



November 2006

**CONDITIONAL SHORT-TERM USE LEVEL DESIGNATION FOR BASIC (TSS) &
PHOSPHORUS TREATMENT
&
PILOT USE LEVEL DESIGNATION FOR ENHANCED & OIL TREATMENT**

For

Americast's filterra®

Ecology's Decision:

Based on Americast's submissions and recommendations by the Technical Review Committee, Ecology hereby issues the following use level designations:

1. A Conditional Short-Term Use Designation for Basic and Phosphorus Treatment.
2. A Pilot Level Use Designation for Enhanced and Oil Treatment.

These Conditional Use Level Designations expire on November 1, 2009 unless extended by Ecology, and are subject to the conditions specified below.

The Pilot Use Level Designations expire on May 1, 2010 unless extended by Ecology, and is subject to the conditions specified below.

Ecology's Conditions of Use:

filterra® units shall be designed, installed, and maintained to comply with these conditions:

1. Each filterra® unit shall be sized using an infiltration rate of 50 inches/hour using the 15-minute water quality design flowrate (as specified in Ecology's most recent Stormwater Manual) as calculated using the latest version of the Western Washington Hydrology Model or other Ecology-approved continuous runoff model.
2. Each site plan must undergo filterra® review before the unit can be approved for site installation. This will ensure that site grading and slope are appropriate for use of a filterra® unit.
3. filterra® media shall conform to the following specifications:



Media Specs

- 4. Maintenance includes removing trash and accumulated debris from the filter surface and replacing the mulch layer. Inspections will be used to determine the site-specific maintenance schedules and requirements. Maintenance procedures should follow those given in the most recent version of the filterra® Installation, Operation, and Maintenance Manual.**
- 5. filterra® commits to submitting a QAPP for TRC review and Ecology approval by May 1, 2007 that meets the TAPE requirements for attaining a GULD for basic, phosphorus, enhanced, and oil treatment. QAPPs must be submitted for each site where the unit is to be used for enhanced and oil treatment.**
- 6. Local jurisdictions must file a “Pilot Level Technologies Notice of Intent” form with the Department of Ecology prior to authorizing filterra® for a Pilot Use Level application (units to be used for enhanced and oil treatment).**
- 7. filterra® shall submit a TEER for TRC review for enhanced and oil treatment by November 1, 2009 and shall submit a TEER for TRC review for basic and phosphorus treatment by May 1, 2009.**
- 8. filterra® may request Ecology to grant deadline or expiration date extensions, upon showing cause for such extensions. Lack of funds to complete the monitoring will not be viewed by Ecology as sufficient cause.**
- 9. Discharges from the filterra® units shall not cause or contribute to water quality standards violations in receiving waters.**

Applicant: Americast

Applicant’s Address: 11352 Virginia Precast Road
Ashland, VA, 23005

Application Documents:

- State of Washington Department of Ecology Application for Conditional Use Designation, Americast (September 2006)

Applicant’s Use Level Request:

General Level Use Designation for Basic and Phosphorus Treatment and Conditional Use Level Designation for Enhanced Treatment and Pilot Use Level for Oil Treatment.

Applicant's Performance Claims:

Field testing and laboratory testing show that the filterra® unit is promising as a stormwater treatment best management practice and can meet Ecology's performance goals for basic and phosphorus treatment and has the potential to meet Ecology's goal for enhanced and oil treatment.

Technical Review Committee Recommendations:

The Technical Review Committee finds sufficient evidence that filterra® should be able to demonstrate, through additional field testing, that it will attain a General Use Level Designation (GULD) for basic, enhanced, and phosphorus treatment.

Findings of Fact:

1. Field testing data are currently available for 9 storms in Virginia.
2. The field data showed an average removal of 75% for TSS with an average influent of 12.5 +/- 7.60, 64% for total zinc with an average influent of 0.04 +/- 0.02, and 52% for total phosphorus with an average influent of 0.11 +/- 0.05.
3. Laboratory testing was performed on a scaled down version of the filterra® unit. The lab data showed an average removal from 83-91% for TSS with influents ranging from 21 to 320 mg/L, 82-84% for total copper with influents ranging from 0.94 to 2.3 mg/L, and 50-61% for orthophosphate with influents ranging from 2.46 to 14.37 mg/L.
4. Permeability tests were conducted on the soil media.
5. Lab scale testing using Sil-Co-Sil 106 showed percent removals ranging from 70.1% to 95.5% for influent concentrations ranging from 8.3 to 260 mg/L.

Remaining Issues or Concerns about the filterra® Technology:

1. There is currently no data regarding the removal of dissolved metals. Data must be obtained on the removal of dissolved copper and dissolved zinc. Ecology's performance goals for enhanced treatment assume the facility is treating stormwater with dissolved concentrations ranging from 0.003 to 0.02 mg/L and dissolved zinc ranging from 0.02 to 0.3 mg/L. It is recommended that Americast find sites with stormwater containing metals in these concentration ranges.
2. There is minimal information regarding the expected life of the media. Testing should be conducted to determine a maximum treatment life of the media with regards to TSS, metals, and phosphorus treatment.
3. There is minimal information available about the treatment capabilities of different plant species, testing should be completed at sites that contain different plants to determine if plant species plays a key role in pollutant removal ability.

Contact Information:

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Ecology web link: <http://www.ecy.wa.gov/programs/wq/stormwater/newtech/index.html>

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