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Organics Pre-Processing

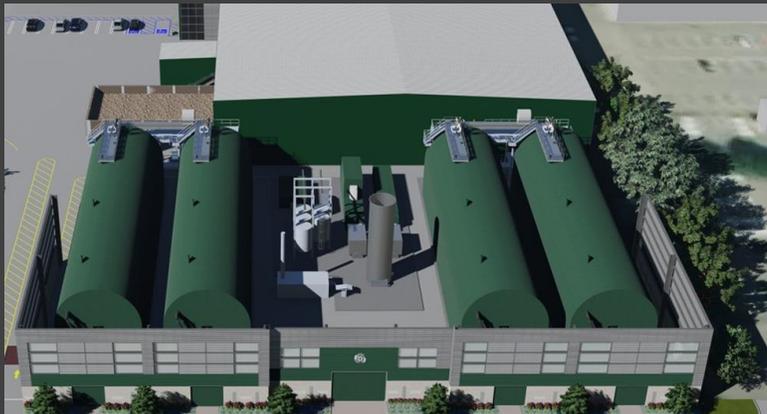
SYSTEMS OVERVIEW

MAY 21, 2021

By: Nick Caniglia
For: SWANA Central CA
Sierra Chapter

Introduction

- Architects, Engineers and Planners
- Founded in 1982 by Jim Miller
- Currently 57 employees
- Designed more than 150+ solid waste facilities
- Main office in Brea and Four Other US Offices:
 - San Carlos (CA)
 - Portland (OR)
 - Houston (TX)
 - Lexington (KY)



Presentation Objectives

1. Discuss the various organics pre-processing and separation equipment known in the industry used to prepare feedstock material for Anaerobic Digestion or Composting
2. To leave this presentation with a better understanding of:
 - System manufacturers
 - Types of systems and how they each separate feedstock material
 - General system information concerning models, throughput, rough costs and local installations
 - Limitations to consider

Why Pre-Process Organic waste?

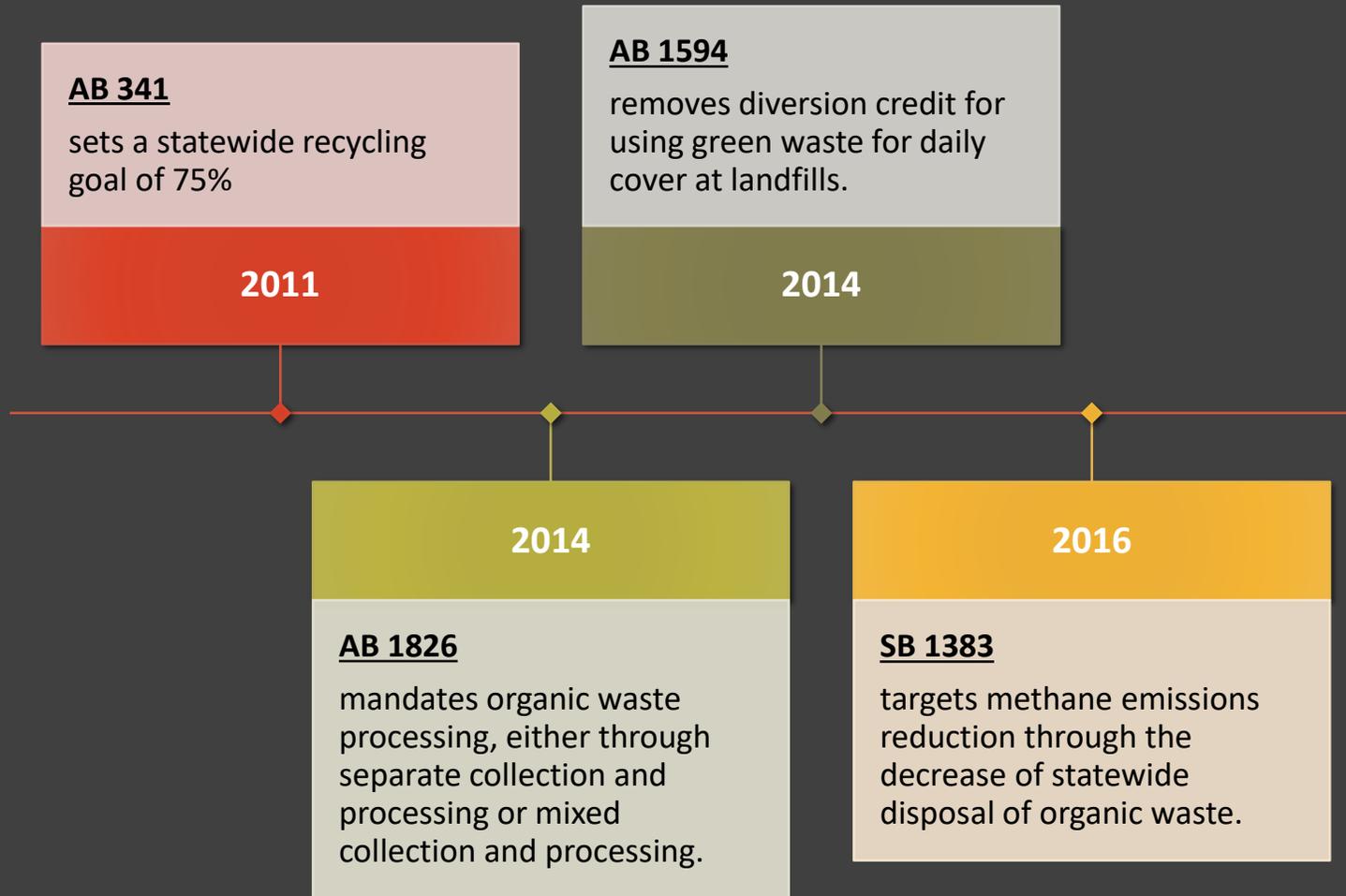
Comply with CA
Regulations
(CalRecycle)

