Kg;
pH = 8.0 S.U.
WINTER (NOV-APRIL) TEMP=5.0 C;
SUMMER (MAY-OCT) TEMP=20.0 C.

*CALCULATION OF WATER QUALITY BASED SALTWATER DISCHARGE LIMITS*

FACILITY NAME: Jamestown WWTF RIPDES PERMIT #: RI0100366

NOTE: METALS CRITERIA ARE DISSOLVED, METALS LIMITS ARE TOTAL; AMMONIA CRITERIA AND LIMITS HAVE BEEN CONVERTED TO ug/l N.

| CHEMICAL NAME | CAS # | BACKGROUND CONCENTRATION (ug/L) | SALTWATER CRITERIA ACUTE (ug/L) | DAILY MAX LIMIT (ug/L) | SALTWATER CRITERIA CHRONIC (ug/L) | HUMAN HEALTH NON-CLASS A CRITERIA (ug/L) | MONTHLY AVE LIMIT (ug/L) |
|---|---|---|---|---|---|---|---|
| PRIORITY POLLUTANTS: | | | | | | | |
| TOXIC METALS AND CYANIDE | | | | | | | |
| ANTIMONY | 7440360 | | | No Criteria | | 640 | 139776 |
| ARSENIC (limits are total recoverable) | 7440382 | NA | 69 | 15069.6 | 36 | 1.4 | 305.76 |
| ASBESTOS | 1332214 | | | No Criteria | | | No Criteria |
| BERYLLIUM | 7440417 | | | No Criteria | | | No Criteria |
| CADMIUM (limits are total recoverable) | 7440439 | 0.033823777 | 40 | 9878.068343 | 8.8 | | 2165.955667 |
| CHROMIUM III (limits are total recoverable) | 16065831 | NA | | No Criteria | | | No Criteria |
| CHROMIUM VI (limits are total recoverable) | 18540299 | 0.165139975 | 1100 | 272129.9919 | 50 | | 12326.36649 |
| COPPER (limits are total recoverable) | 7440508 | 0.664061543 | 4.8 | 1203.295494 | 3.1 | | 700.0545306 |
| CYANIDE | 57125 | | 1 | 218.40 | 1 | 140 | 218.4 |
| LEAD (limits are total recoverable) | 7439921 | 0.048476988 | 210 | 54241.65537 | 8.1 | | 2078.847802 |
| MERCURY (limits are total recoverable) | 7439976 | NA | 1.8 | 462.4941176 | 0.94 | 0.15 | 32.76 |
| NICKEL (limits are total recoverable) | 7440020 | 1.139875065 | 74 | 18052.27675 | 8.2 | 4600 | 1721.913113 |
| SELENIUM (limits are total recoverable) | 7782492 | NA | 290 | 63462.92585 | 71 | 4200 | 15537.47495 |
| SILVER (limits are total recoverable) | 7440224 | 0.005729996 | 1.9 | 547.3781661 | | | No Criteria |
| THALLIUM | 7440280 | | | No Criteria | | 0.47 | 102.648 |
| ZINC (limits are total recoverable) | 7440666 | NA | 90 | 20778.01268 | 81 | 26000 | 18700.21142 |
| VOLATILE ORGANIC COMPOUNDS | | | | | | | |
| ACROLEIN | 107028 | | | No Criteria | | 290 | 63336 |
| ACRYLONITRILE | 107131 | | | No Criteria | | 2.5 | 546 |
| BENZENE | 71432 | | | No Criteria | | 510 | 111384 |
| BROMOFORM | 75252 | | | No Criteria | | 1400 | 305760 |
| CARBON TETRACHLORIDE | 56235 | | | No Criteria | | 16 | 3494.4 |
| CHLOROBENZENE | 108907 | | | No Criteria | | 1600 | 349440 |
| CHLORODIBROMOMETHANE | 124481 | | | No Criteria | | 130 | 28392 |
| CHLOROFORM | 67663 | | | No Criteria | | 4700 | 1026480 |
| DICHLOROBROMOMETHANE | 75274 | | | No Criteria | | 170 | 37128 |
| 1,2DICHLOROETHANE | 107062 | | | No Criteria | | 370 | 80808 |
| 1,1DICHLOROETHYLENE | 75354 | | | No Criteria | | 7100 | 1550640 |
| 1,2DICHLOROPROPANE | 78875 | | | No Criteria | | 150 | 32760 |
| 1,3DICHLOROPROPYLENE | 542756 | | | No Criteria | | 21 | 4586.4 |
| ETHYLBENZENE | 100414 | | | No Criteria | | 2100 | 458640 |
| BROMOMETHANE (methyl bromide) | 74839 | | | No Criteria | | 1500 | 327600 |
| CHLOROMETHANE (methyl chloride) | 74873 | | | No Criteria | | | No Criteria |
| METHYLENE CHLORIDE | 75092 | | | No Criteria | | 5900 | 1288560 |

*CALCULATION OF WATER QUALITY BASED SALTWATER DISCHARGE LIMITS*

FACILITY NAME: Jamestown WWTF RIPDES PERMIT #: RI0100366

NOTE: METALS CRITERIA ARE DISSOLVED, METALS LIMITS ARE TOTAL; AMMONIA CRITERIA AND LIMITS HAVE BEEN CONVERTED TO ug/l N.

| CHEMICAL NAME | CAS # | BACKGROUND CONCENTRATION (ug/L) | SALTWATER CRITERIA ACUTE (ug/L) | DAILY MAX LIMIT (ug/L) | SALTWATER CRITERIA CHRONIC (ug/L) | HUMAN HEALTH NON-CLASS A CRITERIA (ug/L) | MONTHLY AVE LIMIT (ug/L) |
|---|---|---|---|---|---|---|---|
| 1,1,2,2TETRACHLOROETHANE | 79345 | | | No Criteria | | 40 | 8736 |
| TETRACHLOROETHYLENE | 127184 | | | No Criteria | | 33 | 7207.2 |
| TOLUENE | 108883 | | | No Criteria | | 15000 | 3276000 |
| 1,2TRANSDICHLOROETHYLENE | 156605 | | | No Criteria | | 10000 | 2184000 |
| 1,1,1TRICHLOROETHANE | 71556 | | | No Criteria | | | No Criteria |
| 1,1,2TRICHLOROETHANE | 79005 | | | No Criteria | | 160 | 34944 |
| TRICHLOROETHYLENE | 79016 | | | No Criteria | | 300 | 65520 |
| VINYL CHLORIDE | 75014 | | | No Criteria | | 2.4 | 524.16 |
| ACID ORGANIC COMPOUNDS | | | | | | | |
| 2CHLOROPHENOL | 95578 | | | No Criteria | | 150 | 32760 |
| 2,4DICHLOROPHENOL | 120832 | | | No Criteria | | 290 | 63336 |
| 2,4DIMETHYLPHENOL | 105679 | | | No Criteria | | 850 | 185640 |
| 4,6DINITRO2METHYL PHENOL | 534521 | | | No Criteria | | 280 | 61152 |
| 2,4DINITROPHENOL | 51285 | | | No Criteria | | 5300 | 1157520 |
| 4NITROPHENOL | 88755 | | | No Criteria | | | No Criteria |
| PENTACHLOROPHENOL | 87865 | | 13 | 2839.2 | 7.9 | 30 | 1725.36 |
| PHENOL | 108952 | | | No Criteria | | 1700000 | 371280000 |
| 2,4,6TRICHLOROPHENOL | 88062 | | | No Criteria | | 24 | 5241.6 |
| BASE NEUTRAL COMPUNDS | | | | | | | |
| ACENAPHTHENE | 83329 | | | No Criteria | | 990 | 216216 |
| ANTHRACENE | 120127 | | | No Criteria | | 40000 | 8736000 |
| BENZIDINE | 92875 | | | No Criteria | | 0.002 | 0.4368 |
| POLYCYCLIC AROMATIC HYDROCARBONS | | | | No Criteria | | 0.18 | 39.312 |
| BIS(2CHLOROETHYL)ETHER | 111444 | | | No Criteria | | 5.3 | 1157.52 |
| BIS(2CHLOROISOPROPYL)ETHER | 108601 | | | No Criteria | | 65000 | 14196000 |
| BIS(2ETHYLHEXYL)PHTHALATE | 117817 | | | No Criteria | | 22 | 4804.8 |
| BUTYL BENZYL PHTHALATE | 85687 | | | No Criteria | | 1900 | 414960 |
| 2CHLORONAPHTHALENE | 91587 | | | No Criteria | | 1600 | 349440 |
| 1,2DICHLOROBENZENE | 95501 | | | No Criteria | | 1300 | 283920 |
| 1,3DICHLOROBENZENE | 541731 | | | No Criteria | | 960 | 209664 |
| 1,4DICHLOROBENZENE | 106467 | | | No Criteria | | 190 | 41496 |
| 3,3DICHLOROBENZIDENE | 91941 | | | No Criteria | | 0.28 | 61.152 |
| DIETHYL PHTHALATE | 84662 | | | No Criteria | | 44000 | 9609600 |
| DIMETHYL PHTHALATE | 131113 | | | No Criteria | | 1100000 | 240240000 |
| DInBUTYL PHTHALATE | 84742 | | | No Criteria | | 4500 | 982800 |
| 2,4DINITROTOLUENE | 121142 | | | No Criteria | | 34 | 7425.6 |

