

**AGREEMENT FOR  
STORM WATER SYSTEM MAINTENANCE**

This Agreement is made on August 26, 2022, by **Eastlake Northwest, LLC, a Michigan limited liability company, whose address is 24211 Little Mack, St. Clair Shores, MI 48080** ("Owner"), and the CITY OF ROCHESTER HILLS (the "City"), whose address is 1000 Rochester Hills Drive, Rochester Hills, MI 48309.

WHEREAS, Owner owns and proposes to develop the Property described in attached Exhibit A; and

WHEREAS, the proposed development of the Property will alter the natural flow of surface and storm water drainage; and

WHEREAS, Owner has proposed, and the City has approved, a storm water drainage and detention system (the "System") comprised of storm water detention and water quality treatment facilities, storm sewer pipe, catch basins, manholes for the Property as described and depicted in the Storm Water System Plan attached as Exhibit B; and

WHEREAS, the parties will benefit from the proper operation, use and maintenance of the System and enter into this agreement to provide for the same.

THEREFORE, the parties agree:

**1. Use of the System:**

Components of the System, including any and all water conveyance, detention and water quality treatment facilities, storm sewer pipe, catch basins, manholes, shall be used solely for the purpose of conveying, detaining and treating storm and surface drainage on the property until such time as: (i) The City determines and notifies Owner or Owner's successors, grantees or assigns, in writing, that it is no longer necessary to convey, detain or treat the storm and surface drainage; and (ii) An adequate alternative for conveying, detaining and treating storm and surface drainage has been provided which is acceptable to the City and which includes the granting of any easements to the City or third parties as may be required or necessary for the alternative drainage system.

**2. Maintenance:**

A. Owner shall be responsible for the proper maintenance, repair and replacement of the System and all parts thereof as detailed in the Maintenance Plan attached as Exhibit C.

B. Proper maintenance of the System shall include, but is not limited to: (i) Removing accumulated sediment, trash and debris; (ii) Maintaining storm sewer and structures; (iii) Controlling the effects of erosion; (iv) Inspection of storm sewer structures and pipes for structural integrity; (v) Inspection and cleaning of the storm sewer and catch basins upstream from the detention system; and (vi) Any other maintenance that is reasonable and necessary to facilitate and continue the proper operation and use of the System.

**3. Action by City:**

If, at any time, Owner or Owner's successors, grantees or assigns neglect or fail to properly maintain the System or any part thereof, the City may notify Owner or Owner's successors, grantees or assigns. The notice shall be in writing and shall list and describe maintenance deficiencies and demand that they be corrected within thirty (30) days.

The notice shall further specify a date and place for a hearing to be held at least fourteen (14) days after the date of the notice before the City Council, or such other board or official as the City Council may designate. At the hearing, the City Council (or other designated board or official) may affirm or modify the list and description of maintenance deficiencies and, for good cause shown, may extend the time for the deficiencies to be corrected.

4. Charges:

The City shall charge to the current owner of the Property the cost of maintenance or other corrective action undertaken by the City under this agreement, plus a ten percent (10%) administrative fee. If not timely paid, the City may place the charges on the City's tax roll, which charges shall be a lien on the real property and shall be collectable and enforceable in the same manner general property taxes are collected and enforced.

5. Notice:

Any notices required under this agreement shall be sent by certified mail to the address for each party set forth below, or to such other addresses as such party may notify the other parties in writing:

To Eastlake Northwest, LLC:

24211 Little Mack  
St. Clair Shores, MI 48080

To the City:

City Clerk  
City of Rochester Hills  
1000 Rochester Hills Drive  
Rochester Hills, MI 48309

6. Successors and Assigns:

This agreement shall bind and inure to the benefit of the parties and their respective successors, grantees and assigns. The benefits, burdens, rights, obligations and responsibilities hereunder shall run with the land and shall bind all current and future owners of the Property and any divisions thereof.

7. Recording of Agreement:

This agreement shall be recorded at the Oakland County Register of Deeds.

Eastlake Northwest, LLC,  
a Michigan limited liability company

By: George Bhanem MD  
Print Name: GEORGE B. BHANEM, M.D.  
Title: Eastlake Northwest LLC  
manager

STATE OF MICHIGAN  
COUNTY OF MACOMB

This agreement was acknowledged before me on AUGUST 26, 2022, by GEORGE B. BHANEM, M.D. the manager, of Eastlake Northwest, LLC, a Michigan Limited Liability Company, on its behalf.

