Pan America Environmental, Inc.

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ENGINEERING SPECIFICATION

RSS Series DAF Recycle Saturation System

Engineering Specification

GET A QUOTE	SPEAK TO AN ENGINEER
technical@panamenv.com	262.716.0105

SECTION 1.0 SYSTEM DESIGN & CONSTRUCTION

1.01 Air Saturation System

The DAF is provided with a recycle air saturation system that is designed to direct a portion of the water from the effluent end of the tank, super-saturate the water with air and then mix this solution with incoming wastewater facilitating intimate mixing of both flows. Recycle saturation pump and schedule 80 PVC piping are mounted on RSS skid with a bypass line directed to the DAF effluent chamber.

Recycle Saturation Vessel System

The recycle system consists of the following features:

Recycle Pump:	High head coated cast iron or 304 stainless steel centrifugal 90 psi pump, mounted to the DAF or saturation vessel skid to provide air saturated water under pressure to the recycle system.
Saturation vessel:	304 SS construction.
Standard maximum pressure rating:	150 psi
Standard operating pressure rating:	100 psi

- Air preparation and control assembly consisting of: check valve, solenoid valve, air flow meter with needle valve, bypass valve, regulator/filter, pressure relief valve and vent valve.
- Auto-Q™ automatic equalization level control assembly with switch sight glass, pressure gauge and isolation valves.
- Auto-Q™ automatic EQ electrical control logic.
- Inlet mixing chamber.
- Valving: suction isolation, bypass and discharge control valves are provided matched to the RSS system.
- Pump discharge pressure gauge.
- Recycle pump discharge flowmeter (optional)
- NEMA 4 control in MCP is provided.
- RSS skid: fork pockets provided, all components mounted, wired & plumbed to this skid.
- System requires compressed air.

1.02 Influent Mixing Chamber

The saturated flow mixes with the wastewater flow at the DAF influent via a mixing chamber. Chamber to be constructed of same material as DAF tank.

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1.03 Master Control Panel (MCP)

The options provided with this quotation will include controls that will be integrated into one, centralized Master Control Panel (MCP). The MCP will provide the following controls:

- Recycle pump HOA switch for manual and automatic on/off.
- Auto-Q system control for automatic control of the air/water continuous EQ process
- Air solenoid valve control to correspond to Auto-Q logic
- Power disconnect, transformer, circuit breakers are provided to accommodate a 3 phase input power.
- MCP power required: 230 or 460V/3pH/60Hz.
- Enclosure: NEMA 4, steel construction, ANSI 61 grey enamel coating.
- LED lights, metallic switches
- Designed per UL508, NEC
- Wired to all electrical devices.
- Conduit: EMT & liquid tight are used.

1.04 Spare Parts

The following spare parts are provided:

- (1) Auto-Q level switch assembly
- (1) Auto-Q logic relay
- (1) Pump seal

1.05 Field Technician

A Field Technician can be provided ask for a quote, per Diem is $1250.00 + expenses.

1.06 Submittal Package

Upon receiving an order Pan America Environmental will engineer and produce a Submittal Approval Package, which allows you the customer to review and change or keep aspects of the system detailed in this quote. The submittal package provides the following at a minimum:

- General arrangement drawings, 2D, 3D, plan, end, sectional, detail and other views
- Hydraulic profile
- Electrical schematics
- Control panel physical layout
- Process/control narrative (where project size is applicable)
- Component datasheets
- Component cutsheets

Options

- P&ID
- Structural, seismic, wind load, lifting lug review, anchorage and/or other PE review calculations
- Design sizing PE calculations and/or calculations of any other types
- Testing review and implementation during fabrication and assembly, i.e. NDT, NDE, radiographic, x-ray, ultrasonic, magnetic particle exam, others
- Piping testing per desired standards, i.e. ASME B31.1 power piping, ASME B31.3 process piping
- Rigging and lifting guide, drawings and/or procedures and methods

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- WPS, ITP, PQR, PMI, others
- Document, QC report and/or other project document binder
- Mill certificates

Revisions & Meetings

The submittal package contains a limited amount of engineering and provides a maximum of Two (2) revisions of up to 10% maximum each. This quote does not include open ended, extensive or continuous revisions until approval is given. This submittal package does not include: Iterative R&D and review projects, design/redesign projects, pre-submittal before or after order placement to attain approval from the end user before order is placed, honored or executed by Buyer, engineers/consultants, contractors and/or other parties involved with this project. In addition, numerous and/or excessive meetings relative to the system design and complexity are not provided as PAE strives to have all valuable communications in writing so as to create a trackable/traceable project evolution.