*CALCULATION OF WATER QUALITY BASED SALTWATER DISCHARGE LIMITS*

FACILITY NAME: Jamestown WWTF RIPDES PERMIT #: RI0100366

NOTE: METALS CRITERIA ARE DISSOLVED, METALS LIMITS ARE TOTAL; AMMONIA CRITERIA AND LIMITS HAVE BEEN CONVERTED TO ug/l N.

| CHEMICAL NAME | CAS # | BACKGROUND CONCENTRATION (ug/L) | SALTWATER CRITERIA ACUTE (ug/L) | DAILY MAX LIMIT (ug/L) | SALTWATER CRITERIA CHRONIC (ug/L) | HUMAN HEALTH NON-CLASS A CRITERIA (ug/L) | MONTHLY AVE LIMIT (ug/L) |
|---|---|---|---|---|---|---|---|
| 1,2DIPHENYLHYDRAZINE | 122667 | | | No Criteria | | 2 | 436.8 |
| FLUORANTHENE | 206440 | | | No Criteria | | 140 | 30576 |
| FLUORENE | 86737 | | | No Criteria | | 5300 | 1157520 |
| HEXACHLOROBENZENE | 118741 | | | No Criteria | | 0.0029 | 0.63336 |
| HEXACHLOROBUTADIENE | 87683 | | | No Criteria | | 180 | 39312 |
| HEXACHLOROCYCLOPENTADIENE | 77474 | | | No Criteria | | 1100 | 240240 |
| HEXACHLOROETHANE | 67721 | | | No Criteria | | 33 | 7207.2 |
| ISOPHORONE | 78591 | | | No Criteria | | 9600 | 2096640 |
| NAPHTHALENE | 91203 | | | No Criteria | | | No Criteria |
| NITROBENZENE | 98953 | | | No Criteria | | 690 | 150696 |
| NNITROSODIMETHYLAMINE | 62759 | | | No Criteria | | 30 | 6552 |
| NNITROSODINPROPYLAMINE | 621647 | | | No Criteria | | 5.1 | 1113.84 |
| NNITROSODIPHENYLAMINE | 86306 | | | No Criteria | | 60 | 13104 |
| PYRENE | 129000 | | | No Criteria | | 4000 | 873600 |
| 1,2,4trichlorobenzene | 120821 | | | No Criteria | | 70 | 15288 |
| PESTICIDES/PCBs | | | | | | | |
| ALDRIN | 309002 | | 1.3 | 283.92 | | 0.0005 | 0.1092 |
| Alpha BHC | 319846 | | | No Criteria | | 0.049 | 10.7016 |
| Beta BHC | 319857 | | | No Criteria | | 0.17 | 37.128 |
| Gamma BHC (Lindane) | 58899 | | 0.16 | 34.944 | | 1.8 | 393.12 |
| CHLORDANE | 57749 | | 0.09 | 19.656 | 0.004 | 0.0081 | 0.8736 |
| 4,4DDT | 50293 | | 0.13 | 28.392 | 0.001 | 0.0022 | 0.2184 |
| 4,4DDE | 72559 | | | No Criteria | | 0.0022 | 0.48048 |
| 4,4DDD | 72548 | | | No Criteria | | 0.0031 | 0.67704 |
| DIELDRIN | 60571 | | 0.71 | 155.064 | 0.0019 | 0.00054 | 0.117936 |
| ENDOSULFAN (alpha) | 959988 | | 0.034 | 7.4256 | 0.0087 | 89 | 1.90008 |
| ENDOSULFAN (beta) | 33213659 | | 0.034 | 7.4256 | 0.0087 | 89 | 1.90008 |
| ENDOSULFAN (sulfate) | 1031078 | | | No Criteria | | 89 | 19437.6 |
| ENDRIN | 72208 | | 0.037 | 8.0808 | 0.0023 | 0.06 | 0.50232 |
| ENDRIN ALDEHYDE | 7421934 | | | No Criteria | | 0.3 | 65.52 |
| HEPTACHLOR | 76448 | | 0.053 | 11.5752 | 0.0036 | 0.00079 | 0.172536 |
| HEPTACHLOR EPOXIDE | 1024573 | | 0.053 | 11.5752 | 0.0036 | 0.00039 | 0.085176 |
| POLYCHLORINATED BIPHENYLS3 | 1336363 | | | No Criteria | 0.03 | 0.00064 | 0.139776 |
| 2,3,7,8TCDD (Dioxin) | 1746016 | | | No Criteria | | 0.000000051 | 1.11384E-05 |
| TOXAPHENE | 8001352 | | 0.21 | 45.864 | 0.0002 | 0.0028 | 0.04368 |
| TRIBUTYLTIN | | | 0.42 | 91.728 | 0.0074 | | 1.61616 |

*CALCULATION OF WATER QUALITY BASED SALTWATER DISCHARGE LIMITS*

FACILITY NAME: Jamestown WWTF RIPDES PERMIT #: RI0100366

NOTE: METALS CRITERIA ARE DISSOLVED, METALS LIMITS ARE TOTAL; AMMONIA CRITERIA AND LIMITS HAVE BEEN CONVERTED TO ug/l N.

| CHEMICAL NAME | CAS # | BACKGROUND CONCENTRATION (ug/L) | SALTWATER CRITERIA ACUTE (ug/L) | DAILY MAX LIMIT (ug/L) | SALTWATER CRITERIA CHRONIC (ug/L) | HUMAN HEALTH NON-CLASS A CRITERIA (ug/L) | MONTHLY AVE LIMIT (ug/L) |
|---|---|---|---|---|---|---|---|
| NON PRIORITY POLLUTANTS: | | | | | | | |
| OTHER SUBSTANCES | | | | | | | |
| ALUMINUM (limits are total recoverable) | 7429905 | NA | | No Criteria | | | No Criteria |
| AMMONIA as N (winter/summer) | 7664417 | | 17262 \| 6000.6 | 3770021 1310531 | 2548 \| 904.2 | | 556527 \| 197477 |
| 4BROMOPHENYL PHENYL ETHER | | | | No Criteria | | | No Criteria |
| CHLORIDE | 16887006 | | | No Criteria | | | No Criteria |
| CHLORINE | 7782505 | | 13 | 3549 | 7.5 | | 2047.5 |
| 4CHLORO2METHYLPHENOL | | | | No Criteria | | | No Criteria |
| 1CHLORONAPHTHALENE | | | | No Criteria | | | No Criteria |
| 4CHLOROPHENOL | 106489 | | | No Criteria | | | No Criteria |
| 2,4DICHLORO6METHYLPHENOL | | | | No Criteria | | | No Criteria |
| 1,1DICHLOROPROPANE | | | | No Criteria | | | No Criteria |
| 1,3DICHLOROPROPANE | 142289 | | | No Criteria | | | No Criteria |
| 2,3DINITROTOLUENE | | | | No Criteria | | | No Criteria |
| 2,4DINITRO6METHYL PHENOL | | | | No Criteria | | | No Criteria |
| IRON | 7439896 | | | No Criteria | | | No Criteria |
| pentachlorobenzene | 608935 | | | No Criteria | | | No Criteria |
| PENTACHLOROETHANE | | | | No Criteria | | | No Criteria |
| 1,2,3,5tetrachlorobenzene | | | | No Criteria | | | No Criteria |
| 1,1,1,2TETRACHLOROETHANE | 630206 | | | No Criteria | | | No Criteria |
| 2,3,4,6TETRACHLOROPHENOL | 58902 | | | No Criteria | | | No Criteria |
| 2,3,5,6TETRACHLOROPHENOL | | | | No Criteria | | | No Criteria |
| 2,4,5TRICHLOROPHENOL | 95954 | | | No Criteria | | | No Criteria |
| 2,4,6TRINITROPHENOL | 88062 | | | No Criteria | | | No Criteria |
| XYLENE | 1330207 | | | No Criteria | | | No Criteria |

