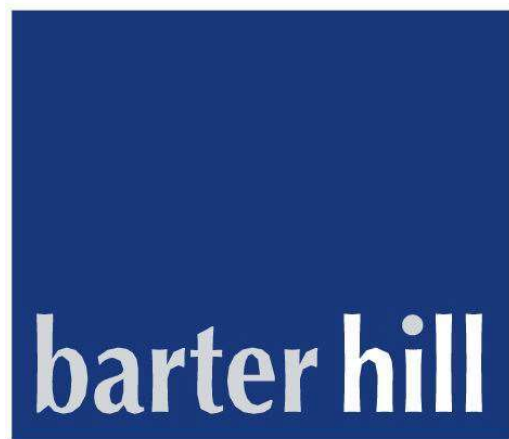




Drainage Management and Maintenance Plan

ZMQL Ltd

East Court, East Grinstead 10056

04/07/25

ZMQL Ltd
East Court, East Grinstead 10056
04/07/25



Quality Assurance

Site: East Court, East Grinstead
Client: ZMQL Ltd
Report: Drainage Management and Maintenance Plan
Job Reference 10056

Report Prepared By: Oliver Shaw

Signed:

Date: 04/07/25

Report Checked By: John Russell

Signed:

A handwritten signature in black ink, appearing to read 'J. Russell'.

Date: 04/07/25



Revision	Date	Details	Prepared By	Checked By
V.01	15/04/25	Planning Issue	OCS	JR
V.02	04/07/25	Downstream Defender/Timetable include	OCS	JR

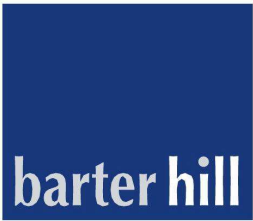


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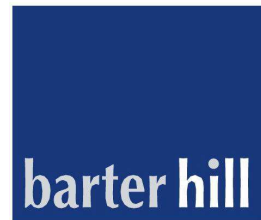
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10056-BHP-XX-XX-DR-C-1001 Drainage Layout

Appendices

Appendix A	Timetable of Implementation
Appendix B	Downstream Defender Maintenance Manual



1 Introduction

- 1.1 Barter Hill Partnership have been commissioned by ZMQL Ltd to prepare a Management and Maintenance Plan to support planning application DM/24/1340 for 33 residential apartments at East Court, East Grinstead. This report seeks to address Condition 5 of the planning application:

“Condition 5.

The development hereby permitted shall not commence unless and until details of the proposed foul and surface water drainage and means of disposal have been submitted to and approved in writing by the local planning authority. No building shall be occupied until all the approved drainage works have been carried out in accordance with the approved details. The details shall include a timetable for its implementation and a management and maintenance plan for the lifetime of the development which shall include arrangements for adoption by any public authority or statutory undertaker and any other arrangements to secure the operation of the scheme throughout its lifetime. Maintenance and management during the lifetime of the development should be in accordance with the approved details.

Reason: To ensure that the proposal is satisfactorily drained and to accord with Policy DP41 of the District Plan (2014 - 2031) and national policy contained within the National Planning Policy Framework.”

- 1.2 This Drainage Maintenance and Management Plan explains how the proposed development’s surface water and Sustainable Drainage Systems (SuDS) shall be maintained and managed after completion for the lifetime of the development.
- 1.3 The stakeholders involved in the management and maintenance of the various SuDS drainage components for the site are outlined below:
- Private Management Company (PMC) will be responsible for the management and maintenance of the private SuDS components. No adopting authorities will be responsible for the site’s drainage proposals.
- 1.4 A summary of the management and maintenance responsibilities for each stakeholder in relation to the aspects of the surface water drainage are summarised in Table 1.1 below:

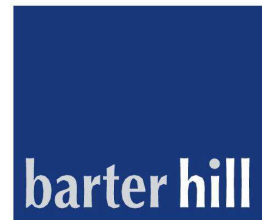
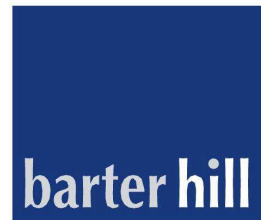


Table 1.1 – Management and Maintenance Responsibilities

Category	Drainage Component	Stakeholder to Management Component
Surface Water Sewers	Private Drainage (pipes, manholes, gullies, flow controls)	PMC
Category	Drainage Component	Stakeholder to Management Component
SuDS Attenuation Features	Attenuation Crates	PMC



2 Surface Water Drainage Strategy

- 2.1 The surface water and foul drainage strategy for the site is included in Drawing 10056-BHP-XX-XX-DR-C-1001. The drainage proposals comprise a series of private pipes, inspection chambers, manholes, orifice plate, and areas of crates.
- 2.2 A timetable for implementation of the works is included in Appendix A.
- 2.3 Private surface water networks serving the development convey flows to the proposed discharge location on the northern boundary of the site.
- 2.4 Three areas of crates are proposed for attenuation on the site. The product specified at this stage is Aquacell however other similar products would be suitable for the design.