Engineering Only

The quotation provides a limited amount of engineering and does not provide “Engineering Only”. The limited engineering is part of the system cost and is provided to give direction and final understanding as to what is being provided to you in the system design. The quoted and submitted system is a proprietary PAE product and PAE will not produce drawings for you to build, license, bid out or produce and/or market as your product for your or any other entities use.

SECTION 2.0 MATERIALS OF CONSTRUCTION

2.01 Steel Construction

Tank shell, baffles and internal structural members shall be constructed of A-36 carbon steel. Weld joints are to be double welded and dye penetrant tested. Saturation tank construction to be ASTM A516/A516M carbon steel or as required or determined by PAE.

2.02 Surface Preparation

Interior surfaces shall be prepared to an SSPC-SP10 near white metal blast. Exterior surfaces shall be prepared to an SSPC-SP6 commercial blast.

2.03 Coatings

Interior coating shall be coated with Ameron High Build Coal Tar Epoxy Amercoat 78HB (18-20 mils DFT). Exterior coating shall be coated with Ameron epoxy primer, Amerlock 2, (5-8 mils DFT). Final coat to be Ameron Amershield Aliphatic Polyurethane Enamel coat (5 mils DFT). Surface color to be Green RT-2203.

2.04 Pressure Vessel Internal Piping

Internal/external piping shall be ASTM A372 / A372M steel or as required or determined by PAE. Flanges to be 150 or 300 # RF as required.

2.05 Fasteners

All wetted fasteners to be ANSI, 300 series stainless steel. All non-wetted fasteners to be zinc plated.

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2.06 I.O.M. Manuals

Two copies of the Installation, Operation and Maintenance manuals will be provided.

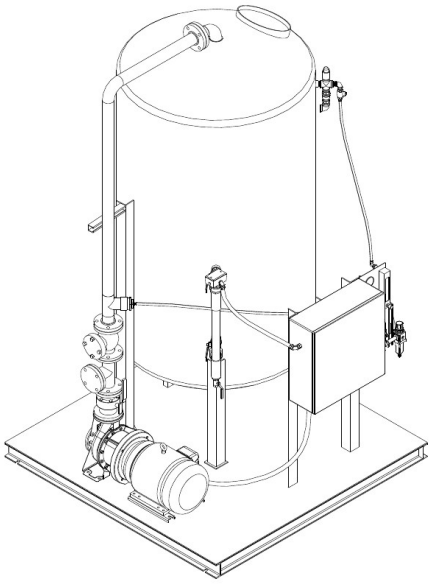
2.07 Assembly

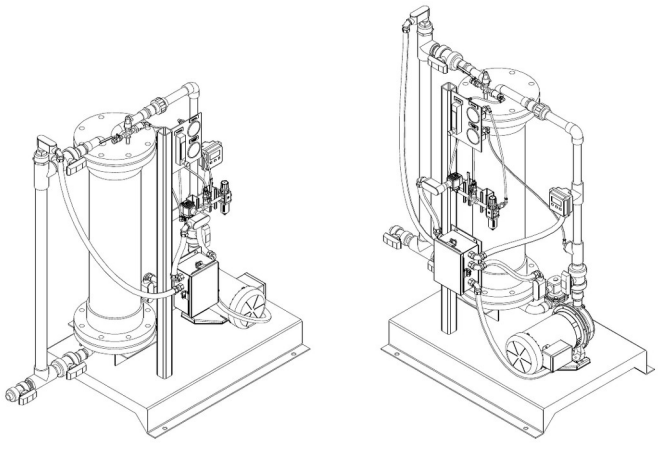
The RSS components will be installed on or in the RSS skid, plumbed, wired and functionally tested prior to shipping. The manufacturer of preference shall be: Pan America Environmental, Inc.

2.08 Warranty

Pan America Environmental warrants its products to be free of defect in materials and workmanship for a period of one year from the date of shipment.

Small RSS Configuration Large RSS Configuration





LEFT/FRONT RIGHT/FRONT

***Standard designs, weights and dimensions subject to change**

Not for construction.

Specifying an RSS Series DAF Recycle Saturation System for your project?

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