



PO Box 1279  
Goldsboro, NC 27533  
[www.gitank.com](http://www.gitank.com)

Phone: (919) 751-1791  
Fax: (919) 751-8186  
email:tanks@gitank.com

## General AquaSweep Separator Specifications

Provide and install \_\_\_\_\_ General Industries, Inc. Model \_\_\_\_\_ parallel corrugated plate gravity displacement Oil Water Separator(s) shall be \_\_\_\_\_, having a total volume of \_\_\_\_\_ gallons.

### 1.0 Application

The separator shall be designed for gravity separation of free oils (hydrocarbons and other petroleum products) along with some settleable solids from wastewater. The source of the influent to the separator shall be gravity flow from stormwater runoff and spills.

These oil water separators will not separate emulsified products, soaps, or other non-specified hydrocarbons.

### 2.0 Performance

#### 2.1 Influent Characteristics

Provide oil/water separator designed for intermittent and variable flows of water, oil, or any combination of non-emulsified oil/water mixtures ranging from zero to the value indicated as a maximum flow rate as scheduled on drawings. Operating temperatures of the influent oil in water mixture shall range from 32°F to 95°F. The specific gravity of the oils at operating temperatures shall range from 0.83 to 0.94 and the petroleum hydrocarbon concentration less than or equal to 200,000 mg/l (20%). The specific gravity of the fresh water at operating temperatures shall range from 1.00 to 1.03.

#### 2.2 Effluent Characteristics

The free oil and grease concentration in the effluent from the oil/water separator shall not exceed \_\_\_\_\_ (5ppm or 10ppm).

To achieve this goal, it will be necessary to remove all free oil droplets equal to and greater than 20 microns.

### 3.0 Design and Construction Criteria

3.1 The oil/water separator shall be designed in accordance with Stokes Law and the American Petroleum Institute Publication 421, "Monographs on Refinery Environmental Control - Management of Water Discharges, Design and Operation of Oil/Water Separators".

3.2 The oil/water separator capacities, dimensions, construction, and thickness shall be in strict accordance with Underwriters Laboratories; Subject UL-58 Standard for Safety, UL-1746 External Corrosion Protection System, UL-2215 Standard for Steel Underground Tanks for Flammable and Combustible Liquids.

3.3 The oil/water separator corrosion control system shall be in strict accordance with STI-P3, ACT-100, ACT-100-U or PERMATANK® specifications as applied by a licensee of the Steel Tank Institute. Manufacturer must be a licensee of Steel Tank Institute. Aboveground applications coated to environmental conditions as needed.

3.4 The oil/water separator shall comply with National Fire Protection Association NFPA 30 Flammable and Combustible Liquids Code, 1996 Edition.

3.5 The oil/water separator shall be the standard patented product of a steel tank manufacturer regularly engaged in the production of such equipment. No subcontracting of tank fabrication shall be permitted. Manufacturer shall have at least (5) years experience in manufacturing similar units for identical applications.

3.6 The oil/water separator shall be fabricated, inspected and tested for leakage before shipment from the factory by manufacturer as a completely assembled vessel ready for installation. Inspection and test reports shall be supplied to customer on manufacturer letterhead.

3.7 The oil/water separator shall be cylindrical, horizontal, atmospheric-type steel vessel with flat-flanged heads, intended for the separation and storage of flammable and combustible liquids. The separator shall have the structural strength to withstand static and dynamic hydraulic loading while empty and during operating conditions.

3.8 The oil/water separator shall have an oil storage capacity equal to about 43% of the total vessel volume and an emergency oil spill capacity equal to 80% of the total vessel volume.

3.9 Each oil/water separator shall consist of inlet and outlet connections, non-clogging flow distributor and energy dissipater device, stationary under

flow baffle, presettling chamber for solids, sludge baffle, oil coalescing chamber with a parallel corrugated steel plate coalescer (with removable plates or pack) and to achieve a 10ppm requirement, a sectionalized removable polypropylene impingement coalescer to optimize separation of free oil from water, effluent downcomer positioned to prevent discharge of free oil that has been separated from water, access for each chamber, fittings for vent, oil pump-out, sampling, gauging, leak detection, and lifting lugs.

