



COMMONWEALTH of VIRGINIA

DEPARTMENT OF ENVIRONMENTAL QUALITY

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Molly Joseph Ward
Secretary of Natural Resources

David K. Paylor
Director

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July 3, 2014

Mr. Derek Berg
71 US Route 1, Suite F
Scarborough, Maine 04074

Re: Assignment of Percent Removal Efficiencies for Total Phosphorus

Dear Mr. Berg,

Thank you for your submittal of the Manufactured Treatment Device (MTD) Registration Form and supporting documentation for the Contech Jellyfish[®] Filter. The MTD information provided (Appendix A) was reviewed for the purpose of assigning a pollutant removal efficiency for total phosphorus (TP). This review was performed in accordance with the Guidance Memo Number 14-2009 titled "Interim Use of Stormwater Manufactured Treatment Devices (MTDs) to meet the new Virginia Stormwater Management Program (VSMP) Technical Criteria, Part IIB Water Quality Design Requirements". The review process included the analysis of the documents submitted and any other publically available reports.

The documents submitted provided descriptive information about the Contech Jellyfish[®] Filter, the maintenance plan, and a performance study. The data provided within the contents of the submitted performance study included drainage area size and land cover, storm event and runoff parameters, event mean concentrations (EMC) of selected nutrients, metals, and sediment, and performance results. The performance data received was analyzed by calculating the removal efficiencies for each storm event sampled for TP and then computing the mean of the removal efficiencies for that study period. This method of analysis was applied to all data received in order to achieve a consistent analytical process to aid in the assigning of removal efficiencies. A summary of the results is provided in Appendix B.

Consistent with Guidance Memo Number 14-2009, Contech Jellyfish[®] Filter is receiving an EMC percent TP removal efficiency of 50%. As stated in the guidance memo, this information will be posted on the Virginia Stormwater Clearinghouse website. This MTD 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;

A handwritten signature in cursive script that reads "Fred K. Cunningham".

Fred K. Cunningham
Director
Office of Water Permits

Appendix A-Documents

- 1) Contech Engineered Solutions, Jellyfish[®] Filter Solutions Guide
- 2) NJCAT Technology Verification, JellyFish[®] Filter
- 3) JellyFish[®] Sizing Criteria
- 4) Manufactured Treatment Device (MTD) Registration

Appendix B-Study Results

NJCAT Technology Verification Report- JellyFish[®] Filter

Storm Date	Influent EMC (mg/l)	Effluent EMC (mg/l)	*Discrete Removal Efficiency (%)
28-May 2010	2.405	0.762	68
16-Jun	3.256	0.876	73
21-Jun	5.883	0.472	92
30-Jun	1.216	0.619	49
15-Jul	3.548	0.731	79
1-Aug	2.342	0.92	61
6-Aug	2.04	0.92	55
7-Aug	1.407	0.955	32
23-Aug	1.57	0.883	44
12-Sep	2.135	1.537	28
26-Sep	3.035	1.485	51
27-Sep	3.063	1.73	44
4-Nov	5.011	2.409	52
16-Nov	8.793	2.574	71
5-Jan 2011	3.947	2.104	47
10-Jan	3.853	2.496	35
25-Jan	4.497	1.146	75
7-Feb	2.952	1.177	60
9-Mar	0.887	0.806	9
28-Mar	7.056	3.751	47
30-Mar	4.364	2.474	43
20-Apr	6.504	4.769	27
14-May	2.994	1.48	51
6-Jun	2.769	2.368	14
27-Jun	3.228	2.758	15
		Mean	49

*Efficiency = $100 \times (1 - \text{Effluent EMC} / \text{Influent EMC})$