



## State of New Jersey

DEPARTMENT OF ENVIRONMENTAL PROTECTION

401-02B

Bureau of Nonpoint Pollution Control

Division of Water Quality

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](http://www.state.nj.us/dep/dwq/bnpc_home.htm)

August 31, 2011

CHRIS CHRISTIE  
*Governor*

KIM GUADAGNO  
*Lt. Governor*

BOB MARTIN  
*Commissioner*

Graham Bryant  
Hydroworks, LLC  
50 S. 21st Street, 2nd floor  
Kenilworth, NJ 07033

Re: MTD Laboratory Test Certification for the Hydroguard by Hydroworks, LLC

**Effective Date: September 1, 2011**  
**Expiration Date: September 1, 2013**  
**TSS Removal Rate: 50%**

Dear Mr. Bryant:

The Stormwater Management Rules at N.J.A.C. 7:8 allow the use of manufactured treatment devices (MTDs) for compliance with the design and performance standards provided that the pollutant removal rates have been verified by New Jersey Corporation for Advanced Technology, NJCAT, and certified by the New Jersey Department of Environmental Protection (NJDEP).

The certification process was revised through the "Transition for Manufactured Treatment Devices," dated July 15, 2011. NJDEP has determined that Hydroguard by Hydroworks, LLC is consistent with the criteria under *A. Manufactured Treatment Devices with Interim Certifications*. Therefore, **NJDEP certifies the use of the Hydroguard by Hydroworks, LLC 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 Table 1 and based on the peak flow of the New Jersey Water Quality Design Storm as specified in N.J.A.C. 7:8-5.
2. The Hydroguard can only be used off-line. Any flow above the New Jersey Water Quality Design Storm must utilize an external bypass around the system.

3. A hydrodynamic separator, such as the Hydroguard, cannot be used in series with another hydrodynamic separator to achieve an enhanced removal rate for total suspended solids (TSS) removal under N.J.A.C. 7:8-5.5.
4. The maintenance plan for the sites using this device shall incorporate at a minimum, the maintenance requirements for the Hydroguard, attached.

**Table 1**

Model	Structure Inside Diam. (ft)	Inner Chamber Diam. (in)	Structure Depth (ft)*	Sediment Volume <sup>3 +</sup> (ft )	Oil/Floating Trash Volume <sup>3</sup> (ft ) [gal]	Permanent Pool Wet Volume (gal)	Treatment Flow Rate (cfs) [gal]
HG 4	4	31.5	5	38	10 [76]	470	0.80 [359]
HG 5	5	40	5.5	64	16 [123]	808	1.25 [561]
HG 6	6	48	6	92	27 [203]	1269	1.80 [808]
HG 7	7	56	6.3	125	42 [313]	1823	2.45 [1100]
HG 8	8	63	6.7	163	61 [457]	2507	3.20 [1437]
HG 9	9	68.5	7.1	207	101 [754]	3371	4.05 [1818]
HG 10	10	78	7.6	268	119 [893]	4455	5.00 [2245]
HG 12	12	96	8.5	386	186 [1389]	7191	7.20 [3232]

In addition to the attached, any project with a Stormwater BMP subject to the Stormwater Management Rules, N.J.A.C. 7:8, must include a detailed maintenance plan. The detailed maintenance plan must include all of the items identified in 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 Manual.

NJDEP anticipates proposing further adjustments to this process through the readoption of the Stormwater Management Rules. Additional information regarding the implementation of the Stormwater Management Rules N.J.A.C. 7:8 are available at [www.njstormwater.org](http://www.njstormwater.org). If you have any questions regarding the above information, please contact Ms. Sandra Blick of my office at (609) 633-7021.

Sincerely,



Ed Frankel, P.P., Acting Bureau Chief  
Bureau of Nonpoint Pollution Control

C: Richard S. Magee, NJCAT  
Chron file

October 7, 2010

WAUSAU CONCRETE CO.  
COUNTY MATERIALS CO.  
JIM LUEDEKE  
240 HWY 29W  
PO BOX 130  
MARATHON WI 54448

HYDROWORKS, LLC  
GRAHMAN BRYANT  
50 21<sup>st</sup> ST  
KENILWORTH NJ 07033

Re: Description: STORMWATER TREATMENT DEVICE  
Manufacturer: HYDROWORKS, LLC  
Product Name: HYDROGUARD HG 4  
Model Number(s): HG4  
{HYDRODYNAMIC, VORTEX SW TREATMENT SEPARATOR}  
Product File No: 20100377

The specifications and/or plans for this plumbing product have been reviewed and determined to be in compliance with chapters Comm 82 through 84, Wisconsin Administrative Code, and Chapters 145 and 160, Wisconsin Statutes.

