

- e. Control of Allowable Non-Stormwater Discharges – Allowable non-stormwater discharges as established in Part I.B.2 of this permit should be kept separate from stormwater flow through the use of appropriate control measures. The owner and operator must identify all allowable non-stormwater discharges associated with construction activity and describe the controls and measures that will be implemented at those locations to minimize pollutant contamination where applicable.
  
- f. Control Dewatering Practices – Describe dewatering practices that will be implemented if water must be removed from an area so that construction activity can continue. Site owners and operators are prohibited from discharging groundwater or accumulated stormwater that is removed from excavations, trenches, foundations, vaults, or other similar points of accumulation, unless such waters are first effectively managed by appropriated control measures. Examples of appropriate control measures include, but are not limited to, temporary sediment basins or sediment traps, sediment socks, dewatering tanks and bags, or filtration systems (e.g. bag or sand filters) that are designed to remove sediment. Uncontaminated, non-turbid dewatering water can be discharged without being routed to a control. At a minimum the following discharge requirements must be met for dewatering activities:
  - i. Do not discharge visible floating solids or foam.
  - ii. To the extent feasible, utilize vegetated, upland areas of the site to infiltrate dewatering water before discharge. In no case will surface waters be considered part of the treatment area.
  - iii. At all points where dewatering water is discharged utilize velocity dissipation devices.
  - iv. With filter backwash water, either haul it away for disposal or return it to the beginning of the treatment process.
  - v. Replace and clean the filter media used in dewatering devices when the pressure differential equals or exceeds the manufacturer’s specifications.
  - vi. Dewatering practices must involve the implementation of appropriate control measures as applicable (i.e. containment areas for dewatering earth materials, portable sediment tanks and bags, pumping settling basins, and pump intake protection).
  
- g. Establish Proper Building Material Staging Areas - Describe construction materials expected to be stored on-site and procedures for storage of materials to minimize exposure of the materials to stormwater. Minimization of exposure is

not required in cases where the exposure to precipitation and to stormwater will not result in a discharge of pollutants, or where exposure of a specific material or product poses little risk of stormwater contamination (such as final products and materials intended for outdoor use).

- h. Control Discharges from Stockpiled Sediment or Soil - Stockpile management consists of procedures and practices designed to minimize or eliminate the discharge of stockpiled material (soil, topsoil, base material, rubble) from entering drainage systems or surface waters. For any stockpiles or land clearing debris composed, in whole or in part, of sediment or soil, you must comply with the following requirements:
  - i. Locate piles within the designated limits of disturbance.
  - ii. Protect from contact with stormwater (including run-on) using a temporary perimeter sediment barrier.
  - iii. Where practicable provide cover or appropriate temporary vegetative or structural stabilization to avoid direct contact with precipitation or to minimize the discharge of sediments.
  - iv. Do not hose down or sweep soil or sediment accumulated on pavement or other impervious surfaces into any stormwater conveyance, storm drain inlet, or surface water.
  - v. To the maximum extent practicable, contain and securely protect from wind.
- i. Minimize Dust – describe dust control procedures and practices that will be used to suppress dust and limit its generation to control the generation of pollutants that could be discharged in stormwater from the site (i.e. applying water, limiting the amount of bare soil exposed at one time etc.).
- j. Designate Washout Areas – describe the controls that will be used to minimize the discharge of pollutants from equipment and vehicle washing, wheel wash water, washout areas for concrete mixers, paint, stucco, etc. The recommended location(s) of washout areas should be identified, or at a minimum the locations where these washout areas should not be sited should be called out.
- k. Establish Proper Equipment/Vehicle Fueling and Maintenance Practices – Describe equipment/vehicle fueling and maintenance practices that will be implemented to prevent pollutants from mixing with stormwater (e.g. secondary containment, drip pans, spill kits, etc.). Provide recommended location(s) of fueling/maintenance areas, or, at minimum, locations where fueling/maintenance should be avoided.

3. Control Practice Installation, Inspection, and Maintenance Requirements

a. Installation Requirements - Complete the installation of temporary erosion, runoff, sediment, and pollution prevention control measures by the time each phase of earth-disturbance has begun. All stormwater controls must be installed in accordance with good engineering practices, including applicable design specifications. Design specifications may be found in manufacturer specifications and/or the *Rhode Island Soil Erosion and Sediment Control (RISESC) Handbook* (as amended). Any departures from such specifications must be provided and demonstrated to reflect good engineering practices.

b. Inspection Requirements

i. *Minimum Frequency* - Each of the following areas must be inspected by or under the supervision of the owner and operator at least once every seven (7) calendar days and within twenty-four (24) hours after any storm event which generates at least 0.25 inches of rainfall per twenty-four (24) hour period and/or after a significant amount of runoff:

- a. All areas that have been cleared, graded, or excavated and that have not yet completed stabilization;
- b. All stormwater erosion, runoff, and sediment control measures (including pollution prevention practices) installed at the site to comply with this permit;
- c. Construction material, unstabilized soil stockpiles, waste, borrow, or equipment storage, and maintenance areas that are covered by this permit and are exposed to precipitation;
- d. All areas where stormwater typically flows within the site, including temporary drainage ways designed to divert, convey, and/or treat stormwater;
- e. All points of discharge from the site;
- f. All locations where temporary or permanent soil stabilization measures have been implemented.
- g. All locations where vehicles enter or exit the site.

ii. *Qualified Personnel* – The site owner and operator are responsible for designating personnel to conduct inspections and for ensuring that the personnel who are responsible for conducting the inspections are “qualified” to do so. A “qualified person” is a

person knowledgeable in the principles and practices of erosion, runoff, sediment, and pollution prevention controls, who possesses the skills to assess conditions at the construction site that could impact stormwater quality, and the skills to assess the effectiveness of any stormwater controls selected and installed to meet the requirements of this permit.