PATTI ANN STONER  
NOTARY PUBLIC, STATE OF MI  
COUNTY OF MACOMB  
MY COMMISSION EXPIRES Nov 24, 2026  
ACTING IN COUNTY OF MACOMB

Patti Ann Stoner  
MACOMB, Notary public  
County, Michigan  
My commission expires: 11-24-2026

~~STATE OF MICHIGAN  
COUNTY OF OAKLAND~~

~~This agreement was acknowledged before me on \_\_\_\_\_, by Bryan K. Barnett, Mayor of the City of Rochester Hills, on behalf of the City.~~

see next page

CITY OF ROCHESTER HILLS

By: \_\_\_\_\_  
Bryan K. Barnett, Mayor

STATE OF MICHIGAN  
COUNTY OF OAKLAND

The foregoing instrument was acknowledged before me on \_\_\_\_\_, 2022,  
by Bryan K. Barnett, Mayor, of the City of Rochester Hills, a Michigan Municipal corporation, on behalf of  
the corporation.

\_\_\_\_\_  
, Notary Public

Oakland County, Michigan

My Commission Expires:

Drafted by:

Gregory Bono, PE  
PEA, INC.  
1849 Pond Run Dr.  
Auburn Hills, MI 48326

When Recorded Return to:

Clerk's Department  
City of Rochester Hills  
1000 Rochester Hills Drive  
Rochester Hills, MI 48309

*John Staran*  
*Approved 8/30/22*

**EXHIBIT A  
LEGAL DESCRIPTION**

**LEGAL DESCRIPTION: PARENT PARCEL**

(Per ATA National Title Group, File No: 63-21757988-SCM, Dated Devenber 23, 2020)

Land in the City of Rochester Hills, Oakland County, Michigan, described as follows:

Lots 3 and 4 except the South 10 feet of each Supervisor's Plat No. 12, as recorded in Liber 106, Page 35 of Plats, Oakland County Records.

EXCEPT

Terms and provisions of Highway Easement granted to the Board of County Road Commissioners, County of Oakland, Michigan recorded in Liber 34769, Page 502, Oakland County Records. Easement is plotted hereon.

**LEGAL DESCRIPTION  
AS SURVEYED BY PEA GROUP**

A parcel of land being a part of Lots 3 and 4 of "Supervisors Plat No. 12", located in the NE 1/4 of Section 32, T.03N., R.11E., City of Rochester Hills, Oakland County, Michigan, and described as follows:

BEGINNING at a found iron with Surveyors Cap No. 46672 at the NW corner of Lot 3 of said "Supervisors Plat No. 12": thence along the north line of Lot 3 and Lot 4, S88°48'00"E 199.81 feet to the east line of said Lot 4; thence S01°54'00"W 183.42 feet along said east line of Lot 4; thence N88°48'00"W 199.81 feet, parallel to, and 10 feet north of the south line of said Lots 3 and 4, to the east line of Donley Ave. (60 feet wide); thence along said east line and the west line of said Lot 3 N01°54'00"E 183.42 feet to the POINT OF BEGINNING. Containing 0.84± acres

