

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(s) 001A. Such discharges shall be limited and monitored by the permittee as specified below:

| <u>Effluent Characteristic</u> | <u>Discharge Limitations</u> | | | <u>Concentration - specify units</u> | | <u>Monitoring Requirement</u> | |
|--------------------------------|--|------------------------|----------------------|--------------------------------------|----------------------|-------------------------------|--------------------|
| | <u>Quantity - lbs./day</u> <u>Average Monthly</u> | <u>Average Monthly</u> | <u>Maximum Daily</u> | <u>Average Weekly</u> | <u>Maximum Daily</u> | <u>Measurement Frequency</u> | <u>Sample Type</u> |
| Flow | | --- gpm | | | 10 gpm | Continuous | Totalizer |
| 1,1-Dichloroethane | | 5.0 ug/l | | | 5.0 ug/l | 1/2-Weeks | Grab |
| 1,1-Dichloroethene | | 0.57 ug/l | | | 5.0 ug/l | 1/2-Weeks | Grab |
| Cis-1,2-Dichloroethene | | 5.0 ug/l | | | 5.0 ug/l | 1/2-Weeks | Grab |
| Trans-1,2-Dichloroethene | | 5.0 ug/l | | | 5.0 ug/l | 1/2-Weeks | Grab |
| Tetrachloroethene | | 4.24 ug/l | | | 5.0 ug/l | 1/2-Weeks | Grab |
| 1,1,1-Trichloroethane | | 5.0 ug/l | | | 5.0 ug/l | 1/2-Weeks | Grab |
| 1,1,2-Trichloroethane | | 5.0 ug/l | | | 5.0 ug/l | 1/2-Weeks | Grab |
| Trichloroethene | | 5.0 ug/l | | | 5.0 ug/l | 1/2-Weeks | Grab |
| Vinyl Chloride | | 1.92 ug/l | | | 5.0 ug/l | 1/2-Weeks | Grab |
| Chloroethane | | 5.0 ug/l | | | 5.0 ug/l | 1/2-Weeks | Grab |

--- 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 at the following location: Outfall 001A (Effluent from the Groundwater Extraction and Treatment System)

Midpoint and effluent samples shall be taken once every two (2) calendar weeks. Influent samples shall be taken once per month. Reporting shall only be required for effluent samples as required in Part I.C of the permit.

2. Groundwater Extraction and Treatment System (GWETS):
 - a. The permittee shall treat all contaminated groundwater from the submersible extraction pump located in the extraction trench with a treatment system that consists of particulate bag filters and (3) 1,000 pound granular activated carbon vessels in series (as described in Part IV. of the attached Statement of Basis) and is designed to meet the effluent limitations listed in Part I.A.1. The system shall not be modified without approval from the Office of Water Resources and Office of Waste Management.
 - b. Monitoring for the presence of volatile organic compounds (VOCs) at the effluent sample location, after the 3rd GAC unit, shall be performed once for each two (2) week period of discharge. Monitoring for the presence of VOCs at the midfluent sample locations, between the 1st and 2nd GAC units, shall be performed once for each two- (2) week period of discharge. These locations shall be sampled for the parameters listed in Part I.A.1 of the permit.
 - c. Monitoring for the presence of VOCs at the influent sample location, prior to the 1st GAC unit, shall be performed once per month. The influent sample location shall be sampled for the parameters listed in Part I.A.1 of the permit.
 - d. When the presence of VOCs are detected at the midpoint sample location (between the 2nd and final GAC units), changeout of the primary and secondary carbon vessels shall be performed within five (5) days of detecting breakthrough.
 - e. A flow log that includes the rate and duration of flow including the time(s) of day when the flow commences and ceases and a summary of total flow, operations and maintenance activities, and a description of all carbon replacement activities performed during the monitoring period must be submitted with the Discharge Monitoring Reports required under Part I.C.2 of the permit.
 - f. The treatment system shall be inspected at a minimum of twice per month to assure the system is operating efficiently. As a result of these or any other inspections, appropriate actions shall be taken, as soon as practicable, to resolve any problems discovered during the inspection. Records documenting the inspections and any actions taken shall be retained and made available to the Office of Water Resources upon request.
 - g. Discharge shall cease and the Office shall be notified immediately if any of the contaminants listed, are found in the effluent above the limits listed in Part I.A.1 of the permit. At a minimum, the notification shall include a summary of total flow, operation and maintenance activities, and any laboratory results from the last time the carbon filters were replaced to the present. Also, the notification shall include a description of the steps that have or will be taken to prevent future violations, as well as justification as to the appropriateness of such steps. Written documentation of the immediate notification required above shall be submitted to the Office within five (5) days. The discharge may recommence once steps have been taken to ensure the limits will not be exceeded again, and following approval by DEM. At a minimum, these steps shall include replacement of the first activated carbon filter.
3.
 - a. The pH of the effluent shall not be less than 6.5 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.