- iii. *Recordkeeping Requirements* - All records of inspections, including records of maintenance and corrective actions must be maintained with the SESC Plan. Inspection records must include the date and time of the inspection, and the inspector's name, signature, and contact information.
  - iv. *Reductions in Inspection Frequency* - If earth disturbing activities are suspended due to frozen conditions, inspections may be reduced to a frequency of once per month. The owner and operator must document the beginning and ending dates of these periods in the SESC Plan.
  - v. Failure to make and provide documentation of inspections under this part constitutes a violation of this permit and enforcement actions under 46-12 of R.I. General Laws may result.
- c. Maintenance Requirements – Site owners and operators must ensure that all erosion, runoff, sediment, and pollution prevention controls remain in effective operating condition and are protected from activities that would reduce their effectiveness. Site owners and operators must ensure that all erosion, runoff, sediment, and pollution prevention controls are inspected at the frequency established in Part III.J.3.b of this permit. If the designated site inspector finds a problem (i.e. erosion, runoff, sediment or pollution prevention controls require replacement, repair, or maintenance), the owner and operator must ensure that the necessary repairs or modifications are made in accordance with the following:
- i. Initiate work to fix the problem immediately after discovering the problem, and complete such work by the close of the next work day, if the problem does not require significant repair or replacement, or if the problem can be corrected through routine maintenance.
  - ii. When installation of a new control or a significant repair is needed, site owners and operators must ensure that the new or modified control practice is installed and made operational by no later than seven (7) calendar days from the time of discovery where feasible. If it is infeasible to complete the installation or repair within seven (7) calendar days, the reasons why it is infeasible must be documented in the SESC



Plan along with the schedule for installing the stormwater control(s) and making it operational as soon as practicable after the 7-day timeframe. Where these actions result in changes to any of the stormwater control measures outlined in the SESC Plan, site owners and operators must modify the SESC Plan accordingly within seven (7) calendar days of completing this work in accordance with Part III.F.

- iii. If corrective actions are required, the site owner and operator must ensure that all corrective actions are documented on the inspection report in which the problem was first discovered. These corrective actions must be documented, signed, and dated by the site operator once all necessary repairs have been completed.

4. Site Plan Requirements – Site Plans must depict all of the control measures required to meet the SESC Plan requirements of this permit. Depending on the complexity, the SESC Plan may reference the complete construction plan set prepared as part of the overall Stormwater Management Plan, and/or may have a specific SESC Plan Set developed. The SESC Plan should indicate the plan type (General, Drainage & Utility, SESC Plan, etc.) and sheet numbers where the following required information can be found:

- a. Title & Date of Plan Set(s).
- b. Total Project Area, including all grading and/or excavation, and a defined Limit of Disturbance.
- c. Pre- and post-development drainage patterns.
- d. The location and name of the receiving waters and/or separate storm sewer system and the ultimate receiving waters that may be impacted during construction.
- e. Location of environmentally sensitive features and areas to be preserved and/or protected.
- f. Locations where stormwater discharges to a surface water or wetland.
- g. Location of all existing and proposed impervious surfaces/structures.
- h. Locations of potential sources of pollution that may reasonably be expected to affect the quality of stormwater discharges from the site (i.e. exposed, unstabilized soil stockpiles and construction material and waste collection areas).
- i. Locations and timing of stabilization practices including phased clearing and

grubbing based on scheduled activities.

- j. The location of all erosion, runoff, sediment, and pollution prevention control measures, including the location of temporary sediment basins, diversions, or other water quality, peak discharge, and volume control structures
- k. Areas within the project limits which are unsuitable for material storage areas, equipment storage areas, designated concrete washout collection areas, dumpsters, stockpiles, fueling locations, etc. (i.e. locations where these activities shall not occur, and recommendations of where they may occur).
- l. The location of spill prevention and response equipment.
- m. The location of all proposed post-construction best management practices including locations of infiltrating practices and prohibited traffic areas.

#### **IV. NOTICE OF INTENT REQUIREMENTS**

For the purposes of this permit, the terms “Notice of Intent” and/or “NOI” refer to the *Application for Stormwater Construction Permit and Water Quality Certification Form* and the *Appendix A Checklist (Stormwater Management Plan Checklist and LID Planning Report-Stormwater Design Summary)*, available on the RIDEM Stormwater Construction Permitting website<sup>2</sup>. A complete NOI submittal requires completion of both of the above-mentioned documents.

##### **A. Contents of the Notice of Intent:**

- 1. Site information, including the street address, plat and lot numbers, location description, latitude, longitude and utility pole number.
- 2. Total site area and site area to be disturbed.
- 3. Name and class of water body class receiving run off from project or site.
- 4. Project name.
- 5. Indication of pre-application meeting and meeting date.
- 6. Owner/applicant information, including name, organization/company name, contact person, address, email and telephone number.