*CALCULATION OF WATER QUALITY BASED SALTWATER DISCHARGE LIMITS*

FACILITY NAME: Jamestown WWTF RIPDES PERMIT #: RI0100366

| CHEMICAL NAME | CAS# | DAILY MAX LIMIT (ug/L) | MONTHLY AVE LIMIT (ug/L) |
|---|---|---|---|
| PRIORITY POLLUTANTS: | | | |
| TOXIC METALS AND CYANIDE | | | |
| ANTIMONY | 7440360 | No Criteria | 139776.00 |
| ARSENIC, TOTAL | 7440382 | 15069.60 | 305.76 |
| ASBESTOS | 1332214 | No Criteria | No Criteria |
| BERYLLIUM | 7440417 | No Criteria | No Criteria |
| CADMIUM, TOTAL | 7440439 | 9878.07 | 2165.96 |
| CHROMIUM III, TOTAL | 16065831 | No Criteria | No Criteria |
| CHROMIUM VI, TOTAL | 18540299 | 272129.99 | 12326.37 |
| COPPER, TOTAL | 7440508 | 1203.30 | 700.05 |
| CYANIDE | 57125 | 218.40 | 218.40 |
| LEAD, TOTAL | 7439921 | 54241.66 | 2078.85 |
| MERCURY, TOTAL | 7439976 | 462.49 | 32.76 |
| NICKEL, TOTAL | 7440020 | 18052.28 | 1721.91 |
| SELENIUM, TOTAL | 7782492 | 63462.93 | 15537.47 |
| SILVER, TOTAL | 7440224 | 547.38 | No Criteria |
| THALLIUM | 7440280 | No Criteria | 102.65 |
| ZINC, TOTAL | 7440666 | 20778.01 | 18700.21 |
| VOLATILE ORGANIC COMPOUNDS | | | |
| ACROLEIN | 107028 | No Criteria | 63336.00 |
| ACRYLONITRILE | 107131 | No Criteria | 546.00 |
| BENZENE | 71432 | No Criteria | 111384.00 |
| BROMOFORM | 75252 | No Criteria | 305760.00 |
| CARBON TETRACHLORIDE | 56235 | No Criteria | 3494.40 |
| CHLOROBENZENE | 108907 | No Criteria | 349440.00 |
| CHLORODIBROMOMETHANE | 124481 | No Criteria | 28392.00 |
| CHLOROFORM | 67663 | No Criteria | 1026480.00 |
| DICHLOROBROMOMETHANE | 75274 | No Criteria | 37128.00 |
| 1,2DICHLOROETHANE | 107062 | No Criteria | 80808.00 |
| 1,1DICHLOROETHYLENE | 75354 | No Criteria | 1550640.00 |
| 1,2DICHLOROPROPANE | 78875 | No Criteria | 32760.00 |
| 1,3DICHLOROPROPYLENE | 542756 | No Criteria | 4586.40 |
| ETHYLBENZENE | 100414 | No Criteria | 458640.00 |
| BROMOMETHANE (methyl bromide) | 74839 | No Criteria | 327600.00 |
| CHLOROMETHANE (methyl chloride) | 74873 | No Criteria | No Criteria |
| METHYLENE CHLORIDE | 75092 | No Criteria | 1288560.00 |
| 1,1,2,2TETRACHLOROETHANE | 79345 | No Criteria | 8736.00 |
| TETRACHLOROETHYLENE | 127184 | No Criteria | 7207.20 |
| TOLUENE | 108883 | No Criteria | 3276000.00 |
| 1,2TRANSDICHLOROETHYLENE | 156605 | No Criteria | 2184000.00 |
| 1,1,1TRICHLOROETHANE | 71556 | No Criteria | No Criteria |
| 1,1,2TRICHLOROETHANE | 79005 | No Criteria | 34944.00 |
| TRICHLOROETHYLENE | 79016 | No Criteria | 65520.00 |
| VINYL CHLORIDE | 75014 | No Criteria | 524.16 |
| ACID ORGANIC COMPOUNDS | | | |
| 2CHLOROPHENOL | 95578 | No Criteria | 32760.00 |
| 2,4DICHLOROPHENOL | 120832 | No Criteria | 63336.00 |
| 2,4DIMETHYLPHENOL | 105679 | No Criteria | 185640.00 |
| 4,6DINITRO2METHYL PHENOL | 534521 | No Criteria | 61152.00 |
| 2,4DINITROPHENOL | 51285 | No Criteria | 1157520.00 |
| 4NITROPHENOL | 88755 | No Criteria | No Criteria |
| PENTACHLOROPHENOL | 87865 | 2839.20 | 1725.36 |
| PHENOL | 108952 | No Criteria | 371280000.00 |
| 2,4,6TRICHLOROPHENOL | 88062 | No Criteria | 5241.60 |
| BASE NEUTRAL COMPUNDS | | | |
| ACENAPHTHENE | 83329 | No Criteria | 216216.00 |
| ANTHRACENE | 120127 | No Criteria | 8736000.00 |
| BENZIDINE | 92875 | No Criteria | 0.44 |
| PAHs | | No Criteria | 39.31 |
| BIS(2CHLOROETHYL)ETHER | 111444 | No Criteria | 1157.52 |
| BIS(2CHLOROISOPROPYL)ETHER | 108601 | No Criteria | 14196000.00 |
| BIS(2ETHYLHEXYL)PHTHALATE | 117817 | No Criteria | 4804.80 |
| BUTYL BENZYL PHTHALATE | 85687 | No Criteria | 414960.00 |
| 2CHLORONAPHTHALENE | 91587 | No Criteria | 349440.00 |
| 1,2DICHLOROBENZENE | 95501 | No Criteria | 283920.00 |
| 1,3DICHLOROBENZENE | 541731 | No Criteria | 209664.00 |
| 1,4DICHLOROBENZENE | 106467 | No Criteria | 41496.00 |
| 3,3DICHLOROBENZIDENE | 91941 | No Criteria | 61.15 |
| DIETHYL PHTHALATE | 84662 | No Criteria | 9609600.00 |
| DIMETHYL PHTHALATE | 131113 | No Criteria | 240240000.00 |
| DI-n-BUTYL PHTHALATE | 84742 | No Criteria | 982800.00 |
| 2,4DINITROTOLUENE | 121142 | No Criteria | 7425.60 |
| 1,2DIPHENYLHYDRAZINE | 122667 | No Criteria | 436.80 |
| FLUORANTHENE | 206440 | No Criteria | 30576.00 |

*CALCULATION OF WATER QUALITY BASED SALTWATER DISCHARGE LIMITS*

FACILITY NAME: Jamestown WWTF RIPDES PERMIT #: RI0100366

| CHEMICAL NAME | CAS# | DAILY MAX LIMIT (ug/L) | MONTHLY AVE LIMIT (ug/L) |
|---|---|---|---|
| FLUORENE | 86737 | No Criteria | 1157520.00 |
| HEXACHLOROBENZENE | 118741 | No Criteria | 0.63 |
| HEXACHLOROBUTADIENE | 87683 | No Criteria | 39312.00 |
| HEXACHLOROCYCLOPENTADIENE | 77474 | No Criteria | 240240.00 |
| HEXACHLOROETHANE | 67721 | No Criteria | 7207.20 |
| ISOPHORONE | 78591 | No Criteria | 2096640.00 |
| NAPHTHALENE | 91203 | No Criteria | No Criteria |
| NITROBENZENE | 98953 | No Criteria | 150696.00 |
| N-NITROSODIMETHYLAMINE | 62759 | No Criteria | 6552.00 |
| N-NITROSODI-N-PROPYLAMINE | 621647 | No Criteria | 1113.84 |
| N-NITROSODIPHENYLAMINE | 86306 | No Criteria | 13104.00 |
| PYRENE | 129000 | No Criteria | 873600.00 |
| 1,2,4trichlorobenzene | 120821 | No Criteria | 15288.00 |
| PESTICIDES/PCBs | | | |
| ALDRIN | 309002 | 283.92 | 0.11 |
| Alpha BHC | 319846 | No Criteria | 10.70 |
| Beta BHC | 319857 | No Criteria | 37.13 |
| Gamma BHC (Lindane) | 58899 | 34.94 | 34.94 |
| CHLORDANE | 57749 | 19.66 | 0.87 |
| 4,4DDT | 50293 | 28.39 | 0.22 |
| 4,4DDE | 72559 | No Criteria | 0.48 |
| 4,4DDD | 72548 | No Criteria | 0.68 |
| DIELDRIN | 60571 | 155.06 | 0.12 |
| ENDOSULFAN (alpha) | 959988 | 7.43 | 1.90 |
| ENDOSULFAN (beta) | 33213659 | 7.43 | 1.90 |
| ENDOSULFAN (sulfate) | 1031078 | No Criteria | 19437.60 |
| ENDRIN | 72208 | 8.08 | 0.50 |
| ENDRIN ALDEHYDE | 7421934 | No Criteria | 65.52 |
| HEPTACHLOR | 76448 | 11.58 | 0.17 |
| HEPTACHLOR EPOXIDE | 1024573 | 11.58 | 0.09 |
| POLYCHLORINATED BIPHENYLS3 | 1336363 | No Criteria | 0.14 |
| 2,3,7,8TCDD (Dioxin) | 1746016 | No Criteria | 0.00 |
| TOXAPHENE | 8001352 | 45.86 | 0.04 |
| TRIBUTYLTIN | | 91.73 | 1.62 |

