

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

**RHODE ISLAND RESOURCE RECOVERY CORPORATION**  
65 SHUN PIKE  
JOHNSTON, RI 02919

is authorized to discharge from a facility located at

**RHODE ISLAND RESOURCE RECOVERY CORPORATION**  
65 SHUN PIKE  
JOHNSTON, RI 02919

to receiving waters named

**CEDAR SWAMP BROOK AND TRIBUTARIES [RI0006018R-01]**  
**SIMMONS RESERVOIR [RI0006018L-03]**

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

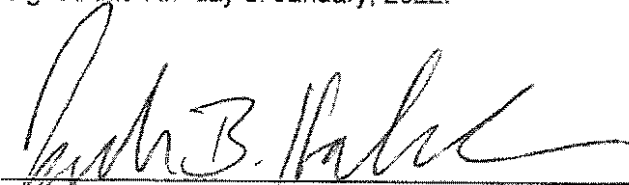
This permit shall become effective April 1, 2022.

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

This permit supersedes the permit issued on April 24, 2015 and modified on October 23, 2017.

This permit consists of twenty (20) pages in Part I including effluent limitations, monitoring requirements, etc. and ten (10) pages in Part II including General Conditions.

Signed this 7th day of January, 2022.



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Joseph B. Haberek, P.E.  
Acting Administrator 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 of this permit and lasting through the date of permit expiration, the permittee is authorized to discharge from outfall serial numbers: 005A (Pond 5 Outlet immediately below the spillway from the pond) and 006A (Pond 6 Outlet immediately below the spillway from the pond). The discharges from these outfalls shall only consist of non-contaminated stormwater as defined by 40 CFR §445.2. 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			Measurement Frequency	Sample Type
	Average Monthly	Maximum Daily	Average Monthly	Average Weekly	Maximum Daily		
Flow	--- GPD					See Footnote 1	Calculated <sup>2</sup>
TSS			--- mg/L		--- mg/L	See Footnote 1	Grab <sup>3</sup>
Phosphorous, Total			--- ug/L		--- ug/L	See Footnote 1	Grab <sup>3</sup>
Fecal Coliform			--- MPN/100 mL		--- MPN/100 mL	1/Quarter	Grab <sup>3</sup>

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

<sup>1</sup>Samples shall be taken at a minimum frequency of monthly April – June and quarterly July – March.

<sup>2</sup>Flow shall be calculated using the drainage area, runoff coefficient, and the amount of rainfall.

<sup>3</sup>The Grab or "First Flush" value shall be obtained using a grab sample, consisting of an individual sample of at least 100 mL, collected as soon as possible following commencement of a discharge.

Samples must be obtained from a discharge which is the result of a storm event of at least 0.1 inches per twenty-four (24) hours that occurs at least seventy-two (72) hours after the previously measurable (greater than 0.1 inches in magnitude) storm event. RIRRC must maintain documentation to ensure the above conditions are met.

PART I

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

2. During the period beginning on the effective date of this permit and lasting through the date of permit expiration, the permittee is authorized to discharge from outfall serial numbers: 002A (Pond 2 Outlet below the spillway from the pond and upstream of any influence of road runoff), 004A (Pond 4 Outlet immediately below the spillway from the pond), 015A (Pond 11 Outlet immediately below the spillway from the pond), and 017A (Pond 13 Outlet immediately below the spillway from the pond). 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			Measurement Frequency	Sample Type
	Average Monthly	Maximum Daily	Average Monthly *(Minimum)	Average Weekly *(Average)	Maximum Daily *(Maximum)		
Flow	---	GPD				See Footnote 1	Calculated <sup>3</sup>
BOD <sub>5</sub>			37 mg/L		140 mg/L	See Footnote 1	Grab <sup>4</sup>
TSS			27 mg/L		88 mg/L	See Footnote 2	Grab <sup>4</sup>
Ammonia, Total (as N)			4.9 mg/L		10 mg/L	See Footnote 2	Grab <sup>4</sup>
pH			(6.0 S.U.)		(9.0 S.U.)	See Footnote 1	Grab <sup>4</sup>
alpha-Terpineol			16 ug/L		33 ug/L	See Footnote 1	Grab <sup>4</sup>
Benzoic Acid			71 ug/L		120 ug/L	See Footnote 1	Grab <sup>4</sup>
p-Cresol			14 ug/L		25 ug/L	See Footnote 1	Grab <sup>4</sup>
Phenol			15 ug/L		26 ug/L	See Footnote 1	Grab <sup>4</sup>
Zinc, Total			110 ug/L		200 ug/L	See Footnote 1	Grab <sup>4</sup>
Iron, Total			--- mg/L		--- mg/L	See Footnote 1	Grab <sup>4</sup>
Phosphorous, Total			--- ug/L		--- ug/L	See Footnote 1	Grab <sup>4</sup>
Fecal Coliform			--- MPN/100 mL		--- MPN/100 mL	See Footnote 5	Grab <sup>4</sup>

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

<sup>4</sup>Values in parentheses ( ) are to be reported as Minimum/Maximum for the reporting period rather than Average Monthly/Maximum Daily.

<sup>1</sup>Samples shall be taken at a minimum frequency of monthly April – June and quarterly July – March.

<sup>2</sup>Samples shall be taken at a minimum frequency of monthly for TSS, and ammonia for Outfall 002A. Samples shall be taken at a minimum frequency of monthly April – June and quarterly July – March for TSS, and ammonia for outfalls 004A, 0015A, and 017A.

<sup>3</sup>Flow shall be calculated using the drainage area, runoff coefficient, and the amount of rainfall.

<sup>4</sup>The Grab or "First Flush" value shall be obtained using a grab sample, consisting of an individual sample of at least 100 mL, collected as soon as possible following

commencement of a discharge.

<sup>5</sup>Samples shall be taken at a minimum frequency of quarterly for outfall 004A, 015A, and 017A. Fecal Coliform sampling from outfall 002A is not required.

Samples must be obtained from a discharge which is the result of a storm event of at least 0.1 inches per twenty-four (24) hours that occurs at least seventy-two (72) hours after the previously measurable (greater than 0.1 inches in magnitude) storm event. RIRRC must maintain documentation to ensure the above conditions are met.

PART I

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

3. During the period beginning on the effective date of this permit and lasting through the date of permit expiration, the permittee is authorized to discharge from outfall serial number: 016A (Phase V Landfill Stone Trench Discharge) as specified below:

Effluent Characteristic	Discharge Limitations					Monitoring Requirement	
	Quantity - lbs./day		Concentration - specify units			Measurement Frequency	Sample Type
	Average Monthly	Maximum Daily	Average Monthly *(Minimum)	Average Weekly *(Average)	Maximum Daily *(Maximum)		
Flow	91,000 GPD	123,500 GPD				1/Month	Estimate
Cadmium, Total			0.15 ug/L		0.84 ug/L	1/Month	24 Hr Composite
Silver, Total			--- ug/L		0.64 ug/L	1/Month	24 Hr Composite
Ammonia, Total (as N)							
May-Oct			5.0 mg/L		43.0 mg/L	1/Month	24 Hr Composite
Nov-April			12.2mg/L		47.3 mg/L	1/Month	24 Hr Composite
Phosphorous, Total							
April-Oct			0.033 mg/L		--- mg/L	1/Month	24 Hr Composite
Nov-March			1.0 mg/L		--- mg/L	1/Month	24 Hr Composite
Orthophosphorous (Nov – March)			--- mg/L		--- mg/L	1/Month	24 Hr Composite
Iron, Total			1.31mg/L		--- mg/L	1/Month	24 Hr Composite

--- 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 locations: Outfall 016A – effluent from Phase V underdrain treatment system.

4.
  - a. The discharge shall not cause visible discoloration of the receiving waters.
  - b. The effluent shall contain neither a visible oil sheen, foam, nor floating solids at any time.
  - c. The discharge shall not cause the receiving water's turbidity to be greater than 10 NTU above background.
  - d. The permittee shall analyze its effluent from Outfall 016A (Phase V Landfill Stone Trench Discharge – a.k.a. "Underdrain") semi-annually for the EPA Priority Pollutants as listed in 40 CFR §122, Appendix D, Tables II and III. The results of these analyses shall be submitted to the Department of Environmental Management (DEM) on January 31 and July 31 of each year for the previous six-month period with the Comprehensive Site Evaluation Reports required under part I.E. The Priority Pollutant Report must include the following information:
    - (1) For any pollutants detected in the priority pollutant scans, the Priority Pollutant Report must identify if they are pollutants regulated under the Superfund Record of Decision (ROD).
    - (2) If pollutants regulated under the ROD are detected, RIRRC must provide written notification to the EPA and DEM Superfund programs within seven (7) days of receiving the priority pollutant scan results and the Priority Pollutant Report must include a copy of the written notification.
    - (3) If pollutants not regulated under the ROD are detected, the Priority Pollutant Report must include an evaluation of the potential for liner leakage/failure as being the source of the pollutant.
    - (4) For all non-ROD pollutants detected, the Priority Pollutant Report must include a comparison of pollutant concentrations to water quality criteria using a dilution factor of 1.639 and, if any of the pollutants exceed the applicable water quality criteria, the report must include either a compliance schedule to eliminate the underdrain's discharge to surface waters or an application for an Order of Approval for an appropriate wastewater treatment system designed to remove the identified pollutant.
    - (5) For all pollutants detected, the sampling frequency shall be increased from semi-annually to monthly and the Priority Pollutant Report shall include the results of the monthly sampling. If, after collecting adequate data demonstrating that the detected pollutants are no longer present in the Phase V Landfill Stone Trench Discharge, the permittee would like to decrease the sampling frequency to semi-annually, the permittee may submit a written request to DEM. The permittee shall continue sampling monthly until written approval is granted to decrease sampling.
    - (6) All sampling and analysis shall be in accordance with EPA Regulations, including 40 CFR; Part 136; grab samples and composites shall be taken as appropriate.
5. 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 40CFR122.21(g)(7); or
  - (4) Any other notification level established by the Director in accordance with 40 C.F.R. 122.44(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 CFR 122.21(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.
6. If there is a change in the status of any outfall, notification must be provided as follows:
- a. The DEM must be notified in writing if a permitted outfall, which was not constructed prior to the effective date of this permit will begin discharging. This notification must be provided a minimum of fourteen (14) days prior to the commencement of discharge.
  - b. The DEM must be notified in writing if the discharge from any permitted outfall has been eliminated, no later than thirty (30) days following the elimination of discharge.
7. The permittee shall comply with all of the terms and conditions of the approved *Erosion and Sedimentation Control Plan* as amended (the "Erosion and Sediment Control Plan").
8. The permittee shall implement measures to control the discharge of stormwater from areas that do not have waste in them yet.
9. This permit serves as the State's Water Quality Certificate for the discharges described herein.

B. PHASE V UNDERDRAIN EVALUATION (OUTFALL 016)

1. If any of outfall 016A's effluent limitations from Part I.A.3 are exceeded or if the priority pollutant scans required under Part I.A.4.d show exceedances of the applicable water

quality criteria, the permittee shall notify the DEM within seven (7) calendar days and submit a written evaluation of the cause of the exceedance and a proposed schedule of the steps planned to be taken to reduce, eliminate, and prevent reoccurrence of the noncompliance.

### C. STORMWATER MANAGEMENT PLAN REQUIREMENTS

1. Within sixty (60) days from the date of issuance of this permit, RIRRC shall submit a revised Stormwater Management Plan (SWMP) that addresses all of the requirements of this permit, including but not limited to the requirements from Part I.C.5. The SWMP shall be prepared in accordance with good engineering practices and identify potential sources of pollutants which may reasonably be expected to affect the quality of stormwater discharges from the facility. In addition, the SWMP shall describe and ensure the implementation of Best Management Practices (BMPs), which are used to reduce or eliminate the pollutants in stormwater discharges from the facility and to assure compliance with the terms and conditions of this permit. The SWMP is intended to document the selection, design, and installation of control measures that are used to meet this permit's effluent limits. As distinct from the SWMP, any additional documentation requirements are intended to document the implementation of the permit requirements (including inspections, maintenance, monitoring, and corrective actions). This SWMP shall be subject to DEM review, in accordance with Part I.C.3.
2. The SWMP shall be signed by the permittee in accordance with RIPDES Regulations (250-RICR-150-10 §1.12) and retained on-site.
3. If the SWMP is reviewed by the Director, he or she may notify the permittee at any time that the SWMP does not meet one or more of the minimum requirements of this part. After such notification from the Director, the permittee shall make changes to the SWMP and shall submit to the Director a written certification that the requested changes have been made. Unless otherwise provided by the Director, the permittee shall have thirty (30) days after such notification to make the necessary changes.
4. The permittee shall promptly, and in no case later than thirty (30) calendar days, amend the SWMP whenever there is a change in design, construction, operation, or maintenance, which has a significant effect on the potential for the discharge of pollutants to the waters of the State; a release of reportable quantities of hazardous substances and oil; or if the SWMP proved to be ineffective in achieving the general objectives of controlling pollutants in stormwater discharges (based upon exceedances of effluent limitations in Part I.A, exceedances of benchmark concentrations in Part I.D, or the results of inspections required in Part I.C.5.c of this permit). Changes must be noted and then submitted to this Department. Amendments to the SWMP may be reviewed by DEM in the same manner as Part I.C.3 of this permit.
5. The SWMP shall include, at a minimum, the following items:
  - a. Description of Potential Pollutant Sources. The Plan must provide a description of potential sources which may be reasonably expected to add significant amounts of pollutants to stormwater discharges or which may result in the discharge of pollutants during dry weather. It must identify all activities and significant materials, which may potentially be significant pollutant sources.
    - (1) A site map indicating: a delineation of the drainage area of all outfalls, each existing structural control measure to reduce pollutants in stormwater runoff, locations where significant materials are exposed to stormwater, locations where significant leaks or spills have occurred, a delineation of all impervious surfaces, all surface water bodies, all separate storm sewers, and the locations of the following activities where such areas are exposed to stormwater: fueling stations, vehicle and equipment maintenance and/or cleaning areas, material handling areas,



material storage areas, process areas, and waste disposal areas;

- (2) A topographic map extending one-quarter of a mile beyond the property boundaries of the facility;
- (3) An estimate of the overall runoff coefficient for each drainage area and entire site, determined by an acceptable method, such as, but not limited to, area weighting;
- (4) A narrative description of significant materials that have been treated, stored, or disposed of in a manner to allow exposure to stormwater between the time of three (3) years prior to the issuance of this permit to the present; method of on-site storage or disposal; materials management practices employed to minimize contact of these materials with stormwater runoff between the time of three (3) years prior to the issuance of this permit and the present; materials loading and access areas; the location and description of existing structural and non-structural control measures to reduce pollutants in stormwater runoff; and description of any treatment the stormwater receives;
- (5) A list of significant spills and significant leaks of toxic or hazardous pollutants that occurred at the facility three (3) years prior to the effective date of this permit to the present;
- (6) A list of any pollutants limited in effluent guidelines to which a facility is subject under 40 CFR Subchapter N, any pollutants listed on a RIPDES permit to discharge process water, and any information required under 250-RICR-150-10-1 §11.1 of the Regulations for the Rhode Island Pollutant Discharge Elimination System (250-RICR-150-10-1.11) or 40 CFR 122.21(g)(iii)-(v);
- (7) For each area of the facility that generates stormwater discharges activity with a reasonable potential for containing significant amounts of pollutants, a prediction of the direction of flow and an estimate of the types of pollutants, which are likely to be present in stormwater associated with industrial activity; and
- (8) A summary of existing sampling data describing pollutants in stormwater discharges from the facility.

b. Stormwater Management Controls. The permittee must develop a description of stormwater management controls appropriate for the facility and implement such controls. The appropriateness for implementing controls listed in the Plan must reflect identified potential sources of pollutants at the facility. The description of stormwater management controls must address the following minimum components, including a schedule for implementing such controls:

- (1) *Pollution Prevention Team.* The Plan must identify a specific individual(s), by name or title, within the facility organization as members of a team that are responsible for developing the Plan and assisting the plant manager in its implementation, maintenance, and revision. The Plan must clearly identify the responsibilities of each team member. The activities and responsibilities of the team must address all aspects of facility's Plan.
- (2) *Risk Identification and Assessment/Material Inventory.* The Plan must assess the potential of various sources which contribute pollutants to stormwater discharge associated with the industrial activity. The Plan must include an inventory of the types of materials handled. Each of the

following must be evaluated for the reasonable potential for contributing pollutants to runoff: loading and unloading operations, outdoor manufacturing or processing activities, significant dust or particulate generating processes, and on-site waste disposal practices. Factors to consider include the toxicity of chemicals; quantity of chemicals produced, or discharged; the likelihood of contact with stormwater, and the history of significant leaks or spills of toxic or hazardous pollutants.

