

Managing solids through collective innovations

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At a glance

- NEORSD and how we manage solids
- Innovations by design
- Innovations by necessity

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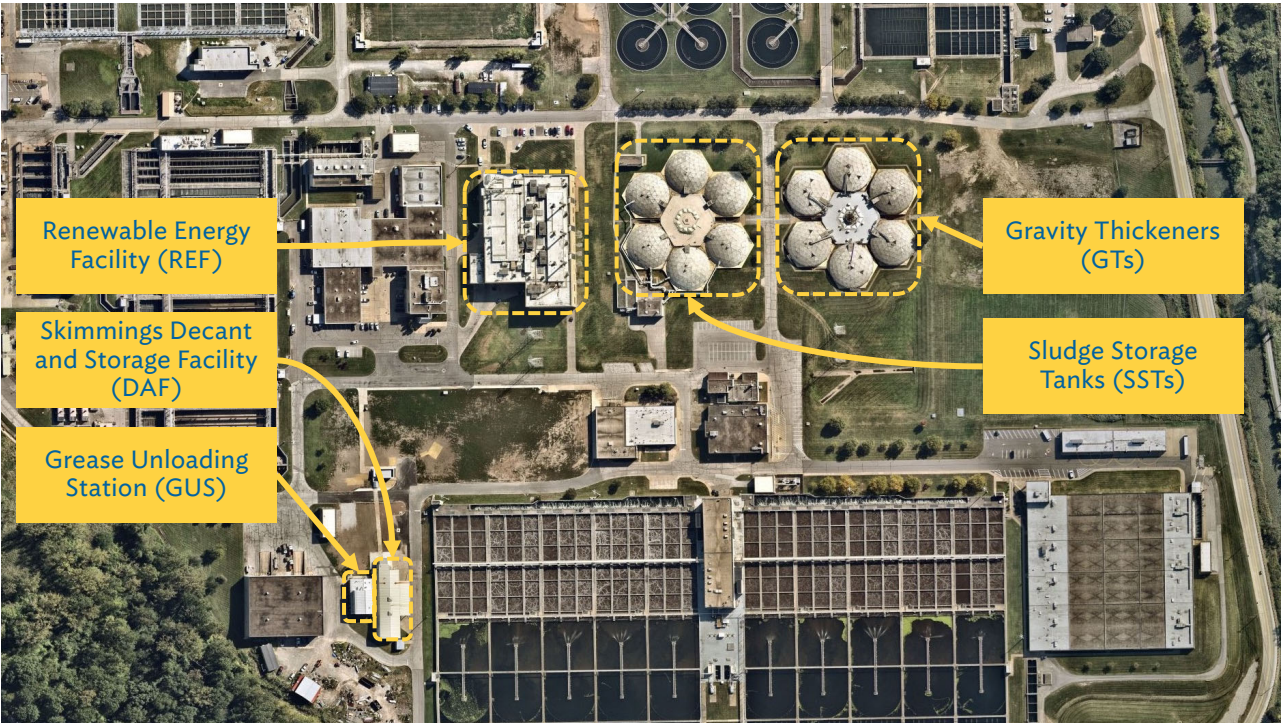
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GREASE +
SKIMMINGS

SLUDGE



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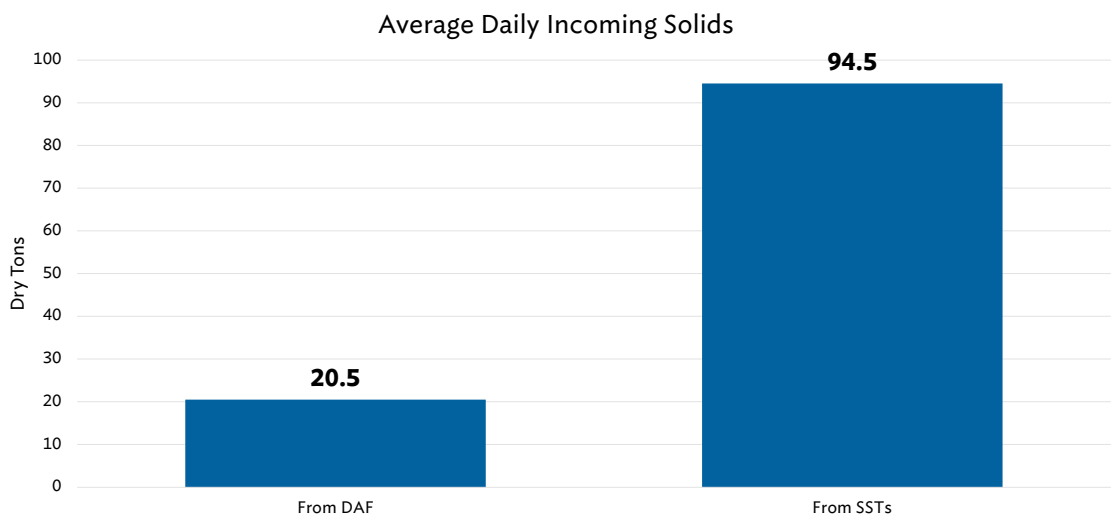
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SOUTHERLY DAILY AVERAGE