| CHEMICAL NAME | CAS# | DAILY MAX LIMIT (ug/L) | MONTHLY AVE LIMIT (ug/L) |
|---|---|---|---|
| NON PRIORITY POLLUTANTS: | | | |
| OTHER SUBSTANCES | | | |
| ALUMINUM, TOTAL | 7429905 | No Criteria | No Criteria |
| AMMONIA (as N), WINTER (NOV-APR | 7664417 | 3770020.80 | 556526.88 |
| AMMONIA (as N), SUMMER (MAY-OC | 7664417 | 1310531.04 | 197477.28 |
| 4BROMOPHENYL PHENYL ETHER | | No Criteria | No Criteria |
| CHLORIDE | 16887006 | No Criteria | No Criteria |
| CHLORINE | 7782505 | 3549.00 | 2047.50 |
| 4CHLORO2METHYLPHENOL | | No Criteria | No Criteria |
| 1CHLORONAPHTHALENE | | No Criteria | No Criteria |
| 4CHLOROPHENOL | 106489 | No Criteria | No Criteria |
| 2,4DICHLORO6METHYLPHENOL | | No Criteria | No Criteria |
| 1,1DICHLOROPROPANE | | No Criteria | No Criteria |
| 1,3DICHLOROPROPANE | 142289 | No Criteria | No Criteria |
| 2,3DINITROTOLUENE | | No Criteria | No Criteria |
| 2,4DINITRO6METHYL PHENOL | | No Criteria | No Criteria |
| IRON | 7439896 | No Criteria | No Criteria |
| pentachlorobenzene | 608935 | No Criteria | No Criteria |
| PENTACHLOROETHANE | | No Criteria | No Criteria |
| 1,2,3,5tetrachlorobenzene | | No Criteria | No Criteria |
| 1,1,1,2TETRACHLOROETHANE | 630206 | No Criteria | No Criteria |
| 2,3,4,6TETRACHLOROPHENOL | 58902 | No Criteria | No Criteria |
| 2,3,5,6TETRACHLOROPHENOL | | No Criteria | No Criteria |
| 2,4,5TRICHLOROPHENOL | 95954 | No Criteria | No Criteria |
| 2,4,6TRINITROPHENOL | 88062 | No Criteria | No Criteria |
| XYLENE | 1330207 | No Criteria | No Criteria |

**ATTACHMENT A-5: DMR Effluent Data**

**JAMESTOWN WWTF**

**DMR Data Summary 7/11/16**

***** NOT ICIS CERTIFIED*****

## 001A

BOD, 5-day, 20 deg. C Location= 1

| | MO AVG lb/d | DAILY MX lb/d |
|---|---|---|
| Mean | 9.458 | 31.4562 |
| Minimum | . | . |
| Maximum | 51. | 228. |
| Data Count | 60 | 60 |

| | MO AVG mg/L | WKLY AVG mg/L | DAILY MX mg/L |
|---|---|---|---|
| Mean | 2.9983 | 4.8652 | 7.3833 |
| Minimum | . | . | . |
| Maximum | 10. | 14.7 | 24. |
| Data Count | 60 | 60 | 60 |

Chlorine, total residual Location= 1

| | MO AVG mg/L | DAILY MX mg/L |
|---|---|---|
| Mean | 1.0525 | 1.8283 |
| Minimum | .55 | .95 |
| Maximum | 1.64 | 2. |
| Data Count | 60 | 60 |

Coliform, fecal general Location= 1

| | MO GEO MPN/100mL | WKLY GEO MPN/100mL | DAILY MX MPN/100mL |
|---|---|---|---|
| Mean | 2.2915 | 12.7062 | 400105.2467 |
| Minimum | 1. | 1. | 1. |
| Maximum | 9.7 | 288. | 24000000. |
| Data Count | 60 | 60 | 60 |

Flow, in conduit or thru treatment plant Location

| | MO AVG MGD | DAILY MX MGD |
|---|---|---|
| Mean | .3698 | .7394 |
| Minimum | .1322 | .2 |
| Maximum | .9236 | 2.489 |
| Data Count | 60 | 60 |

Nitrogen, Kjeldahl, total [as N] Location= 1

| | DAILY MX mg/L |
|---|---|
| Mean | 2.7757 |
| Minimum | . |
| Maximum | 8.8 |
| Data Count | 30 |

Nitrogen, nitrate total [as N] Location= 1

| | DAILY MX mg/L |
|---|---|

| | |
|---|---|
| Mean | 4.7053 |
| Minimum | .1 |
| Maximum | 29. |
| Data Count | 30 |

Nitrogen, nitrite total [as N] Location= 1

| | DAILY MX mg/L |
|---|---|
| Mean | .0447 |
| Minimum | . |
| Maximum | .338 |
| Data Count | 30 |

Nitrogen, total [as N] Location= 1

| | DAILY MX mg/L |
|---|---|
| Mean | 7.5007 |
| Minimum | .9 |
| Maximum | 33. |
| Data Count | 30 |

Oil & Grease Location= 1

| | DAILY MX mg/L |
|---|---|
| Mean | 1.6533 |
| Minimum | . |
| Maximum | 10. |
| Data Count | 60 |

pH Location= 1

| | MINIMUM SU | MAXIMUM SU |
|---|---|---|
| Mean | 6.2633 | 6.975 |
| Minimum | 6. | 6.5 |
| Maximum | 6.8 | 7.5 |
| Data Count | 60 | 60 |

Solids, settleable Location= 1

| | WKLY AVG mL/L | DAILY MX mL/L |
|---|---|---|
| Mean | . | . |
| Minimum | . | . |
| Maximum | . | . |
| Data Count | 60 | 60 |

Solids, total suspended Location= 1

| | MO AVG lb/d | DAILY MX lb/d |
|---|---|---|
| Mean | 12.4553 | 48.6392 |
| Minimum | .27 | 1.65 |
| Maximum | 120.6 | 249. |
| Data Count | 60 | 60 |

| | MO AVG mg/L | WKLY AVG mg/L | DAILY MX mg/L |
|---|---|---|---|
| Mean | 4.0718 | 7.2883 | 11.3467 |
| Minimum | .2 | .73 | 1.8 |
| Maximum | 16.2 | 43. | 60. |
| Data Count | 60 | 60 | 60 |

BOD, 5-day, 20 deg. C Location= G

| | MO AVG lb/d | DAILY MX lb/d |
|---|---|---|
| Mean | 515.5667 | 866.1667 |
| Minimum | 293. | 483. |
| Maximum | 1109. | 1871. |
| Data Count | 60 | 60 |

| | MO AVG mg/L | WKLY AVG mg/L | DAILY MX mg/L |
|---|---|---|---|
| Mean | 209.545 | 268.1667 | 347.3 |
| Minimum | 73. | 108. | 120. |
| Maximum | 409. | 723. | 1200. |
| Data Count | 60 | 60 | 60 |

Solids, total suspended Location= G

| | MO AVG lb/d | DAILY MX lb/d |
|---|---|---|
| Mean | 496.77 | 919.1833 |
| Minimum | 241. | 426. |
| Maximum | 1281. | 4346. |
| Data Count | 60 | 60 |

| | MO AVG mg/L | WKLY AVG mg/L | DAILY MX mg/L |
|---|---|---|---|
| Mean | 206.0067 | 305.3333 | 399.9667 |
| Minimum | 64. | 88. | 110. |
| Maximum | 587. | 1840. | 2700. |
| Data Count | 60 | 60 | 60 |

BOD, 5-day, percent removal Location= K

| | MINIMUM % |
|---|---|
| Mean | 98.405 |
| Minimum | 92. |
| Maximum | 100. |
| Data Count | 60 |

Solids, suspended percent removal Location= K

| | MINIMUM % |
|---|---|
| Mean | 97.6 |
| Minimum | 90.5 |
| Maximum | 99.9 |
| Data Count | 60 |

## 001T

LC50 Statre 48Hr Acute Mysid. Bahia Location=

| | MINIMUM % |
|---|---|
| Mean | 94.7368 |
| Minimum | . |
| Maximum | 100. |
| Data Count | 19 |

