

# ACE (Air Charged Entrainment)



In a traditional DAF system large particles are formed during the flocculation process. Millions of small air bubbles are then attached to these particles to lift the sludge to the surface of water. Listening to our client's wish list, Ecologix has developed a specially designed system that is hermetically sealed with no internally moving parts that will self-clean as needed. The system can use atmospheric air, compressed air or even other gases like nitrogen for explosion proof applications.

To optimize the floatation process and reduce the required footprint, Ecologix has invented a process called ACE (Air Charged Entrainment) by which the air bubbles are embedded inside the sludge. This creates a more efficient separation process as the air/gas entrainment facilitates faster particle floatation and consequently reduces the system's footprint and cost.

This system features a smart level control that can be set to reduce the content of water in the sludge, which results in drier sludge. The ACE is equipped with one influent pump, one effluent pump, one sludge pump as well as a polymer make down unit. The ACE is able to achieve coagulation, flocculation, pH Control, TSS separation and Fat, Oil and Grease separation with greater efficiencies than a traditional DAF system. It can be configured as a DGF (Dissolved Gas Flotation), DAF or OWS (Oil-Water Separator) system. Furthermore, the self-cleaning cycle can use compressed air to scour the internals of the system preventing the need for cleaning maintenance inside the system.

For over 10 years Ecologix has been designing, developing, fabricating, installing and optimizing a range of Dissolved Air Flotation (DAF) systems to fit our clients' needs. In spite of our success, we have been relentless in the pursuit of improving our own systems and reducing our clients' operation costs, maintenance, downtime and the elimination of odors and hazardous fumes. The culmination of these efforts is the ACE system.

## **ACE Unique Features**

- Hermetically sealed, with no moving parts
- Entrained air bubbles are embedded inside the sludge
- Smaller footprint to comparable systems
- More efficient coagulation, flocculation, pH Control, TSS separation and Fat, Oil and Grease separation than a traditional DAF
- Smart level control for reduction of water content in the sludge
- Can be configured as a DGF, DAF or Oil Water Separator
- Self cleaning

## **Industries well suited for an ACE**

- Meat processing / slaughterhouse (beef, pigs, sheep, goats)
- Ice Cream factory
- Poultry processing (chickens, turkey, duck, geese)
- Confectionary/Candy manufacturing
- Bakery / baked goods
- Oil & Gas industry
- Mining industry
- Food processing and packaging
- Dairy processing (milk, cheese, yogurt)
- Beverage factories (breweries, juice, soda)
- Automotive industry
- Paper and pulp industry



