



**Rhode Island Department of Environmental Management**  
**Office of Water Resources – Stormwater Technology Review Committee**  
**235 Promenade St. Providence, RI 02908 Ph: 401-222-4700**

**Alternative Stormwater Technology Certification**

**Vendor Contact:**

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**Technology Name:**

Separator™ Row

**Approval Type:**

Pretreatment/Retrofits

**Certification Dates:**

Issued: April 9, 2024

Expires: April 9, 2029

**CERTIFICATION:**

The Rhode Island Stormwater Technology Review Committee which consists of members from the Department of Environmental Management (DEM), Department of Transportation (DOT) and the Coastal Resources Management Council (CRMC) have reviewed the **Separator™ Row** application for certification of its Technology Approval and accepted use for Stormwater Treatment in the State of Rhode Island.

In accordance with Stormwater Rule 250-RICR-150-10-8.9B, **Cultec** has petitioned the permitting agencies to certify the **Separator™ Row** as an acceptable structural stormwater control described in Stormwater Rule 250-RICR-150-10-8.31. They have submitted monitoring results and supporting information developed in accordance with the provisions of the Technology Assessment Protocol (TAP) for Innovative and Emerging Technologies as described in in Stormwater Rule 250-RICR-150-10 Sections 8.39 and 8.40.

The **Separator™ Row** is granted reciprocity in Rhode Island as a proprietary stormwater treatment technology, given that it has been issued an Environmental Technology Verification (ETV) in accordance with International Organization for Standardization (ISO) 14034:2016 – Laboratory Testing of Oil-Grit Separators (June 2014). The laboratory study was conducted at Good Harbour Laboratories in Mississauga, Ontario, Canada with third-party verification provided by Globe Performance Solutions. The ISO is not a member of the Technology Acceptance Reciprocity Protocol (TARP) and the ETV is not equivalent to an approval from the Washington Department of Ecology Technology Assessment Protocol (TAPE). However, the TAPE program takes data from ETV studies into consideration when evaluating the effectiveness of emerging stormwater treatment technologies. Furthermore, the Massachusetts Department of Environmental Protection (DEP) allows the **Separator™ Row** to be utilized to meet TSS removal requirements. Additionally, the RIDEM has historically allowed the use of this device for the purpose of pre-treatment. This Environmental Technology Verification recognizes the **Separator™ Row** as a stormwater treatment technology which provides at least 25% removal of total suspended solids when operating at the maximum treatment flow rate for each device specified in the attached **Table 1: Separator™ Row Sizing Table**. The State of Massachusetts is a member of the Technology Acceptance Reciprocity Partnership (TARP). As per Stormwater Rule 250-RICR-150-10-8.39, both TAPE and TARP approved devices are allowed reciprocity consideration in Rhode Island.

The **Separator™ Row** is a pre-treatment or retrofit device that captures TSS from stormwater runoff as described in Stormwater Rule 250-RICR-150-10-8.31. It is an open-bottom thermoplastic molded arch whose sides are wrapped in non-woven geotextile filter fabric and bottom lined with a woven geotextile filter fabric. The device is designed to remove trash and sediment from stormwater. This product was developed by **Cultec**. The **Separator™ Row** is approved for off-line use only.

The manufacturer has demonstrated that this product meets the minimum water quality standards for pretreatment as described in Stormwater Rule 250-RICR-150-10-8.31. The **Separator™ Row** is approved for at

least **25%** removal of total suspended solids (TSS) when designed using flow rates specified in the attached **Table 1: Separator™ Row Sizing Table** which is based on a maximum loading rate of 2.1 gallons per minute per square foot of bottom chamber area. The **Separator™ Row** is NOT recognized for removal of Pathogens, Total Phosphorus or Nitrogen. This device may be used as pretreatment or retrofit device provided that the design, installation, and maintenance are conducted in accordance with the following terms and conditions:

#### I. GENERAL CERTIFICATION REQUIREMENTS

1. The system must adhere to the manufacturer's specification for the **Separator™ Row** located in the general notes section of the Cultec **Separator™ Row** detail sheet that is located on the last page of this certification letter. The detail sheet containing the **Separator™ Row** specifications can also be found at: <https://cultec.com/Asset/separator-row-stormwater-details.pdf>
2. The system must be installed in accordance with the manufacturer's installation manual for the **Separator™ Row**, which can be found at: <https://cultec.com/Asset/CLT058-stormwater-installation-instructions-c4-330xlhd.pdf> and <https://cultec.com/Asset/CLT009-recharger-360hd-902hd-installation-instructions-stormwater-imperial.pdf>
3. The **Separator™ Row** is **certified as a pretreatment** device in accordance with Stormwater Rule 250-RICR-150-10-8.31, provided the device treats the flow of the first inch of runoff from the capture area, unless waived by the state permitting agency. The system's design must utilize flow rates, impervious catchment sizes, and maximum sediment capacities listed in the attached **Table 1: Separator™ Row Sizing Table**.
4. The system must be designed to meet the following requirements:
  - a. The device must be attached to an upstream flow-splitter diversion manhole with either a weir or an elevated bypass manifold designed to ensure that the first inch of runoff is routed to the device prior to bypass. The weir or elevated bypass manifold's invert must be located at least 9" above the bottom invert of the **Separator™ Row** chamber elevation.
  - b. If the upstream flow-splitter diversion manhole is designed with a weir, then the manhole must be at least 30" wide. The manhole must be at least 48" wide if its rim is more than 4' above the invert of the device.
  - c. The upstream flow-splitter diversion manhole must also provide a 2' sump.
  - d. Each individual row of **Separator™ Row** chambers must be directly connected to a maintenance access manhole.
  - e. The inlet pipe connecting the diversion manhole to the device must be the maximum allowable diameter per chamber as specified on the vendor's construction details.
  - f. The inlet must be the only pipe connected to the **Separator™ Row**. No outlet pipes shall be directly connected to the pre-treatment chambers.
  - g. Each device must provide an inspection port at the point located furthest from the inlet.
  - h. The maximum distance between maintenance access manholes connected to each individual row of **Separator™ Row** chambers shall not exceed 200' to ensure that the JetVac hose is sufficiently long.
5. This device is **certified as a retrofit device** in accordance with Stormwater Rule 250-RICR-150-10-8.6A. Retrofits are allowed flexibility with regards to the eleven minimum standards described in Sections 8.6 through 8.17 of Stormwater Rule 250-RICR-150-10, but in general they are considered

effective if they capture at least 50% of the catchment and meet the target water quality treatment of at least the first 0.5 inches of the water quality volume.

6. The approved devices shall be located such that they are accessible for maintenance and/or emergency removal of oil or chemical spills.
7. The device cannot be used in series with another Hydrodynamic separator to achieve enhanced removal rates for TSS.

## II. MAINTENANCE REQUIREMENTS

1. Standard permitting conditions for inclusion of this technology will, at a minimum include the following:
  - a. Each individual owner must ensure that any and all of their proprietary stormwater treatment devices are maintained in accordance with the manufacturer's specifications, which are provided in the **Cultec Separator™ Row** Operation & Maintenance Manual:  
<https://cultec.com/Asset/CLT043-cultec-separator-row-o-m.pdf>
  - b. Each individual owner must ensure that any and all of their proprietary stormwater pre-treatment devices are maintained in accordance with the requirements stated in Stormwater Rule 250-RICR-150-10-8.31-C, which requires the device to be inspected a minimum of 2 times per year. Additionally, the device must be cleaned out with a JetVac when either pollutant removal capacity is reduced by 50% or more, or when average sediment depth is 3" or greater.
  - c. All material removed from the unit must be properly disposed of and is the responsibility of the owner.
  - d. The applicant must include a copy of the **Separator™ Row** Inspection and Maintenance Guide in their project specific long-term operation and maintenance plan.
2. The applicant must provide evidence of a maintenance contract which extends for a minimum of two years. The contracted maintenance provider must receive training by **Cultec** on how to properly maintain **Separator™ Row** devices. This requirement excludes maintenance providers recognized by the RIDEM to be qualified in maintenance of **Separator™ Row** devices.

## III. REPORTING REQUIREMENTS

1. Upon request from the owner of any **Separator™ Row** system installed in the State of Rhode Island, the vendor shall provide the owner with a recommended maintenance schedule after the first year of the device's operation. If a recommended maintenance schedule is requested by the owner after the first year of the device's operation, then the owner is responsible for notifying the vendor of any additional pollutant loading sites where contributing drainage areas may be subject to further development (i.e., strip malls).
2. The Vendor shall immediately notify the RIDEM Office of Water Resources if and when any changes are made to the model name or number of any **Separator™ Row** device for all models applicable to this certification.
3. The Vendor shall immediately notify the RIDEM Office of Water Resources if and when any revisions are made to the design, installation operation and maintenance manuals for all models applicable to this certification. Revisions deemed by the RIDEM to be substantial, may require re-application to the Alternative Stormwater Technology Program.

4. The Vendor shall notify the RIDEM at least thirty (30) days following any proposed transfer of ownership of the Component technology. Notification shall include the name and address of the new owner and a written agreement between the existing and new owner specifying a date for transfer of ownership, responsibility, and liability for the Component. All provisions of this Certification shall be applicable to any new owners.

