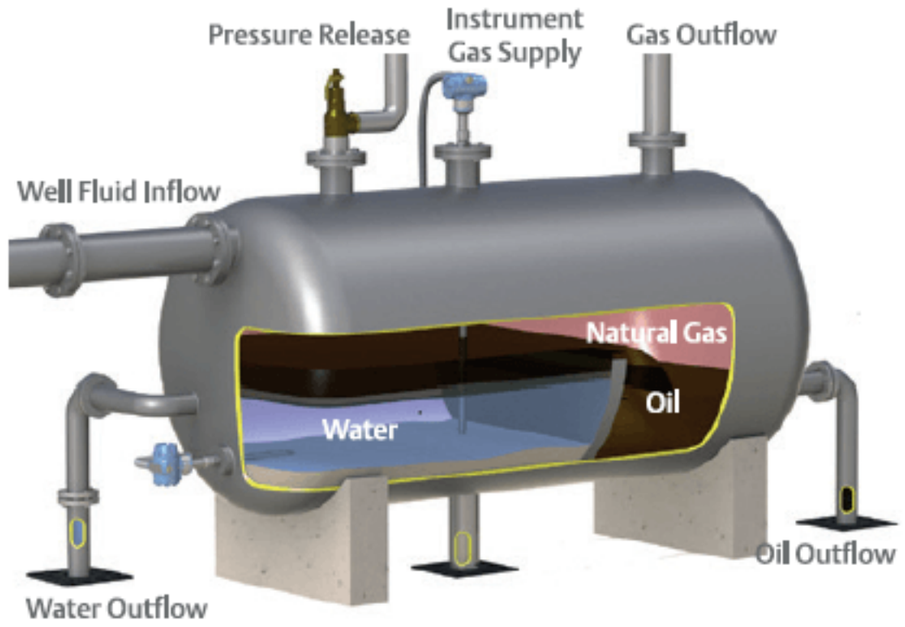
OIL SKIM TANKS

UNDERGROUND OIL/WATER SEPARATORS

SKIM VESSELS

Generally, skim vessels are very close in design and performance to API separators. The main addition to the design of the skim vessels is a presence of the devices that help promoting the coalescence, enhancing oil droplet separation from the main flow, and reducing the short-circuiting. Inlet spreaders, baffle plates, and outlet collectors are the examples of such additional devices. The main utilization of the skim vessels is the primary treatment of low-pressure effluent water with high oil concentration and solid contaminants. These vessels are not commonly used in offshore applications due to size and weight limitations, and the negative effect of platform movement on the separation.



OUR EXPERIENCE

BASIIA CONTRACTING offers customized Skim Tank packages for the reduction of oil and gas in produced water. BASIIA CONTRACTING maintains project management and quality assurance standards that are in compliance with the requirements of the leading oil and petrochemical companies across the globe.

BASIIA CONTRACTING optimized process design and comprehensive project management can produce a cost-effective package.

OUR TECHNOLOGIES

Skim tank internals are selected by in-house design models supported by Computational Fluid Dynamic (CFD) modeling to optimize oil/ water/gas separation. The internals can be designed to cover a wide range of inlet specifications to accommodate fluctuating oil, gas, and suspended solids concentrations and can be installed into existing tanks.

DESIGN FEATURES

As the produced water is often sour, enclosed gas blanketed tanks are used.