Organics
Diversion from
Landfills

Reduction in
Green House
Gas (GHG)

Waste to Energy
Conversion /
Production

Composting and
Agricultural
Uses



CA Regulations / Legislation

Are we ready for SB 1383?

- ❑ Enforcement begins January 1, 2022 on 50% organic waste diversion
- ❑ 75% organic waste diversion beginning January 1, 2025



What's in your Waste Stream?



What do you
do when it
looks like
this?



How do you
remove the
organics
effectively?

What are the different types of systems?

Horizontal Mills

- SCOTT Turbo Separator
- SMICON Depackager
- MAVITEC Depacker

Hydraulic Press

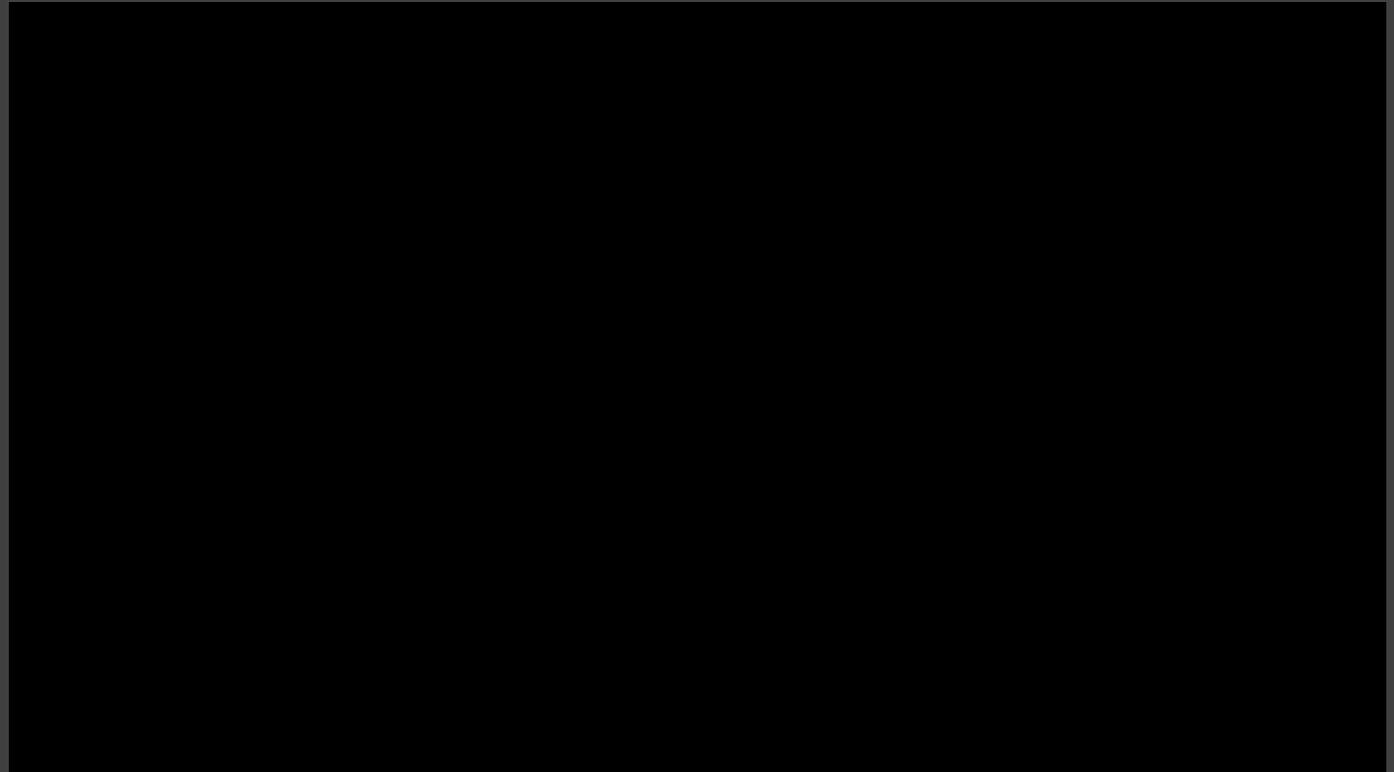
- Anaergia OREX

Vertical Mills

- Cesaro Tiger Depack
- DODA Bio Separator