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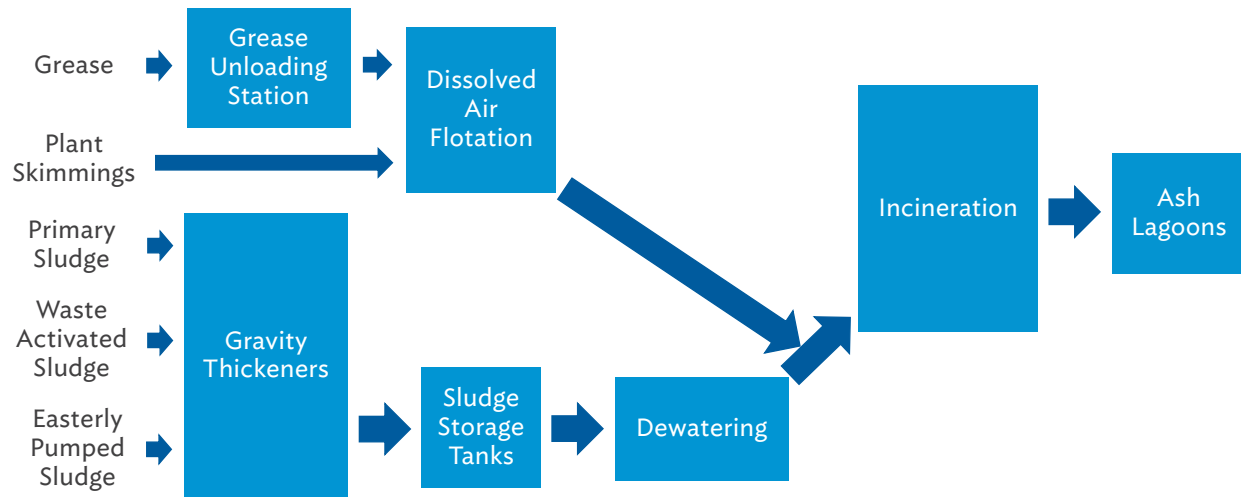
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Grease and skimmings account for about
18% of incinerated solids per day

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17,500 Gallons of Skimmings are Collected Daily from
Primary and Final Clarifiers



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27,000 Gallons of Grease are Delivered to
Southerly Daily on Average

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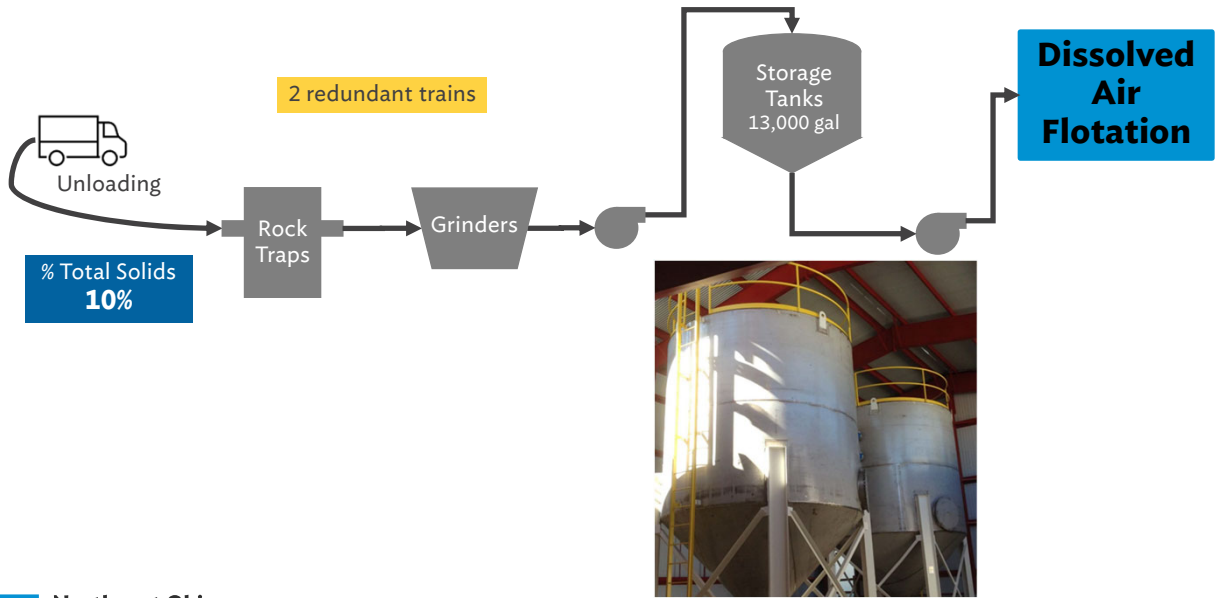
27,000 Gallons of Grease are Delivered to
Southerly Daily on Average

