KARL F. DEAN
MAYOR

METROPOLITAN GOVERNMENT OF NASHVILLE AND DAVIDSON COUNTY

DEPARTMENT OF WATER AND SEWERAGE SERVICES
STORMWATER DIVISION
DEVELOPMENT REVIEW
800 2ND AVENUE, SOUTH
NASHVILLE, TENNESSEE 37210

February 22, 2013

Mark B. Miller
Research Scientist
AquaShield
2705 Kanasita Drive
Chattanooga, TN 37343

RE: Metro Water Services Proprietary BMP Approval
Aqua-Swirl treatment device by AquaShield

Dear Mr. Miller,

Metro Water Services (MWS) is in the process of updating our approved listing of proprietary BMPs for use in Metro Nashville and Davidson County. The Stormwater Management Manual, Volume 1 – Regulations Section 7.6 allows for the use of proprietary BMPs as Limited Application BMPs. Proprietary devices must be approved by MWS before they can be considered for use in Metro through an application and acceptance process. Metro Stormwater has adopted an interim policy that provides an option to accept the New Jersey Department of Environmental Protection (NJDEP) certification process. Based on the NJDEP Laboratory Test Certification letter, **the Aqua-Swirl treatment device by AquaShield, Inc. has been approved for use in Metro as a pretreatment unit with a 50% TSS removal rate**, provided that the project design is consistent with the following conditions:

1. The model selected for the project design must be sized in accordance with the following table and based on the peak flow of the Metro water quality design storm as specified in Volume 1 – Regulations Section 7.6.2.
   Qp = C*I*A
   Where:
   Qp = the peak flow through the proprietary BMP in cfs (Water Quality Treatment Flow)
   C = runoff coefficient
   I = rainfall intensity, 2.45 inches/hour for Metro
   A = the contributing drainage area for the BMP, in acres
2. The Aqua-Swirl can only be used **off-line**. Any flow above the calculated peak flow allowed through the device by the above equation must utilize an external bypass around the system.
3. Aqua-Shield must ensure all system designs conform to MWS Stormwater Regulations.

Metro Water Services complies with the Americans with Disabilities Act. For additional information contact Joseph A. Estes, Sr., 1600 2nd Avenue North, Nashville, TN 37208-2206; telephone 615-862-4862.

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4. The design engineer (a Tennessee Professional Engineer) must approve the shop drawings for conformance to dimensions and design features. These approved shop drawings are to be submitted to Metro as part of the grading permit application. As-built certification of the units by a Tennessee Professional Engineer will be required prior to issuance of the Use and Occupancy Permit to the owner.
5. The maintenance plan for sites using this device shall incorporate, at a minimum, the manufacturer's recommended maintenance plan which must be submitted for approval by MWS.
6. Metro reserves the right to recall approvals for reasons including, but not limited to: 1) restrictions placed by the Tennessee Department of Environment and Conservation, 2) product modifications or system failures indicating questionable performance capability, 3) changes in Metro stormwater regulations or policy, or 4) changes in the Technology Acceptance Reciprocity Partnership (TARP) or NJDEP protocols.
7. MWS approvals based on NJDEP Certification will run with the certification dates and deadlines defined by the NJDEP Certification. This approval will expire September 1, 2013 unless the NJDEP certification is renewed and documentation of this renewal is provided to Metro Stormwater prior to this date.

As a condition of this approval, Aqua-Shield must submit for approval the following information no later than **March 29, 2013**. Submit the following information in electronic format for review and distribution (such as PDF, TIF, JPEG, Word).

- The manufacturer recommended maintenance plan which contains, at a minimum, the requirements included in the Proprietary BMP Inspections and Maintenance Checklist, attached.
- Standard details of the approved models in the following table with external bypass feature.

Aqua-Swirl Model	Water Quality Treatment Flow (cfs)	Swirl Chamber Diameter (ft)	Maximum Stub-out Offline Pipe Outer Diameter (in)	Oil/Debris Storage Capacity (gal)	Sediment Storage Capacity (cu ft)
AS-2	0.6	2.5	8	37	10
AS-3	0.9	3.25	10	110	20
AS-4	1.6	4.25	12	190	32
AS-5	2.2	5	12	270	45
AS-6	3.2	6	14	390	65
AS-7	4.3	7	16	540	90
AS-8	5.6	8	18	710	115
AS-9	7.1	9	20	910	145
AS-10	8.8	10	22	1130	180
AS-12	12.6	12	24	1698	270

This approval is effective immediately; however, projects for which an Application for Grading Permit is received by MWS Stormwater Development Review Section prior to March 29, 2013 may be designed using the previously published 2009 MWS Proprietary Stormwater Quality Units Selection Guide for Pretreatment Applications. Projects received after March 29, 2013 that utilize the above referenced manufactured treatment device will be reviewed for compliance with the flow rates and conditions of this letter. Additional information regarding the Stormwater Management Regulations may be found at www.nashville.gov. If you have any questions regarding the above information, please contact Laura Jones with Stormwater Development Review by phone, 615-880-3832, or email, laura.jones2@nashville.gov.

Sincerely,

Roger D. Lindsey, P.E., CFM
Program Manager - Development Review Section
Metro Water Services - Stormwater Division
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Nashville, TN 37219-6300
Phone: 615-862-4706
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Enclosure:

MWS Stormwater Management Manual Interim Policy
Proprietary BMP Inspections and Maintenance Checklist