- Drycake Twister

Horizontal Mills

- SCOTT Turbo Separator
- SMICON Depackager
- MAVITEC Depacker





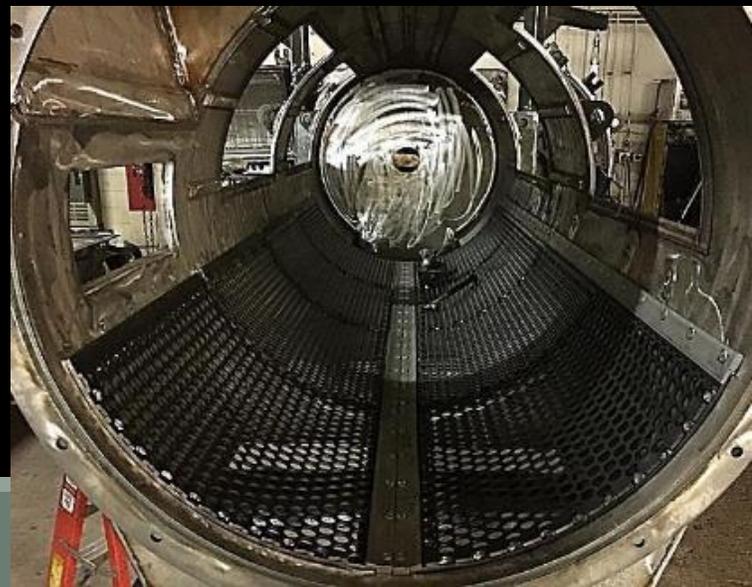
SCOTT Turbo Separator



- Founded in 1996 and Manufactured in Minnesota
- Distributed by Olympic Wire and Equipment
- <https://scottequipment.com/recycling/>
- 4 models offered
 - T20, T30, T42, Thor
- Throughput range 1 to 30 tph
- General Cost Range: \$ - \$\$\$
- California Installations
 - RMG – Ontario, CA
 - Blue Line Transfer Station – So. San Francisco, CA
 - Cedar Avenue Recycling & Transfer Station – Fresno, CA
 - Republic Services – Anaheim, CA



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smicon
ENGINEERING YOUR PROCESS