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<sup>2</sup> The RIDEM Stormwater Construction Permitting Website is available at <http://www.dem.ri.gov/programs/water/permits/ripdes/stormwater/construction.php>

7. A signed certification by the Owner/Applicant that under penalty of law they've requested and authorized the investigation, compilation, and submission of all the information, in whatever form, contained in the Application; have personally examined and are familiar with the information submitted herein; and based on their inquiry of those individuals immediately responsible for obtaining the information, they believe the information is true, accurate and complete. The Owner/Applicant is aware that it's the owner's responsibility to implement or hire a qualified contractor responsible to implement any required Soil Erosion and Sediment Control Plan, to effectively control stormwater discharges leaving the site during the construction period. The Owner/Applicant authorizes RIDEM personnel access to the property for purposes of observing conditions pertinent to the application and assessing compliance with any permit or determination resulting from the application.
8. Professional information, including name, license type and number, company name, email, phone number and title. The Professional must be a Registered Professional Engineer, if the Stormwater Analysis and Drainage Report requires the practice of engineering; or a Registered Professional Engineer, a Certified Professional in Erosion and Sediment Control (CPESC), a Certified Professional in Storm Water Quality (CPSWQ), or a Registered Landscape Architect, if the submission requires the determination of site location within a Natural Heritage Area, or if the project requires submission of a Soil Erosion and Sediment Control Plan.
9. A signed certification by a Professional that under penalty of law the project described in the application and associated materials is in compliance with the RI Stormwater Rules, the RISDISM (as amended), and the RISESC Handbook (as amended) [if required] and that they believe all information presented in the application and the accompanying materials is true, accurate and complete. All engineering designs, plans and specifications [if required] included in the application were done by the certifying Professional or by someone working directly for them. The Natural Heritage Area Information [if required] and the site specific Soil Erosion and Sediment Control Plan [if required] were prepared under their direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on their inquiry of the person or persons who manage the system, or those persons directly responsible for gathering or developing the information, the information submitted is, to the best of their knowledge and belief, true, accurate, and complete at the time the application is made. The certifying Professional is aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.
10. Permit History including all other RI Coastal Resources Management Council (CRMC), US Army Corps of Engineers and RIDEM application or file numbers and program names associated with the site.

11. Indicate if there are Freshwater Wetlands on the subject or adjacent property and the project proposes new or increased impervious cover for property other than a single family home; or disturbance of more than 10,000 square feet of existing impervious cover; or to fill in any amount of floodplain or alter storm flowage to a river, stream or wetland on any lot.
12. Indicate if the project requires an application to RI CRMC and proposes a residential development of six (6) units or more; or a project that results in the creation of 10,000 square feet or more of impervious area.
13. Indicate if the project proposes an infiltration system listed in the Rhode Island Stormwater Design and Installation Standards Manual (RISDISM) that receives stormwater from a residential impervious area that is more than 10,000 square feet; or a non-residential roof area greater than 10,000 square feet; or a non-residential road or parking area of any size.
14. Indicate if the treatment system discharges below the ground; or above the ground and infiltrates, but must be reviewed for compliance with the RI Stormwater Rules and RISDISM to be protective of groundwater.
15. Indicate if the project proposes discharge of stormwater to waters of the State [including a Separate Storm Sewer System (MS4)], and disturbs less than one (1) acre, but the activity is part of a larger common plan resulting in more than 1 acre of disturbance; or disturbs more than 1 acre of property. Provide the name of the larger common plan.
16. Indicate if the site within or directly discharges to a Natural Heritage Area (NHA)?
17. After review of the NOI, additional information may be required by this office to determine whether or not to authorize the discharge under this permit.

**B. Where to Submit.** A completed and signed NOI must be submitted to:

R.I. Department of Environmental Management  
Permit Application Center  
RIPDEM 235 Promenade Street  
Providence, RI 02908

**C. Additional Notification.** Construction sites discharging stormwater must submit a copy of the NOI to the applicable Town or City Department in which the construction activity and the point of discharge is located.

**D. Deficient.** If the NOI does not meet one or more of the minimum requirements of this permit, then the applicant will be notified as such by a deficiency letter at any point during the review period. It is the responsibility of the applicant to make all required changes in the plan and

resubmit the application. The review period will recommence upon the departmental receipt of the revised application.

## V. GENERAL REQUIREMENTS

- A. Duty to Comply.** The permittee must comply with all conditions of this permit and any other applicable State, local and/or federal regulations. Any permit noncompliance constitutes a violation of Chapter 46-12 of the Rhode Island General Laws and the CWA and is grounds for enforcement action which may include, permit termination, revocation and reissuance, modification, or for the denial of a permit renewal application and the imposition of penalties.
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 this requirement.
  2. Section 309 of the CWA provides significant penalties for any person who violates a permit condition implementing Sections 301, 302, 306, 307, 308, 318, or 405 of the CWA or any permit condition or limitation implementing any such sections in a permit issued under Section 402 of the CWA. Any person who violates any condition of this permit is subject to a civil penalty of up to \$25,000 per day of such violation, as well as any other appropriate sanctions provided by Section 309 of the CWA. Section 309(c)(4) of the CWA provides that any person who knowingly makes any false material statement, representation, or certification in any record or other document submitted or required to be maintained under this permit, including reports of compliance or noncompliance shall, upon conviction, be punished by a fine of up to \$10,000 or by imprisonment of not more than two (2) years, or by both.
  3. Chapter 46-12 of the R.I. General Laws provides that any person who violates a permit condition is subject to a civil penalty of not more than \$25,000 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 \$25,000 per day of such violation and imprisonment for not more than five (5) years, 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 thirty (30) days, or both.
- B. Continuation of the Expired General Permit.** Provided the permittee has reapplied in accordance with paragraph C. below, an expired general permit continues in force and effect until a new general permit is issued. Only those construction sites previously authorized to discharge under the expired permit are covered by the continued permit.
- C. 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 coverage under a new permit. The permittee shall submit a complete Notice of Intent at least thirty (30) days before the expiration date of the existing permit, unless permission for a later date

has been granted by the Director.