Approved  
*gm*  
City of Rochester Hills  
09/29/2022 9:07:49 AM

**PEA  
GROUP**

t: 844.813.2949  
www.peagroup.com

**EASTLAKE  
NORTHWEST, LLC**  
24211 LITTLE MACK  
ST. CLAIR SHORES, MI 48080

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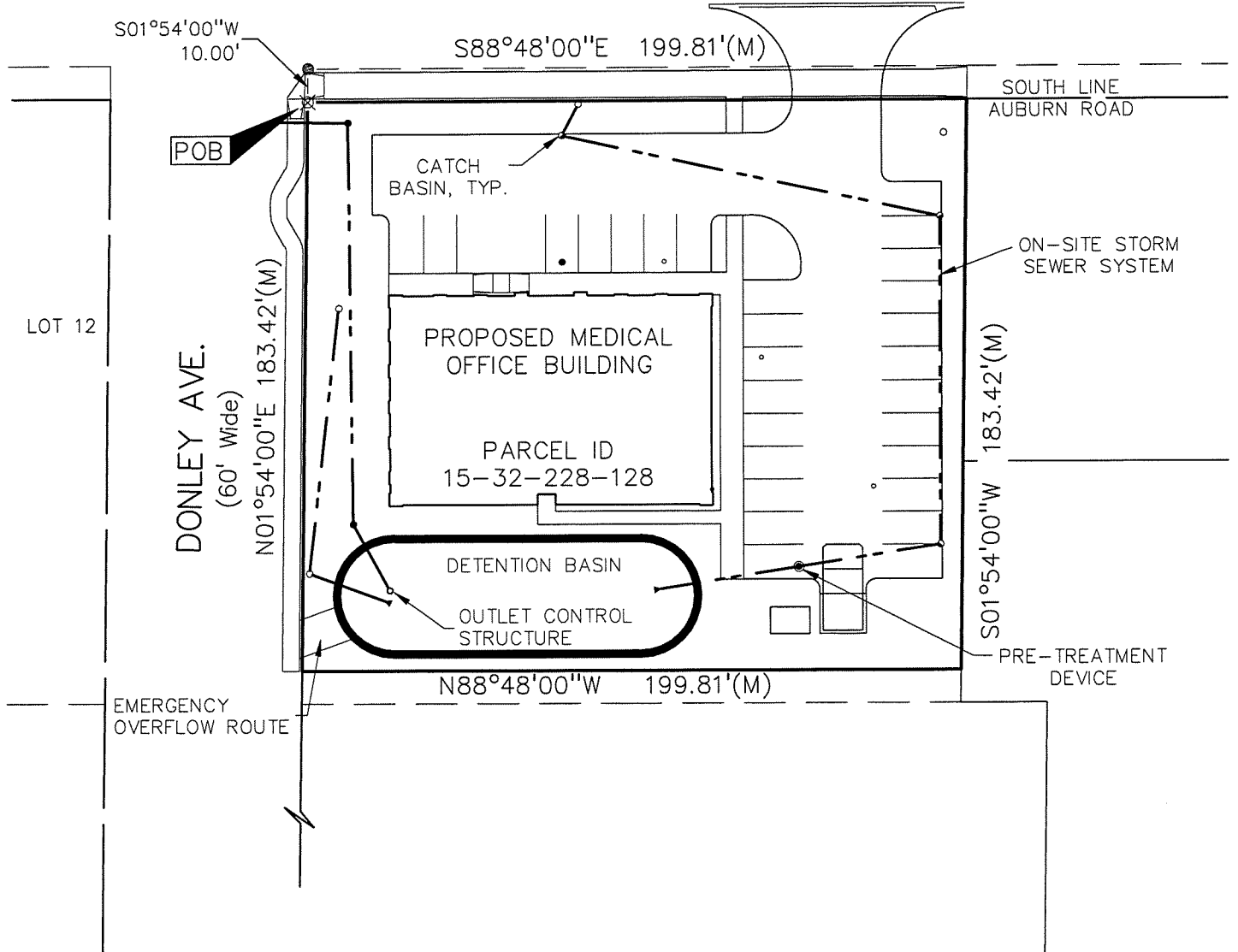
REV 9-2-22

**SHEET 1 OF 1**  
JULY 28, 2022  
2021-0398

**EXHIBIT B  
STORM WATER SYSTEM PLAN**

NORTH LINE SECTION 32

AUBURN RD.  
WIDTH VARIES-PUBLIC



*OK ARS  
8/30/22*

EXHIBIT C  
STORM WATER SYSTEM MAINTENANCE PLAN

**OPERATION AND MAINTENANCE MANUAL**

**INTRODUCTION:**

This manual identifies the ownership, operation and maintenance responsibilities for all storm water management systems including the underground detention system, underground, storm sewer system, outlet control structures, mechanical pre-treatment devices and bioswales as incorporated into and detailed on the approved Construction Plans as prepared by Professional Engineering Associates, Inc. In order to comply with the local best management practices (BMP) and requirements, this manual should serve as a minimum performance standard. This manual should be retained intact and read in its entirety by all parties responsible for the operations and maintenance of the on-site BMP's.

