OIL WATER SEPARATOR FLAT BOTTOM

Coalescing Media Design

United International
HYDRO TECHNOLOGIES

MADE IN U.S.A.

Features:

✓A-36 carbon steel

✓Adjustable water weir

✓Integral oil reservoir

✓Influent diffuser

✓Expandable effluent chamber

✓Sealed/gasketed covers

✓Internal/external epoxy coatings

✓Lifting lugs

✓Flat Bottom

✓Skid mounted

✓Multi-section cover

Typical Applications:

✓Groundwater remediation

✓Mobile separation system

✓DAF/Clarifier pretreatment

✓Power plant water treatment

✓Refinery process water

✓Aircraft wash racks

✓Machining coolant oil removal

✓Tank farm tank bottoms

✓Vehicle washwater treatment

✓R.O. Filter pre-treatment

✓Oil spill recovery

✓Trench water treatment

✓Bilge water treatment

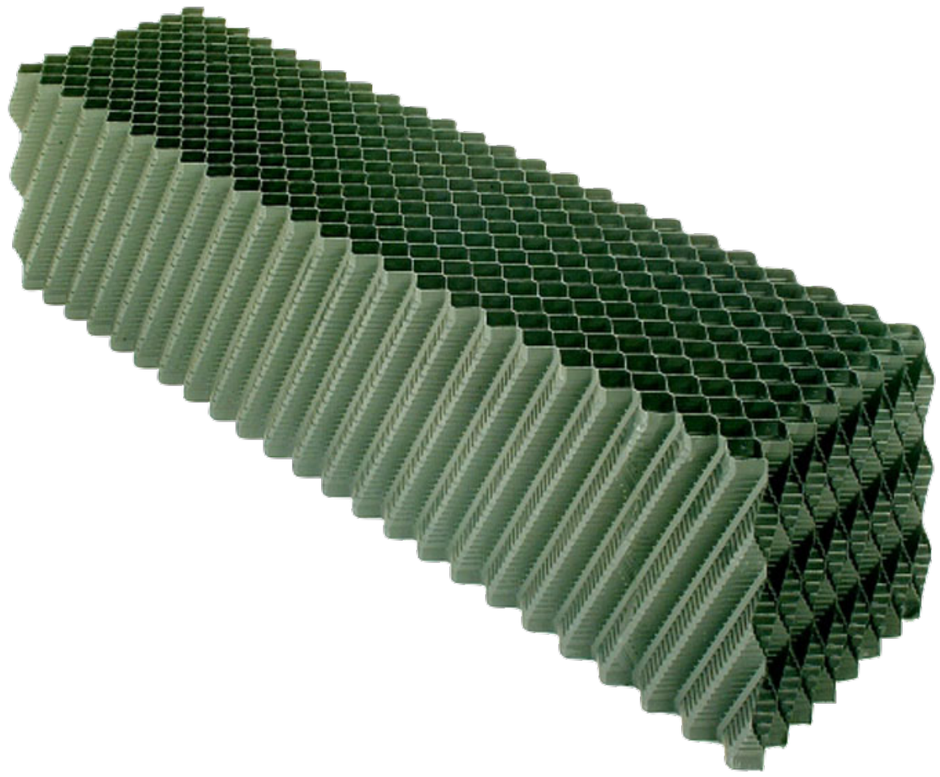
Coalescing Separation

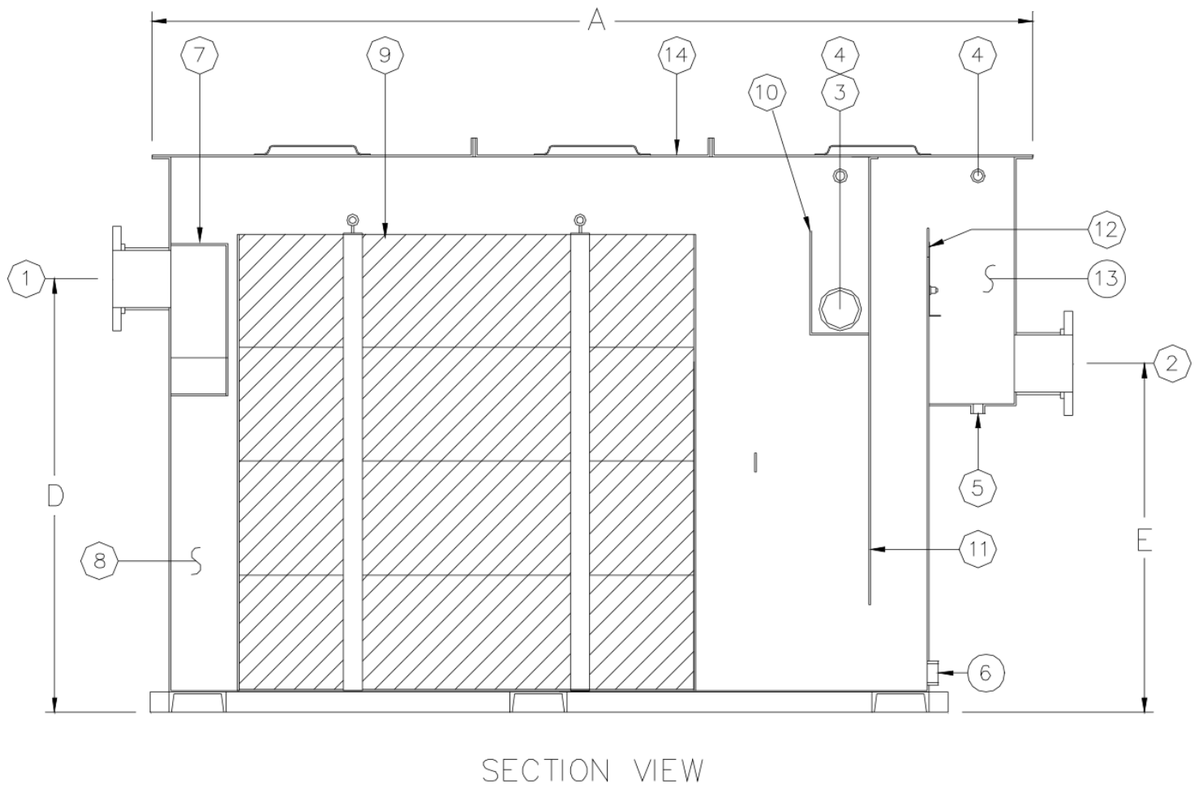
Features:

The separator separates via coalescing action and the density differential of liquids per Stokes Law, which defines the rise rate of an oil droplet based on its density and size. Typically, the difference between the specific gravity of the oil and water is much closer than the specific gravity of the suspended solids and water. Therefore, the design of the separator is based on the difference in the specific gravity of the oil to be separated and the wastewater.

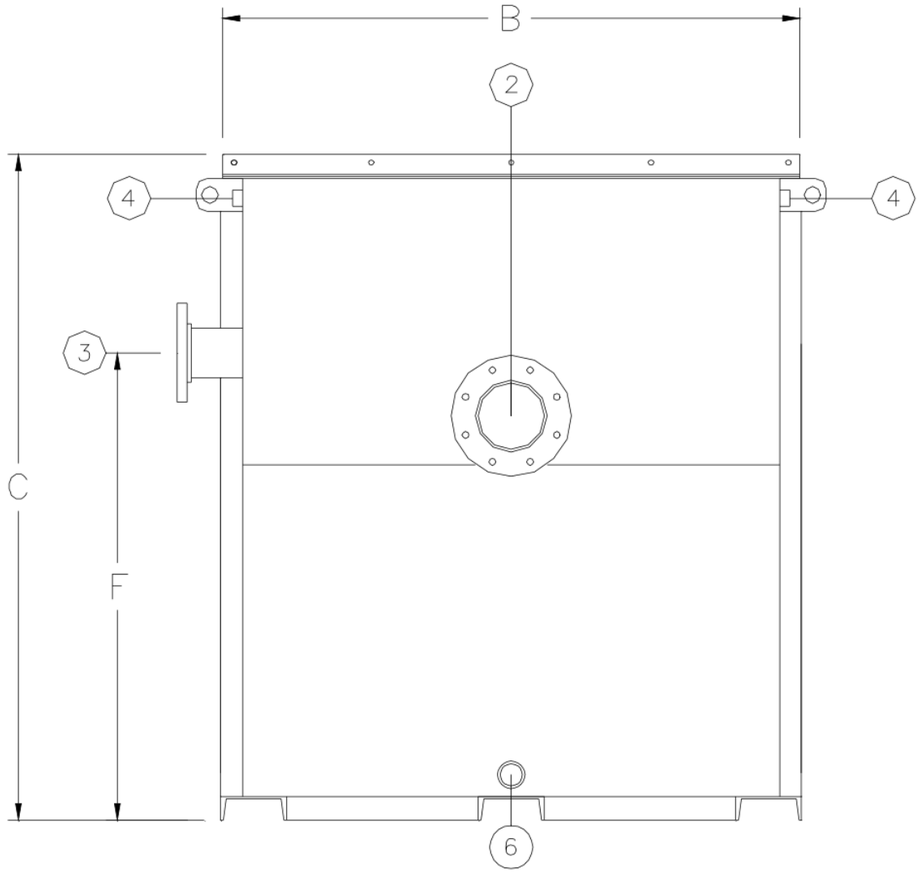
Products Separated:

Motor oils, fuels (vehicle/jet), fuel oils, hydraulic fluids, immiscible machining oils, lube oil, transmission fluid, bunker C, DNAPL, LNAPL, vegetable based oils, crude, air compressor lube & other hydrocarbon based derivatives (BTEX etc.) Model sizing is based on the oil/fuel specific gravity, droplet size removal desired and other parameters of the waste stream.





