PAN AMERICA ENVIRONMENTAL, INC.

- Wash Water Recycling and Treatment Systems
- Replacement Parts • Accessories • Detergent

VEW

Vehicle Equipment Wash Water Treatment & Recycling Systems

2024 Treatment Systems Catalog



Leaders in Water Treatment Systems Since 1991

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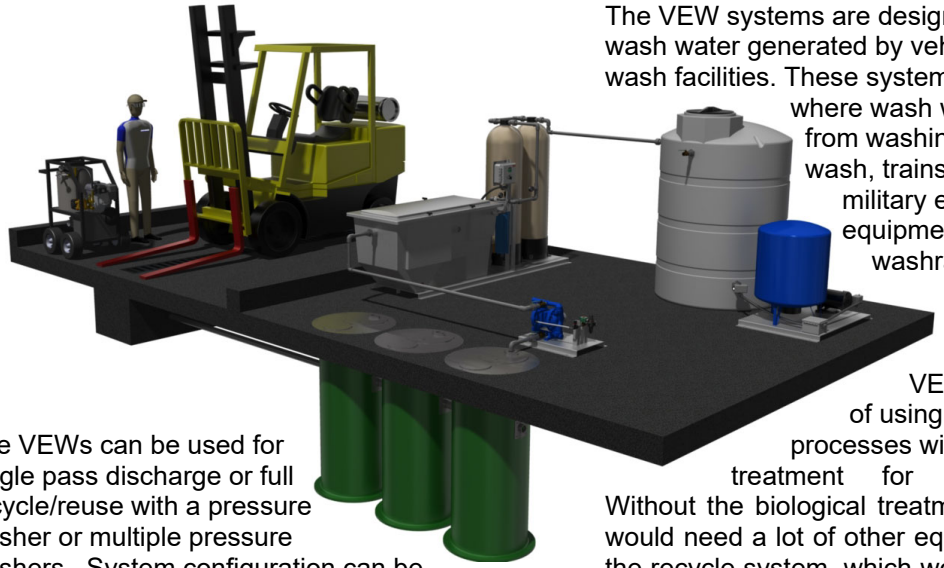
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VEW

Vehicle Equipment Wash Water Treatment & Recycling Systems

The VEW treatment system is a family of modular systems that can be mixed and matched to tailor the system design to your facility needs and create a complete solution for your wash facility.



The VEWs can be used for single pass discharge or full recycle/reuse with a pressure washer or multiple pressure washers. System configuration can be customized depending on the project needs. The VEW systems are designed to remove oils, fuels, metals, suspended solids, organics and other contaminants.

Options can be provided to complete the system design, such as GAC filtration, bag or sand filtration, chemical treatment, pH adjustment, metals precipitation/filtration and any of the technologies in our product lineup.

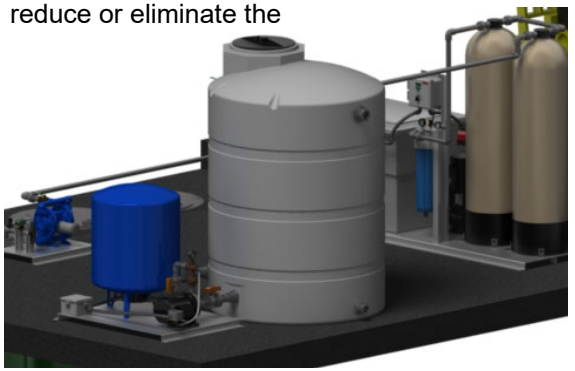
Customization & modifications to fit your project needs are possible through the many options we offer.

The VEW systems are designed for treatment of wash water generated by vehicle and equipment wash facilities. These systems can be used where wash water is generated from washing cars, trucks, tank wash, trains, aircraft, watercraft, military equipment, heavy-equipment, forklifts and other washracks.

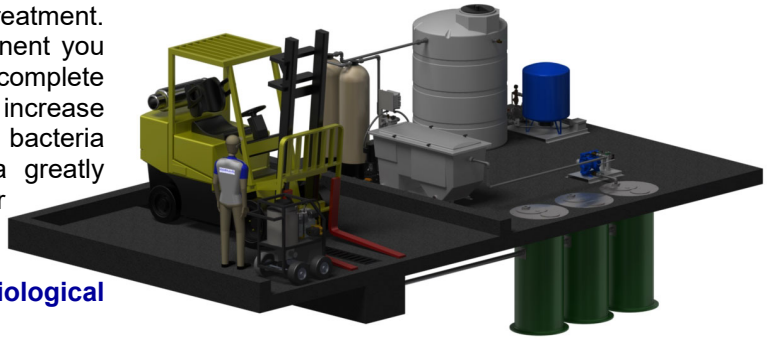
Recycling with the VEW systems consists of using physical separation processes with biological treatment for proper treatment. Without the biological treatment component you would need a lot of other equipment to complete the recycle system, which would greatly increase system and operational costs. The bacteria injection system allows recycling at a greatly reduced cost and is well matched to your project.

Biological Treatment, Odors and Biological Growth

Treatment and storage systems containing waste water and treated water can encourage growth of bacteria which can lead to odor, bio-growth and ultimately septic conditions. With the addition of our EnBio™ bacterial treatment system bacteria not only consume petroleum products but also reduce or eliminate the



odors created by them and other contaminants in the system.



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VEW

Vehicle Equipment Wash Water Treatment & Recycling Systems

VEW-A: Automated Wash Water Recycling Systems

The VEW-A treatment systems are the centerpiece of the VEW line and are an integral part of the automated, full recycle system design and consists of the following sub-systems:

- Oil Water Separator
- Solids filtration
- Effluent pumpout system
- ZeoMaxx Z200 polishing filter or other media
- Master Control Panel (MCP) automatic controls

The VEW-A model can be used as a stand-alone treat and discharge to sewer design or when combined with the balance of the other VEW modules it becomes a full recycle/reuse system. The other modules needed for full recycle are:

- IFS Influent Feed System
- PSM Pressurized Supply Module
- Superaerator/EnBio treatment system
- Sludge Handling Filter
- Washpad & collection sump



VEW: Automated Wash Water Treat and Discharge or Recycling Systems

The VEW treatment systems are the economical recycle or treat and discharge system design as dictated by the application and consists of the following sub-systems:

- Oil Water Separator
- Solids filtration
- Effluent pumpout system
- Master Control Panel (MCP) automatic controls

The VEW model can be used as a stand-alone treat and discharge to sewer design or when combined with the balance of the other VEW modules it becomes a recycle/reuse system. The other modules needed for full recycle are:

- IFS Influent Feed System
- PSM Pressurized Supply Module
- Superaertor/EnBio treatment system
- Sludge Handling Filter



The VEW systems are provided for all flow rates in 304SS & FRP (ZeoMaxx Filter) construction (5-180 GPM flow range).