3 Stakeholder Responsibilities

- 3.1 The surface water drainage strategy consists of a number of components already identified in Table 1.1.
- 3.2 For the surface water drainage system to operate as originally designed, it is necessary to ensure that they are adequately maintained and managed throughout the lifetime of the development.
- 3.3 The following sections identifies the stakeholders, and their responsibility associated with each drainage component in terms of operational, maintenance and management requirements.

Drainage Components Operated and Maintained by PMC or Private Property Owners

- 3.4 A PMC appointed by the developer and subsequently by the residents of the development (via a yearly management fee) will be responsible for the maintenance and management of the surface water drainage components for the site.

Private Pipes

- 3.5 Private pipes are to be inspected as required. The pipe is to be inspected if there is thought to be damage. Dig down or non-intrusive techniques (i.e. pipe lining) to secure repairs will be implemented to ensure the sewer functions as designed. Any blockages within a pipe are to be removed by rodding or high-pressure water jetting to clear the debris.

Private Gullies

- 3.6 Trapped gullies located within the private access road or on path areas where required are to be inspected as required if there is thought to be a blockage. Any blockages within gullies and connection pipes are to be removed by rodding or high-pressure water jetting to clear the debris.

Manholes

- 3.7 All manholes are to be inspected annually and accumulated sediment or blockage is to be removed and manholes hosed down if required.

Flow Controls/Orifice Plates/Downstream Defender

- 3.8 The Flow Control Orifice Plates (located at the downstream end of the network) are to be inspected annually in accordance with manufacture's recommendations. Accumulated sediment or debris buildup which could result in blockage is to be removed and hosed down if required. The maintenance details of the downstream defender are in Appendix B.

4 Maintenance Categories

Operation and maintenance Activity Categories

4.1 There are three main categories of maintenance activities:

- Regular maintenance (including inspections and monitoring)
- Occasional Maintenance
- Remedial Maintenance

4.2 Regular maintenance consists of basic tasks done on a frequent and predictable schedule, including vegetation management, litter and debris removal, and inspections. More frequent monitoring is required in the first year of a SuDS component as it establishes itself.

4.3 Occasional maintenance comprises tasks that are likely to be required periodically, but on a much less frequent and predictable basis than the regular tasks (sediment removal is an example).

4.4 Remedial maintenance comprises intermittent tasks that may be required to rectify faults associated with the system, although the likelihood of faults can be minimised by good design, construction and general maintenance. Where remedial work is found to be necessary, it is likely to be due to site-specific characteristics or unforeseen events, and as such timings are difficult to predict.

Regular Maintenance Activities

4.5 The regular maintenance activities for the SuDS components on site are outlined in the following sections.

Inspections and Reporting

4.6 Regular SuDS scheme inspections are required to:

- Help determine optimum future maintenance activities.
- Confirm hydraulic, water quality, amenity and ecological performance allow identification of potential system failures, e.g. blockage, poor infiltration, poor water quality etc.

4.7 Inspections can generally be required at monthly site visits (e.g. for grass cutting) for little additional cost, and should, therefore, be subsumed into regular maintenance requirements. During the first year of operation, inspections should ideally be carried out after every significant storm event to ensure proper functioning, but in practice this may be difficult or impractical to arrange.

Litter/debris removal

4.8 This is an integral part of SuDS maintenance and reduces the risks of inlet and outlet blockages, retains amenity value and minimises pollution risks.

Occasional Maintenance Activities

- 4.9 The occasional maintenance activities for the SuDS components on site are outlined in the following sections.

Sediment Removal

- 4.10 To ensure long-term effectiveness, the sediment that accumulates in SuDS components should be removed periodically. The required frequency of sediment removal is dependent on many factors including:

- Design of upstream drainage system
- Type of system
- Design storage volume
- Characteristics of upstream catchment area (e.g., land use, level of imperviousness, upstream construction activities, erosion control management and effectiveness of upstream pretreatment).