**OWNER:**

Eastlake Northwest, LLC  
24211 Little Mack  
St. Clair Shores, MI 48080

**PROPERTY INFORMATION:**

This Operations and Maintenance Manual covers the storm water systems located on the property as described in Exhibit "A" to this storm water system maintenance agreement dated 8/26/22 2022.

TAX ITEM NO. 15-32-228-128

**STORMWATER MANTENANCE EXHIBIT:**

Exhibit "B" of the Storm Water Maintenance Agreement is the Storm Water System Plan which provides a clear presentation of all components of the storm water system. This system is subject to the long-term operation and maintenance responsibilities detailed in this manual. The system includes:

- Storm sewer pipes
- Storm sewer structures (manholes, inlets, catch basins, etc.)
- Outlet control structures
- Pre-Treatment Devices ConTech (Cascade CS-4)
- Detention Basin

*Ok  
ALS 8/30/22*

## INSPECTIONS:

The frequency of system inspections outlined in the manual and attached exhibits should be considered the minimum, if no events warrant additional inspections. The frequency of inspection should be fine-tuned over time as system specific conditions are better known and the rate at which certain maintenance operations need to be performed is better understood. Maintenance Inspection Checklists are provided for each of the BMP's in this system. Inspections should be performed by personnel responsible for maintenance and may need to be certified for confined space entry, depending on the component being inspected. Operation of the detention system, outlet control structures and pre-treatment devices may need to be inspected by a practicing civil engineer familiar with their operation.

Records of all routine inspections and any work performed on the system for maintenance, repair or replacement should be maintained by the owner and kept for a minimum of ten (10) years. A copy of all records should be provided to the City of Rochester Hills Engineering Division. The records should include this manual, all inspection sheets, approved construction plans and as-built documents, a maintenance log of work performed to the system(s) and contact information for the system inspector, civil engineer, landscape architect, geotechnical engineer and contractor involved with the system.

## STORM WATER SYSTEM MAINTENANCE:

Regular Inspection and maintenance of BMP's are necessary if these facilities are to consistently perform up to expectations. Stormwater systems are expected to perform quality and quantity control functions as long as the land use they serve exists. Failure to maintain these systems can create the following adverse impacts:

- Increased pollutants to surrounding surface water features
- Potential loss of life or property resulting from catastrophic failure of the facility
- Aesthetic or nuisance conditions, such as mosquitoes or reduced property values due to a degraded facility appearance.

Most of these impacts can be avoided through proper and timely inspection and maintenance. A major concern associated with these impacts is the general public's expectations related to the quality of life provided, in part, by construction of these systems. Inadequate maintenance means the general public may have a false sense of security. The most common cause of stormwater system failure is the lack of adequate and proper operation, inspection, maintenance, and management.

Good design and construction can reduce subsequent maintenance needs and costs, but they cannot eliminate the need for maintenance altogether. Maintenance requires a long-term commitment of time, money, personnel, and equipment. Monitoring the overall performance of the stormwater management system is a major aspect of any maintenance program.

The maintenance responsibilities for these systems lie with the current property owner and transfer with the property in perpetuity. If maintenance of the system is not performed, the City of Rochester Hills reserves the right to enter the property and perform all necessary work at the property owners' cost. Refer to the Agreement for Storm Water System Maintenance for additional details.

#### GENERAL MAINTENANCE ITEMS:

##### Parking Lot Sweeping:

Routine sweeping of all paved surfaces provides a more attractive appearance and removes accumulations of sediment and trash that tend to migrate into stormwater management systems during rainfall events. Parking lot sweeping should be performed quarterly or as necessary to limit sediment and trash build-up.

##### Grass Mowing and Maintenance:

Mowing requirements at a facility should be designed to the specific site conditions, grass types and seasonal variations in climate. Grassed areas require periodic fertilizing, de-thatching and soil conditioning in order to maintain healthy growth. Provisions will need to be made to reseed and reestablish grass cover in areas damaged by sediment accumulation, stormwater flow, erosion or other causes. Dead turf will need to be replaced after being discovered. Inspection of the grass areas and other landscaping features should be made annually.

##### Trash and Debris Removal:

Removal of trash and debris from all areas of the property should be performed monthly. Removal of these items will prevent damage to vegetated areas and eliminate their potential to inhibit the operation of any of the stormwater management systems. Sediment, debris and trash that are removed and collected should be disposed of according to local, State and Federal regulations at suitable disposal and/or recycling centers.

