

# CDS Stops Storm Water Pollution



**Before CDS**

**After CDS**

# CDS is the most effective system for the sustainable removal and retention of suspended solids and floatables from storm water.

## REMOVES POLLUTANTS

The Continuous Deflective Separation (CDS) technology utilizes a non-blocking, non-mechanical screening process to remove pollutants from storm water flow and combined sewer overflows (CSO). CDS units capture fine sands and solids and are capable of removing more than 80% of annual total suspended solids from storm water. Additionally, CDS units remove 100% of floatables and 100% of all particles in the storm water which are equal to or greater than one-half the size of the screen opening. Studies show the units remove 93% of all particles which are one-third the size of the screen opening, and 53% of all particles one-fifth the size of the screen opening.

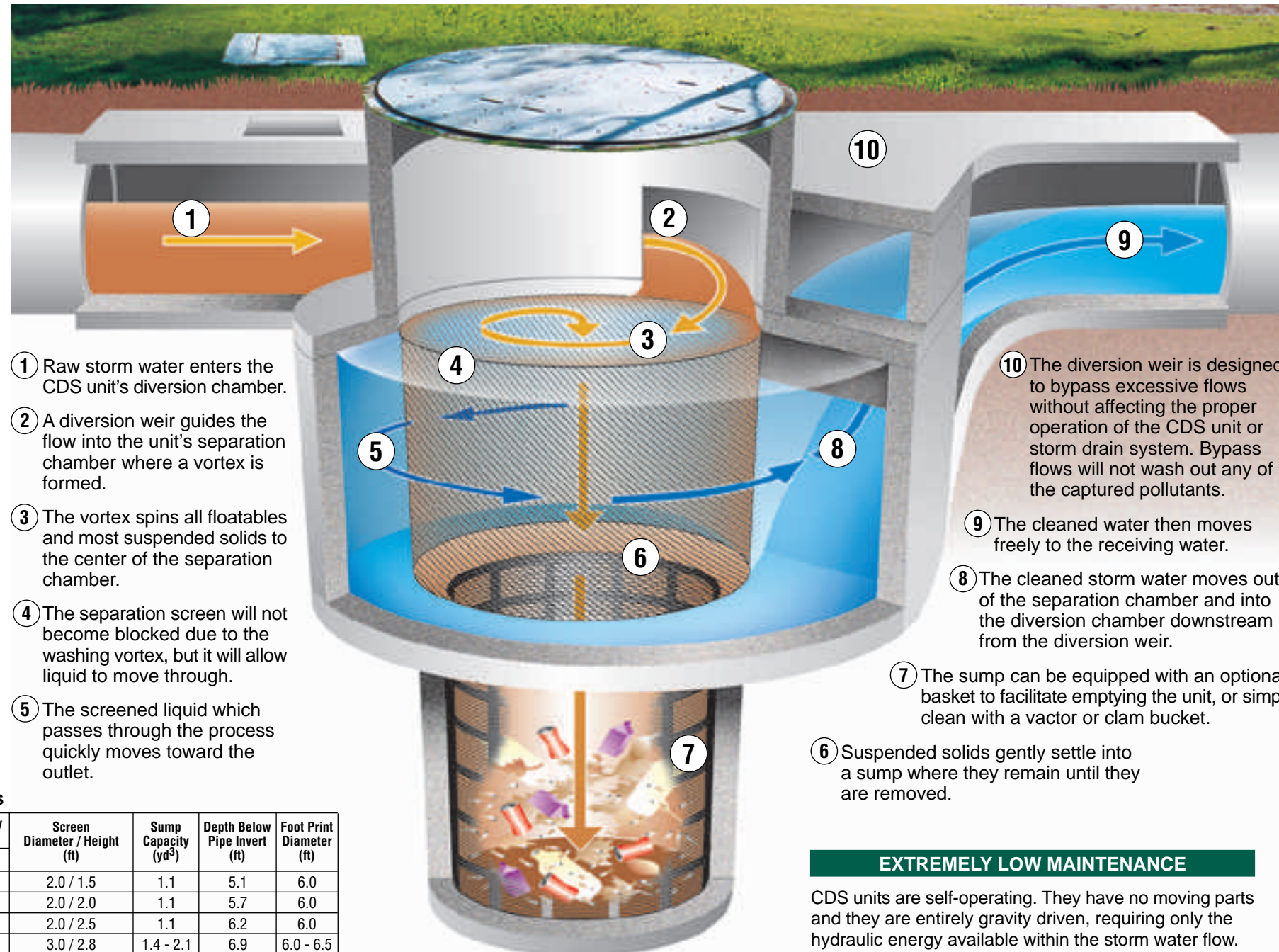
A conventional oil baffle within a CDS unit effectively controls oil and grease in storm water. With the addition of sorbents, the permanent capture efficiency of oil and grease is increased to 80–90%. The combination of a conventional oil baffle and particulate sorbents is a unique feature of a CDS storm water treatment unit. Once pollutants are captured in a CDS unit, they cannot escape.