- 4.11 Sediment accumulation will typically be rapid for the entire construction period (including time required for the building, turfing and landscaping of all upstream development plots). Once a catchment is completely developed and all vegetation is well established, sediment mobility and accumulation are likely to drop significantly.

Remedial Maintenance

- 4.12 The remedial maintenance activities for the SuDS components on site are outlined in the following sections.

Structure Rehabilitation/Repair

- 4.13 In some cases, a major overhaul of the drainage system is required to remove headwalls and control structures etc. This will typically be between 10 and 25 years, depending on the technique and factors such as the type of catchment and sediment load. The SuDS design allows for access to undertake this work and consider the need for the overhaul without causing major disruption.
- 4.14 Other SuDS techniques are unlikely to need major overhaul if routine maintenance is undertaken as required.

5 Management and Maintenance Plan

Reporting

- 5.1 A report shall be prepared and issued to Mid Sussex District Council by the PMC on the condition of the SuDS scheme every 6 months or at an alternative interval agreed by both parties.

SuDS Owner's Manual

- 5.2 An owner's manual will be prepared and includes the following:
- Details of the design concepts and criteria for the SuDS scheme.
 - Location of all SuDS techniques in a site
 - Brief summary of how the techniques work, their purpose.
 - How they can be damaged by any subsequent works undertaken on a development.
 - Maintenance requirements (a maintenance plan) and a maintenance record.
 - Explanation of the consequences of not carrying out the maintenance that is specified.
 - Identification of areas where certain activities are prohibited (for example stockpiling materials on pervious surfaces).
 - An action plan for dealing with accidental spillages.
 - Advice on what to do if alterations are to be made to a development, if service companies undertake excavations or other similar works carried out that could affect the SuDS.

Emergency Response Action Plan

- 5.3 In the event of an extreme spill/pollution event a response action plan will be developed and communicated to all those involved in the operation of a site, so that if a spillage occurs it can be prevented from causing pollution to receiving waters. While the risk is low on a residential site, a response plan should be developed and agreed by the various stakeholders.
- 5.4 A vital part of dealing with a spill is being able to quickly identify the watercourse, groundwater and drainage systems that may be affected by a spill. This is part of the pollution risk response plan.
- 5.5 The following maintenance regime has been prepared based on the criteria within The SuDS Manual for the proposed surface water drainage and is set out in Tables 4.1 – 4.3 below:

Table 4.1 – Private Drainage Pipes Maintenance Schedule

Maintenance Schedule	Required Action	Frequency
Regular Maintenance	Remove sediment and debris from inspection chambers and flow control chambers.	Annually
	Cleaning of gutters and any filters on downpipes.	Annually
	Remove any root ingress.	As required
Occasional Maintenance	CCTV survey of drains to check alignment, cracking and joint displacement.	10-year intervals

Table 4.3 – Attenuation Crates Maintenance Schedule (Table 21.3 SuDS Manual)

Maintenance Schedule	Required Action	Frequency
Regular Maintenance	Inspect and identify possible maintenance issues	Monthly (or annually after 3 months)
	Remove debris from system	Monthly
	Remove sediment from pre-treatment structures	Annually
Remedial Actions	Repair pipe inlets, outlets and vents	Annually, or as required
Monitoring	Inspect all inlets, outlets and vents for maintenance issues	Annually
	Survey tank for sediment build up and remove if necessary	Every 5 years or as required

- 5.6 The maintenance regime recommended above is put in place to minimise the risk of blockages occurring and to prevent water surcharging from the inspection chambers and manholes. If flooding from the drainage system occurs, then the cause should be identified immediately and dealt with by the maintenance company and if considered appropriate, the maintenance regime should be adapted to ensure the cause of flooding does not occur again in the future.

6 Waste Requirements

- 6.1 There are usually three types of waste arising from regular SuDS maintenance: litter, green waste (vegetation) and sediment.

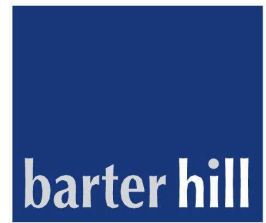
Litter Waste

- 6.2 Litter will be disposed of as for any open space in the site. As there are no open space SuDS on site (such as swales or basins) this is not required.