4. All existing manufacturing, commercial, mining, and silvicultural dischargers must notify the Director as soon as they know or have reason to believe:
 - a. That any activity has occurred or will occur which would result in the discharge, on a routine or frequent basis, of any toxic pollutant which is not limited in the permit, if that discharge will exceed the highest of the following "notification levels":
 - (1) One hundred micrograms per liter (100 ug/l);
 - (2) Two hundred micrograms per liter (200 ug/l) for acrolein and acrylonitrile; five hundred micrograms per liter (500 ug/l) for 2,4-dinitrophenol and for 2-methyl-4, 6-dinitro-phenol; and one milligram per liter (1 mg/l) for antimony;
 - (3) Five (5) times the maximum concentration value reported for that pollutant in the permit application in accordance with 40 C.F.R. s122.21(g)(7); or
 - (4) Any other notification level established by the Director in accordance with 40 C.F.R. s122.44(f) and Rhode Island Regulations.
 - b. That any activity has occurred or will occur which would result in the discharge, on a non-routine or infrequent basis, of any toxic pollutant which is not limited in the permit, if that discharge will exceed the highest of the following "notification levels":
 - (1) Five hundred micrograms per liter (500 ug/l);
 - (2) One milligram per liter (1 mg/l) for antimony;
 - (3) Ten (10) times the maximum concentration value reported for that pollutant in the permit application in accordance with 40 C.F.R. s122.21(g)(7); or
 - (4) Any other notification level established by the Director in accordance with 40 C.F.R. s122.44(f) and Rhode Island Regulations.
 - c. That they have begun or expect to begin to use or manufacture as an intermediate or final product or by-product any toxic pollutant which was not reported in the permit application.
5. This permit serves as the State's water quality certification for the discharges described herein.

B. DETECTION LIMITS

The permittee shall assure that all 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 submitted along with the monitoring reports.

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 submitted along with the monitoring report. 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.

Therefore, all sample results shall be reported as: an actual value, "could not be analyzed", less than the reagent water MDL, or less than an effluent or sludge specific MDL. The effluent or sludge specific MDL must be calculated using the methods outlined in 40 CFR Part 136, Appendix B. Samples which 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.

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 from this section shall be reported as zero in accordance with the DEM's DMR Instructions, provided that all appropriate EPA approved methods were followed.