- (3) *Preventative Maintenance.* A preventative maintenance program must involve inspection and maintenance of stormwater management devices (i.e., oil/water separators, catch basins) as well as inspecting and testing plant equipment and systems to uncover conditions that could cause breakdown or failures resulting in discharges of pollutants to surface waters.
- (4) *Good Housekeeping.* Good housekeeping requires the maintenance of a clean, orderly facility. The permittee must keep all exposed areas of the facility in a clean, orderly manner where such exposed areas could contribute pollutants to stormwater discharges. Common problem areas include: around trash containers, storage areas and loading docks. Measures must also include: a schedule for regular pickup and disposal of garbage and waste materials; routine inspections for leaks and conditions of drums, tanks and containers.
- (5) *Spill Prevention and Response Procedure:* The permittee must minimize the potential for leaks, spills and other releases that may be exposed to stormwater and develop plans for effective response to such spills if or when they occur. At a minimum the permittee must implement a) procedures for plainly labeling containers (e.g., "Used Oil", "Spent Solvents", "Fertilizers and Pesticides", etc.) that could be susceptible to spillage or leakage to encourage proper handling and facilitate rapid response if spills or leaks occur; b) preventative measures such as barriers between material storage and traffic areas, secondary containment provisions, and procedures for material storage and handling; c) procedures for expeditiously stopping, containing, and cleaning up leaks, spills, and other releases. Employees who may cause, detect, or respond to a spill or leak must be trained in these procedures and have necessary spill response equipment available. If possible, one of these individuals should be a member of the stormwater Pollution Prevention Team; and d) procedures for notification of appropriate facility personnel, emergency response agencies, and regulatory agencies. Where a leak, spill, or other release containing a hazardous substance or oil requires the activation of the facility's response plan, the permittee must notify the DEM and take appropriate action to stop or minimize a release of Hazardous Material posing an Imminent Hazard and/or any on-going spill of Hazardous Material at the time of discovery. Local requirements may necessitate reporting of spills or discharges to local emergency response, public health, or drinking water supply agencies. Contact information must be in locations that are readily accessible and available. Measures for cleaning up hazardous material spills or leaks must be consistent with applicable RCRA regulations at 40 CFR Part 264 and 40 CFR Part 265.
- (6) *Management of Runoff.* The permittee must describe the traditional stormwater management practices (permanent structural BMPs other than those which control the generation or source(s) of pollutants that currently exist or that are planned for the facility). These types of BMPs typically are used to divert, infiltrate, reuse, or otherwise reduce pollutants in stormwater discharges from the site. All BMPs that the

permittee determines are reasonable and appropriate, or are required by a State or local authority; must be implemented and maintained. Factors to consider when the permittee is selecting appropriate BMPs should include: 1) the industrial materials and activities that are exposed to stormwater, and the associated pollutant potential of those materials and activities; and 2) the beneficial and potential detrimental effects on surface water quality, ground water quality, receiving water base flow (dry weather stream flow), and physical integrity of receiving waters.

Structural measures should be placed on upland soils, avoiding wetlands and floodplains, if possible. Structural BMPs may require a separate permit under section 404 of the CWA before installation begins.

- (7) *Sediment and Erosion Prevention.* The Plan must identify areas which; due to topography, activities, or other factors; have a high potential for significant soil erosion and identify measures to limit erosion.
- (8) *Structural Practices.* A description of structural BMPs to divert flows from exposed soils, filter runoff, store flows, or otherwise limit runoff from coming into contact with exposed, unvegetated areas of the site and to prevent sediments and/or other pollutants from leaving the site. Such practices may include: staked hay bales, silt fence, earthen dikes, drainage swales, check dams, subsurface drains, pipe slope drains, level spreaders, storm drain inlet protection, rip-rap outlet protection, sediment traps and sediment basins.
- (9) *Employee Training:* The permittee must describe the stormwater employee training program for the facility. The description should include the topics covered, such as spill response, good housekeeping and material management practices, and must identify periodic dates (e.g., every 6 months during the months of July and January) for such training. The permittee must provide employee training for all employees that work in areas where industrial materials or activities are exposed to stormwater, and for employees that are responsible for implementing activities identified in the SWMP (e.g., inspectors, maintenance people). The employee training should inform them of the components and goals of the SWMP.
- (10) *Visual Inspections.* Qualified plant personnel must be identified to inspect designated equipment and plant areas. Material handling areas must be inspected for evidence of, or the potential for, pollutants entering the drainage system. A tracking or follow up procedure must be used to ensure that the appropriate action has been taken in response to the inspection. Records of inspections must be maintained on site for at least five (5) years.
- (11) *Recordkeeping and Internal Reporting Procedures.* Incidents such as spills, or other discharges, along with other information describing the quality and quantity of stormwater discharges must be included in the records. All inspections and maintenance activities must be documented and maintained on site for at least five (5) years.
- (12) *Minimizing Exposure:* Where practicable, industrial materials and activities should be protected by a storm-resistant shelter to prevent exposure to rain, snow, snowmelt, or runoff.
- (13) *Other Controls: Off-site Vehicle Tracking of Sediments.* Each site shall have graveled access entrance and exit drives and parking areas to reduce the tracking of sediment onto public or private roads.

c. Site Inspection.

Results of all inspections must be documented and records retained on-site for a minimum period of five (5) years.

- (1) The following inspections must be conducted within 24 hours after all rainstorms which produce more than 1" of rainfall, or a minimum of weekly. During periods of continuous rain and/or melting, erosion control measures shall be inspected daily.
  - i. Inspect newly seeded surfaces to ensure that seed and mulch remain in place and are not washed from the soil surface.
  - ii. Inspect any mulch cover to identify any damage to the cover, failure of anchoring mechanisms, washouts, dislocation or other failures. Inspections of the mulch cover are to continue until a permanent vegetative cover has been established.
  - iii. Inspect any straw/hay bale barriers to ensure that the integrity of the barriers have not been breached and to check sediment accumulation. Sediment must be removed from behind the barriers when its accumulation reaches 1/2 the height of the barriers.
  - iv. Inspect any filter fences to ensure that the integrity of the fence has not been breached and to check sediment accumulation. Sediment must be removed from behind the fences when its accumulation reaches 1/3 the height of the fences.
  - v. Inspect any stone barriers to verify their integrity and to ensure that the center of the barriers remain a minimum of six (6) inches lower in elevation than the ends of the barriers. Sediment must be removed when accumulation interferes with the function of the barriers.
  - vi. Monitoring of sediment basin turbidity.
  - vii. Inspect earthen berms and sediment traps weekly to ensure that the structural integrity of the berms/traps has not been damaged.
  - viii. Inspect stockpiles of topsoil and earthen materials weekly to ensure that the slopes are no greater than thirty percent (30%), are seeded and stabilized, and are completely encircled by staked hay bales or silt fence.
  - ix. Inspect outfalls and discharge locations weekly for evidence of a release of sediment or other pollutants to ensure that their structural integrity has not been breached.
  - x. Inspect locations where vehicles entrance and exit the site weekly for sediment that has been tracked off site. If there is evidence that sediment has been tracked off site, the permittee shall sweep the paved surfaces and determine if the controls require improvement.
- (2) The following inspections must be conducted on at least a quarterly basis:

- i. Visually inspect all diversion benches and drainage swales to ensure that the benches remain intact and to determine if settling has affected the grade of the bench. Annual site mapping will be used to verify the visual inspections. "Photogrammetric mapping" may be used to satisfy this requirement, when conducted. A copy of this mapping must be included with the semi-annual Comprehensive Site Evaluation Report that is due January 31<sup>st</sup> and July 31<sup>st</sup> of each year (see Part I.E).
- ii. Inspect the basins that contain silt booms to ensure that the anchoring systems are securely fastened, flotation is adequate, and panel joints remain intact.
- iii. Inspect riprap, for the first year after the placement of the riprap, to ensure that stone has not been dislodged and that scouring of the support material has not occurred. If the first-year inspections verify the integrity of the riprap placement, inspection frequency can be reduced to annually.

(3) Sediment basin inspection and maintenance requirements

- i. Sediment accumulation in sedimentation basins 5, 6 and 10 must be measured at least once every 2 years and/or whenever there is a failure of sediment controls. Sediment levels for these ponds shall be measured during even numbered calendar years and submitted with the Comprehensive Site Evaluation Report due January 31<sup>st</sup> of odd numbered years. Sediment accumulation in sedimentation basins 2, 4, 11, and 13 must be measured every year and/or whenever there is a failure of sediment controls. Sediment levels for these ponds for the previous calendar year shall be submitted with the Comprehensive Site Evaluation Reports due January 31<sup>st</sup> of each year. When sedimentation basins 2, 3 and/or 11 no longer receive runoff from active areas of the landfill, then the permittee may request that sediment levels be measured once every 2 years and/or whenever there is a failure of sediment controls. Sediment measurement frequency shall remain once/year until DEM approves any frequency changes in writing.
- ii. Sediment must be removed when the sediment depth in the basin reaches 2/3 of the available storage depth or when the sediment depth in the basin is causing the basins to be ineffective in removing sediment.

Pond No.	Bottom Elevation (ft)	Lowest Invert Elevation (ft)	Sediment Removal Average Elevation (ft)
2	293.50	297.02	295.85
4	370.00	373.69	372.70
5	358.50	361.20	360.30
6	345.00	348.31	347.21
10	366.00	370.00	368.67
11	328.00	331.00	330.00
13	340.00	343.30	342.20

Note: Pond elevations for existing ponds must be verified after sediment removal.

- iii. Any ponds that have not been constructed must have their elevations verified within thirty (30) days after the completion of the pond's construction.
- (4) Any sediment removal and/or maintenance performed must be documented and records retained on-site for a minimum period of five (5) years.
- (5) Semi-annual site inspections must be conducted by appropriate personnel named in the SWMP to verify that the description of potential pollutant sources identified by the SWMP is accurate, that the drainage map has been updated or otherwise modified to reflect current conditions, and controls to reduce pollutants in stormwater discharges associated with industrial activity identified in the Plan are being implemented and are adequate. A tracking or follow up procedure must be used to ensure that the appropriate action has been taken in response to the inspection. Records documenting significant observations made during the site inspection must be retained as part of the SWMP for a minimum of five (5) years.

d. Additional Requirements

- (1) *Preventative Maintenance Program.* As part of the preventative maintenance program, the permittee must maintain the following: all elements of leachate collection and treatment systems, to prevent commingling of leachate with stormwater; the integrity and effectiveness of any intermediate or final cover (including repairing the cover as necessary), to minimize the effects of settlement, sinking, and erosion.
- (2) *Erosion and Sedimentation Control.* Provide temporary stabilization (e.g., temporary seeding, mulching, and placing geotextiles on the inactive portions of stockpiles) for the following: materials stockpiles for daily, intermediate, and final cover; inactive areas of the landfill or open dump; landfills or open dump areas that have final covers but where vegetation has yet to establish itself; and land application sites where waste application has been completed but final vegetation has not yet been established.
- (3) *Impairment Controls.* Because the facility discharges to a waterbody which is water quality impaired due to bacteria/pathogens (fecal coliform), and dissolved oxygen in Cedar Swamp Brook, as well as total phosphorous and turbidity impairments in the Simmons Reservoir, the permittee must implement the following operational and structural source controls:
  - i. Sweep impervious sources (i.e., roads, parking lots) at a minimum frequency of once per quarter, unless safety concerns due to extended periods of snow/ice cover make sweeping impracticable, in which case sweeping shall be completed as soon as conditions allow it. If the permittee is unable to sweep quarterly, the permittee must document and include in the SWMP records the reasons why quarterly sweeping was not completed. The permittee must increase the sweeping frequency and use more efficient sweeping technologies when necessary;
  - ii. Minimize exposure of solid waste, garbage, and floatable debris to the maximum extent practicable.
  - iii. Use all reasonable methods to deter rodents, birds, and other

animals from feeding/nesting/roosting at the facility;

- iv. Install structural source control BMPs to address on-site activities and sources that could cause bacterial/pathogen contamination (e.g., dumpsters, compost piles, food waste, and animal products);
  - v. Implement other pollution prevention and stormwater BMPs as appropriate.
- e. Consistency with Other Plans. Stormwater management controls may reflect requirements for Spill Prevention Control and Counter-measure (SPCC) plans under Section 311 of the CWA or Best Management Practices (BMP) Programs otherwise required by another permit, including, but not limited to an Erosion and Sedimentation Control Plan (ESCP), and may incorporate any part of such plans into the SWMP by reference.

#### D. BENCHMARK MONITORING

1. The permittee shall compare Total Iron sampling results for outfalls 002A, 004A, 015A, and 017A; TSS sampling results for outfalls 005A and 006A; and Total Phosphorous sampling results for outfalls 002A, 004A, 005A, 006A, 015A, and 017A; to the following benchmark monitoring concentrations. Benchmark monitoring concentrations may be subject to change by permit modification to be consistent with future revisions to EPA and / or State benchmarks:

Parameter	Benchmark Concentration (mg/l)
TSS	100
Total Iron	1.0
Total Phosphorous	2.0

2. Any exceedances of any of the benchmark concentrations shall trigger an evaluation of the implementation of the existing stormwater controls and facility operations to determine if there are possible problems with non-structural BMPs or maintenance that can be corrected. Stormwater controls and the SWMP shall be promptly revised in response to these evaluations and in no case later than thirty (30) calendar days following the receipt of monitoring results that exceed either the benchmark concentrations or the permit limits. SWMP amendments shall be submitted to the DEM in accordance with Part I.C.4. A report of the permittee's comparison of monitoring results with the benchmark concentrations and permit limits shall be submitted with each DMR. If the permittee exceeds the benchmark concentrations or permit limits during the monitoring period the report shall include a detailed description of the possible causes of the exceedances and any modifications made to the stormwater controls to reduce the pollutant levels. If the exceedance of the benchmark concentration is caused by the natural background iron concentrations in the groundwater at the site the report shall include a detailed characterization of the natural background concentration and supporting documentation which demonstrates that the uncontaminated groundwater was the cause of the benchmark exceedance.
3. On a yearly basis, the permittee shall calculate the annual average of all sampling data for Total Iron, TSS, and Total Phosphorous for each outfall for the previous calendar year (January 1 – December 31). When calculating the annual average concentration, pollutant concentrations that were reported as less than the minimum detection limit from Part I.H shall be replaced with zeros. If the annual average exceeds the applicable benchmark concentration and the exceedance is not caused by the natural background iron concentrations in the groundwater at the site, then the permittee shall perform a detailed review of all stormwater controls, BMPs, and maintenance schedules and shall

make all reasonable amendments to stormwater controls and the facility's SWMP to reduce the pollutant levels in the discharge. These amendments shall be submitted to the DEM - Office of Water Resources with the Comprehensive Site Evaluation Report that is required under Part I.E. If the amendments will include changes to structural controls, the report must include a schedule for the implementation of the proposed structural modifications. SWMP amendments shall propose changes to structural stormwater controls and must be approved by the DEM prior to implementation. Upon DEM approval of the structural changes, the permittee shall implement them in accordance with the approved schedule.