SECTION VIEW



EFFLUENT END VIEW

Item	Description	Item	Description	Item	Description	Item	Description	Item	Description
1	Inlet	4	Vent	7	Inlet diffuser	10	Skimmer/Reserv	13	Effluent Chamber
2	Outlet	5	Drain	8	Influent Chamber	11	Oil Baffle	14	Cover
3	Oil Outlet	6	Drain	9	Coalescing Media	12			

Coalescing Oil Water Separators

Coalescing Oil Water Separators are passive, physical separation systems designed for removal of oils, fuels, hydraulic fluids, LNAPL and DNAPL products from water. Designed performance can be described by a combination of Stokes Law and current coalescing plate theory, wherein, the oil droplet rise rate and other parameters dictate the surface area required for gravity & coalescent separation.

Stokes Law

This equation relates the terminal settling or rise velocity of a smooth, rigid sphere in a viscous fluid of known density and viscosity to the diameter of the sphere when subjected to a known force field (gravity). The equation is:

$$V = \frac{(2gr^2)(d1 - d2)}{9\mu}$$

V: Velocity of rise (cm/ sec)

g: Acceleration of gravity (cm/ sec2)

r: Equivalent radius of particle (cm)

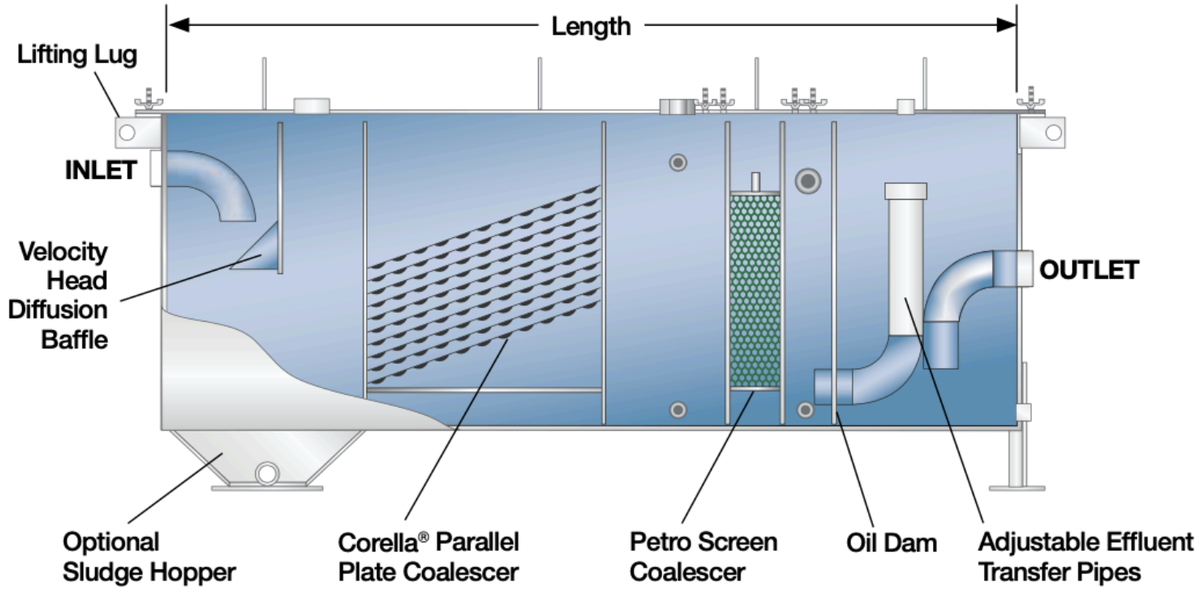
d1: Density of particle (g/ cm3)

d2: Density of medium (g/ cm3)

μ: Dynamic viscosity of medium (N.s/ cm2).

Coalescing Media Design

Coalescing media provides a laminar flow path that creates a quiescent zone to facilitate the impact with and attachment of oils to the media surface by reducing waste stream turbulence and velocity. This control of the waste stream creates a more ideal environment for oil removal. By virtue of media design, solids will also collide with the media and settle to the separator bottom to some degree. Due to oil typically being lighter than water, they (oil) will rise up the coalescing plate. As the oil droplets rise up the plate they will coalesce or come together with other droplets, creating progressively larger droplets. Once the droplet size is sufficient or the droplet reaches the top of the media plate the droplet pulls away from the plate and rises to the water surface.



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