

UltraPaq™

Packaged Wastewater Treatment Plants

What is **UltraPaq™**?

The most advanced packaged wastewater
treatment plant built--

anywhere.

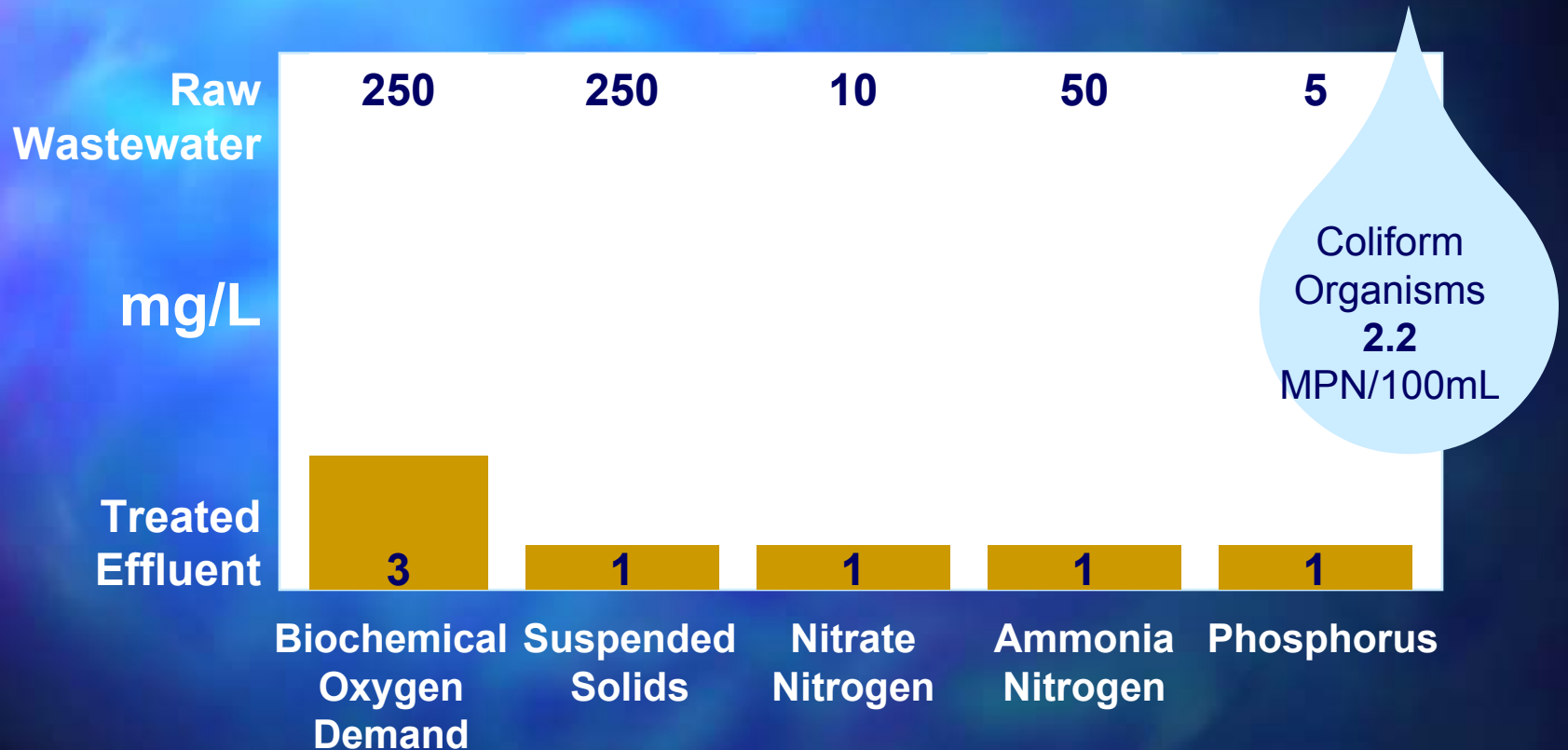
What wastes are treated?

Sanitary type wastewaters.

What are the applications?

- 💧 **Airfields**
- 💧 **Amusement Parks**
- 💧 **Campgrounds**
- 💧 **Construction Sites**
- 💧 **Contaminated Aquifers**
- 💧 **Highway Rest Stops**
- 💧 **Housing Subdivisions**
- 💧 **Mobile Armed Forces**
- 💧 **Mobile Home Parks**
- 💧 **Recreational Areas**
- 💧 **Remote Power Plants**
- 💧 **Restaurants**
- 💧 **Ocean-going Ships**
- 💧 **Offshore Platforms**

How effective is maximum treatment?



What Treatment Methods are used?