VEW-A Equipment Detail

Model	Flow Rate GPM	Operating Weight	Z200 Media	Voltage V/pH/Hz
VEW-2-Z	5	805	180 lbs	115/1/60
VEW-4-Z	10	2000	350 lbs	115/1/60
VEW-8-Z	25	4020	900 lbs	115/1/60
VEW-12-Z	35	4800	1500 lbs	230/3/60
VEW-16-Z	50	5500	1850 lbs	230/3/60
VEW-24-Z	65	9630	2700 lbs	230/3/60
VEW-36-Z	80	11200	2900 lbs	230/3/60
VEW-48-Z	100	14700	4500 lbs	230/3/60
VEW-64-Z	150	20350	6500 lbs	230/3/60
VEW-80-Z	180	24400	6800 lbs	230/3/60

VEW Options

Model	
SF-2	Sludge filter, dual
ASV	Automatic sludge valve
Z & AC Filter Media	Variety of medias for variety of contaminants

VEW Equipment Detail

Model	Flow Rate GPM	Operating Weight	Voltage V/pH/Hz
VEW-2	5	805	115/1/60
VEW-4	10	2000	115/1/60
VEW-8	25	4020	115/1/60
VEW-12	35	4800	230/3/60
VEW-16	50	5500	230/3/60
VEW-24	65	6100	230/3/60
VEW-36	80	7700	230/3/60
VEW-48	100	9600	230/3/60
VEW-64	150	12200	230/3/60
VEW-80	180	16300	230/3/60

Larger flow rates up to 800 GPM available.

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Clarisep™

Industrial Grade Heavy Duty Treatment Systems

Flow Rates: 2-300 GPM for Solids, oils & fuels removal



Clarisep core technologies consists of our Slant Plate Pack solids settling and Flopak oil coalescing technologies, solids filtration and ZeoMaxx filtration. All are the same high performance designs we use in our industrial treatment systems where nothing but heavy duty will suffice and the equipment designs are built to exceed the capabilities of today's typical wash water treatment and recycle system designs.

Settling efficiency is not based on retention time, water volume or water depth but is based on Slant Pack surface area. Settling efficiency is directly related to settling velocity and settling distance where our Slant Pack shortens settling distances negating the need for large bulky tanks. The shortened distance speeds up settling. High performance clarification and oil separation is based on a large settling surface area and large oil coalescing surface area where the surface areas increase the speed and performance of the separation processes in a smaller volumetric space.

Use for wash racks with:

- High mud, solids, grit
- Highly variable waste characteristics
- Flow rates 2-300 GPM
- Heavy metals
- Heavy oils, fuels, petroleum, crude, HFO
- DNAPL, LNAPL, BTEX, VOC products

The Clarisep™ System Consists of:

- Clarisep settling separation tank
- Effluent collection tank
- Effluent pumpout
- Primary solids filter 15 micron
- Final solids filter 5 micron
- ZeoMaxx filter

Use MicroSTAX™ optional chemical treatment systems with the Clarisep where difficult to settle solids are a problem to increased performance



Clarisep System Detail

Model	Flow GPM	Dimensions L X W X H	Settling Area Ft2	Coalescing Area Ft2	Sludge Gal.	Wt Lbs
CS-202	5	62" X 29" X 31"	20	138	15	
CS-404	10	96" X 29" X 62"	40	276	21	
CS-808	20	108" X 29" X 62"	80	552	32	
CS-12012	30	120" X 29" X 72"	120	828	59	
CS-15016	40	134" X 29" X 72"	150	1104	83	
CS-20024	50	134" X 48" X 72"	200	1656	125	
CS-25036	60	134" X 60" X 72"	250	2484	109	
CS-30048	75		300	3312	136	
Cs-40064	100		400	4416	184	

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ZeoMaxx Filter Systems

A family of filter systems provided as single or multiple filters for sequential or parallel treatment of contaminants.



ZeoMaxx Medias

A family of mineral medias offering the removal of a wide variety of water born contaminants.

ZeoMaxx filters have high cation exchange capacities. Ammonia (NH4), heavy metals (Pb, Cu, Cd, Zn, Co, Cr, Mn and Fe; Pb, Cu as high as 97 %), toxins, low level radioactive elements (Cs, Co, Sr, Ag), flouride, petrochemicals and others are adsorbed by ZeoMaxx.

Due to its high cation exchange capacity, large surface area, highly porous crystal structure, eco-friendly composition it has a wide range of applications for water treatment. ZeoMaxx's ion exchange efficiency is not affected by temperature or pH changes.

Applications

Treatment
- Following bag filter for vehicle wash facilities
- Retrofit an existing treatment system

Post Treatment:
- Following Oil Water Separators
- Following Dissolved Air Flotation
- Following Slant Plate Clarifiers

Pretreatment:
- Prior to membrane filters
- Prior to GAC filters
- Prior to resin filters

Media and Use

- **Z100 & Z100C** Ammonium removal.
- **Z200** Our most versatile media with more active media per Ft3 than organoclays, removes oils/fuels, sheens, heavy metals and similar organics from water. Because Z200 series can absorb up to 70% of its weight in hydrocarbons, it is often used prior to granular activated carbon to extend the GAC media life and increase system performance.
- **Z275** The liquid phase filtration media is a 4 x 10 mesh Zeomaxx impregnated with dimethyldioctadecylammonium chloride per kilogram of Z275. The density of the product shall be 53-56 pounds per cubic foot.
- **Z300** Media to remove anionic compounds including phosphates and nitrates. The liquid phase filtration media Z300 shall be 8 x 14 mesh ZeoMaxx impregnated with Naphthalkonium chloride. The density of the product shall be 57-59 pounds per cubic foot.
- **ZAS** Activated alumina media for arsenic, fluoride, removal.
- **ZAC** activated carbon medium is used to remove fuels, BTEX, VOCs, Napthalene, phenol, MEK, PCBs, TCE, THMs, fertilizers, pesticides, taste, odor, many other organic contaminants, MBAS, and chlorine as well as being used in many drinking water applications.

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PSM: Automated Pressurization Supply Modules

The PSM Pressurization Supply Module systems are provided to store VEW treated water and supply it back to the pressure washer(s) under pressure on demand and supply to the Mud Blaster supply pump. The PSM systems are offered in a range of flow rates from 5 - 100 GPM with larger systems available. The PSM consist of the following components:

- Clean water storage tank
- Pressurization pump, stainless steel construction
- Hydro-pneumatic tank to maintain line pressure
- Pressure switch to maintain automatic pressure control
- Clean water tank low level sensor to protect pump against lose of water supply
- Automatic controls

The PSM can be used as a stand-alone collection and supply system or retro-fit to an existing system.

The storage tank can be provided per the standard volumes or we can provide larger volumes to fit your facility needs.