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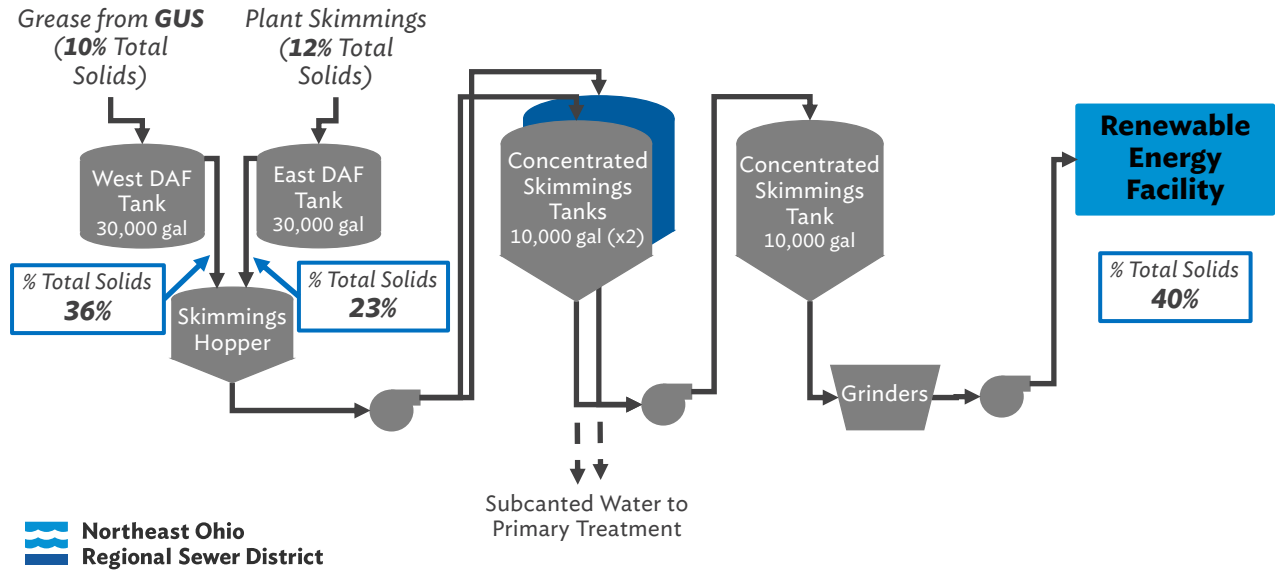
HIGHEST NUMBER OF GREASE LOADS IN A SINGLE DAY