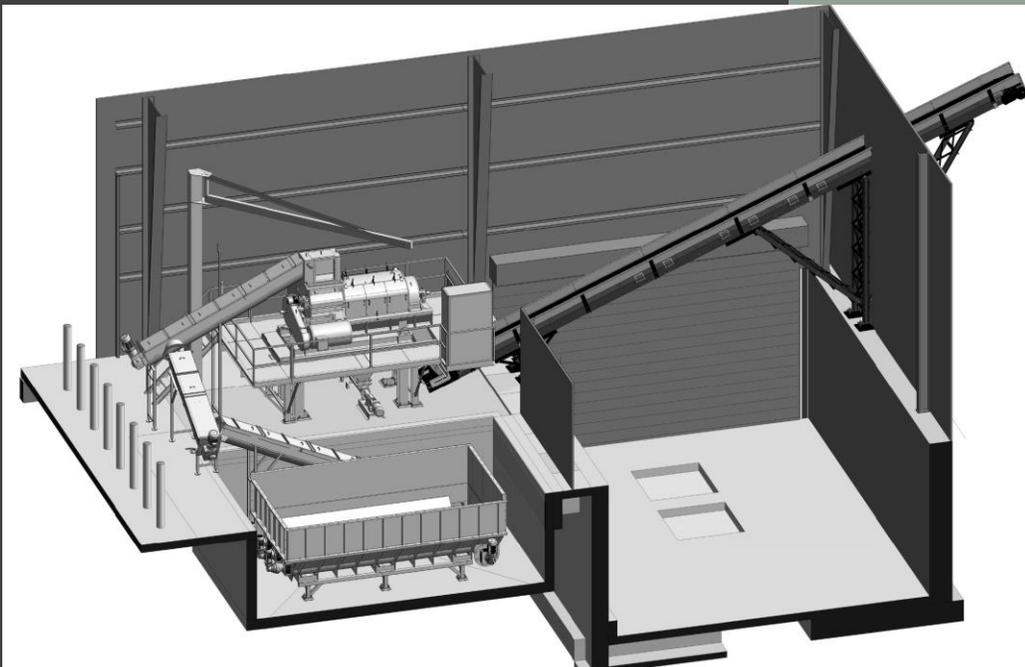
SMICON Depackager

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 **VAN DYK**
recycling solutions

- Founded in 1980 and Manufactured in the Netherlands
- Distributed by Van Dyk Recycling Solutions
- <https://www.smicon.nl/en/machines/depacking/>
- 2 models offered
 - SMIMO120, SMIMO160
- Throughput range 15 to 25 tph
- General Cost Range: \$\$ - \$\$\$
- California Installations
 - EDCO – Escondido, CA



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<https://video.link/w/k0jAb>





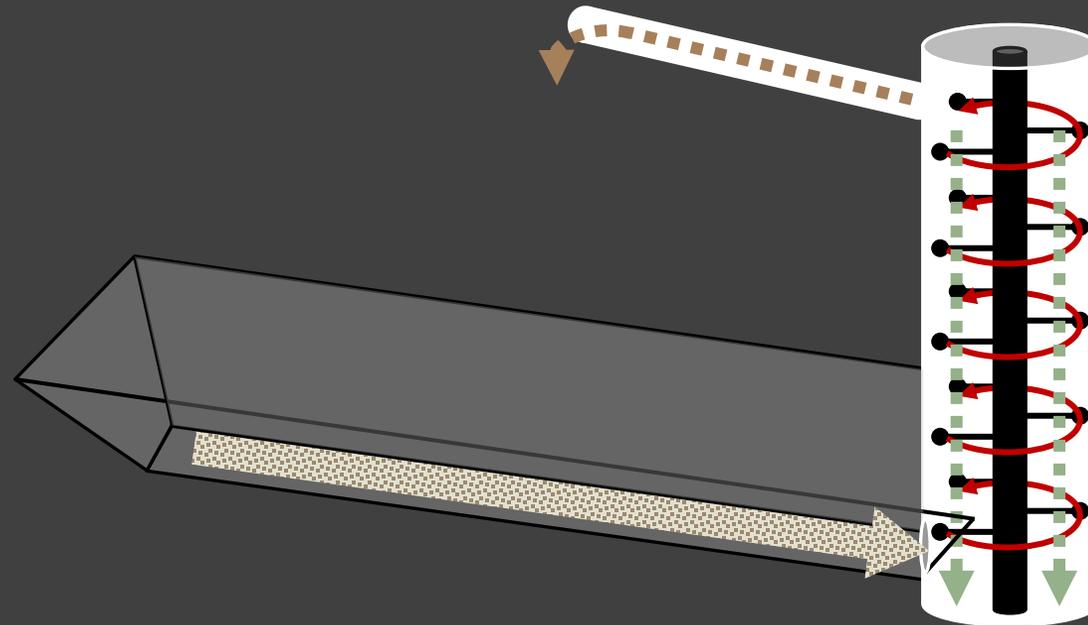
MAVITEC Depacker

- Manufactured in the Netherlands
- <https://mavitecgreenenergy.com/>
- 2 models offered
 - Paddle Depacker Model S
 - Paddle Depacker
- Throughput range 2 to 20 tph
- General Cost Range: \$\$ - \$\$\$
- California Installations
 - Not yet