#### E. COMPREHENSIVE SITE EVALUATION

A semi-annual comprehensive site evaluation report must be prepared which summarizes the results of the site inspections required under Part I.C, the priority pollutant scans required under Part I.A.4.d, and the benchmark monitoring required under Part I.D. These reports shall be submitted to the DEM - Office of Water Resources by January 31<sup>st</sup>, for the July 1 – December 31 period, and July 31<sup>st</sup>, for the January 1 – June 30 period, of each year. These reports must include the names of the personnel who conducted the inspections, any major or recurring observations noted in the inspections, any maintenance performed on the erosion and sedimentation control measures, a summary of the results of all sediment soundings, and a tabulated summary of all turbidity monitoring.

#### F. SAMPLING WAIVER

If unable to collect samples for Outfalls 002A, 004A, 005A, 006A, 015A, and 017A due to adverse climatic conditions that create dangerous conditions for personnel or otherwise make the collection of a sample impractical, the permittee may submit in lieu of sampling data a description of why samples could not be collected. This waiver applies to an individual reporting period. The permittee is prohibited from exercising this waiver more than twice during a two-year period. If there are no discharges from an outfall during a given reporting period, it shall be reported as "no discharge" on the Discharge Monitoring Report and a sampling waiver is not required.

#### G. SALT STORAGE PILES

Storage piles of salt must be enclosed/covered to prevent exposure to precipitation, except for exposure resulting from adding or removing material from the pile.

#### H. 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, and the following terms and conditions:

All analyses of parameters under this permit must comply with the *National Pollutant Discharge Elimination System (NPDES): Use of Sufficiently Sensitive Test Methods for Permit Applications and Reporting* rule. Only sufficiently sensitive test methods may be used for analyses of parameters under this permit.

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 submitted along with monitoring reports, as well as 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.
  - a. For results reported as less than the MDL, the permittee shall submit a Below Detection Limit summary table as an attachment to NetDMR that lists the parameters that were below the detection limit and the calculated MDL.

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 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.

<b>Volatiles - EPA Method 624</b>		<b>MDL ug/l (ppb)</b>	<b>Pesticides - EPA Method 608</b>		<b>MDL ug/l (ppb)</b>
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			
12V	dichlorobromomethane	1.0	<b>Base/Neutral - EPA Method 625</b>		<b>MDL ug/l (ppb)</b>
14V	1,1-dichloroethane	1.0	1B	acenaphthene *	1.0
15V	1,2-dichloroethane	1.0	2B	acenaphthylene *	1.0
16V	1,1-dichloroethylene	1.0	3B	anthracene *	1.0
17V	1,2-dichloropropane	1.0	4B	benzidine	4.0
18V	1,3-dichloropropylene	1.0	5B	benzo(a)anthracene *	2.0
19V	ethylbenzene	1.0	6B	benzo(a)pyrene *	2.0
20V	methyl bromide	1.0	7B	3,4-benzofluoranthene *	1.0
21V	methyl chloride	1.0	8B	benzo(ghi)perylene *	2.0
22V	methylene chloride	1.0	9B	benzo(k)fluoranthene *	2.0
23V	1,1,2,2-tetrachloroethane	1.0	10B	bis(2-chloroethoxy)methane	2.0
24V	tetrachloroethylene	1.0	11B	bis(2-chloroethyl)ether	1.0
25V	toluene	1.0	12B	bis(2-chloroisopropyl)ether	1.0
26V	1,2-trans-dichloroethylene	1.0	13B	bis(2-ethylhexyl)phthalate	1.0
27V	1,1,1-trichloroethane	1.0	14B	4-bromophenyl phenyl ether	1.0
28V	1,1,2-trichloroethane	1.0	15B	butylbenzyl phthalate	1.0
29V	trichloroethylene	1.0	16B	2-chloronaphthalene	1.0
31V	vinyl chloride	1.0	17B	4-chlorophenyl phenyl ether	1.0
			18B	chrysene *	1.0
<b>Acid Compounds - EPA Method 625</b>		<b>MDL ug/l (ppb)</b>	19B	dibenzo (a,h)anthracene *	2.0
1A	2-chlorophenol	1.0	20B	1,2-dichlorobenzene	1.0
2A	2,4-dichlorophenol	1.0	21B	1,3-dichlorobenzene	1.0
3A	2,4-dimethylphenol	1.0	22B	1,4-dichlorobenzene	1.0
4A	4,6-dinitro-o-cresol	1.0	23B	3,3' -dichlorobenzidine	2.0
5A	2,4-dinitrophenol	2.0	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
<b>Pesticides - EPA Method 608</b>		<b>MDL ug/l (ppb)</b>	31B	fluoranthene *	1.0
1P	aldrin	0.059	32B	fluorene *	1.0
2P	alpha-BHC	0.058	33B	hexachlorobenzene	1.0
3P	beta-BHC	0.043	34B	hexachlorobutadiene	1.0
4P	gamma-BHC	0.048	35B	hexachlorocyclopentadiene	2.0
5P	delta-BHC	0.034	36B	hexachloroethane	1.0
6P	chlordane	0.211	37B	indeno(1,2,3-cd)pyrene *	2.0
7P	4,4' -DDT	0.251	38B	isophorone	1.0
8P	4,4' -DDE	0.049	39B	naphthalene *	1.0
9P	4,4' -DDD	0.139	40B	nitrobenzene	1.0
10P	dieldrin	0.082	41B	N-nitrosodimethylamine	1.0
11P	alpha-endosulfan	0.031	42B	N-nitrosodi-n-propylamine	1.0
12P	beta-endosulfan	0.036	43B	N-nitrosodiphenylamine	1.0
13P	endosulfan sulfate	0.109	44B	phenanthrene *	1.0
14P	endrin	0.050	45B	pyrene *	1.0
15P	endrin aldehyde	0.062	46B	1,2,4-trichlorobenzene	1.0
16P	heptachlor	0.029			
17P	heptachlor epoxide	0.040			

OTHER TOXIC POLLUTANTS

	MDL (ug/l)
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	5.0
Phenols, Total	50.0
TCDD	**
MTBE (Methyl Tert Butyl Ether)	1.0
Total Phosphorus	10.0

\*\* 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 624.1 and 625.1 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 624.1 and 625.1 subparts 8.3.1 and 8.3.11).

**I. MONITORING AND REPORTING**

**1. Monitoring**

All monitoring required by this permit shall be done in accordance with sampling and analytical testing procedures specified in 40 CFR Part 136 unless other procedures are explicitly required in the permit.

**2. Reporting**

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

a. Submittal of DMRs Using NetDMR

The permittee shall continue to submit its monthly monitoring data in discharge monitoring reports (DMRs) to DEM electronically using NetDMR per the following schedule:

<u>Testing to be Performed</u>	<u>Report Due No Later Than</u>	<u>Result Submitted on DMR for</u>
January 1 - March 31	April 15	January 1 – March 31
April	May 15	April 1 – April 30
May	June 15	May 1 – May 31
June	July 15	June 1 – June 30
July 1 – Sept. 30	October 15	July 1 – Sept. 30
Oct. 1 – Dec. 31	January 15	Oct. 1 – Dec. 31

When the permittee submits DMRs using NetDMR, it is not required to submit hard copies of DMRs to DEM.

b. 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

c. Submittal of Reports in Hard Copy Form

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

- (1) Semi-Annual Comprehensive Site Inspection Report
- (2) Written notifications required under Part II
- (3) Notice of unauthorized discharges

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

d. Verbal Reports and Verbal Notifications

Any verbal reports or verbal notifications, if required in Part I and/or II of this permit, shall be made to the DEM. This includes verbal reports and notifications which required 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.

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 250-RICR-150-10-1.12 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 (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 250-RICR-150-10-1.14(R) 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 250-RICR-150-10-1.14(R) of the RIPDES Regulations; and
  - (d) The permittee complied with any remedial measures required under 250-RICR-150-10-1.14(E) 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, 235 Promenade Street, Providence, Rhode Island 02908. 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 250-RICR-150-10-1.16 and 250-RICR-150-10-1.24 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 250-RICR-150-10-1.50 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 <sup>3</sup> /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 <sub>3</sub> -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 <sub>3</sub> -N	nitrate nitrogen as nitrogen
NO <sub>2</sub> -N	nitrite nitrogen as nitrogen
NO <sub>3</sub> -NO <sub>2</sub>	combined nitrate and nitrite nitrogen as nitrogen
C <sub>12</sub>	total residual chlorine

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

**Statement of Basis**

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

RIPDES PERMIT NO. RI0023442

**NAME AND ADDRESS OF APPLICANT:**

RHODE ISLAND RESOURCE RECOVERY CORPORATION  
65 SHUN PIKE  
JOHNSTON, RI 02919

**NAME AND ADDRESS OF FACILITY WHERE DISCHARGE OCCURS:**

RHODE ISLAND RESOURCE RECOVERY CORPORATION  
65 SHUN PIKE  
JOHNSTON, RI 02919

**RECEIVING WATER:**

CEDAR SWAMP BROOK AND TRIBUTARIES [RI0006018R-01], AND  
SIMMONS RESERVOIR [RI0006018L-03]

**CLASSIFICATION:**

**B**

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

The above-named applicant has applied to the Rhode Island Department of Environmental Management (DEM) for reissuance of a RIPDES Permit to discharge into the designated receiving waters.

The applicant, Rhode Island Resource Recovery Corporation (RIRRC), owns and operates the State's central facilities for the recycling and disposal of solid waste. The RIRRC facility is a RCRA Subtitle D Non-Hazardous Waste Landfill. These facilities handle approximately 95 percent of the State's municipal solid waste and a significant amount of commercial waste. The facility does not accept any out-of-state waste.

There are seven point-source discharges from RIRRC: Outfall 002, 004, 005, 006, 015, 016, and 017. The discharge locations include Quarry Stream, Cedar Swamp Brook (waterbody ID (WBID) RI0006018R-01), and the Simmons Reservoir (WBID RI0006018L-03). Outfalls 002 and 017 discharge to the Simmons Reservoir. Outfalls 004, 005, and 006 discharge to Quarry Stream. Outfalls 015 and 016 discharge to Cedar Swamp Brook. Quarry Stream flows into Cedar Swamp Brook, which flows into the Upper Simmons Reservoir (The "Upper" and "Lower" Simmons Reservoir are both designated by the DEM as WBID RI0006018L-03).

**Facility Description**

The RIRRC owns and operates the landfill and recycling facility located on 62 Shun Pike. RIRRC's most recent RIPDES permit, authorizing discharges from the above-mentioned facility, became effective July 1, 2015 and expired on July 1, 2020. The facility submitted an application for permit reissuance to the DEM on January 2, 2020. On January 8, 2020 DEM issued a deficiency letter regarding the application materials. On March 6, 2020 the DEM issued an application complete letter to the applicant. In accordance with 250-RICR-150-10 §1.13 of the Regulations for the Rhode Island Pollutant Discharge Elimination System, the facility's July 1, 2015 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 July 1, 2015 permit. The permit authorizes discharges from seven outfalls: 002, 004, 005, 006, 015, 016, and 017.

A process flow diagram is attached as Attachment D.

**Receiving Water Description**

The receiving waters include Cedar Swamp Brook and its tributaries (which includes Quarry Stream), (waterbody ID (WBID) RI0006018R-01), and the Simmons Reservoir (WBID RI0006018L-03). Quarry Stream flows into Cedar Swamp Brook, which flows into the Upper Simmons Reservoir (The "Upper" and "Lower" Simmons Reservoir are both designated by the DEM as WBID RI0006018L-03). These waterbodies are classified as Class B, and are designated as warm water fisheries according to the RI Water Quality Regulations. These waters are designated for fish and wildlife habitat and primary and secondary contact recreational activities. They shall be suitable for compatible industrial processes and cooling, hydropower, aquacultural uses, navigation, and irrigation and other agricultural uses. These waters shall have good aesthetic value.

The water body segment for Cedar Swamp Brook and its tributaries is RI0006018R-01 and is in Johnston, Rhode Island. This segment is listed on DEM's 2018 303(d) impaired waters list for not supporting Fish and Wildlife habitat due to dissolved oxygen. Additionally, this segment is listed for not supporting Primary Contact Recreation or Secondary Contact Recreation due to fecal coliform.

The water body segment for Simmons Reservoir is RI0006018L-03 and is in Johnston, Rhode Island. This segment is listed on DEM's 2018 303(d) impaired waters list for not supporting Fish and Wildlife habitat due to total phosphorous and turbidity.

**II. Description of Discharge**

A quantitative description of the discharges in terms of significant effluent parameters based on DMR

data from July 1, 2015 to March 31, 2021 is shown in Attachment A. Attachment B includes calculations of allowable acute and chronic discharge limitations from outfall 016A. Attachment C is a summary of possible water quality limitations and reasonable potential. Attachment D includes a flow diagram depicting the authorized discharges and the outfall locations. Attachment E includes a site map showing surface water quality monitoring locations. Attachment F includes background data used in permit development.

Outfalls 002, 004, 015, and 017 discharge landfill wastewater as defined in 40 CFR §445.2(f). Landfill wastewater includes contaminated stormwater, which is defined in 40 CFR §445.2(b) and means stormwater that comes in direct contact with landfill wastes, the waste handling and treatment areas. Areas that may produce contaminated stormwater include (but are not limited to): the open face of an active landfill with exposed waste (no cover added); the areas around wastewater treatment operations; trucks, equipment or machinery that has been in direct contact with the waste; and waste dumping areas. Therefore, these discharges are subject to federal effluent limitations which are specified in 40 CFR §445.21.

Outfall 016 contains non-stormwater discharges from the phase V stone trench underdrain treatment system, and it is subject to numeric water quality-based limits. Since this outfall only contains groundwater, it is not subject to the technology-based limits from 40 CFR §445.

Outfall 005 and 006 discharge non-contaminated stormwater, defined in 40 CFR §445.2(g), and includes stormwater that does not come into direct contact with landfill wastes, the waste handling and treatment areas, or landfill wastewater that is defined in 40 CFR §445.2(f). Non-contaminated stormwater includes stormwater which flows off the cap, cover, intermediate cover, daily cover, and/or final cover of the landfill.

Based on a review of available effluent data submitted with the most recent application, priority pollutant scan data, and DMR data, the facility may not be able to comply with its final permit limits at outfall 016A for Total Cadmium, Total Silver, Total Phosphorous, and Total Iron. RIRRC is currently subject to Consent Agreement OCI-WP-19-67, AAD No.: 20-003/WRE, that includes a schedule for RIRRC to construct a sewerage line for the Underdrain to the Cranston Water Pollution Control Facility (CWPCF) and begin discharge to the CWPCF, thereby eliminating the discharge to surface waters from Outfall 016A. It is anticipated that an updated or new Consent Agreement will be necessary in order to establish interim limits while RIRRC constructs the sewerage line and eliminates its discharge from Outfall 016A into surface waters of the State.