3.10 Flow through the plate coalescer shall be cross-flow, perpendicular to plate corrugations. The corrugated plates shall be of protected steel construction. The minimum plate gap spacing shall be 3/4 inches. Plastic plate or vertical tube type coalescers are not equal and are not permissible.  
NOTE: Plate spacing and orientation may vary depending on site conditions.

3.11 Separator shall be a pre-packaged, pre-engineered, ready to install unit consisting of:

3.12 An influent connection \_\_\_\_\_ inch, flanged.

3.13 An internal influent nozzle at the inlet end of the separator located at the furthest diagonal point from the effluent discharge opening.

3.14 A velocity head diffusion baffle at the inlet to:

- reduce horizontal velocity and flow turbulence.
- distribute the flow equally over the separator's cross-sectional area.
- direct the flow in a serpentine path in order to enhance hydraulic characteristics and fully utilize all separator volume.
- completely isolate all inlet turbulence from the separation chamber.

3.15 A sediment chamber to disperse flow and collect oily solids and sediments.

3.16 A sludge baffle to retain settleable solids and sediment and prevent them from entering the separation chamber.

3.17 An internal effluent downcomer at the outlet end of the separator, to allow for discharge from the bottom of the separation chamber only.

3.18 An effluent connection \_\_\_\_\_ inch, flanged.

3.19 Fittings for vent, interface/level sensor, leak detection, oil pump-out, sampling, and gauge.

3.20 Manholes (18" or 24" dia.), U.L. approved, complete with \_\_\_\_\_" extensions, covers, gaskets, and bolts are provided as needed.

3.21 Lifting lugs at balancing points for handling and installation.

3.22 Corrosion Protection System consisting of:

- STI-P3, ACT-100, ACT-100-U or PERMATANK® construction and labels
- Isolation Spool Pieces
- Dielectric Isolation Gaskets and Bushings
- External surfaces coated with appropriate protective coating.

#### 4.0 Submittals:

4.1 Shop drawings for oil/water separators shall show principal dimensions and location of all fittings.

4.2 API design calculations are verified for required effective surface area and design in compliance with American Petroleum Institute 421, "Monographs on Refinery Environmental Control - Management of Water Discharges, Design and Operation of Oil/Water Separators".

4.3 Anchorage and buoyancy calculations are verified for burial depth, buoyancy and anchorage. Calculations to be based on site specific information as furnished by contract specifications.

4.4 Manufacturer shall submit factory DIN 1999 test data and representative independent certified field test reports to verify performance.

4.5 Instructions for installation, operation, and maintenance. Manufacturer shall supply three (3) sets with the separator.

4.6 Quality control and inspection procedures and reports shall be considered part of the submittal package.

#### 5.0 Warranty

5.1 The manufacturer shall warrant its products to be free from defects in material and workmanship for a period of one year from the date of shipment. The warranty shall be limited to repair or replacement of the defective part(s).

5.2 Thirty (30) year Warranty. Refer to STI-P3, ACT-100, ACT-100-U or PERMATANK® Limited Warranty for details.

#### 6.0 Accessories and Options

6.1 Separator can be furnished with an audible and visual alarm system which indicates hi oil (visual only) and hi-hi oil level (audible and visual) of oil storage in the oil/water separator. An audible and visual leak detection alarm

system, which indicates hydrocarbon and/or water in the interstice, shall be provided. A silence control shall be provided for the audible alarm. Level sensors to be intrinsically safe. Level sensors to be made of stainless steel. Control panel shall be in NEMA 4. Power to the control panel is to be [ ] volt, [ ] phase.

6.2 Separator can be furnished with \_\_\_\_\_ steel hold-down straps with dielectric liners and turnbuckles.