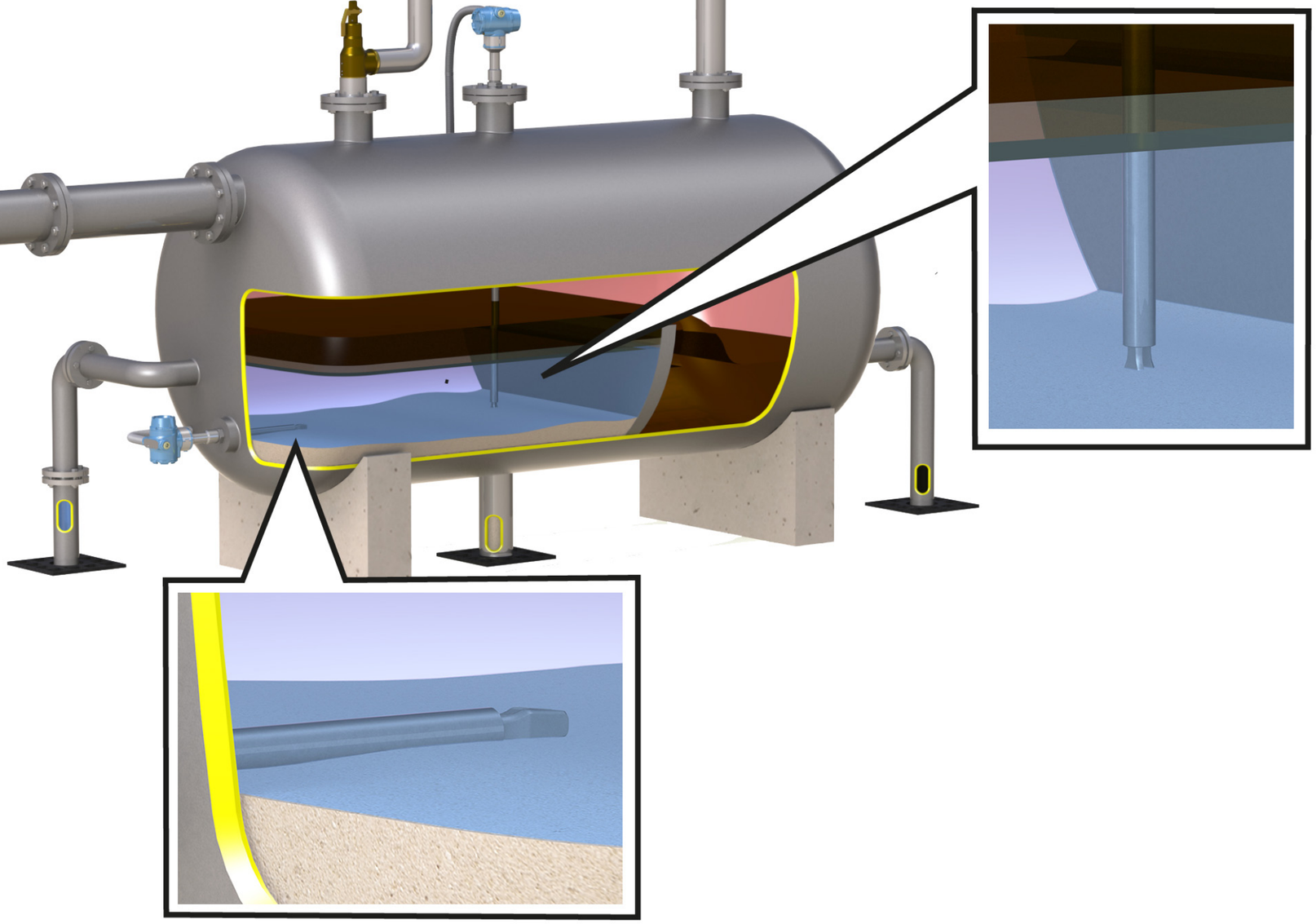
Gases are separated in a central stilling well to prevent excessive turbulence in the oil separation zone.

The design allows for the separation of higher density sludges through a flushing system at the base of the stilling well.

The internals can be retro-fitted into existing tanks.

A floating oil skimmer or tank weir can be used for removal of the separated oil layer.