Sediment Management

- 6.3 Silt/sediment collected from a SuDS component will often contain low levels of metals, hydrocarbons and other pollutants.
- 6.4 Any sediment removed from SuDS must meet the requirements of relevant waste management legislation.
- 6.5 The Environment Agency has adopted a risk-based approach in relation to removal of sediment from sites. To assess whether the silt/sediment collected in the system is likely to have a high risk of being defined as “hazardous waste” will mainly be based on the land use within the catchment (e.g., residential, industrial or heavy vehicle management areas or end-of-pipe ponds without source control; swales etc without source control).
- 6.6 However, sediments excavated from upstream pre-treatment devices that receive runoff from residential or standard road and roof areas are generally not toxic or hazardous material and can therefore be safely disposed of by either land application or landfilling.
- 6.7 However, consultation will take place by the PMC with the environmental regulator to confirm appropriate waste management protocols and compliance with legislation. Sediment testing may be required before sediment excavation to determine its classification and appropriate disposal methods. Where there is low risk of pollution, this will allow sediment removal and land application to suitable vegetated surfaces outside the SuDS design profile but still close by (e.g. within 20 m of the SuDS component).
- 6.8 If land application is not appropriate for low-risk sites, the sediment will have to be disposed of offsite. If material is removed offsite, the PMC and those carrying out the work must comply with the required legislation and secure the relevant Environment Agency permits.
- 6.9 Final implementation of the sediment waste management strategy is to be confirmed by the PMC.

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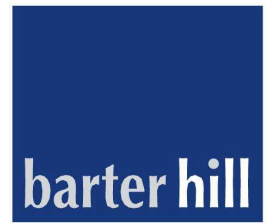


Drawings



Cad file
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Appendix A

Timetable for Implementation – Drainage Works

Project: Drainage Installation for 33 Flats

Planning Authority: Mid Sussex District Council

Start Date: 26 January 2026

Estimated Duration: 4 months

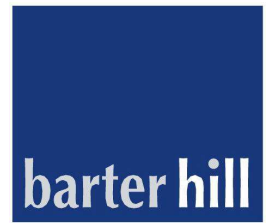
Anticipated Completion: 26 May 2026

Proposed Work Schedule

Phase	Description	Start Date	End Date
Mobilisation	Site setup, welfare units, traffic management	26 Jan 2026	28 Jan 2026
Excavation	Groundworks and trenching for drainage routes	29 Jan 2026	18 Feb 2026
Drainage Installation	Laying of pipes, manholes, and soakaways	19 Feb 2026	28 Mar 2026
Testing & Inspection	Pressure testing, CCTV surveys, LA inspections	30 Mar 2026	10 Apr 2026
Backfilling & Surfacing	Reinstatement of excavated areas	13 Apr 2026	1 May 2026
Final Checks & Handover	Final snagging and documentation	4 May 2026	26 May 2026

Note: The programme includes typical working days only and may be subject to weather or site conditions.

ZMQL Ltd
East Court, East Grinstead 10056



Appendix B



Operation and Maintenance Manual

Downstream Defender® hydrodynamic separator with 5mm Screen

Vortex Separator for Stormwater Treatment

Turning Water Around ...®

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3

Downstream Defender® by Hydro International

- Benefits of the Downstream Defender®

- Applications

- Downstream Defender® Components

4

Operation

- Introduction

- Pollutant Capture and Retention

- Wet Sump

- Blockage Protection

4

Maintenance

- Overview

- Determining You Maintenance Schedule

5

Maintenance Procedures

- Inspection

- Floatables and Sediment Cleanout

8

Downstream Defender® Installation Log

9

Downstream Defender® Inspection and Maintenance Log

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DISCLAIMER: Information and data contained in this manual is exclusively for the purpose of assisting in the operation and maintenance of Hydro International plc's Downstream Defender®. No warranty is given nor can liability be accepted for use of this information for any other purpose. Hydro International plc have a policy of continuous product development and reserve the right to amend specifications without notice.

Downstream Defender® by Hydro International

The Downstream Defender® is an advanced Hydrodynamic Vortex Separator designed to provide high removal efficiencies of settleable solids and their associated pollutants, oil, and floatables over a wide range of flow rates.

The Downstream Defender® has unique, flow-modifying internal components developed from extensive full-scale testing, CFD modeling and over thirty years of hydrodynamic separation experience in wastewater, combined sewer and stormwater applications. These internal components distinguish the Downstream Defender® from simple swirl-type devices and conventional oil/grit separators by minimizing turbulence and headlosses, enhancing separation, and preventing washout of previously stored pollutants.

The high removal efficiencies and inherent low headlosses of the Downstream Defender® allow for a small footprint making it a compact and economical solution for the treatment of non-point source pollution.

