SEPARATORS THAT WORK!

TEST SHOW:
To Get 15PPM You Must Remove Essentially All Of The Particles 60 Microns And Larger.

How Much Retention Time Does This Take?

You Need To Raise An Oil Particle At Least 1 Foot So It Does Not Get Sucked Out The Discharge Pipe!

SO:
Stokes' Law States: Vr=g(Pw-Pw)x(DxD) / 18u

Where:
Vr = Rate of Rise of a Particle
g = Acceleration caused by Gravity (981 cm/sec)
Pw = Specific Gravity of Water
Po = Specific Gravity of Oil
D = Diameter of Oil Particle
u = Viscosity of Water at 40 degrees F.

Assume: **.90 for Specific Gravity of Oil and 1.0 for Water.**
(60 Micron Particle of Oil is .006 cm)

Then: **Vr = 981 x (1 - .90) x (.006 x .006) / (18 x .0153) = .013 cm/sec**
.013/2.54 = .005 in/sec x 60 sec / 12 in = .0256 feet/min

Amount of Time to Raise a 60 Micron Particle 1 foot is: 1/.0256 = 39 minutes*
***This is without plates**

A considerable portion of separation and coalescence occurs on the corrugated entrance plate of the AquaClean™ separator. Also, the parellel plate pack causes the particles to rise 4+ times faster.

If you double the diameter of an oil particle, it will rise 4x times faster!

What Does This Mean?

If your plates are not at the furthest point towards the inlet, you cannot get 10 minute throughputs!

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HOW A 10 PPM SEPARATOR WORKS:

To get 10PPM you must remove essentially all of the particles 20 microns and larger.

How do you do this?

You need to use a Coalescer to capture these very small oil particles, so they do not get sucked out the discharge pipe!

How does a Coalescer do this?

The Coalescer is constructed using materials that attract oil and repel water. As the small oil particles come in contact with the Coalescer, they attach to it and wick their way to the top. Additionally, the particles collide with each other and get bigger causing them to rise much quicker.

Where Should The Coalescer Be Located?

The Coalescer should be as close to the outlet end of the separator as possible and as far away from any parallel plates as possible. This will limit the Coalescer to capturing the minimum amount of oil needed to get the desired effluent rating.

If The Coalescer is too close to the parallel plates, it will get clogged and become a flow restricter or get ripped out of it's frame, creating a maintenance problem!

The AquaClean™ Coalescer is a "One-Piece" unit that can be removed from grade without the need of:

1. **Dismantling**
2. **De-watering**
3. **Confined space entry**

This can save hundreds or thousands of dollars per event.
This feature combined with the parallel plates being at the front of the units is a "Major Plus" in analyzing the ease of maintenance and future maintenance costs.