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 | | MDL ug/l (ppb) | Pesticides | | MDL ug/l (ppb) |
|----------------|----------------------------|----------------|--------------|--|----------------|
| 1V | acrolein | 10.0 | 18P | PCB-1242 | 0.289 |
| 2V | acrylonitrile | 5.0 | 19P | PCB-1254 | 0.298 |
| 3V | benzene | 1.0 | 20P | PCB-1221 | 0.723 |
| 5V | bromoform | 1.0 | 21P | PCB-1232 | 0.387 |
| 6V | carbon tetrachloride | 1.0 | 22P | PCB-1248 | 0.283 |
| 7V | chlorobenzene | 1.0 | 23P | PCB-1260 | 0.222 |
| 8V | chlorodibromomethane | 1.0 | 24P | PCB-1016 | 0.494 |
| 9V | chloroethane | 1.0 | 25P | toxaphene | 1.670 |
| 10V | 2-chloroethylvinyl ether | 5.0 | | | |
| 11V | chloroform | 1.0 | Base/Neutral | | MDL ug/l (ppb) |
| 12V | dichlorobromomethane | 1.0 | 1B | acenaphthene* | 1.0 |
| 14V | 1,1-dichloroethane | 1.0 | 2B | acenaphthylene* | 1.0 |
| 15V | 1,2-dichloroethane | 1.0 | 3B | anthracene* | 1.0 |
| 16V | 1,1-dichloroethylene | 1.0 | 4B | benzidine | 4.0 |
| 17V | 1,2-dichloropropane | 1.0 | 5B | benzo(a)anthracene* | 0.013 |
| 18V | 1,3-dichloropropylene | 1.0 | 6B | benzo(a)pyrene* | 0.023 |
| 19V | ethylbenzene | 1.0 | 7B | 3,4-benzofluoranthene* | 0.018 |
| 20V | methyl bromide | 1.0 | 8B | benzo(ghi)perylene* | 2.0 |
| 21V | methyl chloride | 1.0 | 9B | benzo(k)fluoranthene* | 0.017 |
| 22V | methylene chloride | 1.0 | 10B | bis(2-chloroethoxy)methane | 2.0 |
| 23V | 1,1,2,2-tetrachloroethane | 1.0 | 11B | bis(2-chloroethyl)ether | 1.0 |
| 24V | tetrachloroethylene | 1.0 | 12B | bis(2-chloroisopropyl)ether | 1.0 |
| 25V | toluene | 1.0 | 13B | bis(2-ethylhexyl)phthalate | 1.0 |
| 26V | 1,2-trans-dichloroethylene | 1.0 | 14B | 4-bromophenyl phenyl ether | 1.0 |
| 27V | 1,1,1-trichloroethane | 1.0 | 15B | butylbenzyl phthalate | 1.0 |
| 28V | 1,1,2-trichloroethane | 1.0 | 16B | 2-chloronaphthalene | 1.0 |
| 29V | trichloroethylene | 1.0 | 17B | 4-chlorophenyl phenyl ether | 1.0 |
| 31V | vinyl chloride | 1.0 | 18B | chrysene* | 0.15 |
| | | | 19B | dibenzo (a,h)anthracene* | 0.03 |
| Acid Compounds | | MDL ug/l (ppb) | 20B | 1,2-dichlorobenzene | 1.0 |
| 1A | 2-chlorophenol | 1.0 | 21B | 1,3-dichlorobenzene | 1.0 |
| 2A | 2,4-dichlorophenol | 1.0 | 22B | 1,4-dichlorobenzene | 1.0 |
| 3A | 2,4-dimethylphenol | 1.0 | 23B | 3,3'-dichlorobenzidine | 2.0 |
| 4A | 4,6-dinitro-o-cresol | 1.0 | 24B | diethyl phthalate | 1.0 |
| 6A | 2-nitrophenol | 1.0 | 25B | dimethyl phthalate | 1.0 |
| 7A | 4-nitrophenol | 1.0 | 26B | di-n-butyl phthalate | 1.0 |
| 8A | p-chloro-m-cresol | 2.0 | 27B | 2,4-dinitrotoluene | 2.0 |
| 9A | pentachlorophenol | 1.0 | 28B | 2,6-dinitrotoluene | 2.0 |
| 10A | phenol | 1.0 | 29B | di-n-octyl phthalate | 1.0 |
| 11A | 2,4,6-trichlorophenol | 1.0 | 30B | 1,2-diphenylhydrazine (as azobenzene) | 1.0 |
| | | | 31B | fluoranthene* | 1.0 |
| Pesticides | | MDL ug/l (ppb) | 32B | fluorene* | 1.0 |
| 1P | aldrin | 0.059 | 33B | hexachlorobenzene | 1.0 |
| 2P | alpha-BHC | 0.058 | 34B | hexachlorobutadiene | 1.0 |
| 3P | beta-BHC | 0.043 | 35B | hexachlorocyclopentadiene | 2.0 |
| 4P | gamma-BHC | 0.048 | 36B | hexachloroethane | 1.0 |
| 5P | delta-BHC | 0.034 | 37B | indeno(1,2,3-cd)pyrene* | 0.043 |
| 6P | chlordane | 0.211 | 38B | isophorone | 1.0 |
| 7P | 4,4'-DDT | 0.251 | 39B | naphthalene* | 1.0 |
| 8P | 4,4'-DDE | 0.049 | 40B | nitrobenzene | 1.0 |
| 9P | 4,4'-DDD | 0.139 | 41B | N-nitrosodimethylamine | 1.0 |
| 10P | dieldrin | 0.082 | 42B | N-nitrosodi-n-propylamine | 1.0 |
| 11P | alpha-endosulfan | 0.031 | 43B | N-nitrosodiphenylamine | 1.0 |
| 12P | beta-endosulfan | 0.036 | 44B | phenanthrene* | 1.0 |
| 13P | endosulfan sulfate | 0.109 | 45B | pyrene* | 1.0 |
| 14P | endrin | 0.050 | 46B | 1,2,4-trichlorobenzene | 1.0 |
| 15P | endrin aldehyde | 0.062 | | | |
| 16P | heptachlor | 0.029 | | | |
| 17P | heptachlor epoxide | 0.040 | | | |

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 | 1.0 |
| Chromium, Hexavalent | 20.0 |
| Copper, Total | 1.0 |
| Lead, Total | 1.0 |
| Mercury, Total | 0.2 |
| Nickel, Total | 1.0 |
| Selenium, Total | 2.0 |
| Silver, Total | 0.5 |
| Thallium, Total | 1.0 |
| Zinc, Total | 5.0 |
| Asbestos | ** |
| Cyanide, Total | 10.0 |
| Phenols, Total | 50.0 |
| TCDD | ** |
| MTBE (Methyl Tert Butyl Ether) | 1.0 |
| Total Xylene | 0.5 |
| Ethanol | 2.0 mg/l |

*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.