The Department hereby issues an approval based on the Wisconsin Statutes and the Wisconsin Administrative Code. **This approval is valid until the end of NOVEMBER 2015.**

This approval is contingent upon compliance with the following stipulation(s):

- Description-- The HYDROGUARD HG-SERIES are hydrodynamic, vortex separator devices designed as vertically-oriented cylinders with dual flow paths. The model number corresponds to the structure's inside diameter in feet.
- **Maximum storage capacity: total sediment storage—38 cu ft; oil storage—76 gallons.**  
**Maximum flow rates: design flow—0.8 cfs**
- Any wastewater or waste materials (e.g. sludge, scum) withdrawn from these systems must be disposed of in accordance with NR 113.
- Prior to installation of this product, plans and specifications must be submitted to the department or to an approved agent municipality for review and approval in accordance with s. Comm 82.20 (1) of the Wis. Admin. Code. Written approval for the plans and specifications shall be obtained prior to installation of the product.
- The review undertaken by Commerce staff does not include review and/or approval of this submittal as meeting DNR specifications for ch. NR 151.
- This product submittal has been reviewed and approved for plumbing treatment standards for subsurface infiltration and irrigation using stormwater as the source, as listed in Table Comm 82.70-1.
- Written approval for the plumbing plans shall be obtained from the department for each installation of this system. If the project is located within the city of Milwaukee, plans may be submitted to either the department or to the city of Milwaukee.
- This product must be installed in a department-approved tank that meets the design criteria for this product, as specified by Hydroworks.
- Labeling: The Hydroworks, Hydroguard series is permanently labeled as follows (as listed in HG Series Labeling Details, ver. 1.0):
  - 1) The Hydroworks logo and coding numbers are painted on the mono-base (each manhole riser); the coding indicates the project, structure ID/location and stacking sequence for installation purposes. Labels generally are painted twice on the product at 180 degrees apart.
  - 2) The model number is not painted on either product, but the model series corresponds to the diameter of the mono-base; for example, the Hydroguard HG-4 has a 4-ft. diameter.
- Inspection and maintenance of each installation of this product shall be conducted when the TSS/sediment reaches 30 inches or when floatables or oils cover > 50% surface. Anticipated maintenance intervals are 1 to 2 years.

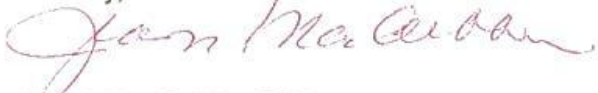


- Installation-- Installation of this product must be in accordance with the manufacturer's printed installation instructions. A copy of the manufacturer's installation instructions must be given to the property owner, installer and submitted along with other information required by the governing agency for the installation.
- **This product submittal has been reviewed and approved for plumbing treatment standards for subsurface infiltration and irrigation using stormwater as the source, as listed in Table Comm 82.70-1. Each site-specific installation shall be submitted for review and include acceptable methods, modelin , or analysis to predict efficiency for TSS and oil & grease removal.**
- **Note: Information on how to access SLAMM and P8 and the average annual rainfall files for five locations in the state, as published periodically by the department, is available at: <http://dnr.wi.gov/runoff/models/index.htm> or by contacting the WDNR storm water management program at (608) 267-7694.**
- **Pollutant loading models such as DETPOND, SLAMM, P8 or equivalent methodology may be used to evaluate the efficiency of the design in reducing total suspended solids. Information on how to access these models is available at: <http://dnr.wi.gov/runoff/models/index.htm> or by contacting the WDNR storm water management program at (608) 267-7694.**
- This manhole riser/catch basin must be designed to withstand the loads to which it will be subjected. All manhole covers terminating above grade must have effective locking devices.
- Installation-- The installation of this product shall maintain a working emergency overflow or outlet pipe. Each installation shall conform to Hydroguard Installation Instructions (ver. 1.2).
- Maintenance: The Hydroworks, Hydroguard series maintenance is as follows (as listed in Hydroworks Hydroguard Technical Manual, ver. 2.2):
  - 1) In addition to a 12-month maintenance interval for stabilized sites, inspection is provided via an access cover where TSS depth measurements maybe made after each large storm event.
  - 2) Visual inspection of floatables may be made via the access cover.
  - 3) For parking lots and stabilized sites, a 24-month interval is recommended for grease and oil removal.
  - 4) TSS and trash removal may be made using a vactor truck.
- These devices must be installed, maintained and serviced as directed by the manufacturer to perform as advertised.

This approval supersedes the approval issued on 11/18/2005 under product file number 20050160. This approval letter shall be incorporated with your previously approved plans and/or specifications approved under product file number 20050160.

The department is in no way endorsing this product or any advertising, and is not responsible for any situation which may result from its use.

Sincerely,



Jean M. MacCubbin, CST  
Engineering Consultant--Plumbing Products Review  
Commerce; Safety & Buildings Div.  
PO Box 2658  
201 W Washington Ave.  
Madison WI 53703-2658  
Phone: 608-266-0955; Fax: 608-283-7456  
E-mail: Jean.MacCubbin@WI.GOV

October 7, 2010

WAUSAU CONCRETE CO.  
COUNTY MATERIALS CO.  
JIM LUEDEKE  
240 HWY 29W  
PO BOX 130  
MARATHON WI 54448

HYDROWORKS, LLC  
GRAHMAN BRYANT  
50 21<sup>st</sup> ST  
KENILWORTH NJ 07033

Re: Description: STORMWATER TREATMENT DEVICE  
Manufacturer: HYDROWORKS, LLC  
Product Name: HYDROGUARD HG 6  
Model Number(s): HG 6  
{HYDRODYNAMIC, VORTEX SW TREATMENT SEPARATOR}  
Product File No: 20100378

The specifications and/or plans for this plumbing product have been reviewed and determined to be in compliance with chapters Comm 82 through 84, Wisconsin Administrative Code, and Chapters 145 and 160, Wisconsin Statutes.

