



John Elias Baldacci
Governor

Maine Department of Health and Human Services

Maine Center for Disease Control and Prevention
286 Water Street, 3rd Floor
11 State House Station
Augusta, ME 04333-0011

Brenda M. Harvey,
Commissioner

Dora Anne Mills, MD, MPH
Public Health Director
Maine CDC Director

June 23, 2006

WASTECH International, Inc.
Attn.: Guy Marchessault, Senior Vice President
210 West Road, #7
Portsmouth, New Hampshire 03801-5693

Subject: Product Registration, Seapoint Wastewater Treatment System, B-Series, C-Series, and P-Series

Dear Mr. Marchessault:

The Division of Health Engineering has completed a review of a registration application for General Use of your company's product. Included in this application is data for 64 installations of the Seapoint Wastewater Treatment System in various states in the United States of America. This information was submitted pursuant to Section 1802 of the Maine State Plumbing Code, Subsurface Wastewater Disposal Rules (Rules), for code registration, for use in Maine.

Product Description

The Seapoint Wastewater Treatment System consists of a submerged membrane bioreactor with optional sludge dewatering capabilities. Influent receives primary treatment prior to introduction to the membrane reactor. Effluent is disinfected through use of an ultraviolet unit. The Seapoint Wastewater Treatment System is designed to treat flows up to 50,000 gallons per day.

The Seapoint Wastewater Treatment System is delivered in three versions: within concrete structures (B-Series), within cargo style containers (C-Series), and in palletized configuration (P-Series). This registration applies to all configurations and models of the product.

Claim

According to the information you provided, the Seapoint Wastewater Treatment System produces effluent with BOD₅ and TSS levels of less than 10 mg/l, each, as well as similar reductions in other constituents.

Determination

On the basis of the information you have submitted, the Division has determined that the Seapoint Wastewater Treatment System is acceptable for use in the State of Maine, provided that it is installed, operated, and maintained in conformance with the manufacturer's directions.

In the event that the product fails to perform as claimed by the applicant, use of the new or experimental technology in Maine, including all installations approved pursuant to Section 1801.7 of the Rules, shall cease. Use of the new or experimental technology shall not resume until the applicant and the Division have reached a mutually acceptable agreement for resolving the failure to perform as claimed.

Because installation and owner maintenance has a significant effect on the working order of onsite sewage disposal systems, including their components, the Division makes no representation or guarantee as to the efficiency and/or operation of Seapoint Wastewater Treatment System. Further, registration of this product for use in the State of Maine does not represent Division preference or recommendation for this product over similar products.

If you have any questions please feel free to contact me at (207) 287-5695.

Sincerely,

James A. Jacobsen, Environmental Specialist IV
Wastewater and Plumbing Control Program
Division of Health Engineering
e-mail: james.jacobsen@state.me.us

/jaj

xc: Product File

Our vision is Maine people enjoying safe, healthy and productive lives.

Phone: (207) 287-5695

Fax: (207) 287-3165

NexTalk (former TTY/TDD Line)
1-800-606-0215



WASTECH International, Inc.
Seapoint Products Division

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MAY 10 2006

**WASTEWATER &
PLUMBING PROGRAM**

RECEIVED

MAY 10 2006

**WASTEWATER &
PLUMBING PROGRAM**

May 9, 2006

Mr. James Jacobsen, ~~PE~~
Maine Division of Health Engineering
Water and Wastewater Control Program
161 Capitol Street
11 State House Station
Augusta, ME 04333-0011

Subject: Seapoint Package Plant Registration

Dear Jim:

Enclosed please find additional information/ documentation regarding WASTECH's Seapoint package plant product line. Since Registration of the Seapoint product line was approved on a provisional basis in September, 2004, WASTECH has expanded its product offering to include concrete structures (the B-Series) and Palletized units (the P-Series) in addition to the containerized units (C-Series) that were specifically reviewed by the Division of Health Engineering.

All three of the Seapoint product formats, B-Series, P-Series and C-Series, contain exactly the same treatment technology components. The concrete structures and containers are intended to be used as stand-alone facilities, part of a community, residential or commercial sewage treatment system. The palletized units are intended for the same general purpose, but offer the possibility of incorporation into another structure or building that is more suitable to the aesthetic requirements of the project.

The entire Seapoint product line produces consistent high quality effluent, with BOD₅ and TSS consistently less than 5 mg/L, total nitrogen less than 10 mg/L, and fecal coliform bacteria not detectible. Seapoint package plants are modular in design and can treat up to 50,000 gallons of wastewater per day, producing water that could be reused.

WASTECH employs Kubota membrane bioreactor technology in all of its products. Enviroquip, Inc. of Austin Texas is the exclusive licensee for Kubota membrane equipment in the U.S. and WASTECH manufactures package plant units that are marketed and sold throughout the U.S. under the Enviroquip name. Therefore, I have included data and technical reports in the information package that apply to the Seapoint product line, but are presented under the name Enviroquip.

210 West Road, #7
Portsmouth, NH 03801-5639
USA
Tel: 603-436-2809
Fax: 603-436-9961

I believe that the Seapoint product line offers the State of Maine a convenient, flexible and timely solution to the challenge of providing environmentally appropriate wastewater treatment. On the basis of the information presented, I am requesting that WASTECH's Seapoint product line be considered for full Registration without provisional status. I look forward to answering any questions and providing whatever additional support you may require.

Sincerely,



Guy Marchesseault, Ph.D.
President
603-436-2809 Ext 14
gm@wastech.com

Enclosure: Application Package Addendum

210 West Road, #7
Portsmouth, NH 03801-5639
USA
Tel: 603-436-2809
Fax: 603-436-9961



JOHN ELIAS BALDACCI
GOVERNOR

STATE OF MAINE
DEPARTMENT OF HUMAN SERVICES
BUREAU OF HEALTH, DIVISION OF HEALTH ENGINEERING
161 CAPITOL STREET
11 STATE HOUSE STATION
AUGUSTA, MAINE
04333-0011

JOHN R. NICHOLAS
COMMISSIONER

September 15, 2004

WASTECH International, Inc.
Attn.: Guy Marchessault, Senior Vice President
210 West Road, #7
Portsmouth, New Hampshire 03801-5693

Subject: Provisional Product Registration, Seapoint Wastewater Treatment System, Models 5, 10, and 20

Dear Mr. Marchessault:

The Division of Health Engineering has completed a review of a registration application for your company's product. This information was submitted pursuant to Section 1802 of the Maine State Plumbing Code, Subsurface Wastewater Disposal Rules (Rules), for code registration, for use in Maine.

Product Description

The Seapoint Wastewater Treatment System consists of a submerged membrane bioreactor with optional sludge dewatering capabilities. Influent receives primary treatment prior to introduction to the membrane reactor. Effluent is disinfected through use of an ultraviolet unit. The Seapoint Wastewater Treatment System is designed to treat flows ranging from 5,000 gallons to 20,000 gallons per day. The Seapoint Wastewater Treatment System is designed for use with conventional onsite sewage disposal areas, and/or surface application of effluent.

Claim

According to the information you provided, the Seapoint Wastewater Treatment System produces effluent with BOD₅ and TSS levels of less than 10 mg/l, each.

Determination

On the basis of the information you have submitted, the Division has determined that the Seapoint Wastewater Treatment System is acceptable for use in the State of Maine on a Provisional basis, provided that it is installed, operated, and maintained in conformance with the manufacturer's directions.

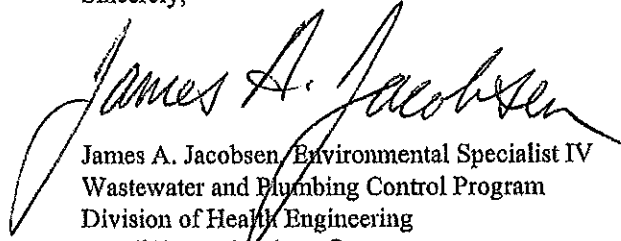
No more than 50 installations may be installed under this Provisional registration. On no less than a monthly basis for a period of not less than one year, the applicant shall test the influent and effluent of each installed new or experimental technology system for the following parameters: five day Biochemical Oxygen Demand (BOD₅), Total Suspended Solids (TSS), Nitrate Nitrogen (NO₃), and coliform bacteria. The results of these tests shall be submitted to the Division on no less than a semi-annual basis. Existing data from other jurisdictions may be submitted, if available.

In the event that the product fails to perform as claimed by the applicant, use of the new or experimental technology in Maine, including all installations approved pursuant to Section 1801.7 of the Rules, shall cease. Use of the new or experimental technology shall not resume until the applicant and the Division have reached a mutually acceptable agreement for resolving the failure to perform as claimed.

Because installation and owner maintenance has a significant effect on the working order of onsite sewage disposal systems, including their components, the Division makes no representation or guarantee as to the efficiency and/or operation of Seapoint Wastewater Treatment System. Further, registration of this product for use in the State of Maine does not represent Division preference or recommendation for this product over similar products.

If you have any questions please feel free to contact me at (207) 287-5695.

Sincerely,



James A. Jacobsen, Environmental Specialist IV
Wastewater and Plumbing Control Program
Division of Health Engineering
e-mail: james.jacobsen@state.me.us

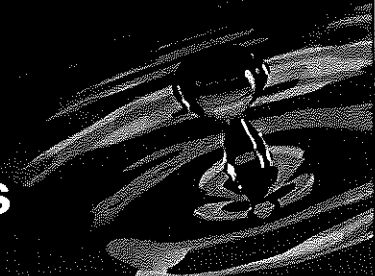
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SEAPOINT

Pre-engineered, Prefabricated, MBR Wastewater Treatment Package Plants



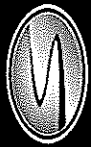
WASTECH[®] International has successfully transitioned wastewater treatment equipment developed for the U.S. military into a commercial product line that is currently being marketed throughout the country under the name **Seapoint[®]**. The **Seapoint** product line consists of advanced wastewater treatment equipment conveniently packaged for the land development, decentralized municipal and emergency management marketplaces. **Seapoint** products are also marketed under private label throughout the country by Enviroquip, Inc. of Austin Texas.

The **Seapoint** product line and MBR systems marketed by Enviroquip utilize well-established and commercially- demonstrated flat plate membrane bioreactor technology manufactured by KUBOTA , the best available for generating the high quality effluent demanded by environmental agencies. Features of the **Seapoint** product line include:

- pre-engineered, prefabricated and pre-tested;
- three packaging formats to meet customer needs - enclosed concrete structures, open pallets, transportable containers;
- smallest physical footprint with superior quality effluent;
- fully automatic, redundant operations;
- low operating and maintenance costs, easy monitoring with remote access;
- delivered on time, on budget, ready to operate.

WASTECH is seeking approval for unqualified registration from the Maine Department of Human Services, Division of Health Engineering for its **Seapoint** package plant equipment (which may also be marketed under the Enviroquip name).