C. MONITORING AND REPORTING

1. Monitoring

All monitoring required by this permit shall be done in accordance with sampling and analytical testing procedures specified in Federal Regulations (40 CFR Part 136).

2. Reporting

Monitoring results obtained during the previous month(s) shall be summarized and reported on Discharge Monitoring Report (DMR) Forms, postmarked no later than the 15th day of the month following the completed reporting period. A copy of the analytical laboratory report, specifying analytical methods used, shall be included with each report submission. The first report is due on _____. Signed copies of these, and all other reports required herein, shall be submitted to:

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

PART II
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DEFINITIONS

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) 222-3961, (401) 222-6519 or (401) 222-2284 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 (1)(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 public 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. °C | temperature in degrees Centigrade |
| Temp. °F | 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 |
| Cl ₂ | total residual chlorine |

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

STATEMENT OF BASIS

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

RIPDES PERMIT NO.

RI0023604

NAME AND ADDRESS OF APPLICANT:

Strawberry Field Estates, Inc.
445 Warwick Industrial Drive
Warwick, RI 02886

NAME AND ADDRESS OF FACILITY WHERE DISCHARGE OCCURS:

Strawberry Field Estates, Inc.
333 Strawberry Field Road
Warwick, RI

RECEIVING WATER:

Tuscatucket Brook
(Water body ID#: RI0007025R-05)

CLASSIFICATION:

A

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

The above named applicant has reapplied to the Rhode Island Department of Environmental Management for issuance of a RIPDES Permit to discharge into the designated receiving water. The applicant's discharge consists of effluent from a groundwater extraction and treatment system (primary components include four (4) submersible extraction pumps (3 located in wells (inactive), 1 located in the extraction trench), a particulate filter, and three (3) 1,000-pound granular activated carbon (GAC) vessels aligned in series). The discharge is to an existing catch basin located on Strawberry Field Road, which discharges to Tuscatucket Brook.

II. Limitations and Conditions

The effluent limitations, monitoring requirements, and any implementation schedule (if required) may be found in the draft permit.

III. Description of Discharge

Strawberry Field Estates, Inc. is the owner of the property at 333 Strawberry Field Road, Warwick, Rhode Island and leases the property. This permit authorizes the discharge of treated groundwater to Tuscatucket Brook from a groundwater extraction and treatment system installed and operated under an Order of Approval issued by the DEM Office of Waste Management. The system is designed to restrict the off-site migration of groundwater impacted with volatile organic compounds and protect down gradient residential properties from the plume of impacted groundwater. Any other discharges are not authorized under this permit.

Outfall 001 discharges to Tuscatucket Brook in the segment defined as water body ID number RI0007025R-05. This segment is described as Tuscatucket Brook in the City of Warwick. This segment is located in Warwick and is classified as a Class A water body according to the RI Water Quality Regulations with a warm water fishery designation. Class A waters are designated for primary and secondary contact recreational activities and for fish and wildlife habitat. They shall be suitable for compatible industrial processes and cooling, hydropower, aquacultural uses, navigation, and irrigation and other agricultural uses. These waters shall have excellent aesthetic value. Freshwater rivers and streams, and lakes and ponds are designated cold water, warm water or unassessed based upon the potential for the presence of brook trout by evaluating current and historical presence/absence information, habitat, water quality and physical characteristics data. Currently, this water body is not listed as being impaired.

Discharges of treated groundwater from the Groundwater Extraction and Treatment System are regulated by the conditions in the permit for Outfall 001A. All discharges will be treated by an approved treatment system prior to discharge. A quantitative description of the discharge from Outfall 001 in terms of significant effluent parameters based on Discharge Monitoring Report Data for the past five (5) years is shown in Attachment A-1. Attachment A-2 includes a site location map and Attachment A-3 includes a piping and instrumentation diagram displaying the components and controls of the above mentioned treatment system.