## PROVEN TECHNOLOGY

The CDS technology has been proven by extensive independent laboratory studies and over a thousand actual installations in the United States and Australia. Copies of these performance reports are available at our web site, or by contacting our offices.

## APPROVED BEST MANAGEMENT PRACTICE

The CDS technology has achieved approval as a Best Management Practice (BMP) by municipalities and state DOTs throughout the United States. The USEPA lists CDS as a structural BMP.



- ① Raw storm water enters the CDS unit's diversion chamber.
- ② A diversion weir guides the flow into the unit's separation chamber where a vortex is formed.
- ③ The vortex spins all floatables and most suspended solids to the center of the separation chamber.
- ④ The separation screen will not become blocked due to the washing vortex, but it will allow liquid to move through.
- ⑤ The screened liquid which passes through the process quickly moves toward the outlet.
- ⑥ Suspended solids gently settle into a sump where they remain until they are removed.
- ⑦ The sump can be equipped with an optional basket to facilitate emptying the unit, or simply clean with a vactor or clam bucket.
- ⑧ The cleaned storm water moves out of the separation chamber and into the diversion chamber downstream from the diversion weir.
- ⑨ The cleaned water then moves freely to the receiving water.
- ⑩ The diversion weir is designed to bypass excessive flows without affecting the proper operation of the CDS unit or storm drain system. Bypass flows will not wash out any of the captured pollutants.

## KEY FEATURES and BENEFITS

### Uses

- Storm Water Treatment
- Combined Sewer Overflow Treatment
- Dry Weather Flow Diversion

### Applications

- Capture and retention of suspended solids, sand, floatables, oil and grease, and other gross pollutants from:
  - Commercial Service and Parking Areas
  - Industrial Areas
  - Public Property and Parkland
  - Residential Streets and Private Property
- Pretreatment for:
  - Wetlands, Ponds, and Swales
  - Media and Sand Filters
  - Oil/Water Separators
  - Pump Stations

### Efficient

- Highly effective (up to 90%) in capturing and retaining sediment as small as one-third the screen aperture.
- Captures and retains 100% of floatables and all other material greater than the screen aperture.

### Cost-Effective

- CDS provides the lowest cost per CFS (Cubic Feet per Second) processed when compared to other structural BMPs.

### Large Treatment Flow Range

- From 0.7 to 300 CFS.

### Non-Blocking and Non-Mechanical

- Standard CDS units have no moving parts. They require no power or supporting infrastructure, and they will not clog.

### Unobtrusive and Easy to Install

- CDS units are compact and are installed below ground, so space requirements are modest. They are ideal for new construction as well as retrofit applications.

### Low-Cost, Safe and Easy Pollutant Removal

- Maintenance is easy using standard vactor, clam, or basket equipment which minimizes maintenance personnel exposure to hazardous material.

### Improves Discharge Water Quality

- Removes floatables and suspended solids from storm water runoff.
- Removes free oil and grease with the use of an oil baffle, and/or sorbents.

## EXTREMELY LOW MAINTENANCE

CDS units are self-operating. They have no moving parts and they are entirely gravity driven, requiring only the hydraulic energy available within the storm water flow. The screens and supporting hardware are stainless steel and will resist corrosion.

CDS units have very large sump capacities relative to their design flows, and only need to be cleaned out with a standard vactor truck approximately one to four times per year. This operation eliminates workers' exposure to the materials captured in the units.