#### IV. RIGHTS OF THE RIDEM AND CRMC

1. The RIDEM may suspend, modify, or revoke this approval for cause, including but not limited to non-compliance with any of the conditions or provisions of this approval, misrepresentation, or failure to fully disclose all relevant data, or receipt of new information indicating that the use of the **Separator™ Row** system is contrary to the public interest, public health, or the environment.
2. This approval does not represent an endorsement of the **Separator™ Row** system by the RIDEM, RIDOT or CRMC. This letter of approval may be reproduced only in its entirety.
3. The **Separator™ Row** General Specification and **Separator™ Row** Operation and Maintenance Manual referenced herein are approved upon the date of approval of this Certification.
4. The RIDEM reserves the right to suspend or revoke this Certification if updated design, installation, and O&M manuals are not provided to the RIDEM within thirty (30) days of RIDEM request or one hundred and eighty (180) days prior to the expiration date of this Certification. All revisions must be reviewed and approved by the RIDEM prior to re-certification.

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Eric A. Beck, P.E.  
Administrator of Groundwater and Freshwater Wetlands Protection

Date

**SEE ATTACHMENTS ON NEXT PAGE:**

**Table 1: Separator™ Row Sizing Table**

<b>Model #</b>	<b>Chamber Dimensions (H x W x L)</b>	<b>Chamber Bottom Surface Area (ft<sup>2</sup>)</b>	<b>Maximum Treatment Flow Rate per Chamber (cfs)</b>	<b>Approximate Maximum Impervious Treatment Area (acres)</b>
Contacto <sup>®</sup> 100HD	12.5" x 36" x 8'	22.5	0.11	0.095
Recharger <sup>®</sup> 150XLHD	18.5" x 33" x 11'	24.0	0.11	0.105
Recharger <sup>®</sup> 180HD	20.5" x 36" x 7.33'	19.0	0.09	0.083
Recharger <sup>®</sup> 280HD	26.5" x 47" x 8'	27.4	0.13	0.114
Recharger <sup>®</sup> 330XLHD	30.5" x 52" x 8.5'	31.3	0.15	0.130
Recharger <sup>®</sup> 360HD	36" x 60" x 4.17'	18.4	0.09	0.077
Recharger <sup>®</sup> 902HD	48" x 78" x 4.25'	23.9	0.11	0.102

**TYPICAL STANDARD DETAIL FOR SEPARATOR™ ROW - ON NEXT PAGE**



## GENERAL

1. THE USER'S INFORMATION ROW IS USED AS AN INDICATIVE MEANS OF REMOVING TOTAL DISPERSED SOLIDS FROM THE CHAMBER SYSTEM AS WELL AS PROVIDING EXTERIOR ACCESS FOR INSPECTION AND MAINTENANCE.

2. THE SEPARATION ROW PERFORMANCE SHALL BE TESTED AND VERIFIED TO THE PROTOCOLS AND PROCEDURES AS OBTAINED BY ENVIRONMENTAL TECHNOLOGY CORPORATION (EVT) CAPABLE TO ACHIEVE THE REQUIRED REMOVAL.

A SEPARATOR ROW IS INSTALLED ON A 1-2 INCH (25-51 mm) WASHED, CRUSHED STONE BASE.

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CALTEC RECOMMENDS INSPECTIONS OF THE SEPARATOR ROW TO BE PERFORMED EVERY

SIX MONTHS IN THE FIRST YEAR, THE PROBABILITY OF INJECTION CAN THEN BE ADJUSTED BASED UPON PREVIOUS OBSERVATION OF SEDIMENT DEPOSITION.

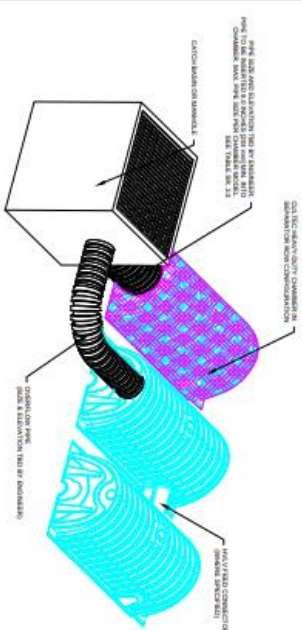
WHILE CLEANING IS POSSIBLE FOR A SINGLE MANHOLE, IN SHORTER LINES, A CLEAN-OUT OPTION FROM EITHER END OF A LINE IS PREFERRED. PARTICULARLY FOR LONGER LINES, CLEANING INVOLVES FLUSHING SEDIMENT FROM THE BASE FABRIC OF THE SEPARATOR ROW.

ACCESS MUST BE PROVIDED VIA A MANHOLE LOCATED AT THE END OF THE ROW FOR CLEAN-OUT.