SEAPOINT Package Plant Division
WASTECH International, Inc
210 West Road
Portsmouth, NH 03801
603.436.2809
www.seapointinc.com



SEAPOINT

Wastewater Treatment Package Plants

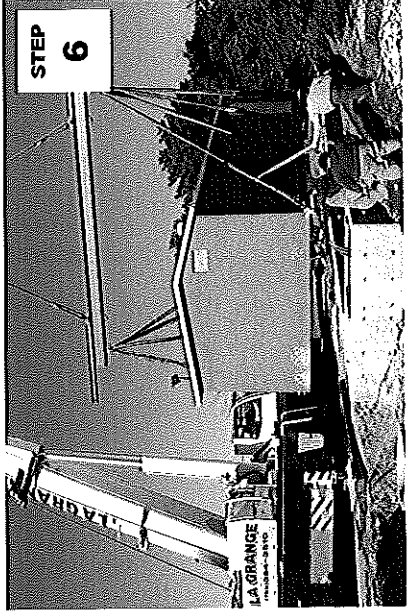
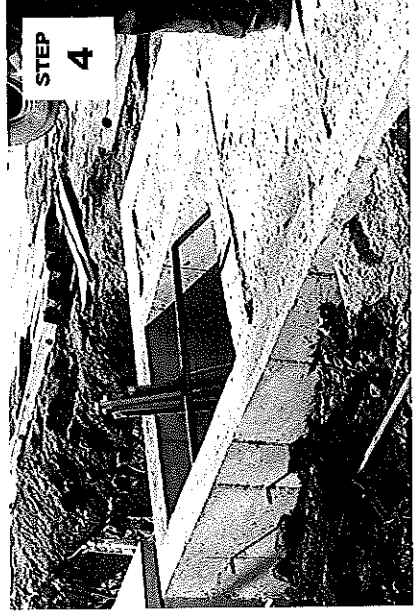
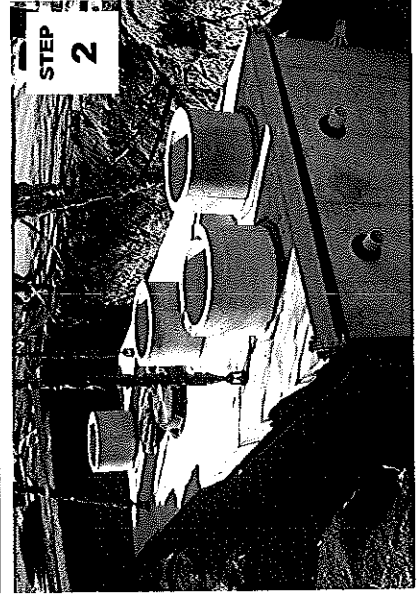
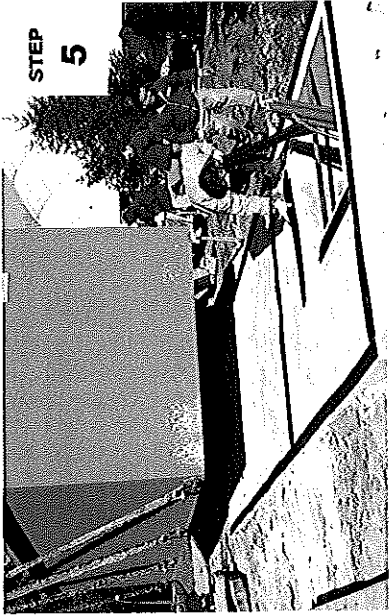
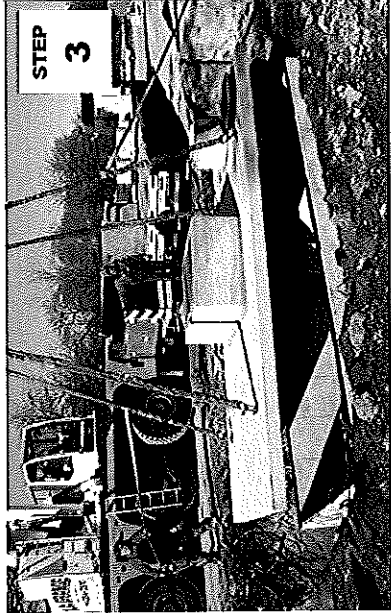
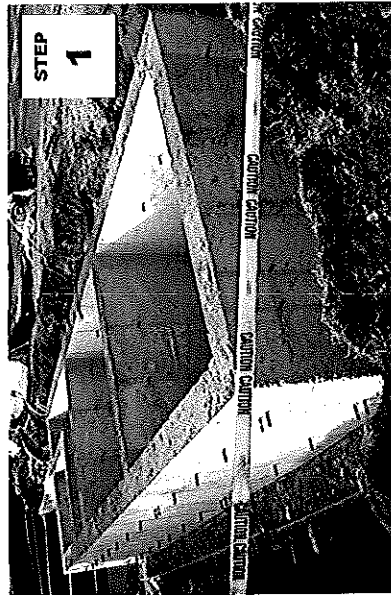
Customer Site Preparation

- Building Foundation
- Installation of Solids Separation & Flow Equalization Tanks

Building Installation

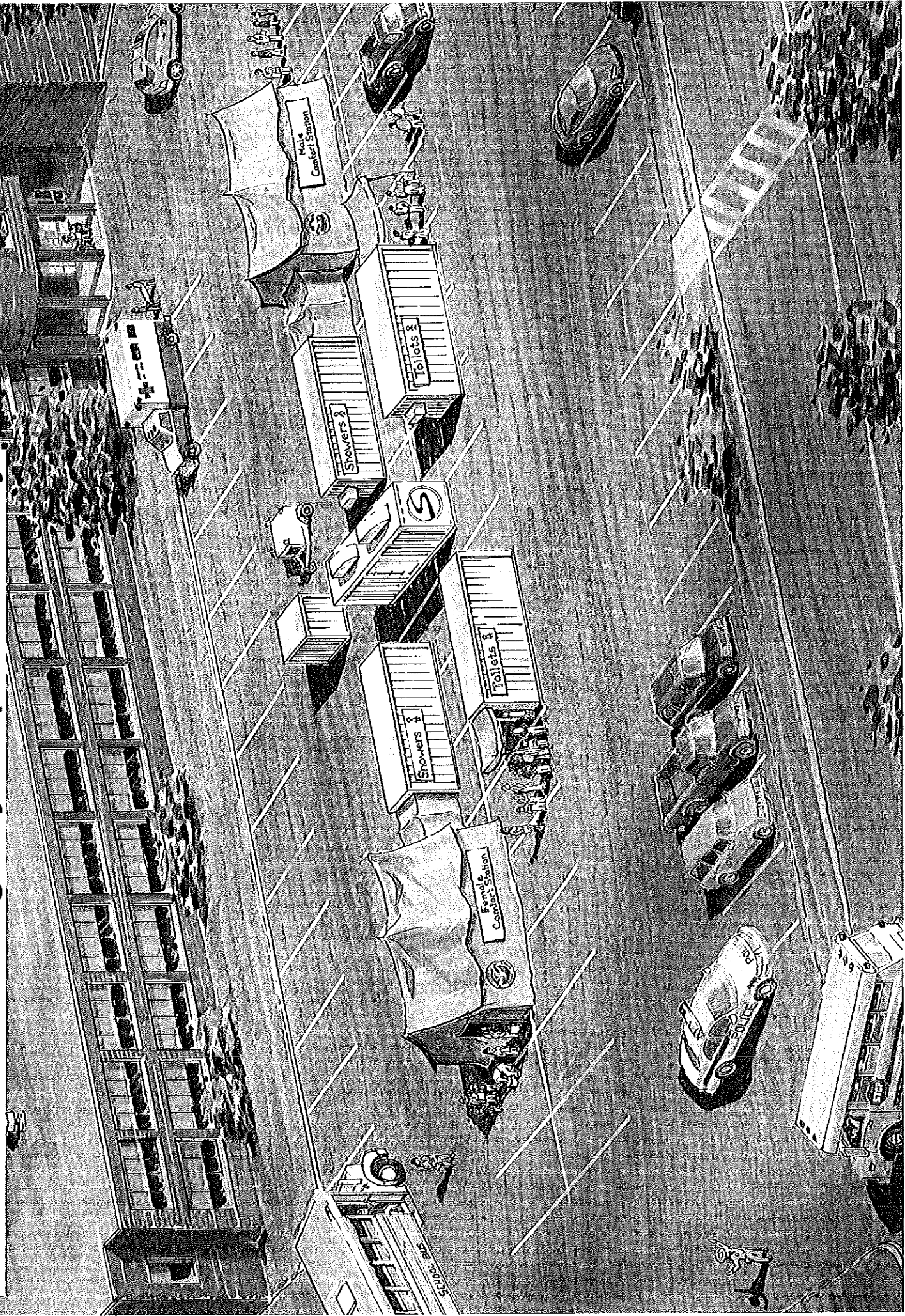
- Crane Used for Moving
- Mastic Used for Sealing
- Alignment of Soil Box Pipes for Piping Connections