- 🔹 Rotating Biological Surface Process (RBS)
- 🔹 Chlorine or Ozone Disinfection
- 🔹 Gravity Separation
- 🔹 Dual Media Filtration
- 🔹 Fixed Growth Aerobic Sludge Digestion to Extinction

Design Features

- 💧 Unmatched performance--both process & mechanical
- 💧 Lowest energy costs to operate
- 💧 Automatic sludge disposal
- 💧 Smallest in size
- 💧 Quiet operation--cannot be heard from 15 foot distance
- 💧 Automatic treatment--little operator skill required
- 💧 No odors whatsoever
- 💧 Longest extended warranty

No disposal is required. The biological sludge generated is aerobically digested to ***extinction!***

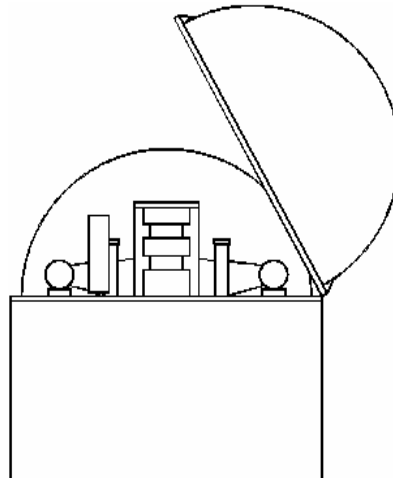
UltraPaq™ is available in 15 different sizes, from 1,000 to 75,000 GPD to match **your** treatment requirements.

UltraPaq™ arrives fully factory assembled and tested. Only piping and electrical connections are required at the jobsite.

UltraPaq™ carries a full five (5) year Warranty on all parts and labor.

The cost is far less expensive than all other systems with similar treatment and less effective technology.

UltraPaq™



Packaged Wastewater Treatment Plants

Featuring
On-site Treatment
and Sludge Disposal

“The Ultimate in Biological Purification Equipment”

Built By:

***WaterSmart
Environmental, Inc.***

Shawnee Mission, Kansas

Engineering Data Sheet

9020

Product: UltraPaq™ Packaged Wastewater Treatment Plant

What is it?	The most advanced packaged treatment plant built -- anywhere.	
What wastes are treated?	Sanitary type wastewaters.	
What are the applications?	<ul style="list-style-type: none"> ◆ Airfields ◆ Camp/Construction Sites ◆ Contaminated Aquifers ◆ Highway Rest Stops 	<ul style="list-style-type: none"> ◆ Housing Subdivisions ◆ Mobile Home Parks ◆ Mobile Armed Forces ◆ Recreational Areas
		<ul style="list-style-type: none"> ◆ Remote Power Plants ◆ Restaurants ◆ Ocean Ships ◆ Offshore Platforms
How effective is maximum treatment? (See table, p. 5)	Biochemical Oxygen Demand	3 mg/L
	Suspended Solids	1 mg/L
	Nitrate-Nitrogen	1 mg/L
	Ammonia-Nitrogen	1 mg/L
	Phosphorus	1 mg/L
	Coliform Organisms	2.2 MPN/100 mL
What about sludge disposal?	None required! Biological sludge generated is aerobically digested to extinction.	
What sizes are available?	1,000 gallons per day to 75,000 GPD. 15 different sizes to choose from. See engineering drawing S-1300, last page.	
What treatment methods are used?	Rotating Biological Surface process (RBS), chlorine or ozone disinfection, gravity separation, dual media filtration, and fixed growth aerobic sludge digestion to extinction.	
How are units shipped?	Fully factory assembled and tested. Only piping and electrical connections are required at the jobsite.	
How long is the warranty period?	Five (5) years on all parts & labor.	
What's the cost?	Far less expensive than all other treatment plants with similar treatment.	

Design Features

- ◆ Unmatched Performance -- Both Process And Mechanical
- ◆ Lowest Energy Costs to Operate
- ◆ Automatic Sludge Disposal
- ◆ Smallest In Size
- ◆ Quiet Operation—Cannot Be Heard From 15 Foot Distance
- ◆ Automatic Treatment—Little Operator Skill Required
- ◆ No Odors Whatsoever
- ◆ Longest Extended Warranty

of the UltraPaq™ is independent of hydraulic considerations, the

user may connect storm water drains to the sanitary waste discharge line. No flow equalization is necessary since equalization is accomplished hydraulically through flow recirculation. Influent flow, organic concentrations, pH, and temperature can therefore all vary over a considerable range without adverse impact on average treatment quality.

Flow to the UltraPaq™ may be interrupted for up to 3 days each week. Flow recirculation permits the various microorganisms to metabolize sufficient food to sustain the basic colonies. Therefore, continuous flow to the unit is not necessary on holidays and weekends.

Hydraulics

UltraPaq™ will accept wide variations in influent feed. The maximum intermittent flow may be as much as 300% of the design flow. Since the treatment efficiency

Process treatment restart is automatic on resumption of electrical power after a power outage.



Above photo shows a completed 10,000 GPD UltraPaq™ being truck shipped to the customer.

Treatment

UltraPaq™ will accept:

- ◆ Occasional oil spills.
- ◆ Baby care products such as disposable bibs and diapers.
- ◆ Feminine care products.
- ◆ Cigarette and cigar butts, as well as tobacco and candy wrappers.
- ◆ Assorted and miscellaneous wrappers and items from bathroom dispensers.
- ◆ Rags and paper towels.

UltraPaq™ provides excellent and consistent treatment over wide air and liquid waste temperatures.

