

BioClean<sup>®</sup> Kraken<sup>®</sup> Curb Inlet Filter  
Maintenance Manual



# BIO CLEAN® KRAKEN CURB INLET FILTER OPERATION & MAINTENANCE MANUAL

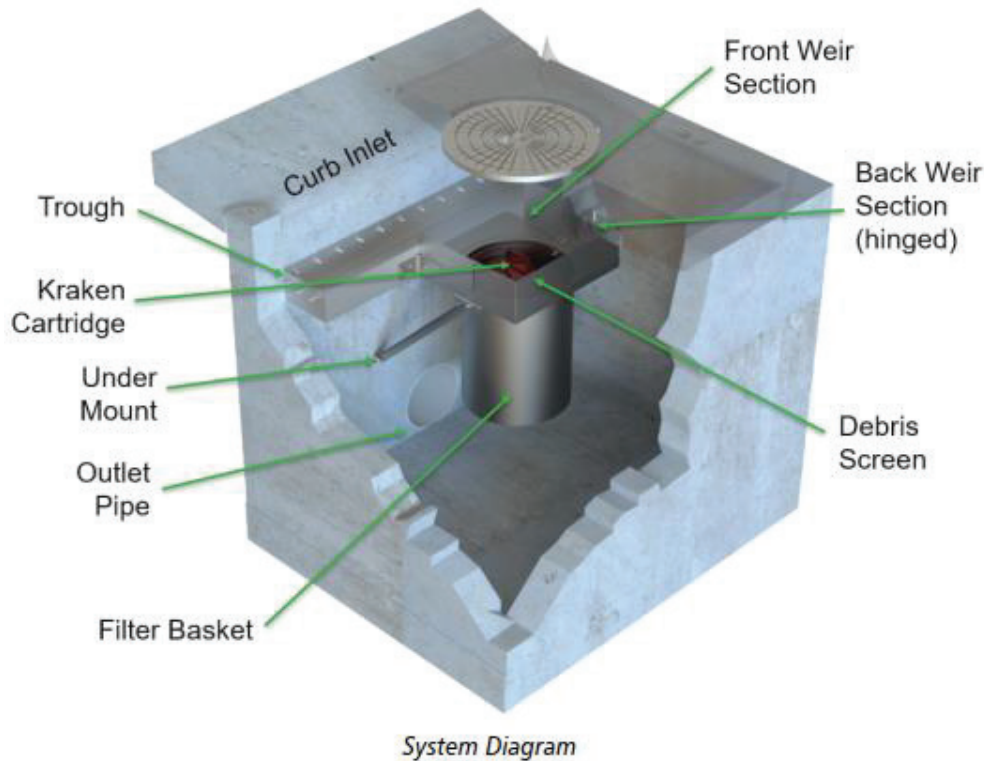
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## OVERVIEW

Contech's Bio Clean® Kraken Curb Inlet Filter is a stormwater catch basin filter designed to remove trash, debris, sediments, particulates, and hydrocarbons. The innovative trough and weir system is mounted along the curb face and directs incoming stormwater toward the filter basket, which is positioned directly under the manhole access opening regardless of its location in the catch basin. This simple yet profound design allows the filter to be cleaned from the finished surface without access into the catch basin, significantly reducing maintenance time and eliminating confined space entry. The filter lifting handle allows for the filter to be removed easily through the manhole. The weir also folds up to allow unimpeded access into the basin for routine maintenance or pipe jetting.

As with all stormwater BMPs, inspection and maintenance on the Curb Inlet Filter is necessary. Stormwater regulations require BMPs be inspected and maintained to ensure they are operating as designed to allow for effective pollutant removal and provide protection to receiving water bodies. It is recommended that inspections be performed multiple times during the first year to assess site-specific loading conditions. This is recommended because pollutant loading can vary greatly from site to site. Variables such as nearby soil erosion or construction sites, winter sanding of roads, amount of daily traffic, and land use can increase pollutant loading on the system. The first year of inspections can be used to set inspection and maintenance intervals for subsequent years. Without appropriate maintenance, a BMP can exceed its storage capacity which can negatively affect its continued performance in removing and retaining captured pollutants.



### WARNING

Confined space entry may be required. Contractor to obtain all equipment and training to meet applicable local and OSHA regulations regarding confined space entry. It is the Contractor's or entry personnel's responsibility to always proceed safely.



## SAFETY NOTICE AND PERSONAL SAFETY EQUIPMENT

Job site safety is a topic and a practice addressed comprehensively by others. The inclusions here are merely reminders to whole areas of Safety Practice that are the responsibility of the Owner(s), Manager(s), and Service Provider(s). OSHA and Canadian OSH, Federal, State/Provincial, and Local Jurisdiction Safety Standards apply on any given site or project. The knowledge and applicability of those responsibilities is the Service Provider's responsibility and outside the scope of Contech Engineered Solutions.