Vertical Mills

- Cesaro Tiger Depack
- DODA Bio Separator
- Drycake Twister



Cesaro Tiger DePack

- Manufactured in Italy
- USA Dealer is Ecoverse
- <https://www.tigerdepack.com/en/>
- 3 models offered
 - HS30, HS55, HS90
- Throughput range 10 to 40 tph
- General Cost Range: \$\$ - \$\$\$
- California Installations
 - Western Imperial Products – Mira Loma, CA





<https://video.link/w/bCtAb>

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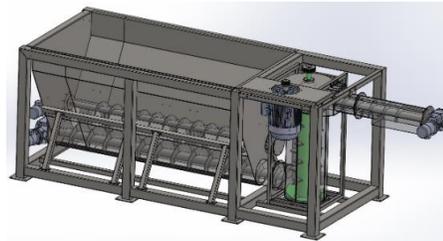
The logo for DODA, featuring the word "DODA" in a bold, black, sans-serif font with a registered trademark symbol (®) to the upper right. A thin red vertical line is positioned to the left of the text.

DODA Bio Separator

The logo for JRMA, consisting of the letters "JRMA" in a large, bold, white, sans-serif font, with the words "ARCHITECTS ENGINEERS" in a smaller, white, sans-serif font directly below it. The logo is set against a dark grey rectangular background.

- Manufactured in Italy
- Distributed by DODA USA
- <https://www.dodausa.com/industrial/separators/bio-separator/>
- 1 model offered
- Throughput range up to 20 tph
- General Cost Range: \$\$
- California Installations
 - LA County Sanitation Districts – Puente Hills, CA
 - Waste Management – Orange, CA

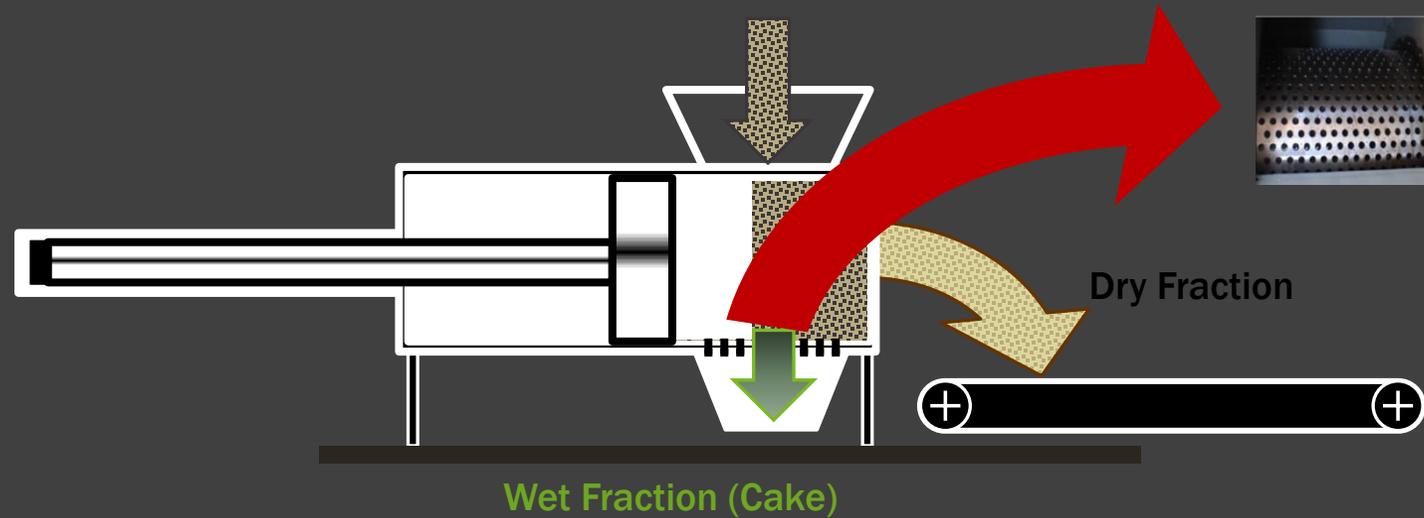
Drycake Twister Depackager



- Manufactured in the Netherlands
- Founded in 1995
- <https://www.twisterseparator.com/>
- 1 model offered
- Throughput range up to 20 tph
- General Cost: \$\$
- California Installations
 - Not yet