PSM Equipment Detail

Model	Flow Rate GPM	Tank Volume	Voltage V/pH/Hz
PSM-3.5-300	3-5	300 g	115/1/60
PSM-5.8-300	5-8	300	115/1/60
PSM-8.10-300	8-10	300	115/1/60
PSM-10.15-500	10-15	500	230/3/60
PSM-15.25-500	15-25	500	230/3/60
Tank Dimensions			
300 gallon	36"D X 77"H		
500 gallon	48"D X 72"H		
Pump Skid Dims	30"L X 43"W X 37"H		

PSM Alternate Clean Water Storage Tanks

Model	Volume Gal.	Oper. Weight	Dimensions Dia X H
CWS-1000-P	1000	8,740	64" X 80"
CWS-1500-P	1500	13,175	64" X 116"
CWS-2000-P	2000	17,580	64" X 152"
MOC: HDPE			

IFS: Automated Influent Feed System

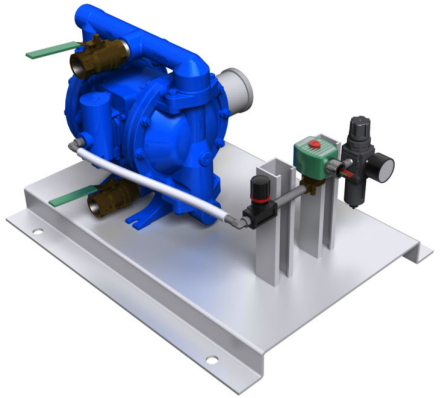
The IFS Influent Feed Systems are provided to transfer wash water from the collection sump to the treatment system inlet.

The IFS consists of the following components:

- Adjustable flow rate air operated diaphragm pump
- Air preparation and control assembly
- Level switches (high & low)
- Automatic controls
- Pump skid

Pump Flow Rate Adjustability

The pump flow rate can be adjusted via the air control assembly. The air control assembly contains an air/filter regulator for pressure control and a fine adjustment, precision air needle valve for flow control. By adjusting these components you can set the desired flow rate.



IFS Feed Pump Detail

Model	Flow Rate GPM	Operating Weight	Voltage V/pH/Hz
IFS-05-AO	5-10	35	115/1/60
IFS-10-AO	10-35	45	115/1/60
IFS-15-AO	35-50	65	115/1/60

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TB: Triple Basin Water Treatment System

Pre-fabricated, reinforced fiberglass below grade pretreatment

Economical alternative to concrete

3-stage processing, volumes of 225 to 3,000 gallons

The TB series Triple Basin collection sump systems are provided to collect wash water from the washpad and allow a below grade location for solids to settle out, aeration and EnBio™ treatment to occur. The Triple Basin is an integral part of the treatment system as it is pre-treatment to the VEW system. The Triple Basin consists of the following features:

- (3) FRP chambers, vertical cylindrical design
- Internal baffling to control flow path
- Interconnecting piping
- Covers with inspection panels
- NPT inlet/outlet and vent fittings
- Final water pumpout chamber
- Designed for direct soil burial

The basins can be used as a stand-alone collection/treatment system, provided with the VEWs or retro-fit to an existing system and can reduce the cost of sump pit design and installation when compared to concrete.







Sludge filter option

Basin Options	
Model	
SF-D	Sludge Filter
LS-EFF	Level switch effluent
LS-HH	Level switch high level
Bag-5-C25	Sludge filter bag 5 micron Case of 25 bags
AD-24.75	Aeration Diffuser

Triple Basin Detail 24" – 42" Diameter				
Model	Tank Gals	Total Gals	Fitting Size"	**Tank L X W X H**
TB-2442-225	75	225	4"	84" X 24" X 42"
TB-2460-300	100	300	4"	84" X 24" X 60"
TB-2478-450	150	450	4"	84" X 24" X 78"
TB-3084-750	250	750	4"	102" X 30" X 84"
TB-3672-900	300	900	4"	120" X 36" X 72"
TB-3678-1050	350	1050	4"	120" X 36" X 78"
TB-4278-1350	450	1350	4"	138" X 42" X 78"
Vents			2"	One per tank
Fittings are NPT				
Tank MOC: FRP				

Triple Basin Detail 42" – 60" Diameter				
Model	Tank Gals	Total Gals	Fitting Size"	**Tank L X W X H**
TB-4284-1500	500	1500	4"	138" X 42" X 84"
TB-42102-1800	600	1800	4"	138" X 42" X 102"
TB-4890-2100	700	2100	4"	162" X 48" X 90"
TB-48114-2700	900	2700	4"	162" X 48" X 114"
TB-6084-3000	1000	3000	4"	196" X 60" X 84"
Vents			2"	One per tank
Fittings are NPT				
Tank MOC: FRP				

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VEW

Vehicle Equipment Wash Water Treatment & Recycling Systems

OSF: High Performance Industrial Oil Water Separators

The OSF series above ground oil water separators are a high performance compact, corrosion resistant FRP design that can be used as a stand-alone separation device where your application requires simple treatment for oil, fuels, BTEX products and solids removal or as part of a larger system.

The OSF design can remove many oil types and a very wide range of petroleum distillates. The design can be mounted to a trailer for mobile applications, many options are offered to customize to your project. 5 sizes are offered for 5-50 GPM.

Discharge Performance: 10 mg/L or less, 30-micron, non-emulsified, free & dispersed oil droplets.

Coalescing Media Design: Using the Flopak separation media allows the OSFs to provide a high performance design in an inexpensive, light weight, compact concept. The Flopak media is easily removed, cleaned and replaced.

Cover & Tank: The tank, cover and fittings are all constructed of fiberglass for long life, light weight and low corrosion susceptibility. The cover includes quick remove T handle fasteners and a cover vapor gasket.

Hopper Bottom: The Tank design includes a V-hopper bottom for solids containment with sludge outlets on both sides of the tank.

Oil Reservoir/Effluent Chamber: The OSF design provides an on board oil reservoir and an expandable effluent chamber for pumping treated water directly from the tank.

Oil Skimmer: An adjustable slotted, rotary pipe oil skimmer is provided to skim floating oils and remove them from the tank.

Inlet Diffuser: An inlet diffuser is provided to diffuse incoming water velocity, energy and spread the flow across the tank width and depth.





Oil Water Separator Detail					
Model	Flow GPM	Dimensions L X W X H	Volume Gal.	Sludge Gal.	Wt Lbs
OS-2-F	5	62" X18" X 31"	25	7	90
OS-4-F	10	62" X 29" X 31"	50	13	120
OS-8-F	25	72" X 29" X 42"	125	13	180
OS-12-F	35	72" X 40" X 42"	180	25	350
OS-16-F	50	72" X 52" X 42"	240	37	425

Flow rates to 5,000 GPM and larger available

Options List (partial)

- Anchor hold down brackets
- Retpak secondary media
- Expanded effluent chamber
- Influent feed pump
- Effluent pumpout
- Oil pumpout
- Sludge pumpout
- High oil/water level alarms
- Level switches installed
- Elevation stand
- Oil transfer piping
- ZeoMaxx/GAC effluent filter
- Vent vapor scrubber
- High temperature designs
- Trailer mounted system
- Skid mounted system
- Container mounted system
- Custom systems



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OSe: High Performance Industrial Oil Water Separators

The OSe series above ground oil water separators are a high performance compact, corrosion resistant 304 stainless steel design that can be used as a stand-alone separation device where your application requires simple treatment for oil, fuels, BTEX products and solids removal or as part of a larger integrated system.