Benefits of the Downstream Defender®

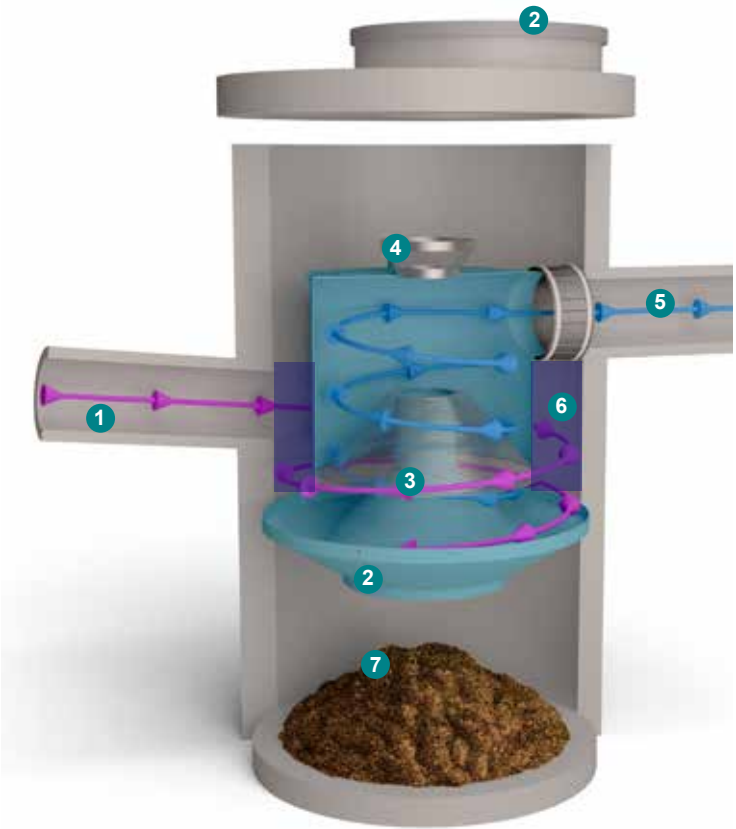
- Removes sediment, floatables, oil and grease
- No pollutant washouts
- Small footprint
- No loss of treatment capacity between clean-outs
- Low headloss
- Efficient over a wide ranges of flows
- Easy to install
- Low maintenance

Applications

- New developments and retrofits
- Utility yards
- Streets and roadways
- Parking lots
- Pre-treatment for filters, infiltration and storage
- Industrial and commercial facilities
- Wetlands protection

Downstream Defender® Components

1. Tangential inlet
2. Benching skirt
3. Bypass Screen
4. Inline Screen
5. Outlet Pipe
6. Floatables Storage
7. Isolated Sediment Storage Zone



HYDRO MAINTENANCE SERVICES

Hydro International has been engineering stormwater treatment systems for over 30 years. We understand the mechanics of removing pollutants from stormwater and how to keep systems running at an optimal level.

NOBODY KNOWS OUR SYSTEMS BETTER THAN WE DO



AVOID SERVICE NEGLIGENCE

Sanitation services providers not intimately familiar with stormwater treatment systems are at risk of the following:

- Inadvertently breaking parts or failing to clean/replace system components appropriately.
- Charging you for more frequent maintenance because they lacked the tools to service your system properly in the first place.
- Billing you for replacement parts that might have been covered under your Hydro warranty plan
- Charging for maintenance that may not yet have been required.

LEAVE THE DIRTY WORK TO US

Trash, sediment and polluted water is stored inside treatment systems until they are removed by our team with a vactor truck. Sometimes teams must physically enter the system chambers in order to prepare the system for maintenance and install any replacement parts. Services include but are not limited to:

- Solids removal
- Removal of liquid pollutants
- Replacement media installation (when applicable)



BETTER TOOLS, BETTER RESULTS

Not all vactor trucks are created equal. Appropriate tools and suction power are needed to service stormwater systems appropriately. Companies who don't specialize in stormwater treatment won't have the tools to properly clean systems or install new parts.



SERVICE WARRANTY

Make sure you're not paying for service that is covered under your warranty plan. Only Hydro International's service teams can identify tune-ups that should be on us, not you.