Safety Boots



Gloves



Hard Hat



Eye Protection



Maintenance and Protection  
of Traffic Plan

## INSPECTION SUMMARY & EQUIPMENT LIST

The core to any successful stormwater BMP maintenance program is routine inspections. The inspection steps required on the Curb Inlet Filter are quick and easy. As mentioned above, the first year should be seen as the maintenance interval establishment phase. During the first year, more frequent inspections should occur in order to gather loading data and maintenance requirements for that specific site. This information can be used to establish a base for long-term inspection and maintenance interval requirements.

The following is a list of equipment required to allow for simple and effective inspection of the Curb Inlet Filter:

Inspection Item	Status	Notes	Remarks
1. Visual Inspection			
2. Filter Condition			
3. Inlet Pipe Condition			
4. Inlet Pipe Slope			
5. Inlet Pipe Material			
6. Inlet Pipe Diameter			
7. Inlet Pipe Length			
8. Inlet Pipe Location			
9. Inlet Pipe Orientation			
10. Inlet Pipe Access			
11. Inlet Pipe Clearance			
12. Inlet Pipe Protection			
13. Inlet Pipe Maintenance			
14. Inlet Pipe Inspection			
15. Inlet Pipe Report			

Contech Inspection and Maintenance Report



Flashlight



Access Cover Hook

## INSPECTION AND MAINTENANCE NOTES

1. Following maintenance and/or inspection, it is recommended that the maintenance operator prepare a maintenance/inspection record. The record should include any maintenance activities performed, amount and description of debris collected, and condition of the system and its various filter mechanisms.
2. The owner should keep maintenance/inspection record(s) for a minimum of five years from the date of maintenance. These records should be made available to the governing municipality for inspection upon request at any time.
3. Transport all debris, trash, organics, and sediments to approved facility for disposal in accordance with local and state requirements.
4. Entry into the catch basin may require confined space training based on state and local regulations. It is generally not required for routine inspections or maintenance of the Curb Inlet Filter.

## INSPECTION PROCESS

1. Prepare the inspection form by writing in the necessary information including project name, location, date & time, unit number and other information (see inspection form).
2. Observe the inside of the catch basin through the manhole. If minimal light is available and vision into the unit is impaired, utilize a flashlight to see inside the catch basin.
3. Look for any out of the ordinary obstructions in the catch basin, trough, weir, filter basket, basin floor, or outlet pipe. Write down any observations on the inspection form.
4. Through observation and/or digital photographs, estimate the amount of trash, foliage, and sediment accumulated inside the filter basket. Record this information on the inspection form.
5. Through visual observation, inspect the condition of the filter basket. Look for excessive build-up of sediment or any damage to the system. Record this information on the inspection form.
6. Observe the condition and color of the optional hydrocarbon boom (if present). Record this information on the inspection form.
7. Finalize the inspection report for analysis by the maintenance manager to determine if maintenance is required.

## MAINTENANCE INDICATORS

Based upon the observations made during inspection, maintenance of the system may be required based on the following indicators:

- Missing or damaged internal components.
- Obstructions in the filter basket and/or its bypass.
- Excessive accumulation of trash, foliage, and sediment in the filter basket. Maintenance is required when the basket is greater than half-full.
- The following chart shows the 50% and 100% storage capacity of each filter size:

Basket Model	Basket Depth (inches)	Diameter (inches)	50% Storage Capacity (CF)	100% Storage Capacity (CF)
BIO-CURB-KMF-13	13	18	0.77	1.54
BIO-CURB-KMF-23	23	18	1.29	2.58

## MAINTENANCE SUMMARY

It is recommended that maintenance occurs at least two days after the most recent rain event to allow debris and sediments to dry out. Maintaining the system while flows are still entering it will increase the time and complexity required for maintenance.

Cleaning of the Curb Inlet Filter can be performed from the finished surface without entry into catch basin utilizing a vacuum truck. All necessary pre-maintenance steps must be carried out before maintenance occurs. Once traffic control has been set up per local and state regulations and the manhole cover has been safely removed, the maintenance process can begin. It should be noted that some maintenance activities or unique and custom system configurations may require confined space entry. All confined space requirements must be strictly followed before entry into the system. In addition, the following is recommended:

- Prepare the maintenance form by writing in the necessary information including project name, location, date & time, unit number and other info (see maintenance form).
- Set up all appropriate safety and maintenance equipment.
- Ensure traffic control is set up and properly positioned.
- Prepared pre-checks (OSHA, safety, confined space entry) are performed.

# MAINTENANCE EQUIPMENT

The following is a list of equipment to allow for simple and effective maintenance of the Curb Inlet Filter. It is recommended that a vacuum truck be utilized to minimize the time required to maintain the Curb Inlet Filter, though it can easily be cleaned by hand.