The OSe design can remove many oil types and a very wide range of petroleum distillates. The design can be mounted to a trailer for mobile applications, many options are offered to customize to your project. Many standard sizes are offered for 5-250 GPM and larger.

Discharge Performance: 10 mg/L or less, 30-micron, non-emulsified, free & dispersed oil droplets.

Coalescing Media Design: Using the Flopak separation media allows the OSe to provide a high performance design in an inexpensive, light weight, compact concept. The Flopak media is easily removed, cleaned and replaced.

Cover & Tank: The tank, cover and fittings are all constructed of 304 SS for long life and low corrosion susceptibility. The cover includes attaching fasteners and a cover vapor gasket.

Hopper Bottom: The Tank design includes a V-hopper bottom for solids containment with sludge outlets on both sides of the tank.

Oil Reservoir/Effluent Chamber: The OSe design offers optional on board oil reservoir and effluent chamber for pumping treated water and/or oils directly from the tank.

Oil Skimmer: An adjustable slotted, rotary pipe oil skimmer is provided to skim floating oils and remove them from the tank.

Inlet Diffuser: An inlet diffuser is provided to diffuse incoming water velocity, energy and spread the flow across the tank width and depth.

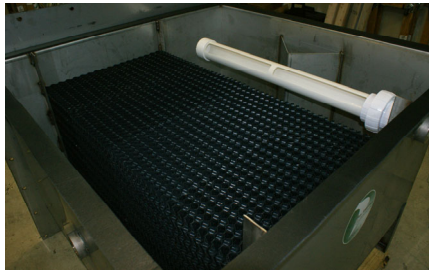
Oil Water Separator Detail

Model	Flow GPM	Dimensions L X W X H	Volume Gal.	Sludge Gal.	Wt Lbs
OSe-2	5	62" X18" X 31"	25	7	90
OSe-4	10	62" X 29" X 31"	50	13	120
OSe-8	25	72" X 29" X 42"	125	13	180
OSe-12	35	72" X 40" X 42"	180	25	350
OSe-16	50	72" X 52" X 42"	240	37	425
OSe-24	72	82" X 40" X 53"	353	50	1150
OSe-36	100	82" X 40" X 65"	465	50	1320
OSe-48	133	82" X 52" X 65"	580	50	1660
OSe-64	180	82" X 52" X 77"	700	65	1980
OSe-80	240	82" X 64" X 77"	1055	85	2150

Flow rates to 5,000 GPM and larger available

Options List (partial)

- Anchor hold down brackets
- Retpak secondary media
- Expanded effluent chamber
- Influent feed pump
- Effluent pumpout
- Oil pumpout
- Sludge pumpout
- High oil/water level alarms
- Level switches installed
- Elevation stand
- Oil transfer piping
- ZeoMaxx/GAC effluent filter
- Vent vapor scrubber
- High temperature designs
- Trailer mounted system
- Skid mounted system
- Container mounted system
- Custom systems



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EnBio™: Biological Treatment System

Car wash systems and washwater treatment systems are typically not designed to remove washwater odors. Through the decomposition of accumulated contaminants in the water and existing bacteria as well as certain chemicals, odorous gases can be created. The EnBio™ product eliminates odors by out competing naturally occurring bacteria, consuming the food source and forcing their die off so that those bacteria cannot cause odors.

Bacterial digestion is the process of bacteria, consuming organic matter. Enzymes act to break the organic matter into water soluble nutrients, which the bacteria then digest. Using complex chemical reactions, the bacteria metabolize the organic waste down to water and carbon dioxide (the final metabolic waste products), providing the bacteria with energy for growth and reproduction. Organic waste is consumed by the bacteria, used as nutrients by the bacteria and is no longer present to produce odors, sludge, pollution, or competitive bacterial growth.

EnBio™ is a combination of all natural bacteria, enzymes with nutrients. EnBio bacteria/enzyme blends are targeted to the food sources typically found in an industrial wastewater stream and treatment system.

EnBio™ bacteria cling to the containers they are injected into and they propagate at an extreme speed, doubling their number every 15-20 minutes. They become dispersed throughout the entire system eating non-stop 24 hrs/day which means coalescing media stays cleaner, filter bags (reducing bag changes), valves, sight glasses, flow meter sensors, pump heads, piping and other devices in the piping system stay cleaner requiring less cleanup. Wherever the water goes the bacteria goes too and continue to eat the contaminants.

Dosing

Liquid can be manually or automatically dosed into the treatment system with our dosing system which gives you multiple dosing events throughout the day/week.

The daily EnBio™ concentration added is 20 ounces per 500 to 1,500 gallon system per day. You will set the dosing system per the IOM instructions to continuously dose throughout the day, seven days per week. EnBio™ is available in 1, 5 and 55 gallon volumes.

EnBio™ bacteria and enzymes are chosen for their ability to selectively consume targeted contaminants such as fuels, oils, solids and sludge. We select only facultative strains of bacteria that function and flourish in aerobic (with oxygen) or anaerobic (oxygen depleted) environments. Our bacteria are most effective in an aerobic state working 5-7 times faster. Other factors important to a bacteria's existence are high and low pH, chemical shock and temperature as well as sufficient food source. EnBio bacteria flourish best the closer to the neutral pH of 7 the water is. They are resistant to disinfectants like chlorine up to 150 PPM.

EnBio™ bacteria consume contaminants such as organic matter, oils, grease, other petroleum products like heavy and light fuels (DNAPL/LNAPL) and soluble solvents.

The bacteria propagate within sump bottom solids reducing the sludge load, freeing oils and grease and digesting them. Using EnBio™ can reduce sludge hauling frequency and cost.

For use in:

- Oil water separators
- Car and truck wash treatment /recycling systems
- Marine bilges
- Recycled washwater storage tanks
- Wash facility basins/collection sumps
- Groundwater remediation systems
- API oil water separators
- Septic leach fields plugged with petroleum products
- Bilge water treatment facilities





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SuperAerator™: Aeration System

For odor and contaminant reduction with bio-treatment aeration is required in order to maintain sufficient oxygen content for the EnBio™ bacteria treatment system.

The SuperAerator™ and SuperAerator™ XL systems when used in combination with the EnBio™ system will reduce pit management problems such as odor and sludge reduction.

The system consists of:
- Air pump
- Air diffuser(s)
- Air tubing
- The XL system combines the EnBio™ system with the SuperAerator™ in one convenient enclosure

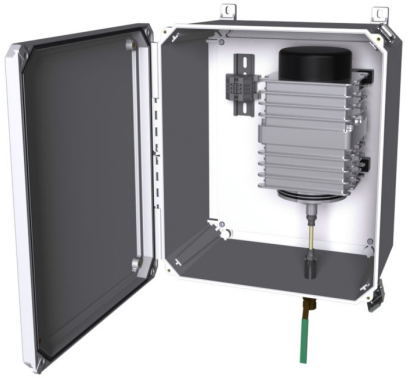
Compare With Traditional Odor Reduction Measures

The use of the SuperAerator™ in combination with the EnBio™ system offers a more simplistic natural treatment solution when compared to chemical and gas oxidants such as chlorine, hydrogen peroxide and ozone.