PARAMETER	PERFORMANCE BC-200 MODEL
Stokes' Law	✓
ASTM D-4201	✓
UL 1316	✓
API 421	✓
USCG 46CFR 162.050	✓
15 PPM	✓
10 PPM	✓
UL 2215	✓
Intermittent Flow	✓
Continuous Flow	✓



SKIM TANK SCHEMATIC

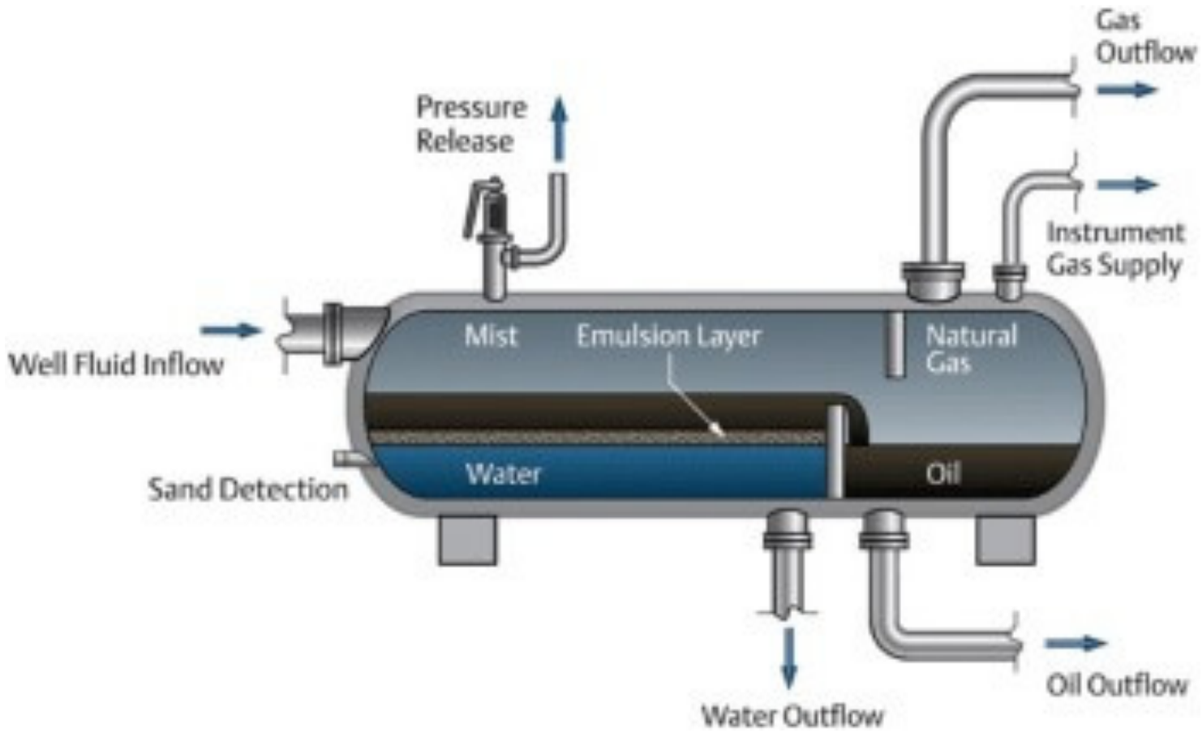
BASIIA CONTRACTING engineers are closely involved in all aspects of your project starting with process evaluation, integration and optimization, followed by detailed process and mechanical engineering, E&I and design through complete fabrication, assembly, inspection, testing, and commissioning as well as post-commissioning operations service.