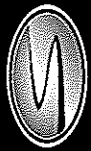
B-Series Installation





SEAPoint Emergency Response Facility

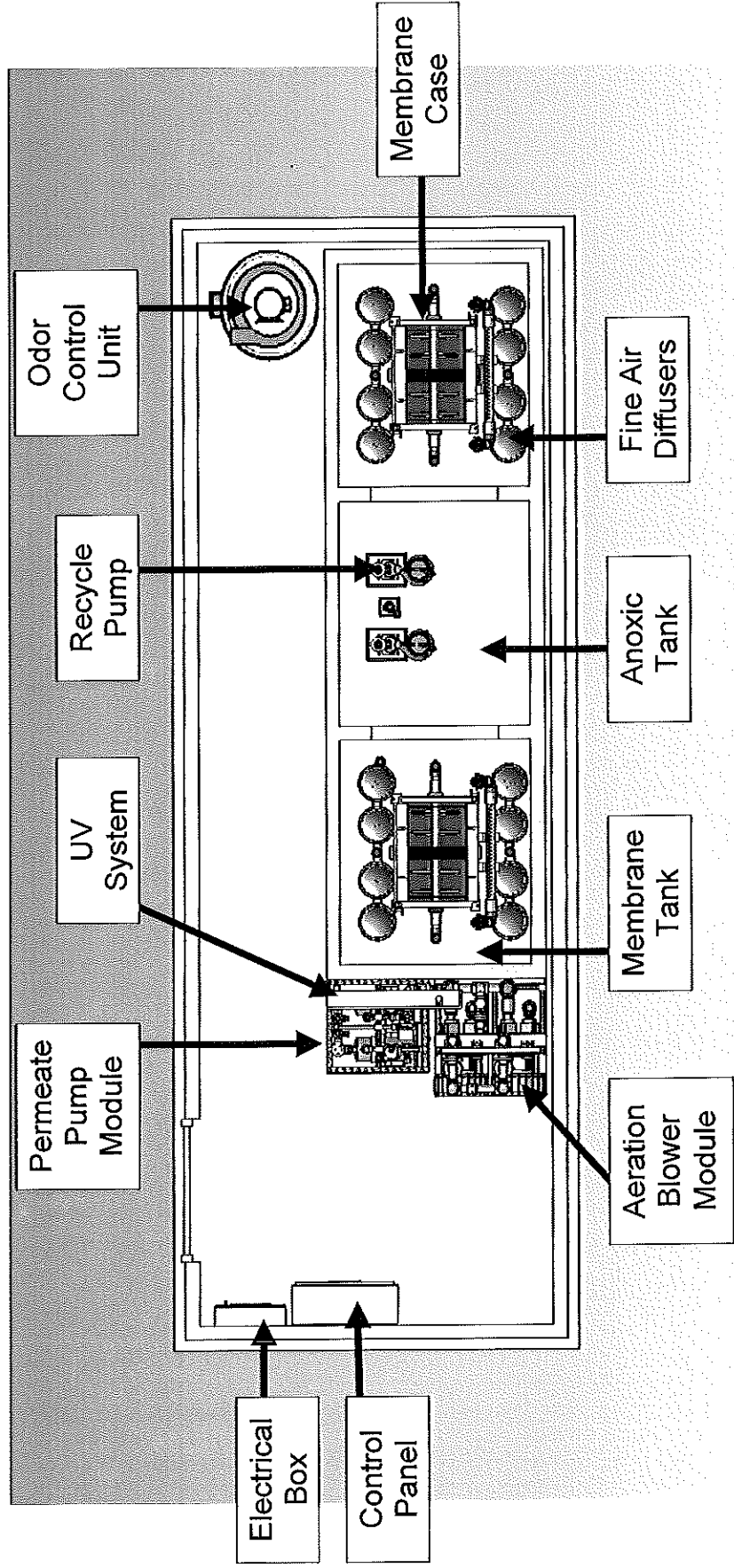




SEAPOINT

B-Series Wastewater Treatment Package Plants

Typical B-10 - Duplex System





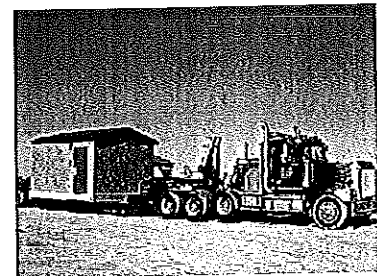
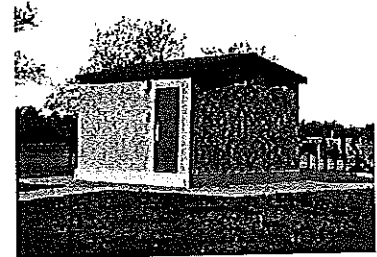
SEAPOINT B-Series

Pre-engineered Wastewater Treatment Package Plants in Prefabricated Modular Concrete Structures

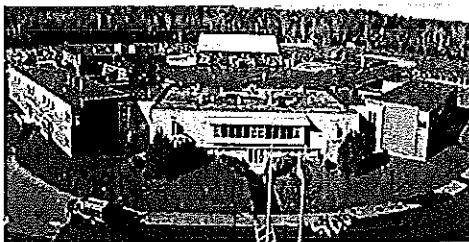
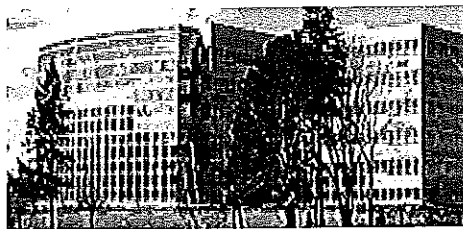
SEAPOINT B-Series Systems

Up to 30,000 GPD advanced wastewater treatment in prefabricated structures incorporating process equipment

- All SEAPOINT products are pre-engineered and manufactured at our facilities.
- Our products are delivered to you ready for installation at your prepared site.
- SEAPOINT products have the smallest footprint on the market for wastewater package plants.
- Save time and money by specifying one of our many standard packages with the options you need.



Typical Applications



Features

- Fully integrated, automatic treatment process with submerged membrane bioreactor (MBR) technology and UV
- Durable modular structure with multiple finish options; power and liquid connections to customer-supplied external wastewater collection, equalization and sludge holding tanks
- Produces reuse quality effluent (typical BOD₅, TSS ≤ 5 mg/L, TN ≤ 10 mg/L, CFU = ND)
- Reliable technology, PLC control, easily maintained, duplex pumps, blowers and UV

Options

- Work space insulation and heating
- Remote system monitoring with auto dial
- Exterior and roof finish options
- Total phosphorus control
- Upgrades for extreme wind, seismic and snow conditions

Applications include:

- Small Communities • Cluster Housing
- Commercial Campuses • Schools
- Visitor Centers • RV Parks • Golf Courses

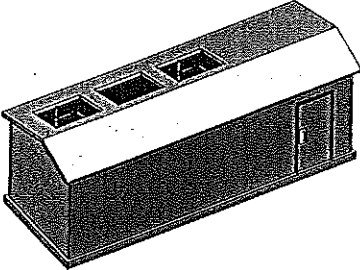
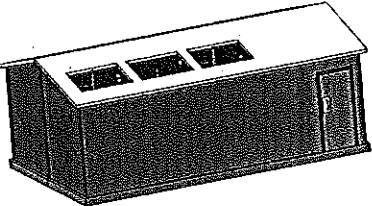
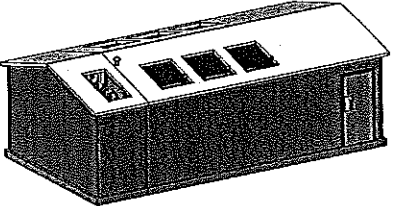
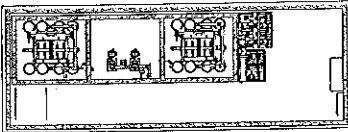
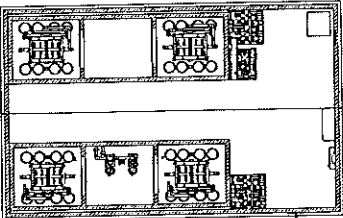
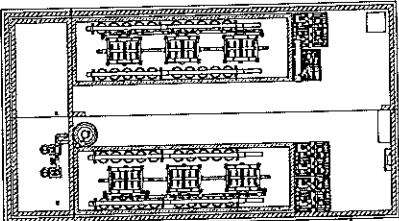
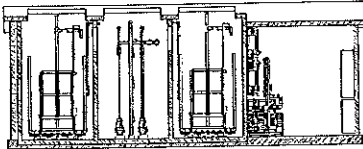
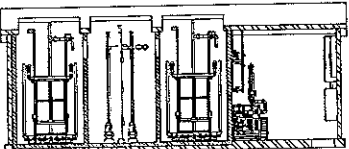
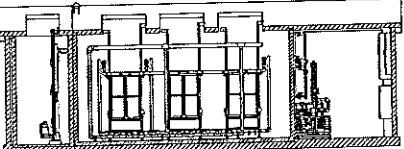
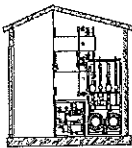
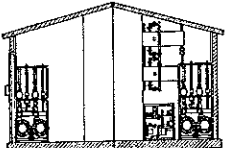
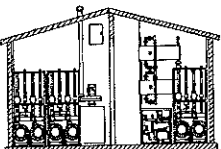
SEAPOINT™



Pre-engineered Wastewater Package Plants in Prefabricated Modular Concrete Structures

SEAPOINT B-series units come in four standard flow capacities with typical flow rates as follows:

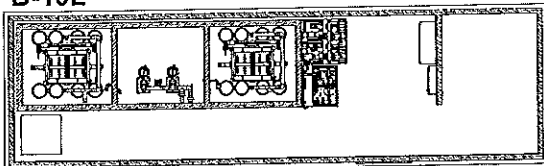
- The B-5: 5,000 GPD or up to 7,500 GPD with optional E (extended) configuration upgrade
- The B-10: 10,000 GPD or up to 15,000 GPD with optional E (extended) configuration upgrade
- The B-20: 20,000 GPD or up to 30,000 GPD with optional E (extended) configuration upgrade
- The B-30: 30,000 GPD with attached anoxic tank

B-10	B-20	B-30
		
		
		
		
<p>26'-6" Long 9'-6" Wide 10'-4" High 89,000 lbs Dry 116,000 lbs Wet</p>	<p>26'-6" Long 16'-6" Wide 11'-2" High 146,000 lbs Dry 201,000 lbs Wet</p>	<p>30'-6" Long 16'-6" Wide 11'-2" High 172,000 lbs Dry 255,000 lbs Wet</p>
<p>Note: Length and Width are foundation size</p>		

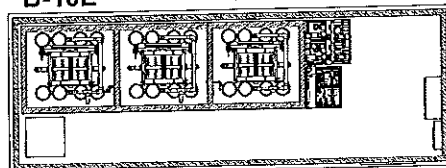
Each B-Series version is also available in 2 alternative configurations (individually or in combination):

- The L (long) version with additional 6 or 10 foot length for optional or customer-supplied equipment, and
- The E (extended capability) version with the additional treatment capability of one or more MBR tanks.

B-10L



B-10E

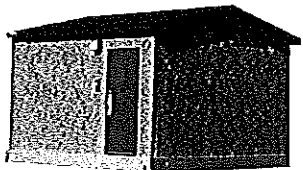
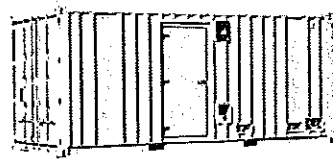
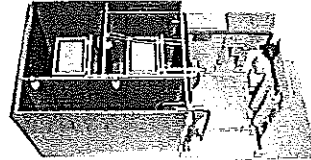




SEAPOINT

Pre-engineered, Prefabricated Wastewater Treatment Package Plants



	PRE-FABRICATED STRUCTURE UNITS (B-Series)	CONTAINER UNITS (C-Series)	PALLET UNITS (P-Series)
TYPICAL ILLUSTRATION			
DESCRIPTION	Self-contained, modular wastewater treatment system housed in a concrete structure producing high quality, reusable effluent	Self-contained, relocatable wastewater treatment system producing high quality, reusable effluent	Fully integrated, transportable wastewater treatment system with palletized components, producing high quality, reusable effluent
APPLICATIONS	5,000 - 30,000 GPD	5,000 - 30,000 GPD	5,000 - 50,000 GPD
FEATURES	Automatic, fully integrated treatment equipment, with power and liquid interfaces, delivered in a durable modular structure	Automatic, fully integrated treatment equipment, with power and liquid interfaces, housed in a durable, insulated, weather-tight, ISO container	Automatic, fully integrated treatment equipment, arranged on pallets with electric and plumbing interconnections for easy installation and operation
TYPICAL EFFLUENT QUALITY	BOD ₅ , TSS ≤ 5mg/L, TN ≤ 10, fecal coliform = ND	BOD ₅ , TSS ≤ 5mg/L, TN ≤ 10, fecal coliform = ND	BOD ₅ , TSS ≤ 5mg/L, TN ≤ 10, fecal coliform = ND
STANDARD EQUIPMENT	Membrane bio-reactor (MBR) with odor control, ultraviolet disinfection, PLC control system, duplexed pumps and blowers	Membrane bio-reactor (MBR), ultraviolet disinfection, PLC control system, insulation, duplexed pumps and blowers	Membrane bio-reactor (MBR) with odor control, ultraviolet disinfection, PLC control system, duplexed pumps and blowers
OPTIONS	Cold weather heating & insulation package, workspace A/C, sludge thickening, dial-out emergency notification	Work space heating and A/C, sludge thickening, dial-out emergency notification	Sludge thickening, dial-out emergency notification
INTERFACE REQUIREMENTS (provided by owner)	Wastewater collection/separation tank, equalization/pump tank, sludge holding tank, prepared site with power	Wastewater collection/separation tank, equalization/pump tank, sludge holding tank, support pad with power	Wastewater collection/separation tank, equalization/pump tank, sludge holding tank, support pad with power and weather-proof enclosure for electrical equipment
TYPICAL MARKET APPLICATIONS	Wastewater treatment facility for residential developments, commercial campuses, resorts, visitor centers, country clubs, RV Parks, etc.	Stand-alone sanitary service for commercial buildings, seasonal camps, training sites, reconstruction, emergency management, etc.	Integrated wastewater treatment unit for office buildings, schools, hospitals, hotels, apartment buildings, etc.