These oxidants can corrode metallic system components and other items that the water comes into contact with. Ozone requires constant addition to be effective as the ozone molecule continuously degrades until it reverts to oxygen, which takes about 1 hour. When AOX (Advanced Oxidation) is used where hydrogen peroxide is combined with ozone the cost to keep the oxidation process is even greater.

The EnBio™ microbes do not cause corrosion and the self-increasing bacteria colony builds and maintains itself reducing your need to continuously add EnBio™ media.

- Retrofit existing systems
- Simple installation
- Fit most brands of sumps and treatment systems



SuperAerator™



SuperAerator™ XL





SuperAerator™ Equipment Detail				
Model	Air CFM	Diffuser	Power 60/50Hz	Wt Lbs
SA-3	3	(1) 2"D X 24"L	115V/1pH	
SA-5	5	(1) 2"D X 24"L	115V/1pH	
SA-7	7	(1) 2"D X 24"L	115V/1pH	
Diffuser				3
SA Syst.		14" X 12" X 8"		20
XL Syst.		20" X 20" X 8"		35

Larger aeration systems available for any system water volume.

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Mud Blaster™: High Volume Water Blast Systems

The Mud Blaster™ systems provide a high water volume under moderate pressure for removal of high loadings of mud and dirt from heavy equipment prior to finish washing.

High water volumes at lower pressures are more effective at removing heavy dirt loads than low flow high pressure systems.

Standard Features:

- 500 - 750 gallon clean water storage tank
- 20, 30 & 50 GPM models offered
- Multi-stage, high head centrifugal pump
- 10 HP, TEFC motor
- Operating pressure: 200 psi
- Fork liftable pump skid
- Fresh water makeup valve
- Low water level pump shutdown protection
- Automatic pump bypass on spray nozzle shutoff
- 50' hose with variable stream nozzle and on/off lever shutoff valve
- NEMA 4X controls with on/off and overload protection and power disconnect
- 230/460V/3pH/60Hz power

Options:

- Automatic fresh water resupply system drawing from PSM or other fresh water source
- Hose reel
- Remote operation stations
- Larger storage tank volume
- Dual Blaster models with two blaster pumps, hoses, nozzles and controls for separate Mud Blaster blast stations on same skid.
- Wall mounted system



Mud Blaster™ Equipment Detail

Model	Flow GPM	Dimensions L X W X H	Volume Gal.	PSI	Skid Lbs
MUD-20	20	30" X 48" X 52"	500	200	560
MUD-30	30	30" X 48" X 52"	500	200	580
MUD-50	50	36" X 48" X 52"	750	200	605

Gallons	***Tank Dims:***
500	48"D X 73"H
750	48"D X 103"H

Mud Blaster™ Options

Model	
FWR	Fresh water resupply
Reel	Hose reel, manual

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EpH: pH Adjustment Systems

The EpH systems monitor and maintain a pH set point on a continuous basis from a wash water waste stream and a wide variety of industrial waste streams. The typical wastewater pH range for treatment is from 4-11. Effluent from the pH system is usually in the 6-9 pH range per most local POTW discharge limits.

The neutralization system configuration includes:

- HDPE tank
- Full cover with vapor gasket and inspection hatch
- Mixer with TEFC motor
- 316 SS impeller shaft and axial flow impeller(s)
- One chemical metering pump (optional second pump available)
- pH probe with quick release assembly
- pH controller
- NEMA 4X control panel
- 115V/1pH/60Hz and 230/460V/3pH/60 Hz power

Systems are configurable to meet the standard continuous neutralization mode or optional manual and semi-automatic batch modes.

Options:

- Chart recorder
- Effluent diversion valve (available on continuous flow systems only)
- PLC controls
- Explosion proof design
- 2nd metering pump & controls
- Alternate tank construction: FRP, polypropylene, coated steel, 304/316 stainless steel.

Larger size systems available.



EpH Systems Equipment Detail

Model	Flow GPM	Dimensions D X H	Volume Gal.	Inlet/outlet size	Wt Lbs
EpH.05	5	22” X 48”	50	1.5”	90
EpH.10	10	30” X 48”	100	1.5”	120
EpH.15	15	31” X 62”	150	2”	180
EpH.25	25	39” X 65”	250	2”	200
EpH.30	30	45” X 60”	300	3”	265
EpH.40	40	52” X 60”	400	3”	310
EpH.50	50	60” X 58”	500	3”	375
EpH.75	75		750	4"	
EpH.100	100		1000	4"	



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Filter Pac

Industrial Grade Effluent Filtration Systems

Flow Rates: 2-300 GPM

The Filter Pac systems provide customizable effluent filtration that can be applied to any of the VEW family of systems or your existing treatment system wherever additional filtration is required to boost filtration capability and treatment performance.

Filter Pac Systems provide:

- Effluent pumping
- Effluent solids filtration
- ZeoMaxx filtration
- GAC (carbon) filtration
- Local or integrated controls
- Other specialty filtration medias/resins
- Customization to wastestream contaminants

Effluent Pump: A pump is provided to transfer wastewater to the Filter Pac filters.

Effluent Solids Filter: Solids are filtered in one or two stages to reduce filterable solids down to 15 and 5 micron particles.

ZeoMaxx Filtration: FRP tank, PVC fittings for long life, light weight and low corrosion susceptibility. For oils, fuels, petroleum, distillates and a variety of metals.

GAC Filtration: FRP tank, PVC fittings for long life, light weight and low corrosion susceptibility.

ZeoMaxx Media Types
Multiple resin types and media are offered for various contaminants such as zinc, fluoride, metals, pesticides and other materials. (See page 5)

Products Removed:

- Oils
- Fuels
- Suspended solids
- Metals
- Minerals
- Fluoride
- BTEX
- VOCs
- HFOs
- Bunkers
- LNAPL
- DNAPL
- Pesticides



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MicroSTAX™

Industrial Grade Pretreatment Systems

Flow Rates: 2-300 GPM

The Pan America Environmental MicroSTAX™ systems typically used prior to the Clarisep systems are a pipe flocculator type of design that provides multiple-chemical reaction contact in a compact footprint design without moving parts, wearing components or need for power. The MicroSTAX™ design uses water turbulence induced by a serpentine piping network to mix chemical products into a wastestream.

The design eliminates the need for mixing tanks, mixers and electrical consumption. The process takes place under highly controlled, well-defined and optimized conditions.