1

MAINTENANCE OF THE SEPARATOR NOW IS TO BE ACCOMPLISHED WITH A JETAC PROCESS. THE JETAC IS TO BE SENT DOWN THE ENTIRE LENGTH OF THE SEPARATOR NOW. AS THE HIGH PRESSURE WATER NOZZLE IS RETRIEVED, THE CAPTURED SEDIMENTS ARE PUSHED BACK INTO THE MANHOLE FOR VACUATING.

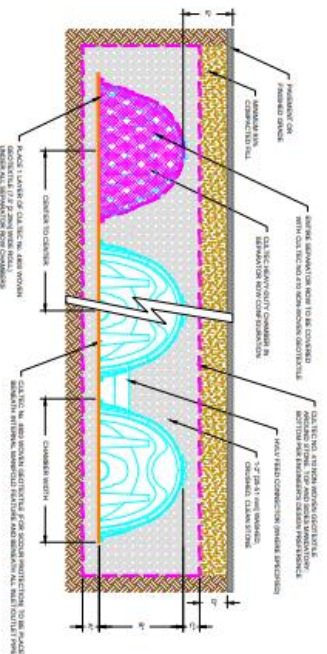
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[illegible]

NOTE: STONE ABOVE AND BELOW UNITS MAY VARY PER SYSTEM  
SEE SYSTEM LAYOUT FOR STONE REQUIREMENTS

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### CROSS SECTION TABLE REFERENCE



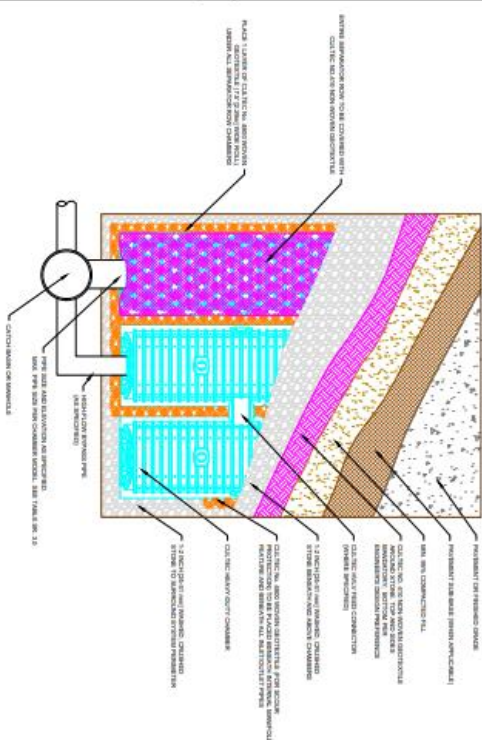
## 1

\* SEE SR 30 - CROSS SECTION TABLE REFERENCE

THIS DRAWING WAS PREPARED TO SUPPORT THE PROJECT ENGINEER OF RECORD FOR THE PROPOSED SYSTEM. IT IS THE ULTIMATE RESPONSIBILITY OF THE PROJECT ENGINEER OF RECORD TO ENSURE THAT THE CALLED SYSTEMS DESIGN IS IN FULL COMPLIANCE WITH ALL APPLICABLE LAWS AND REGULATIONS. IT IS THE PROJECT ENGINEER OF RECORD'S RESPONSIBILITY TO ENSURE THAT THE CALLED PRODUCTS ARE DESIGNED IN ACCORDANCE WITH CALIFORNIA'S MINIMUM REQUIREMENTS. THIS DRAWING DOES NOT APPROVE PLANS, SPEC, OR SYSTEM DESIGNS.

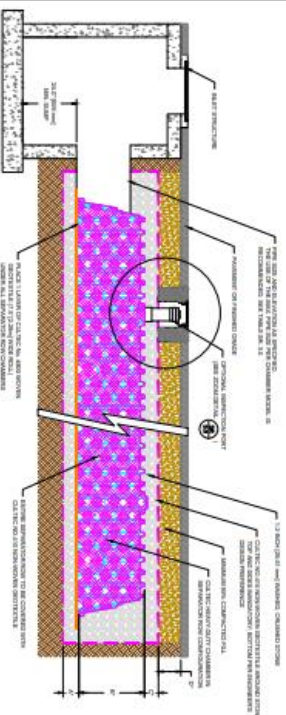
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TYPICAL SEPARATOR ROW CONFIGURATION PLAN VIEW



## 1

\* SEE SFR 3.0 - CROSS SECTION TABLE REFERENCE



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TRAFFIC APPLICATION

SEPARATOR ROW DETAIL SHEET	
PROJECT NO: *	DATE: 08/20/18
DESIGNED BY: CULTEC, INC	CHECKED BY: TECH
SCALE: N.T.S.	SHEET NO: *