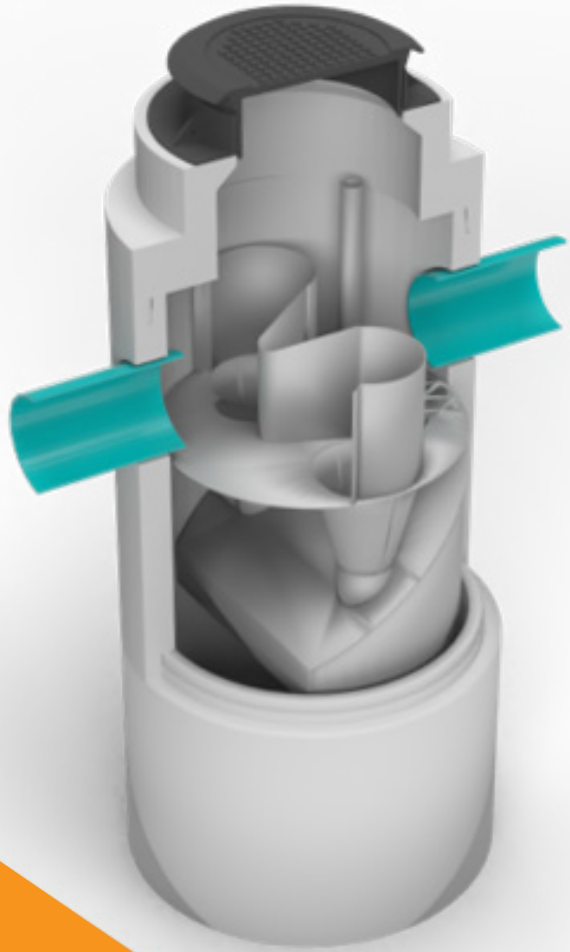
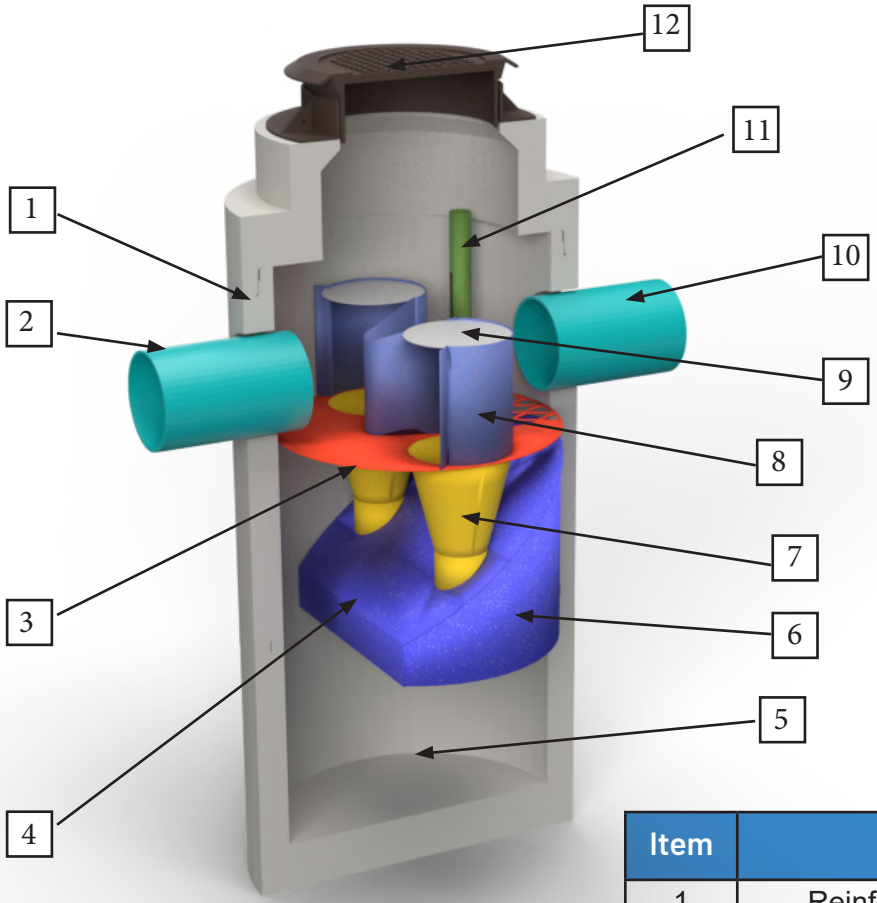
SDD3™
Inspection and Maintenance Manual



SDD3 - Oil and Grit Separator

Inspection and Maintenance Manual

The SDD3 is an innovative stormwater treatment system that ensures maximum removal of suspended solids and oils without the risk of resuspension.