The Department hereby issues an approval based on the Wisconsin Statutes and the Wisconsin Administrative Code. **This approval is valid until the end of NOVEMBER 2015.**

This approval is contingent upon compliance with the following stipulation(s):

- **Description-- The HYDROGUARD HG-SERIES are hydrodynamic, vortex separator devices designed as vertically-oriented cylinders with dual flow paths. The model number corresponds to the structure's inside diameter in feet.**
- **Maximum storage capacity: total sediment storage—92 cu ft; oil storage—203 gallons.**  
**Maximum flow rates: design flow—1.8 cfs**
- Any wastewater or waste materials (e.g. sludge, scum) withdrawn from these systems must be disposed of in accordance with NR 113.
- Prior to installation of this product, plans and specifications must be submitted to the department or to an approved agent municipality for review and approval in accordance with s. Comm 82.20 (1) of the Wis. Admin. Code. Written approval for the plans and specifications shall be obtained prior to installation of the product.
- The review undertaken by Commerce staff does not include review and/or approval of this submittal as meeting DNR specifications for ch. NR 151.
- This product submittal has been reviewed and approved for plumbing treatment standards for subsurface infiltration and irrigation using stormwater as the source, as listed in Table Comm 82.70-1.
- Written approval for the plumbing plans shall be obtained from the department for each installation of this system. If the project is located within the city of Milwaukee, plans may be submitted to either the department or to the city of Milwaukee.
- This product must be installed in a department-approved tank that meets the design criteria for this product, as specified by Hydroworks.
- Labeling: The Hydroworks, Hydroguard series is permanently labeled as follows (as listed in HG Series Labeling Details, ver. 1.0):
  - 1) The Hydroworks logo and coding numbers are painted on the mono-base (each manhole riser); the coding indicates the project, structure ID/location and stacking sequence for installation purposes. Labels generally are painted twice on the product at 180 degrees apart.
  - 2) The model number is not painted on either product, but the model series corresponds to the diameter of the mono-base; for example, the Hydroguard HG-4 has a 4-ft. diameter.
- Inspection and maintenance of each installation of this product shall be conducted when the TSS/sediment reaches 30 inches or when floatables or oils cover > 50% surface. Anticipated maintenance intervals are 1 to 2 years.



- Installation-- Installation of this product must be in accordance with the manufacturer's printed installation instructions. A copy of the manufacturer's installation instructions must be given to the property owner, installer and submitted along with other information required by the governing agency for the installation.
- **This product submittal has been reviewed and approved for plumbing treatment standards for subsurface infiltration and irrigation using stormwater as the source, as listed in Table Comm 82.70-1. Each site-specific installation shall be submitted for review and include acceptable methods, modeling, or analysis to predict efficiency for TSS and oil & grease removal.**
- **Note: Information on how to access SLAMM and P8 and the average annual rainfall files for five locations in the state, as published periodically by the department, is available at: <http://dnr.wi.gov/runoff/models/index.htm> or by contacting the WDNR storm water management program at (608) 267-7694.**
- **Pollutant loading models such as DETPOND, SLAMM, P8 or equivalent methodology may be used to evaluate the efficiency of the design in reducing total suspended solids. Information on how to access these models is available at: <http://dnr.wi.gov/runoff/models/index.htm> or by contacting the WDNR storm water management program at (608) 267-7694.**
- This manhole riser/catch basin must be designed to withstand the loads to which it will be subjected. All manhole covers terminating above grade must have effective locking devices.
- Installation-- The installation of this product shall maintain a working emergency overflow or outlet pipe. Each installation shall conform to Hydroguard Installation Instructions (ver. 1.2).
- Maintenance: The Hydroworks, Hydroguard series maintenance is as follows (as listed in Hydroworks Hydroguard Technical Manual, ver. 2.2):
  - 1) In addition to a 12-month maintenance interval for stabilized sites, inspection is provided via an access cover where TSS depth measurements maybe made after each large storm event.
  - 2) Visual inspection of floatables may be made via the access cover.
  - 3) For parking lots and stabilized sites, a 24-month interval is recommended for grease and oil removal.
  - 4) TSS and trash removal may be made using a vactor truck.
- These devices must be installed, maintained and serviced as directed by the manufacturer to perform as advertised.

This approval supersedes the approval issued on 11/18/2005 under product file number 20050829. This approval letter shall be incorporated with your previously approved plans and/or specifications approved under product file number 20050829.

The department is in no way endorsing this product or any advertising, and is not responsible for any situation which may result from its use.

Sincerely,



Jean M. MacCubbin, CST  
Engineering Consultant--Plumbing Products Review  
Commerce; Safety & Buildings Div.  
PO Box 2658  
201 W Washington Ave.  
Madison WI 53703-2658  
Phone: 608-266-0955; Fax: 608-283-7456  
E-mail: Jean.MacCubbin@WI.GOV

October 7, 2010

WAUSAU CONCRETE CO.  
COUNTY MATERIALS CO.  
JIM LUEDEKE  
240 HWY 29W  
PO BOX 130  
MARATHON WI 54448

HYDROWORKS, LLC  
GRAHAM BRYANT  
50 21st ST  
KENILWORTH NJ 07033

Re: Description: STORMWATER TREATMENT DEVICE  
Manufacturer: HYDROWORKS, LLC  
Product Name: HYDROGUARD HG 8  
Model Number(s): HG 8  
{HYDRODYNAMIC, VORTEX SW TREATMENT SEPARATOR}  
Product File No: 20100379

The specifications and/or plans for this plumbing product have been reviewed and determined to be in compliance with chapters Comm 82 through 84, Wisconsin Administrative Code, and Chapters 145 and 160, Wisconsin Statutes.