TREATMENT SYSTEMS SERVICED BY HYDRO:

- Stormwater filters
- Stormwater separators
- Baffle boxes
- Biofilters/biorention systems
- Storage structures
- Catch basins
- Stormwater ponds
- Permeable pavement



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Operation

Introduction

The Downstream Defender® operates on simple fluid hydraulics. It is self-activating, has no moving parts, no external power requirement and is fabricated with durable non-corrosive components. No manual procedures are required to operate the unit and maintenance is limited to monitoring accumulations of stored pollutants and periodic clean-outs. The Downstream Defender® has been designed to allow for easy and safe access for inspection/monitoring and clean-out procedures. Entry into the unit or removal of the internal components is not necessary for maintenance, thus safety concerns related to confined-space-entry are avoided.

Pollutant Capture and Retention

The internal components of the Downstream Defender® have been designed to protect the oil, floatables and sediment storage volumes so that separator performance is not reduced as pollutants accumulate between clean-outs. Additionally, the Downstream Defender® is designed and installed into the storm drain system so that the vessel remains wet between storm events. Oil and floatables are stored on the water surface in the outer annulus separate from the sediment storage volume in the sump of the unit providing the option for separate oil disposal, and accessories such as adsorbant pads. Since the oil/floatables and sediment storage volumes are isolated from the active separation region, the potential for re-suspension and washout of stored pollutants between clean-outs is minimized.

Wet Sump

The sump of the Downstream Defender® retains a standing water level between storm events. The water in the sump prevents stored sediment from solidifying in the base of the unit. The clean-out procedure becomes more difficult and labor intensive if the system allows fine sediment to dry-out and consolidate. Dried sediment must be manually removed by maintenance crews. This is a labor intensive operation in a hazardous environment.

Maintenance

Overview

The Downstream Defender® protects the environment by removing a wide range of pollutants from stormwater runoff. Periodic removal of these captured pollutants is essential to the continuous, long-term functioning of the Downstream Defender®. The Downstream Defender® will capture and retain sediment and oil until the sediment and oil storage volumes are full to capacity. When sediment and oil storage capacities are reached, the Downstream Defender® will no longer be able to store removed sediment and oil. Maximum pollutant storage capacities are provided in Table 1.

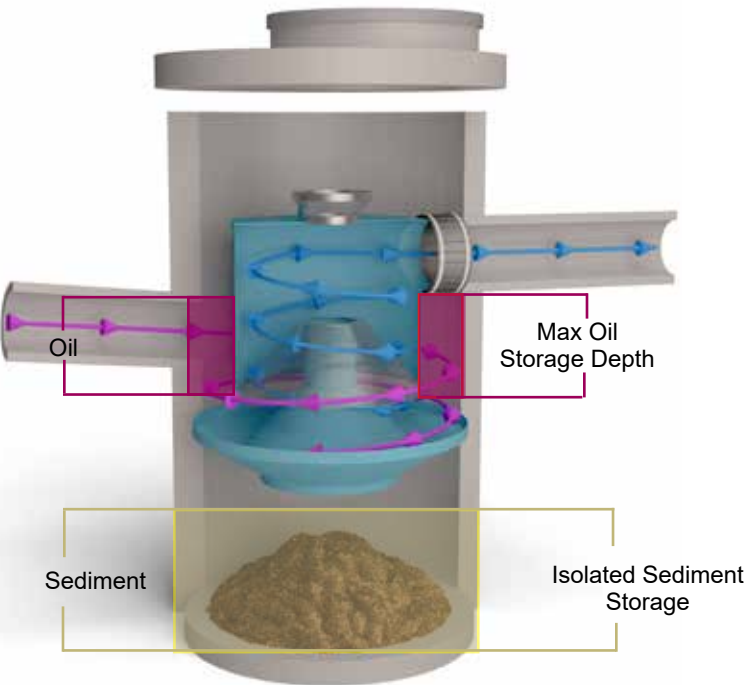


Fig.1 Pollutant storage volumes of the Downstream Defender®.

The Downstream Defender® allows for easy and safe inspection, monitoring and clean-out procedures. A commercially or municipally owned sump-vac is used to remove captured sediment and floatables. Access ports are located in the top of the manhole. On the 6-ft, 8-ft and 10-ft units, the floatables access port is above the outlet pipe between the concrete manhole wall and the dip plate. The sediment removal access ports for all Downstream Defender® models are located directly over the bypass screen.

Maintenance events may include Inspection, Oil & Floatables Removal, and Sediment Removal. Maintenance events do not require entry into the Downstream Defender®, nor do they require the internal components of the Downstream Defender® to be removed. In the case of inspection and floatables removal, a vactor truck is not required. However, a vactor truck is required if the maintenance event is to include oil removal and/or sediment removal.

