



**April 2008**  
**(Updated September 2008 extending due dates)**

**CONDITIONAL USE LEVEL DESIGNATION FOR PRETREATMENT (TSS)**  
**For**  
**BaySaver Technologies™ BaySeparator**

**Ecology's Decision:**

Based on BaySaver Technologies™ application submissions and recommendations by the Technical Review Committee (TRC), Ecology hereby issues the following use level designation for the BaySaver Technologies™ BaySeparator units:

- 1. Conditional Use Level Designation (CULD) for pretreatment, as defined in the Ecology Manual Volume I, (a) ahead of infiltration treatment, or (b) to protect and extend the maintenance cycle of a basic or enhanced treatment device (e.g., sand or media filter). This CULD applies to BaySeparator units sized at an operating rate of no more than 0.82 gpm/ft<sup>2</sup> of manhole area (primary plus storage) at the water quality design flow rate as determined using the Western Washington Hydrology Model (WWHM).**

**This CULD expires on April 1, 2011 unless extended by Ecology.**

**All designations are subject to the conditions specified below.**

**Properly designed and operated BaySeparator systems may also have applicability in other situations (example: low-head situations such as bridges or ferry docks), for TSS and oil/grease removal where, on a case-by-case basis, it is found to be infeasible or impracticable to use any other approved practice. Jurisdictions covered under the Phase I or Phase II municipal stormwater permits should use variance/exception procedures and criteria as required by their NPDES permit.**

**Ecology finds that the BaySaver system could also provide water quality benefits in retrofit situations.**

**Ecology's Conditions of Use:**

**BaySeparators shall be designed, installed, and maintained to comply with these conditions:**

- 1. BaySeparators must be designed, assembled, installed, operated, and maintained in accordance with BaySaver Technologies™ applicable manuals and documents and the Ecology decision and conditions specified herein.**

- 2. On or before April 1, 2009, BaySaver Technologies™ shall submit a Quality Assurance Project Plan (QAPP) that meets the TAPE requirements for attaining a general use level designation (GULD) for pretreatment.**
- 3. Discharges from the BaySeparator unit shall not cause or contribute to water quality standards violations in receiving waters.**
- 4. BaySaver Technologies™ shall complete all required testing and submit a TEER for pretreatment for TRC and Ecology review by October 1, 2010.**
- 5. BaySaver Technologies™ may request Ecology to grant deadline or expiration date extensions, upon showing cause for such extensions.**

**Applicant:** BaySaver Technologies™, Inc.

**Applicant's Address:** 1302 Rising Ridge Road, Suite 1  
Mount Airy, Maryland, 21771

**Application Documents:**

- “Baysaver Technologies, Inc. Technical Evaluation Engineering Report”, Baysaver Technologies Inc., Revised 2008
- “Baysaver Technologies, Inc. Technical Evaluation Engineering Report”, Baysaver Technologies Inc., August 2006
- “Baysaver Technologies, Inc. Technical Evaluation Engineering Report”, Baysaver Technologies Inc., June 2005
- “Baysaver Technologies™ Separation System Technical and Design Manual”, Baysaver Technologies Inc.”, March 2004
- “Estimating the Maximum Treatment Rate and the Maximum Hydraulic Rate of the Baysaver Units”, Omid Mohensi, September 2005
- List of Units Sold and Units Installed in Washington State, June, 2005

A CD-ROM of the submittal reports may be requested from BaySaver Technologies™.

**Applicant's Use Level Requests:**

- General use level designation (GULD) for pretreatment.

**Applicant's Performance Claims:**

BaySeparator units can be designed and sized such that they remove 125 micron particles at an efficiency of 80%. Specifically, BaySeparator units: remove and retain sediment particles from stormwater runoff.

- Achieve an instantaneous removal efficiency of 80% or greater when properly sized for a selected design flowrate.
- Retain material through intense storms and do not resuspend previously-trapped pollutants.
- Are easily maintained.

**Technical Review Committee Recommendations:** The TRC, based on the weight of the evidence and using its best professional judgment, finds that:

- The BaySaver units, sized according to this designation document can achieve, at a minimum, equivalent performance to a presettling basin as defined in the most recent *Stormwater Management Manual for Western Washington, Volume V, Chapter 6*.

**Findings of Fact:**

- Full-scale laboratory tests have been conducted on three series of tests. The first series of tests were conducted on a 24” separator unit with two 72” manholes. On average at 25% of the maximum treatment rate the unit can achieve 84% TSS removal of F-95 sand. The second series of tests were conducted on a 24” separator unit with a 48” primary manhole and a 72” storage manhole. On average at 15% of the maximum treatment rate the unit can achieve 94% removal of F-95 sand. The third series of tests were conducted on a 24” separator unit with a 48” primary manhole and a 72” storage manhole with water at 20° Celsius (the first two series were conducted with water at near-freezing temperatures). On average at 25% of the maximum treatment rate the unit can achieve 89.5% removal of F-95 sand.

**Technology Description:**

Design Manual and technical bulletins can be downloaded from company's web site.

**Recommended Research and Development:**

Ecology encourages BaySaver Technologies™ to pursue continuous improvements to the BaySeparator unit. To that end, the following actions are recommended:

- Conduct field-testing to reliably ascertain the BaySaver’s ability to remove the finer particles (based on the TAPE) comprising TSS found on local highways, parking lots, and other high-use areas.
- Conduct field testing to verify that maintenance practices are appropriate.

- Conduct testing on various sized BaySeparator units to verify the sizing technique is appropriate.
- Conduct testing to determine the flowrates that trigger maximum treatment operation and bypass operation.
- Conduct testing to determine the flowrate at which resuspension occurs.

**Contact Information:**

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

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