The Department hereby issues an approval based on the Wisconsin Statutes and the Wisconsin Administrative Code. **This approval is valid until the end of NOVEMBER 2015.**

This approval is contingent upon compliance with the following stipulation(s):

- **Description-- The HYDROGUARD HG-SERIES are hydrodynamic, vortex separator devices designed as vertically-oriented cylinders with dual flow paths. The model number corresponds to the structure's inside diameter in feet.**
- **Maximum storage capacity: total sediment storage—163 cu ft; oil storage—457 gallons. Maximum flow rates: design flow—3.2 cfs**
- Any wastewater or waste materials (e.g. sludge, scum) withdrawn from these systems must be disposed of in accordance with NR 113.
- Prior to installation of this product, plans and specifications must be submitted to the department or to an approved agent municipality for review and approval in accordance with s. Comm 82.20 (1) of the Wis. Admin. Code. Written approval for the plans and specifications shall be obtained prior to installation of the product.
- The review undertaken by Commerce staff does not include review and/or approval of this submittal as meeting DNR specifications for ch. NR 151.
- This product submittal has been reviewed and approved for plumbing treatment standards for subsurface infiltration and irrigation using stormwater as the source, as listed in Table Comm 82.70-1.
- Written approval for the plumbing plans shall be obtained from the department for each installation of this system. If the project is located within the city of Milwaukee, plans may be submitted to either the department or to the city of Milwaukee.
- This product must be installed in a department-approved tank that meets the design criteria for this product, as specified by Hydroworks.
- Labeling: The Hydroworks, Hydroguard series is permanently labeled as follows (as listed in HG Series Labeling Details, ver. 1.0):
  - 1) The Hydroworks logo and coding numbers are painted on the mono-base (each manhole riser); the coding indicates the project, structure ID/location and stacking sequence for installation purposes. Labels generally are painted twice on the product at 180 degrees apart.
  - 2) The model number is not painted on either product, but the model series corresponds to the diameter of the mono-base; for example, the Hydroguard HG-4 has a 4-ft. diameter.
- Inspection and maintenance of each installation of this product shall be conducted when the TSS/sediment reaches 30 inches or when floatables or oils cover > 50% surface. Anticipated maintenance intervals are 1 to 2 years.



October 7, 2010

Product File No: 20100379

- Installation-- Installation of this product must be in accordance with the manufacturer's printed installation instructions. A copy of the manufacturer's installation instructions must be given to the property owner, installer and submitted along with other information required by the governing agency for the installation.
- **This product submittal has been reviewed and approved for plumbing treatment standards for subsurface infiltration and irrigation using stormwater as the source, as listed in Table Comm 82.70-1. Each site-specific installation shall be submitted for review and include acceptable methods, modeling, or analysis to predict efficiency for TSS and oil & grease removal.**
- **Note: Information on how to access SLAMM and P8 and the average annual rainfall files for five locations in the state, as published periodically by the department, is available at:**  
<http://dnr.wi.gov/runoff/models/index.htm>  
or by contacting the WDNR storm water management program at (608) 267-7694.
- **Pollutant loading models such as DETPOND, SLAMM, P8 or equivalent methodology may be used to evaluate the efficiency of the design in reducing total suspended solids. Information on how to access these models is available at:** <http://dnr.wi.gov/runoff/models/index.htm>  
or by contacting the WDNR storm water management program at (608) 267-7694.
- This manhole riser/catch basin must be designed to withstand the loads to which it will be subjected. All manhole covers terminating above grade must have effective locking devices.
- Installation-- The installation of this product shall maintain a working emergency overflow or outlet pipe. Each installation shall conform to Hydroguard Installation Instructions (ver. 1.2).
- Maintenance: The Hydroworks, Hydroguard series maintenance is as follows (as listed in Hydroworks Hydroguard Technical Manual, ver. 2.2):
  - 1) In addition to a 12-month maintenance interval for stabilized sites, inspection is provided via an access cover where TSS depth measurements may be made after each large storm event.
  - 2) Visual inspection of floatables may be made via the access cover.
  - 3) For parking lots and stabilized sites, a 24-month interval is recommended for grease and oil removal.
  - 4) TSS and trash removal may be made using a vactor truck.
- These devices must be installed, maintained and serviced as directed by the manufacturer to perform as advertised.

This approval supersedes the approval issued on 11/18/2005 under product file number 20050830.

This approval letter shall be incorporated with your previously approved plans and/or specifications approved under product file number #20050830/

The department is in no way endorsing this product or any advertising, and is not responsible for any situation which may result from its use.