**ATTACHMENT A-6: Summary of State UFP Data**

| test type | test date or collection date | parameter | conc. | units | sum | num | ave. | max. |
|---|---|---|---|---|---|---|---|---|
| PPS | 9/23/2015 | Ammonia | 140 | ug/L | | | | |
| PPS | 9/17/2014 | Ammonia | 480 | ug/L | | | | |
| PPS | 9/11/2013 | Ammonia | 6300 | ug/L | 6920 | 3 | 2307 | 6300 |
| PPS | 9/23/2015 | Barium | 12 | ug/L | | | | |
| PPS | 9/11/2013 | Barium | 16 | ug/L | | | | |
| PPS | 9/17/2014 | Barium | 17 | ug/L | | | | |
| PPS | 9/12/2012 | Barium | 18 | ug/L | 63 | 4 | 15.8 | 18 |
| PPS | 9/17/2014 | Bis(2-ethylhexyl)phthalate | 2.7 | ug/L | | | | |
| PPS | 9/11/2013 | Bis(2-ethylhexyl)phthalate | 4.1 | ug/L | 6.8 | 2 | 3.4 | 4.1 |
| UFP | 11/9/2011 | Bromodichloromethane | 6.7 | ug/L | 6.7 | 1 | 6.7 | 6.7 |
| UFP | 11/9/2011 | Chloroform | 5 | ug/L | 5 | 1 | 5 | 5 |
| PPS | 9/11/2013 | Copper, Total | 5.4 | ug/L | | | | |
| PPS | 9/17/2014 | Copper, Total | 6.5 | ug/L | | | | |
| PPS | 9/23/2015 | Copper, Total | 6.7 | ug/L | | | | |
| UFP | 11/9/2011 | Copper, Total | 13 | ug/L | 31.6 | 4 | 7.9 | 13 |
| UFP | 11/9/2011 | Dibromochrloromethane | 4.8 | ug/L | 4.8 | 1 | 4.8 | 4.8 |
| UFP | 11/9/2011 | Lead, Total | 1 | ug/L | | | | |
| PPS | 9/11/2013 | Lead, Total | 4.4 | ug/L | 5.4 | 2 | 2.7 | 4.4 |
| UFP | 11/9/2011 | Nickel, Total | 5 | ug/L | | | | |
| PPS | 9/11/2013 | Nickel, Total | 6.6 | ug/L | | | | |
| PPS | 9/23/2015 | Nickel, Total | 7.3 | ug/L | | | | |
| PPS | 9/17/2014 | Nickel, Total | 7.5 | ug/L | 26.4 | 4 | 6.6 | 7.5 |
| PPS | 9/12/2012 | Phenolics | 34 | ug/L | | | | |
| PPS | 9/17/2014 | Phenolics | 120 | ug/L | 154 | 2 | 77 | 120 |
| UFP | 11/9/2011 | Zinc, Total | 73 | ug/L | | | | |
| PPS | 9/17/2014 | Zinc, Total | 130 | ug/L | | | | |
| PPS | 9/11/2013 | Zinc, Total | 140 | ug/L | | | | |
| PPS | 9/23/2015 | Zinc, Total | 280 | ug/L | 623 | 4 | 156 | 280 |