## Standard CDS Unit Capacities and Physical Features

|                        | Model Designation  | Approximate Impervious Catchment Area (Acres) | Treatment Capacity $Q_{\text{water quality}}$ |             | Screen Diameter / Height (ft) | Sump Capacity (yd <sup>3</sup> ) | Depth Below Pipe Invert (ft) | Foot Print Diameter (ft) |
|------------------------|--|---|---|-------------|-------------------------------|----------------------------------|------------------------------|--------------------------|
|                        |  |   | cfs   | MGD         |                               |                                  |                              |                          |
| Precast Concrete       | PMSU 20_15   | 1-4   | 0.7   | 0.5         | 2.0 / 1.5                     | 1.1                              | 5.1                          | 6.0                      |
|                        | PMSU 20_20   | 2-6   | 1.1   | 0.7         | 2.0 / 2.0                     | 1.1                              | 5.7                          | 6.0                      |
|                        | PMSU 20_25   | 3-9   | 1.6   | 1.0         | 2.0 / 2.5                     | 1.1                              | 6.2                          | 6.0                      |
|                        | PSW & PMSU 30_30   | 6-17  | 3.0   | 1.9         | 3.0 / 2.8                     | 1.4 - 2.1                        | 6.9                          | 6.0 - 6.5                |
|                        | PSWC & PMSU 40_40  | 12-33   | 6.0   | 3.9         | 4.0 / 4.0                     | 1.9                              | 9.7                          | 8.3                      |
|                        | PSWC 56_40 & 50_40 & 50_50   | 18-61   | 9 & 11  | 5.8 & 7.1   | 5.6 / 4.0 & 5.0 / 5.0         | 1.9                              | 9.7                          | 9.5                      |
|                        | PSWC 56_53   | 28-78   | 14  | 9           | 5.6 / 5.3                     | 1.9                              | 10.8                         | 9.5                      |
|                        | PSWC 56_68   | 38-106  | 19  | 12          | 5.6 / 6.8                     | 1.9                              | 12.5                         | 9.5                      |
|                        | PSWC 56_78 & PSW 70_70   | 50-144  | 25 & 26                                       | 16 & 17     | 5.6 / 7.8 & 7.0 / 7.0         | 1.9 - 3.9                        | 13.5                         | 9.5                      |
|                        | PSW 100_60   | 60-167  | 30  | 19          | 10.0 / 6.0                    | 6.9 - 14.1                       | 12.0                         | 17.5                     |
| PSW 100_80             | 100-278  | 50  | 32  | 10.0 / 8.0  | 6.9 - 14.1                    | 14.0                             | 17.5                         |                          |
| PSW 100_100            | 128-356  | 64  | 41  | 10.0 / 10.0 | 6.9 - 14.1                    | 16.0                             | 17.5                         |                          |
| Cast-In-Place Concrete | CDS cast-in-place reinforced concrete units can be designed to treat flows up to 300 cfs |   |   |             |                               |                                  |                              |                          |

## SERVICES OFFERED BY CDS TECHNOLOGIES

- Feasibility Studies and Cost Estimates
- Technical Specifications for Installations
- Preparations of Construction Bid Specifications
- AutoCad Drawings (Conceptual and Construction)
- Quotes for Precast Units and Cost Estimates for Cast-In-Place Units
- Installation Oversight from Pre-construction to Final Acceptance; Advice During Setting of CDS Unit and During Construction; and a Project Review Before Acceptance from Contractor
- Turnkey Projects, Design/Construction
- Project and Construction Management
- Operations and Maintenance Manual
- Three Joint Inspections During First Year of Operation
- Maintenance Services
- Certification to Regulatory Agencies on Maintenance and Cleanout when Performed by CDS
- TSS Removal Calculations

## COUNTRIES AND USA STATES UTILIZING THE CDS TECHNOLOGY

- |                 |                 |                  |                 |
|-----------------|-----------------|------------------|-----------------|
| ■ Australia     | ● Georgia       | ● Michigan       | ● Tennessee     |
| ■ Canada        | ● Idaho         | ● Minnesota      | ● Texas         |
| ■ New Zealand   | ● Illinois      | ● New Hampshire  | ● Virginia      |
| ■ United States | ● Indiana       | ● New Jersey     | ● Washington    |
| ● California    | ● Kentucky      | ● New York       | ● Washington DC |
| ● Connecticut   | ● Louisiana     | ● Ohio           | ● West Virginia |
| ● Florida       | ● Maryland      | ● Oregon         | ● Wisconsin     |
|                 | ● Massachusetts | ● South Carolina |                 |

## REGIONAL OFFICES AND SUPPLIERS

### NORTHWEST

Portland, OR  
Phone: (503) 240-3629

### WEST COAST

Scaramento, CA  
Phone: (916) 486-1736  
Morgan Hill, CA  
Toll Free: (888) 535-7559  
Long Beach, CA  
Toll Free: (877) 572-0330

### SUPPLIERS

Atlantic Precast  
Hanson Pipe & Product  
Sherman-Dixie



### MIDWEST

Chicago, IL  
Phone: (708) 482-8550

### NORTHEAST

Boston, MA  
Phone: (978) 827-2378

### MID-ATLANTIC

Baltimore, MD  
Phone: (410) 620-0933  
Raleigh, NC  
Phone: (919) 858-8887

### SOUTHEAST

Atlanta, GA  
Phone: (770) 720-8324  
Winter Park, FL  
Toll Free: (800) 848-9955

Website: [WWW.CDSTECH.COM](http://WWW.CDSTECH.COM)  
E-Mail: [cds@cdstech.com](mailto:cds@cdstech.com)

Offices also in Melbourne, Sydney, and Brisbane, Australia and Hamilton, New Zealand