SEAPOINT

210 West Road, #7 | Portsmouth, NH 03801 | USA | Tel: 603-436-2809 | Fax: 603-436-9961 | www.seapointinc.com

SEAPOINT Integrated Wastewater Treatment Products

General Specifications

Treatment Technology & Wastewater Processing Capabilities:

- Treatment system based upon flat-plate membrane bio-reactor (MBR) technology
- 2 to 21 gallons per minute, at 3,000 to 30,000 gallons per day average flow (Up to 50,000 gpd in Series P)
- 6 to 42 gallons per minute for emergency flow up to 24-hours
- *Effluent Supplied Head Pressure: 15'*

Wastewater Influent Characterization: The system is optimized to operate within the following blended municipal wastewater input parameters:

- *Maximum Particle Size: 1/8"*
- *TSS: 30 day average not to exceed 300 mg/L*
- *BOD₅: 30 day average not to exceed 300 mg/L*
- *TKN: 30 day average not to exceed 45 mg/L*
- *Influent Temperature: 50°F (10°C) to 80°F (27°C)*
- *pH: 5.0 – 9.0*

Treated Effluent Characterization:

- *Maximum Particle Size: not to exceed .005"*
- *TSS: not to exceed 5 mg/L average*
- *BOD₅: not to exceed 5 mg/L average*
- *Total Nitrogen: not to exceed 10 mg/L average*
- *Turbidity: not to exceed 1.0 NTU*

These influent and effluent values are for standard plant equipment. Additional treatment options are available for influent concentrations that exceed these values and effluent concentrations that must be lower.

Electric Power Requirements:

- *Customer Supplied Inlet Power: 3-phase, 50 or 60 Hz. Single phase option available for smaller units.*
- *Frequency Stability Limit: +/- 1 Hz of specified line frequency*
- *Line Voltage Fluctuation Limit: +/- 5%*

Mechanical Equipment

- Effluent pumps and recirculation pumps, aeration blowers, control valves, and ultraviolet disinfection unit are pre-mounted in the system
- Supply pumps are included with the system for installation in the equalization tank.
- Standard system has installed backups for pumps, blowers, and UV disinfection.

System Controls & Process Monitoring:

- PLC controlled for total automatic operation, including automatic switchover to standby equipment, as needed.
- Display panel for alarms and faults
- Internal modem for remote dial-in connection to PLC
- Optional dial-out modem for emergency notification

Installation Site:

- *Operating Temperature:* The system will operate at ambient temperatures ranging from 40°F (4°C) to 90°F (32°C). Optional insulation/heating and/or air conditioning are available for operation outside this range.
- *Location:* The installation site should be located in close proximity to the wastewater collection area and a power source sufficient to operate the system.
- *Additional Tanks:* A collection/separation (C/S) tank, which receives all wastewater, and an equalization (EQ) tank, which supplies the system, are required. Filtering capable of removing all particles greater than 1/8 inch is required between the C/S and EQ tanks. Filters are supplied for installation into the C/S tank. An optional active bar screen is available. A sludge holding tank is recommended. Tanks are available as options.
- *Site Work:* Installation of building and tanks, and all on-site plumbing and electrical connections between the treatment unit and peripheral equipment are the responsibility of the customer.

Rev: PG032706NA

Pre-engineered Wastewater Package Plants in Prefabricated Modular Concrete Structures

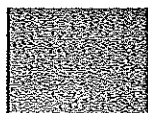


Finish and Color Options

SEAPOINT has a large selection of standard and upgraded packages in a variety of colors from which to choose. These prefabricated structures will lower your project costs and shorten time to completion.

- Construction materials are reinforced concrete.
- Two coats of modified latex exterior paint are applied at the factory.
- Architectural upgrades, including exterior wall and roof finishes, are available.

Exterior Wall Finishes: (Options at extra cost)



Standard: Painted Stucco



Optional: Split Block
Concrete Form



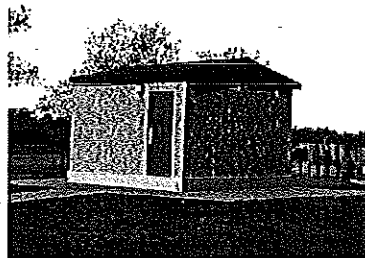
Optional: River Rock
Exposed Aggregate

Color Options: Benjamin Moore Industrial Coating Color Pallet

Other Optional Exterior Wall Finishes Include:
Clapboard Look
Cedar Shingle Look

Roof Finishes: (Options at extra cost)

Standard: Finished and Painted Concrete
Options: Asphalt Shingle Roof
Standing Seam Metal Roof



Structure Code Compliance

The standard B-Series package plant structures are built in accordance with the 2003 International Building Code (IBC). The standard structure conforms to:

- Winds up to 140 MPH
- Seismic Zone 2
- 20 inch snow load

Upgraded structures can be built for seismic zone 4, higher wind stress, and higher snow load.

Additionally, the structures are in full compliance with the following codes: 2003 International Plumbing Code, 2003 International Mechanical Code and 2002 National Electric Code

Wastewater Treatment Package Plant Capabilities

Typical Maximum Influent Concentrations:

- BOD₅: 300 mg/L 30 day average
- TSS: 300 mg/L 30 day average
- TKN: 45 mg/L 30 day average

Treated Effluent Concentrations

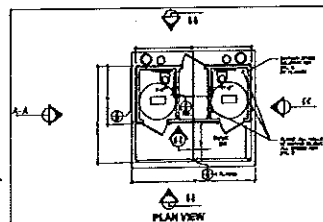
- BOD₅: ≤ 5 mg/L
- TSS: ≤ 5 mg/L
- TN: ≤ 10 mg/L

Additional treatment options are available for higher influent concentrations and lower effluent values. Modifications are available to achieve compliance with total N ≤ 3 mg/L and total P ≤ 1 mg/L.

Other Available Products:

Prefabricated Restroom Buildings

- Available in a variety of sizes, configurations and finishes
- ADA compliant
- Ideally suited for recreation areas, RV parks, etc.
- Contact your sales representative for more information



SEAPOINT

General Structure Specifications

Pre-cast Components:

- All concrete used in the pre-cast walls, roof, and floor has a minimum compressive strength of 5,000 psi and conforms with the requirements of ACI standard 318-83.
- Test samples are taken during the manufacture of each structure.

Reinforcement:

- All reinforcing steel bars conform to ASTM 615 Grade 60.
- Wire mesh and flat sheets used for reinforcing conform to ASTM 185.

Assembly: All pre-cast wall panels are welded together and attached to the floor in such a way as to form a continuous unit.

Doors: Exterior door is 3' 0" x 6' 8", 1 3/4" thick pre-hung metal with a matching metal frame permanently attached to the building.

Exterior Walls: The exterior concrete walls of the structure have a concrete stucco finish. Other finishes are available as options.

Electrical:

- All electrical items are pre-wired.
- Fixtures include:
 - Interior lighting
 - Exterior lighting by entry door
 - 120 volt electrical outlets
 - Exterior power disconnect box

Design Loads: The standard building is designed for wind speeds up to 140 MPH, snow loads of 20", and Seismic Zone 2. Building upgrades are available for Seismic Zone 4, snow loads up to 60", and wind speeds as required.

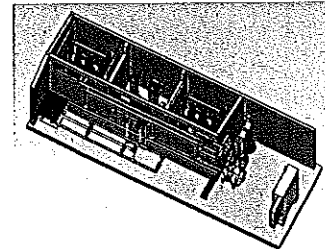
Site Preparation Requirements

Location: The installation site should be in close proximity to the wastewater collection area and a power source sufficient to operate the system. The installation site must permit access by equipment capable of transporting, offloading, and handling the designated loads.

Site Suitability: The site must be level and stable enough for the system's gross weight, when fully loaded and processing wastewater. The foundation must be designed in accordance with local codes.

Additional Tanks: A collection/separation tank, which receives all wastewater, and an equalization tank, which supplies the treatment unit, are required. The minimum size of each is determined in consultation with SEAPOINT in consideration of the flow details of the application. Filtering capable of removing all particles greater than 1/8 inch is required between tanks. These filters are supplied by SEAPOINT for installation into the collection tank. A sludge holding tank is recommended. Tanks are available from SEAPOINT as options.

Site Work: Installation of building and tanks, and all on-site plumbing and electrical connections are the responsibility of the customer.



General Treatment System Specifications

Treatment Technology:

- Submerged membrane bioreactor with denitrification, influent pre-filtration, and permeate disinfection

Wastewater Processing Capabilities:

- Available in standard sizes capable of treating up to 30,000 GPD
- Effluent Supplied Head Pressure: 15' minimum

Wastewater Influent Characterization: The system is optimized to operate within the following blended municipal wastewater input parameters:

- TSS: 30 day average not to exceed 300 mg/L
- BOD₅: 30 day average not to exceed 300 mg/L
- TKN: 30 day average not to exceed 45 mg/L
- Wastewater Temperature: 50°F (10°C) to 80°F (27°C)
- pH: 5.0 – 9.0

Treated Effluent Characterization :

- Maximum Particle Size: not to exceed .005"
- TSS: ≤ 5 mg/L average
- BOD₅: ≤ 5 mg/L average
- Total Nitrogen: ≤ 10 mg/L average
- Turbidity: not to exceed 1.0 NTU
- Fecal Coliform Bacteria: None detectable

These influent and effluent values are for standard plant equipment. Additional treatment options are available for influent concentrations that exceed these values or effluent concentrations that must be lower.