##### Stormwater System Maintenance Items:

The following narratives give an overview of the maintenance requirements of the different components of the stormwater system. The inspection checklists attached to this report offer a more complete listing of what should be inspected, when inspection should occur and the likely frequency of maintenance activities.

##### Storm Sewer and Structures:

Catch basins, inlets, manholes, outlet control structures, and storm sewer pipes should be inspected to check for sediment accumulation and clogging, floatable debris, dead vegetation, etc. The structures and sewers should also be observed during a wet weather event to ensure their proper operation. Accumulated sediment and debris should be removed on an annual basis or as needed based on observed conditions. Structural repairs or maintenance should occur as



needed based on observed conditions such as cracks, spalling, joint failure, leakage, misalignment, or settlement of structures. A civil engineer should be retained if problems are thought to exist.

Detention Basin:

The detention basin should be kept free of dead leaves and vegetation, trash, debris, or any other foreign matter that would inhibit infiltration of runoff. The outlet control structure should be checked for structural integrity as mentioned above for the storm sewer structures, and any visible signs of erosion or flow bypassing the structure. The detention basin itself will trap sediment under normal conditions, so the amount of sediment should be monitored over time and removed when the accumulated depth reaches 3"-4" total. The planted vegetation within the detention basin should conform to that shown on the construction plans, and any invasive species should be removed. Regular lawn fertilizing and mowing should occur within the detention basin as part of the grass mowing and maintenance segment stated above. The operation of the detention basin and the outlet control structure should be observed during a wet weather event to ensure proper functioning. A civil engineer should be retained if problems are thought to exist. The vegetation should be inspected for healthy growth by a landscape architect if the inspection personnel are not familiar with the specific plantings inside the basin.

Stormwater Pre-Treatment Devices:

Refer to the attached maintenance manuals from the manufacturer for all inspection and maintenance requirements for the pre-treatment structures.

The following pages include inspection checklists for the various devices and components listed above as well as the manufacture's manuals for the stormwater pre-treatment structures.

## EXHIBIT C

### STORM WATER MANAGEMENT SYSTEM – PERMANENT MAINTENANCE

DATE/TIME OF INSPECTION: \_\_\_\_\_

INSPECTOR: \_\_\_\_\_

#### STORMWATER MANAGEMENT SYSTEM MAINTENANCE TASKS AND SCHEDULE

MAINTENANCE ACTIVITIES	SYSTEM COMPONENTS					FREQUENCY
	Storm Collection System (Sewers, Swales, Basins, Manholes, Catch Basins)	Pavement Areas	Manufactured Treatment System	Flow Restrictor & Outlet Pipe	Structure	Detention Basin
<b>MONITORING/INSPECTION</b>						
Inspect for sediment accumulation/clogging	X	X	X	X	X	Annually
Inspect for floatables, dead vegetation and debris	X	X	X	X	X	Annually & After Major Events
Inspect for erosion and integrity of system	X	X				Annually & After Major Events
Inspect all components during wet weather and compare to as-built plans	X	X	X	X	X	Annually
Ensure maintenance access remain open/clear	X	X	X	X	X	Annually
<b>PREVENTIVE MAINTENANCE</b>						
Remove accumulated sediment	X	X	X	X	X	As Needed (see note below)
Remove floatables, dead vegetation and debris	X	X	X	X	X	As Needed
Sweeping of pavement surfaces (streets and parking areas)		X				As Needed
<b>REMEDIAL ACTIONS</b>						
Repair/stabilize areas of erosion	X	X			X	As Needed
Replace dead plantings & reseed bare areas	X				X	As Needed
Structural repairs	X	X	X	X	X	As Needed
Make adjustments/repairs to ensure proper functioning	X	X	X	X	X	As Needed

### SUMMARY:

INSPECTORS REMARKS: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

OVERALL CONDITION OF FACILITY: \_\_\_\_\_

RECOMMENDED ACTIONS NEEDED: \_\_\_\_\_

## Cascade Separator<sup>®</sup> Inspection and Maintenance Guide



CASCADE  
separator<sup>®</sup>

## Maintenance

The Cascade Separator® system should be inspected at regular intervals and maintained when necessary to ensure optimum performance. The rate at which the system collects sediment and debris will depend upon on-site activities and site pollutant characteristics. For example, unstable soils or heavy winter sanding will cause the sediment storage sump to fill more quickly but regular sweeping of paved surfaces will slow accumulation.