Item	Description
1	Reinforced concrete manhole cover
2	Inlet pipe
3	Horizontal plate
4	Oblique plate
5	Sediment storage area
6	Oil storage
7	Vortex
8	Centrifuge plate
9	Protection lid
10	Outlet pipe
11	Oil tank access pipe
12	Cast iron frame and cover

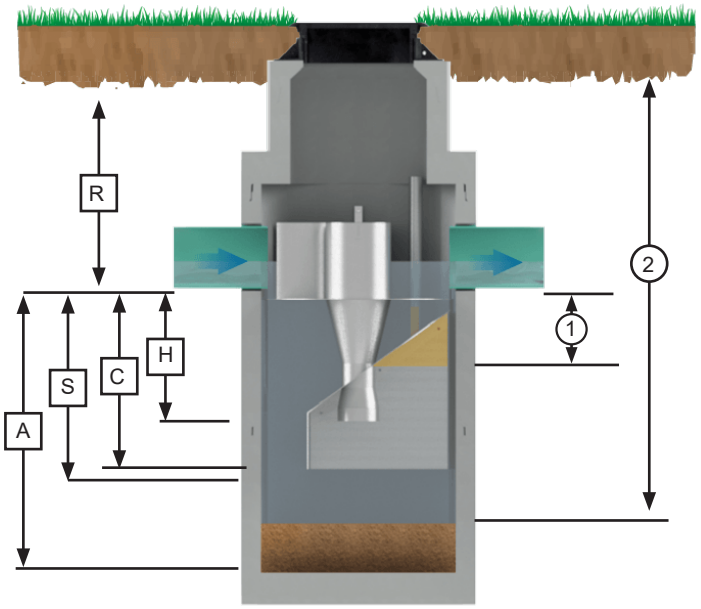
INTRODUCTION

To ensure the proper functioning of the SDD3 and to avoid the resuspension of oils and sediments, it is important to perform periodic maintenance. The maintenance frequency of the SDD3 may vary depending on the installation site. Therefore, to determine the sediment and oil supply for the specific location of the unit, we recommend that SDD3 be inspected every six months during its first year of operation. Thereafter, this frequency can be adjusted as required.

Maintenance of the SDD3 is simple and carried out entirely from the ground surface, without having to enter the unit. In addition, no disassembly of the internal system is required. To facilitate handling, the SDD3 should be serviced in dry weather and in accordance with local safety regulations. It is the responsibility of the users to determine and implement appropriate safety and environmental practices. The cleaning of SDD3 is recommended when the sediment level exceeds 75% of the storage capacity, a value less than or equal to the maintenance threshold (S) indicated in Appendix 1.

The maximum sediment storage level (C) is also indicated in Appendix 1. When oil is present in the unit, a preliminary cleaning of the unit is desirable to reduce disposal costs.

The reference parameters for SDD3 maintenance are shown in Figure 1.