Electric Power Requirements:

- Customer Supplied Inlet Power: 208 or 480VAC, 3-phase. Single phase option available for smaller units.
- Frequency Stability Limit: +/- 1 Hz of specified line frequency
- Line Voltage Fluctuation Limit: +/- 5%

Mechanical Equipment:

- Effluent pumps, recirculation pumps, aeration blowers, control valves, and ultraviolet disinfection units are pre-mounted in the system
- Supply pumps are included with the system for installation in the equalization tank.
- Duplex designs are standard; simplex designs are available.

System Controls & Process Monitoring:

- PLC controlled
- Display panel for alarms and faults
- Internal modem for remote monitoring with optional auto-dialer

Operating Temperature: The system will operate at ambient temperatures ranging from 40°F (4°C) to 90°F (32°C). Optional insulation and heating are available for operation outside this range.

Odor Control: An odor control system designed to manage the process air released from the membrane bioreactor is incorporated into the structure.

Rev: B050306NA

SEAPOINT™ Package Plants are Manufactured by WASTECH International, Inc.

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SEAPOINT P-Series

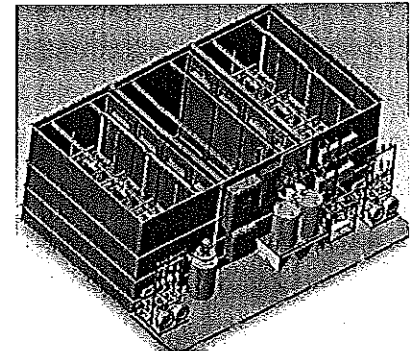
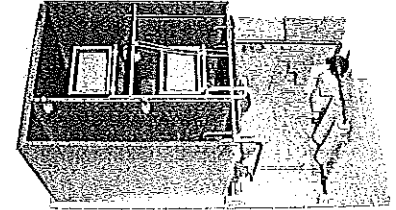
Pre-engineered, Modular Wastewater Treatment Package Plants on Fully Integrated Pallets



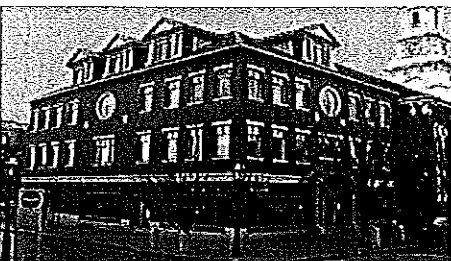
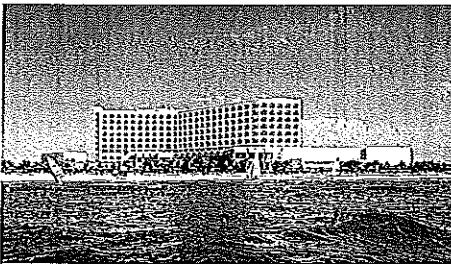
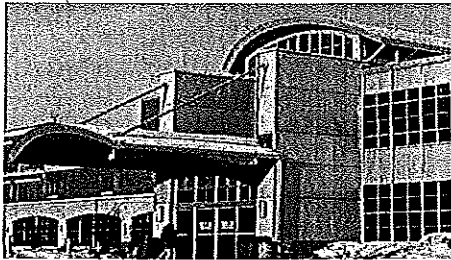
SEAPOINT P-Series Systems

Up to 40,000 GPD advanced wastewater treatment on prefabricated, modular pallets

- All SEAPOINT products are pre-engineered, prefabricated and pre-tested.
- SEAPOINT products are delivered by flat-bed trailer or ISO shipping container, ready for installation at your prepared site.
- SEAPOINT products have the smallest footprint on the market for wastewater package plants.
- Standard SEAPOINT products are available in a range of capacities from 5,000 to 40,000 GPD with a range of configurations for ease of installation. Larger custom sizes are also available.



Typical Applications



Features

- Fully integrated, automatic treatment process with submerged membrane bioreactor (MBR) technology and UV
- Durable coated steel structure with power and liquid connections to customer-supplied external wastewater collection, equalization and sludge holding tanks
- Produces reuse quality effluent (typical BOD₅, TSS ≤ 5 mg/L, TN ≤ 10 mg/L, CFU = ND)
- Reliable technology, PLC control, easily maintained, duplex pumps, blowers and UV

Options

- Remote system monitoring with auto-dial capability
- Upgraded instrumentation for process monitoring
- Total phosphorus control
- Odor control system

Applications include:

- Hospitals • Office Buildings • Hotels
- Residential Developments • Schools
- Malls • Apartment Buildings • Stadiums

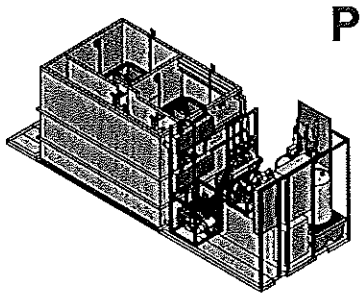
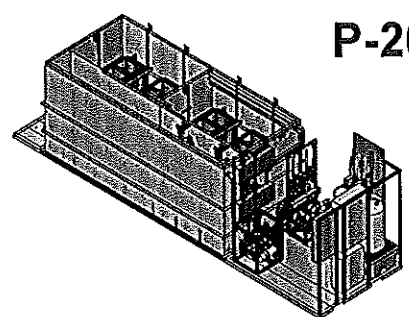
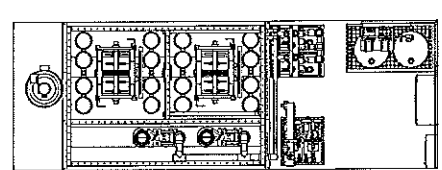
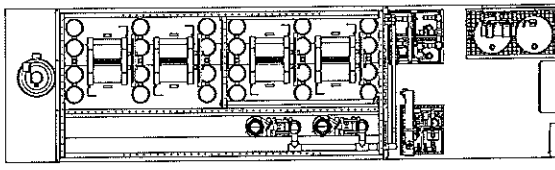
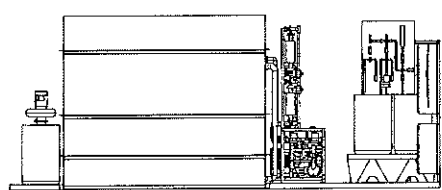
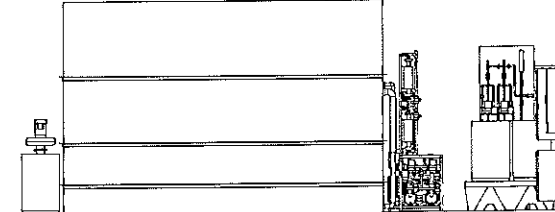
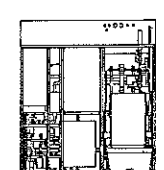
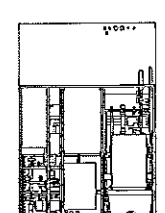
SEAPOINT™



Pre-engineered, Modular Wastewater Treatment Package Plants on Fully Integrated Steel Pallets

SEAPOINT P-series units come in five standard daily treatment volume capacities:

- The P-5, P-10, and P-20 (up to 20,000 GPD) ship on a single pallet with integrated anoxic tank.
- The P-30, P-40, and larger units (30,000 GPD and up) ship on three pallets with the MBR and anoxic sections connected on site.
- Larger sizes can be easily designed using a modular approach similar to the P-30 and P-40.
- Dimensions and weights shown are for steel tanks. Concrete tanks are available for the P-5, P-10, and P-20. Contact SEAPOINT for details.

P-10	P-20
	
	
	
	
10,000 Gallons per Day 21'-9" Long 7'-5" Wide 8'-8" High 11,400 lbs Dry 38,700 lbs Wet	20,000 Gallons per Day 27'-5" Long 7'-5" Wide 10'-8" High 16,800 lbs Dry 87,000 lbs Wet

SEAPOINT

Pre-engineered, Modular Wastewater Treatment Package Plants on Fully Integrated Steel Pallets



SEAPOINT Package Plant Capabilities

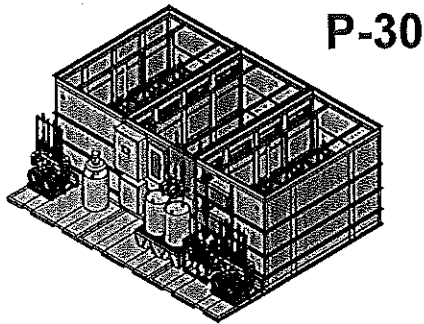
Typical Maximum Influent Concentrations:

- BOD₅: 300 mg/L 30 day average
- TSS: 300 mg/L 30 day average
- TKN: 45 mg/L 30 day average

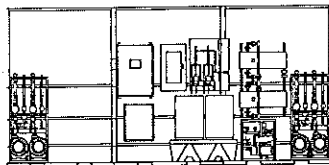
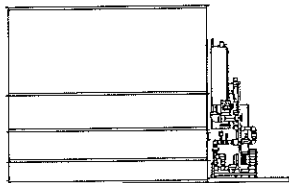
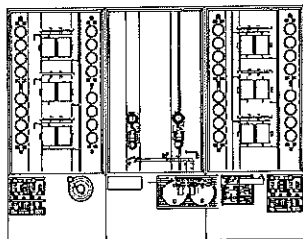
Treated Effluent Concentrations:

- BOD₅: ≤ 5 mg/L
- TSS: ≤ 5 mg/L
- TN: ≤ 10 mg/L

Additional treatment options are available for higher influent concentrations and lower effluent values. Modifications are available to achieve compliance with total N ≤ 3 mg/L and total P ≤ 1 mg/L.