No.	Description	Status	Action	Priority	Remarks	Inspected By
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						
11						
12						
13						
14						
15						

Contech Inspection and Maintenance Report



Flashlight



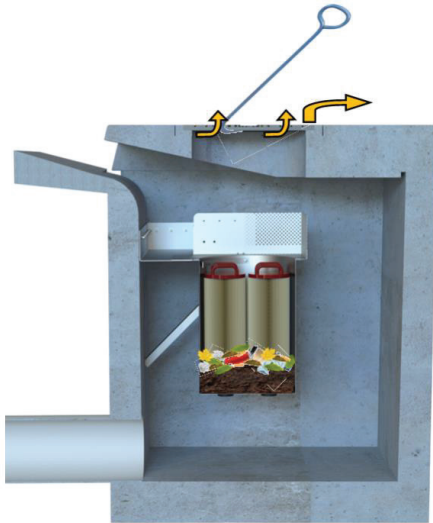
Access Cover Hook



Vacuum Assisted Truck with Pressure Washer (Recommended)

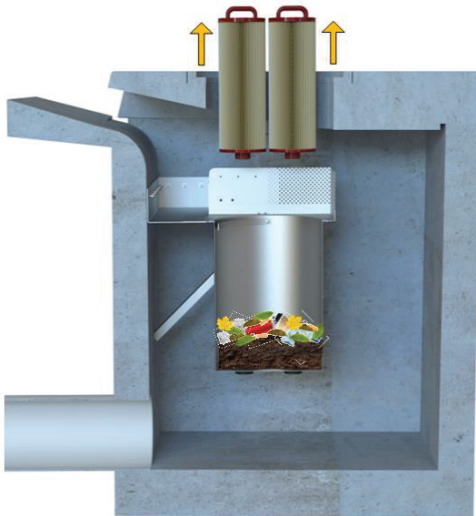


# MAINTENANCE INSTRUCTIONS



## 1. INSPECT CATCH BASIN

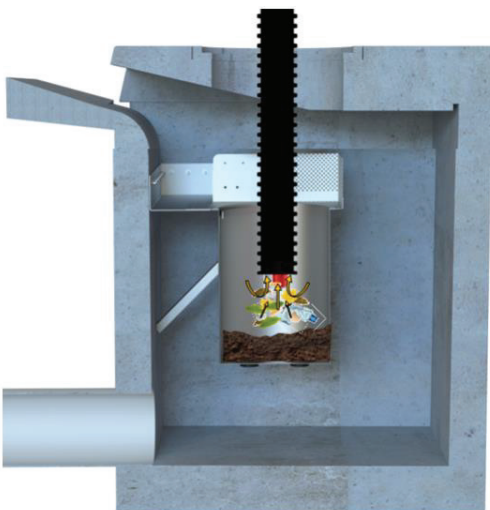
Inspect the Curb Inlet Filter as detailed under Inspection Process above.



## 2. VACUUM AND WASH FILTER BASKET

Using an extension on a vacuum truck, position the hose over the opened catch basin. Insert the vacuum hose down into the filter basket and suck out trash, foliage, and sediment. Pressure wash the sides and bottom of the filter basket to remove any stuck debris. Once the filter basket is clean, power wash the weir and trough, pushing the debris into the filter basket - leave the hose in the filter basket during this process so entering debris will be sucked out.

If present, inspect the hydrocarbon boom as detailed on the next page.



## 3. FINISH MAINTENANCE

When maintenance is complete, replace the hatch or manhole cover and remove all traffic control.

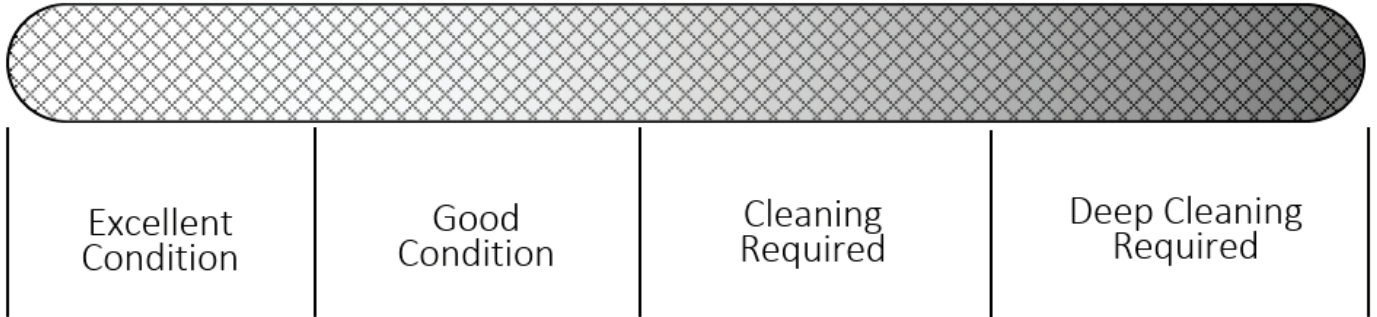
All removed debris and pollutants shall be disposed of following local and state requirements. Disposal requirements for recovered pollutants may vary depending on local guidelines. In most areas the sediment, once dewatered, can be disposed of in a sanitary landfill. It is not anticipated that the sediment would be classified as hazardous waste.

In the case of damaged components, replacement parts can be ordered from the manufacturer.

## KRAKEN CARTRIDGE INSPECTION

Visually inspect all cartridges for damage to the membrane material or plastic end caps. Kraken Cartridges can be reused as long as they are in good condition, and replacements can be ordered directly from the manufacturer if current ones are damaged or spent (membrane material is deteriorating).

The following is a maintenance indication color chart for the Kraken Cartridge:









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