Sincerely,



Jean M. MacCubbin, CST  
Engineering Consultant--Plumbing Products Review  
Commerce; Safety & Buildings Div.  
PO Box 2658  
201 W Washington Ave.  
Madison WI 53703-2658  
Phone: 608-266-0955; Fax: 608-283-7456  
E-mail: Jean.MacCubbin@WI.GOV



October 7, 2010

WAUSAU CONCRETE CO.  
COUNTY MATERIALS CO.  
JIM LUEDEKE  
240 HWY 29W  
PO BOX 130  
MARATHON WI 54448

HYDROWORKS, LLC  
GRAHAM BRYANT  
50 21<sup>ST</sup> ST  
KENILWORTH NJ 07033

Re: Description: STORMWATER TREATMENT DEVICE  
Manufacturer: HYDROWORKS, LLC  
Product Name: HYDROGUARD HG 10  
Model Number(s): HG 10  
{HYDRODYNAMIC, VORTEX SW TREATMENT SEPARATOR}  
Product File No: 20100380

The specifications and/or plans for this plumbing product have been reviewed and determined to be in compliance with chapters Comm 82 through 84, Wisconsin Administrative Code, and Chapters 145 and 160, Wisconsin Statutes.

The Department hereby issues an approval based on the Wisconsin Statutes and the Wisconsin Administrative Code. **This approval is valid until the end of NOVEMBER 2015.**

This approval is contingent upon compliance with the following stipulation(s):

- **Description-- The HYDROGUARD HG-SERIES are hydrodynamic, vortex separator devices designed as vertically-oriented cylinders with dual flow paths. The model number corresponds to the structure's inside diameter in feet.**
- **Maximum storage capacity: total sediment storage—268 cu ft; oil storage—893 gallons.**  
**Maximum flow rates: design flow—5.0 cfs**
- Any wastewater or waste materials (e.g. sludge, scum) withdrawn from these systems must be disposed of in accordance with NR 113.
- Prior to installation of this product, plans and specifications must be submitted to the department or to an approved agent municipality for review and approval in accordance with s. Comm 82.20 (1) of the Wis. Admin. Code. Written approval for the plans and specifications shall be obtained prior to installation of the product.
- The review undertaken by Commerce staff does not include review and/or approval of this submittal as meeting DNR specifications for ch. NR 151.
- This product submittal has been reviewed and approved for plumbing treatment standards for subsurface infiltration and irrigation using stormwater as the source, as listed in Table Comm 82.70-1.
- Written approval for the plumbing plans shall be obtained from the department for each installation of this system. If the project is located within the city of Milwaukee, plans may be submitted to either the department or to the city of Milwaukee.
- This product must be installed in a department-approved tank that meets the design criteria for this product, as specified by Hydroworks.
- Labeling: The Hydroworks, Hydroguard series is permanently labeled as follows (as listed in HG Series Labeling Details, ver. 1.0):
  - 1) The Hydroworks logo and coding numbers are painted on the mono-base (each manhole riser); the coding indicates the project, structure ID/location and stacking sequence for installation purposes. Labels generally are painted twice on the product at 180 degrees apart.
  - 2) The model number is not painted on either product, but the model series corresponds to the diameter of the mono-base; for example, the Hydroguard HG-4 has a 4-ft. diameter.
- Inspection and maintenance of each installation of this product shall be conducted when the TSS/sediment reaches 30 inches or when floatables or oils cover > 50% surface. Anticipated maintenance intervals are 1 to 2 years.

WAUSAU CONCRETE CO.

Page 2

October 7, 2010

Product File No: 20100380

- Installation-- Installation of this product must be in accordance with the manufacturer's printed installation instructions. A copy of the manufacturer's installation instructions must be given to the property owner, installer and submitted along with other information required by the governing agency for the installation.
- **This product submittal has been reviewed and approved for plumbing treatment standards for subsurface infiltration and irrigation using stormwater as the source, as listed in Table Comm 82.70-1. Each site-specific installation shall be submitted for review and include acceptable methods, modeling, or analysis to predict efficiency for TSS and oil & grease removal.**
- **Note: Information on how to access SLAMM and P8 and the average annual rainfall files for five locations in the state, as published periodically by the department, is available at:**  
<http://dnr.wi.gov/runoff/models/index.htm>  
or by contacting the WDNR storm water management program at (608) 267-7694.
- **Pollutant loading models such as DETPOND, SLAMM, P8 or equivalent methodology may be used to evaluate the efficiency of the design in reducing total suspended solids. Information on how to access these models is available at:** <http://dnr.wi.gov/runoff/models/index.htm>  
or by contacting the WDNR storm water management program at (608) 267-7694.
- This manhole riser/catch basin must be designed to withstand the loads to which it will be subjected. All manhole covers terminating above grade must have effective locking devices.
- Installation-- The installation of this product shall maintain a working emergency overflow or outlet pipe. Each installation shall conform to Hydroguard Installation Instructions (ver. 1.2).
- Maintenance: The Hydroworks, Hydroguard series maintenance is as follows (as listed in Hydroworks Hydroguard Technical Manual, ver. 2.2):
  - 1) In addition to a 12-month maintenance interval for stabilized sites, inspection is provided via an access cover where TSS depth measurements may be made after each large storm event.
  - 2) Visual inspection of floatables may be made via the access cover.
  - 3) For parking lots and stabilized sites, a 24-month interval is recommended for grease and oil removal.
  - 4) TSS and trash removal may be made using a vacuum truck.
- These devices must be installed, maintained and serviced as directed by the manufacturer to perform as advertised.

This approval supersedes the approval issued on 11/18/2005 under product file number 20050831.

This approval letter shall be incorporated with your previously approved plans and/or specifications approved under product file number 20050831.

The department is in no way endorsing this product or any advertising, and is not responsible for any situation which may result from its use.