P-30



30,000 Gallons per Day

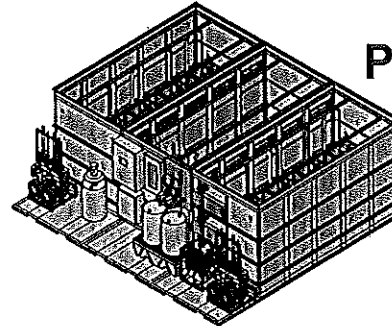
17'-2" Long

22'-0" Wide

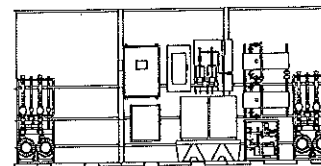
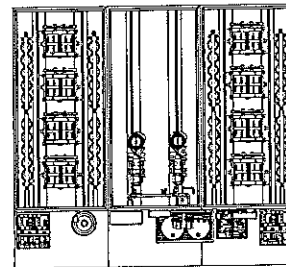
10'-8" High

27,600 lbs Dry

143,000 lbs Wet



P-40



40,000 Gallons per Day

19'-2" Long

22'-0" Wide

10'-8" High

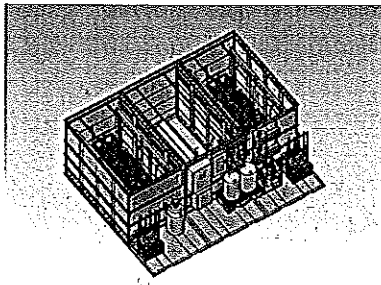
33,000 lbs Dry

181,000 lbs Wet

SEAPOINT

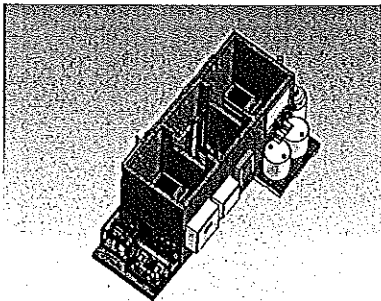
Materials

Steel



- Welded steel construction
- Tanks protected with epoxy paint
- Stainless steel hardware
- Available in all standard and custom sizes

Concrete



- Reinforced concrete poured as a monolithic structure
- Interior of tanks sealed with epoxy paint
- Available in standard sizes up to P-20

Site Preparation

Location: The installation site should be in close proximity to the waste water collection area and a power source sufficient to operate the system. The installation site must permit access by equipment capable of transporting, offloading, and handling the designated loads.

Site Suitability: The site must be level and stable enough for the system's gross weight, when fully loaded and processing wastewater. The foundation must be designed in accordance with local codes.

Additional Tanks: A collection/separation tank, which receives all wastewater, and an equalization tank, which supplies the treatment unit, are required. The minimum size of each is determined in consultation with SEAPOINT in consideration of the flow details of the application. A sludge holding tank is recommended. Tanks are available from SEAPOINT as options.

Filtering: Filters capable of removing all particles greater than 1/8 inch are required. Static filters for installation between the collection and equalization tanks are supplied with the unit. An optional bar screen for installation between the equalization tank and treatment plant is available.

Lifting: A clearance of 6 feet from the top of the tank to a lifting hook (15 to 17 feet from floor) is required for membrane cassette removal and replacement.

Site Work: Installation of pallet and tanks, construction of foundation and enclosure, and all on-site plumbing and electrical connections are the responsibility of the customer.

General Treatment System Specifications

Treatment Technology:

- Submerged membrane bioreactor with denitrification, influent pre-filtration and permeate disinfection

Wastewater Processing Capabilities:

- Available in standard sizes capable of treating up to 40,000 GPD. Larger custom sizes are also available.
- Effluent Supplied Head Pressure: 15' minimum

Wastewater Influent Characterization: The system is optimized to operate within the following blended municipal wastewater input parameters:

- TSS: 30 day average not to exceed 300 mg/L
- BOD₅: 30 day average not to exceed 300 mg/L
- TKN: 30 day average not to exceed 45 mg/L
- Wastewater Temperature: 50°F (10°C) to 80°F (27°C)
- pH: 5.0 – 9.0

Treated Effluent Characterization :

- Maximum Particle Size: not to exceed .005"
- TSS: ≤ 5 mg/L average
- BOD₅: ≤ 5 mg/L average
- Total Nitrogen: ≤ 10 mg/L average
- Turbidity: not to exceed 1.0 NTU
- Fecal Coliform Bacteria: None detectible

These influent and effluent values are for standard plant equipment. Additional treatment options are available for influent concentrations that exceed these values or effluent concentrations that must be lower.

Electric Power Requirements:

- Customer Supplied Inlet Power: 208 or 480VAC, 3-phase. Single phase option available for smaller units.
- Frequency Stability Limit: +/- 1 Hz of specified line frequency
- Line Voltage Fluctuation Limit: +/- 5%

Mechanical Equipment:

- Effluent pumps, recirculation pumps, aeration blowers, control valves, and ultraviolet disinfection units are pre-mounted in the system.
- Supply pumps are included with the system for installation in the equalization tank.
- Duplex designs are standard; simplex designs are available.

System Controls & Process Monitoring:

- PLC controlled
- Display panel for alarms and faults
- Internal modem for remote monitoring with optional auto-dialer

Operating Temperature: The system will operate at ambient temperatures ranging from 40°F (4°C) to 90°F (32°C).

Odor Control: An optional odor control system designed to manage the process air released from the membrane bioreactor can be incorporated into the pallet. A cover, which extends above the top of the tanks, is required to contain the gases for odor control.

Rev: P050206NA

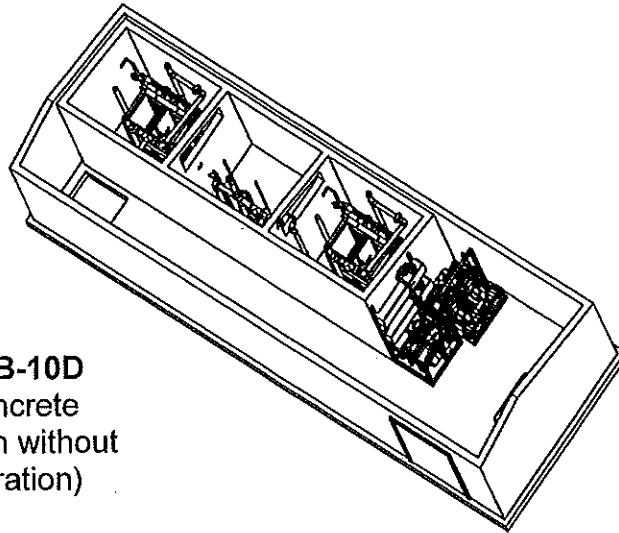
SEAPOINT™ Package Plants are Manufactured by WASTECH International, Inc.

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Seapoint B-10D Specification

Wastewater Treatment Package Plant in a Prefabricated Concrete Structure



Seapoint™ B-10D
(Modular concrete
structure shown without
roof for illustration)

Wastewater Processing Capabilities:

- Treatment system based on flat-plate membrane bio-reactor (MBR) technology
- Up to 8.7 GPM, 12,500 GPD average flow
- Up to 17.4 GPM, 25,000 GPD emergency flow (up to 24 hours)
- Effluent Supplied Head Pressure: 15' minimum

Influent, Effluent, and Process Characterization: The following influent and effluent values are for standard plant equipment. Additional treatment options are available for influent concentrations that exceed these values and effluent concentrations that must be lower.

- **Wastewater Influent**
 - *Maximum Particle Size:* 1/8" (3 mm)
 - *TSS:* 30-day average not to exceed 300 mg/L
 - *BOD₅:* 30-day average not to exceed 300 mg/L
 - *TKN:* 30-day average not to exceed 45 mg/L
- **Process Conditions**
 - *Operating Temperature:*
 - For 12,500 GPD: 59°F (15°C) to 80°F (27°C)
 - For 10,000 GPD: 50°F (10°C) to 80°F (27°C)
 - *MLSS Concentration:* 12,000 mg/L (typical)
 - *pH:* 5.0 – 9.0
- **Treated Effluent**
 - *TSS:* 30-day average not to exceed 5 mg/L
 - *BOD₅:* 30-day average not to exceed 5 mg/L
 - *Total Nitrogen:* 30-day average not to exceed 10 mg/L
 - *Turbidity:* 30-day average not to exceed 1.0 NTU
 - *Fecal Coliform Bacteria:* None detectible

Seapoint B-10D Specification

Materials of Construction

Structure is Reinforced Concrete. Tanks are fabricated as a monolithic reinforced concrete unit.

- All concrete used in the unit has a minimum compressive strength of 5,000 psi and conforms with the requirements of ACI standard 318-83.
- All reinforcing steel bars conform to ASTM 615 Grade 60.
- Wire mesh and flat sheets used for reinforcing conform to ASTM 185.
- Test samples are taken during manufacturing.
- Interior of tanks is sealed with an epoxy coating.

Mechanical Equipment

- Effluent pumps, recirculation pumps, aeration blowers, control valves, and ultraviolet disinfection units are pre-mounted on the B-10D
- Supply pumps are included with the B-10D for installation in the equalization tank
- Standard system has installed backups for pumps, blowers, and UV disinfection
- An odor control system treats the process air released from the MBR

Electric Power Requirements:

- *Customer Supplied Inlet Power:* 3 phase power standard. Single phase option available.
- *Voltage and Frequency:* will match local requirements.
- *Frequency Stability Limit:* +/- 1 Hz of specified line frequency
- *Line Voltage Fluctuation Limit:* +/- 5%
- *Power:*
 - Average Operating: 12 kW
 - Peak Operating: 16 kW
 - Connected Equipment: 28 kW

Note: Estimated power usage is based on pump and blower ratings. Actual power usage depends on operating conditions and will normally be lower. Heat and air conditioning are not included.

Plumbing Connections (at the B-10D interface):

- *Wastewater Influent:* a 1 ½" PVC connection for inflow from the equalization tank
- *Treated Effluent:* a 1" PVC connection for permeate discharge
- *Sludge Wasting:* a 1 ½" PVC connection for wasting sludge to either a holding tank or to a tank truck
- *Drain:* a 2" PVC connection to drain MBR tanks to equalization tank

System Controls & Process Monitoring:

- Control system based on a GE Fanuc PLC
- Display panel for alarms and faults
- System designed for total automatic operation including automatic switchover to standby equipment if required
- Optional automatic telephone dialer for emergency notification

Seapoint B-10D Specification

Environmental Conditions:

- *Operating Temperature:* 40°F (4°C) to 90°F (32°C). Optional insulation, heating and air conditioning are available to maintain this range inside the structure.
- *Seasonal Usage:* when drained, system is designed for long-term non-use (24 months or greater) with a temperature range from -40°F (-40°C) to 140°F (60°C)

System Size and Weight:

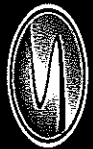
- Empty Weight (without water) = 89,000 pounds (40,000 kg)
- Operating Weight (with water) = 116,000 pounds (53,000 kg)
- Size: 26'-6" long, 9'-6" wide, and 10'-4" high
(808 cm long, 290 cm wide, and 315 cm high)

Site Preparation Requirements:

- **Location:** The installation site should be located in close proximity to the wastewater collection area and a power source sufficient to operate the system. The installation site must permit access by equipment capable of transporting, offloading, and handling the unit empty weight.
- **Site Suitability:** The site must be level and stable enough to support the system gross weight, when fully loaded and processing wastewater. Foundation or concrete pad must be prepared in accordance with local codes.
- **Additional Tanks:** A collection/separation tank, which receives all wastewater, and an equalization tank, which supplies the treatment unit, are required. The minimum size of each is determined in consultation with SEAPOINT after evaluation of the application's flow distributions and collection system design. A sludge holding tank is optional. Its need depends on how the owner decides to operate and maintain the system. Tanks are available from SEAPOINT as options.
- **Filtering:** Filters capable of removing all particles greater than 1/8 inch are required. Static filters for installation between the collection and equalization tanks are supplied with the unit. An optional bar screen for installation between the equalization tank and treatment plant is available.
- **Site Work:** Installation of structure and tanks, and all on-site plumbing, mechanical, electrical, and communications connections are the responsibility of the customer.

