

Management of Petrochemical/Refinery Organic-contaminated Solids Alternatives to Incineration

David Michaelis

Sr. District Manager – CWM Lake Charles

Disclaimer

****Speaking as a customer/user of incineration technology****

****Not representing or directly affiliated with incineration provider****

Incineration Market

Capacity

- 2020 Capacity Issues
- Some recent relief, but not significant
- EPA recognizes capacity issue
- LA generators must notify and receive authorization to exceed storage time limit

Incineration Market

Pricing

- Significant price increases
- Tightening of incineration parameters
- Change in process code

ALTERNATIVES

Bioremediation

Technology



Biological/microbial breakdown



Naturally-occurring and supplemental microbes



Nutrient augmentation



Aerobic and anaerobic activity

Bioremediation – Target Waste

- **Light organic contamination levels**
- **Organic constituents - Listed / characteristic waste codes or Organic UHCs**
- **Heavy metal contamination is acceptable**
- **NESHAP or CC controls required is acceptable**

Thermal Desorption

Technology



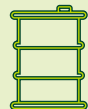
Does not meet CMBST or RORGS specified technology



Volatilize / vaporize organic and aqueous components



Capture vapors through quench / cooling loop



Recover organic content

Thermal Desorption – Target Waste

- **HSM / VRE**
- **Not limited to SIC 2911**
- **Heavy organic contamination levels**
- **Solids preferred**
- **Specific list of acceptable waste codes**
- **Must have recoverable organics**



Organic Recovery

Technology



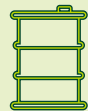
Does not meet CMBST or RORGS specified technology



Chemical Waste / Centrifuge / Filter Press



Filtration / Dissolved Air Flotation (DAF)



Recover organic content

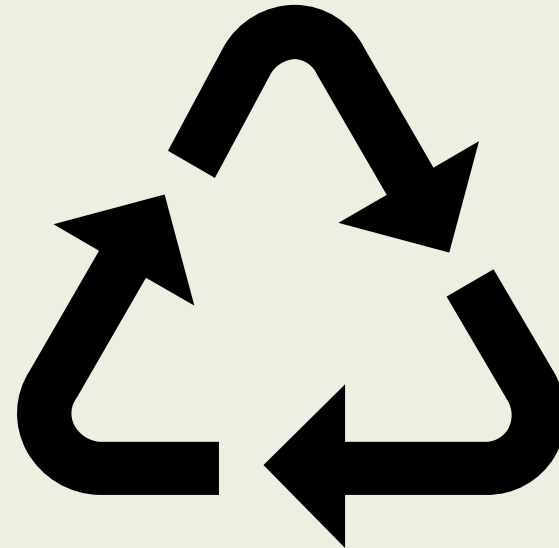
Organic Recovery – Target Waste

- HSM / VRE
- Not limited to SIC 2911
- Heavy organics contamination levels
- Liquids/sludge preferred
- Specific list of acceptable waste codes
- Must have recoverable organics



Hazardous Secondary Materials (HSM)

- 40 CFR261.4 exclusions
 - #12 – SIC2911 to SIC2911
 - #24 – HSM transferred off-site for reclamation
- Excludes material from Solid Waste
- Waste Minimization
- Notification Requirements
- Specific list of waste codes
- State-by-state



Other Options

- **Fuel Blending (solid / liquid / sludge)**
- **Solvent recovery (liquid)**
- **Waste water treatment (liquid)**
- **Chemical Oxidation (solid / liquid / sludge)**

Questions?



Thank you!