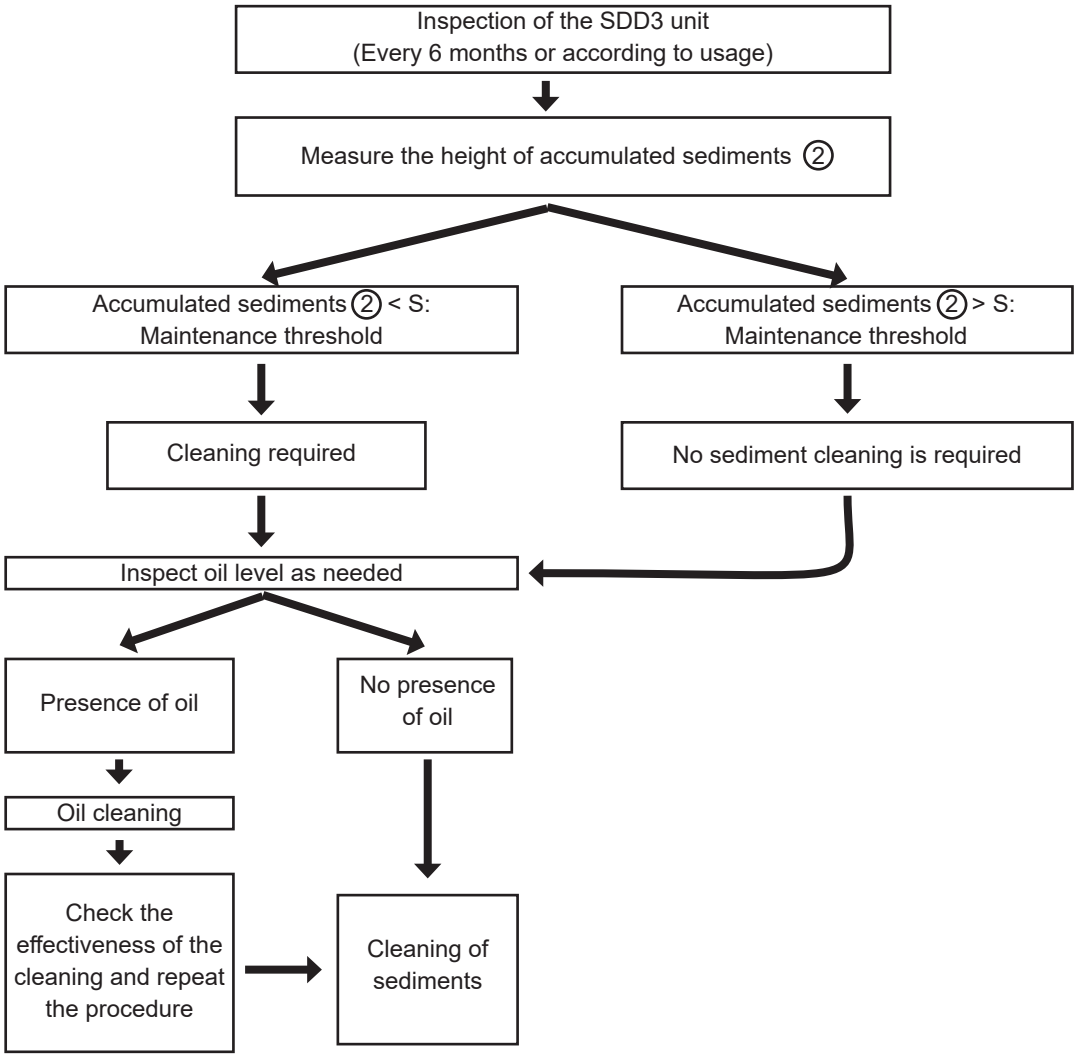


A	Maximum height of the empty unit (invert to bottom)
S	Sediment maintenance threshold (75% of storage capacity)
C	Maximum sediment height (100% of storage capacity)
H	Maximum oil level
R	Height of invert from ground level
1	Oil level
2	Sediment height

Figure 1: Reference parameters for the maintenance of SDD3

INSPECTION METHODS FOR SDD3

The following diagram provides an overview of the frequency and criteria for maintenance of the SDD3 system. The steps will be described in the following diagram.



During inspections, the following steps should be followed to obtain the information necessary to assess cleaning needs. This is done by completing the inspection form (see Appendix 2).

1. Oil Level Inspection (Figure 2)

Step 1: Remove the cast iron cover to access the SDD3 or the valve box cover which gives direct access to the oil cleaning pipe (models SDD3-1800 and above).

Step 2: Slowly insert an oil level sampler, such as a sludge judge or equivalent, into the vertical pipe provided.

Step 3: Lower the sampler to level H, then quickly remove it and check the oil level. This step should be done slowly in order to get as accurate a picture as possible of the oil level in the unit.

Step 4: Record the data collected on the inspection form (Appendix 2).