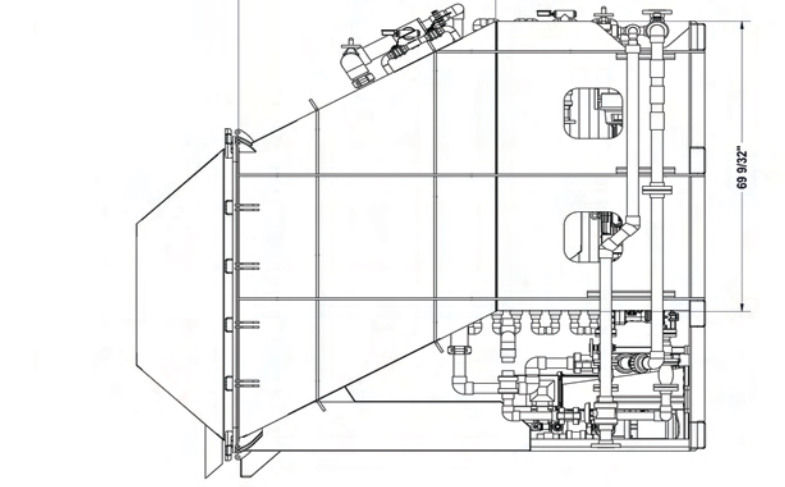
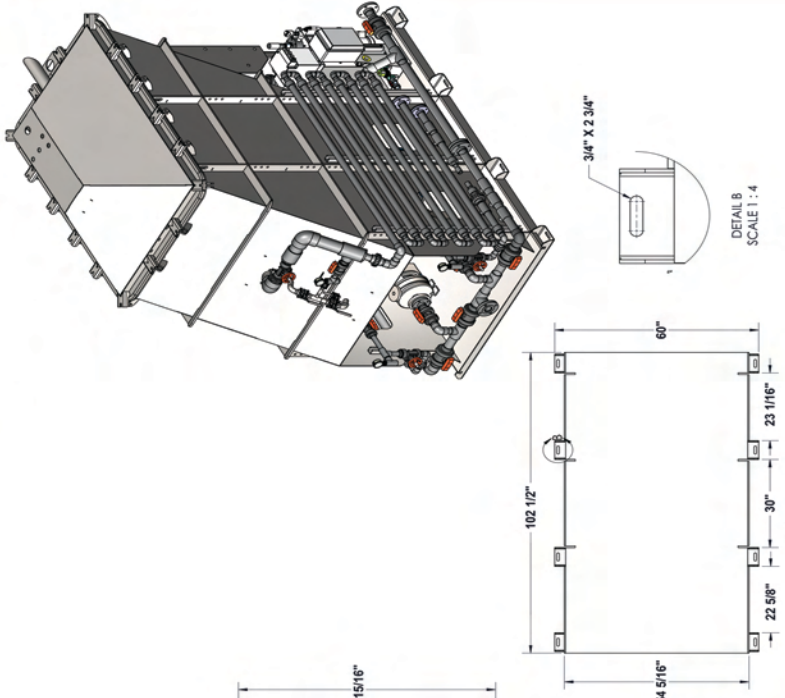
## **Water & Wastewater Treatment Solutions**

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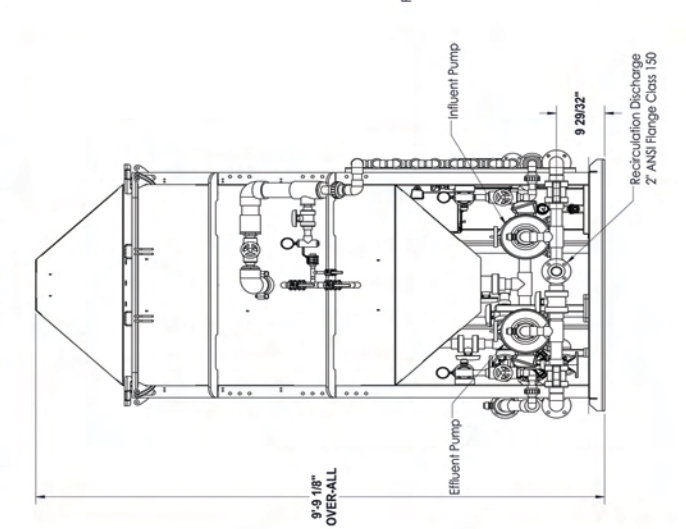
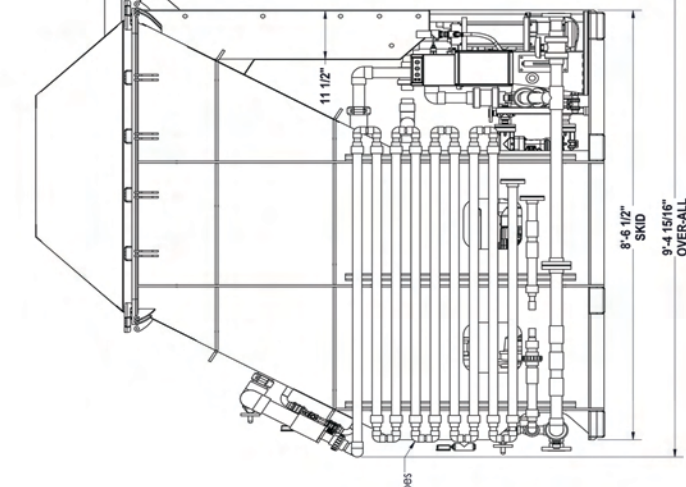
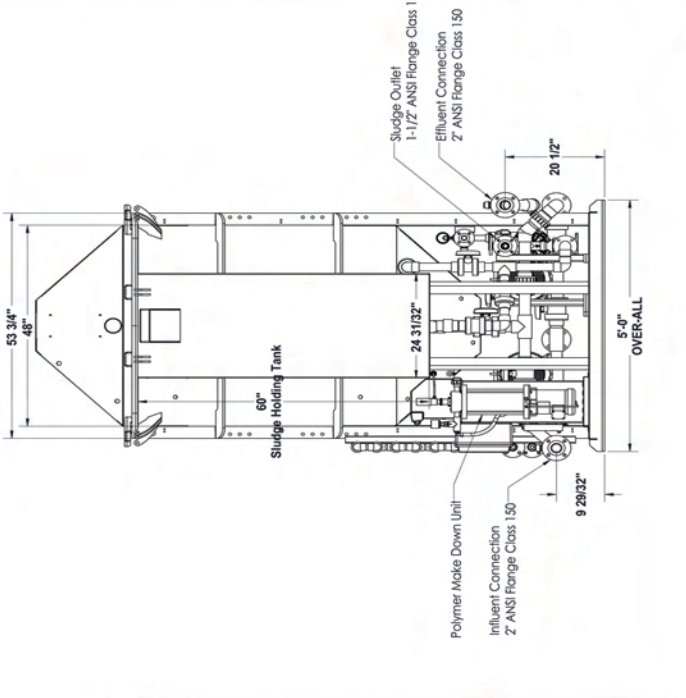
**Faster - Better - Simpler - Safer**