### **III. Permit 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**

#### **Permit Limit Development**

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).

Development of RIPDES permit limitations is a multi-step process consisting of: determining if Federal effluent guidelines apply; calculation of allowable water quality-based discharge levels based on background data and available dilution; assigning appropriate Best Professional Judgement (BPJ) based limits; comparing existing and proposed limits; comparing discharge data to proposed limits; performing an antidegradation/antibacksliding analysis to determine the final permit limits; and developing interim limits as appropriate.

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.

#### Technology-Based Permit Limitations

The RIRRC facility is a RCRA Subtitle D Non-Hazardous Waste Landfill that discharges Landfill Wastewater subject to federal effluent guidelines found at 40 CFR Part 445, Subpart B.

Because outfalls 002, 004, 015, and 017 receive stormwater flows that are defined as Landfill Wastewater, according to 40 CFR Part 445. They are each subject to the previously mentioned federal effluent guidelines that include technology-based limits for Biochemical Oxygen Demand (BOD), Total Suspended Solids (TSS), Total Ammonia, alpha-terpineol, Benzoic Acid, p-Cresol, Phenol, Zinc, and pH found at 40 CFR Part 445, Subpart B.

In addition, since these outfalls also receive contaminated stormwater, which can have elevated levels of iron, the DEM has determined that it is appropriate to assign benchmark monitoring for iron. Also, due to impairments in the receiving waterbodies, these outfalls have been assigned benchmark monitoring for total phosphorous. Lastly, these outfalls have been assigned monitoring for flow.

#### Best Professional Judgment (BPJ)-Based Permit Limitations

##### Flow Limits

The Phase V Underdrain Treatment System was designed for an average flow of 91,000 gallons per day (gpd) and a daily maximum flow of 123,500 gpd. Therefore, the DEM has assigned a monthly average flow limit for Outfall 016 of 91,000 gpd and maximum daily flow of 123,500 gpd. These flow limits are necessary, in part, because when the underdrain treatment system receives an excessive flow, the treatment system is bypassed and discharges to Pond 2, thereby discharging from Outfall 002. The process wastewater from the underdrain treatment system is not an allowable discharge from Outfall 002. Flow limits from Outfall 016 ensure that bypasses will not occur.

##### Outfall 005 and 006

Pond 5 and pond 6 (outfalls 005 and 006 respectively) do not receive any flows from active landfill operations and they will only receive drainage from areas of the landfill that have been closed. Since these outfalls will only discharge non-contaminated stormwater as defined in 40 CFR §445.2(g), and includes stormwater that does not come into direct contact with landfill wastes, the waste handling and treatment areas, or landfill wastewater that is defined in 40 CFR §445.2(f), these outfalls are not subject to federal effluent guidelines. Non-contaminated stormwater includes stormwater which flows off the cap, cover, intermediate cover, daily cover, and/or final cover of the landfill. Therefore, based upon BPJ, these ponds have been assigned monitoring for flow and benchmark monitoring for TSS and Total Phosphorous. Total phosphorous benchmarks are required at these outfalls due to impairments in Cedar Swamp Brook for dissolved oxygen (for which phosphorous is the surrogate measure). TSS benchmark monitoring is used to evaluate the effectiveness of the sedimentation and erosion controls in use at the site. Fecal coliform monitoring is required due to the fecal coliform impairment in Cedar Swamp Brook.

The DEM also evaluated the possibility of other monitoring parameters at outfalls 005 and 006. Oil & Grease was evaluated as a potential parameter because it is included in the DEM's 2019 Multi-Sector General Permit (MSGP) for stormwater discharges associated with industrial activity as a "universal" benchmark parameter. DEM does not expect the landfill to be a significant source of O&G because it does not have industrial processes that would expose stormwater to significant amounts of oil or grease, therefore, monitoring was not included for this parameter. Chemical Oxygen Demand (COD) was also evaluated for possible monitoring. COD is included in the EPA's 2021 MSGP. As noted in the National Resource Council's 2019 report, "Improving the EPA Multi-Sector General Permit for Industrial Stormwater Discharges", COD is a recommended

"universal" benchmark monitoring parameter. COD can be an indicator of broader water quality problems and the presence of other pollutants, indicating whether a facility is properly maintaining stormwater control measures. Based on available monitoring data, the DEM has determined that COD monitoring is not required in RIRRC's RIPDES permit. RIRRC conducted 12 sampling events between 2015 and 2018 at several surface water monitoring locations, including background data at Cedar Swamp Brook (upstream of landfill discharges), and downstream of Ponds 4, 5, and 6. A map of these monitoring locations can be seen in Attachment E. A summary table of average COD results is provided below:

Monitoring Location	Average COD Result (mg/L)	Upper Bound of 95% Confidence Interval COD Concentrations (mg/L)
1B (upstream of landfill in Cedar Swamp Brook)	5.1	10.3
1A (downstream of Pond 4)	15.6	25.2
A (downstream of confluence of Quarry Stream and Cedar Swamp Brook)	8.3	15.2
B (downstream of monitoring location A)	10.9	15.7
C (downstream of monitoring location B)	11.6	20.0
7 (downstream of monitoring location C – prior to entering the Simmons Reservoir)	12.3	20.4

The EPA 2021 MSGP most stringent benchmark monitoring concentration for COD is 120 mg/L. For landfills, the EPA's 2021 MSGP requires indicator monitoring only for COD. Based on the above results, the RIRRC does not have reasonable potential to exceed the most stringent benchmark monitoring concentrations for COD, for any sector, and therefore the DEM has determined that RIRRC does not require COD monitoring at this time and that TSS is a sufficient indicator of the effectiveness of stormwater controls at the site.

#### Water Quality-Based Limit (WQBEL) Calculations

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 (250-RICR-150-05-1). 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

Mixing for the RIRRC discharges to the Cedar Swamp Brook is assumed to be instantaneous and complete. Therefore, the whole flow of the stream at critical flow conditions is used when calculating limits and accounting for dilution.

Based on a July 14, 1993 letter from the DEM to RIRRC, the 7Q10 flow for Cedar Swamp Brook was estimated to be 0.09 cubic feet per second (cfs). The Brown and Caldwell report on the design of the Phase V Underdrain Treatment System that was submitted to the DEM calculated a flow of 91,000 gallons per day as the average design flow for the underdrain treatment system (outfall

016A). Using an underdrain design flow of 91,000 gpd or 0.141 cfs and a Cedar Swamp Brook 7Q10 flow of 0.09 cfs, the dilution factor for outfall 016A was calculated to be 1.639. The dilution factor was calculated using the following equation:

$$DF = \frac{Q_D + Q_U}{Q_D}$$

Where: DF = Dilution Factor  
Q<sub>D</sub> = Design Flow  
Q<sub>U</sub> = Flow upstream of the facility(Receiving Water Flow)

Therefore, the dilution factor of 1.639 was used when calculating water quality-based permit limits for this outfall.

The Rhode Island Water Quality Regulations at 250-RICR-150-05-1.18(N)(1) require in-stream concentrations of discharged pollutants to be determined by specific formulas, or other methods which may be found to be acceptable. These formulas require the use of the seven-day, 10-year, low flow of the receiving stream immediately upstream of the discharge to be used in calculating the concentrations of discharged pollutants for the purpose of developing RIPDES permit conditions. This 7Q10 value is protective of water quality standards under critical flow conditions.

#### Hardness

The hardness value used for WQBEL calculations was found using the lower bound 95% confidence interval of available hardness data at Cedar Swamp Brook (monitoring location SW-1B, see Attachment E), collected by DEM and RIRRC. This value was calculated to be 27.3 mg/L as CaCO<sub>3</sub>. The available data used for background characterization of Cedar Swamp Brook is summarized in Attachment F.

#### Limit Calculation

Based on the above dilution factors and the freshwater aquatic life and non-Class A human health criteria from the Rhode Island Water Quality Regulations (250-RICR-150-05 §1.26), the allowable water quality-based effluent limitations were established using 80% allocation when no background data was available and 90% allocations when background data was available.

The allowable discharge limits were calculated as follows:

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

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

Where: DF = acute or chronic dilution factor, as appropriate  
Note: the right side of this formula is divided by the appropriate metals translator when this formula is used to calculate limits for metals

- b) Using available background concentration data (See Attachment F)

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

Where: DF = acute or chronic dilution factor, as appropriate  
Note: the right side of this formula is divided by the appropriate metals translator when this formula is used to calculate limits for metals

Because background concentrations were available for arsenic, cadmium, copper, lead, nickel, selenium, silver, and zinc, 90% of criteria was allocated for these pollutants. All other limits were calculated using 80% allocation, due to a lack of background data.

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

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

- I. 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.
- II. Pollutants with water quality based monthly average limits in the previous RIPDES permit. The relaxation of monthly average limits from the previous permit was restricted in accordance with the antibacksliding provisions of the Clean Water Act and the Policy on the Implementation of the Antidegradation Provisions of the Rhode Island Water Quality Regulations.

In accordance with 40 CFR Part 122.4(d)(1)(iii), it is only necessary to establish limitations for those pollutants in the discharge which have the reasonable potential to cause or contribute to the exceedance of the in-stream criteria. In order to evaluate the need for permit limitations, the allowable discharge levels (permit limits) were compared to Discharge Monitoring Report (DMR) data, Priority Pollutant Scan data, available surface water monitoring data, and data provided in the permit application. An assessment was made to determine if limits were necessary, using the data collected during the previous permit term (since 2015). Based on these comparisons, water quality limitations have been deemed necessary at outfall 016 for cadmium, silver, ammonia, phosphorous, and iron. In addition, monitoring for orthophosphorous has been included in the permit.

#### Antibacksliding

Provided below is a brief introduction to Antibacksliding and Antidegradation; as well as a discussion on how the two policies were used to calculate water quality-based limits.

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)*

1. 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.
2. 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 asked 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 pollutant levels, which would result after the 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 DEM's "*Policy on the Implementation of the Antidegradation Provisions of the Rhode Island Water Quality Regulations July 2006*" (the Policy) established 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 criteria exceeds the levels necessary to support the 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 Policy.

**Tier 2½.** Where high quality waters constitute Special Resource Protection Waters SRPWs<sup>1</sup>, there shall be no measurable degradation of the existing water quality necessary to protect the characteristics 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<sup>2</sup>, that water quality shall be maintained and protected. The State may allow some limited activities that result in temporary or 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, DEM 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 DEM 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 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 in 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

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<sup>1</sup> SRPWs are surface waters identified by the Director as having significant recreational or ecological uses.

<sup>2</sup> ONRWs are a special subset of high-quality water bodies, identified by the State as having significant recreational or ecological water uses.

antidegradation, existing water quality must be defined. As explained earlier, DEM 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.

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

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

where:  $C_b$  = background concentration<sup>3</sup>  
 $C_d$  = discharge data<sup>4</sup>  
DF = dilution factor

In this permit, all monthly average limitations are either the same as or more stringent than the limits in the 2015 permit. Therefore, the limits contained in this permit are consistent with the Department's anti-degradation policy.

### **Other Permit Conditions**

#### Priority Pollutants

The required priority pollutant scans are to be performed semi-annually for the EPA Priority Pollutants as listed in 40 CFR 122, Appendix D, Tables II and III. These priority pollutant scans are required to evaluate any groundwater contamination that may be discharged through this outfall. If any pollutants that are regulated under the Record of Decision are detected in these scans, RIRRC is required to provide notice to the Federal and State Superfund Programs so that the contamination can be addressed. If any pollutants, not regulated under the ROD, are detected that also cause an exceedance of water quality criteria, RIRRC is required to either eliminate the discharge to surface waters or provide appropriate treatment to remove the detected pollutant. In addition, any pollutants detected in the priority pollutant scan will have their monitoring frequency increased from semi-annual to monthly. As stated previously, under existing consent agreements, RIRRC plans to eliminate their discharge from outfall 016 and direct it to the Cranston Water Pollution Control Facility. Once the discharge to surface waters is eliminated, priority pollutant scans from the outfall will no longer be required.

#### WET Testing

The biomonitoring requirements are set forth in 40 CFR 131.11 and in the State's Water Quality Regulations, containing narrative conditions at 250-RICR-150-05-1.10(B) that state, at a minimum, all waters shall be free of pollutants in concentrations or combinations or from anthropogenic activities subject to these regulations that: adversely affect the composition of fish and wildlife; adversely affect the physical, chemical, or biological integrity of the habitat; interfere with the propagation of fish and wildlife; adversely alter the life cycle functions, uses, processes, and activities of fish and wildlife; or adversely affect human health. In order to determine compliance with many of these conditions, WET testing is typically required.

RIDEM's toxicity permitting policy is based on past toxicity data, the level of available dilution, and other considerations required under 40 CFR §122.44(d)(1)(ii). Given the existing controls at the facility, the water quality classification of the receiving waters, and the available water quality monitoring data, DEM has determined that WET monitoring is not required at this time.

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<sup>3</sup> Data collected at a location that is unimpacted by significant point source discharges.

<sup>4</sup> 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 95<sup>th</sup> 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.



## Benchmark Monitoring

In addition to previously-mentioned permit limits, this permit also includes benchmark monitoring concentrations for total iron, TSS, and total phosphorous. The total iron, and TSS benchmarks are consistent with DEM's 2019 MSGP benchmark requirements. Benchmark monitoring concentrations are not directly correlated to water quality standards. They are pollutant levels that EPA has developed to be protective of water quality under most scenarios. Exceedances of benchmark values, which are not caused by natural background sources, shall trigger a review of the facility's stormwater controls by the permittee and modification as necessary.

Due to impairments in Cedar Swamp Brook and the Simmons Reservoir, benchmark concentrations are also included for total phosphorous. The total phosphorous benchmark concentration is set at 2.0 mg/L. This benchmark concentration will be protective of water quality and allow DEM to collect additional phosphorous loading data in anticipation of a Total Maximum Daily Load study that will allocate a phosphorous load to RIRRC in the future (currently planned for 2024).

## SWMP Requirements

A SWMP is required to be developed to document stormwater controls that are being used to prevent water quality impacts from the site. The SWMP describes and ensures the implementation of Best Management Practices (BMPs), which are used to reduce or eliminate the pollutants in stormwater discharges from the facility and to assure compliance with the terms and conditions of this permit. The SWMP is intended to document the selection, design, and installation of control measures that are used to meet this permit's effluent limits. Because of existing impairments, the SWMP requirements also contain conditions designed to address the impairments (See Part I.C.5.d(3)). These conditions, which include sweeping impervious surfaces; minimizing exposure of waste, garbage, and floatable debris; deterring rodents, birds, and other animals, installing source control BMPs at dumpsters; and other pollution prevention and stormwater BMPs as appropriate, are consistent with the conditions of DEM's 2019 MSGP.

## Nutrients

The effluent monitoring requirements have been specified in accordance with the RIPDES regulations as well as 40 CFR 122.41 (j), 122.44 (i), and 122.48 to yield data representative of the discharge. The requirement of testing for nutrients; phosphorus and ammonia, is necessary to make a determination on nutrient loadings in the receiving water.