2. Sediment level inspection (Figure 3)

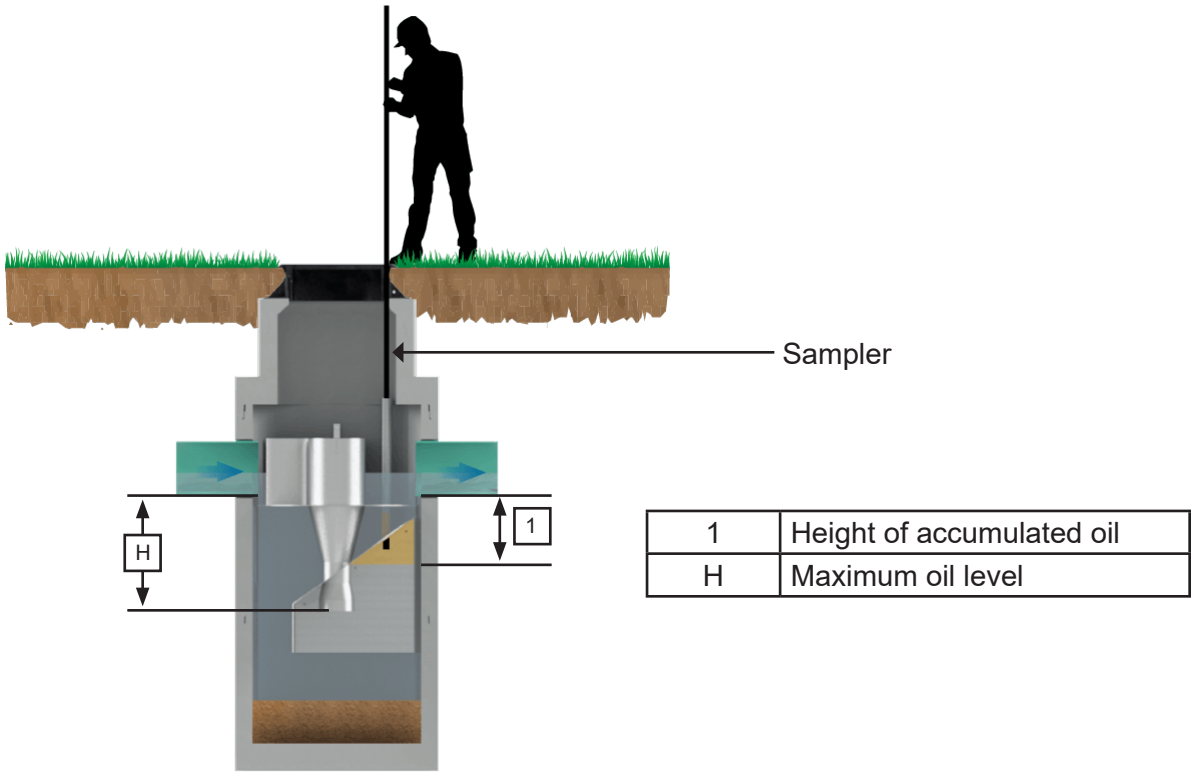
Step 1: Remove the cast iron cover to access the SDD3.

Step 2: Insert a rigid measuring instrument into one of the vortexes to determine the current sediment accumulation in the unit. This measurement is taken from the top of the lid to above the sediment at the bottom of the unit.

Step 3: Repeat step 1, but this time in the second vortex. The smaller of the two measurements will be used to determine cleaning requirements.

Step 4: Sediment cleaning is required when the sediment height is less than or equal to the maintenance threshold (S) shown in Figure 1.

Step 5: Record the information collected in the inspection sheet (Appendix 2).