**ATTACHMENT A-7: Limits Comparison**

# Facility Name: *Jamestown WWTF*

## RIPDES Permit #: *RI0100366*

## Outfall #: *001A*

NOTE: METALS LIMITS ARE TOTAL METALS

| Parameter | CAS # | Concentration Limits (ug/L) Based on WQ Criteria | | Antideg. Limits (ug/L) | Ave UFP&PPS Data (ug/L) 2011, 2013-15 | | Ave. DMR Data (ug/L) 4/11-3/16 | | Potential Permit Limits (ug/L) | | Reasonable Potential? |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Daily Max | Monthly Ave | Monthly Ave | Max | Ave | Daily Max | Mo. Ave | Daily Max | Monthly Ave | |
| PRIORITY POLLUTANTS | | | | | | | | | | | |
| TOXIC METALS AND CYANIDE | | | | | | | | | | | |
| ANTIMONY | 7440360 | No Criteria | 139776.00 | --- | --- | --- | --- | --- | --- | 139776 | N |
| ARSENIC (limits are total recoverable) | 7440382 | 15069.60 | 305.76 | --- | --- | --- | --- | --- | 15069.6 | 305.76 | N |
| ASBESTOS | 1332214 | No Criteria | No Criteria | --- | --- | --- | --- | --- | --- | --- | N |
| BERYLLIUM | 7440417 | No Criteria | No Criteria | --- | --- | --- | --- | --- | --- | --- | N |
| CADMIUM (limits are total recoverable) | 7440439 | 9878.07 | 2165.96 | --- | --- | --- | --- | --- | 9878.068343 | 2165.955667 | N |
| CHROMIUM III (limits are total recoverable) | 16065831 | No Criteria | No Criteria | --- | --- | --- | --- | --- | --- | --- | N |
| CHROMIUM VI (limits are total recoverable) | 18540299 | 272129.99 | 12326.37 | --- | --- | --- | --- | --- | 272129.9919 | 12326.36649 | N |
| COPPER (limits are total recoverable) | 7440508 | 1203.30 | 700.05 | --- | 13 | 7.9 | --- | --- | 1203.295494 | 700.0545306 | N |
| CYANIDE | 57125 | 218.40 | 218.40 | --- | --- | --- | --- | --- | 218.4 | 218.4 | N |
| LEAD (limits are total recoverable) | 7439921 | 54241.66 | 2078.85 | --- | 4.4 | 2.7 | --- | --- | 54241.65537 | 2078.847802 | N |
| MERCURY (limits are total recoverable) | 7439976 | 462.49 | 32.76 | --- | --- | --- | --- | --- | 462.4941176 | 32.76 | N |
| NICKEL (limits are total recoverable) | 7440020 | 18052.28 | 1721.91 | --- | 7.5 | 6.6 | --- | --- | 18052.27675 | 1721.913113 | N |
| SELENIUM (limits are total recoverable) | 7782492 | 63462.93 | 15537.47 | --- | --- | --- | --- | --- | 63462.92585 | 15537.47495 | N |
| SILVER (limits are total recoverable) | 7440224 | 547.38 | No Criteria | --- | --- | --- | --- | --- | 547.3781661 | 547.3781661 | N |
| THALLIUM | 7440280 | No Criteria | 102.65 | --- | --- | --- | --- | --- | --- | 102.648 | N |
| ZINC (limits are total recoverable) | 7440666 | 20778.01 | 18700.21 | --- | 280 | 156 | --- | --- | 20778.01268 | 18700.21142 | N |
| VOLATILE ORGANIC COMPOUNDS | | | | | | | | | | | |
| ACROLEIN | 107028 | No Criteria | 63336.00 | --- | --- | --- | --- | --- | --- | 63336 | N |
| ACRYLONITRILE | 107131 | No Criteria | 546.00 | --- | --- | --- | --- | --- | --- | 546 | N |
| BENZENE | 71432 | No Criteria | 111384.00 | --- | --- | --- | --- | --- | --- | 111384 | N |
| BROMOFORM | 75252 | No Criteria | 305760.00 | --- | --- | --- | --- | --- | --- | 305760 | N |
| CARBON TETRACHLORIDE | 56235 | No Criteria | 3494.40 | --- | --- | --- | --- | --- | --- | 3494.4 | N |
| CHLOROBENZENE | 108907 | No Criteria | 349440.00 | --- | --- | --- | --- | --- | --- | 349440 | N |
| CHLORODIBROMOMETHANE | 124481 | No Criteria | 28392.00 | --- | 4.8 | 4.8 | --- | --- | --- | 28392 | N |
| CHLOROFORM | 67663 | No Criteria | 1026480.00 | --- | 5 | 5 | --- | --- | --- | 1026480 | N |
| DICHLOROBROMOMETHANE | 75274 | No Criteria | 37128.00 | --- | 6.7 | 6.7 | --- | --- | --- | 37128 | N |
| 1,2DICHLOROETHANE | 107062 | No Criteria | 80808.00 | --- | --- | --- | --- | --- | --- | 80808 | N |
| 1,1DICHLOROETHYLENE | 75354 | No Criteria | 1550640.00 | --- | --- | --- | --- | --- | --- | 1550640 | N |
| 1,2DICHLOROPROPANE | 78875 | No Criteria | 32760.00 | --- | --- | --- | --- | --- | --- | 32760 | N |
| 1,3DICHLOROPROPYLENE | 542756 | No Criteria | 4586.40 | --- | --- | --- | --- | --- | --- | 4586.4 | N |
| ETHYLBENZENE | 100414 | No Criteria | 458640.00 | --- | --- | --- | --- | --- | --- | 458640 | N |
| BROMOMETHANE (methyl bromide) | 74839 | No Criteria | 327600.00 | --- | --- | --- | --- | --- | --- | 327600 | N |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| CHLOROMETHANE (methyl chloride) | 74873 | No Criteria | No Criteria | --- | --- | --- | --- | --- | --- | --- | N |
| METHYLENE CHLORIDE | 75092 | No Criteria | 1288560.00 | --- | --- | --- | --- | --- | --- | 1288560 | N |
| 1,1,2,2TETRACHLOROETHANE | 79345 | No Criteria | 8736.00 | --- | --- | --- | --- | --- | --- | 8736 | N |
| TETRACHLOROETHYLENE | 127184 | No Criteria | 7207.20 | --- | --- | --- | --- | --- | --- | 7207.2 | N |
| TOLUENE | 108883 | No Criteria | 3276000.00 | --- | --- | --- | --- | --- | --- | 3276000 | N |
| 1,2TRANSDICHLOROETHYLENE | 156605 | No Criteria | 2184000.00 | --- | --- | --- | --- | --- | --- | 2184000 | N |
| 1,1,1TRICHLOROETHANE | 71556 | No Criteria | No Criteria | --- | --- | --- | --- | --- | --- | --- | N |
| 1,1,2TRICHLOROETHANE | 79005 | No Criteria | 34944.00 | --- | --- | --- | --- | --- | --- | 34944 | N |
| TRICHLOROETHYLENE | 79016 | No Criteria | 65520.00 | --- | --- | --- | --- | --- | --- | 65520 | N |
| VINYL CHLORIDE | 75014 | No Criteria | 524.16 | --- | --- | --- | --- | --- | --- | 524.16 | N |
| ACID ORGANIC COMPOUNDS | | | | | | | | | | | |
| 2CHLOROPHENOL | 95578 | No Criteria | 32760.00 | --- | --- | --- | --- | --- | --- | 32760 | N |
| 2,4DICHLOROPHENOL | 120832 | No Criteria | 63336.00 | --- | --- | --- | --- | --- | --- | 63336 | N |
| 2,4DIMETHYLPHENOL | 105679 | No Criteria | 185640.00 | --- | --- | --- | --- | --- | --- | 185640 | N |
| 4,6DINITRO2METHYL PHENOL | 534521 | No Criteria | 61152.00 | --- | --- | --- | --- | --- | --- | 61152 | N |
| 2,4DINITROPHENOL | 51285 | No Criteria | 1157520.00 | --- | --- | --- | --- | --- | --- | 1157520 | N |
| 4NITROPHENOL | 88755 | No Criteria | No Criteria | --- | --- | --- | --- | --- | --- | --- | N |
| PENTACHLOROPHENOL | 87865 | 2839.20 | 1725.36 | --- | --- | --- | --- | --- | 2839.2 | 1725.36 | N |
| PHENOL | 108952 | No Criteria | 371280000.00 | --- | --- | --- | --- | --- | --- | 371280000 | N |
| 2,4,6TRICHLOROPHENOL | 88062 | No Criteria | 5241.60 | --- | --- | --- | --- | --- | --- | 5241.6 | N |
| BASE NEUTRAL COMPOUNDS | | | | | | | | | | | |
| ACENAPHTHENE | 83329 | No Criteria | 216216.00 | --- | --- | --- | --- | --- | --- | 216216 | N |
| ANTHRACENE | 120127 | No Criteria | 8736000.00 | --- | --- | --- | --- | --- | --- | 8736000 | N |
| BENZIDINE | 92875 | No Criteria | 0.44 | --- | --- | --- | --- | --- | --- | 0.4368 | N |
| POLYCYCLIC AROMATIC HYDROCARBONS | | No Criteria | 39.31 | --- | --- | --- | --- | --- | --- | 39.312 | N |
| BIS(2CHLOROETHYL)ETHER | 111444 | No Criteria | 1157.52 | --- | --- | --- | --- | --- | --- | 1157.52 | N |
| BIS(2CHLOROISOPROPYL)ETHER | 108601 | No Criteria | 14196000.00 | --- | --- | --- | --- | --- | --- | 14196000 | N |
| BIS(2ETHYLHEXYL)PHTHALATE | 117817 | No Criteria | 4804.80 | --- | 4.1 | 3.4 | --- | --- | --- | 4804.8 | N |
| BUTYL BENZYL PHTHALATE | 85687 | No Criteria | 414960.00 | --- | --- | --- | --- | --- | --- | 414960 | N |
| 2CHLORONAPHTHALENE | 91587 | No Criteria | 349440.00 | --- | --- | --- | --- | --- | --- | 349440 | N |
| 1,2DICHLOROBENZENE | 95501 | No Criteria | 283920.00 | --- | --- | --- | --- | --- | --- | 283920 | N |
| 1,3DICHLOROBENZENE | 541731 | No Criteria | 209664.00 | --- | --- | --- | --- | --- | --- | 209664 | N |
| 1,4DICHLOROBENZENE | 106467 | No Criteria | 41496.00 | --- | --- | --- | --- | --- | --- | 41496 | N |
| 3,3DICHLOROBENZIDENE | 91941 | No Criteria | 61.15 | --- | --- | --- | --- | --- | --- | 61.152 | N |
| DIETHYL PHTHALATE | 84662 | No Criteria | 9609600.00 | --- | --- | --- | --- | --- | --- | 9609600 | N |
| DIMETHYL PHTHALATE | 131113 | No Criteria | 240240000.00 | --- | --- | --- | --- | --- | --- | 240240000 | N |
| DInBUTYL PHTHALATE | 84742 | No Criteria | 982800.00 | --- | --- | --- | --- | --- | --- | 982800 | N |
| 2,4DINITROTOLUENE | 121142 | No Criteria | 7425.60 | --- | --- | --- | --- | --- | --- | 7425.6 | N |
| 1,2DIPHENYLHYDRAZINE | 122667 | No Criteria | 436.80 | --- | --- | --- | --- | --- | --- | 436.8 | N |
| FLUORANTHENE | 206440 | No Criteria | 30576.00 | --- | --- | --- | --- | --- | --- | 30576 | N |
| FLUORENE | 86737 | No Criteria | 1157520.00 | --- | --- | --- | --- | --- | --- | 1157520 | N |
| HEXACHLOROBENZENE | 118741 | No Criteria | 0.63 | --- | --- | --- | --- | --- | --- | 0.63336 | N |
| HEXACHLOROBUTADIENE | 87683 | No Criteria | 39312.00 | --- | --- | --- | --- | --- | --- | 39312 | N |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| HEXACHLOROCYCLOPENTADIENE | 77474 | No Criteria | 240240.00 | --- | --- | --- | --- | --- | --- | 240240 | N |
| HEXACHLOROETHANE | 67721 | No Criteria | 7207.20 | --- | --- | --- | --- | --- | --- | 7207.2 | N |
| ISOPHORONE | 78591 | No Criteria | 2096640.00 | --- | --- | --- | --- | --- | --- | 2096640 | N |
| NAPHTHALENE | 91203 | No Criteria | No Criteria | --- | --- | --- | --- | --- | --- | --- | |
| NITROBENZENE | 98953 | No Criteria | 150696.00 | --- | --- | --- | --- | --- | --- | 150696 | N |
| NNITROSODIMETHYLAMINE | 62759 | No Criteria | 6552.00 | --- | --- | --- | --- | --- | --- | 6552 | N |
| NNITROSODINPROPYLAMINE | 621647 | No Criteria | 1113.84 | --- | --- | --- | --- | --- | --- | 1113.84 | N |
| NNITROSODIPHENYLAMINE | 86306 | No Criteria | 13104.00 | --- | --- | --- | --- | --- | --- | 13104 | N |
| PYRENE | 129000 | No Criteria | 873600.00 | --- | --- | --- | --- | --- | --- | 873600 | N |
| 1,2,4trichlorobenzene | 120821 | No Criteria | 15288.00 | --- | --- | --- | --- | --- | --- | 15288 | N |
| PESTICIDES/PCBs | | | | | | | | | | | |
| ALDRIN | 309002 | 283.92 | 0.11 | --- | --- | --- | --- | --- | 283.92 | 0.1092 | N |
| Alpha BHC | 319846 | No Criteria | 10.70 | --- | --- | --- | --- | --- | --- | 10.7016 | N |
| Beta BHC | 319857 | No Criteria | 37.13 | --- | --- | --- | --- | --- | --- | 37.128 | N |
| Gamma BHC (Lindane) | 58899 | 34.94 | 34.94 | --- | --- | --- | --- | --- | 34.944 | 34.944 | N |
| CHLORDANE | 57749 | 19.66 | 0.87 | --- | --- | --- | --- | --- | 19.656 | 0.8736 | N |
| 4,4DDT | 50293 | 28.39 | 0.22 | --- | --- | --- | --- | --- | 28.392 | 0.2184 | N |
| 4,4DDE | 72559 | No Criteria | 0.48 | --- | --- | --- | --- | --- | --- | 0.48048 | N |
| 4,4DDD | 72548 | No Criteria | 0.68 | --- | --- | --- | --- | --- | --- | 0.67704 | N |
| DIELDRIN | 60571 | 155.06 | 0.12 | --- | --- | --- | --- | --- | 155.064 | 0.117936 | N |
| ENDOSULFAN (alpha) | 959988 | 7.43 | 1.90 | --- | --- | --- | --- | --- | 7.4256 | 1.90008 | N |
| ENDOSULFAN (beta) | 33213659 | 7.43 | 1.90 | --- | --- | --- | --- | --- | 7.4256 | 1.90008 | N |
| ENDOSULFAN (sulfate) | 1031078 | No Criteria | 19437.60 | --- | --- | --- | --- | --- | --- | 19437.6 | N |
| ENDRIN | 72208 | 8.08 | 0.50 | --- | --- | --- | --- | --- | 8.0808 | 0.50232 | N |
| ENDRIN ALDEHYDE | 7421934 | No Criteria | 65.52 | --- | --- | --- | --- | --- | --- | 65.52 | N |
| HEPTACHLOR | 76448 | 11.58 | 0.17 | --- | --- | --- | --- | --- | 11.5752 | 0.172536 | N |
| HEPTACHLOR EPOXIDE | 1024573 | 11.58 | 0.09 | --- | --- | --- | --- | --- | 11.5752 | 0.085176 | N |
| POLYCHLORINATED BIPHENYLS3 | 1336363 | No Criteria | 0.14 | --- | --- | --- | --- | --- | --- | 0.139776 | N |
| 2,3,7,8TCDD (Dioxin) | 1746016 | No Criteria | 0.00 | --- | --- | --- | --- | --- | --- | 1.11384E-05 | N |
| TOXAPHENE | 8001352 | 45.86 | 0.04 | --- | --- | --- | --- | --- | 45.864 | 0.04368 | N |
| TRIBUTYLTIN | | 91.73 | 1.62 | | | | | | 91.728 | 1.61616 | N |
| NON PRIORITY POLLUTANTS: | | | | | | | | | | | |
| OTHER SUBSTANCES | | | | | | | | | | | |
| ALUMINUM (limits are total recoverable) | 7429905 | No Criteria | No Criteria | --- | --- | --- | --- | --- | --- | --- | N |
| AMMONIA (winter) | 7664417 | 3770020.80 | 556526.88 | --- | --- | --- | --- | --- | 3770020.8 | 556526.88 | N |
| AMMONIA (summer) | | 1310531.04 | 197477.28 | --- | 6300 | 2307 | --- | --- | 1310531.04 | 197477.28 | N |
| 4BROMOPHENYL PHENYL ETHER | 16887006 | No Criteria | No Criteria | --- | --- | --- | --- | --- | --- | --- | N |
| CHLORIDE | 7782505 | No Criteria | No Criteria | | | | | | --- | --- | N |
| CHLORINE | | 3549.00 | 2047.50 | --- | --- | --- | 1828.3 | 1052.5 | 3549 | 2047.5 | Y |
| 4CHLORO2METHYLPHENOL | | No Criteria | No Criteria | --- | --- | --- | --- | --- | --- | --- | N |
| 1CHLORONAPHTHALENE | 106489 | No Criteria | No Criteria | --- | --- | --- | --- | --- | --- | --- | N |
| 4CHLOROPHENOL | | No Criteria | No Criteria | --- | --- | --- | --- | --- | --- | --- | N |
| 2,4DICHLORO6METHYLPHENOL | | No Criteria | No Criteria | --- | --- | --- | --- | --- | --- | --- | N |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,1DICHLOROPROPANE | 142289 | No Criteria | No Criteria | --- | --- | --- | --- | --- | --- | --- | N |
| 1,3DICHLOROPROPANE | | No Criteria | No Criteria | --- | --- | --- | --- | --- | --- | --- | N |
| 2,3DINITROTOLUENE | | No Criteria | No Criteria | --- | --- | --- | --- | --- | --- | --- | N |
| 2,4DINITRO6METHYL PHENOL | 7439896 | No Criteria | No Criteria | --- | --- | --- | --- | --- | --- | --- | N |
| IRON | 608935 | No Criteria | No Criteria | | | | | | --- | --- | N |
| pentachlorobenzene | | No Criteria | No Criteria | --- | --- | --- | --- | --- | --- | --- | N |
| PENTACHLOROETHANE | | No Criteria | No Criteria | --- | --- | --- | --- | --- | --- | --- | N |
| 1,2,3,5tetrachlorobenzene | 630206 | No Criteria | No Criteria | --- | --- | --- | --- | --- | --- | --- | N |
| 1,1,1,2TETRACHLOROETHANE | 58902 | No Criteria | No Criteria | --- | --- | --- | --- | --- | --- | --- | N |
| 2,3,4,6TETRACHLOROPHENOL | | No Criteria | No Criteria | --- | --- | --- | --- | --- | --- | --- | N |
| 2,3,5,6TETRACHLOROPHENOL | 95954 | No Criteria | No Criteria | --- | --- | --- | --- | --- | --- | --- | N |
| 2,4,5TRICHLOROPHENOL | 88062 | No Criteria | No Criteria | --- | --- | --- | --- | --- | --- | --- | N |
| 2,4,6TRINITROPHENOL | 1330207 | No Criteria | No Criteria | --- | --- | --- | --- | --- | --- | --- | N |
| XYLENE | | No Criteria | No Criteria | | | | | | --- | --- | N |