Seapoint™ Package Plants
Manufactured by WASTECH International, Inc.
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Fax: (603) 436-9961

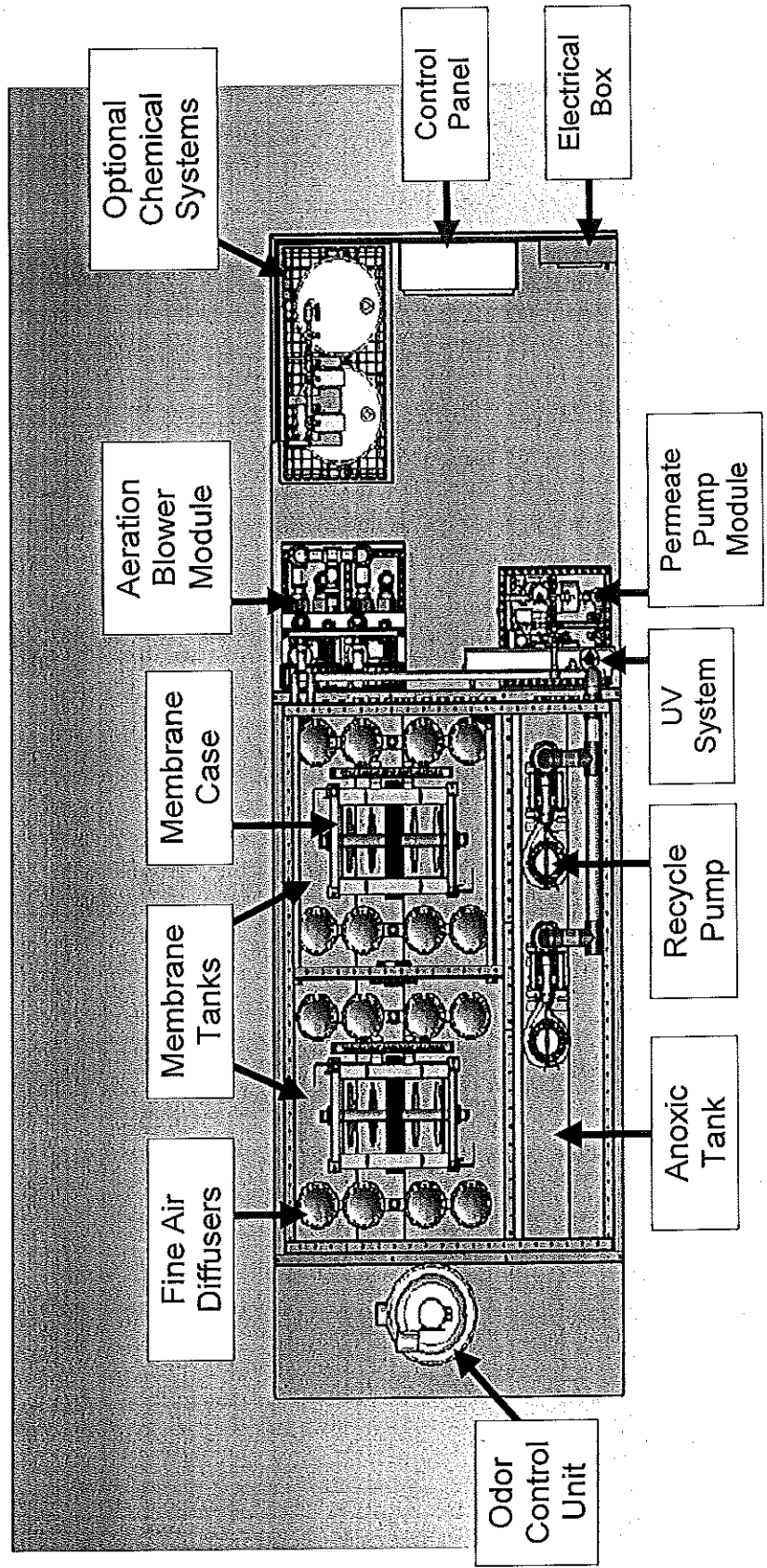
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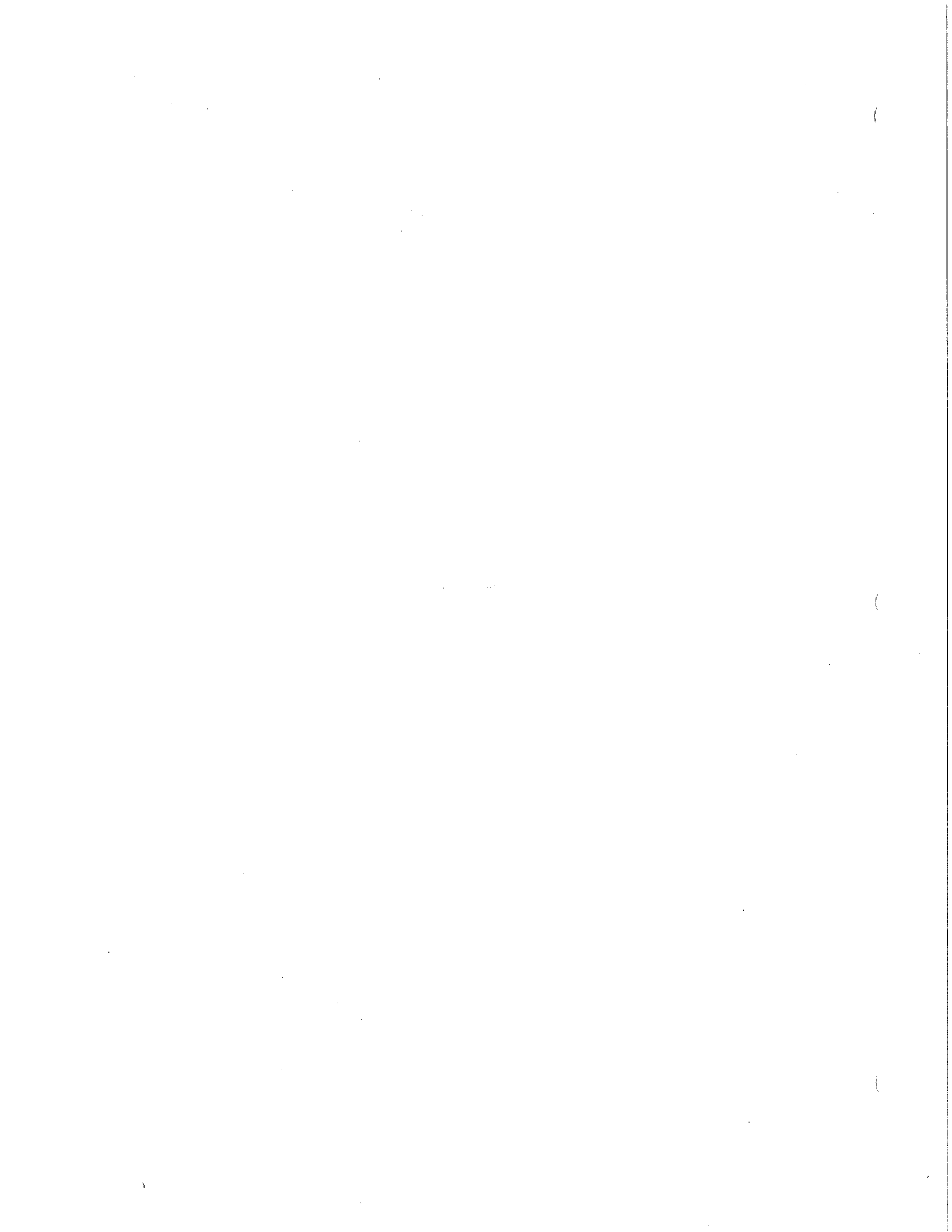


SEAPoint

P-Series Wastewater Treatment Package Plants

Typical P-10 - Duplex System

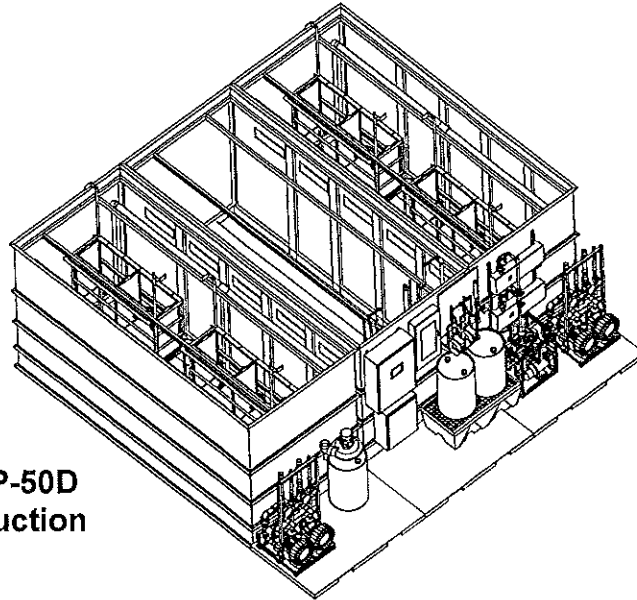






Seapoint P-50D Specification

Palletized Wastewater Treatment Package Plant



**Seapoint™ P-50D
Steel Construction**

Wastewater Processing Capabilities:

- Treatment system based on flat-plate membrane bio-reactor (MBR) technology
- Up to 43 GPM, 62,500 GPD average flow
- Up to 87 GPM, 125,000 GPD emergency flow (up to 24 hours)
- Effluent Supplied Head Pressure: 15' minimum

Influent, Effluent, and Process Characterization: The following influent and effluent values are for standard plant equipment. Additional treatment options are available for influent concentrations that exceed these values and effluent concentrations that must be lower.

- **Wastewater Influent**
 - *Maximum Particle Size:* 1/8" (3 mm)
 - *TSS:* 30-day average not to exceed 300 mg/L
 - *BOD₅:* 30-day average not to exceed 300 mg/L
 - *TKN:* 30-day average not to exceed 45 mg/L
- **Process Conditions**
 - *Operating Temperature:*
 - For 62,500 GPD: 59°F (15°C) to 80°F (27°C)
 - For 50,000 GPD: 50°F (10°C) to 80°F (27°C)
 - *MLSS Concentration:* 12,000 mg/L (typical)
 - *pH:* 5.0 – 9.0
- **Treated Effluent**
 - *TSS:* 30-day average not to exceed 5 mg/L
 - *BOD₅:* 30-day average not to exceed 5 mg/L
 - *Total Nitrogen:* 30-day average not to exceed 10 mg/L
 - *Turbidity:* 30-day average not to exceed 1.0 NTU
 - *Fecal Coliform Bacteria:* None detectible

Seapoint P-50D Specification

Materials of Construction

- Pallet and tanks are a fabricated, welded steel unit
- Mounting hardware for equipment inside the tanks is stainless steel
- Tanks are protected with an epoxy paint

Mechanical Equipment

- Effluent pumps, recirculation pumps, aeration blowers, control valves, and ultraviolet disinfection units are pre-mounted on the P-50D
- Supply pumps are included with the P-50D for installation in the equalization tank
- Standard system has installed backups for pumps, blowers, and UV disinfection
- An odor control system treats the process air released from the MBR

Electric Power Requirements:

- *Customer Supplied Inlet Power:* 3 phase power standard
- *Voltage and Frequency:* will match local requirements
- *Frequency Stability Limit:* +/- 1 Hz of specified line frequency
- *Line Voltage Fluctuation Limit:* +/- 5%
- *Power Consumed*

- Average Operating: 28 kW
- Peak Operating: 32 kW
- Connected Equipment: 51 kW

Note: Estimated power usage is based on pump and blower ratings. Actual power usage depends on operating conditions and will normally be lower.