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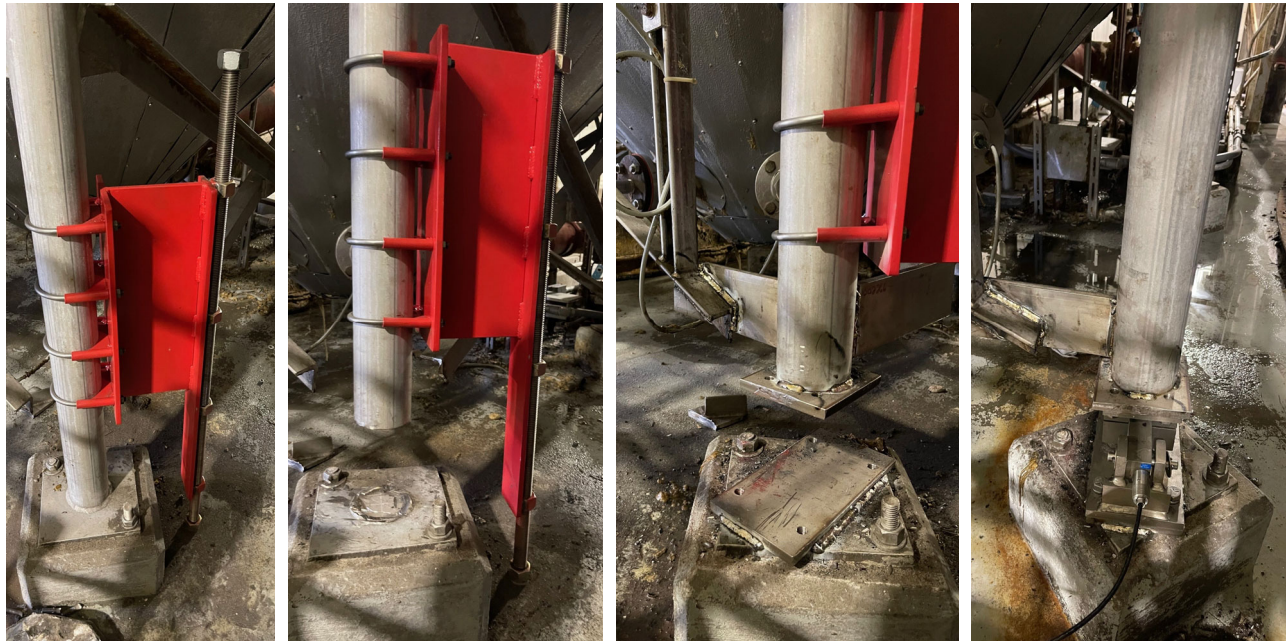


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DAF – Skimmings Decant and Storage Facility (Dissolved Air Flotation)



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Skimmings Hopper Leg Modification

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Completed Load Cell Installation

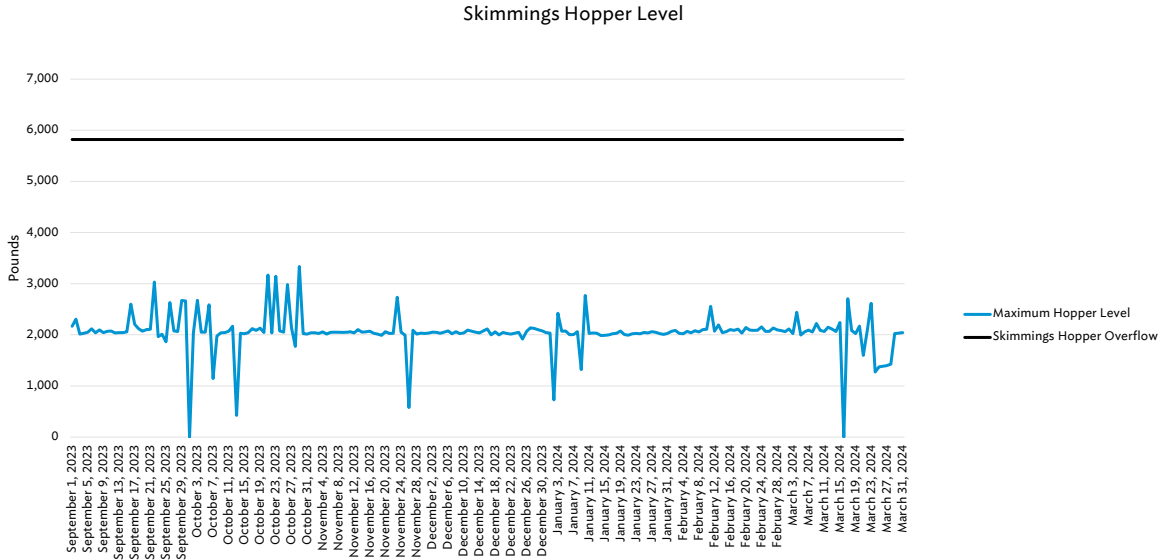
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Innovation: High Hopper Level Alarm

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INCINERATED
SKIMMINGS
+ GREASE



