



BaySaver Technologies, LLC
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November 13, 2017

ATTENTION: Daniel Figola, General Manager

REFERENCE: Third Party Review of NJCAT Testing Procedures for Barracuda™ Separator at the Mid Atlantic Storm Water Research Center, 1207 Park Ridge Drive, Mount Airy, MD 21771

SUMMARY

Boggs Environmental Consultants, Inc. (BEC) was hired by Advanced Drainage Systems (ADS) in May of 2017, to serve as independent third-party oversight of NJCAT testing of the BaySaver Barracuda S4 Separator test unit for removal of sediment. The device is an insert that can be installed in either Polypropylene plastic pipe or concrete vault, and consists of a cone (vortex separator) and baffles (“teeth”). For the particle size distribution and weighted calculation method required by the NJDEP HDS Protocol, the Barracuda Separator demonstrated greater than 50% TSS removal at an MTFR of 1.25 cfs (559 gpm) under the NJCAT protocol and gained approval by NJDEP.

SCALED RESULTS

All testing and data collection procedures, including sediment blending, were supervised by BEC, and in accordance with the *New Jersey Department of Environmental Protection Laboratory Protocol to Assess Total Suspended Solids Removal by a Hydrodynamic Sedimentation Manufactured Treatment Device* (January 2013) (NJDEP HDS Protocol). Testing flow rates ranged from 0.32 to 1.60 cfs (142 gpm – 720 gpm), with a target influent sediment concentration of 200 mg/L. Based upon New Jersey scaling methodology, the table below represents treatment and device information for the S4, S6, and S8 units.

Table 1: MTFR's and Sizings for BaySaver Barracuda Models

Model ¹	Man-hole Diameter ¹ (ft)	NJDEP 50% TSS MTFR (cfs)	Treatment Area (ft ²)	Hydraulic Loading rate (gpm/ft ²)	Chamber Depth (ft)	Wet Volume (ft ³)	50% Maximum Sediment Storage ² (ft ³)
Barracuda S4	4	1.25	12.57	44.6	6.83	75.4	10.47
Barracuda S6	6	2.80	28.27	44.6	6.83	169.7	23.56
Barracuda S8	8	5.00	50.27	44.6	11.03	512.7	41.89

Notes:

1. In some areas Barracuda units are available in additional diameters. Units not listed here are sized not to exceed 44.6 gpm/ft² of effective treatment during the peak water quality flow.
2. 50% Sediment Storage Capacity is equal to manhole diameter x 10 inches of sediment depth. Each Barracuda unit has a 20 inches deep sediment sump.

Should you have any questions, contact our office at your earliest convenience.

Sincerely,

BOGGS ENVIRONMENTAL CONSULTANTS, INC.

William R. Warfel

Principal Environmental Scientist

Robin J. Maliszewskyj

Chemical Engineer