1	Height of accumulated oil
H	Maximum oil level

Figure 2: Oil level inspection method

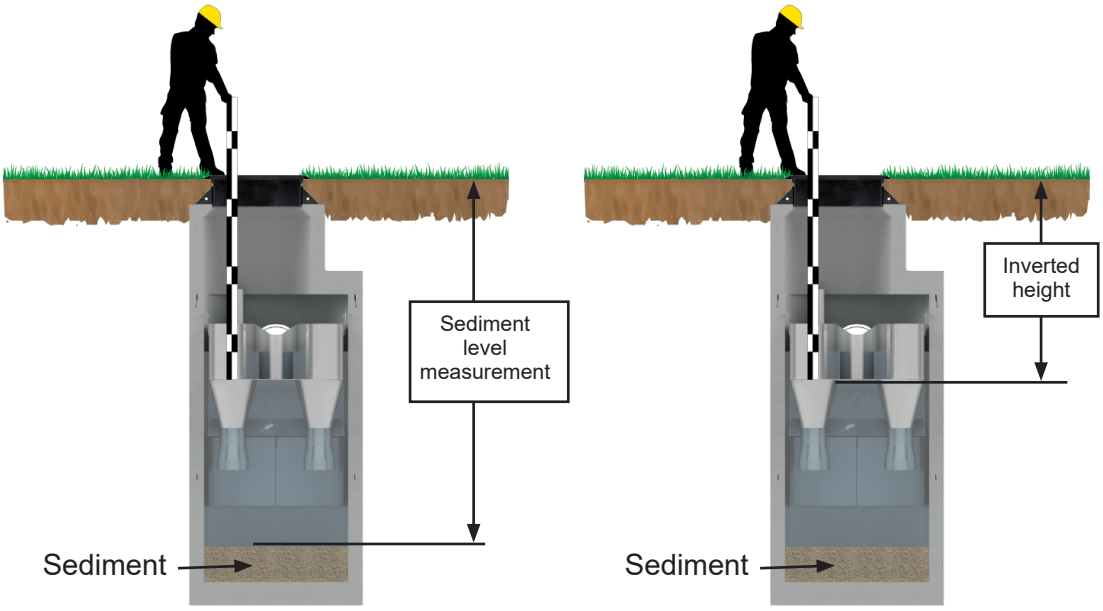


Figure 3: Sediment inspection method

SDD3 MAINTENANCE PROCEDURE

1. Oil cleaning (if required)

When oil is present in the unit, a preliminary cleaning of the unit is desirable to reduce maintenance costs. If this step is not carried out, the entire contents of the unit (liquid and vacuumed sediments) would be considered contaminated and would have to be sent to a contaminated materials treatment centre, increasing disposal costs.

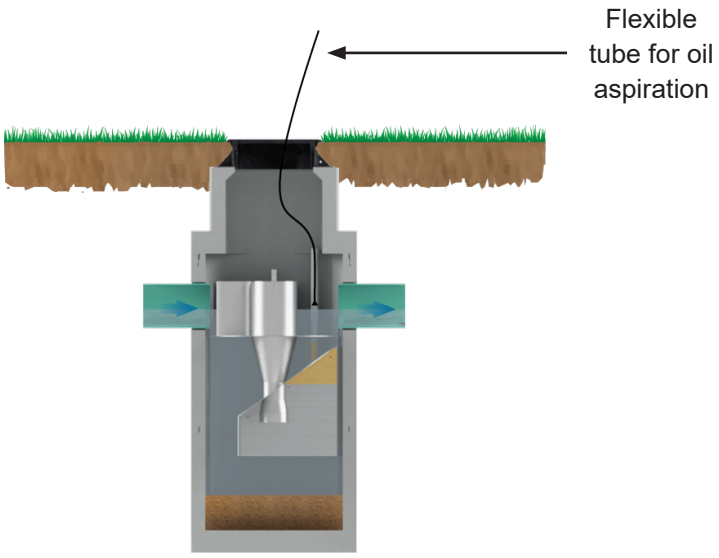


Figure 4: Oil cleaning

Oil cleaning is carried out using a portable pumping system or a vacuum truck equipped with a flexible hose with a diameter of 50 mm (2 in) or less. To carry out the complete oil cleaning, the following steps should be carried out:

Step 1: Remove the cast iron cover in place to access the contents of the SDD3 and determine the oil level.

Step 2: Insert the pump hose into the oil tank access pipe.

Step 3: Start the pump and pump oil down the hose to the oil level measured in step 2 during the oil inspection.

Step 4: Repeat the second step of the oil inspection to check the pumping efficiency.

Step 5: Repeat steps 3 to 5 if necessary.

2. Sediment clean-up (Figure 5)

Sediment cleaning is carried out using a vacuum truck equipped with flexible hoses of up to 125mm (5 in) for small SDD3 models (≤ 1200 mm (47.24 in)) and up to 400 mm (15.75 in) for larger models (Table 2). Incidentally, the use of a pressurised water jet and a rigid handle to direct the nozzle is desirable to perform optimal cleaning. The procedure for cleaning the sediment is as follows:

Step 1: Remove the cast iron cover.

Step 2: Insert the vacuum hose into one of the vortexes and suck out the water in the unit.

Step 3: Once the water is sucked out, add the angled pressure water jet to the same vortex to agitate and loosen the accumulated sediment.