EQUIVALENT TO
ANTHRACITE COAL

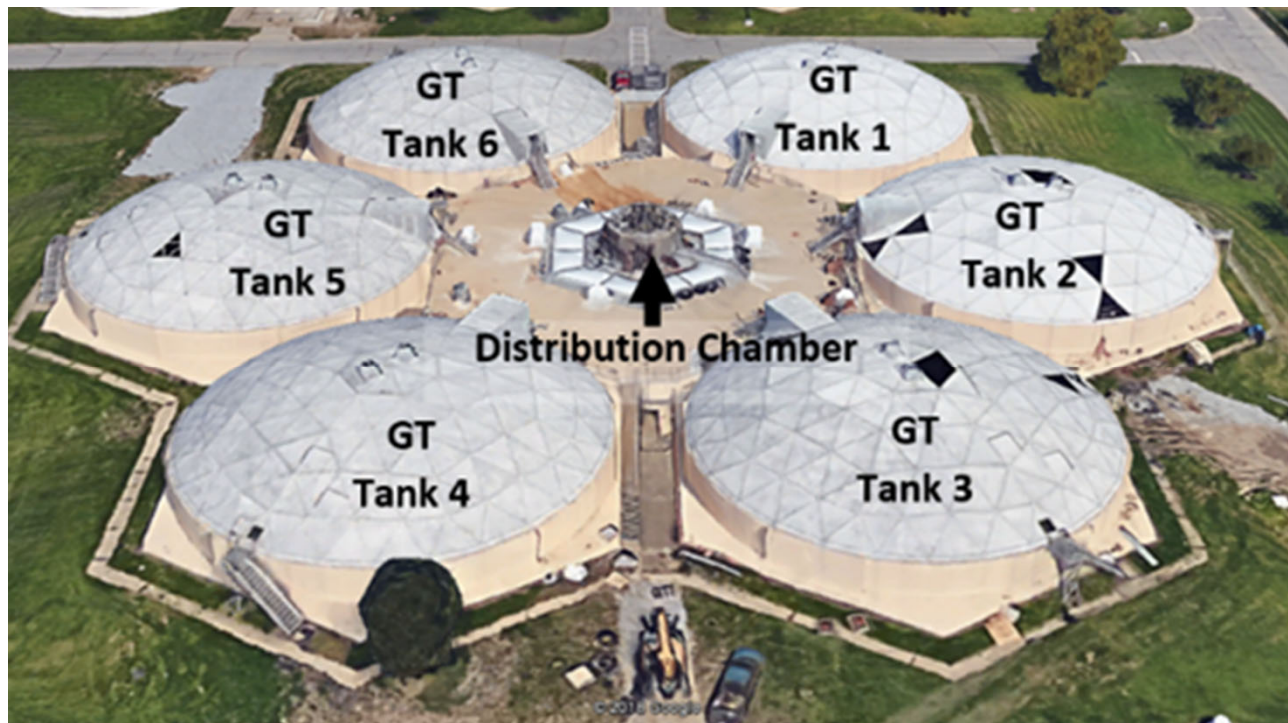
BTU PER POUND





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Gravity thickeners are necessary for proper settling of sludge

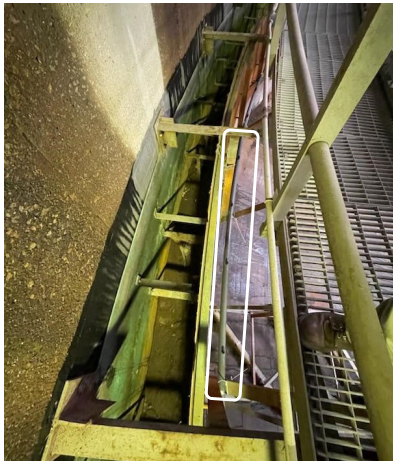
- Best performance: Keep sludges separate before storage
- 4 million gallons of storage is available
- Foul odors are filtered before release to atmosphere