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

Description of the Facility

The main building at the Site located at 333 Strawberry Field Road in Warwick, Rhode Island was constructed in 1960 for Leeson Corporation with additions constructed throughout the 1960's and also in 1982. Prior to 1960, the property was used as a strawberry farm. The property was used by the Leeson Corporation from 1960 to 1983 for the manufacturing of textile machinery. Operations within the building included machinery manufacturing, metals finishing, steam cleaning, industrial painting, rust proofing, heat treatment of metals, storage, and office space. In 1983, The Lares Group purchased the property and the main building was subdivided into separate tenant spaces. Leeson Corporation continued to operate in a portion of the building until 1985. Due to the presence of VOCs (specifically TCE and 1,1 DCE) in groundwater along the property boundary, the Rhode Island Department of Environmental Management was notified in writing by Strawberry Field Estates, Inc. about the potential off-site migration of groundwater impacted above the Rhode Island Department of Environmental Management (RIDEM) Site Remediation Regulations GB Groundwater Objectives. Strawberry Field Estates, Inc., proposed to install a Groundwater Extraction and Treatment System (GWETS) as an immediate response to maintain hydraulic control near the Site boundary along Strawberry Field Road and minimize the potential for additional offsite migration of contaminated groundwater. Operation of the GWETS began and was authorized to discharge remediated groundwater under RIDEM RIPDES Order of Approval No. RIO-323 on May 23, 2002. On February 17, 2004 a RIPDES Permit was issued authorizing the discharge from the GWETS at an average monthly flowrate of 10 gpm with a maximum daily flow limit of 20 gpm.

On May 4, 2004, the RIPDES program issued a minor modification to increase the system sampling frequency from 2/month to 1/week in response to the potential for increased flow rates

and influent concentrations being passed through the granular activated carbon treatment system as a result of the addition of a groundwater extraction trench. At the time the minor modification was issued, DEM made Strawberry Field Estates, Inc. aware that anticipated changes in flow due to the addition of the extraction trench may also warrant the need for a major permit modification to increase the permitted system flow rate. In response to this recommendation, on July 29, 2004, Strawberry Field Estates, Inc. submitted a request to formally modify the existing RIPDES permit. The request involved an increase in the monthly average flowrate from 10 gpm to 20 gpm, with an increase in the maximum daily flowrate from 20 gpm to 30 gpm. In order to maintain the recommended sixty (60) days of breakthrough time through the carbon treatment system, Strawberry Field Estates, Inc. also proposed to increase the carbon capacity on site from two (2) 1000 pound carbon vessels to three (3) 2000lb carbon vessels aligned in series. As a result of the system changes, the groundwater extraction and treatment system primary components were upgraded to include four (4) submersible extraction pumps (3 located in wells, 1 located in the extraction trench), a particulate filter, and three (3) 2,000 pound granular activated carbon (GAC) vessels aligned in series. On February 2, 2005, the RIPDES program issued a major modification to the discharge permit that increased the permitted flow rates to 20 gpm (monthly average) and 30 gpm (daily maximum). In addition, because the breakthrough time was estimated to be approximately 58 days, the monitoring frequency was reduced from 1/week to once every two (2) calendar weeks. No other permit conditions, including pollutant effluent limitations were changed in the permit modification.

On January 8th and January 29, 2009, Sage Environmental, Inc., on behalf of Strawberry Field Estates, Inc., requested, as part of the permit renewal application, a further increase in the treatment system flow rate from 20 gpm monthly average and 30 gpm daily maximum to 30 gpm monthly average and 40 gpm daily maximum. The increased flow was necessary in order to maximize the extraction rates from the groundwater extraction wells and trench located at the site to ensure that there is no offsite migration of contaminated groundwater. RIDEM's Office of Waste Management agreed that the increased flow was necessary. Therefore, Sage Environmental, Inc. compiled maximum concentrations of contaminants of concern treated by the groundwater extraction and treatment system for a two-year period (December 2006 through December 2008). This data was generated from the treatment system influent concentrations reported on past Discharge Monitoring Reports for this period. Using the maximum concentrations detected for each pollutant in the influent over the two year period, Sage Environmental, Inc. performed a revised carbon consumption estimate for the three (3) 2,000 lb carbon vessels at the proposed maximum flow rate of 40 gpm. Based on the results of the carbon consumption calculations, carbon breakthrough is estimated to be 68 days at the proposed maximum flow rate of 40 gpm. This design estimate of 68 days exceeds the 60-day minimum breakthrough requirement for RIPDES permitted carbon treatment systems. Based on this information, the RIPDES Program had determined that an increase in the permitted discharge flow rates through the treatment system was acceptable.