Reliability

1. The only moving parts are the RBS drive and liquid transfer pumps. An H-O-A selector switch for each drive motor permits manual override should servicing or replacement be required.
2. Gearmotors, bearings, and pumps are oversized to maximize maintenance-free operation.
3. The Five-year mechanical warranty is exclusive to the UltraPaq™ Plant. Company provides both parts and labor in during this extended warranty period.

Operation and Maintenance

1. Energy input requirements are minimal.
2. No controls or moving parts are exposed which prevents tampering and vandalism. A hasp and lock is provided for the hinged machinery compartment access door.

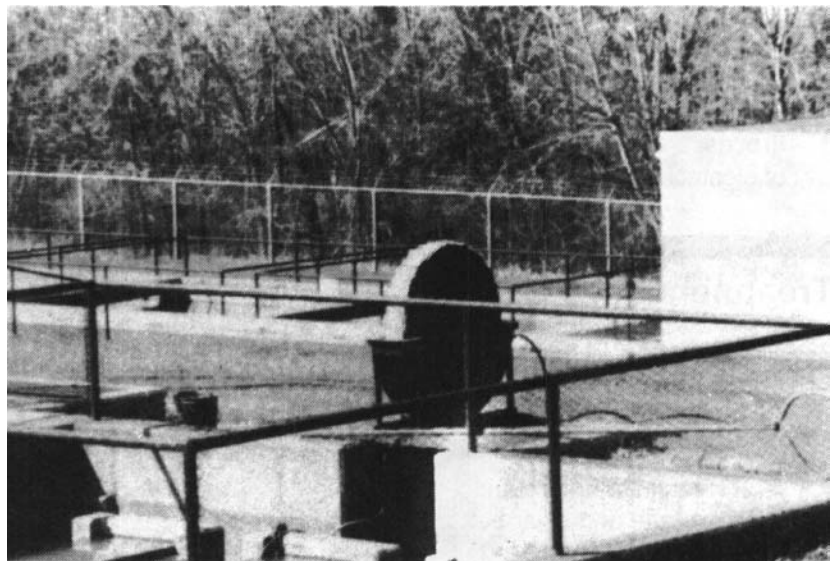
3. No sludge disposal is required since it is entirely consumed in the aerobic digester compartment of the UltraPaq™.
4. Expensive UltraPaq™ plant operator expertise is not required. All treatment is achieved automatically. The plant should be routinely inspected about once per month.
5. The ozonator uses an air dryer cartridge, which must be filled about every two months.

Aesthetics

1. No audible noise from 10 feet away.
2. No aerosols are generated or released (primary criticism of contact stabilization, extended air, and conventional activated sludge plants.)
3. No odors whatsoever, even during periods of low or no flow. Odor control treatment system is provided.

Installation

1. No treatment building required since UltraPaq™ comes with its own weatherproof cover.
2. Only concrete piers are required since UltraPaq™ is shipped fully factory built and tested.
3. Complete BOD treatment is achieved within 7 days from initial start up. Nitrification is accomplished in 45 days. Denitrification in 60 days.
4. Units may be off-loaded with a crane. Lifting eyes are provided.
5. The UltraPaq™ may be moved from one location to another. Draining the tank is the only shipping requirement.



Field testing of 1st stage RBS pilot plant at Municipal Treatment Facilities.

6. A factory-trained representative will inspect the completed installation and instruct the plant operator. An installation/operation/maintenance manual is provided with the equipment.

UltraPaq™ Process Design Considerations

Background

In all likelihood, no water or wastewater treatment equipment product has been in more demand the last 25 years than packaged wastewater treatment plants. Because the competition for this large market has been so intense, the manufacturers of this type of equipment have had to extract every possible cost in the design and manufacture of these plants in order to remain competitive. Consequently, the end user generally obtained a favorable purchase price.

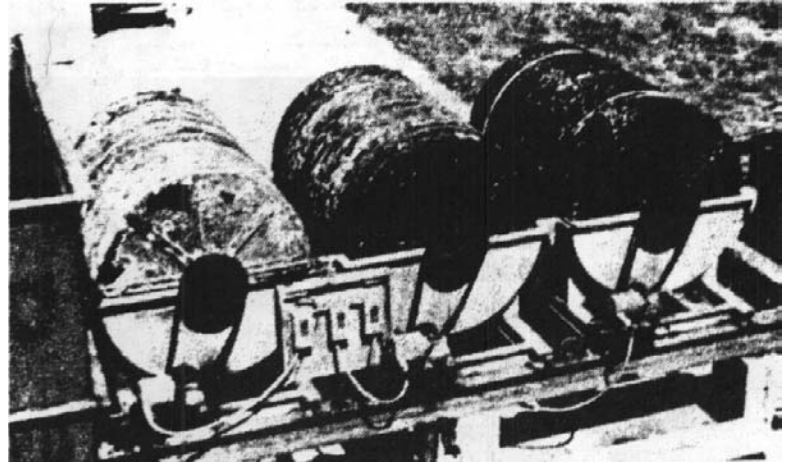
However, both mechanical reliability and process performance invariably suffered due to cost cutting efforts by the manufacturers. As a result, user experience with and confidence in packaged wastewater treatment plants has traditionally been somewhat lackluster. Regulatory agencies, likewise, have yet to be impressed with so-called "mechanical" treatment plants. The need, then, for a good working, mechanically reliable -- and yet cost competitive -- packaged wastewater treatment plant has yet to be satisfied.