Sincerely,



Jean M. MacCubbin, CST  
Engineering Consultant--Plumbing Products Review  
Commerce; Safety & Buildings Div.  
PO Box 2658  
201 W Washington Ave.  
Madison WI 53703-2658  
Phone: 608-266-0955; Fax: 608-283-7456  
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JIM LUEDEKE  
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PO BOX 130  
MARATHON WI 54448

HYDROWORKS, LLC  
GRAHAM BRYANT  
50 21<sup>ST</sup> ST  
KENILWORTH NJ 07033

Re: Description: STORMWATER TREATMENT DEVICE  
Manufacturer: HYDROWORKS, LLC  
Product Name: HYDROGUARD HG 12  
Model Number(s): HG 12  
{HYDRODYNAMIC, VORTEX SW TREATMENT SEPARATOR}  
Product File No: 20100381

The specifications and/or plans for this plumbing product have been reviewed and determined to be in compliance with chapters Comm 82 through 84, Wisconsin Administrative Code, and Chapters 145 and 160, Wisconsin Statutes.

The Department hereby issues an approval based on the Wisconsin Statutes and the Wisconsin Administrative Code. **This approval is valid until the end of NOVEMBER 2015.**

This approval is contingent upon compliance with the following stipulation(s):

- **Description-- The HYDROGUARD HG-SERIES are hydrodynamic, vortex separator devices designed as vertically-oriented cylinders with dual flow paths. The model number corresponds to the structure's inside diameter in feet.**
- **Maximum storage capacity: total sediment storage—386 cu ft; oil storage—1389 gallons. Maximum flow rates: design flow—7.2 cfs**
- Any wastewater or waste materials (e.g. sludge, scum) withdrawn from these systems must be disposed of in accordance with NR 113.
- Prior to installation of this product, plans and specifications must be submitted to the department or to an approved agent municipality for review and approval in accordance with s. Comm 82.20 (1) of the Wis. Admin. Code. Written approval for the plans and specifications shall be obtained prior to installation of the product.
- The review undertaken by Commerce staff does not include review and/or approval of this submittal as meeting DNR specifications for ch. NR 151.
- This product submittal has been reviewed and approved for plumbing treatment standards for subsurface infiltration and irrigation using stormwater as the source, as listed in Table Comm 82.70-1.
- Written approval for the plumbing plans shall be obtained from the department for each installation of this system. If the project is located within the city of Milwaukee, plans may be submitted to either the department or to the city of Milwaukee.
- This product must be installed in a department-approved tank that meets the design criteria for this product, as specified by Hydroworks.
- Labeling: The Hydroworks, Hydroguard series is permanently labeled as follows (as listed in HG Series Labeling Details, ver. 1.0):
  - 1) The Hydroworks logo and coding numbers are painted on the mono-base (each manhole riser); the coding indicates the project, structure ID/location and stacking sequence for installation purposes. Labels generally are painted twice on the product at 180 degrees apart.
  - 2) The model number is not painted on either product, but the model series corresponds to the diameter of the mono-base; for example, the Hydroguard HG-4 has a 4-ft. diameter.
- Inspection and maintenance of each installation of this product shall be conducted when the TSS/sediment reaches 30 inches or when floatables or oils cover > 50% surface. Anticipated maintenance intervals are 1 to 2 years.

October 7, 2010

Product File No: 20100381

- Installation-- Installation of this product must be in accordance with the manufacturer's printed installation instructions. A copy of the manufacturer's installation instructions must be given to the property owner, installer and submitted along with other information required by the governing agency for the installation.
- **This product submittal has been reviewed and approved for plumbing treatment standards for subsurface infiltration and irrigation using stormwater as the source, as listed in Table Comm 82.70-1. Each site-specific installation shall be submitted for review and include acceptable methods, modeling, or analysis to predict efficiency for TSS and oil & grease removal.**
- **Note: Information on how to access SLAMM and P8 and the average annual rainfall files or five locations in the state, as published periodically by the department, is available at: <http://dnr.wi.gov/runoff/models/index.htm> or by contacting the WDNR storm water management program at (608) 267-7694.**
- **Pollutant loading models such as DETPOND, SLAMM, P8 or equivalent methodology may be used to evaluate the efficiency of the design in reducing total suspended solids. Information on how to access these models is available at: <http://dnr.wi.gov/runoff/models/index.htm> or by contacting the WDNR storm water management program at (608) 267-7694.**
- This manhole riser/catch basin must be designed to withstand the loads to which it will be subjected. All manhole covers terminating above grade must have effective locking devices.
- Installation-- The installation of this product shall maintain a working emergency overflow or outlet pipe. Each installation shall conform to Hydroguard Installation Instructions (ver. 1.2).
- Maintenance: The Hydroworks, Hydroguard series maintenance is as follows (as listed in Hydroworks Hydroguard Technical Manual, ver. 2.2):
  - 1) In addition to a 12-month maintenance interval for stabilized sites, inspection is provided via an access cover where TSS depth measurements may be made after each large storm event.
  - 2) Visual inspection of floatables may be made via the access cover.
  - 3) For parking lots and stabilized sites, a 24-month interval is recommended for grease and oil removal.
  - 4) TSS and trash removal may be made using a vactor truck.
- These devices must be installed, maintained and serviced as directed by the manufacturer to perform as advertised.

This approval supersedes the approval issued on 11/18/2005 under product file number 20050832.