In October 2014, the RIPDES Program performed a compliance evaluation inspection of the GWETS as part of the permit reissuance process. As noted during the inspection the GWETS was being operated with one of the 2,000 pound activated carbon vessels replaced with a carbon drum due to corrosion issues with the steel carbon vessel. On-site representatives noted that system flow rates had been significantly lower than the design flows and that upgrading of the steel vessels to fiberglass vessels would be necessary and that the system may be downsized due to low yields being generated from the extraction wells. Following the inspection a letter was sent to Sage Environmental (Sage) and Strawberry Field Estates requiring either replacement of the carbon drum with a 2,000 pound vessel per the existing permit, or to attain Office of Waste Management (OWM) approval to modify the system and amend the NPDES application and provide a complete description of the revised GWETS. On December 22, 2014 Sage submitted a GWETS modification request to OWM for the replacement of the three (3) steel carbon vessels with (3) 1,000 pound fiberglass units capable of 20 gpm flow and treatment rates. Though the GWETS was designed to pump and treat 40 gpm, hydraulic control has been demonstrated at a

much lower flow rate with the addition of the trench recovery well. OWM approved the proposed changes to the GWETS on December 29, 2014. Following OWM approval Sage submitted an updated NPDES Form 2C to the RIPDES Program on March 11, 2015 that included a revised Form 2C, process diagram, manufacturer specification sheet for the 1,000 pound carbon units, carbon breakthrough design calculations, and updated groundwater influent data for the past year (February 2014 – January 2015). Upon review of the March 11th updated NPDES Form 2C submittal, it was noted in a March 26, 2015 comment letter from the RIPDES Program that the breakthrough time for the 3,000 pounds of carbon was 65.6 days for a design flow rate of 8 gpm. However, the December 22nd GWETS modification letter identified the (3) 1,000 pound units were capable of 20 gpm treatment and flow rates. RIPDES requested Sage to either propose a revised maximum/design flow rate for the GWETS or increase the quantity of activated carbon in order to meet the 60 day breakthrough time required by the DEM for activated carbon treatment systems. In an April 9, 2015 comment response letter from Sage, it was noted that the overall flow rate of the system would not exceed 10 gpm based on current conditions, and operational history with just the recovery trench has shown flow rates no greater than 8 gpm. Sage re-evaluated the system carbon usage based upon a 10 gpm maximum continual flow rate and using that rate and the highest detected analyte concentrations from February 2014 through January 2015 a breakthrough time of 52.5 days was calculated. Upon consulting with the OWM regarding the decrease in maximum system capacity to 10 gpm, the OWM concurs that the 10 gpm flow rate will be adequate to maintain hydraulic control of the site based on recent groundwater data from the site utilizing just the recovery trench. Due to the compromised state of the existing activated carbon vessels and need to maintain hydraulic control of the site, on April 15, 2015 the RIPDES Program authorized Sage to replace the three (3) steel vessels with (3) 1,000 pound fiberglass units with the intent that the system will be operated within the 10 gpm proposed maximum flow rate. Based on the above information, the RIPDES Program has decreased the permitted flow rates to monitor only (monthly average) and 10 gpm (daily maximum). No pollutant effluent limitations were changed in the permit. Monitoring of the treatment system at the midpoint and effluent monitoring locations will continue to be required at a frequency of twice per month and monthly for the influent. Reporting shall only be required for effluent samples.

General Requirements

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. DEM's primary authority over the permit comes from EPA's delegation of the program in September 1984 under the Federal Clean Water Act.

Under Section 301 (b)(1)(C) of the CWA, discharges are subject to effluent limitations based on water quality standards. The Rhode Island Water Quality Standards include a narrative statement that prohibits the discharge of any pollutant or combination of pollutants in quantities that would be toxic or injurious to aquatic life. In addition, the State has adopted EPA's numerical criteria for specific toxic pollutants and toxicity criteria as published in the EPA Quality Criteria for Water, 1986, (EPA 440/5-86-001) as amended.

The effluent monitoring requirements have been specified in accordance with RIPDES regulations as well as 40 CFR 122.41 (j), 122.44 (l), and 122.48 to yield data representative of the discharge.

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.

Explanation of Effluent Limitation Derivation and Conditions

Development of RIPDES permit limitations is a multi-step process consisting of the following steps: identifying applicable technology-based limits; calculating allowable water-quality based

discharge levels based on in-stream criteria, background data and available dilution; establishing Best Professional Judgement (BPJ) limits in accordance with Section 402 of the CWA; and assigning the most stringent as the final discharge limitations.

Water quality criteria are comprised of numeric and narrative criteria. Numeric criteria are scientifically derived ambient concentrations developed by EPA or States 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 draft RIDES permit for Strawberry Field Estates, Inc., authorizing the discharge of treated effluent from the Groundwater Extraction and Treatment System, includes numeric effluent limitations and requires the implementation of proper operation and maintenance procedures and inspection protocols for additional protection of the environment. The effluent parameters in the draft permit are discussed in more detail below following the effluent limitation derivation for the one Outfall being regulated by this permit.