PART II
TABLE OF CONTENTS

GENERAL REQUIREMENTS

(a) Duty to Comply

The permittee must comply with all conditions of this permit. Any permit noncompliance constitutes a violation of Chapter 46-12 of the Rhode Island General Laws and the Clean Water Act (CWA) and is grounds for enforcement action; for permit termination, revocation and reissuance, or modification; or for denial of a permit renewal application.

(1) The permittee shall comply with effluent standards or prohibitions established under Section 307(a) of the CWA for toxic pollutants within the time provided in the regulations that establish these standards or prohibitions, even if the permit has not yet been modified to incorporate the requirement.

(2) The CWA provides that any person who violates a permit condition implementing Sections 301, 302, 306, 307, 308, 318, or 405 of the CWA is subject to a civil penalty not to exceed $10,000 per day of such violation. Any person who willfully or negligently violates permit conditions implementing Sections 301, 302, 306, 307 or 308 of the Act is subject to a fine of not less than $2,500 nor more than $25,000 per day of violation, or by imprisonment of not more than 1 year, or both.

(3) Chapter 46-12 of the Rhode Island General Laws provides that any person who violates a permit condition is subject to a civil penalty of not more than $5,000 per day of such violation. Any person who willfully or negligently violates a permit condition is subject to a criminal penalty of not more than $10,000 per day of such violation and imprisonment for not more than 30 days, or both. Any person who knowingly makes any false statement in connection with the permit is subject to a criminal penalty of not more than $5,000 for each instance of violation or by imprisonment for not more than 30 days, or both.

(b) 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.)

(c) 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.

(d) Duty to Mitigate

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

(e) 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, and, where applicable, compliance with DEM "Rules and Regulations Pertaining to the Operation and Maintenance of Wastewater Treatment Facilities" and "Rules and Regulations Pertaining to the Disposal and Utilization of Wastewater Treatment Facility Sludge." This provision requires the operation of back-up or auxiliary facilities or similar systems only when the operation is necessary to achieve compliance with the conditions of the permit.

(f) Permit Actions

This permit may be modified, revoked and reissued, or terminated for cause, including but not limited to: (1) Violation of any terms or conditions of this permit; (2) Obtaining this permit by misrepresentation or failure to disclose all relevant facts; or (3) A change in any conditions that requires either a temporary or permanent reduction or elimination of the authorized discharge. 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 condition.

(g) Property Rights

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

(h) 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.

(i) Inspection and Entry

The permittee shall allow the Director, or an authorized representative, upon the presentation of credentials and other documents as may be required by law, to:

(1) 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;

(2) Have access to and copy, at reasonable times any records that must be kept under the conditions of this permit;

(3) Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices or operations regulated or required under this permit; and

(4) Sample or monitor any substances or parameters at any location, at reasonable times, for the purposes of assuring permit compliance or as otherwise authorized by the CWA or Rhode Island law.

(j) Monitoring and Records

(1) Samples and measurements taken for the purpose of monitoring shall be representative of the volume and nature of the discharge over the sampling and reporting period.

(2) The permittee shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings from 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 5 years from the date of the sample, measurement, report or application. This period may be extended by request of the Director at any time.

(3) Records of monitoring information shall include:

(i) The date, exact place, and time of sampling or measurements;

(ii) The individual(s) who performed the sampling or measurements;

(iii) The date(s) analyses were performed;

(iv) The individual(s) who performed the analyses;

(v) The analytical techniques or methods used; and

(vi) The results of such analyses.

(4) Monitoring must be conducted according to test procedures approved under 40 CFR Part 136 and applicable Rhode Island regulations, unless other test procedures have been specified in this permit.

(5) 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 per violation or by imprisonment for not more than 6 months per violation or by both. Chapter 46-12 of the Rhode Island General Laws also provides that such acts are subject to a fine of not more than $5,000 per violation, or by imprisonment for not more than 30 days per violation, or by both.

(6) Monitoring results must be reported on a Discharge Monitoring Report (DMR).

