

 Industry All Industries

Client	Confidential
Year	2019
Application	Stormwater & Runoff water
Solution	Down Defender; SRS; Hydraspin; Up-Flow filter



Synopsis

Aqua Horizon Technologies (AHT) was requested to propose a treatment solution to treat the storm water run-off for sediments and fine sediments along with floatables and oils. AHT and Hydro International (HI) proposed a 4-stage treatment system. AHT are the official distributors of the HI product range, and all contracts will be done with AHT.

Solution

AHT 4-stage treatment system solution:

Stage1 -Downstream Defender

The Downstream Defender targets floating objects, free oils, and particles down to 105 micron using Hydro’s advanced hydrodynamic vortex separator, Downstream Defender. This stage removes >80% of sediments of size 105 micron and larger also removing free oils from the incoming flow to the effluent quality of 100 ppm.



Figure 2: Downstream Defender installation

Stage 2 – Spill Recovery System

The 20 – 30 m3/h Spill Recovery System (SRS) will speed the recovered oil in the event of a spill (similar technology to the gravity-based separator) with the

capability of recovering 20 000 litre spill and removing 50% of the sediments and oil droplets.

Stage 3 – Hydraspin

The Hydraspin will pump the oily water tangentially into the hydrocyclone which initiates a spinning vortex. The spinning vortex is accelerated as it moves down the tapered hydrocyclone, separating the heavier water phase to the outside walls while the lighter oil phase moves to the centre. This removes 95% of emulsified oil between 10-15 microns.



Figure 1: Hydraspin System

Stage 4 – Up Flow filter

The Up Flow Filter targets fine sediment particles down to 20 microns. The Up-flow filter will be installed downstream of the Hydraspin system in concrete vaults. 80% removal of what is left, achieving 1 PPM.



Figure 3: Up-Flow Filter installation.