### Ammonia

The Rhode Island Water Quality Regulations at 250-RICR-150-05 §1.26(L) require freshwater chronic ammonia limits to be calculated on the basis of pH and temperature. For Cedar Swamp Brook, the upper bound 90% confidence interval for pH and temperature was calculated for ammonia criteria. These criteria were calculated on a seasonal basis, with a "Summer" (May – October) and "Winter" (November – April). The upper bound 90% confidence interval for May-October was calculated for pH and found to be 7.1 s.u. and for temperature the upper bound 90% confidence interval is 20.6 °C. For November – April, the values were calculated as 7 s.u. for pH and 7.5 °C for temperature. Water quality classifications (250-RICR-150-05 §1.25) lists the segment of the Cedar Swamp Brook and Simmons Reservoir that the facility discharges to as a warmwater habitat. Therefore, salmonids are assumed absent, and ammonia criteria from the RIDEM Ambient Water Quality Criteria and Guidelines for Toxic Pollutants (250-RICR-150-05 §1.26(L)) are used based on that designation.

### Phosphorous

For outfall 016A, RIRRC uses phosphoric acid for pH adjustment in order to lower the Phase V Underdrain's pH and to compensate for the lack of phosphorous that the phase V Underdrain Treatment System's nitrifying bacteria require. Because of this, the DEM has determined that the Phase V Underdrain discharge has reasonable potential to cause an exceedance of the Total

Phosphorous water quality criteria of 0.025 mg/L that applies for lakes, ponds, kettleholes, and reservoirs. Using the treatment system's design flow and the 7Q10 flow for Cedar Swamp Brook, the DEM determined that the applicable dilution factor is 1.639. Using this dilution factor and allocating 80% of the criteria, due to the lack of background phosphorous data, the Total Phosphorous permit limit for outfall 016A was calculated to be 0.033 mg/L (i.e., the limit =  $0.8 * 0.025 \text{ mg/L} * 1.639$ ). In addition to the 0.033 mg/L Total Phosphorous limit in effect from April through October, the permit also contains a Total Phosphorous limit of 1.0 mg/L from November through March. The November – March limit is necessary to ensure that the levels of phosphorous discharged in the winter period do not result in the accumulation of phosphorous in the sediments. The limitations assumes that the dissolved fraction of the Total Phosphorous will pass through the system. To verify that the particulate fraction is low (i.e., the Total Phosphorous is being discharged is in the dissolved form), a monitoring requirements for orthophosphorous has been included for the November – March period in order to determine the particulate fraction. All outfalls other than 016A have been assigned benchmark monitoring for total phosphorous.

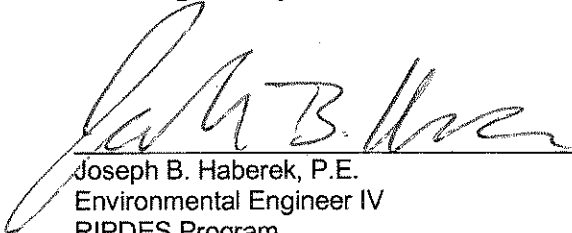
The remaining general and specific conditions of the permit are based on the RIPDES regulations as well as 40 CFR Parts 122 through 125 and consist primarily of management requirements common to all stormwater permits.

V. **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:

Travis Babikoff, P.E.  
Environmental Engineer II  
Department of Environmental Management/ Office of Water Resources  
235 Promenade Street  
Providence, Rhode Island 02908  
Telephone: (401) 222-4700, ext: 77274  
Email: [travis.babikoff@dem.ri.gov](mailto:travis.babikoff@dem.ri.gov)

10/25/2021  
Date

  
Joseph B. Haberek, P.E.  
Environmental Engineer IV  
RIPDES Program  
Office of Water Resources  
Department of Environmental Management

## ATTACHMENT A

### Effluent Characteristics:

<b>Parameter</b>	<b>Outfall 002A (Pond 2) Monthly Average*</b>	<b>Outfall 002Q (Pond 2) Quarterly Average**</b>
Flow	980,061 gpd	774,870 gpd
BOD <sub>5</sub>	4.7	Non-detect
TSS	46.4	93.6
Ammonia, Total	11.6	9.6
pH	7.1	7.4
Alpha-Terpineol	Non-detect	Non-detect
Benzoic Acid	Non-detect	Non-detect
p-Cresol	Non-detect	Non-detect
Phenol	Non-detect	Non-detect
Zinc, Total	42.4	72.9
Iron, Total	3.0	4.1

<b>Parameter</b>	<b>Outfall 004A (Pond 4) Monthly Average***</b>	<b>Outfall 004Q (Pond 4) Quarterly Average***</b>
Flow	1.16 MGD	1.09 MGD
BOD <sub>5</sub>	Non-detect	9.2
TSS	20.2	46.9
Ammonia, Total	0.1	0.2
pH	8.0	7.5
Alpha-Terpineol	Non-detect	Non-detect
Benzoic Acid	Non-detect	Non-detect
p-Cresol	Non-detect	Non-detect
Phenol	Non-detect	Non-detect
Zinc, Total	12.6	14.2
Iron, Total	1.0	1.8

<b>Parameter</b>	<b>Outfall 005A (Pond 5) Monthly Average*</b>	<b>Outfall 005Q (Pond 5) Quarterly Average**</b>
Flow	680,981 gpd	774,870 gpd
TSS	11.7	93.6

<b>Parameter</b>	<b>Outfall 006A (Pond 6) Monthly Average*</b>	<b>Outfall 006Q (Pond 6) Quarterly Average**</b>
Flow	980,061 gpd	774,870 gpd
TSS	46.4	93.6

Note: Units are in mg/L unless otherwise noted. Monthly and Quarterly Average represents the mean of monthly averages for the applicable time period.

\*The monthly average data is from April 2016 to June 2020

\*\*The quarterly average data is from July 2015 to March 2021

\*\*\*Outfall 004 was monitored only for flow, TSS, and total iron until the monitoring period ending 12/31/17, when all other parameters began to be monitored.

Parameter	Outfall 015A (Pond 11) Monthly Average*	Outfall 015Q (Pond 11) Quarterly Average**
Flow	1.06 MGD	839,321 gpd
BOD <sub>5</sub>	1.5	0.8
TSS	6.9	11.1
Ammonia, Total	0.2	0.3
pH	7.3	7.3
Alpha-Terpineol	Non-detect	Non-detect
Benzoic Acid	Non-detect	Non-detect
p-Cresol	Non-detect	Non-detect
Phenol	Non-detect	Non-detect
Zinc, Total	16.3	11.6
Iron, Total	0.9	0.5

Parameter	Outfall 016A (Phase V Landfill Stone Trench Discharge) Monthly Average*	Outfall 016Q (Phase V Landfill Stone Trench Discharge) Quarterly Average**
Flow	53,291 gpd	57,976 gpd
BOD <sub>5</sub>		Non-detect
TSS	46.4	93.6
Ammonia, Total	0.5	0.3
pH	7.1	7.4
Zinc, Total	42.4	72.9
Iron, Total	1.1	1.0
Phosphorous-ortho	0.05	0.01
Phosphorous, Total	0.27	0.11

Parameter	Outfall 017A (Pond 13) Monthly Average*	Outfall 017Q (Pond 13) Quarterly Average**
Flow		
BOD <sub>5</sub>		
TSS		
Ammonia, Total		
pH		
Alpha-Terpineol	<b>NO DISCHARGE SINCE CONSTRUCTION</b>	
Benzoic Acid		
p-Cresol		
Phenol		
Zinc, Total		
Iron, Total		

Note: Units are in mg/L unless otherwise noted. Monthly and Quarterly Average represents the mean of monthly averages for the applicable time period.

\*The monthly average data is from April 2016 to June 2020

\*\*The quarterly average data is from July 2015 to March 2021

**ATTACHMENT B**

**Calculation of Allowable Acute and Chronic Discharge Limitations**

**CALCULATION OF WATER QUALITY BASED NON-CLASS AA FRESHWATER DISCHARGE LIMITS**  
**FACILITY SPECIFIC DATA INPUT SHEET**

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

FACILITY NAME: **RIRRC**  
 RIPDES PERMIT #: **RI0023442**

	DISSOLVED BACKGROUND DATA (ug/L)	ACUTE METAL TRANSLATOR	CHRONIC METAL TRANSLATOR
ALUMINIUM	NA	NA	NA
ARSENIC	0.08	1	1
CADMIUM	0	0.998318474	0.963318474
CHROMIUM III	NA	0.316	0.86
CHROMIUM VI	NA	0.982	0.962
COPPER	1.6	0.96	0.96
LEAD	0.74	0.980176925	0.980176925
MERCURY	NA	0.85	0.85
NICKEL	0.65	0.998	0.997
SELENIUM	0.03	NA	NA
SILVER	0.01	0.85	NA
ZINC	3.6	0.978	0.986
AMMONIA (as N)	NA		

FLOW DATA	
DESIGN FLOW =	0.091 MGD
=	0.141 CFS
7Q10 FLOW =	0.090 CFS
7Q10 (JUNE-OCT) =	0.090 CFS
7Q10 (NOV-MAY) =	0.090 CFS
30Q5 FLOW =	0.090 CFS
HARMONIC FLOW =	0.090 CFS

DILUTION FACTORS	
ACUTE =	1.639
CHRONIC =	1.639
(MAY-OCT) =	1.639
(NOV-APR) =	1.639
30Q5 FLOW =	1.639
HARMONIC FLOW =	1.639

USE NA WHEN NO DATA IS AVAILABLE

NOTE 1: METAL TRANSLATORS FROM RI WATER QUALITY REGS.

pH =	7.0 S.U.
HARDNESS =	27.3 (mg/L as CaCO3)

WATER QUALITY BASED EFFLUENT LIMITS - FRESHWATER

CALCULATION OF WATER QUALITY BASED NON-CLASS AA FRESHWATER DISCHARGE LIMITS

FACILITY NAME: RIRRC

RIPDES PERMIT #: RI0023442

Month	Upper 90 <sup>th</sup> pH**	Upper 90 <sup>th</sup> % Temp (°C)**	Acute Criteria* mg/L as N	Chronic Criteria* mg/L as N
May	7.1	20.6	32.8	3.84
Jun	7.1	20.6	32.8	3.84
Jul	7.1	20.6	32.8	3.84
Aug	7.1	20.6	32.8	3.84
Sep	7.1	20.6	32.8	3.84
Oct	7.1	20.6	32.8	3.84
Nov	7	7.5	36.1	9.3
Dec	7	7.5	36.1	9.3
Jan	7	7.5	36.1	9.3
Feb	7	7.5	36.1	9.3
Mar	7	7.5	36.1	9.3
Apr	7	7.5	36.1	9.3

NOTE: Criteria from Appendix B of the RI Water Quality Regulations  
250-RICR-150-05-1.26

\* The receiving water body is a warm water body, therefore it is assumed that salmonids are absent, and those acute criteria for Total Ammonia Nitrogen are used  
\*\* pH and Temperature data points calculated based on Upper 90th percentile of historical WQ data (See Attachment F)

Water Quality Based Effluent Limits - Freshwater

CALCULATION OF WATER QUALITY BASED NON-CLASS AA FRESHWATER DISCHARGE LIMITS

FACILITY NAME: RIRRC

RIPDES PERMIT #: RI0023442

NOTE: METALS CRITERIA ARE EXPRESSED AS DISSOLVED, METALS LIMITS ARE EXPRESSED AS TOTAL

CHEMICAL NAME	CAS #	BACKGROUND CONCENTRATION (ug/L)	FRESHWATER CRITERIA ACUTE (ug/L)	DAILY MAX LIMIT (ug/L)	FRESHWATER CRITERIA CHRONIC (ug/L)	HUMAN HEALTH NON-CLASS A CRITERIA (ug/L)	MONTHLY AVE LIMIT (ug/L)
<b>PRIORITY POLLUTANTS</b>							
<b>TOXIC METALS AND CYANIDE</b>							
ANTIMONY	7440360		450	590.1012396	10	640	13.11336088
ARSENIC (limits are total recoverable)	7440382	0.08	340	501.53492	150	1.4	2.01422073
ASBESTOS	1332214			No Criteria			No Criteria
BERYLLIUM	7440417		7.5	9.835020659	0.17		0.222927135
CADMIUM (limits are total recoverable)	7440439	0	0.568984595	0.84081013	0.099629313		0.152575141
CHROMIUM III (limits are total recoverable)	16065831	NA	196.7486732	816.4672007	25.59296015		39.02438632
CHROMIUM VI (limits are total recoverable)	18540299	NA	16	21.36596477	11		14.99448749
COPPER (limits are total recoverable)	7440508	1.6	3.954786654	5.012124052	2.953269		3.473069863
CYANIDE	57125		22	28.84939393	5.2	140	6.818947657
LEAD (limits are total recoverable)	7439921	0.74	15.32743843	22.58660105	0.597288271		0.416420221
MERCURY (limits are total recoverable)	7439976	NA	1.4	2.159847674	0.77	0.15	0.231412251
NICKEL (limits are total recoverable)	7440020	0.65	156.1198759	230.3615933	17.34009831	4600	25.24129709
SELENIUM (limits are total recoverable)	7782492	0.03	20	29.48588687	5	4200	7.357090391
SILVER (limits are total recoverable)	7440224	0.01	0.369844067	0.634378712	NA		No Criteria
THALLIUM	7440280		46	60.32146004	1	0.47	0.616327961
ZINC (limits are total recoverable)	7440666	3.6	39.00459633	56.48327118	39.32365233	26000	56.50236062
<b>VOLATILE ORGANIC COMPOUNDS</b>							
ACROLEIN	107028		2.9	3.802874655	0.06	290	0.078680165
ACRYLONITRILE	107131		378	495.6850412	8.4	2.5	3.27834022
BENZENE	71432		265	347.5040633	5.9	510	7.736882919
BROMOFORM	75252		1465	1921.107369	33	1400	43.2740909
CARBON TETRACHLORIDE	56235		1365	1789.97376	30	16	20.98137741
CHLOROBENZENE	108907		795	1042.51219	18	1600	23.60404958
CHLORODIBROMOMETHANE	124481			No Criteria		130	170.4736914
CHLOROFORM	67663		1445	1894.880647	32	4700	41.96275481
DICHLOROBROMOMETHANE	75274			No Criteria		170	222.9271349
1,2DICHLOROETHANE	107062		5900	7736.882919	131	370	171.7850275
1,1DICHLOROETHYLENE	75354		580	760.574931	13	7100	17.04736914
1,2DICHLOROPROPANE	78875		2625	3442.257231	58	150	76.0574931
1,3DICHLOROPROPYLENE	542756			No Criteria		21	27.53805785
ETHYLBENZENE	100414		1600	2098.137741	36	2100	47.20809916
BROMOMETHANE (methyl bromide)	74839			No Criteria		1500	1967.004132
CHLOROMETHANE (methyl chloride)	74873			No Criteria			No Criteria
METHYLENE CHLORIDE	75092		9650	12654.39325	214	5900	280.6259228