Hydraulic Press

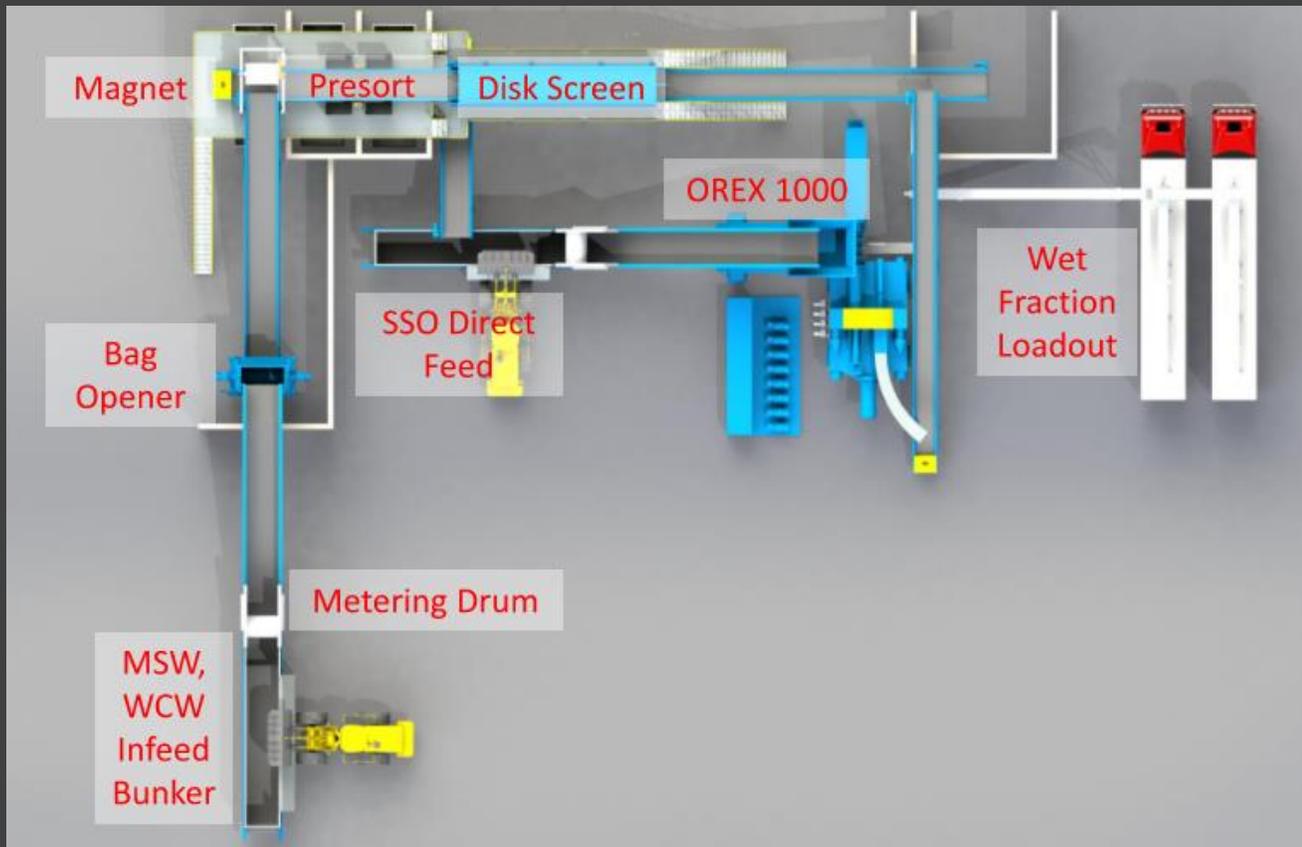
- Anaergia OREX



Anaergia Organics Extrusion Press (OREX)



- Global Footprint
- Based in Carlsbad, CA
- <https://www.anaergia.com/what-we-do/municipal-solid-waste/organics-extraction>
- 1 model offered
- General Cost: \$\$\$\$
- California Installations
 - SBWMA Shoreway Environmental Center – San Carlos, CA
 - Waste Management – Sun Valley, CA
 - Universal Waste Systems – Los Angeles, CA





Examples of Pre and Post Processed Organic Material

MSW



WET FRACTION



DRY FRACTION



What are some Considerations and Limitations?

- May need upfront shredding, sorting or ? Ahead of the system
- Type of feeding system
- System footprint
- Grass, leaves and corn husks
- Need for water and/or packaging to scour screens
- Wide range in costs

In Summary

- They all work!
- Achieve 90-99% clean organic recovery
- Prepare material suitable for AD or Composting

Questions?

Thank you

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