Introduction

To cost effectively treat domestic or sanitary wastes, biological treatment is the clear choice over physical/chemical treatment. Biological treatment, however, requires relatively uniform flow in order to achieve reliable process control over treatment performance. As a consequence, smaller flows (less than about 20,000 gallons per day) are generally treated using the extended aeration activated sludge process. Extended air plants aerate the mixed liquor for 24 hours prior to discharge. This "extended" hydraulic detention permits wide variations in diurnal flow without significant impairment of treatment quality.

For larger flows, conventional (8 hours of aeration) activated sludge is the process usually employed. For even larger flows, contact stabilization treatment (about 20

minutes of aeration) is usually the most cost-effective. To be kept in mind is that there exist no clear-cut rules or standards, which establish the specific kind of treatment preferable for each treatment project. What is clear, however, is that the smaller the flow, the greater the ne-



In this pilot study, flow is from right to left. Note the drastic bacteria growth reduction in the 2nd and 3rd stages. This result was caused by the now obsolete hydraulic loading design approach to the RBS Process.

cessity for hydraulic equalization, and vice versa.

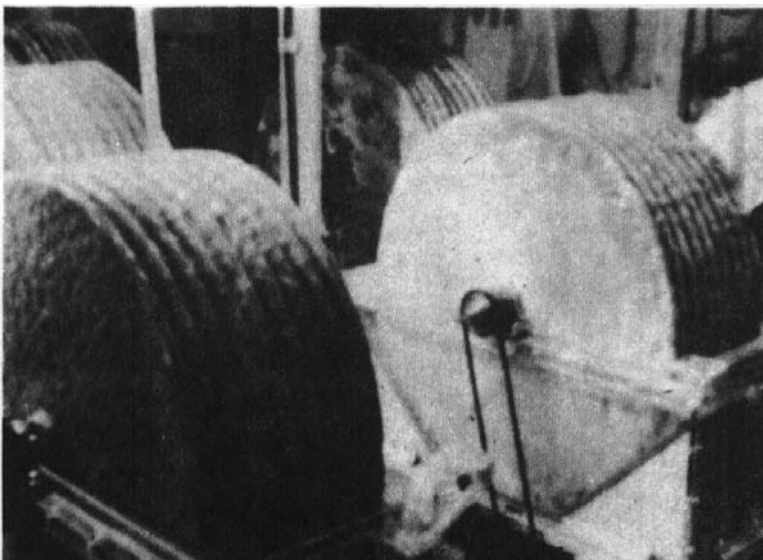
Significant hydraulic equalization is provided for in the UltraPaq™ Packaged Treatment Plants. In addition, Biochemical Oxygen Demand is reduced, Nitrification and Denitrification are accomplished, Sludge Digestion to Extinction is provided, and Effluent Disinfection is practiced. Each of these features will be discussed in detail as they relate to the extensive capabilities of the UltraPaq™ Packaged Wastewater Treatment Plant.

Product Description

Ten years of development and design, the UltraPaq™ Plant is a biological treatment system utilizing the cost-effective Rotating Biological Surface Process (RBS) with innovative hydraulic, mechanical, and process features which permit unmatched treatment with superb mechanical reliability. Treatment consists of primary sedimentation/equalization followed by five stages of RBS treatment for BOD reduction, then three stages of RBS treatment for nitrification, followed by solids removal and disinfection. Separated sludge from the final DAF separator is continuously transferred to the aerobic digester, which also employs the RBS process. Sludge digestion and all stages of BOD and NOD reduction are accomplished with but a *single* shaft of rotating discs!

The UltraPaq™ is the ultimate packaged wastewater treatment plant because:

1. Sanitary wastes can be purified to 3 mg/L BOD, 1 mg/L NOD, 1 mg/L NO₃, 1 mg/L suspended solids, and less than 2.2 MPN coliform/100 mL. In addition, sludge is aerobically oxidized to extinction thereby eliminating sludge disposal requirements.



Laboratory testing showing different arrangements of stages and organic loadings.

2. The UltraPac™ requires less than 1/3 the operating energy of any other biological treatment plant.
3. The UltraPac™ requires less than 1/2 the space of any other packaged mechanical plant offering similar treatment.
4. The UltraPac™ carries a standard 5-year mechanical warranty which is unmatched by any other manufacturer.
5. Operation is automatic -- minimum operator skill is necessary.
6. No other packaged treatment plant is as economical to purchase and own as the UltraPac™.