Water Quality Based Effluent Limits - Freshwater

CALCULATION OF WATER QUALITY BASED NON-CLASS AA FRESHWATER DISCHARGE LIMITS

FACILITY NAME: RIRRC

RIPDES PERMIT #: RI0023442

NOTE: METALS CRITERIA ARE EXPRESSED AS DISSOLVED, METALS LIMITS ARE EXPRESSED AS TOTAL

CHEMICAL NAME	CAS #	BACKGROUND CONCENTRATION (ug/L)	FRESHWATER CRITERIA ACUTE (ug/L)	DAILY MAX LIMIT (ug/L)	FRESHWATER CRITERIA CHRONIC (ug/L)	HUMAN HEALTH NON-CLASS A CRITERIA (ug/L)	MONTHLY AVE LIMIT (ug/L)
1,1,2,2TETRACHLOROETHANE	79345		466	611.082617	10	40	13.11336088
TETRACHLOROETHYLENE	127184		240	314.7206611	5.3	33	6.950081266
TOLUENE	108883		635	832.6984158	14	15000	18.35870523
1,2TRANSDICHLOROETHYLENE	156605			No Criteria		10000	13113.36088
1,1,1TRICHLOROETHANE	71556			No Criteria			No Criteria
1,1,2TRICHLOROETHANE	79005		900	1180.202479	20	160	26.22672176
TRICHLOROETHYLENE	79016		1950	2557.105371	43	300	56.38745178
VINYL CHLORIDE	75014			No Criteria		2.4	3.147206611
<b>ACID ORGANIC COMPOUNDS</b>							
2CHLOROPHENOL	95578		129	169.1623553	2.9	150	3.802874655
2,4DICHLOROPHENOL	120832		101	132.4449449	2.2	290	2.884939393
2,4DIMETHYLPHENOL	105679		106	139.0016253	2.4	850	3.147206611
4,6DINITRO2METHYL PHENOL	534521			No Criteria		280	367.1741046
2,4DINITROPHENOL	51285		31	40.65141873	0.69	5300	0.904821901
4NITROPHENOL	88755			No Criteria			No Criteria
PENTACHLOROPHENOL	87865		0.054292982	0.071196347	0.041653899	30	0.054622261
PHENOL	108952		251	329.1453581	5.6	1700000	7.343482092
2,4,6TRICHLOROPHENOL	88062		16	20.98137741	0.36	24	0.472080992
<b>BASE NEUTRAL COMPOUNDS</b>							
ACENAPHTHENE	83329		85	111.4635675	1.9	990	2.491538567
ANTHRACENE	120127			No Criteria		40000	52453.44352
BENZIDINE	92875			No Criteria		0.002	0.002622672
POLYCYCLIC AROMATIC HYDROCARBONS				No Criteria		0.18	0.236040496
BIS(2CHLOROETHYL)ETHER	111444			No Criteria		5.3	6.950081266
BIS(2CHLOROISOPROPYL)ETHER	108601			No Criteria		65000	85236.84571
BIS(2ETHYLHEXYL)PHTHALATE	117817		555	727.7915288	12	22	15.73603305
BUTYL BENZYL PHTHALATE	85687		85	111.4635675	1.9	1900	2.491538567
2CHLORONAPHTHALENE	91587			No Criteria		1600	2098.137741
1,2DICHLOROBENZENE	95501		79	103.5955509	1.8	1300	2.360404958
1,3DICHLOROBENZENE	541731		390	511.4210743	8.7	960	11.40862396
1,4DICHLOROBENZENE	106467		56	73.43482092	1.2	190	1.573603305
3,3DICHLOROBENZIDENE	91941			No Criteria		0.28	0.367174105
DIETHYL PHTHALATE	84662		2605	3416.030509	58	44000	76.0574931
DIMETHYL PHTHALATE	131113		1650	2163.704545	37	1100000	48.51943525
DI-n-BUTYL PHTHALATE	84742			No Criteria		4500	5901.012396
2,4DINITROTOLUENE	121142		1550	2032.570936	34	34	44.58542699

## CALCULATION OF WATER QUALITY BASED NON-CLASS AA FRESHWATER DISCHARGE LIMITS

FACILITY NAME:

RIRRC

RIPDES PERMIT #: RI0023442

NOTE: METALS CRITERIA ARE EXPRESSED AS DISSOLVED, METALS LIMITS ARE EXPRESSED AS TOTAL

CHEMICAL NAME	CAS #	BACKGROUND CONCENTRATION (ug/L)	FRESHWATER CRITERIA ACUTE (ug/L)	DAILY MAX LIMIT (ug/L)	FRESHWATER CRITERIA CHRONIC (ug/L)	HUMAN HEALTH NON-CLASS A CRITERIA (ug/L)	MONTHLY AVE LIMIT (ug/L)
1,2DIPHENYLHYDRAZINE	122667		14	18.35870523	0.31	2	0.406514187
FLUORANTHENE	206440		199	260.9558815	4.4	140	5.769878787
FLUORENE	86737			No Criteria		5300	6950.081266
HEXACHLOROBENZENE	118741			No Criteria		0.0029	0.003802875
HEXACHLOROBUTADIENE	87683			No Criteria		180	236.0404958
HEXACHLOROCYCLOPENTADIENE	77474		0.35	0.458967631	0.008	1100	0.010490689
HEXACHLOROETHANE	67721		49	64.25546831	1.1	33	1.442469697
ISOPHORONE	78591		5850	7671.316114	130	9600	170.4736914
NAPHTHALENE	91203		115	150.8036501	2.6		3.409473829
NITROBENZENE	98953		1350	1770.303719	30	690	39.34008264
N-NITROSODIMETHYLAMINE	62759			No Criteria		30	39.34008264
N-NITROSODI-N-PROPYLAMINE	621647			No Criteria		5.1	6.687814048
N-NITROSODIPHENYLAMINE	86306		293	384.2214738	6.5	60	8.523684571
PYRENE	129000			No Criteria		4000	5245.344352
1,2,4trichlorobenzene	120821		75	98.35020659	1.7	70	2.229271349
<b>PESTICIDES/PCBs</b>							
ALDRIN	309002		3	3.934008264		0.0005	0.000655668
Alpha BHC	319846			No Criteria		0.049	0.064255468
Beta BHC	319857			No Criteria		0.17	0.222927135
Gamma BHC (Lindane)	58899		0.95	1.245769284		1.8	2.360404958
CHLORDANE	57749		2.4	3.147206611	0.0043	0.0081	0.005638745
4,4DDT	50293		1.1	1.442469697	0.001	0.0022	0.001311336
4,4DDE	72559			No Criteria		0.0022	0.002884939
4,4DDD	72548			No Criteria		0.0031	0.004065142
DIELDRIN	60571		0.24	0.314720661	0.056	0.00054	0.000708121
ENDOSULFAN (alpha)	959988		0.22	0.288493939	0.056	89	0.073434821
ENDOSULFAN (beta)	33213659		0.22	0.288493939	0.056	89	0.073434821
ENDOSULFAN (sulfate)	1031078			No Criteria		89	116.7089118
ENDRIN	72208		0.086	0.112774904	0.036	0.06	0.047208099
ENDRIN ALDEHYDE	7421934			No Criteria		0.3	0.393400826
HEPTACHLOR	76448		0.52	0.681894766	0.0038	0.00079	0.001035956
HEPTACHLOR EPOXIDE	1024573		0.52	0.681894766	0.0038	0.00039	0.000511421
POLYCHLORINATED BIPHENYLS3	1336363			No Criteria	0.014	0.00064	0.000839255
2,3,7,8TCDD (Dioxin)	1746016			No Criteria		0.000000051	6.68781E-08
TOXAPHENE	8001352		0.73	0.957275344	0.0002	0.0028	0.000262267
TRIBUTYLTIN			0.46	0.6032146	0.072		0.094416198

CALCULATION OF WATER QUALITY BASED NON-CLASS AA FRESHWATER DISCHARGE LIMITS

FACILITY NAME: RIRRC

RIPDES PERMIT #: RI0023442

NOTE: METALS CRITERIA ARE EXPRESSED AS DISSOLVED, METALS LIMITS ARE EXPRESSED AS TOTAL

CHEMICAL NAME	CAS #	BACKGROUND CONCENTRATION (ug/L)	FRESHWATER CRITERIA ACUTE (ug/L)	DAILY MAX LIMIT (ug/L)	FRESHWATER CRITERIA CHRONIC (ug/L)	HUMAN HEALTH NON-CLASS A CRITERIA (ug/L)	MONTHLY AVE LIMIT (ug/L)
<b>NON PRIORITY POLLUTANTS:</b>							
<b>OTHER SUBSTANCES</b>							
ALUMINUM (limits are total recoverable)	7429905	NA	750	983.5020659	87		114.0862396
AMMONIA as N(winter/summer)	7664417		36.1   32.8	47339   43012	9.3   3.84		12195.4   5035.53
4BROMOPHENYL PHENYL ETHER			18	23.60404958	0.4		0.524534435
CHLORIDE	16887006		860000	1127749.036	230000		301607.3002
CHLORINE	7782505		19	31.14423209	11		18.03087121
4CHLORO2METHYLPHENOL			15	19.67004132	0.32		0.419627548
1CHLORONAPHTHALENE			80	104.906887	1.8		2.360404958
4CHLOROPHENOL	106489		192	251.7765289	4.3		5.638745178
2,4DICHLORO6METHYLPHENOL			22	28.84939393	0.48		0.629441322
1,1DICHLOROPROPANE			1150	1508.036501	26		34.09473829
1,3DICHLOROPROPANE	142289		303	397.3348346	6.7		8.785951789
2,3DINITROTOLUENE			17	22.29271349	0.37		0.485194353
2,4DINITRO6METHYL PHENOL			12	15.73603305	0.26		0.340947383
IRON	7439896			No Criteria	1000		1311.336088
pentachlorobenzene	608935		13	17.04736914	0.28		0.367174105
PENTACHLOROETHANE			362	474.7036638	8		10.4906887
1,2,3,5tetrachlorobenzene			321	420.9388842	7.1		9.310486224
1,1,1,2TETRACHLOROETHANE	630206		980	1285.109366	22		28.84939393
2,3,4,6TETRACHLOROPHENOL	58902		7	9.179352615	0.16		0.209813774
2,3,5,6TETRACHLOROPHENOL			8.5	11.14635675	0.19		0.249153857
2,4,5TRICHLOROPHENOL	95954		23	30.16073002	0.51		0.668781405
2,4,6TRINITROPHENOL	88062		4235	5553.508332	94		123.2655923
XYLENE	1330207		133	174.4076997	3		3.934008264

**CALCULATION OF WATER QUALITY BASED NON-CLASS AA FRESHWATER DISCHARGE LIMITS**  
**FACILITY NAME: RIRRC** **RIPDES PERMIT #: R0023442**

CHEMICAL NAME	CAS#	DAILY MAX LIMIT (ug/L)	MONTHLY AVE LIMIT (ug/L)
<b>PRIORITY POLLUTANTS</b>			
<b>TOXIC METALS AND CYANIDE</b>			
ANTIMONY	7440360	590.10	13.11
ARSENIC, TOTAL	7440382	501.53	2.01
ASBESTOS	1332214	No Criteria	0.00000
BERYLLIUM	7440417	9.84	0.22
CADMIUM, TOTAL	7440439	0.84	0.15258
CHROMIUM III, TOTAL	16065831	816.47	39.02
CHROMIUM VI, TOTAL	18540299	21.37	14.99
COPPER, TOTAL	7440508	5.01	3.47
CYANIDE	57125	28.85	6.82
LEAD, TOTAL	7439921	22.59	0.42
MERCURY, TOTAL	7439976	2.16	0.23
NICKEL, TOTAL	7440020	230.36	25.24
SELENIUM, TOTAL	7782492	29.49	7.36
SILVER, TOTAL	7440224	0.63	No Criteria
THALLIUM	7440280	60.32	0.62
ZINC, TOTAL	7440666	56.48	56.48
<b>VOLATILE ORGANIC COMPOUNDS</b>			
ACROLEIN	107028	3.80	0.07868
ACRYLONITRILE	107131	495.69	3.28
BENZENE	71432	347.50	7.74
BROMOFORM	75252	1921.11	43.27
CARBON TETRACHLORIDE	56235	1789.97	20.98
CHLOROBENZENE	108907	1042.51	23.60
CHLORODIBROMOMETHANE	124481	No Criteria	170.47
CHLOROFORM	67663	1894.88	41.96
DICHLOROBROMOMETHANE	75274	No Criteria	222.93
1,2DICHLOROETHANE	107062	7736.88	171.79
1,1DICHLOROETHYLENE	75354	760.57	17.05
1,2DICHLOROPROPANE	78875	3442.26	76.06
1,3DICHLOROPROPYLENE	542756	No Criteria	27.54
ETHYLBENZENE	100414	2098.14	47.21
BROMOMETHANE (methyl bromide)	74839	No Criteria	1967.00
CHLOROMETHANE (methyl chloride)	74873	No Criteria	0.00000
METHYLENE CHLORIDE	75092	12654.39	280.63
1,1,2,2TETRACHLOROETHANE	79345	611.08	13.11

CHEMICAL NAME	CAS#	DAILY MAX LIMIT (ug/L)	MONTHLY AVE LIMIT (ug/L)
TETRACHLOROETHYLENE	127184	314.72	6.95
TOLUENE	108883	832.70	18.36
1,2TRANS-DICHLOROETHYLENE	156605	No Criteria	13113.36
1,1,1TRICHLOROETHANE	71556	No Criteria	0.00000
1,1,2TRICHLOROETHANE	79005	1180.20	26.23
TRICHLOROETHYLENE	79016	2557.11	56.39
VINYL CHLORIDE	75014	No Criteria	3.15
<b>ACID ORGANIC COMPOUNDS</b>			
2CHLOROPHENOL	95578	169.16	3.80
2,4DICHLOROPHENOL	120832	132.44	2.88
2,4DIMETHYLPHENOL	105679	139.00	3.15
4,6DINITRO-2METHYL PHENOL	534521	No Criteria	367.17
2,4DINITROPHENOL	51285	40.65	0.90
4NITROPHENOL	88755	No Criteria	0.00000
PENTACHLOROPHENOL	87865	0.07	0.05462
PHENOL	108952	329.15	7.34
2,4,6TRICHLOROPHENOL	88062	20.98	0.47
<b>BASE NEUTRAL COMPOUNDS</b>			
ACENAPHTHENE	83329	111.46	2.49
ANTHRACENE	120127	No Criteria	52453.44
BENZIDINE	92875	No Criteria	0.00262
PAHs		No Criteria	0.24
BIS(2CHLOROETHYL)ETHER	111444	No Criteria	6.95
BIS(2CHLOROISOPROPYL)ETHER	108601	No Criteria	85236.85
BIS(2ETHYLHEXYL)PHTHALATE	117817	727.79	15.74
BUTYL BENZYL PHTHALATE	85687	111.46	2.49
2CHLORONAPHTHALENE	91587	No Criteria	2098.14
1,2DICHLOROBENZENE	95501	103.60	2.36
1,3DICHLOROBENZENE	541731	511.42	11.41
1,4DICHLOROBENZENE	106467	73.43	1.57
3,3DICHLOROBENZIDENE	91941	No Criteria	0.37
DIETHYL PHTHALATE	84662	3416.03	76.06
DIMETHYL PHTHALATE	131113	2163.70	48.52
DI-n-BUTYL PHTHALATE	84742	No Criteria	5901.01
2,4DINITROTOLUENE	121142	2032.57	44.59
1,2DIPHENYLHYDRAZINE	122667	18.36	0.41
FLUORANTHENE	206440	260.96	5.77

**CALCULATION OF WATER QUALITY BASED NON-CLASS AA FRESHWATER DISCHARGE LIMITS**  
**FACILITY NAME: RIRRC** **RIPDES PERMIT #: R0023442**

