

## CatchBasin StormFilter™

*Important: These guidelines should be used as a part of your site stormwater plan.*

### Overview

The CatchBasin StormFilter™ (CBSF) consists of a multi-chamber steel, concrete, or plastic catch basin unit. The steel CBSF is offered both as a standard and as a deep unit for additional internal overflow and sediment capacity.

The CBSF is installed flush with the finished grade and is applicable for both constrained lot and retrofit applications. Steel and concrete units can accept surface and piped influent for roof leaders or similar applications.

The steel, concrete and plastic CBSF units have capacities of 4, 8 and 2 cartridges, respectively. Internal overflow capacity varies by system type from 0.5 cfs for the plastic, 1.3 cfs for the concrete and 1.0 or 1.8 cfs for the steel unit.

### Design Operation

The CBSF is installed as the primary receiver of runoff, similar to a standard, grated catch basin. The steel and concrete CBSF units have an H-20 rated, traffic bearing lid that allows the filter to be installed in parking lots, and for all practical purposes, takes up no land area. Plastic units can be used in landscaped areas or other non-traffic-bearing applications.

The steel CBSF consists of a sumped inlet chamber and cartridge chamber(s). Runoff enters the sumped inlet chamber either by sheet flow from a paved surface or from an inlet pipe discharging directly to the unit vault. The inlet chamber is equipped with an internal baffle, which traps debris and floating oil and grease, and an overflow weir. While in the inlet chamber, heavier solids are allowed to settle into the deep sump, while lighter solids and soluble pollutants are directed into the cartridge chamber through a port between the baffle and the overflow weir.

The concrete and plastic units operate similarly minus the presence of the inlet chamber or deep sump.

Once in the cartridge chamber, polluted water ponds and percolates horizontally through the media in the filter cartridges. Treated water collects in the cartridge's center tube from where it is directed to the outlet chamber and discharged to the outlet pipe on the downstream side of the overflow weir.

When influent flows exceed the water quality design value, excess water spills over the overflow weir, bypassing the cartridge bay, and discharges to the outlet pipe.

### Applications

The CBSF is particularly useful where small flows are being treated or for sites that have little available hydraulic head. The unit is ideal for applications in which standard catch basins are to be used. Both water quality and catchment issues can be resolved with the use of the CBSF.

### Retro-Fit

The retrofit market has many possible applications for the CBSF. The CBSF can be installed by replacing an existing catch basin without having to "chase the grade," thus reducing the high cost of re-piping the storm system.

## CatchBasin StormFilter™

### Maintenance Guidelines

Maintenance procedures for typical catch basins can be applied to the CatchBasin StormFilter (CBSF). The filter cartridges contained in the CBSF are easily removed and replaced during maintenance activities according to the following guidelines.

1. Establish a safe working area as per typical catch basin service activity.
2. Remove steel grate and diamond plate cover (weight 100 lbs. each) or plastic grating.
3. Turn cartridge(s) approximately ¼ turn counter-clockwise to disconnect from pipe manifold.
4. Remove cartridge(s) from catch basin by hand or with appropriate hoisting equipment.
5. Remove accumulated sediment via vactor truck from all interior chambers.
6. Rinse interior of both bays and vactor remaining water and sediment.
7. Install fresh cartridge(s), by rotating ¼ turn clockwise, taking care not to damage cartridge connectors.
8. Replace cover(s).
9. Dispose of accumulated debris and spent media in accordance with local regulations.
10. Return used, empty cartridges to Contech for refurbishing.

Media may be removed from the filter cartridges using the vactor truck before the cartridges are removed from the catch basin structure once the top cap and hood are removed. The vactor truck must be equipped with a hose capable of reaching areas of restricted clearance.

Empty cartridges can be easily removed from the catch basin structure by hand. Empty cartridges should be reassembled and returned to Contech as appropriate.

Refurbished cartridges are available from Contech on an exchange basis. Contact the maintenance department of Contech at 513-645-7770 for more information.

Onsite maintenance is estimated at 26 minutes once setup for a single cartridge unit. Add approximately 5 minutes for each additional cartridge.

### Mosquito Abatement

In certain areas of the United States, mosquito abatement is desirable to reduce the incidence of vectors.

In BMPs with standing water, which could provide mosquito breeding habitat, certain abatement measures can be taken.

1. Periodic observation of the standing water to determine if the facility is harboring mosquito larvae.
2. Regular catch basin maintenance.
3. Use of larvicides containing *Bacillus thuringiensis israelensis* (BTI). BTI is a bacterium toxic to mosquito and black fly larvae.

In some cases, the presence of petroleum hydrocarbons may interrupt the mosquito growth cycle.

### Using Larvicides in the CatchBasin StormFilter

Larvicides should be used according to manufacturer's recommendations.

Two widely available products are Mosquito Dunks and Summit B.t.i. Briquets. For more information, visit <https://www.amvac.com/products/summit-bti-briquets>.

The larvicide must be in contact with the permanent pool. The larvicide should also be fastened to the CatchBasin StormFilter to prevent displacement by high flows. A magnet can be used with a steel catch basin.

For more information on mosquito abatement in stormwater BMPs, refer to the following: <https://anrcatalog.ucanr.edu/pdf/8125.pdf>.



# Detention Basin Inspection & Maintenance Record

Task	Inspection Frequency	Year _____		
		Contractor (Name & Phone #)	Cost	Notes
<b>Storm Sewer Systems</b>				
Inspect the inlet pipes and outlet pipe for structural integrity	Annually			
Inspect riprap at inlet pipes	Annually			
Conduct routine inspections for trash or other debris that may be blocking the inlet tor outlet pipes or emergency spillway	Monthly and after rain events			
Inspect and clean the storm sewer system and catch basins upstream from the detention basin	Every 5 years or as needed			
Inspect for sediment & trash accumulation at the inlet pipes	Semiannually and after rain events			
Inspect the stone around the riser/standpipe (outlet pipe)	Semiannually and after rain events			
Inspect the riser/standpipe cover for trash and debris	Monthly and after rain events			
Inspect for excess sediment accumulation in the pond	Annually			
Remove accumulated sediment at basin inlets or in basin forebay	Semiannually and after rain events			
Have a Professional Civil Engineer inspect the pond to ensure it is functioning properly	Annually			
Have a Professional Civil Engineer inspect all outlet control structures to ensure they are functioning properly	Annually			



# Detention Basin Inspection & Maintenance Record

Task	Inspection Frequency	Year _____		
		Contractor (Name & Phone #)	Cost	Notes
<b>Detention Basin Vegetation</b>				
Inspect side slopes, berms and spillways for erosion	Annually and after rain events			
Reestablish permanent native vegetation on eroded slopes	Annually and after rain events			
Maintain 15-25 foot "no-mow and chemical-free" zone around the pond edge	Annually			
Mow (or burn) the "no-mow" buffer zone once a year	Annually - late April/ early May			
Inspect basin and "no-mow" zone for invasive species such as purple loosestrife, phragmites, buckthorn (common & glossy), honeysuckle and autumn olive that out-compete native vegetation	Annually - July			
Have a qualified professional selectively herbicide invasive species	Annually July/August			
Increase plant diversity by planting additional vegetation in around the pond	Annually fall or early spring			
<b>Property Management</b>				
Common area maintenance	Annually			
Street sweeping	Semiannually			
Inspect basin for signs of chemicals (solvents, gas, diesel, paint, natural gas). Identify and remove/dispose of properly	Monthly and after rain events			
Review maintenance plan	Annually			