Determining Your Maintenance Schedule

The frequency of cleanout is determined in the field after installation. During the first year of operation, the unit should be inspected every six months to determine the rate of sediment and floatables accumulation. A simple probe such as a Sludge Judge® can be used to determine the level of accumulated solids stored in the sump. This information can be recorded in the maintenance log (see page 9) to establish a routine maintenance schedule.

The vactor procedure, including both sediment and oil/floatables removal, for a 6-ft Downstream Defender® typically takes less than

30 minutes and removes a combined water/oil volume of about 500 gallons.

Inspection Procedures

Inspection is a simple process that does not involve entry into the Downstream Defender®. Maintenance crews should be familiar with the Downstream Defender® and its components prior to inspection.

Scheduling

- It is important to inspect your Downstream Defender® every six months during the first year of operation to determine your site-specific rate of pollutant accumulation
- Typically, inspection may be conducted during any season of the year
- Sediment removal is not required unless sediment depths exceed 75% of maximum clean-out depths stated in Table 1

Recommended Equipment

- Safety Equipment and Personal Protective Equipment (traffic cones, work gloves, etc.)
- Crow bar or other tool to remove grate or lid
- Pole with skimmer or net
- Sediment probe (such as a Sludge Judge®)
- Trash bag for removed floatables

Table 1. Downstream Defender® Pollutant Storage Capacities and Max. Cleanout Depths.

Unit Diameter	Total Oil Storage	Oil Clean-out Depth	Total Sediment Storage	Sediment Clean-out Depth	Max. Liquid Volume Removed
(feet)	(gallons)	(inches)	(gallons)	(inches)	(gallons)
4	70	<16	141	<18	384
6	216	<23	424	<24	1,239
8	540	<33	939	<30	2,884
10	1,050	<42	1,757	<36	5,546
12	1,770	<49	2,970	<42	9,460

NOTES

1. Refer to Downstream Defender® Clean-out Detail (Fig. 1) for measurement of depths.
2. Oil accumulation is typically less than sediment, however, removal of oil and sediment during the same service is recommended.
3. Remove floatables first, then remove sediment storage volume.
4. Sediment removal is not required unless sediment depths exceed 75% of maximum clean-out depths stated in Table 1.



Fig. 4



Fig. 5



Fig. 6

Inspection Procedures

1. Set up any necessary safety equipment around the access port or grate of the Downstream Defender® as stipulated by local ordinances. Safety equipment should notify passing pedestrian and road traffic that work is being done.
2. Remove the lids to the manhole (Fig. 4). NOTE: The 4-ft Downstream Defender® will only have one lid.
3. Without entering the vessel, look down into the chamber to inspect the inside. Make note of any irregularities. See Fig. 7 and 8 for typical inspection views.
4. Without entering the vessel, use the pole with the skimmer net to remove floatables and loose debris from the outer annulus of the chamber.
5. Using a sediment probe such as a Sludge Judge®, measure the depth of sediment that has collected in the sump of the vessel (Fig. 5).
6. On the Maintenance Log (see page 9), record the date, unit location, estimated volume of floatables and gross debris removed, and the depth of sediment measured. Also note any apparent irregularities such as damaged components or blockages.



Fig. 7 View over center shaft into sediment storage zone.

7. Securely replace the grate or lid.
8. Take down safety equipment.
9. Notify Hydro International of any irregularities noted during inspection.

Floatables and Sediment Cleanout

Floatables cleanout is typically done in conjunction with sediment removal. A commercially or municipally owned sump-vac is used to remove captured sediment and floatables (Fig. 6).

Floatables and loose debris can also be netted with a skimmer and pole. The access port located at the top of the manhole provides unobstructed access for a vactor hose and skimmer pole to be lowered to the base of the sump.

Scheduling

- Floatables and sump cleanout are typically conducted once a year during any season.
- If sediment depths are greater than 75% of maximum clean-out depths stated in Table 1, sediment removal is required.
- Floatables and sump cleanout should occur as soon as possible following a spill in the contributing drainage area.



Fig. 8 View of outer annulus of floatables and oil collection zone.