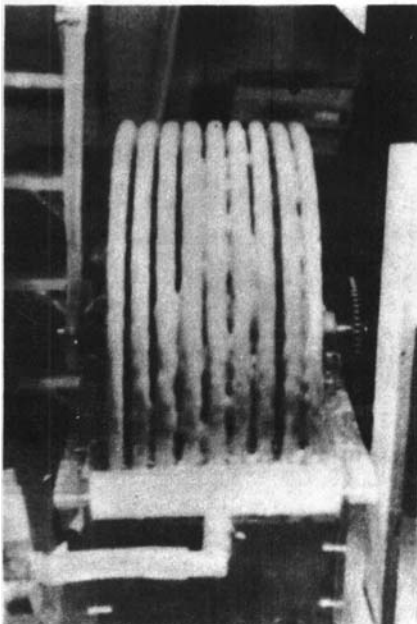
General Design

The UltraPac™ relies on biochemical oxidation provided by the highly recognized RBS Process. This process has received favorable reviews by the US Army Corps of Engineers.¹ The United States Environmental Protection Agency has also supported RBS Process.²

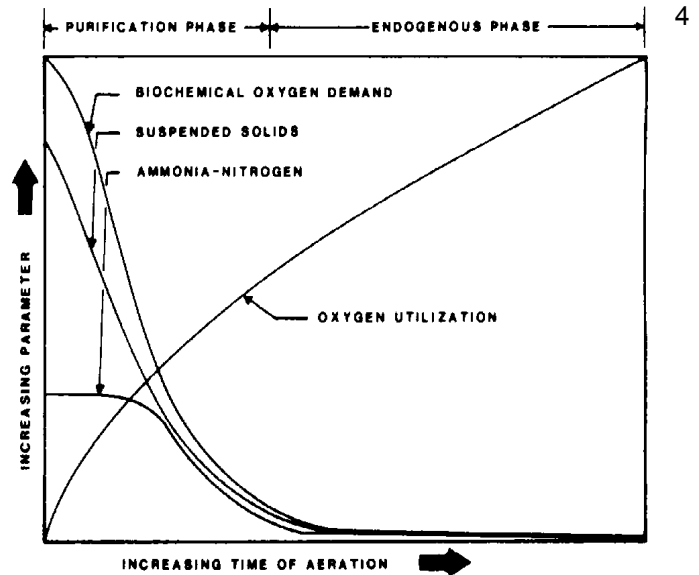
There exists today little controversy on the process of treatment effectiveness and energy efficiencies of the RBS process. It has achieved worldwide acclaim and now represents the "preferred" treatment process both in this country and worldwide.

BOD Reduction

The UltraPac™ is designed on the organic loading principle. This design approach was first recognized by Steiner and subsequently reported by Stover and Kincannon. The EPA now recognizes it as the appropriate method of design, as does RBS Process Equipment Suppliers and researchers.³



This photo shows bridging of bacteria between adjacent disc which have been positioned too closely together. This situation permits anaerobic conditions to occur. Either the discs have to be spaced further apart or the organic loading to the discs has to be reduced, or both must be accomplished to again reestablish aerobic treatment.



The organic loading method of design reflects the fact that as BOD is reduced in the waste stream, rotating disc surface area may be likewise reduced in successive treatment stages since there exists a direct relationship between fixed surface bacterial growths and rotating disc surface area. Consequently, the UltraPac™ provides progressively less disc area in successive treatment stages without impairing effluent quality.

Ammonia Nitrogen Reduction

The use of the RBS Process for Nitrification was recognized rather early during the development of the BOD reduction technology.⁴

The organic loading method is also applicable to Nitrification. Therefore rotating disc surface area is correspondingly reduced in successive stages of treatment.

Final Clarification

The UltraPac™ Plant makes use of the highly effective and space-saving Dissolved Air Flotation (DAF) Process of solids/liquid separation. This method of clarification utilizes microscopic air bubbles to float biological flocs to the liquid surface. Separated sludge is continuously transferred to the aerobic digester. UltraPacs are completely factory fabricated, assembled, and tested prior to truck shipment.

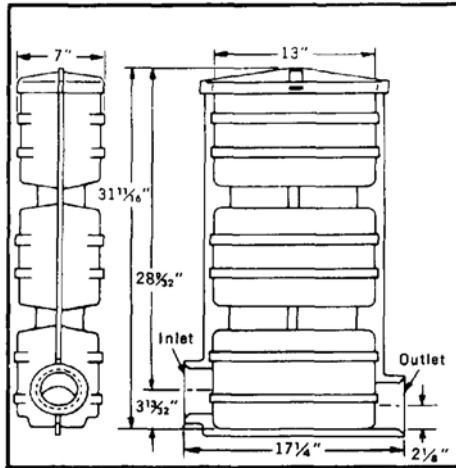
Note: Underflow weir arrangements are provided in both the final DAF separator and disinfection contact tank compartments of the UltraPac™. These weirs coupled with the superior particle separation afforded by the DAF separator together account for the splendid removal of suspended solids, thus generally obviating the need for final media type filtration.