OIL/ WATER SEPARATORS

UNDERGROUND OIL/ WATER SEPARATORS

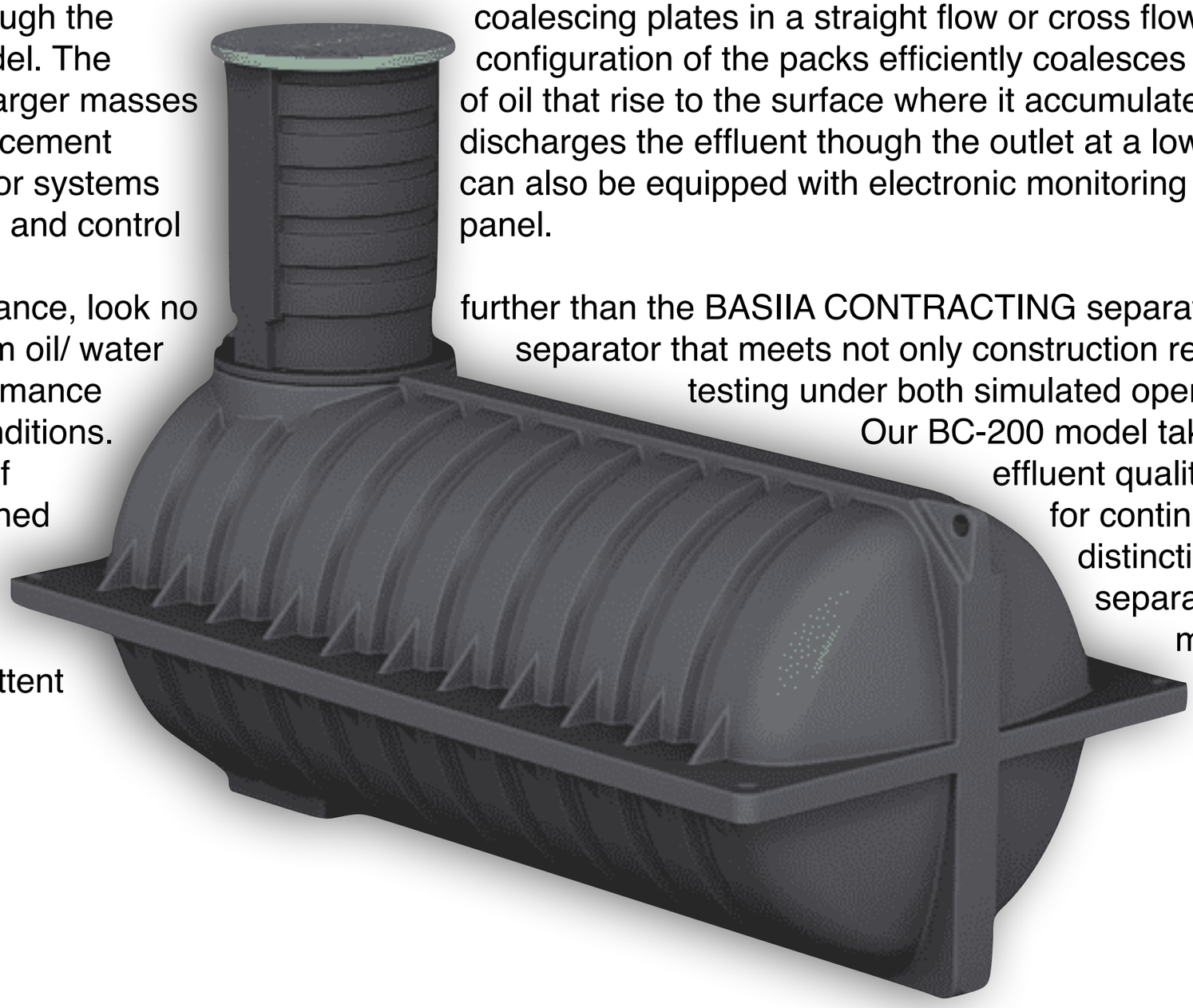
BASIIA CONTRACTING provides a full range of dependable products for the oil/ water separator industry. Our underground separators utilize the same manufacturing technology the petroleum industry relies on for environmental protection.

BASIIA CONTRACTING separators are constructed to remove hydrocarbons with a specific gravity up to 0.95 through the use of an enhanced oleophilic coalescer pack system. Oil/ water separator designs vary based on required effluent quality and flow rates. An effluent quality of 10 parts per million (10 ppm) is typical but the difference between continuous flow and intermittent flow will drastically alter the coalescer pack sequence. BASIIA CONTRACTING provides several options in both single and double-wall construction to meet your unique needs.