Step 4: Once the first part of the unit is clean, repeat the cleaning procedure in the second vortex.

Step 5: To assess the effectiveness of the cleaning, visually inspect and measure the sediment level as described above. The value of this measurement should be approximately equal to value A, corresponding to a completely empty tank.

Step 6: Repeat steps 2 to 5 if necessary.

Step 7: Replace the cast iron cover when the cleaning is complete.

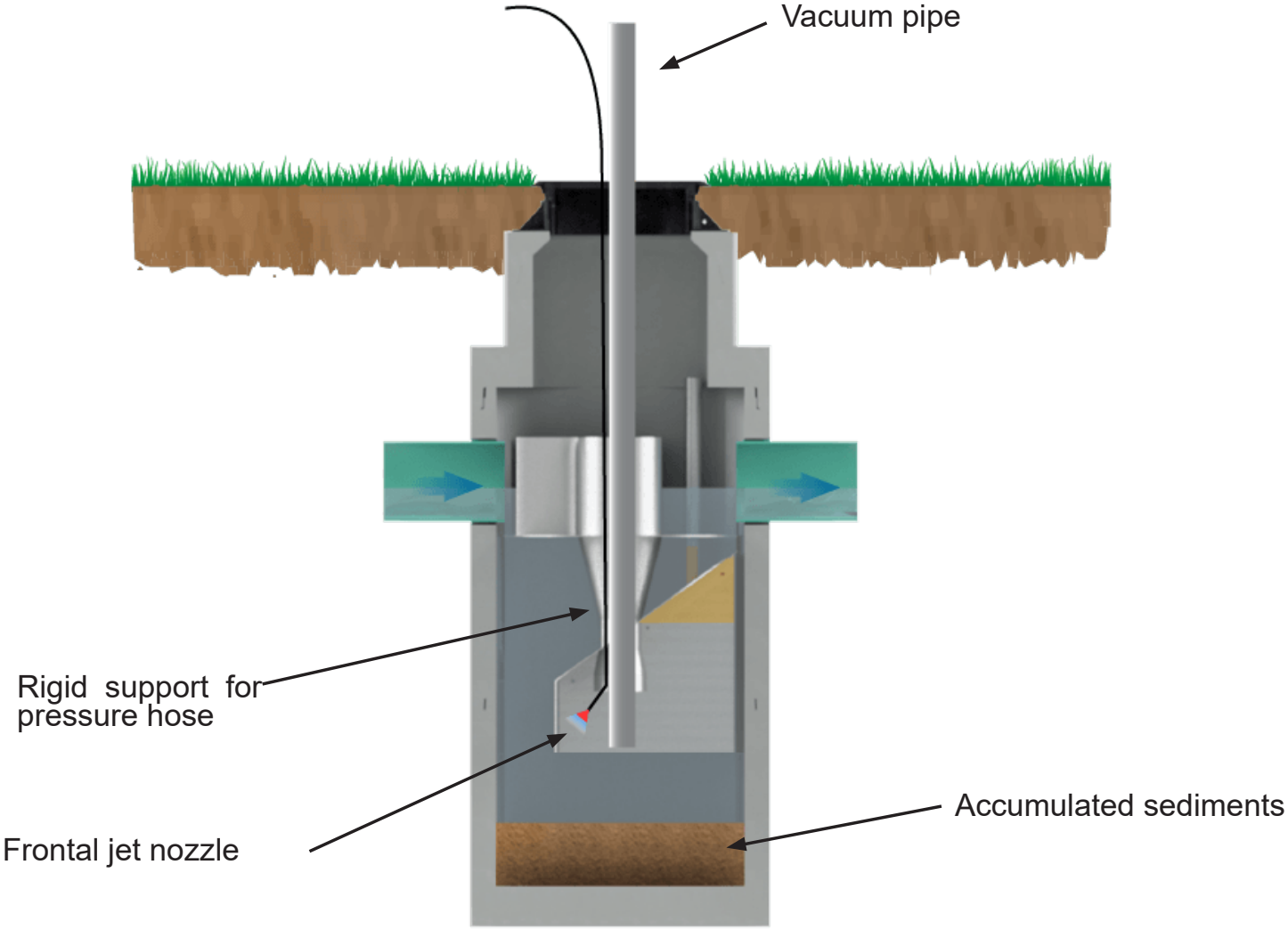
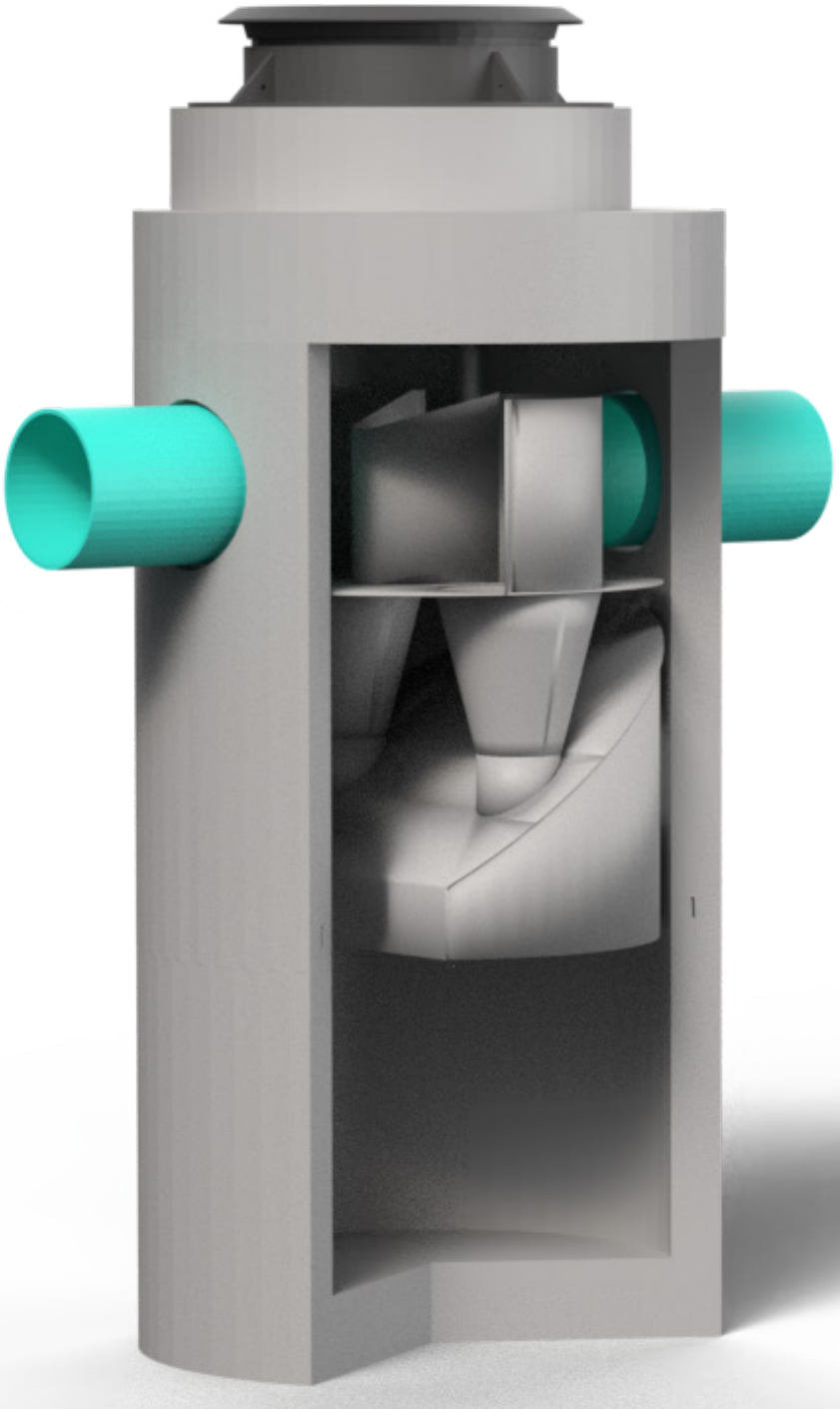


Figure 5: Sediment cleaning



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Appendix 1. SDD3 MAINTENANCE CRITERIA