Sludge Disposal

Separated solids are continuously aerated in the aerobic digester where they undergo gradual biological oxidation to extinction. This process is called endogenous respiration and refers to the automatic cannibalization of the microorganisms by predator cells. It must be carried out

in the absence of carbonaceous BOD in order to be effective.⁵

When the microbial mass is aerated under food-limited conditions, it will use the food stored within the cells (in volatile solids form, mainly carbohydrates) to survive. Eventually, these aged cells will undergo lysis, which will release degradable organic matter



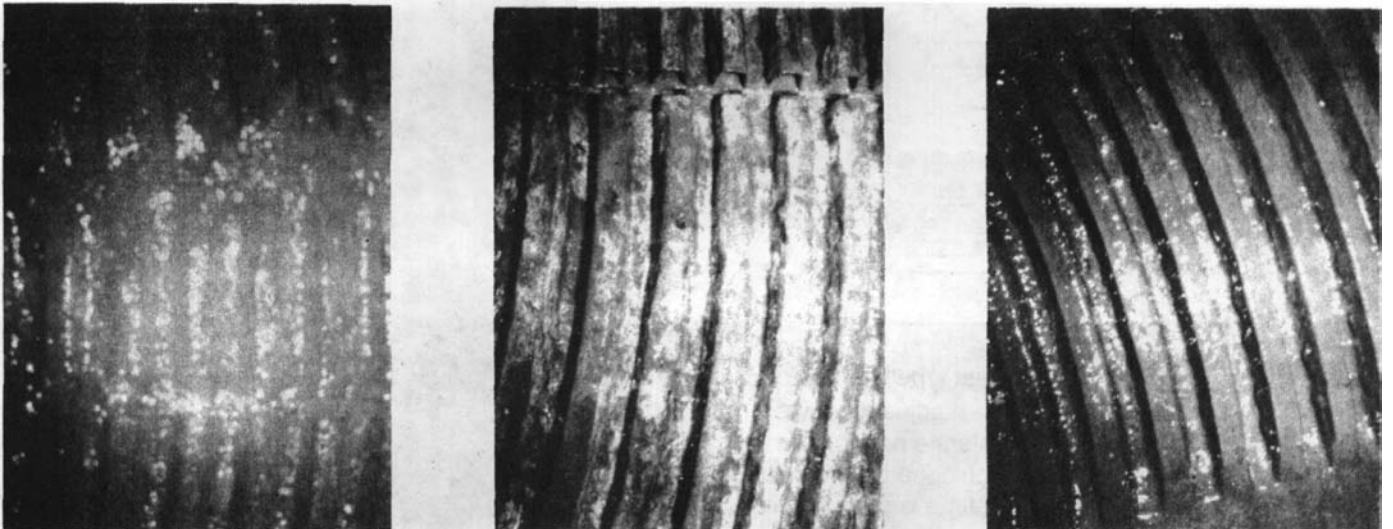
Typical Chlorinator or Ozonator

for use by other microorganisms. End products of this digestion are mainly carbon dioxide, water, and so-called "non-degradable" materials which consist of polysaccharides, hemicellulose, and cellulose. These are generally soluble and thus discharged with the treated effluent. The insoluble residues that remain slowly accumulate in the digester and must be removed on a frequency of about every five (5) years. The above figure is a schematic depiction of the aerobic treatments accomplished in the UltraPac™ plant.

Disinfection

The UltraPac™ can incorporate a pellet type chlorinator or ozonator to accomplish disinfection. An adjustment weir permits manual control of residual chlorine or ozone in the effluent. Approximate time between chlorinator pellet refills is two months. 15 minutes of contact time is provided in conformance with *10 States Standards*. The disinfection contact compartment is baffled to prevent short-circuiting of the flow.

Item	Raw Sewage Or Influent	Treated Effluent Treatment Levels by Model Style					
		A	B	C	D	E	F
Biochemical Oxygen Removal, mg/L	250	10	10	3	3	3	3
Suspended Solids, mg/L	250	10	10	1	1	1	1
Dual Media Filter		No	No	Yes	Yes	Yes	Yes
Ammonia Nitrogen, mg/L	50	3	3	1	1	1	1
Nitrate Nitrogen, mg/L	1	20-50	20-50	20-50	1	1	1
Phosphorus, mg/L	10	10	10	10	10	1	1
Disinfection		No	Yes-Cl ₂	Yes-O ₃	Yes-O ₃	Yes-O ₃	Yes-O ₃
Coliform Organisms (MPN/100 mL)	2-5 million	500,000	20	2.2	2.2	2.2	2.2
Sludge Digester		Yes	Yes	Yes	Yes	Yes	Yes
Odor Control		Yes	Yes	Yes	Yes	Yes	Yes
Effluent Suitable For Irrigation		Yes	Yes	Yes	Yes	Yes	Yes
Potable water reuse (includes granular activated carbon, chlorine disinfection, & hydro-pneumatic tank)		No	No	No	No	No	Yes
Standby power provided		No	No	No	No	No	Yes
Factory price list multiplier		1.0	1.2	1.8	1.9	2.0	2.3



In the photo at left, excess organic loading has caused gross anaerobic conditions to predominate resulting in severely limited BOD reduction. In the center photo, the excess organic loading has been partially corrected. It's the white colored growth that represents an 'overloaded' condition. In the photo at right, the disc surface is properly loaded resulting in a uniform and smooth growth of bacteria achieving maximum BOD reduction. Disregard the reflected light from the camera flash.