CHEMICAL NAME	CAS#	DAILY MAX LIMIT (ug/L)	MONTHLY AVE LIMIT (ug/L)
FLUORENE	86737	No Criteria	6950.08
HEXACHLOROBENZENE	118741	No Criteria	0.00380
HEXACHLOROBUTADIENE	87683	No Criteria	236.04
HEXACHLOROCYCLOPENTADIENE	77474	0.46	0.01049
HEXACHLOROETHANE	67721	64.26	1.44
ISOPHORONE	78591	7671.32	170.47
NAPHTHALENE	91203	150.80	3.41
NITROBENZENE	98953	1770.30	39.34
N-NITROSODIMETHYLAMINE	62759	No Criteria	39.34
N-NITROSODI-N-PROPYLAMINE	621647	No Criteria	6.69
N-NITROSODIPHENYLAMINE	86306	384.22	8.52
PYRENE	129000	No Criteria	5245.34
1,2,4trichlorobenzene	120821	98.35	2.23
<b>PESTICIDES/PCBs</b>			
ALDRIN	309002	3.93	0.00066
Alpha BHC	319846	No Criteria	0.06
Beta BHC	319857	No Criteria	0.22
Gamma BHC (Lindane)	58899	1.25	1.25
CHLORDANE	57749	3.15	0.00564
4,4DDT	50293	1.44	0.00131
4,4DDE	72559	No Criteria	0.00288
4,4DDD	72548	No Criteria	0.00407
DIELDRIN	60571	0.31	0.00071
ENDOSULFAN (alpha)	959988	0.29	0.07343
ENDOSULFAN (beta)	33213659	0.29	0.07343
ENDOSULFAN (sulfate)	1031078	No Criteria	116.71
ENDRIN	72208	0.11	0.05
ENDRIN ALDEHYDE	7421934	No Criteria	0.39
HEPTACHLOR	76448	0.68	0.00104
HEPTACHLOR EPOXIDE	1024573	0.68	0.0005
POLYCHLORINATED BIPHENYLS3	1336363	No Criteria	0.0008
2,3,7,8TCDD (Dioxin)	1746016	No Criteria	0.0000001
TOXAPHENE	8001352	0.96	0.00026
TRIBUTYLTIN		0.60	0.09

CHEMICAL NAME	CAS#	DAILY MAX LIMIT (ug/L)	MONTHLY AVE LIMIT (ug/L)
<b>NON PRIORITY POLLUTANTS</b>			
<b>OTHER SUBSTANCES</b>			
ALUMINUM, TOTAL	7429905	983.50	114.09
AMMONIA (as N), WINTER (NOV-APR)	7664417	47339.23	12195.43
AMMONIA (as N), SUMMER (MAY-OCT)	7664417	43011.82	5035.53
4BROMOPHENYL PHENYL ETHER		23.60	0.52
CHLORIDE	16887006	1127749.04	301607.30
CHLORINE	7782505	31.14	18.03
4CHLORO2METHYLPHENOL		19.67	0.42
1CHLORONAPHTHALENE		104.91	2.36
4CHLOROPHENOL	106489	251.78	5.64
2,4DICHLORO6METHYLPHENOL		28.85	0.63
1,1DICHLOROPROPANE		1508.04	34.09
1,3DICHLOROPROPANE	142289	397.33	8.79
2,3DINITROTOLUENE		22.29	0.49
2,4DINITRO6METHYL PHENOL		15.74	0.34
IRON	7439896	No Criteria	1311.34
pentachlorobenzene	608935	17.05	0.37
PENTACHLOROETHANE		474.70	10.49
1,2,3,5tetrachlorobenzene		420.94	9.31
1,1,1,2TETRACHLOROETHANE	630206	1285.11	28.85
2,3,4,6TETRACHLOROPHENOL	58902	9.18	0.21
2,3,5,6TETRACHLOROPHENOL		11.15	0.25
2,4,5TRICHLOROPHENOL	95954	30.16	0.67
2,4,6TRINITROPHENOL	88062	5553.51	123.27
XYLENE	1330207	174.41	3.93

**ATTACHMENT C**

**Summary of Permit Application Data, Surface Water Monitoring Data, Priority Pollutant Scan(s), and  
Evaluation of Reasonable Potential (Outfall 016)**

Facility Name: **RIRRC**  
 RIPDES Permit #: **RI0023442**  
 Outfall #: **016**

NOTE: METALS LIMITS ARE TOTAL METALS

Parameter	CAS #	Concentration Limits (ug/L)		Antideg. Limits (ug/L)	Permit Application Data 2/11/2019		Priority Pollutant Scan Data July 2015 - December 2020		Ave. DMR Data (ug/L) 7/1/2015 - 3/31/2021		Potential Permit Limits (ug/L)		Reasonable Potential (Yes/No)
		Daily Max	Monthly Ave		Max	Ave	Max	Ave	Daily Max	Monthly Ave	Daily Max	Monthly Ave	
<b>TOXIC METALS AND CYANIDE</b>													
ANTIMONY	7440380	590.10	13.11	—	0	—	6	0.19	—	—	590.10	13.11	NO
ARSENIC, TOTAL	7440382	501.53	2.01	—	0	—	2	0.12	—	—	501.53	2.01	NO
ASBESTOS	1332214	No Criteria	0.00	—	—	—	—	—	—	—	—	0.00	N/A
BERYLLIUM	7440417	9.84	0.22	—	0	—	0	0	—	—	9.84	0.22	NO
CADMIUM, TOTAL	7440439	0.84	0.15	—	0	—	8	1.1	—	—	0.84	0.15	YES
CHROMIUM III, TOTAL	16065831	816.47	39.02	—	—	—	—	—	—	—	816.47	39.02	N/A
CHROMIUM VI, TOTAL	18540299	21.37	14.99	—	2	—	3	0.13	—	—	21.37	14.99	NO
COPPER, TOTAL	7440508	5.01	3.47	—	3	—	3	0.15	—	—	5.01	3.47	NO
CYANIDE	57125	28.85	6.82	—	0	—	0	0	—	—	28.85	6.82	NO
LEAD, TOTAL	7439921	22.59	0.42	—	0	—	0	0	—	—	22.59	0.42	NO
MERCURY, TOTAL	743976	2.16	0.23	—	0	—	0	0	—	—	2.16	0.23	NO
NICKEL, TOTAL	7440020	230.36	25.24	—	10	—	100	9.3	—	—	230.36	25.24	NO
SELENIUM, TOTAL	7782492	29.51	7.38	—	6	—	8	0.36	—	—	29.51	7.38	NO
SILVER, TOTAL	7440224	0.64	No Criteria	—	—	—	6	1	—	—	0.64	0.64	YES
THALLIUM	7440280	60.32	0.62	—	0	—	0	0	—	—	60.32	0.62	NO
ZINC, TOTAL	7440666	56.48	56.48	—	0	—	0	0	—	—	56.48	56.48	NO
<b>VOLATILE ORGANIC COMPOUNDS</b>													
ACROLEIN	107028	3.80	0.08	—	0	—	0	0	—	—	3.80	0.08	NO
ACRYLONITRILE	107131	495.69	3.28	—	0	—	0	0	—	—	495.69	3.28	NO
BENZENE	71432	347.50	7.74	—	0	—	0	0	—	—	347.50	7.74	NO
BROMOFORM	75252	1921.11	43.27	—	0	—	0	0	—	—	1921.11	43.27	NO
CARBON TETRACHLORIDE	66236	1789.97	20.98	—	0	—	0	0	—	—	1789.97	20.98	NO
CHLORO BENZENE	108907	1042.51	23.50	—	0	—	0	0	—	—	1042.51	23.50	NO
CHLORODIBROMOMETHANE	124481	No Criteria	170.47	—	—	—	0	0	—	—	—	170.47	NO
CHLOROFORM	67663	1894.88	41.96	—	0	—	0	0	—	—	1894.88	41.96	NO
DICHLOROBROMOMETHANE	75274	No Criteria	222.93	—	0	—	0	0	—	—	—	222.93	NO
1,2-DICHLOROETHANE	107082	7736.86	171.79	—	0	—	0	0	—	—	7736.86	171.79	NO
1,1-DICHLOROETHYLENE	75354	760.57	17.05	—	0	—	0	0	—	—	760.57	17.05	NO
1,2-DICHLOROPROPANE	78875	3442.26	76.06	—	0	—	0	0	—	—	3442.26	76.06	NO
1,3-DICHLOROPROPYLENE	542756	No Criteria	27.54	—	0	—	0	0	—	—	—	27.54	NO
ETHYLBENZENE	100414	2098.14	47.21	—	0	—	0	0	—	—	2098.14	47.21	NO
BROMOMETHANE (methyl bromide)	74839	No Criteria	1967.00	—	—	—	0	0	—	—	—	1967.00	NO
CHLOROMETHANE (methyl chloride)	74873	No Criteria	0.00	—	—	—	0	0	—	—	—	0.00	NO
METHYLENE CHLORIDE	75092	12654.39	280.63	—	0	—	0	0	—	—	12654.39	280.63	NO
1,1,2,2-TETRACHLOROETHANE	79345	611.08	13.11	—	0	—	0	0	—	—	611.08	13.11	NO
TETRACHLOROETHYLENE	127184	314.72	6.95	—	0	—	0	0	—	—	314.72	6.95	NO
TOLUENE	108983	832.70	18.36	—	0	—	0	0	—	—	832.70	18.36	NO
1,2-TRANS-DICHLOROETHYLENE	156005	No Criteria	13113.36	—	0	—	0	0	—	—	—	13113.36	NO
1,1,1-TRICHLOROETHANE	71556	No Criteria	0.00	—	—	—	0	0	—	—	—	0.00	NO
1,1,2-TRICHLOROETHANE	79005	1160.20	26.23	—	0	—	0	0	—	—	1160.20	26.23	NO
TRICHLOROETHYLENE	79016	2557.11	56.39	—	0	—	0	0	—	—	2557.11	56.39	NO
VINYL CHLORIDE	75014	No Criteria	3.15	—	0	—	0	0	—	—	—	3.15	NO
<b>ACID ORGANIC COMPOUNDS</b>													
2-CHLOROPHENOL	95578	169.16	3.80	—	0	—	0	0	—	—	169.16	3.80	NO
2,4-DICHLOROPHENOL	120832	132.44	2.88	—	0	—	0	0	—	—	132.44	2.88	NO
2,4-DIMETHYLPHENOL	105679	139.00	3.15	—	0	—	0	0	—	—	139.00	3.15	NO
4,6-DINITRO-2-METHYLPHENOL	534621	No Criteria	367.17	—	—	—	0	0	—	—	—	367.17	NO
2,4-DINITROPHENOL	51285	40.65	0.90	—	0	—	0	0	—	—	40.65	0.90	NO
4-NITROPHENOL	88755	No Criteria	0.00	—	—	—	0	0	—	—	—	0.00	NO
PENTACHLOROPHENOL	87865	0.07	0.05	—	0	—	0	0	—	—	0.07	0.05	NO
PHENOL	108952	329.15	7.34	—	0	—	0	0	—	—	329.15	7.34	NO
2,4,6-TRICHLOROPHENOL	88062	20.98	0.47	—	0	—	0	0	—	—	20.98	0.47	NO
<b>BASIC/NEUTRAL COMPOUNDS</b>													
ACENAPHTHENE	83329	111.46	2.49	—	0	—	0	0	—	—	111.46	2.49	NO
ANTHRACENE	120127	No Criteria	52453.44	—	0	—	0	0	—	—	—	52453.44	NO
BENZIDINE	92876	No Criteria	0.00	—	—	—	0	0	—	—	—	0.00	NO
PAHs		No Criteria	0.24	—	—	—	0	0	—	—	—	0.24	NO
BIS(2-CHLOROETHYL)ETHER	11444	No Criteria	6.95	—	0	—	0	0	—	—	—	6.95	NO
BIS(2-CHLOROISOPROPYL)ETHER	108601	No Criteria	85236.65	—	—	—	0	0	—	—	—	85236.65	NO
BIS(2-ETHYLHEXYL)PHTHALATE	117817	727.79	15.74	—	8	—	8	0.31	—	—	727.79	15.74	NO
BUTYL BENZYL PHTHALATE	85687	111.46	2.49	—	0	—	0	0	—	—	111.46	2.49	NO
2-CHLORONAPHTHALENE	91587	No Criteria	2098.14	—	0	—	0	0	—	—	—	2098.14	NO
1,2-DICHLOROBENZENE	96501	103.60	2.36	—	0	—	0	0	—	—	103.60	2.36	NO
1,3-DICHLOROBENZENE	541731	511.42	11.41	—	0	—	0	0	—	—	511.42	11.41	NO
1,4-DICHLOROBENZENE	106467	73.43	1.57	—	0	—	0	0	—	—	73.43	1.57	NO
3,3-DICHLOROBENZIDENE	91941	No Criteria	0.37	—	0	—	0	0	—	—	—	0.37	NO
DIETHYL PHTHALATE	84662	3416.03	76.06	—	0	—	0	0	—	—	3416.03	76.06	NO
DIMETHYL PHTHALATE	131113	2163.70	48.52	—	0	—	0	0	—	—	2163.70	48.52	NO
DI-n-BUTYL PHTHALATE	84742	No Criteria	5901.01	—	—	—	0	0	—	—	—	5901.01	NO
2,4-DINITROTOLUENE	121142	2032.57	44.59	—	0	—	0	0	—	—	2032.57	44.59	NO
1,2-DIPHENYLHYDRAZINE	122667	18.36	0.41	—	0	—	0	0	—	—	18.36	0.41	NO
FLUORANTHENE	208440	260.96	5.77	—	0	—	0	0	—	—	260.96	5.77	NO
FLUORENE	86717	No Criteria	6950.08	—	—	—	0	0	—	—	—	6950.08	NO
HEXACHLOROBENZENE	118741	No Criteria	0.00	—	—	—	0	0	—	—	—	0.00	NO
HEXACHLOROBUTADIENE	87683	No Criteria	236.04	—	—	—	0	0	—	—	—	236.04	NO
HEXACHLORO-CYCLOPENTADIENE	77474	0.46	0.01	—	0	—	0	0	—	—	0.46	0.01	NO
HEXACHLOROETHANE	67721	64.26	1.44	—	0	—	0	0	—	—	64.26	1.44	NO
ISOPHORONE	78591	7671.32	170.47	—	0	—	0	0	—	—	7671.32	170.47	NO
NAFTHALENE	91203	150.80	3.41	—	0	—	0	0	—	—	150.80	3.41	NO
NITROBENZENE	98953	1770.30	39.34	—	0	—	0	0	—	—	1770.30	39.34	NO
N-NITROSDIMETHYLAMINE	62759	No Criteria	39.34	—	0	—	0	0	—	—	—	39.34	NO

