Commonwealth of Virginia

VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY

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Matthew J. Strickler
Secretary of Natural Resources

David K. Paylor
Director
(804) 698-4000

December 7, 2018

Mr. Tom Happel
President
Suntree Technologies
798 Clearlake Road, Suite 2
Cocoa, FL 32922

Transmitted electronically to: happel@suntreetech.com

Re: Assignment of Percent Removal Efficiencies for Total Phosphorus

Dear Mr. Happel:

The Department of Environmental Quality has reviewed the Manufactured Treatment Device (MTD) Registration Form and supporting documentation for the Nutrient Separating Baffle Box® received on March 28, 2018 and resubmitted on October 30, 2018. The submittal included certification from the New Jersey Department of Environment Protection Laboratory (attached).

In accordance with § 62.1-44.15:28 of the Stormwater Management Act, 9VAC25-870-65 C, and Guidance Memo No. 14-2009 Interim Use of Stormwater Manufactured Treatment Devices to meet the New Virginia Stormwater Management Program (VSMP) Technical Criteria, Part IIB Water Quality Design Requirement, **the Nutrient Separating Baffle Box® is hereby approved.**

The Nutrient Separating Baffle Box® is approved with a 20 percent total phosphorous pollutant removal efficiency. This information will be posted on the Virginia Stormwater Clearinghouse website. This device and the assigned removal efficiency can be manually added into Virginia Runoff Reduction spreadsheet to demonstrate compliance with Runoff Reduction Method.

If you have any questions regarding this information, please contact Robert E. Cooper, P.E. at (804) 698-4033 or e-mail at Robert.Cooper@deq.virginia.gov.

Sincerely,

Jaime B. Robb

Jaime B. Robb, Manager
Office of Stormwater Management

Appendix A
Certification letters from
New Jersey Department of Environmental Protection

State of New Jersey

DEPARTMENT OF ENVIRONMENTAL PROTECTION
Bureau of Nonpoint Pollution Control
Division of Water Quality
401-02B
Post Office Box 420
Trenton, New Jersey 08625-0420
609-633-7021 Fax: 609-777-0432
http://www.state.nj.us/dep/dwq/bnpc_home.htm

CHRIS CHRISTIE
Governor

KIM GUADAGNO
Lt. Governor

BOB MARTIN
Commissioner

November 3, 2016

Tom Happel, President
Suntree Technologies, Inc.
798 Clearlake Rd
Cocoa, FL 32922

Re: MTD Lab Certification
Nutrient Separating Baffle Box® (NSBB) with Hydro-Variant Technology Stormwater Treatment Device by Suntree Technologies, Inc.

TSS Removal Rate 50%

Dear Mr. Happel:

The Stormwater Management rules under N.J.A.C. 7:8-5.5(b) and 5.7 (c) allow the use of manufactured treatment devices (MTDs) for compliance with the design and performance standards at N.J.A.C. 7:8-5 if the pollutant removal rates have been verified by the New Jersey Corporation for Advanced Technology (NJCAT) and have been certified by the New Jersey Department of Environmental Protection (NJDEP). Suntree Technologies Inc. has requested an MTD Laboratory Certification for the Nutrient Separating Baffle Box® with Hydro-Variant Technology (NSBB®) stormwater treatment device.

The verification is subject to the "Procedure for Obtaining Verification of a Stormwater Manufactured Treatment Device from New Jersey Corporation for Advance Technology" dated January 25, 2013. The applicable protocol is the "New Jersey Laboratory Testing Protocol to Assess Total Suspended Solids Removal by a Hydrodynamic Sedimentation Manufactured Treatment Device" dated January 25, 2013.

NJCAT verification documents submitted to the NJDEP indicate that the requirements of the aforementioned protocol have been met or exceeded. The NJCAT letter also included a recommended certification TSS removal rate and the required maintenance plan. The NJCAT Verification Report with the Verification Appendix (dated October 2016) for this device is published online at http://www.njcat.org/verification-process/technology-verification-database.html.

The NJDEP certifies the use of the Nutrient Separating Baffle Box® with Hydro-Variant Technology (NSBB®) stormwater treatment device by Suntree Technologies, Inc. at a TSS removal rate of 50% when designed, operated, and maintained in accordance with the information provided in the Verification Appendix and the following conditions:

1. The maximum treatment flow rate (MTFR) for the manufactured treatment device (MTD) is calculated using the New Jersey Water Quality Design Storm (1.25 inches in 2 hrs) in N.J.A.C. 7:8-5.5.

2. The NSBB® stormwater treatment device shall be installed using the same configuration reviewed by NJCAT and shall be sized in accordance with the criteria specified in item 6 below.