UltraPaq™ Engineering Specifications Summary

Type Of Application	Complete secondary treatment of sanitary wastewaters with nitrification & sludge disposal.	
Treatments	Rotating Biological Surface (RBS) process for organic carbon oxidation, nitrification, and sludge digestion to extinction with hypochlorite or ozone disinfection of treated effluent.	
Flow	Gravity, either continuous or intermittent.	
Sludge/Flow Recirculation	Continuous.	
Sludge Disposal	Aerobic digestion to extinction.	
Disinfection	Pellet type dry chlorinator, adjustable, with 20 minute contact time, or ozone.	
Designs	UltraPaq™ 1st stage BOD loading rate is 0.020 lbs. BOD/sq ft/day based on 0.17 lbs. BOD per day per person generated. UltraPaq™ first stage nitrification loading rate is 0.002 lbs. NH ₃ -N/sq ft/day. System design consists of five stages RBS treatment for BOD reduction followed by two stages RBS treatment for nitrification. Settled sludge is transferred to the aerobic digester continuously thus providing flow recirculation which enhances overall system performance. Disc spacing is 3/4 inch for all RBS stages and digester. Aerobic digester size based on production of 0.5 lbs. sludge per 1.0 lb BOD removed. Final gravity separator surface overflow rate is 600 GPD/sq ft or 0.42 GPM/sq ft. (this includes flow contributed by hydraulic recirculation.)	
Operating Temperatures	Liquid wastes: from 50° TO 95° Fahrenheit. Ambient air: from minus 40° to 125° Fahrenheit.	
Inlet pH Range	6.5 to 8.5	
Maximum Effluent Quality (See Table on page 5)	Biochemical Oxygen Demand (Soluble BOD):	Less Than 3 mg/L.
	Suspended Solids (SS):	Less Than 3 mg/L.
	Ammonia Nitrogen (NH ₃ - N):	Less Than 1 mg/L.
	Coliform Organisms:	Less Than 2.2 MPN/100 mL.
Electrical Connections	230 or 460 volt/1 or 3 phase/60 cycle standard. Other voltages, phases, and frequencies available.	
Construction	1/4" carbon steel with weatherproof cover.	
Surface Protection	Interior: Sandblasted to SSPC-SP10 and epoxy painted. Exterior: Sandblasted to SSPC-SP6 and epoxy painted.	
Placement	Level crushed stone, pea gravel, or concrete supports.	
Exterior Colors	Safety green, safety blue, and tan standard. Other colors available.	
Control Panel	UL listed components, NEMA 4 enclosure with starters and local disconnect, H-O-A selector switches, timer, & motor alternator.	
Equipment Warranty	Five (5) years on all parts & labor.	
Options Available	Phosphate removal. Denitrification. Final filtration	

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² Gross, Charles, Gilbert, Walter, and Wheeler, James, "RBCs Reach Maturity", *WATER/Engineering & Management*, 28 (June 1984).

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(Messrs. Gross, Gilbert, and Wheeler assembled the above articles as members of the United States EPA, Municipal Technology Branch, Washington, DC)

³ Steiner, C. G., "Take a New Look at the RBS Process", *Water & Wastes Engineering*, 41, (May 1979).

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⁴ Lue-Hing, Cecil, Obayashi, Alan W., Zenz, David R., Washington, Booker, and Sawyer, Bernard M., "Nitrification of a High Ammonia Content Sludge Supernatant by Use of Rotating Discs", Presented at the 29th Annual Purdue Industrial Waste Conference, W. Lafayette, Indiana, (May, 1974).

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Borchardt, Jack A., Kang, Shin Joh, and Chung, Tai Hak, "Nitrification of Secondary Municipal Waste Effluents by Rotating Bio-Discs", Prepared for United States EPA, Office of Research and Development, Report No. EPA-600/2-78-061, (June 1978).

⁵ Archuleta, Dale, and Barkley, William, "Evaluation of Biological Completely Mixed Reactor System", New Mexico State University, (October 1975).

Jaworski, N., Lawton, G. W., and Rohlich, G. A., "Aerobic Sludge Digestion", *Advances in Biological Waste Treatment*, Macmillan Co., New York, (1963).



Installation, Operation, and Maintenance Instructions

9035

Product: UltraPaq™ Packaged Wastewater Treatment Plants

Installation

Inspection

Before unloading, inspect the treatment plant upon delivery for any damage that may have occurred in shipment. Areas most susceptible to damage are all nozzles and piping. If the equipment is damaged in any way, please notify WaterSmart Environmental, Inc. immediately. Equipment off-loading personnel should note the nature and extent of the damage and then sign and date the bill of lading. A claim should then be filed with the delivering freight carrier.

Off-Loading

The packaged plant must be carefully removed from the truck to prevent damage, particularly the factory applied exterior paint. Observe proper rigging practices at all times. Equipment hoisting operators should attach a guideline to prevent the plant from swinging out of control. Do not drop the equipment in the process of inverting, turning, or moving. Do not slide the plant as the paint will be removed from the bottom of the support saddles.

Coatings

All damaged coatings should be touched up **immediately**. Please contact the factory or coating manufacturer if your vessel is a special application and more specific information is required. Under no conditions should chains or cables be put around the equipment. Use the lifting eyes on the unit to set it in its final position.

