

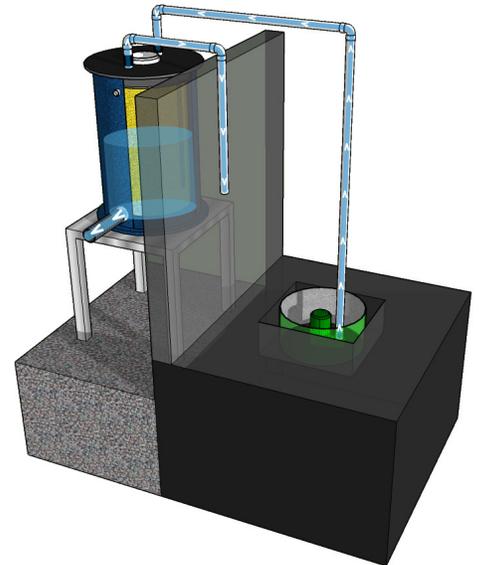


INSTALLATION GUIDE FOR VIPOR-100-SOWF SYSTEM

Operation and Maintenance

OPERATION

The VIPOR-100 SOWF (Sump Oil Water Filtration) is an automatic oil water filtration system that evacuates water from secondary containment vaults and sumps at a flow rate that can exceed 100 gallons per minute (gpm). Under normal conditions when water enters the vault, it flows to the low area of the sump pump and VSF (Vault Sump Filter) ring. The VSF ring filters large sediment in the water. As the water level rises, it activates the pump. The pump moves the water up the 2-inch PVC pipe to the VIPOR-100 SOWF. Inside the VIPOR-100 SOWF, small sediment (25 micron) is filtered by the 8-inch pre-filter before it enters the main chamber. The main chamber will remove hydrocarbons, and most volatile organic compounds, to a non-detectable level to meet federal SPCC mandates. The filtered water is released through gravity flow and into the surrounding ground area.



Should a major hydrocarbon release occur within the vault, the material within VIPOR-100-SOWF will bind to the hydrocarbons, solidify, and stop the flow of hydrocarbons into the environment.

BILL OF MATERIALS

- VIPOR-100-SOWF (C.I.Agent)
- Zoeller® M98 dewatering submersible pump (C.I.Agent)
- Floating pond heater (C.I.Agent)
- VSF (Vault Sump Filter) 24-inch pre-filter ring (C.I.Agent)
- 8- x 18-inch, 25-micron pre-filter sock (C.I.Agent)
- 2-inch schedule 40 PVC pipe. Amount will vary by location. Note: a 10- to 20-ft, 2-inch flexible hose is also an option (Supplied by contractor)

- 2-inch schedule 40 fittings – four, 45- & 90-degree elbows. Varies by location. (Supplied by contractor)
- 2-inch no-hub coupling (Supplied by contractor)
- PVC glue and cement (Supplied by contractor)
- PTFE tape (Supplied by contractor)
- 12-inch heavy-duty cable zip ties (Supplied by contractor)

INSTALLATION OVERVIEW

The VIPOR-100 SOWF requires a power source for the pump and sump water heater. There are three access ports on the top of the VIPOR-100; two require the attachment of 2-inch PVC pipe with rubber no-hub couplings. One is for the intake line from the sump pump to the VIPOR-100, and the second is a return overflow line back into the containment area in the event of an oil discharge shutting off the VIPOR-100, or a dirty pre-filter sock blinded with dirt.

The third is a 6-inch clean out access port for inspecting the pre-filter sock in the throat of the VIPOR-100 oil water filtration system and cleaning or replacing when dirt is present. There is a fourth port in the sidewall of the upper chamber to drain any standing water prior to removing the pre-filter sock for cleaning or replacement.

INSTALLATION GUIDE

The VIPOR-100-SOWF system requires site-specific installation adjustments or modifications. Sites vary in their design such as the position of the sump within the containment area, the depth of the containment sump, the height of the containment walls, etc.