- D. Need to Halt or Reduce Activity Not a Defense.** It shall not be a defense for the 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.
- E. 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.
- F. Duty to Provide Information.** The permittee shall furnish to the Department, 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 furnish to the Director any documents that are required to be kept as part of this permit.
- G. Signatory Requirements.** All Notices of Intent, Stormwater Management Plans, Soil Erosion and Sediment Control Plans, inspection reports, certifications, or other information submitted to the Director, or that this permit requires be maintained by the permittee shall be signed and certified in accordance with 250-RICR-150-10-1-1.12. R.I. General Laws, Chapter 46-12 provides that any person who knowingly makes any false statements, 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 thirty (30) days per violation, or by both.
- H. Oil and Hazardous Substance Liability.** 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 to which the permittee is or may be subject under Section 311 of the CWA.
- I. Release in Excess of Reportable Quantities.** If a release in excess of a reportable quantity occurs, this office must be notified immediately. This permit does not relieve the permittee of the reporting requirements of 40 CFR 117 and 40 CFR 302. The discharge of hazardous substances in the stormwater discharge(s) from a facility shall be minimized in accordance with the applicable stormwater management plan for the facility, and in no case, during any twenty four (24) hour period, shall the discharge(s) contain a hazardous substance equal to or in excess of reportable quantities.
- J. Property Rights.** The issuance of this permit does not convey any property rights of any sort, nor any exclusive privileges, nor does it authorize any injury to private property nor any invasion of personal rights, nor any infringement of Federal, State, or local laws or regulations.
- K. 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.

- L. Transfers.** This permit must be transferred to the new owner/operator at the time of sale of the permitted property. This permit is not transferable to any person except after written notice to the Director. Such notice may be provided via the Permit Transfer Form available on the RIDEM Stormwater Construction Permitting website. Sites subject to additional permits must follow the transfer process for all applicable permits. The Director may require the owner and operator to apply for and obtain an individual RIPDES permit as stated in Part V.T. of this permit.
- M. 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.
- N. Proper Operations and Maintenance.** The permit 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 requirements of this permit.
- O. Record Keeping.** The permittee shall retain records of all inspections and reports required by this permit, and records of all data used to complete the application for this permit, for a period of at least five (5) years from the date of the report or application. The records must be kept at the construction site at all times. Electronic versions of required documents that are readily accessible from the construction site are acceptable. If an on-site location is deemed impractical, notice of the location of the required records must be posted near the main entrance to the construction site. Once the construction project is complete and the permit has been terminated, records must be kept at either the completed project location or the records must be maintained by the owner of record at the time that the construction project was active. This period may be extended by request of the Director at any time.
- P. Bypass of Stormwater Control**

  - 1. *Anticipated Bypass.* If the permittee knows in advance of the need for a bypass, he or she shall notify this Department in writing at least ten (10) days prior to the date of the bypass. Such notice shall include the anticipated quantity and the anticipated effect of the bypass.
  - 2. *Unanticipated Bypass.* The permittee shall submit notice of an unanticipated bypass. Any information regarding the unanticipated bypass shall be provided orally within twenty-four (24) hours from the time the permittee became aware of the circumstances. A written submission shall also be provided within five (5) days of the time the permittee became aware of the bypass. The written submission shall contain a description of the bypass and its cause; the period of the bypass; including exact dates and times, and if the bypass 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 bypass.

3. *Prohibition of Bypass.*

- a. Bypass is prohibited and enforcement action against the permittee may be taken for the bypass unless:
  - i. The bypass was unavoidable to prevent loss of life, personal injury or severe property damage;
  - ii. The permittee submitted notices as required in paragraphs P.1. and P.2. above.
- b. The Director may approve an unanticipated bypass after considering its adverse effects, if the Director determines that it will meet the two conditions in paragraph P.3.a. above.

**Q. Upset Conditions**

1. An upset constitutes an affirmative defense to an action brought for non-compliance with technology based permit limitations if the requirements of paragraph 2 below 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. A permittee who wishes to establish an affirmative defense of an upset shall demonstrate, through properly signed, contemporaneous operating logs, or other relevant evidence, that:
  - a. An upset occurred and the permittee can identify the specific causes(s) of the upset;
  - b. The permittee facility was at the time being properly operated;
  - c. The permittee submitted notice of the upset as required in 250-RICR-150-10-1-1.14(R); and
  - d. The permittee complied with any remedial measures required under 250-RICR-150-10—1-1.14(E).
3. In any enforcement proceeding the permittee seeking to establish the occurrence of an upset has the burden of proof.

**R. Inspection and Entry.** The permittee shall allow the Director, 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 activity is 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 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 R.I. law.

**S. Permit Actions.** This permit may be modified, revoked and reissued, or terminated for cause, including but not limited to: violation of any terms or conditions of this permit; obtaining this permit by misrepresentation or failure to disclose all relevant facts; or a change in any condition 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.