## Inspection

Inspection is the key to effective maintenance and is easily performed. Pollutant transport and deposition may vary from year to year and regular inspections will help ensure that the system is cleaned out at the appropriate time. At a minimum, inspections should be performed twice per year (i.e. spring and fall). However, more frequent inspections may be necessary in climates where winter sanding operations may lead to rapid accumulations, or in equipment wash-down areas. Installations should also be inspected more frequently where excessive amounts of trash are expected.

A visual inspection should ascertain that the system components are in working order and that there are no blockages or obstructions in the inlet chamber, flumes or outlet channel. The inspection should also quantify the accumulation of hydrocarbons, trash and sediment in the system. Measuring pollutant accumulation can be done with a calibrated dipstick, tape measure or other measuring instrument. If absorbent material is used for enhanced removal of hydrocarbons, the level of discoloration of the sorbent material should also be identified during inspection. It is useful and often required as part of an operating permit to keep a record of each inspection. A simple form for doing so is provided in this Inspection and Maintenance Guide.

Access to the Cascade Separator unit is typically achieved through one manhole access cover. The opening allows for inspection and cleanout of the center chamber (cylinder) and sediment storage sump, as well as inspection of the inlet chamber and slanted skirt. For large units, multiple manhole covers allow access to the chambers and sump.

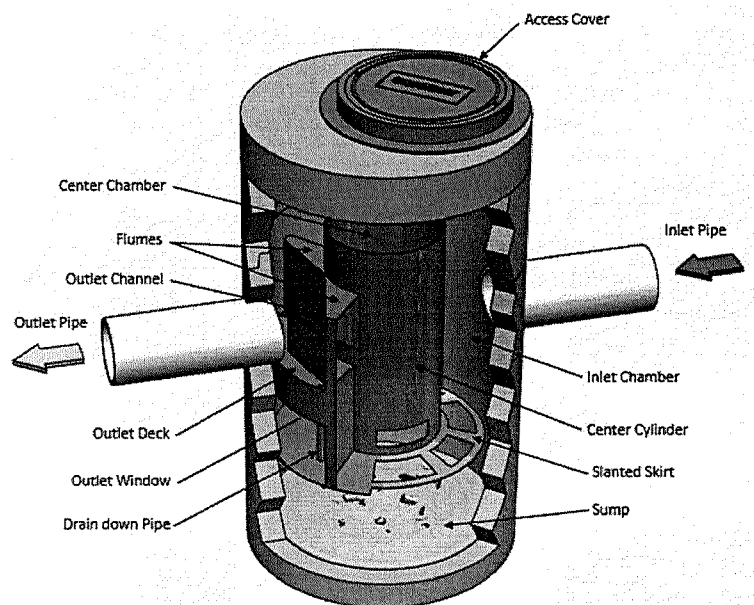
The Cascade Separator system should be cleaned before the level of sediment in the sump reaches the maximum sediment depth and/or when an appreciable level of hydrocarbons and trash has accumulated. If sorbent material is used, it must be replaced when significant discoloration has occurred. Performance may be impacted when maximum sediment storage capacity is exceeded. Contech recommends maintaining the system when sediment level reaches 50% of maximum storage volume. The level of sediment is easily determined by measuring the distance from the system outlet invert (standing water level) to the top of the sediment pile. To avoid underestimating the level of sediment in the chamber, the measuring device must be lowered to the top of the sediment pile carefully. Finer, silty particles at the top of the pile typically offer less resistance to the end of the rod than larger particles toward the bottom of the pile. Once this measurement is recorded, it should be compared to the chart in this document to determine if the height of the sediment pile off the bottom of the sump floor exceeds 50% of the maximum sediment storage.

## Cleaning

Cleaning of a Cascade Separator system should be done during dry weather conditions when no flow is entering the system. The use of a vacuum truck is generally the most effective and convenient method of removing pollutants from the system. Simply remove the manhole cover and insert the vacuum tube down through the center chamber and into the sump. The system should be completely drained down and the sump fully evacuated of sediment. The areas outside the center chamber and the slanted skirt should also be washed off if pollutant build-up exists in these areas.