This approval letter shall be incorporated with your previously approved plans and/or specifications approved under product file number 20050832.

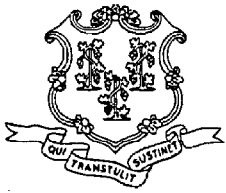
The department is in no way endorsing this product or any advertising, and is not responsible for any situation which may result from its use.

Sincerely,

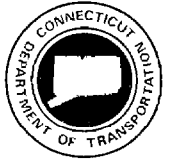


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STATE OF CONNECTICUT  
DEPARTMENT OF TRANSPORTATION



OFFICE OF RESEARCH AND MATERIALS

280 WEST STREET  
ROCKY HILL, CONNECTICUT 06067-3502

Phone: (860) 258-0371  
keith.lane@po.state.ct.us

May 25, 2006

Mr. Graham Bryant, P.E.  
Hydroworks, LLC  
525 Boulevard  
Kenilworth, NJ 07033

Dear Mr. Bryant:

Subject: Hydroguard

Available information on the subject product has been reviewed by our Research Liaison Committee. The Committee has recommended that Hydroguard be approved for use on Connecticut Department of Transportation projects by special provision.

This letter is not an endorsement of Hydroguard and shall in no way be used for promotional purposes, such as for advertisement in a trade magazine, etc. Your cooperation is appreciated.

Sincerely,

Keith R. Lane, P.E.  
Director of Research and Materials  
Bureau of Engineering and  
Highway Operations



UNIVERSITY OF MASSACHUSETTS  
AT AMHERST

Water Resources Research Center  
Blaisdell House, UMass  
310 Hicks Way  
Amherst, MA 01003

Massachusetts Stormwater  
Evaluation Project

(413) 545-5532  
(413) 545-2304 FAX  
[www.mastep.net](http://www.mastep.net)

## MASTEP Technology Review

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**Technology Name:** HydroGuard HG6 Hydrodynamic Separator. Hydroworks, LLC

**Studies Reviewed:** Verification Testing of the HydroGuard HG6 Hydrodynamic Separator Stormwater Treatment Unit. Mailloux and Humphrey, December 2008.

**Date:** January 29, 2009

**Reviewers:** Jerry Schoen

**Rating:** 2

**Brief rationale for rating:**

This laboratory study is generally well conducted and documented. Quality control data is lacking.

**TARP Requirements Not Met\*:**

- No documentation of a Quality Assurance Project Plan, no QC data
- Sediment removal efficiency was calculated by modified mass balance method. Although this is an accurate method, TARP specifies use of TSS analysis method.

**Other Comments**

- Sediment removal efficiency, calculated according to the NJDEP weighted formula, was 60.3%.
- The 100% treatment flow rate for this system is 1.8 CFS.
- Sediment removal was evaluated using modified mass balance method, considered to be a particularly accurate method of evaluating sediment removal in a laboratory setting.
- Particle Size Distribution (with d50 of 70 microns) closely matched the 55% sand, 40% silt, 5% clay mix recommended by NJDEP.
- A full range of flows (25% - 125%) was tested.
- Scour test was performed. Some scour was observed at flows exceeding capacity (effluent concentrations ranged from 14 mg/l when tested with F60 sediment to 42 mg/l when tested with mix similar to NJDEP mix). Given that 75% of material resuspended was < 18 microns and that the smallest particles retained in the system were 26 microns, this test suggests that little scouring of captured materials will occur.

\* Criteria also based on NJDEP laboratory testing guidelines.





**Department of Public Works & Utilities**

November 21, 2012

Jeff Herlocker  
221 W 33<sup>rd</sup> St. N.  
Wichita KS 67204

Dear Mr. Herlocker:

Thank you for your interest and presentation at the City of Wichita Material Review Board on June 6, 2012. After further review of your product and application to the City of Wichita Material Review Board, Hydroguard has been approved for use on City of Wichita storm water projects. Hydroguard shall be considered an approved material in cases where it is appropriate to use a proprietary device to achieve 80% removal of the total suspended solids. The separator shall be installed per the manufacturer's recommendations and shall conform to the City of Wichita Storm Water Manual for proprietary treatment devices found in section 3.3.1.

If you have any additional questions or need more info I can be reached at (316)268-4632 or [smellies@wichita.gov](mailto:smellies@wichita.gov).

Sincerely,

Shawn Mellies, P.E.  
Engineer

**Engineering Division**

City Hall • Seventh Floor • 455 North Main • Wichita, Kansas 67202-1606

**T** 316.268.4501    **F** 316.268.4114

[www.wichitagov.org](http://www.wichitagov.org)



# City of Virginia Beach

[VBgov.com](http://VBgov.com)

OFFICE OF THE CITY ENGINEER  
(757) 385-4131  
FAX (757) 385-5668

MUNICIPAL CENTER  
BUILDING 2  
2405 COURTHOUSE DRIVE  
VIRGINIA BEACH, VIRGINIA 23456-9031

May 15, 2006

Mr. Graham Bryant, P.E.  
President  
Hydroworks  
525 Boulevard  
Kenilworth, NJ 07033

## Re: Product Approval

Dear Mr. Bryant:

The City of Virginia Beach Product Evaluation Committee has completed our review of the Hydroguard. We hereby **APPROVE** the Hydroguard for use in the City of Virginia Beach.