**T. Requiring an Individual Permit or an Alternative General Permit**

1. The Director of the Department of Environmental Management (DEM) may require any owner or operator authorized to discharge stormwater under this permit to apply for and obtain either an individual or an alternative RIPDES general permit. Any interested person may petition the Director to take action under this paragraph. The Director may determine at his or her own discretion that an individual or an alternative general permit is required (see 250-RICR-150-10-1-1.33(C) for reasons why an alternative permit may be required).
2. Any owner or operator authorized to discharge stormwater by this permit may request to be excluded from coverage of this permit by applying for coverage under an individual permit or an alternative general permit. The request shall be granted by the issuance of an individual permit only if the reasons cited by the owner or operator are adequate to support the request. The Director shall notify the permittee within a timely fashion as to whether or not the request has been granted.
3. If a facility requests or is required to obtain coverage under an individual or an alternative general permit, then authorization to discharge stormwater under this permit shall automatically be terminated on the date of issuance of the individual or the alternative general permit. Until such time as an alternative permit is issued, the existing general permit remains fully in force.

**U. Reopener Clause**

1. If there is evidence indicating potential or realized impacts on water quality due to any stormwater discharge associated with construction covered by this permit, the owner or operator of such discharge may be required to obtain an individual permit or alternative general permit in accordance with Part V.T. of this permit or the permit may be modified to include different limitations and/or requirements.
2. Permit modification or revocation will be conducted in accordance with 40 CFR 122.62, 122.63, 122.64 and 124.5.

**V. Availability of Reports.** Except for data determined to be confidential under Part W.1. below, all reports prepared in accordance with the terms of this permit shall be available for public inspection at the DEM at 235 Promenade Street, Providence, Rhode Island. As required by the CWA, effluent data shall not be considered confidential. Knowingly making any false statement on any such report may result in the imposition of criminal penalties as provided for in Section 309 of the CWA and under Chapter 46-12-14 of the Rhode Island General Laws.

**W. Confidentiality of Information.**

1. Any information submitted to DEM pursuant to these regulations may be claimed as confidential by the submitter, consistent with Rhode Island General Law 38-2-2. Any such claim must be asserted at the time of the 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:
  - a. The name and address of any permit application or permittee;
  - b. Permit applications, permits and any attachments thereto; and
  - c. RIPDES effluent data.

**X. Right to Appeal.** Within thirty (30) days of receipt of notice of final authorization, 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-150-10-1-1.50.

## **ATTACHMENT D**

## **ATTACHMENT E**

## **ATTACHMENT F**

## SESC Plan Inspection Report

Project Information			
Name			
Location			
DEM Permit No.			
Site Owner	Name	Phone	Email
Site Operator	Name	Phone	Email
Inspection Information			
Inspector Name	Name	Phone	Email
Inspection Date		Start/End Time	
Inspection Type <input type="checkbox"/> Weekly <input type="checkbox"/> Pre-storm event <input type="checkbox"/> During storm event <input type="checkbox"/> Post-storm event <input type="checkbox"/> Other			
Weather Information			
Last Rain Event Date:                      Duration (hrs):                      Approximate Rainfall (in):			
Rain Gauge Location & Source:			
Weather at time of this inspection:			

**Check statement that applies then sign and date below:**

I, as the designated Inspector, certify that this site has been inspected as required by regulation and I have determined that maintenance and corrective actions are not required at this time.

I, as the designated Inspector, certify that this site has been inspected as required by regulation and I have made the determination that the site requires corrective actions. The required corrective actions are noted within this inspection report.

<b>Inspector:</b>	Print Name	Signature	Date
The Site Operator acknowledges by his/her signature, the receipt of this SESC Plan inspection report and its findings. He/she acknowledges that all recommended corrective actions must be completed and documentation of all such corrective actions must be made in this inspection report per applicable regulations.			
<b>Operator:</b>	Print Name	Signature	Date

**Site-specific Control Measures**

Number the structural and non-structural stormwater control measures identified in the SESC Plan and on the SESC Site Plans and list them below (add as necessary). Bring a copy of this inspection form and any applicable SESC Site Plans with you during your inspections. This list will assist you to inspect all control measures at your site.

FILL THIS TABLE USING THE SESC PLAN TABLES 2.11 & 3.12.

	Location/Station	Control Measure Description	Installed & Operating Properly?	Assoc. Photo/ Figure #	Corrective Action Needed (Yes or No; if 'Yes', please detail action required)
1	Example 1: Eastern Parcel – Slope No. 4 Adjacent to I-95.  Straw Wattles	Straw Wattle. Section Six, Sediment Control Measures, Straw Wattles, Compost Tubes and Fiber Rolls - <i>RI SESC Handbook</i> .	<input type="checkbox"/> Yes <input type="checkbox"/> No		
2	Example 2: Western Parcel – Green Street Construction Entrance	Stone Stabilized Pad. Section Six: Sediment Control Measures – Construction Entrances – <i>RI SESC Handbook</i> .	<input type="checkbox"/> Yes <input type="checkbox"/> No		
3	Example 3:  Hospital Main Footings – Excavation Area – SESC Site Plan Sheet No. 3.	Pump Intake Protection Using Stone Filled Sump with Standpipe. Section Six: Sediment Control Measures, Pump Intake Protection, <i>RI SESC Handbook</i> .	<input type="checkbox"/> Yes <input type="checkbox"/> No		
4	Example 4:  Bridge Abutment Construction Southbound Bridge Abutment, Bridge No. 244 – SESC Site Plan Sheet No. 18.	Prefabricated Concrete Washout Container with Ramp. Used to contain concrete washout during concrete pouring operations. Section Three: Pollution Prevention and Good Housekeeping, Concrete Washouts, <i>RI SESC Handbook</i> .	<input type="checkbox"/> Yes <input type="checkbox"/> No		
5	INSERT TEXT	INSERT TEXT	<input type="checkbox"/> Yes <input type="checkbox"/> No		
6	<b>Attention Operator:</b>	<b>You must modify this inspection form as the project progresses, control measure locations change, and amendments to the SESC Plan are instituted in the field.</b>	<input type="checkbox"/> Yes <input type="checkbox"/> No		
7			<input type="checkbox"/> Yes <input type="checkbox"/> No		
8			<input type="checkbox"/> Yes <input type="checkbox"/> No		