[www.EcologixSystems.com](http://www.EcologixSystems.com)

REV	DESCRIPTION	DATE	BY/APP
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- ACE 100 DAF SPECIFICATIONS:
  - Shipping WT: 3500 lbs
  - Operating WT: 14400 lbs
  - Design Parameters:
    - Design Flow Rates: 100 GPM @ 1440 mg/l of TSS
    - Loading rate @ 100 GPM: 0.39 GPM/sq. ft. psd.
    - Projected Surface Area: 258 sq. ft.
  - Volumes:
    - Hopper Volume: 108 gal
    - Rotation Volume: 1129 gal
    - Skimmed Sludge Compartment Volume: 75 gal
    - Total Volume: 1312 gal
  - Materials of Construction:
    - All welded metal materials to be 304SS
    - All structural metal materials to be 304SS
    - All flanges to be Class 150 ANSI flanges ASTM A-182 - ANSI B16.5
    - All metal piping materials to be Sch40 304SS pipe
    - All non-metal piping materials to be Sch80 PVC
    - All anchoring/bottom plates materials to be 1/2" 304SS
    - Tube Sealers Materials to be Polypropylene (Black)
  - Safety and Health:
    - All moving parts are inaccessible, as required by OSHA
    - All electric power elements are in accordance with OSHA regulations
  - Coating and Finishes:
    - All stainless steel parts to be sandblasted
    - All ASTM A-36 Carbon Steel Materials to be powercoated with High Performance Polymer Alloy Coating Plastcoat PPA 571ES
  - Welding:
    - All welds are conform AWS applicable specifications
    - Welding equipment/supplies for steel metal and structural elements: Wire fed MIG machine or TIC where applicable
    - Welding equipment/supplies for piping and fittings: TIC or MIG
  - Pumps:
    - Influent Pump:
      - Brand: Sulzer
      - Model: CPT 12-1 (LF)
      - Specs: 15 HP 3600 RPM General NEMA 254T, 208-230/440 volts
    - Effluent Pump:
      - Brand: Sulzer
      - Model: CPT 12-1 (LF)
      - Specs: 3 HP 1800 RPM General NEMA 182T, 208-230/440 volts
    - AOD Pump:
      - Brand: Wilden
      - Model: XPX200/SSAAA/TWS/TF/STF/0730
      - Specs: SS welded path with aluminum air side - Teflon Elastomers - 1" NPT



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SKIN	NAME	DATE
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MDR APPR	EG	4/19/2016

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FILE NAME	
MATERIAL	
SCALE	1:14
SHEET NO.	1 OF 1