Water Quality Based Permit Limitations

Appendix B of the Water Quality Regulations describes the flows used to determine compliance with the aquatic life criteria, specifying that the design flow to be utilized for aquatic life criteria shall not be exceeded at or above the lowest average seven (7) consecutive day low flow with an average recurrence frequency of once in ten (10) years (7Q10). Since the discharge from the groundwater treatment system enters Tuscatucket Brook and there no dilution data available for the point of discharge, a dilution factor of one (1) was used in the determination of applicable water quality-based discharge limitations.

Allowable water quality based effluent limitations were established based on the Class A freshwater acute and chronic aquatic life criteria and human health criteria specified in Appendix B of the Rhode Island Water Quality Regulations, using 80% allocation when no background data is available and 90% allocation when background data is available. There is no background data available, therefore, the allowable water quality-based discharge levels were calculated as follows:

$$\text{Limit}_1 = (DF) * (\text{Criteria}) * (80\%)$$

In accordance with 40 CFR 122.44(d)(1)(iii), 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 exceedence of in-stream criteria. In order to evaluate the need for permit limits, the allowable monthly average (chronic) and allowable maximum daily (acute) discharge concentrations are compared to the monthly average and maximum daily Discharge Monitoring Report (DMR) data for the site.

The "Maximum" and "Minimum" pH limitations are based upon Table 1 of Rule 8.D. (2), Class-Specific Criteria – Fresh Waters of the Rhode Island Water Quality Regulations, adopted in accordance with Chapter 42-35 pursuant to Chapters 46-12 and 42-17.1 of the Rhode Island General Laws of 1956, as amended.

Technology Based Permit Limitations

DEM is required to consider technology and water quality requirements when developing permit effluent limits. Technology based treatment requirements represent the minimum level of control that must be imposed under Section 402 and 301(b) of the Act (see 40 CFR 125 Subpart A) to meet Best Practicable Control Technology Currently Available (BPT), Best Conventional Control Technology (BCT) for conventional pollutants, and Best Available Technology Economically Achievable (BAT) for toxic pollutants. In the absence of technology based guidelines, DEM is authorized to use Best Professional Judgement (BPJ) to establish effluent limitations, in

accordance with Section 402(a)(1) of the CWA. Since the Environmental Protection Agency has not promulgated technology-based standards for this discharge, DEM developed BPJ limits.

BPJ Based Permit Limitations

The selected granular activated carbon technology is proven to be able to remove VOCs and CVOCs to a concentration below the Method Detection Limit (MDL). However, experience with systems of mixed contaminants has shown that intermittent slugs of more easily retained contaminants may enter the system and displace less easily adsorbed contaminants like CVOCs. Also, laboratory and field contamination or instrument noise could cause false positives at the method detection limit (MDL). As a result, BPJ limits of five (5) times the MDLs for the CVOC pollutants of concern have been assigned. The limits are achievable by using the proposed groundwater treatment system.

Final Permit Limitations

BPJ limits are the most stringent limitations, when compared to water quality or technology based limits. As a result, BPJ limits have been assigned to all pollutants of concern. The only exceptions to the use of BPJ based effluent limitations are in the cases of the following pollutants of concern: Vinyl Chloride, Tetrachloroethene, and 1,1 Dichloroethylene. In the case of these three pollutants water quality based limitations were more stringent than the technology-based limit of 5 ug/l assigned to the other pollutants of concern. The water quality based limit for vinyl chloride, calculated using the previously mentioned equation, is 1.92 ug/l for the monthly average. No criterion exists for the daily maximum or acute criteria. As a result a combination of water quality and technology based limitations have been assigned in the permit for Vinyl Chloride. The resulting limits for Vinyl Chloride are 1.92 ug/l monthly average and 5.0 ug/l daily maximum. The water quality based limits applicable to tetrachloroethene are 4.24 ug/l for the monthly average and 192 ug/l for the daily maximum or acute criteria. As a result a combination of water quality and technology based limitations have been assigned in the permit for tetrachloroethene. The resulting limits for tetrachloroethene are 4.24 ug/l monthly average and 5.0 ug/l daily maximum. Monthly Average limitations assigned for 1,1 Dichloroethylene are also more stringent than BPJ based limitations and have been carried forward from the previous permit in order to comply with antibacksliding requirements. The applicable limitations assigned for 1,1 Dichloroethylene are 0.57 ug/l monthly average and 5.0 ug/l daily maximum. The pH limits were set equal to the water quality based pH limits previously mentioned.

Antibacksliding

EPA's antibacksliding provision at 40 CFR §122.44(l) prohibit the relaxation of permit limits, standards, and conditions unless the circumstances on which previous permit was based have materially and substantially changed since the time the permit was issued.

The limits in the draft permit are no less stringent than what are in the previous permit. Therefore, since all of the permit limits are at least as stringent as those from the previous permit, this permit satisfies the antibacksliding provisions at 40 CFR §122.44(l).