**PROJECT:**

**INSPECTION DATE:**

	<b>Location/Station</b>	<b>Control Measure Description</b>	<b>Installed &amp; Operating Properly?</b>	<b>Assoc. Photo/ Figure #</b>	<b>Corrective Action Needed (Yes or No; if 'Yes', please detail action required)</b>
9			<input type="checkbox"/> Yes <input type="checkbox"/> No		
10			<input type="checkbox"/> Yes <input type="checkbox"/> No		
11			<input type="checkbox"/> Yes <input type="checkbox"/> No		
12			<input type="checkbox"/> Yes <input type="checkbox"/> No		
13			<input type="checkbox"/> Yes <input type="checkbox"/> No		
14			<input type="checkbox"/> Yes <input type="checkbox"/> No		
15			<input type="checkbox"/> Yes <input type="checkbox"/> No		
16			<input type="checkbox"/> Yes <input type="checkbox"/> No		
17			<input type="checkbox"/> Yes <input type="checkbox"/> No		
18			<input type="checkbox"/> Yes <input type="checkbox"/> No		
19			<input type="checkbox"/> Yes <input type="checkbox"/> No		
20			<input type="checkbox"/> Yes <input type="checkbox"/> No		
21			<input type="checkbox"/> Yes <input type="checkbox"/> No		
22			<input type="checkbox"/> Yes <input type="checkbox"/> No		
23			<input type="checkbox"/> Yes <input type="checkbox"/> No		
24			<input type="checkbox"/> Yes <input type="checkbox"/> No		



**PROJECT:**

**INSPECTION DATE:**

	<b>Location/Station</b>	<b>Control Measure Description</b>	<b>Installed &amp; Operating Properly?</b>	<b>Assoc. Photo/ Figure #</b>	<b>Corrective Action Needed (Yes or No; if 'Yes', please detail action required)</b>
25			<input type="checkbox"/> Yes <input type="checkbox"/> No		
26			<input type="checkbox"/> Yes <input type="checkbox"/> No		
27			<input type="checkbox"/> Yes <input type="checkbox"/> No		
28			<input type="checkbox"/> Yes <input type="checkbox"/> No		
29			<input type="checkbox"/> Yes <input type="checkbox"/> No		
30			<input type="checkbox"/> Yes <input type="checkbox"/> No		

(add more as necessary)

**General Site Issues**

Below are some general site issues that should be assessed during inspections. Please **customize** this list as needed for conditions at the site.

	Compliance Question		Assoc. Photo/ Figure #	Corrective Action Needed (If 'Yes', please detail action required and include location/station)
1	Have all control measures been installed as specified in the RISESC Handbook and prior to any earth disturbing activities?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		
2	Are appropriate limits of disturbance (LOD) established?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		
3	Are controls that limit runoff from exposed soils by diverting, retaining, or detaining flows (such as check dams, sediment basins, etc.) in place?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		
4	Are all temporary conveyance practices installed correctly and functioning as designed?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		
5	Has maintenance been performed as required to ensure continued proper function of all temporary conveyances practices?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		
6	Were all exposed soils seeded by October 15 <sup>th</sup> ?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		
7	Have soils been stabilized where earth disturbance activities have permanently or temporarily ceased on any portion of the site and will not resume for more than 14 days?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		
8	In instances where adequate vegetative stabilization was not established by November 15 <sup>th</sup> , have non-vegetative erosion control measures must be employed?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		
9	If work is to continue from October 15 <sup>th</sup> through April 15 <sup>th</sup> , are steps taken to ensure that only the day's work area will be exposed and all erodible soil is stabilized within 5 working days?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		
10	Have inlet protection measures (such as fabric drop inlet protection, curb drop inlet protection, etc.) been properly installed?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		
11	Has the operator cleaned and maintained inlet protection measures when needed?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		
12	Has the operator removed accumulated sediment adjacent to inlet protection measures within 24 hours of detection?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		

	Compliance Question		Assoc. Photo/ Figure #	Corrective Action Needed (If 'Yes', please detail action required and include location/station)
13	Has the operator properly installed outlet protection (such as riprap, turf mats, etc.) at all temporary and permanent discharge points?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		
14	Are all outlet protection measures functioning properly in order to reduce discharge velocity, promote infiltration, and eliminate scour?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		
15	Have all discharge points been inspected to ensure the prevention of scouring and channel erosion?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		
16	Have sediment controls been installed along perimeter areas that will receive stormwater from earth disturbing activities?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		
17	Is the operator maintaining sediment controls in accordance with the requirements in the <i>RI SESC Handbook</i> ?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		
18	Have temporary sediment barriers been installed around permanent infiltration areas (such as bioretention areas, infiltration basins, etc.)?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		
19	Have staging areas and equipment routing been implemented to avoid compaction where permanent infiltration areas will be located?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		
20	Are surface outlet structures (such as skimmers, siphons, etc.) installed for each temporary sediment basin? [Exception: frozen conditions]	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		
21	Have all temporary sediment basins or traps been inspected and maintained as required to ensure proper function?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		
22	Does the project include the use of polymers, flocculants, or other chemicals to control erosion, sedimentation, or runoff from the site?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		
23	Are all chemicals being managed in accordance with Appendix J of the <i>RISESC Handbook</i> and current best management practices?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		
24	Has the site operator taken steps to <b>prohibit</b> the following pollutant discharges on the site?			
a	Contaminated groundwater.	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		