SYSTEM PROCESS

BASIIA CONTRACTING separators are buried and filled with water. Each separator includes a combination of baffles and coalescer packs, based on effluent requirements, to accelerate separation. Waste water enters through the inlet and gravity naturally settles heavier solids to the bottom of the tank as the oil floats to the top of the water level. The oily water then passes through the coalescing plates in a straight flow or cross flow direction depending on the tank model. The configuration of the packs efficiently coalesces or joins oil droplets together forming larger masses of oil that rise to the surface where it accumulates and can be removed. Gravity displacement discharges the effluent though the outlet at a lower point in the tank chamber. Separator systems can also be equipped with electronic monitoring with high oil level alarms, oil stop valve, and control panel.



For the ultimate in performance, look no further than the BASIIA CONTRACTING separator. The BC-200 model is a premium oil/ water separator that meets not only construction requirements, but has unparalleled performance testing under both simulated operating conditions and working conditions. Our BC-200 model takes separators to a new level of effluent quality. The BC-200 systems are designed for continuous flow, which is a significant distinction when comparing oil/ water separator products. Most products on the market are only engineered for intermittent flow.

PERFORMANCE ADVANTAGES

- Fiberglass, Epoxy Coated CS, or Stainless Steel construction provides corrosion resistance without coatings or protection systems.
- Enhanced coalescer system is comprised of oleophilic plates to maximize separation and minimize maintenance.
- Removable plates simplifies routine cleaning.
- All tanks are built to the stringent performance requirements of UL 1316 for FRP and Other UL standards for CS/ Stainless Steel
- Removes free floating oils and settleable solids for oil/water mixtures to achieve 10ppm effluent quality (or 15 ppm if specified).
- Includes a 30-year internal/ external corrosion and structural warranty.

SEPARATOR DESIGN & SIZING

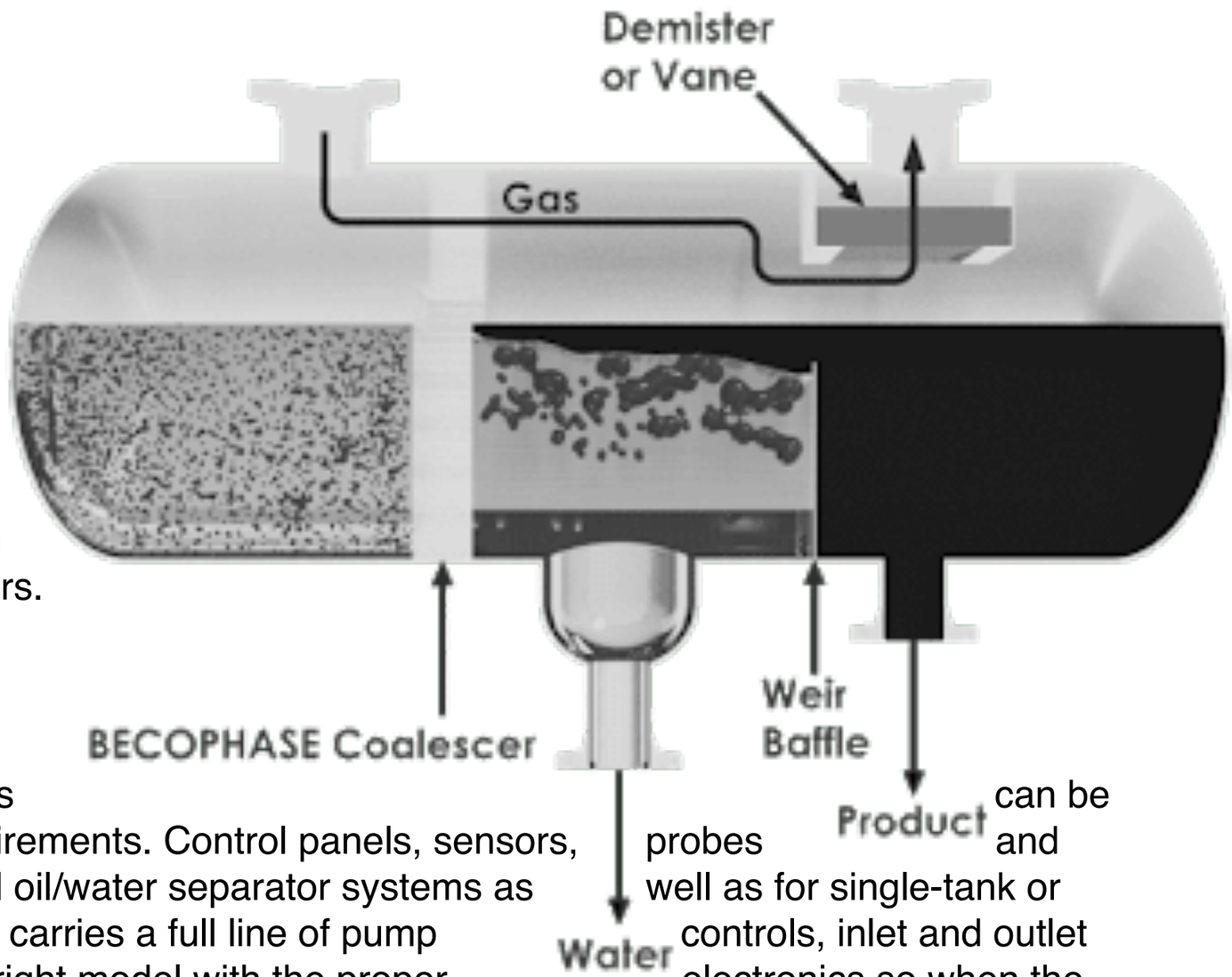
Since each site is unique, the most effective approach is to analyze each situation and design the system accordingly. BASIIA CONTRACTING engineering staff can help determine the best fit for your technical considerations and site specific needs:

• Inlet flow rates	• Inlet/ Outlet Concentration
• Effluent Quality	• Specific Gravity of Contaminants

BC-200 separators are sized primarily on flow rates. A complete list of flow rate plate pack options are available, contact your BASIIA CONTRACTING representative for more information.

INTERCEPTORS

In addition to separators, interceptors are available in single, double, and triple basin designs. BASIIA CONTRACTING interceptors reduce sand, settleable materials, and oil or grease prior to sewer discharge. BASIIA CONTRACTING interceptors can be used as stand alone units or as the initial stage of a more efficient treatment system utilizing BASIIA CONTRACTING oil/ water separators.



ELECTRONICS

Oil/ Water Separator monitoring and control systems can be configured to satisfy a wide range of customer requirements. Control panels, sensors, probes and gauges are available for double-wall and single-wall oil/water separator systems as well as for single-tank or multiple-tank installations. BASIIA CONTRACTING carries a full line of pump controls, inlet and outlet pumps, and waste oil pumps. We can package the right model with the proper electronics so when the tank arrives the only thing left to do is connect the piping.

APPLICATION: RAINWATER RUNOFF

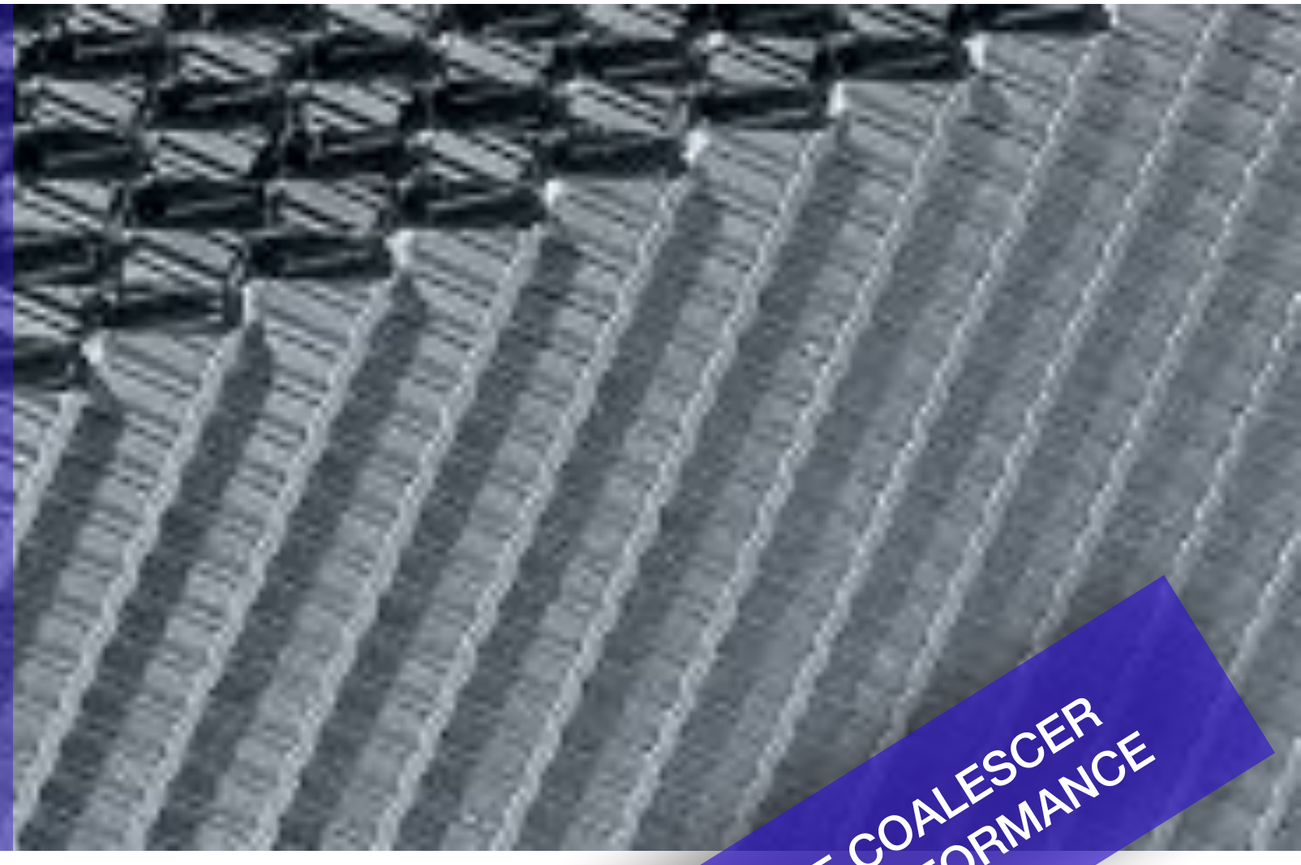
Oil drippings and spills from parking lots, driveways, oil terminals and other vehicular traffic surfaces are being washed into our water supplies by rainwater, creating serious environmental concerns.

BASIIA CONTRACTING Oil/ Water Separators are designed to meet EPA and local guidelines for rainwater runoff control.

TYPICAL FEATURES

- Double-Wall Separator
- Manway Extension
- Hydrostatic Reservoir
- Tank Sump
- Cross flow Baffle
- Coalescer Plate Packs
- Oil Stop Valve
- Anchor Straps
- Deadman Anchor System

The unique cross flow design of the BC-200 model results in the most efficient use of the corrugated plate pack.



UNDERGROUND STORAGE TANKS

PLATE COALESCER

This type of equipment uses gravity separation similar to the skim vessels, but in addition it promotes the coalescence of oil droplets. Bigger droplets flow faster to the phase interface. These devices resemble skim vessels retrofitted with the plate interceptors. Corrugated plate interceptors (CPI) and cross-flow devices are the most effective plate coalescer that are able to separate oil droplets down to sizes of 30-50 µm. The main difference between CPI and cross-flow devices is that the plate axes of the corrugations are parallel to the direction of flow in CPI and are perpendicular in the cross-flow devices.