Features Include:

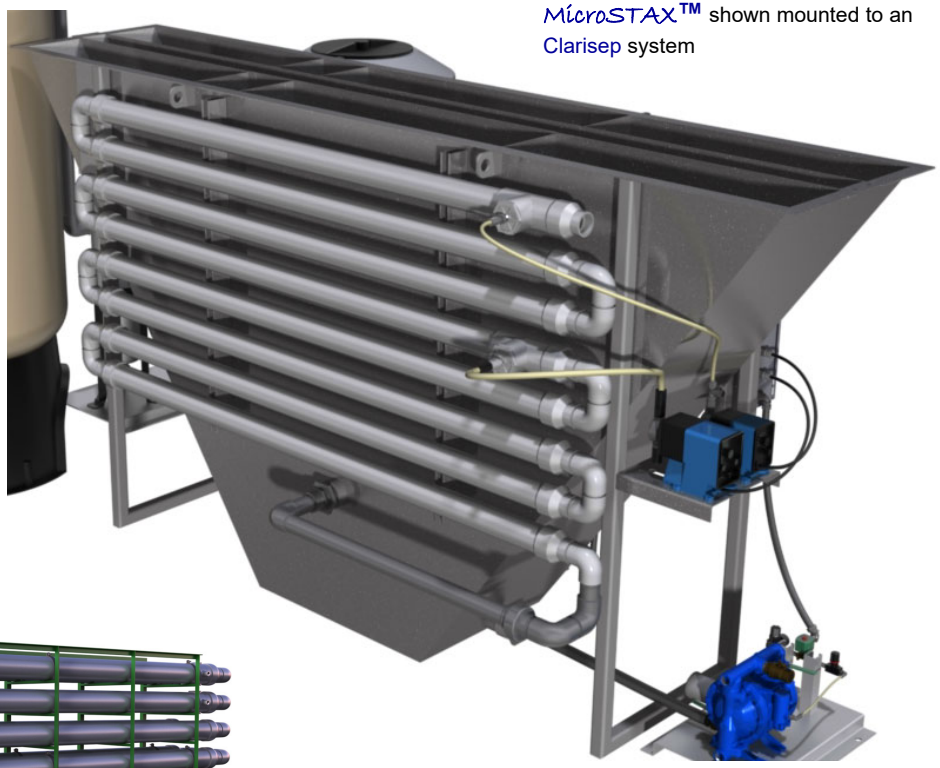
• No power requirements and no moving parts, which means minimal maintenance.
• Uniform mixing in the pipe cross-section promotes uniform flocculation.
• No mixing dead zones.
• Chemical metering systems: coagulation, flocculation, pH

Designed for a particular flow range, each pipe flocculator can be configured with:
• Multiple chemical injection ports for up to three stage treatment (coagulant, and flocculants).
• Centralized, valved chemical pump connection ports.
• Multiple sample ports.
• In-line monitoring probe fittings (pH, suspended solids, conductivity or other use).
• Flanged and NPT connections.

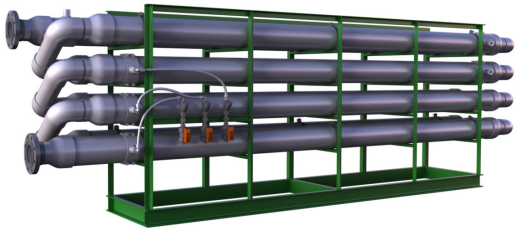
MicroSTAX™ flocculators come with an A36 carbon steel support frame as either a tank mount hanger system or a skid-mounted design for mobility/temporary use or for permanent, off-tank installations.

Unit sizes range from 1.5" to 10" pipe and can be supplied in a variety of lengths and construction.

Other diameters are available Upon request. MicroSTAX™ flocculators can be customized and built to meet specific project requirements.



MicroSTAX™ shown mounted to an Clarisep system



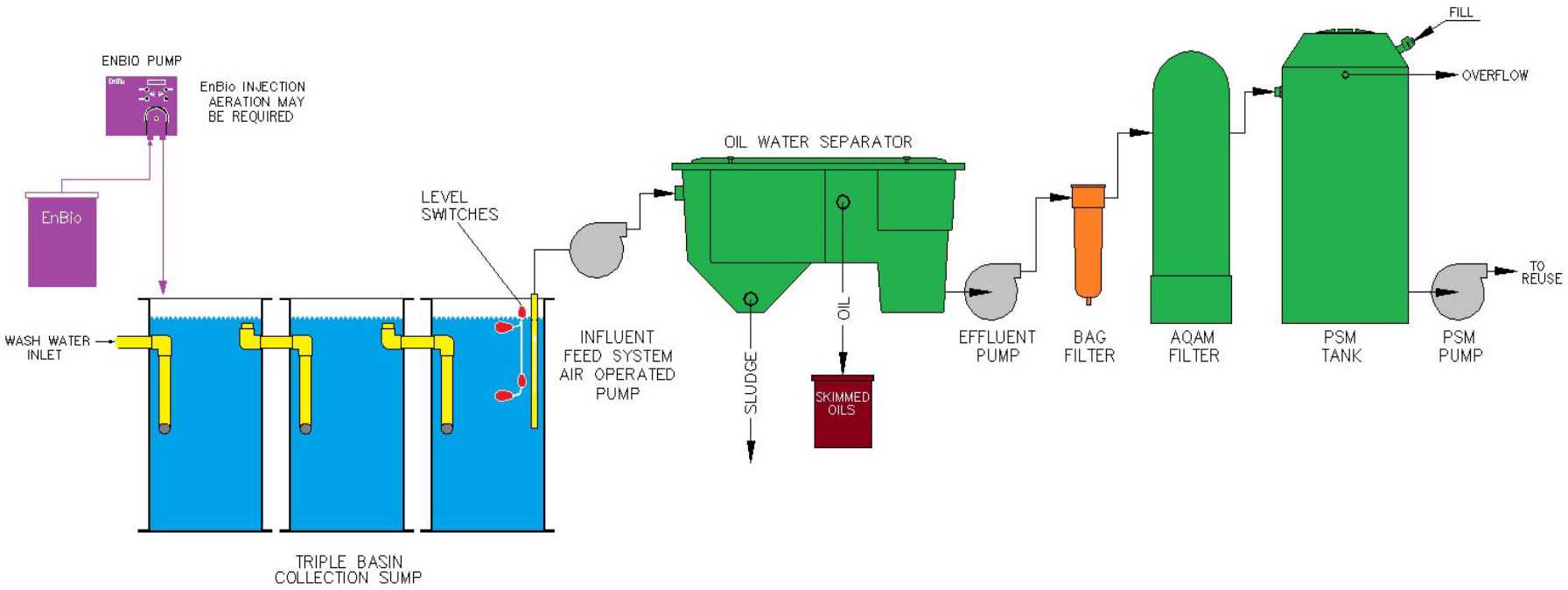
MicroSTAX™ shown separately

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VEW Process

The VEW modules are shown below in order of flow for a full recycle system.



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Washbay Solutions:
Design Concepts

Washbay, washpad and collection sump system design is an entire subject matter in and of itself and we are unable to cover all aspects in this catalog.

The washpad is an important part of your wash & treatment facility as solids will usually be a large part of the treatment process. The more solids you can reduce at the washpad/sump the less you have to remove at the treatment system and this will also reduce system maintenance and downtime.