In installations where the risk of petroleum spills is small, liquid contaminants may not accumulate as quickly as sediment. However, the system should be cleaned out immediately in the event of an oil or gasoline spill. Motor oil and other hydrocarbons that accumulate on a more routine basis should be removed when an appreciable layer has been captured. To remove these pollutants, it may be preferable to use absorbent pads since they are usually less expensive to dispose than the oil/water emulsion that may be created by vacuuming the oily layer. Trash and debris can be netted out to separate it from the other pollutants. Then the system should be power washed to ensure it is free of trash and debris.

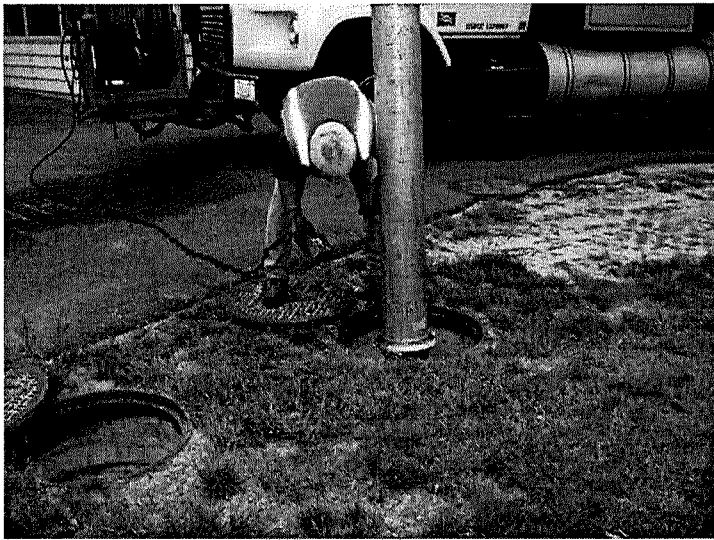
Manhole covers should be securely seated following cleaning activities to prevent leakage of runoff into the system from above and to ensure proper safety precautions. Confined space entry procedures need to be followed if physical access is required. Disposal of all material removed from the Cascade Separator system must be done in accordance with local regulations. In many locations, disposal of evacuated sediments may be handled in the same manner as disposal of sediments removed from catch basins or deep sump manholes. Check your local regulations for specific requirements on disposal. If any components are damaged, replacement parts can be ordered from the manufacturer.



## Cascade Separator® Maintenance Indicators and Sediment Storage Capacities

Model Number	Diameter		Distance from Water Surface to Top of Sediment Pile		Sediment Storage Capacity	
	ft	m	ft	m	y <sup>3</sup>	m <sup>3</sup>
CS-3	3	0.9	1.5	0.5	0.4	0.3
CS-4	4	1.2	2.5	0.8	0.7	0.5
CS-5	5	1.3	3	0.9	1.1	0.8
CS-6	6	1.8	3.5	1	1.6	1.2
CS-8	8	2.4	4.8	1.4	2.8	2.1
CS-10	10	3.0	6.2	1.9	4.4	3.3
CS-12	12	3.6	7.5	2.3	6.3	4.8

Note: The information in the chart is for standard units. Units may have been designed with non-standard sediment storage depth.



A Cascade Separator unit can be easily cleaned in less than 30 minutes.



A vacuum truck excavates pollutants from the systems.

## Cascade Separator® Inspection & Maintenance Log

Cascade Model:			Location:		
Date	Depth Below Invert to Top of Sediment <sup>1</sup>	Floatable Layer Thickness <sup>2</sup>	Describe Maintenance Performed	Maintenance Personnel	Comments

1. The depth to sediment is determined by taking a measurement from the manhole outlet invert (standing water level) to the top of the sediment pile. Once this measurement is recorded, it should be compared to the chart in the maintenance guide to determine if the height of the sediment pile off the bottom of the sump floor exceeds 50% of the maximum sediment storage. Note: to avoid underestimating the volume of sediment in the chamber, the measuring device must be carefully lowered to the top of the sediment pile.
2. For optimum performance, the system should be cleaned out when the floating hydrocarbon layer accumulates to an appreciable thickness. In the event of an oil spill, the system should be cleaned immediately.

### SUPPORT

- Drawings and specifications are available at [www.ContechES.com](http://www.ContechES.com).
- Site-specific design support is available from our engineers.

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