	Compliance Question		Assoc. Photo/ Figure #	Corrective Action Needed (If 'Yes', please detail action required and include location/station)
b	Wastewater from washout of concrete; unless properly contained, managed, and disposed of.	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		
c	Wastewater from washout and cleanout of stucco, paint, form release oils, curing compounds, and other construction products.	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		
d	Fuels, oils, or other pollutants used in vehicle and equipment operation and maintenance.	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		
e	Soaps or solvents used in vehicle and equipment washing.	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		
f	Toxic or hazardous substances from a spill or other release.	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		
25	Is the operator using properly constructed entrances/exits to the site so sediment removal occurs prior to vehicles exiting?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		
26	If needed, are additional controls (such as rumble strips, rattle plates, etc.) in place to remove sediment from tires prior to exiting?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		
27	Is sediment track-out being removed by the end of the same workday in which it occurs (via sweeping, shoveling, or vacuuming)?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		
28	Are all wastes generated at the site being managed and properly disposed of by the end of each workday?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		
29	Are all chemicals and hazardous waste materials stored properly in covered areas and surrounded by containment control systems?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		
30	Has the operator established highly visible locations for the storage of spill prevention and control equipment on the construction site?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		
31	Are allowable non-stormwater discharges being managed properly with adequate controls?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		
32	Is the site operator properly managing groundwater or stormwater that is removed from excavations, trenches, or similar points of accumulation?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		
33	Are proper procedures and controls in place for the storage of materials that may discharge pollutants if	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		

	<b>Compliance Question</b>		<b>Assoc. Photo/ Figure #</b>	<b>Corrective Action Needed (If 'Yes', please detail action required and include location/station)</b>
	exposed to stormwater?			
	Are stockpiles located within the limits of disturbance?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		
	Are stockpiles being protected from contact with stormwater using a temporary sediment barrier?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		
	Where needed, has cover or appropriate temporary vegetative or structural stabilization been utilized for stockpiles?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		
	Is the operator effectively managing the generation of dust through the use of water, chemicals, or minimization of exposed soil?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		
	Are designated washout areas (such as wheel washing stations, washout for concrete, paint, stucco, etc.) clearly marked on the site?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		
	Are vehicle fueling and maintenance areas properly located to prevent pollutants from impacting stormwater and sensitive receptors?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		
	(Other)			

(add more as necessary)

**PROJECT:**

**INSPECTION DATE:**

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**General Field Comments:**

**PROJECT:**

**INSPECTION DATE:**

**Photos:**

(Associated photos – each photo should be dated and have a unique identification # and written description indicating where it is located within the project area. If a close up photo is required, it should be preceded with a photo including both the detail area and some type of visible fixed reference point. Photos should be annotated with Station numbers and other identifying information where needed.)

<b>Photo #:</b> (insert Photo here)	<b>Station:</b>
	<b>Description:</b>

<b>Photo #:</b> (insert Photo here)	<b>Station:</b>
	<b>Description:</b>

<b>Photo #:</b> (insert Photo here)	<b>Station:</b>
	<b>Description:</b>

<b>Photo #:</b> (insert Photo here)	<b>Station:</b>
	<b>Description:</b>

<b>Photo #:</b> (insert Photo here)	<b>Station:</b>
	<b>Description:</b>

<b>Photo #:</b> (insert Photo here)	<b>Station:</b>
	<b>Description:</b>

(add more as necessary)





## **ATTACHMENT G**

**PROJECT:**

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## Amendment Log

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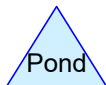
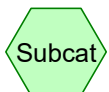
### TO BE FILLED OUT BY SITE OPERATOR

*Describe amendment(s) to be made to the SESC Plan, the date, and the person/title making the amendment. ALL amendments must be approved by the Site Owner.*

#	Date	Description of Amendment	Amended by: Person/Title	Site Owner Must Initial
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				

Add more lines/pages as necessary

## **ATTACHMENT H**



Summary for Reach 2R: C-1

Inflow Area = 1.520 ac, 0.00% Impervious, Inflow Depth = 1.25" for 10-yr event
Inflow = 2.02 cfs @ 12.09 hrs, Volume= 0.158 af
Outflow = 2.03 cfs @ 12.12 hrs, Volume= 0.158 af, Atten= 0%, Lag= 1.5 min

Routing by Muskingum-Cunge method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Reference Flow= 1.52 cfs Estimated Depth= 0.37' Velocity= 2.34 fps
m= 1.418, c= 3.32 fps, dt= 3.0 min, dx= 304.0' / 1 = 304.0', K= 1.5 min, X= 0.445
Max. Velocity= 4.54 fps, Min. Travel Time= 1.1 min
Avg. Velocity = 3.32 fps, Avg. Travel Time= 1.5 min

Peak Storage= 184 cf @ 12.11 hrs
Average Depth at Peak Storage= 0.35' , Surface Width= 2.42'
Bank-Full Depth= 1.00' Flow Area= 3.0 sf, Capacity= 12.06 cfs