The washpad, collection troughs and collection sumps are an integral part of the treatment system and should be considered as the initial water treatment effort and will provide the following pretreatment operations:

- Reduction of heavy solids load at washpad.
- Settles solids in the collection sump(s)
- Assists self-breaking detergents to break emulsions prior to the VEW system.
- Provides a working water volume for biological treatment and recycling hydraulic demands.

When designing keep the following rules of thumb in mind:

- The bigger the better (make room for equipment, operator movement and vehicle size
- Eliminate rainwater runoff to the pad
- Locate drain/trough along pad center, side or end opposite from the wash area to allow solids to stay on the washpad surface, thereby reducing accumulation in the drain/trough/sump system.
- Pitch pad drainage to drain/trough
- Don't use an aggressive pitch on pad or tough, help the solids stay on the pad and in the trough, fast moving water moves solids. A 1/8" per foot drop may be sufficient to limit water velocity.

The washpad should provide a controlled runoff design with pad pitch toward the trough or drain, which will encourage proper draining of the pad.

The most common designs are shown in this catalog. Larger and/or heavy equipment wash racks often use a sump design that allows for high solids concentrations and ease of solids removal as in a sump with a ramp design.

Collection Sump design is important as it begins your treatment process by providing a place for bulk solids to drop out prior to finer treatment by the VEW system.
Probably THE most popular sump design is the triple or double basin that provides multiple chambers to increase the settlement of solids and also provides a final sump point where pumpout of the water to the VEW system is performed.

Be Aware: that large water collection tanks and chambers also pose an odor creation issue due to the solids settling out and accumulating. Be sure to use our **EnBio™** and **SuperAerator™** treatment systems to eliminate odor problems.

Centrally Pitched Drain Designs – For small to medium size wash racks where concrete surface loadings are not an issue.

Side Drain Designs – For sites with limited space and high mud and dirt volumes are expected.

Entrance and Exit Drain Designs - For limited space facilities.

Pre-Wash & Final Wash Designs - For high volume facilities requiring pre-wash. Separation of de-mucking operation from final wash will reduce water treatment costs by not allowing heavy solids loadings to reach the treatment system.

Heavy Solids Designs - These designs incorporate a heavy solids de-watering and handling area. Used where excessive amounts of mud and dirt are anticipated.

High Vehicle Volume Facility – Where heavy wash traffic is planned, multiple, parallel wash bays can be designed.

Drawings are conceptual only. They are not PE engineered and/or certified documents. These are for layout and site planning only and serve as a guide to visualize the final design.

PAE recommends wash and treatment equipment to be enclosed or covered to prevent weather damage and to protect from freezing and long term UV effects.

Pan America Environmental recommends the use of a professional facility engineer to review your facility plans and for proper design and construction per state and local codes.

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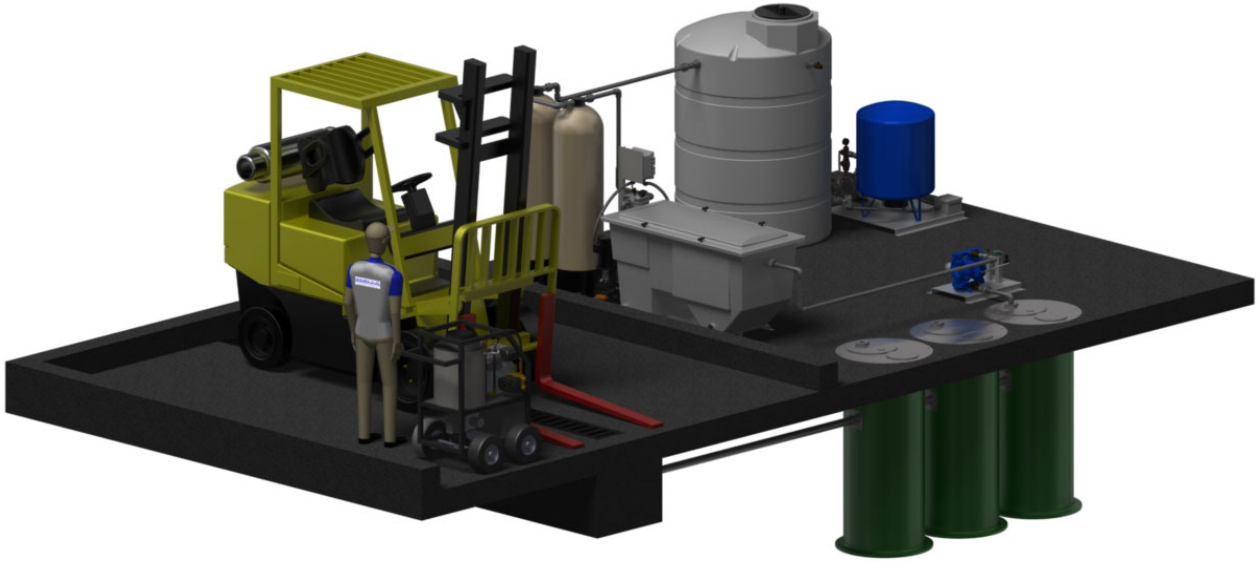
- Wash Water Recycling and Treatment Systems
- Replacement Parts • Accessories • Detergent

VEW

Vehicle Equipment Wash Water Treatment & Recycling Systems

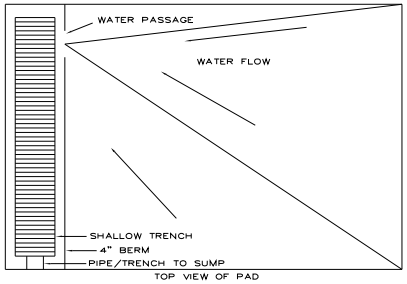
Washbay Solutions:
Design Concepts

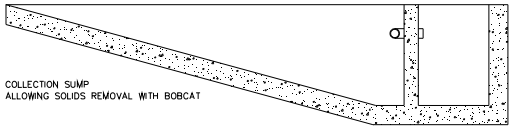
A few wash bay design concepts are provided to give you a direction in design. As there are a multitude of configurations that could be used you will need to review your facility for the best layout. ***More layouts and ideas are available at the VEW website in more detail for your reference. Go to http://www.wash-water-treatment.com***



Facility Design Assistance

Pan America can assist in the initial washpad/washbay, sump and treatment system layout if desired. We can produce a 3D drawing set to give a full design concept then you can work with your engineer to make sure the facility is designed and built to your vision. *Contact PAE for a quote on this service.*