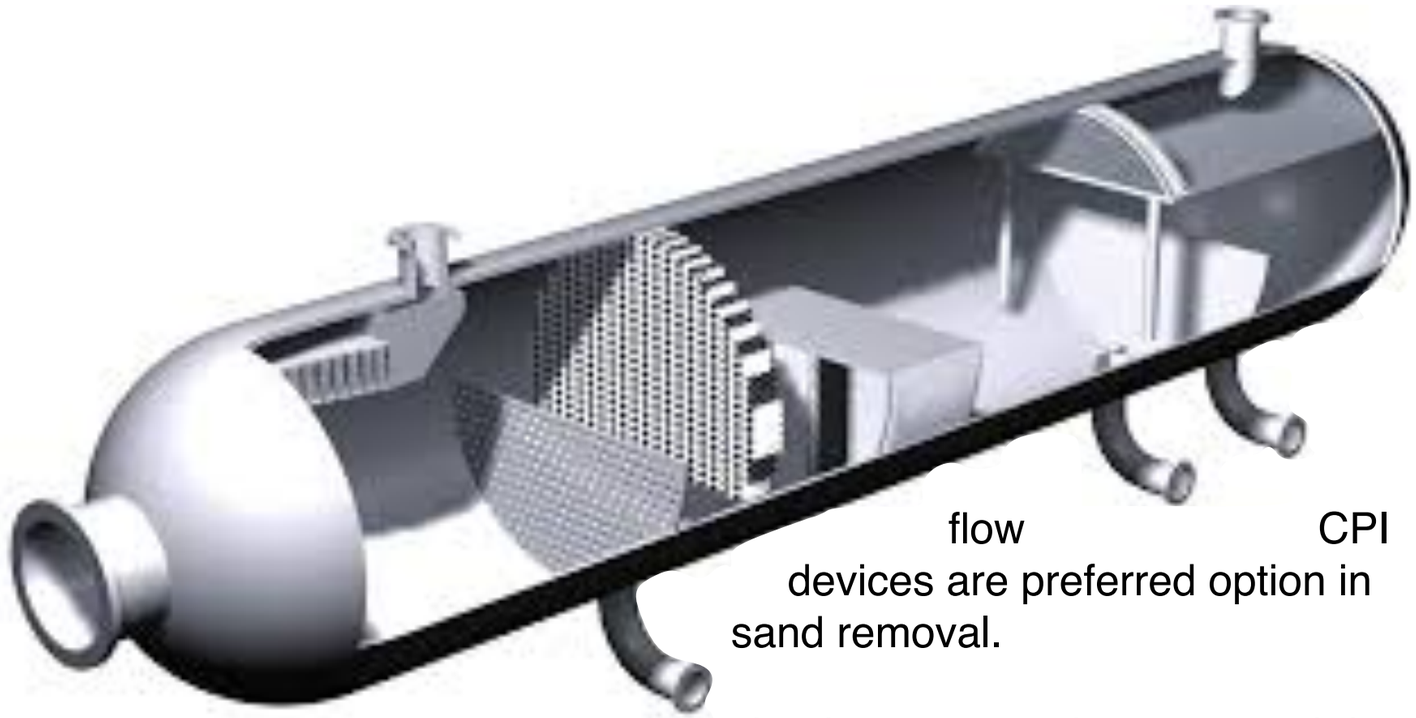


Plate packs are usually oriented at certain angle to the surface. The flow direction of produced water through the inclined plate interceptors can be either up-flow or down-flow. Down-flow CPI may experience issues with sand plugging if sediment production is anticipated. To negate the effect of sand production up-flow CPI configuration can be used. Cross-flow devices are preferred option in pressurized vessels in addition to effective sand removal.

The plate coalescer are simple devices that have no moving parts and do not require power. Steady flow rates with oil concentrations up to 3000 ppm and limited amount of solids are the favorable operation conditions. Emulsified flow streams and oil droplets below 30 µm significantly reduce the efficiency of this equipment type.

Applications with smaller droplets that settle very slowly or not at all present a significant challenge. Solutions focus on increasing the size of the droplets so they will quickly separate by gravity settling to minimize vessel length.

BASIIA CONTRACTING liquid-liquid coalescer consist of mixtures of metal and non-metallic wires and fibers and are engineered for the properties of the specific chemicals involved. The internal geometry promotes growth of the droplet size and maximizes liquid throughput velocities for minimum vessel diameters.

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