Storage

If the equipment is not to be installed at time of delivery, it should be stored in an area away from traffic. The ground should be level and free of sharp object that might damage the coatings. All equipment should be stored above the ground on timbers. All factory packing should remain intact until the unit is ready for installation. Equipment should be stored indoors, if possible. If not, care should be taken that tanks do not fill with water and debris. Covering all of the equipment with a tarp is strongly recommended.

Excavation

The excavation must be free from any hard or sharp material that may cause damage to the tank coating. Care should be exercised during installation to prevent foreign matter from being introduced into the excavation and/or backfill.

The bottom of the excavation shall be covered with clean sand or gravel to a depth of one foot, suitably graded and leveled.

The excavation shall extend a distance of at least two feet around the perimeter of the tank to provide sufficient clearance for sacrificial anodes. The vessel may now be set on a concrete foundation.

Mechanical

1. When setting the packaged plant, be sure it is installed on a foundation that provides adequate support under full load operating conditions. Dimensions of the concrete pad or piers depend on local soil and frost conditions. A qualified civil engineer should determine these dimensions.
2. If a lift station is supplied with the UltraPaq product, please refer to its O&M manual for mechanical installation requirements.

Piping

The next step consists of terminal piping connections. All valves and piping should be adequately supported in accordance with accepted practice. For units with cathodic protection, all piping must be electrically isolated from the separator. This can be accomplished by using dielectric insulator fittings on all nozzles or by the use of plastic piping.

1. When making connections to the equipment **do not** use the equipment as a pipe support. All piping should stand on its own if disconnected from the equipment.
2. Connect the outlet piping. The effluent piping must be the same size or larger than the pipe size of the influent. Do not reduce the size of the effluent piping as this may cause hydraulic overloading of the equipment.
3. Connect the inlet piping. The influent piping must be the same size or smaller than the pipe size of the influent. Do not increase the size of the influent piping as this may cause hydraulic overloading of the equipment.

Backfilling When Required

Backfill consisting of clean sand, gravel, or other non-corrosive inert materials similar to the bedding material shall be installed around the entire tank to create a uniform homogeneous environment.

Special care shall be taken when installing backfill along the bottom sides of the tank to ensure that the tank is fully and evenly supported around the bottom quadrant.

Prior to backfilling top of tank, all openings shall be visually inspected to assure that the dielectric nylon bushings remain in place. Where flanged openings have been used, the dielectric isolation shall be confirmed with a continuity tester. No current shall pass through the factory installed dielectric flanges. Dielectric isolation is required to assure tank integrity.

Electrical

Any pump or level probe wiring and conduit connections should be made at this time. The unit is shipped prewired and factory tested. Bringing power feed to the control panel is the exclusive wiring required.

Anode Integrity

Tanks may be equipped with either zinc or magnesium anodes. Magnesium anodes are appropriate for installation in soil resistivities of 2,000 ohms-cm or greater, whereas zinc anodes are effective for all soil conditions.

Operation & Maintenance

Packaged Plant Start-Up

After about four (4) days a thin bacterial film will develop on the discs. After 10 days of initial plant start-up the plant will exhibit 100% of BOD and COD removal efficiencies. After about 36 days of initial plant start-up the plant will exhibit 100% of its nitrification capability. Packaged Plant operator requirements will vary from state to state. Please contact the appropriate state or county environmental department for its requirements.

Routine Maintenance

Regularly monitor the quality of the effluent leaving the separator. If any loss in effluent quality is observed, steps should be taken to correct the problem immediately. Some things to check if effluent quality has deteriorated are:

1. Have you exceeded the packaged plant's rated flow? If so, return the flow rate to normal

2. Are all components operable? If not, repair as necessary.

Approximately two (2) hours/week are necessary for routine maintenance activities.

Product Warranty

All UltraPac™ packaged treatment plants are guaranteed for a minimum of five (5) years from date of installation. The guarantee includes both mechanical integrity as well as process performance.

Performance Testing/Monitoring

Annual or more frequent testing of packaged plant effluent quality is normal unless the state regulatory agency or your NPDES permit requires more frequent testing.

From the Engineering Department of

WaterSmart
Environmental, Inc.



UltraPaq™ Suggested Retail Price List

9034

Product: UltraPaq™ Packaged Treatment Plant

Model	Amount
UP-1	\$84,500
UP-2	\$90,500
UP-3	\$96,500
UP-5	\$102,500
UP-10	\$110,666
UP-15	\$124,666
UP-20	\$138,833
UP-25	\$150,833
UP-30	\$165,500
UP-35	\$177,000
UP-40	\$191,160
UP-45	\$203,166
UP-50	\$217,333
UP-60	\$245,500
UP-75	\$285,666

Notes:

1. All prices are F.O.B. shipping plant.
2. Normal Shipment is 12 to 14 weeks from order date or approved submittals, whichever applies.
3. Purchaser to advise exterior paint color desired and electrical power available.
4. All prices subject to change without notice.
5. See Standard Conditions of Sale for other applicable terms.

From the Engineering Department of
WaterSmart
Environmental, Inc.





***WaterSmart
Environmental, Inc.***

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