(7) If the permittee monitors any pollutant more frequently than required by the permit, using test procedures approved under 40 CFR Part 136, applicable State regulations, or as specified in the permit, the results of this monitoring shall be included in the calculation and reporting of the data submitted in the DMR.

(k) Signatory Requirement

All applications, reports, or information submitted to the Director shall be signed and certified in accordance with Rule 12 of the Rhode Island Pollutant Discharge Elimination System (RIPDES) Regulations. Rhode Island General Laws, Chapter 46-12 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 noncompliance shall, upon conviction, be punished by a fine of not more than $5,000 per violation, or by imprisonment for not more than 30 days per violation, or by both.

(l) Reporting Requirements

(1) 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.

(2) 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 the permit requirements.

(3) Transfers. This permit is not transferable to any person except after written 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 State and Federal law.

(4) Monitoring reports. Monitoring results shall be reported at the intervals specified elsewhere in this permit.

(5) Twenty-four hour reporting. The permittee shall immediately report any noncompliance which may endanger health or the environment by calling DEM at (401) 222-4700 or (401) 222-3070 at night.

A written submission shall also be provided within five (5) days of the time the permittee becomes aware of the circumstances. The written submission 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.

The following information must be reported immediately:

(i) Any unanticipated bypass which causes a violation of any effluent limitation in the permit; or

(ii) Any upset which causes a violation of any effluent limitation in the permit; or

(iii) Any violation of a maximum daily discharge limitation for any of the pollutants specifically listed by the Director in the permit.

The Director may waive the written report on a case-by-case basis if the oral report has been received within 24 hours.

(6) Other noncompliance. The permittee shall report all instances of noncompliance not reported under paragraphs (1), (2), and (5), of this section, at the time monitoring reports are submitted. The reports shall contain the information required in paragraph (l)(5) of the section.

(7) Other information. Where the permittee becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application or in any report to the Director, they shall promptly submit such facts or information.

(m) Bypass

"Bypass" means the intentional diversion of waste streams from any portion of a treatment facility.

(1) 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 (2) and (3) of this section.

(2) Notice.

(i) Anticipated bypass. If the permittee knows in advance of the need for a bypass, it shall submit prior notice, if possible at least ten (10) days before the date of the bypass.

(ii) Unanticipated bypass. The permittee shall submit notice of an unanticipated bypass as required in Rule 14.18 of the RIPDES Regulations.

(3) Prohibition of bypass.

(i) 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, where "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) 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 backup 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 preventive maintenance; and

(C) The permittee submitted notices as required under paragraph (2) of this section.

(ii) 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 (3)(i) of this section.

(n) Upset

"Upset" means an exceptional incident in which there is 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 improper operation.

(1) 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 (2) 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.

(2) 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:

(a) An upset occurred and that the permittee can identify the cause(s) of the upset;

(b) The permitted facility was at the time being properly operated;

(c) The permittee submitted notice of the upset as required in Rule 14.18 of the RIPDES Regulations; and

(d) The permittee complied with any remedial measures required under Rule 14.05 of the RIPDES Regulations.

(3) Burden of proof. In any enforcement proceeding the permittee seeking to establish the occurrence of an upset has the burden of proof.

(o) Change in Discharge

All discharges authorized herein shall be consistent with the terms and conditions of this permit. Discharges which cause a violation of water quality standards are prohibited. The discharge of any pollutant identified in this permit more frequently than or at a level in excess of that authorized shall constitute a violation of the permit. Any anticipated facility expansions, production increases, or process modifications which will result in new, different or increased discharges of pollutants must be reported by submission of a new NPDES application at least 180 days prior to commencement of such discharges, or if such changes will not violate the effluent limitations specified in this permit, by notice, in writing, to the Director of such changes. Following such notice, the permit may be modified to specify and limit any pollutants not previously limited.

Until such modification is effective, any new or increased discharge in excess of permit limits or not specifically authorized by the permit constitutes a violation.

(p) Removed Substances

Solids, sludges, filter backwash, or other pollutants removed in the course of treatment or control of wastewaters shall be disposed of in a manner consistent with applicable Federal and State laws and regulations including, but not limited to the CWA and the Federal Resource Conservation and Recovery Act, 42 U.S.C. §§6901 et seq., Rhode Island General Laws, Chapters 46-12, 23-19.1 and regulations promulgated thereunder.

(q) Power Failures

In order to maintain compliance with the effluent limitation and prohibitions of this permit, the permittee shall either:

> In accordance with the Schedule of Compliance contained in Part I, provide an alternative power source sufficient to operate the wastewater control facilities;

or if such alternative power source is not in existence, and no date for its implementation appears in Part I,

> Halt reduce or otherwise control production and/or all discharges upon the reduction, loss, or failure of the primary source of power to the wastewater control facilities.

(r) Availability of Reports

Except for data determined to be confidential under paragraph (w) below, all reports prepared in accordance with the terms of this permit shall be available for public inspection at the DEM, 291 Promenade Street, Providence, Rhode Island. As required by the CWA, effluent data shall not be considered confidential. Knowingly making any false statement on any such report may result in the imposition of criminal penalties as provided for in Section 309 of the CWA and under Section 46-12-14 of the Rhode Island General Laws.

(s) State Laws

Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the permittee from any responsibilities, liabilities, or penalties established pursuant to any applicable State law.

(t) Other Laws

The issuance of a permit does not authorize any injury to persons or property or invasion of other private rights, nor does it relieve the permittee of its obligation to comply with any other applicable Federal, State, and local laws and regulations.

(u) Severability

The provisions of this permit are severable, and if any provision of this permit, or the application of any provision of this permit to any circumstance, is held invalid, the application of such provision to other circumstances, and the remainder of this permit, shall not be affected thereby.

(v) Reopener Clause

The Director reserves the right to make appropriate revisions to this permit in order to incorporate any appropriate effluent limitations, schedules of compliance, or other provisions which may be authorized under the CWA or State law. In accordance with Rules 15 and 23 of the RIPDES Regulations, if any effluent standard or prohibition, or water quality standard is promulgated under the CWA or under State law which is more stringent than any limitation on the pollutant in the permit, or controls a pollutant not limited in the permit, then the Director may promptly reopen the permit and modify or revoke and reissue the permit to conform to the applicable standard.

(w) Confidentiality of Information

(1) Any information submitted to DEM 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, DEM may make the information available to the pubic without further notice.

(2) Claims of confidentiality for the following information will be denied:

(i) The name and address of any permit applicant or permittee;

(ii) Permit applications, permits and any attachments thereto; and

(iii) NPDES effluent data.

(x) Best Management Practices

The permittee shall adopt Best Management Practices (BMP) to control or abate the discharge of toxic pollutants and hazardous substances associated with or ancillary to the industrial manufacturing or treatment process and the Director may request the submission of a BMP plan where the Director determines that a permittee's practices may contribute significant amounts of such pollutants to waters of the State.

(y) Right of Appeal

Within thirty (30) days of receipt of notice of a final permit decision, the permittee or any interested person may submit a request to the Director for an adjudicatory hearing to reconsider or contest that decision. The request for a hearing must conform to the requirements of Rule 49 of the RIPDES Regulations.

**DEFINITIONS**

1. For purposes of this permit, those definitions contained in the RIPDES Regulations and the Rhode Island Pretreatment Regulations shall apply.

2. The following abbreviations, when used, are defined below.

| | |
|---|---|
| cu. M/day or $M^3$/day | cubic meters per day |
| mg/l | milligrams per liter |
| ug/l | micrograms per liter |
| lbs/day | pounds per day |
| kg/day | kilograms per day |
| Temp. $^oC$ | temperature in degrees Centigrade |
| Temp. $^oF$ | temperature in degrees Fahrenheit |
| Turb. | turbidity measured by the Nephelometric Method (NTU) |
| TNFR or TSS | total nonfilterable residue or total suspended solids |
| DO | dissolved oxygen |
| BOD | five-day biochemical oxygen demand unless otherwise specified |
| TKN | total Kjeldahl nitrogen as nitrogen |
| Total N | total nitrogen |
| $NH_3$-N | ammonia nitrogen as nitrogen |
| Total P | total phosphorus |
| COD | chemical oxygen demand |
| TOC | total organic carbon |
| Surfactant | surface-active agent |
| pH | a measure of the hydrogen ion concentration |
| PCB | polychlorinated biphenyl |
| CFS | cubic feet per second |
| MGD | million gallons per day |
| Oil & Grease | Freon extractable material |
| Total Coliform | total coliform bacteria |
| Fecal Coliform | total fecal coliform bacteria |
| ml/l | milliliter(s) per liter |
| $NO_3$-N | nitrate nitrogen as nitrogen |
| $NO_2$-N | nitrite nitrogen as nitrogen |
| $NO_3$-$NO_2$ | combined nitrate and nitrite nitrogen as nitrogen |
| $C1_2$ | total residual chlorine |