Plumbing Connections (at the P-50D interface):

- *Wastewater Influent:* a 2" PVC connection for inflow from the equalization tank
- *Treated Effluent:* a 1 ½" PVC connection for permeate discharge
- *Sludge Wasting:* a 1 ½" PVC connection for wasting sludge to either a holding tank or to a tank truck
- *Drain:* a 2" PVC connection to drain MBR tanks to equalization tank

System Controls & Process Monitoring:

- Control system based on a GE Fanuc PLC
- Display panel for alarms and faults
- System designed for total automatic operation including automatic switchover to standby equipment if required
- Optional automatic telephone dialer for emergency notification

Environmental Conditions:

- *Operating Temperature:* ambient temperatures ranging from 40°F (4°C) to 90°F (32°C)
- *Seasonal Usage:* when drained, system is designed for long-term non-use (24 months or greater) with a temperature range from -40°F (-40°C) to 140°F (60°C)

Seapoint P-50D Specification

System Size and Weight:

- Empty Weight (without water) = 37,500 pounds (17,000 kg)
- Operating Weight (with water) = 218,000 pounds (99,000 kg)
- Size: 21'-2" long, 22'-0" wide, and 10'-8" high
(645 cm long, 671 cm wide, and 326 cm high)

- Notes:
1. Height does not include allowance for a removable cover for foam and odor containment (add approximately 24" to height)
 2. A clearance of 6 feet from the top of the tank to a lifting hook (16 feet 8 inches from floor) is required for membrane cassette removal and replacement. In an enclosure, this can either be roof height or through a hatch in the roof.

Site Preparation Requirements:

- **Location:** The installation site should be located in close proximity to the wastewater collection area and a power source sufficient to operate the system. The installation site must permit access by equipment capable of transporting, offloading, and handling the unit empty weight.
- **Site Suitability:** The site must be level and stable enough to support the system gross weight, when fully loaded and processing wastewater. Foundation or concrete pad must be prepared in accordance with local codes.
- **Additional Tanks:** A collection/separation/equalization tank, which receives all wastewater and supplies the treatment unit is required. The minimum size of the tank is determined in consultation with SEAPOINT after evaluation of the application's flow distributions and collection system design. A sludge holding tank is optional. Its need depends on how the owner decides to operate and maintain the system. Tanks are available from SEAPOINT as options.
- **Additional Equipment:**
 - Filters capable of removing all particles greater than 1/8 inch are required. An optional bar screen for installation between the equalization tank and treatment plant is available.
 - Sludge dewatering equipment is available to reduce the volume of sludge generated.
- **Site Work:** Installation of enclosure, pallets, and tanks, and all on-site plumbing, mechanical, electrical, and communications connections are the responsibility of the customer.

Seapoint™ Package Plants
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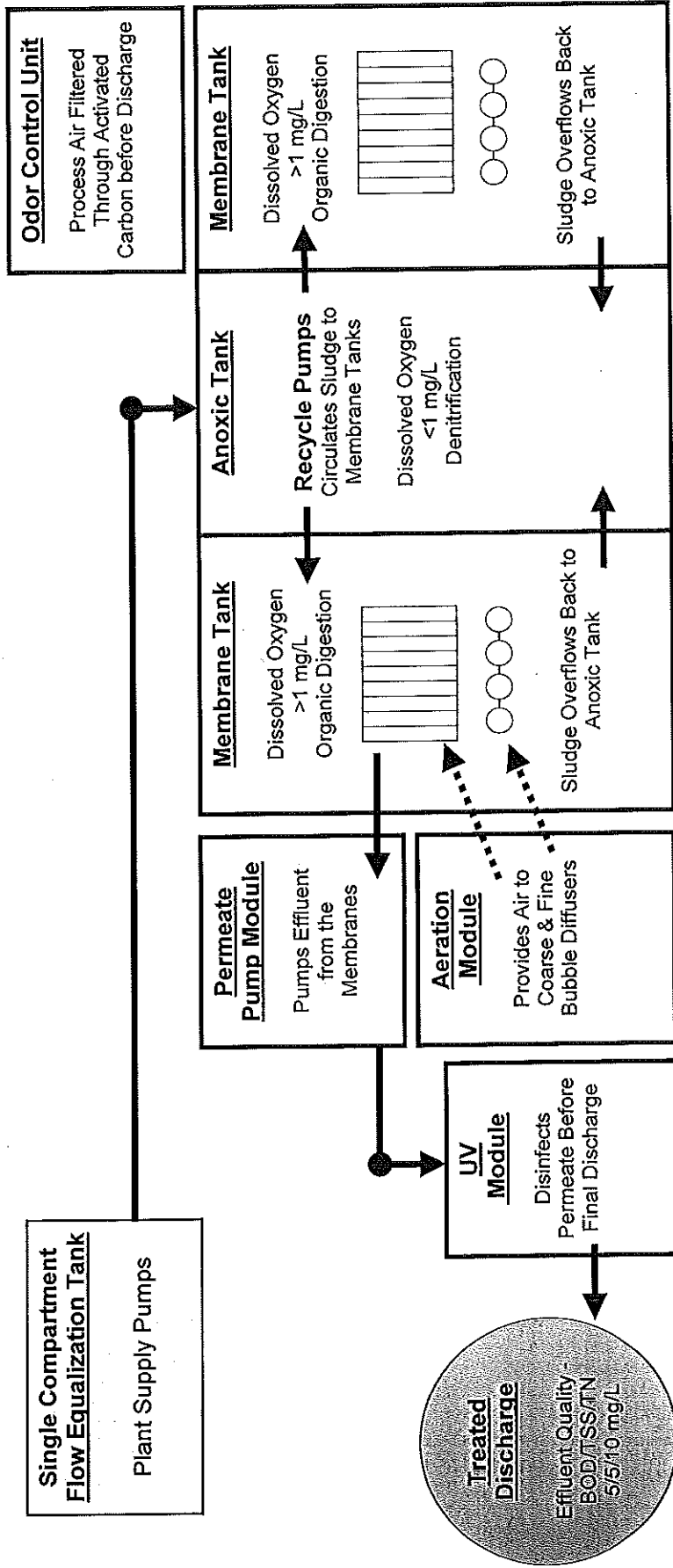
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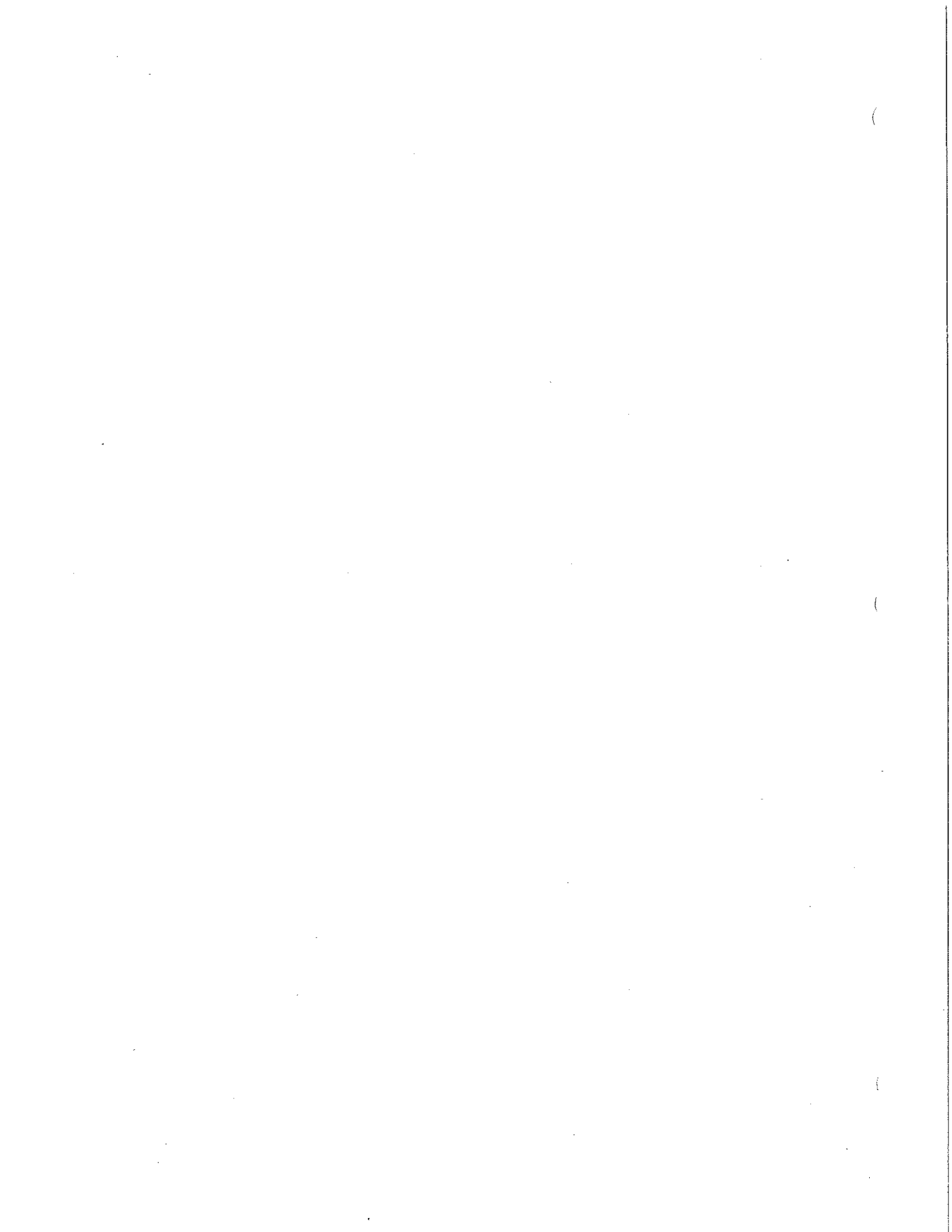


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Wastewater Treatment Package Plants

Typical Plant Process Flow







SEAPoint

Wastewater Treatment Package Plants

Typical Site Process Flow

