

# **Appendix 1: NJDEP Certification**



## State of New Jersey

### DEPARTMENT OF ENVIRONMENTAL PROTECTION

**PHILIP D. MURPHY**  
*Governor*

DIVISION OF WATERSHED PROTECTION AND RESTORATION  
BUREAU OF NJPDES STORMWATER PERMITTING & WATER QUALITY MANAGEMENT

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**June 30, 2021**

Graham Bryant  
President  
Hydroworks, LLC  
257 Cox Street  
Roselle, NJ 07203

Re: MTD Lab Certification  
HydroDome (HD) Stormwater Separator by Hydroworks, LLC  
On-line Installation

#### **TSS Removal Rate 50%**

Dear Mr. Bryant:

The Stormwater Management rules under N.J.A.C. 7:8-5.2(f) and 5.2(j) 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). Hydroworks, LLC has requested an MTD Laboratory Certification for the HydroDome Stormwater Separator (HydroDome).

The project falls under 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 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 dated May 2021 with the Verification Appendix for this device is published online at <http://www.njcat.org/verification-process/technology-verification-database.html>.

**The NJDEP certifies the use of the HydroDome by Hydroworks, LLC 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 HydroDome shall be installed using the same configuration reviewed by NJCAT and shall be sized in accordance with the criteria specified in in item 6 below.
3. This HydroDome 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 11.3 of the New Jersey Stormwater Best Management Practices (NJ Stormwater BMP) Manual which can be found on-line at [www.njstormwater.org](http://www.njstormwater.org).
5. The maintenance plan for a site using this device shall incorporate, at a minimum, the maintenance requirements for the HydroDome, which is attached to this document. However, it is recommended to review the maintenance manual at [www.hydroworks.com/hdmaintenance.pdf](http://www.hydroworks.com/hdmaintenance.pdf) for any changes to the maintenance requirements.
6. Sizing Requirements:

The example below demonstrates the sizing procedure for the HydroDome:

Example:       A 0.25-acre impervious site is to be treated to 50% TSS removal using a HydroDome. 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 21, Fig. 5-10 of Chapter 5 of the NJ Stormwater BMP Manual)  
 $c=0.99$  (curve number for impervious)  
 $Q=ciA=0.99 \times 3.2 \times 0.25=0.79$  cfs

Given the site runoff is 0.79 cfs and based on Table 1 below, the HydroDome Model HD 3 with a MTFR of 0.85 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 HydroDome Models

HydroDome Model	Manhole Diameter (ft)	Maximum Treatment Flowrate, MTFR (cfs)
HD 3	3	0.85
HD 4	4	1.51
HD 5	5	2.36
HD 6	6	3.40
HD 7	7	4.63
HD 8	8	6.03
HD 10	10	9.44
HD 12	12	13.60

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 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 and Retrofit of Stormwater Management Measures.

If you have any questions regarding the above information, please contact Lisa Schaefer of my office at [lisa.schaefer@dep.nj.gov](mailto:lisa.schaefer@dep.nj.gov).

Sincerely,



Gabriel Mahon, Chief  
 Bureau of NJPDES Stormwater Permitting & Water Quality Management  
 Division of Watershed Protection and Restoration  
 New Jersey Department of Environmental Protection

Attachment: Maintenance Plan

cc: Richard Magee, NJCAT