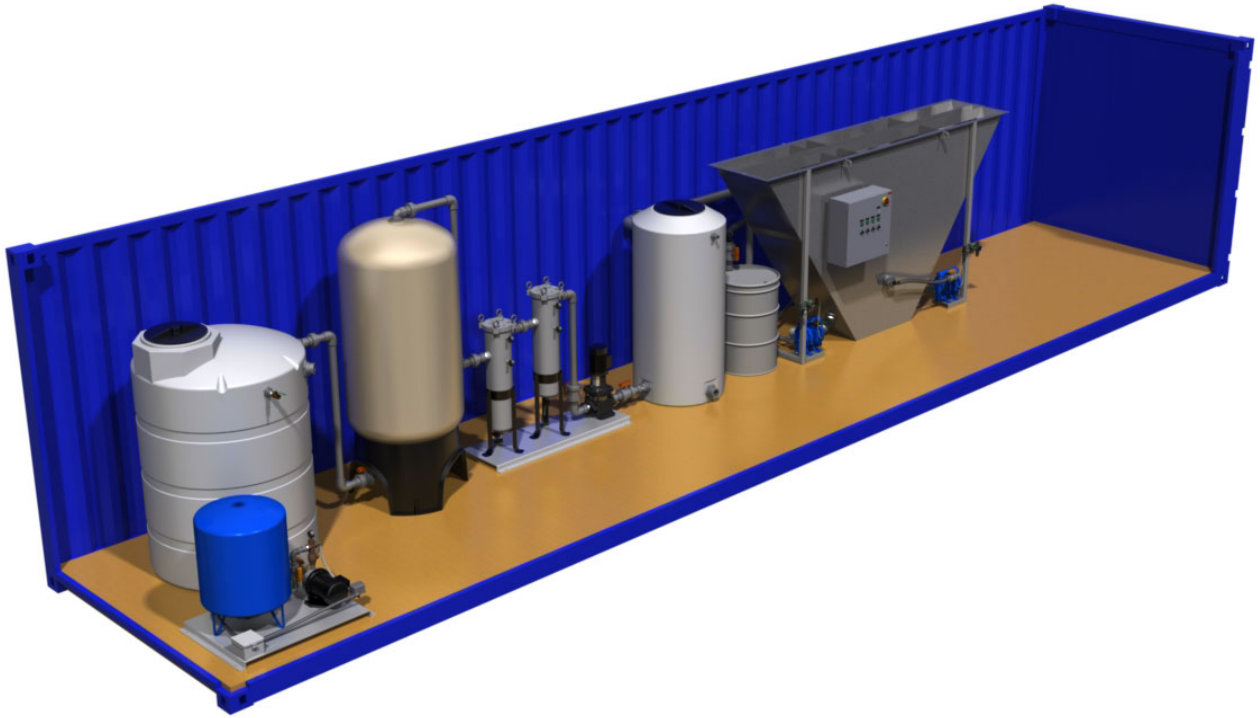


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Containerized Treatment Systems: Options and Designs

All VEW systems can be provided containerized for simplified installation, use in remote and extreme conditions, mobile installations and wherever rapid deployment and/or protection from the elements are desired.



Features

- Standard 10, 20, 40 ft standard, high cube and flat rack containers
- Non-insulated
- Double cargo doors on end
- Lighting
- Master Control Panel (MCP)
- Power receptacles
- Passive cross ventilation system
- Central plumbing connection panel
- Central power connection panel

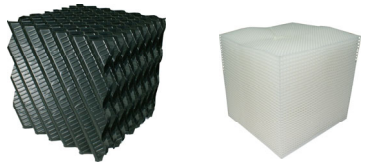
Options:

- Insulation
- Rollup door(s)
- Window(s)
- Active ventilation
- Air conditioning
- Heating
- Alarms
- Separate rooms
- Man access side door(s)
- Custom flooring
- Custom exterior colors

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Consumables

Flopak & HDQ Coalescing Media



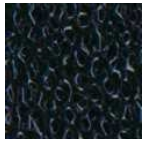
Media Part #	VEW Model
FP-2.5PV	2
FP-4.5PV	4
FP-8.5PV	8
FP-12.5PV	12
FP-16.5PV	16

ZeoMaxx Media



ZeoMaxx Part #	VEW Model
Z-2	2
Z-4	4
Z-8	8
Z-12	12
Z-16	16

Retpak Coalescing Media



Media Part #	VEW Model
RP-2.5PV	2
RP-4.5PV	4
RP-8.5PV	8
RP-12.5PV	12
RP-16.5PV	16

EnBio Media



Media Part #	
EnBio-5	5 gal pail
EnBio-1-4	(4) 1 gal bottle
EnBio-55	55 gal drum

Emulsion Break Detergent



Part #	
ESB-5	5 gal pail
ESB-1-4	(4) 1 gal bottle
ESB-55	55 gal drum

Filter Bags



Part #
Bag-1-20PE-C
Bag-5-20PE-C
Bag-10-20PE-C
Bag-25-20PE-C
(case volume, 25 pcs)

1st number = micron rating

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VEW Parts

Effluent Pumpout System

VEW Effluent Pump



Pump Part #	for VEW Model
96081967	VEW2
96081969	VEW4
96084098	VEW8
96084101	VEW12
96522980	VEW16

VEW Effluent Level Switch



Part #	for VEW Model
VEW-2 Effluent Switch	VEW2
VEW-4 Effluent Switch	VEW4
VEW-8 Effluent Switch	VEW8
VEW-12 Effluent Switch	VEW12
VEW-16 Effluent Switch	VEW16

Filter Bags



Part #
Bag-1-20PE-C
Bag-5-20PE-C
Bag-10-20PE-C
Bag-25-20PE-C
(case volume, 25 pcs)

1st number = micron rating

Flowmeters



Part #	for GPM
5847.238	0-10
5847.239	0-15
5801.330	0-40

Influent Pumpout System

VEW Influent Feed Pump



Pump Part #	for IFS Model
IFP-0.5-MBN-AO	IFS-05-AO
IFP-1.0-MBN-AO	IFS-10-AO
IFP-1.5-MBN-AO	IFS-15-AO
IFP-2.0-MBN-AO	IFS-20-AO

VEW Influent Level Switch



Part #	for All IFS Models
1006052	

Valve, Solenoid



Part #	
8262H022	¼" NPT
8210G094	½" NPT

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PSM (Pressurization Supply Module)

VEW PSM Pump



Pump Part #	for PSM Model
47906	PSM-150
QD75S	PSM-300
QD100S	PSM-500

VEW PSM Level Switch



Part #	for VEW Model
VEW-2 PSM Switch	VEW2
VEW-4 PSM Switch	VEW4
VEW-8 PSM Switch	VEW8
VEW-12 PSM Switch	VEW12
VEW-16 PSM Switch	VEW16

Oil Skimmer

Cylindrical Oil Skimmer



Skimmer Part#	for VEW Model
2X5PV	VEW2
2X12PV	VEW4
2X12PV	VEW8
3X28PV	VEW12
3X36PV	VEW16

SuperAerator System



Air compressor

Pump Part #	SuperAerator Model
SA3-AP	SuperAerator 3 /XL
SA5-AP	SuperAerator 5 /XL
SA7-AP	SuperAerator 7 /XL

Aeration diffuser



Part #	SuperAerator Model
SA-DIF3	SuperAerator 3 /XL
SA-DIF5	SuperAerator 5 /XL
SA-DIF7	SuperAerator 7 /XL

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PAN AMERICA ENVIRONMENTAL, INC

EpH Neutralization System

Mixer



Chemical Metering Pump



pH Probe



pH Controller



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