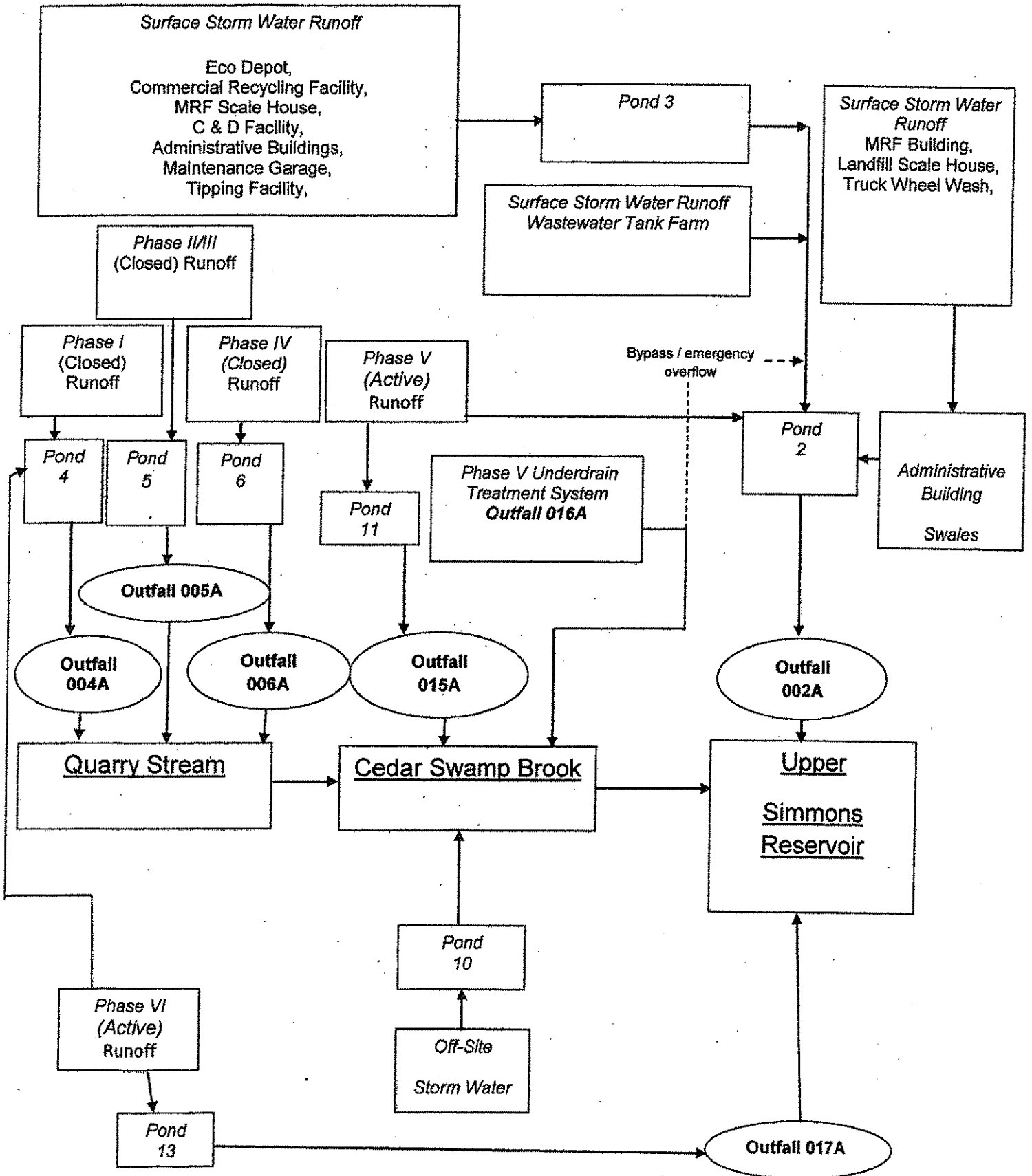
N-NITROSODI-N-PROPYLAMINE	621947	No Criteria	6.69	0	0	0	0	0	0	6.69	NO
N-NITROSODIPHENYLAMINE	86306	384.22	8.52	0	0	0	0	0	384.22	8.52	NO
PYRENE	129000	No Criteria	5245.34	0	0	0	0	0	0	5245.34	NO
1,2,4-trichlorobenzene	139821	88.25	2.23	0	0	0	0	0	88.35	2.23	NO
PESTICIDES/POISONS											
ALDRIN	309002	3.93	0.00	0	0	0	0	0	3.93	0.00	NO
Alpha BHC	319946	No Criteria	0.06	0	0	0	0	0	0	0.08	NO
Beta BHC	319857	No Criteria	0.22	0	0	0	0	0	0	0.22	NO
Gamma BHC (Lindane)	58898	1.25	1.25	0	0	0	0	0	1.25	1.25	NO
CHLORDANE	57749	3.15	0.01	0	0	0	0	0	3.15	0.01	NO
4,4DDT	50293	1.44	0.00	0	0	0	0	0	1.44	0.00	NO
4,4DDE	72559	No Criteria	0.00	0	0	0	0	0	0	0.00	NO
4,4DDD	72548	No Criteria	0.00	0	0	0	0	0	0	0.00	NO
DIELDRIN	60571	0.31	0.00	0	0	0	0	0	0.31	0.00	NO
ENDOSULFAN (alpha)	359988	0.29	0.07	0	0	0	0	0	0.29	0.07	NO
ENDOSULFAN (beta)	33213658	0.29	0.07	0	0	0	0	0	0.29	0.07	NO
ENDOSULFAN (sulfate)	1031078	No Criteria	116.71	0	0	0	0	0	0	116.71	NO
ENDRIN	72208	0.11	0.05	0	0	0	0	0	0.11	0.05	NO
ENDRIN ALDEHYDE	7421934	No Criteria	0.39	0	0	0	0	0	0	0.39	NO
HEPTACHLOR	78448	0.68	0.00	0	0	0	0	0	0.68	0.00	NO
HEPTACHLOR EPOXIDE	1024573	0.68	0.00	0	0	0	0	0	0.68	0.00	NO
POLYCHLORINATED BIPHENYLS3	1336763	No Criteria	0.00	0	0	0	0	0	0	0.00	NO
2,3,7,8TCDD (Dioxin)	1746016	No Criteria	0.00	0	0	0	0	0	0	0.00	N/A
TOXAPHENE	6001352	0.96	0.00	0	0	0	0	0	0.96	0.00	NO
TRIBUTYL TIN		0.60	0.09	0	0	0	0	0	0.60	0.09	N/A
HEAVY METALS/POLLUTANTS											
OTHER ELEMENTS											
ALUMINUM, TOTAL	7429905	983.50	114.09	0	0	0	0	0	983.50	114.09	NO
AMMONIA (as N), WINTER (NOV-APR)	7664417	47339.23	12195.43	490	490	0	580.4	550.2	47339.23	12195.43	YES
AMMONIA (as N), SUMMER (MAY-OCT)	7664417	43011.82	5035.53	490	490	0	440.4	428.8	43011.82	5035.53	YES
PHOSPHOROUS, TOTAL   WINTER (NOV - MAR)		1000.00	0.00	0	0	0	253.8	239	0	1000.00	YES
PHOSPHOROUS, TOTAL   SUMMER (APR - OCT)		33.00	0.00	0	0	0	246.7	244	0	33.00	YES
4BROMOPHENYL PHENYL ETHER		23.60	0.52	0	0	0	0	0	23.60	0.52	NO
CHLORIDE	16887006	1127749.04	301607.30	0	0	0	0	0	1127749.04	301607.30	NO
CHLORINE	7782669	31.14	18.03	0	0	0	0	0	31.14	18.03	NO
4CHLORO2METHYLPHENOL		19.67	0.42	0	0	0	0	0	19.67	0.42	NO
1CHLORONAPHTHALENE		104.91	2.36	0	0	0	0	0	104.91	2.36	NO
4CHLOROPHENOL	106498	251.78	5.64	0	0	0	0	0	251.78	5.64	NO
2,4DICHLORO2METHYLPHENOL		28.85	0.63	0	0	0	0	0	28.85	0.63	NO
1,1DICHLOROPROPANE		1508.04	34.09	0	0	0	0	0	1508.04	34.09	NO
1,3DICHLOROPROPANE	142288	397.33	8.79	0	0	0	0	0	397.33	8.79	NO
2,3DINITROTOLUENE		22.29	0.49	0	0	0	0	0	22.29	0.49	NO
2,4DINITRO2METHYL PHENOL		15.74	0.34	0	0	0	0	0	15.74	0.34	NO
IRON	7439896	No Criteria	1311.34	0	2600	977	1117	1046	0	1311.34	YES
pentachlorobenzene	608835	17.05	0.37	0	0	0	0	0	17.05	0.37	NO
PENTACHLOROETHANE		474.70	10.49	0	0	0	0	0	474.70	10.49	NO
1,2,3,5-tetrachlorobenzene		420.94	9.31	0	0	0	0	0	420.94	9.31	NO
1,1,1,2TETRACHLOROETHANE	630206	1285.11	28.85	0	0	0	0	0	1285.11	28.85	NO
2,3,4,6TETRACHLOROPHENOL	58902	9.18	0.21	0	0	0	0	0	9.18	0.21	NO
2,3,5,4TETRACHLOROPHENOL		11.15	0.25	0	0	0	0	0	11.15	0.25	NO
2,4,5TRICHLOROPHENOL	95954	30.16	0.87	0	0	0	0	0	30.16	0.87	NO
2,4,6TRINITROPHENOL	88062	5553.51	123.27	0	0	0	0	0	5553.51	123.27	NO
XYLENE	1330207	174.41	3.93	0	0	0	0	0	174.41	3.93	NO
HEAVY METALS											
NO WATER QUALITY CRITERIA ESTABLISHED											
FLOW (MGD)		0.1235	0.0910	0.0383	0	0	0.0837	0.056	0.1235	0.0910	N/A



**ATTACHMENT D**

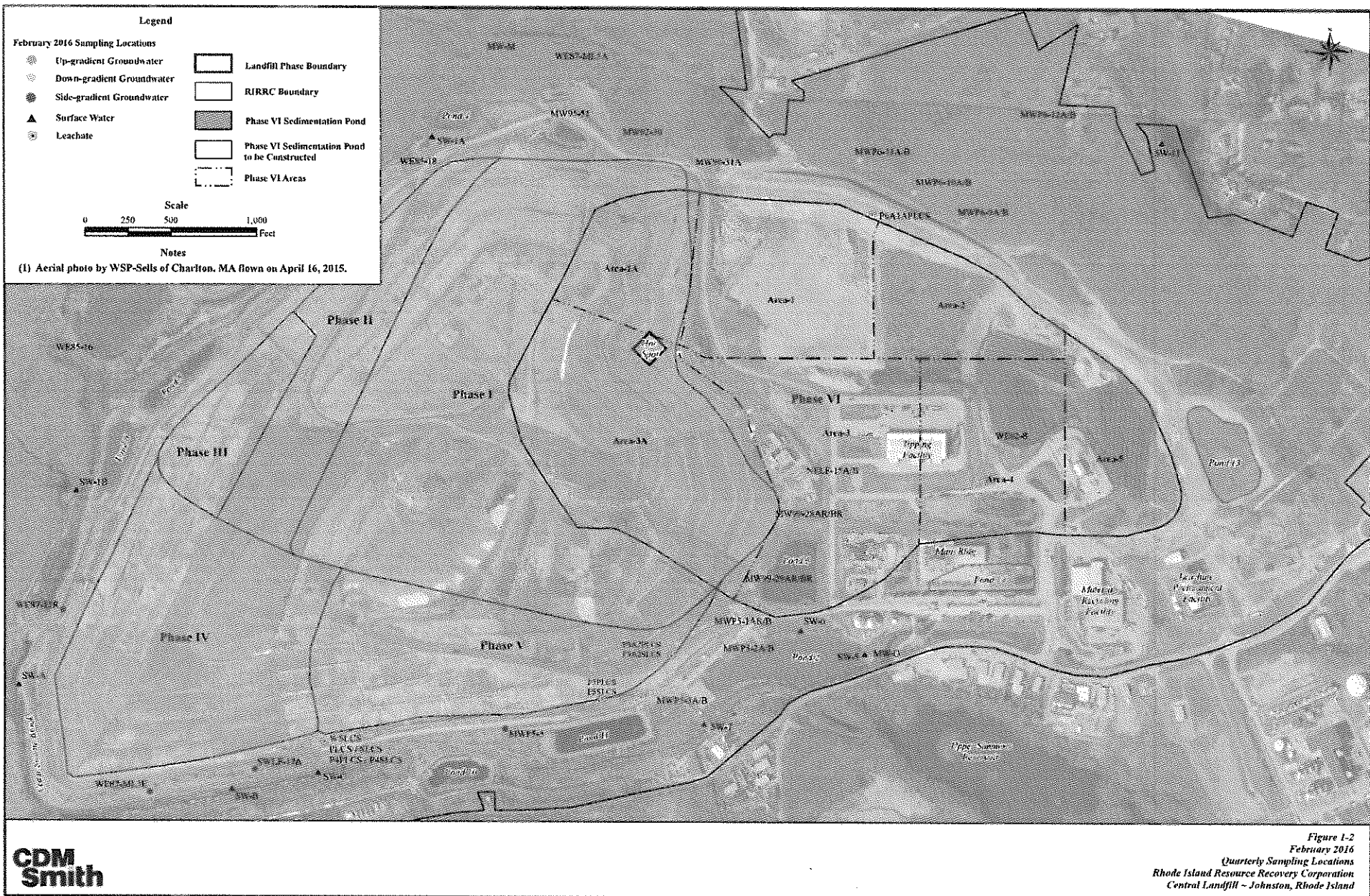
**Process Flow Diagram**

**ATTACHMENT**



**ATTACHMENT E**

**Surface Water Quality Monitoring Locations Map**



**ATTACHMENT F**

**Summary of Available Background Data**

**Attachment F-1**  
 pH and Hardness Data for WQBEL Development

<b>Report Date</b>	<b>Hardness</b>	<b>pH</b>
September 2000	12.8	7.14
May 2015	36	6.78
August 2015	29	6.79
November 2015	62	7.14
February 2016	22	6.77
May 2016	28	7.02
August 2016	61	7.16
November 2016	47	6.92
February 2017	36	6.79
May 2017	24	6.84
August 2017	27	7.05
November 2017	32.1	6.46
February 2018	28	6.65
<b>Upper Bound 95% Confidence Interval (Lower Bound for Hardness)</b>	<b>27.3</b>	<b>7</b>

Data from station SW-1B (see Attachment E)

**Attachment F-2**

Temperature and pH data for ammonia criteria development

**Ammonia Data - Summer (May - Oct)**

<b>Report Date</b>	<b>Temperature</b>	<b>pH</b>
May 2015	13.63	6.78
August 2015	19.31	6.79
May 2016	13.8	7.02
August 2016	23.7	7.16
May 2017	15.57	6.84
August 2017	19.51	7.05
<b>Upper Bound 90% Confidence Interval</b>	<b>20.6</b>	<b>7.1</b>

**Ammonia Data - Winter (Nov - Apr)**

<b>Report Date</b>	<b>Temperature</b>	<b>pH</b>
November 2015	6.43	7.14
February 2016	1.69	6.77
November 2016	8.77	6.92
February 2017	3.41	6.79
November 2017	6.02	6.46
February 2018	7.23	6.65
<b>Upper Bound 90% Confidence Interval</b>	<b>7.5</b>	<b>7.0</b>

Data collected from station SW-1B (refer to map in Attachment E)

**Attachment F-3**  
Available background data

		May-15	Aug-15	Nov-15	Feb-16	May-16	Aug-16	Nov-16	Feb-17	May-17	Aug-17	Nov-17	Feb-18	Average
Arsenic	ug/L	0	0.3	0	0	0	0.39	0	0	0.21	0	0	0	0.08
Cadmium	ug/L	0	0	0	0	0	0	0	0	0	0	0	0	0.000
Copper	ug/L	0	0	1.7	0.92	0.41	0	0.4	2.1	0	3.2	10	0	1.6
Lead	ug/L	0	0.33	0.098	0.19	0.12	0	8.2	0	0	0	0	0	0.74
Nickel	ug/L	0	0	0.46	0.5	0.31	0.63	0.46	0	0	3.4	2	0	0.65
Selenium	ug/L	0	0	0.41	0	0	0	0	0	0	0	0	0	0.03
Silver	ug/L	0	0	0	0	0.047	0	0	0.024	0	0	0	0	0.01
Zinc	ug/L	0	2.5	6.4	7.6	0.85	2.9	0	0	0	17	6	0	3.6

Data collected from station SW-1B (refer to map in Attachment E)