1.00' x 1.00' deep channel, n= 0.022 Earth, clean & straight
Side Slope Z-value= 2.0 '/' Top Width= 5.00'
Length= 304.0' Slope= 0.0079 '/'
Inlet Invert= 577.40', Outlet Invert= 575.00'



Summary for Reach 4R: C-2

Inflow Area = 5.000 ac, 0.00% Impervious, Inflow Depth = 1.25" for 10-yr event
Inflow = 6.64 cfs @ 12.09 hrs, Volume= 0.521 af
Outflow = 6.73 cfs @ 12.11 hrs, Volume= 0.521 af, Atten= 0%, Lag= 0.9 min

Routing by Muskingum-Cunge method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Reference Flow= 4.98 cfs Estimated Depth= 0.57' Velocity= 4.09 fps
m= 1.386, c= 5.67 fps, dt= 3.0 min, dx= 315.0' / 1 = 315.0', K= 0.9 min, X= 0.457
Max. Velocity= 8.21 fps, Min. Travel Time= 0.6 min
Avg. Velocity = 5.66 fps, Avg. Travel Time= 0.9 min

Peak Storage= 370 cf @ 12.10 hrs
Average Depth at Peak Storage= 0.56' , Surface Width= 3.23'
Bank-Full Depth= 1.00' Flow Area= 3.0 sf, Capacity= 16.76 cfs

1.00' x 1.00' deep channel, n= 0.022 Earth, clean & straight
Side Slope Z-value= 2.0 '/' Top Width= 5.00'
Length= 315.0' Slope= 0.0152 '/'
Inlet Invert= 562.80', Outlet Invert= 558.00'



Summary for Reach 5R: C-2

Inflow Area = 1.970 ac, 0.00% Impervious, Inflow Depth = 1.25" for 10-yr event  
 Inflow = 2.62 cfs @ 12.09 hrs, Volume= 0.205 af  
 Outflow = 2.64 cfs @ 12.10 hrs, Volume= 0.205 af, Atten= 0%, Lag= 0.4 min

Routing by Muskingum-Cunge method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs  
 Reference Flow= 1.96 cfs Estimated Depth= 0.33' Velocity= 3.52 fps  
 m= 1.427, c= 5.02 fps, dt= 3.0 min, dx= 100.0' / 1 = 100.0', K= 0.3 min, X= 0.441  
 Max. Velocity= 7.01 fps, Min. Travel Time= 0.2 min  
 Avg. Velocity = 5.02 fps, Avg. Travel Time= 0.3 min

Peak Storage= 52 cf @ 12.10 hrs  
 Average Depth at Peak Storage= 0.32' , Surface Width= 2.28'  
 Bank-Full Depth= 1.00' Flow Area= 3.0 sf, Capacity= 19.20 cfs

1.00' x 1.00' deep channel, n= 0.022 Earth, clean & straight  
 Side Slope Z-value= 2.0 '/' Top Width= 5.00'  
 Length= 100.0' Slope= 0.0200 '/'  
 Inlet Invert= 560.00', Outlet Invert= 558.00'



**Sediment Trap TST-1 (West) Sizing**  
**Moo Cow Solar**  
**Coventry, RI**  
**1/17/2024**

<b>Sediment Trap Storage (Per RISDISM 3.3.7.12)</b>			
	<b>Required</b>	<b>Proposed</b>	
Contributing Drainage Area, DA, (ac)	1.52		
Required Storage Capacity, SC (inch/acre)	1.00		
Wet Storage Volume, $V_w$ (cf)	2,764	5,040	$DA*(SC/12)*(4,3560\text{ sf/acre})*.5$
Dry Storage Volume, $V_D$ (cf)	2,764	2,968	$DA*(SC/12)*(4,3560\text{ sf/acre})*.5$
Total Storage Volume, $V_t$ (cf)	5,527	8,008	



**Sediment Trap TST-2 (East) Sizing**  
**Moo Cow Solar**  
**Coventry, RI**  
**1/17/2024**

<b>Sediment Trap Storage (Per RISDISM 3.3.7.12)</b>			
	<b>Required</b>	<b>Proposed</b>	
Contributing Drainage Area, DA, (ac)	5.00		
Required Storage Capacity, SC (inch/acre)	1.00		
Wet Storage Volume, $V_w$ (cf)	9,075	17,160	$DA*(SC/12)*(4,3560\text{ sf/acre})*.5$
Dry Storage Volume, $V_D$ (cf)	9,075	9,388	$DA*(SC/12)*(4,3560\text{ sf/acre})*.5$
Total Storage Volume, $V_t$ (cf)	18,150	26,548	

**Sediment Trap TST-3 (East) Sizing**  
**Moo Cow Solar**  
**Coventry, RI**  
**1/17/2024**

<b>Sediment Trap Storage (Per RISDISM 3.3.7.12)</b>			
	<b>Required</b>	<b>Proposed</b>	
Contributing Drainage Area, DA, (ac)	1.97		
Required Storage Capacity, SC (inch/acre)	1.00		
Wet Storage Volume, $V_w$ (cf)	3,576	6,560	$DA*(SC/12)*(4,3560\text{ sf/acre})*.5$
Dry Storage Volume, $V_D$ (cf)	3,576	3,788	$DA*(SC/12)*(4,3560\text{ sf/acre})*.5$
Total Storage Volume, $V_t$ (cf)	7,151	10,348	