TOOLS REQUIRED

- Reciprocating saw
- Drill
- Drill bit $\frac{3}{16}$ -inch
- Screw driver
- Nut driver

STEP BY STEP INSTALLATION PROCESS

1. Prepare a stable and level platform or base for the VIPOR-100 unit to set upon outside the containment wall.
2. Pump all standing water from the containment area and floor sump through a C.I.Agent Solutions EVAC filter bag to capture sheen.
3. Clean the floor sump until it is free of dirt, mud, scum, debris and trash. The immediate area where the pump is to be placed must be thoroughly cleaned to avoid clogging the pump intake and damaging the pump.
4. Cut a 2- to 3-foot length of 2-inch diameter PVC pipe.
 - a. Using the PVC primer and cement, attach the (1 ½- to 2-inch) male adaptor to pipe
 - b. Apply PTFE tape the threads of the adaptor and thread into the pump.
 - c. Drill a 3/16 -inch hole in the pipe slightly above the top of the pump as directed by the pump manufacturer.
(Tip – apply PTFE tape to all threaded PVC caps and plugs)
5. Position the pump in the floor sump.
 - a. The pump must be positioned 5- to 6-inches above the sump floor.
 - b. Use concrete pavers to elevate the pump within the sump, while keeping the bottom of the pump below the containment floor.
6. Attach the float assembly to the pipe so that the bottom of the float is slightly above the base of the pump body.
 - a. Adjust the float stop on the stem by sliding it up until it is about an inch below the top of the stem.
 - b. Attach a 2-inch rubber no-hub coupling to the top of the pipe.
 - c. Position the pump in the sump on the concrete pavers or blocks for stability.
7. Place the VSF filter ring around the pump so that the bottom of the pump is slightly above the bottom of the VSF ring.
8. Measure and cut length of 2-inch PVC pipe to go from the rubber no-hub coupling to the top of the containment wall. Using the elbows, continue to measure and cut lengths of pipe to plumb from the pump to the water intake rubber no-hub coupling on the top of the VIPOR. Note: flexible tubing may be used in lieu of PVC pipe.
 - a. Where applicable, use heavy-duty cable zip ties to secure pump in place.
 - b. If necessary, use cable zip ties to secure electrical cords.
9. Open the cleanout on the top of the VIPOR-100 to determine the intake side. The return pipe will have a visible strainer cap on the end inside the upper chamber. Apply PTFE tape to the threads of both the clean out cap and 2-inch drain cap.

10. Plumb the return pipe from the rubber no-hub coupling on the top of the VIPOR-100 back up and over the wall into the containment area. The return line should be directed away from the immediate area of the pump to prevent unwanted dirt from being washed into the sump and pumped into the VIPOR-100. Note: flexible tubing may be used.
11. Test the pump prior to making the final connection to the intake side of the VIPOR-100. Pump any remaining water within the sump pit over the wall into the yard to make sure all remaining dirt had cleared the sump.

MAINTENANCE

Maintenance schedule for the VIPOR-100-SOWF should be set up on a regular interval and/or after a significant rain event.

Note: The frequency of maintenance varies by job site, depending on how much dirt exists in the containment that can clog the pre-filter. Some sites require less frequent maintenance, and some after every rain event. The customer should check after the first few rain events. The amount of sediment caught in the pre-filter should give an indication of maintenance frequency.

1. Remove of the 6-inch clean out cap to inspect the condition of the pre-filter sock. Standing water in the upper chamber or in the pre-filter sock indicates that the pre-filter sock has been clogged by dirt and needs to be replaced.
2. Drain any standing water from the upper chamber through the drain port on the sidewall of the VIPOR-100 before removing the pre-filter sock.
3. Remove the dirty pre-filter sock and replace with a clean pre-filter sock. Soiled pre-filter socks can be cleaned by inverting them and back flushing with water for reuse.
4. Ensure the VSF is clear of any obstructive debris such as leaves, papers, or other materials that could clog the system.