The Hydroguard is eligible for a rating of 20% CBPA Phosphorous removal, until we have actual field test data from local sites that show a higher rating is achievable. In addition, this product qualifies the owner for a 10% reduction in storm water utility billings. The City will consider increasing this reduction if an increased removal rating at an approved local site, can be shown.

Please do not hesitate to contact me if you have any questions or comments regarding this matter.

Sincerely,

Phillip D. Pullen, P.E.  
Product Evaluation Committee Chairman

PDP/po

C: Karl Smithson  
Cheryl Cole  
Charlie Heffington



DEPARTMENT OF PERMITTING SERVICES

Isiah Leggett  
County Executive

Carla Reid  
Director

April 4, 2011

Graham Bryant, P.E.  
Hydroworks, LLC  
50 S. 21<sup>st</sup> Street  
Kenilworth, NJ 07033

Re: Hydroworks Hydroguard

Dear Mr. Bryant,

Please be advised that the Stormwater Management New Products and Materials Committee for Montgomery County recommends the above mentioned product for use in Montgomery County. The approval is based on the following conditions.

1. The maximum allowable drainage area is one acre.
2. The product may only be used for water quality pretreatment for new development and redevelopment.
3. Each unit must be designed and installed as a part of an off-line system utilizing a flow splitting manhole or other MCDPS approved method
4. Each unit must be designed to meet the most current MDE standards for the removal of TSS and TP.
5. Shop drawings for each unit must be reviewed and approved by the design engineer for dimensions, structural integrity, and the overall conformance with the approved stormwater management plans and Montgomery County Standards (including ACI-350 for concrete). All shop drawing must be submitted to DPS for acceptance.
6. Minimum sizing of units is to be provided by the manufacturer based on the design engineer's provided parameter.
7. Prior to use in the County, the design of the unit must be modified to provide adequate access for maintenance and cleaning. This may include the use of additional manholes, steps and ladders.

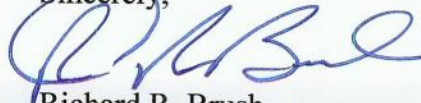


8. All changes and/or modifications to the approved design parameters of this product must be submitted to the County for approval prior to use in the County. Failure to do so will result in revocation of this approval.

This approval is good for a period not to exceed five years. The manufacturer must reapply for approval to continue use of this product prior to the end of the five year period. Otherwise, the product will be no longer acceptable for use.

If you have questions or comments please contact me at 240-777-6343.

Sincerely,



Richard R. Brush  
Manager



## Product Accepted for Use

Date: Jan 24, 2012  
Company Name: Hydroworks, LLC  
Product: Hydroguard

This is to confirm that the Ontario Provincial Standards (OPS), Products Management Committee (PMC) has reviewed your submission for the above product and has determined that the product will receive an "ACCEPTED FOR USE" classification. The Road Authority (TRA) has received direction from PMC to add the following to the product profile on the public website ([www.roadauthority.com](http://www.roadauthority.com)).



*"Product is affirmed as currently meeting the requirements of recognized specifications or standards (such as ASTM, AWWA, CSA, OPS, ULC, etc.) and/or is currently approved for use in Ontario applications (through performance or end-result achievement) by an infrastructure owner (such as a province, state, major municipality, etc.) Products approved only for use on trial installations are not included in this category."*


The "Accepted for Use" logo provides a guideline for purchasers seeking to confirm the ability of manufacturers and suppliers to provide products meeting the required standards and specifications. This acceptance is a committee decision and does not represent acceptance by any individual infrastructure owner. The use of any product will be at the discretion of the specifier (owner or owner's agent).

This acceptance does not constitute a general endorsement of the product nor provide any guarantees of performance or quality. It is incumbent upon the proponent of the product, to ensure that all quality standards and requirements are met. In addition, you are required to notify the PMC Coordinator of any proposed changes to the product. This includes changes to the design, manufacturing process, quality control plan, materials used and manufacturing location. Any changes not conveyed to PMC could result in the withdrawal of the classification of your product.

Companies wishing to publicize their classification status may only refer to the decision of the PMC as:

**"THIS PRODUCT HAS RECEIVED AN "ACCEPTED FOR USE" CLASSIFICATION FROM THE ONTARIO PROVINCIAL STANDARDS (OPS), PRODUCTS MANAGEMENT COMMITTEE (PMC).**

Any advertising or communication other than the above is prohibited and could result in withdrawal of your classification status by PMC.

  
for PMC Coordinator

Any questions or comments should be forwarded to:

Ontario Provincial Standards, PMC Coordinator,  
C/O The Road Authority  
10 Gillingham Drive, Suite 306  
Brampton, Ontario L6X 5A5  
Tel: (905) 459-9200 Fax: (905) 459-4122  
Email: [info@roadauthority.com](mailto:info@roadauthority.com)  
Web site: [www.roadauthority.com](http://www.roadauthority.com)

#### Terms and Conditions

The client represents and warrants to The Road Authority that all information provided by the client to The Road Authority for posting on The Road Authority's web site is current and accurate and acknowledges that The Road Authority will not independently verify the currency and accuracy of such information. As such, the client shall be responsible for all liability stemming from the use by anyone of such information and shall indemnify and hold The Road Authority harmless from and against any and all damages, costs, or expenses incurred or suffered by The Road Authority as a result of the reliance on or use by anyone of such information.