Recommended Equipment

- Safety Equipment (traffic cones, etc)
- Crow bar or other tool to remove grate or lid
- Pole with skimmer or net (if only floatables are being removed)
- Sediment probe (such as a Sludge Judge®)
- Vactor truck (6-inch flexible hose recommended)
- Downstream Defender® Maintenance Log

1. Set up any necessary safety equipment around the access port or grate of the Downstream Defender® as stipulated by local ordinances. Safety equipment should notify passing pedestrian and road traffic that work is being done.
2. Remove the lid to the manhole (NOTE: The 6-ft, 8-ft, 10-ft and 12-ft Downstream Defender® will have 2 lids).
3. Without entering the vessel, look down into the chamber to inspect the inside. Make note of any irregularities.
4. Using the Floatables Port for access, remove oil and floatables stored on the surface of the water with the vactor hose or the skimmer net (Fig. 9).
5. Using a sediment probe such as a Sludge Judge®, measure the depth of sediment that has collected in the sump of the vessel and record it in the Maintenance Log (Pg. 9).
6. Once all floatables have been removed, drop the vactor hose to the base of the sump via the Central Access Port. Vactor out the sediment and gross debris off the sump floor (Fig. 6).

7. Retract the vactor hose from the vessel.
8. On the Maintenance Log provided by Hydro International, record the date, unit location, estimated volume of floatables and gross debris removed, and the depth of sediment measured. Also note any apparent irregularities such as damaged components or blockages.
9. Securely replace the grate or lid.

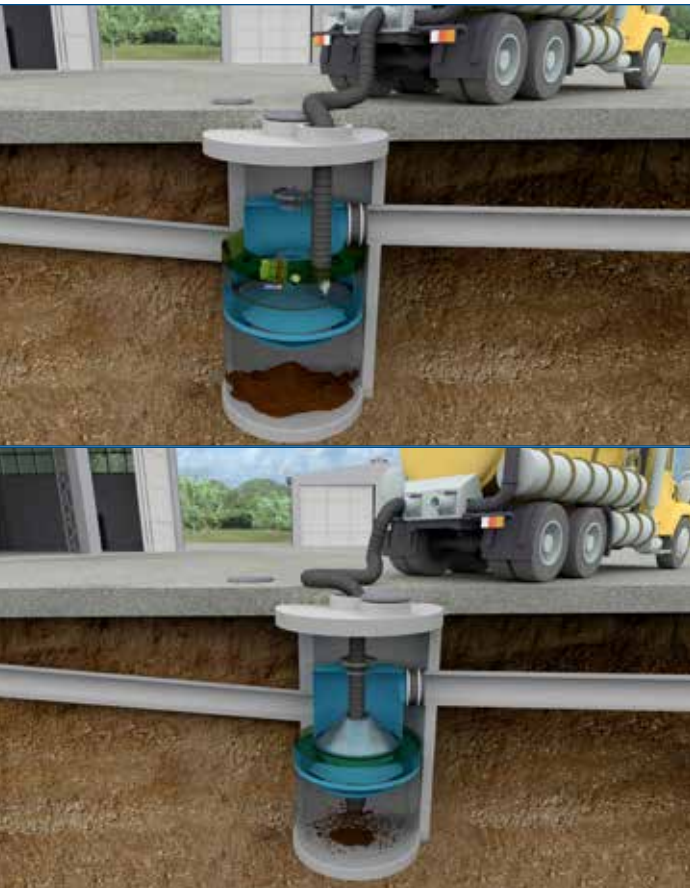


Fig. 9 Floatables and sediment are removed with a vactor hose

Maintenance at a Glance

Activity	Frequency
Inspection	- Regularly during first year of installation - Every 6 months after the first year of installation
Oil and Floatables Removal	- Once per year, with sediment removal - Following a spill in the drainage area
Sediment Removal	- Once per year or as needed - Following a spill in the drainage area

NOTE: For most cleanouts it is not necessary to remove the entire volume of liquid in the vessel. Only removing the first few inches of oils/floatables and the sediment storage volume is required.



Downstream Defender® Installation Log

HYDRO INTERNATIONAL REFERENCE NUMBER:	
SITE NAME:	
SITE LOCATION:	
OWNER:	CONTRACTOR:
CONTACT NAME:	CONTACT NAME:
COMPANY NAME:	COMPANY NAME:
ADDRESS:	ADDRESS:
TELEPHONE:	TELEPHONE:
FAX:	FAX:

INSTALLATION DATE: / /

MODEL (CIRCLE ONE): 4-FT 6-FT 8-FT 10-FT CUSTOM



Downstream Defender® Inspection and Maintenance Log

Date	Initials	Depth of Floatables and Oils	Sediment * Depth Measured	Volume of Sediment Removed	Site Activity and Comments

*Note: Sediment removal is not required unless sediment depths exceed 75% of maximum clean-out depths stated in Table 1.

DO IT RIGHT THE FIRST TIME

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CALL 1 (888) 382-7808 TO SCHEDULE AN INSPECTION

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