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

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 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 the 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.

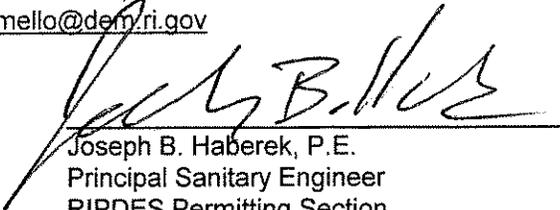
Following the close of the comment period, and after a public hearing, if such hearing is held, the Director will issue a final permit decision and forward a copy of the final decision to the applicant and each person who has submitted written comments or requested notice. Within thirty (30) days following 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:

Aaron Mello
RIPDES Program
Office of Water Resources
Department of Environmental Management
235 Promenade Street
Providence, Rhode Island 02908
Telephone: (401) 222-4700, ext. 7405
Email: aaron.mello@dem.ri.gov

11/3/15
Date


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

ATTACHMENT A-1

DESCRIPTION OF DISCHARGES: Treated Groundwater

DISCHARGE: 001A – Effluent from Groundwater Extraction and Treatment System

AVERAGE EFFLUENT CHARACTERISTICS AT POINT OF DISCHARGE:

| PARAMETER | AVERAGE¹ | MAXIMUM² |
|--------------------------|----------------------------|----------------------------|
| FLOW (GPM) | <u>12.06</u> GPM | <u>14.45</u> GPM |
| 1,1-Dichloroethane | <u>0.326</u> ug/l | <u>0.390</u> ug/l |
| 1,1-Dichloroethene | <u>0.219</u> ug/l | <u>0.219</u> ug/l |
| Cis-1,2-Dichloroethene | <u>0.228</u> ug/l | <u>0.230</u> ug/l |
| Trans-1,2-Dichloroethene | <u>0.219</u> ug/l | <u>0.219</u> ug/l |
| Tetrachloroethene | <u>0.219</u> ug/l | <u>0.219</u> ug/l |
| 1,1,1-Trichloroethane | <u>0.219</u> ug/l | <u>0.219</u> ug/l |
| 1,1,2-Trichloroethane | <u>0.219</u> ug/l | <u>0.219</u> ug/l |
| Trichloroethene | <u>0.219</u> ug/l | <u>0.219</u> ug/l |
| Vinyl Chloride | <u>0.219</u> ug/l | <u>0.219</u> ug/l |
| Chloroethane | <u>0.239</u> ug/l | <u>0.252</u> ug/l |
| pH | <u>5.96</u> S.U. (Minimum) | <u>6.21</u> S.U. (Maximum) |

¹Data represents the mean of the monthly average data from July 2009 through March 2015.

²Data represents the mean of the daily maximum data from July 2009 through March 2015.

ATTACHMENT A-2

STRAWBERRY FIELD ESTATES, INC.

SITE LOCATION MAP



SAGEEnvironmental, Inc

Figure 1

USGS Quadrangle Site Location Map

333 Strawberry Field Road
Warwick, Rhode Island

DATE: 04/25/08
CREATED BY: DAK

JOB #: R041
DRAWING: R041usgs.mxd

USGS QUADRANGLE
EAST GREENWICH, RHODE ISLAND

0 0.1 0.2 0.3 0.4 0.5 0.6 Miles





 Site Location

ATTACHMENT A-3

**STRAWBERRY FIELD ESTATES, INC.
PIPING AND INSTRUMENTATION DIAGRAM**

LEGEND

- LIQUID LINES
- SYSTEM ELECTRICAL
- GAC GRANULAR ACTIVATED CARBON
- ⊗ PRESSURE SWITCH
- ⊗ PRESSURE INDICATOR
- ⊗ BALL VALVE
- ⊗ BALL VALVE SAMPLE PORT
- ⊗ UNION
- ⊗ TOTALIZER
- ⊗ CHECK VALVE

PREPARED BY: 

172 ARMISTICE BLVD
PAWTUCKET, RI 02860
401-723-9900
FAX: 401-723-9973

DRAWING DESCRIPTION:
**STRAWBERRY FIELD
ESTATES
(PIPING AND
INSTRUMENTATION
DIAGRAM)**

PROJECT: R041

LOCATION: 333 STRAWBERRY ROAD
WARWICK, RI

| | | |
|--------------------------|------------------------|-----------------|
| DRAWN BY: BTC | CHECKED BY: BTC | APPROVED BY: RM |
| DRAWING DATE: 12/15/2014 | SHEET NUMBER: R041 | SHEET 1 OF 1 |
| PROJECT NUMBER: R041 | DRAWING NAME: PID PLAN | |

FIGURE