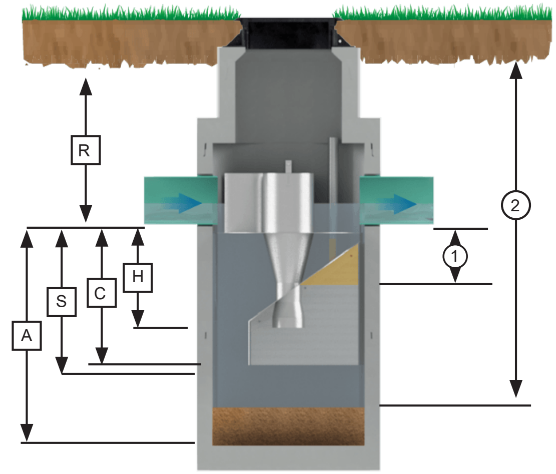
Parameter*		Unit	SDD3 900	SDD3 1200	SDD3 1500	SDD3 1600	SDD3 1800	SDD3 2100	SDD3 2400	SDD3 3000	SDD3 3200	SDD3 3600	SDD3 4000
A	Maximum height of the unit when cleaned	m	1.4	1.7	2	2.1	2.4	2.8	3.2	3.7	3.7	4	4
		ft	4.6	5.7	6.4	6.8	7.7	9.2	10.3	12.1	12.1	13	13
S	Sediment maintenance threshold (75% of storage capacity)	m	0.8	1.1	1.1	1.4	1.6	1.9	2.1	2.6	2.6	3	3
		ft	2.6	3.7	3.7	4.6	5.3	6.3	6.9	8.5	8.5	9.9	10
C	Maximum sediment height 100% of storage capacity	m	0.6	0.9	0.9	1.2	1.4	1.6	1.8	2.2	2.2	2.7	2.7
		ft	2	3	2.8	3.9	4.4	5.4	5.7	7.4	7.4	8.8	8.9
H	Max oil level	m	0.5	0.7	0.9	0.9	1	1.2	1.4	1.8	1.8	1.8	1.8
		ft	1.7	2.3	3.1	3.1	3.2	4	4.6	5.9	5.9	6	6
Max. diameter for cleaning equipment		m	0.4	0.6	0.8	0.8	0.9	0.9	1.1	1.1	1.1	1.1	1.1
		ft	1.2	2	2.5	2.5	3	3	3.4	3.4	3.4	3.4	3.4
Max oil volume		m^3	0.1	0.3	0.5	0.7	1	1.6	2.3	4.5	4.5	7.9	7.9
		gal	31.4	74.1	144.4	172	258.7	409.9	615.3	1200.2	1200.2	2080.3	2080.3
Maximum sediment volume		m^3	0.4	0.7	1.5	1.3	2	2.9	4.9	7.4	7.4	8.8	9.9
		ft^3	13.6	26.0	52.3	47	70.5	104.3	173.1	260.7	260.7	309.8	350.5

SDD SYSTEM INSPECTION

SDD Model ______________________________
Project name ______________________________
Project # Brunet ______________________________
City ______________________________
Unit location ______________________________
GPS coordinates ______________________________

Parameters	Dimension (m / ft)*
A Maximum height of the unit when cleaned (m/ft)	
S Sediment maintenance threshold (75% of storage capacity) (m/ft)	
C Maximum sediment height - 100% of storage capacity (m/ft)	
H Maximum oil level (m/ft)	
R Height of invert from top of pavinng (m/ft)	

*circle the chosen unit



		Oil			Sediment				
Date (MM/DD/YYYY)	Employers name	① Oil level m / ft*	Oil cleaning required YES if: ① > H	Oil cleaning done?	② Sediment height m / ft*	Sediment cleaning reqired YES if: ② < S	Sediment cleaning carried out?	System integrity Presence of breakage	Comments
			Yes / No	Yes / No		Yes / No	Yes / No	Yes / No	
			Yes / No	Yes / No		Yes / No	Yes / No	Yes / No	
			Yes / No	Yes / No		Yes / No	Yes / No	Yes / No	
			Yes / No	Yes / No		Yes / No	Yes / No	Yes / No	
			Yes / No	Yes / No		Yes / No	Yes / No	Yes / No	
			Yes / No	Yes / No		Yes / No	Yes / No	Yes / No	
			Yes / No	Yes / No		Yes / No	Yes / No	Yes / No	
			Yes / No	Yes / No		Yes / No	Yes / No	Yes / No	
			Yes / No	Yes / No		Yes / No	Yes / No	Yes / No	

*circle the chosen unit