3. This NSBB® stormwater treatment device cannot be used in series with another MTD or a media filter (such as a sand filter) to achieve an enhanced removal rate for total suspended solids (TSS) removal under N.J.A.C. 7:8-5.5.

4. Additional design criteria for MTDs can be found in Chapter 9.6 of the New Jersey Stormwater Best Management Practices (NJ Stormwater BMP) Manual which can be found on-line at www.njstormwater.org.

5. The maintenance plan for a site using this device shall incorporate, at a minimum, the maintenance requirements for the NSBB® stormwater treatment device. A copy of the maintenance plan is attached to this certification. However, it is recommended to review the maintenance website at http://www.suntreetech.com/files/Documents/Products/Nutrient-Separating-Baffle-Box/O&M%20Manual%20_%20New%20Jersey%20(3).pdf for any changes to the maintenance requirements.

6. Sizing Requirements:

   The example below demonstrates the sizing procedure for the NSBB®:

   Example: A 0.25 acre impervious site is to be treated to 50% TSS removal using a NSBB®. The impervious site runoff (Q) based on the New Jersey Water Quality Design Storm was determined to be 0.79 cfs.

   Maximum Treatment Flow Rate (MTFR) Evaluation:

   The site runoff (Q) was based on the following:
   time of concentration = 10 minutes
   i=3.2 in/hr (page 5-8, Fig. 5-3 of the NJ Stormwater BMP Manual)
   c=0.99 (runoff coefficient for impervious)
   Q=ciA=0.99x3.2x0.25=0.79 cfs

   Given the site runoff is 0.79 cfs and based on Table 1 below, the NSBB® Model 3-6 with an MTFR of 1.4 cfs would be the smallest model approved that could be used for this site that could remove 50% of the TSS from the impervious area without exceeding the MTFR.

   The sizing table corresponding to the available system models is noted below. Additional specifications regarding each model can be found in the Verification Appendix under Table A-1 and Table A-2.

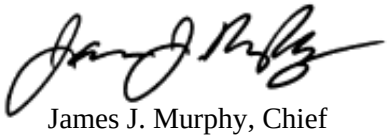
Table 1 NSBB®-HVT Models

NSBB-HVT Model No.	Inside Length. (feet)	Inside Width, (feet)	Depth Below Invert, (feet)	**Maximum Treatment Flow Rate (MTFR), cfs**	50% Maximum Sediment Storage Volume, (ft^3)	Sediment Removal Interval (months)
2-4	4.00	2.00	2.7	0.62	3.88	44.5
3-6	6.00	3.00	3.00	1.40	8.63	44.0
3-8	8.00	3.00	3.00	1.87	11.6	44.5
4-8	8.00	4.00	3.00	2.49	15.0	43.0
5-10	10.00	5.00	4.10	3.89	23.8	43.6
6-12	12.00	6.00	4.80	5.60	34.3	43.7
6-13.75	13.75	6.00	5.40	6.42	39.5	44.0
7-14	14.00	7.00	5.50	7.62	46.7	43.7
7-15	15.00	7.00	5.90	8.17	50.2	43.9
8-14	14.00	8.00	6.20	8.71	53.3	43.7
8-16	16.00	8.00	6.20	9.96	61.3	44.0
9-18	18.00	9.00	6.90	12.60	76.5	43.4
10-17	17.00	10.00	7.60	13.22	80.0	43.2
10-20	20.00	10.00	7.60	15.56	95.0	43.6
12-21	21.00	12.00	9.00	19.60	120	43.7
12-24	24.00	12.00	9.00	22.40	138	44.0

Be advised a detailed maintenance plan is mandatory for any project with a Stormwater BMP subject to the Stormwater Management Rules, N.J.A.C. 7:8. The plan must include all of the items identified in the Stormwater Management Rules, N.J.A.C. 7:8-5.8. Such items include, but are not limited to, the list of inspection and maintenance equipment and tools, specific corrective and preventative maintenance tasks, indication of problems in the system, and training of maintenance personnel. Additional information can be found in Chapter 8: Maintenance of the New Jersey Stormwater Best Management Practices Manual.

If you have any questions regarding the above information, please contact Mr. Titus Magnanao of my office at (609) 633-7021.

Sincerely,



James J. Murphy, Chief
Bureau of Nonpoint Pollution Control

Attachment: Maintenance Plan

cc: Chron File
Richard Magee, NJCAT
Vince Mazzei, DLUR
Ravi Patraju, NJDEP
Gabriel Mahon, BNPC
Titus Magnanao, BNPC