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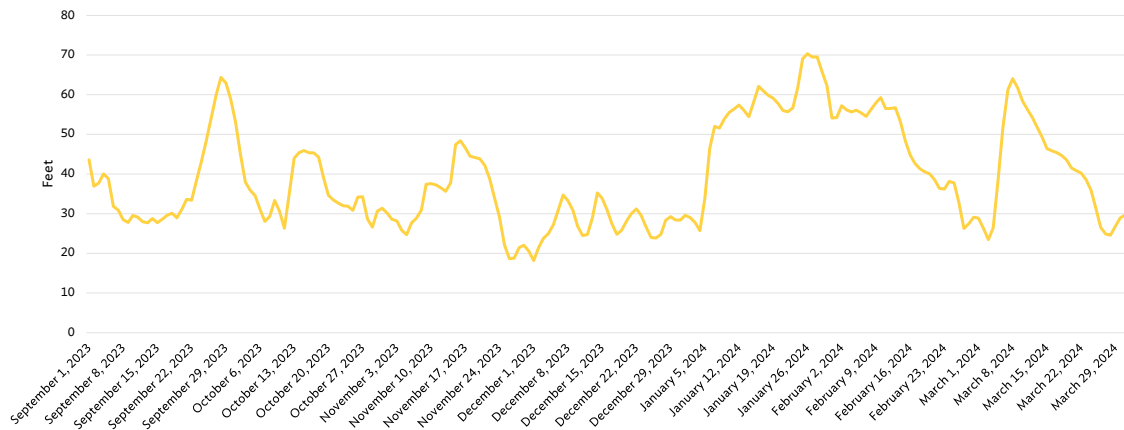
Innovation: Weir Bubbler System

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Tank capacity: 40,000 gallons per foot of storage

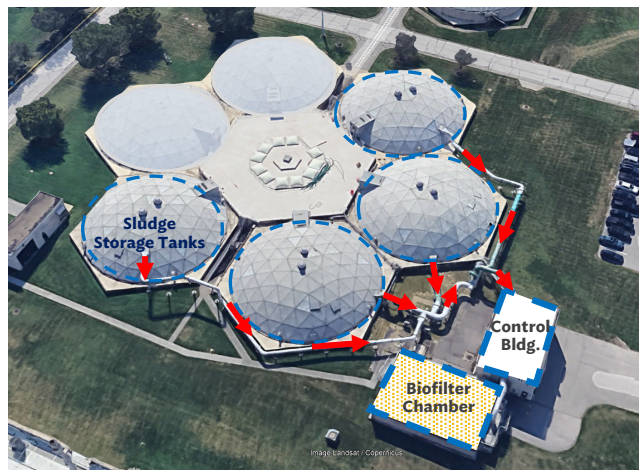


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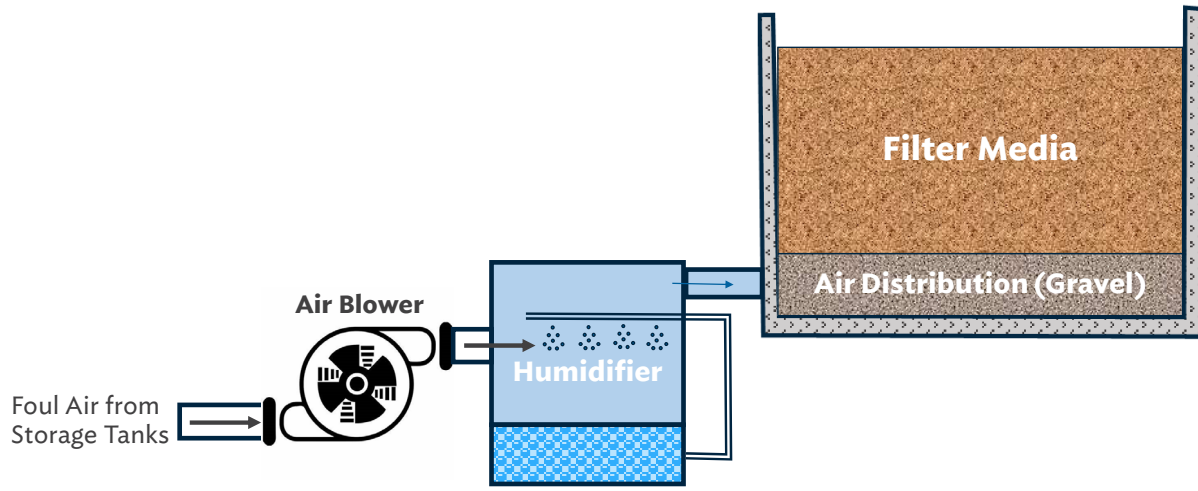
Biofilters capture and treat foul air

- Foul Air is conveyed to the Control Building under Negative Pressure by Air Blowers



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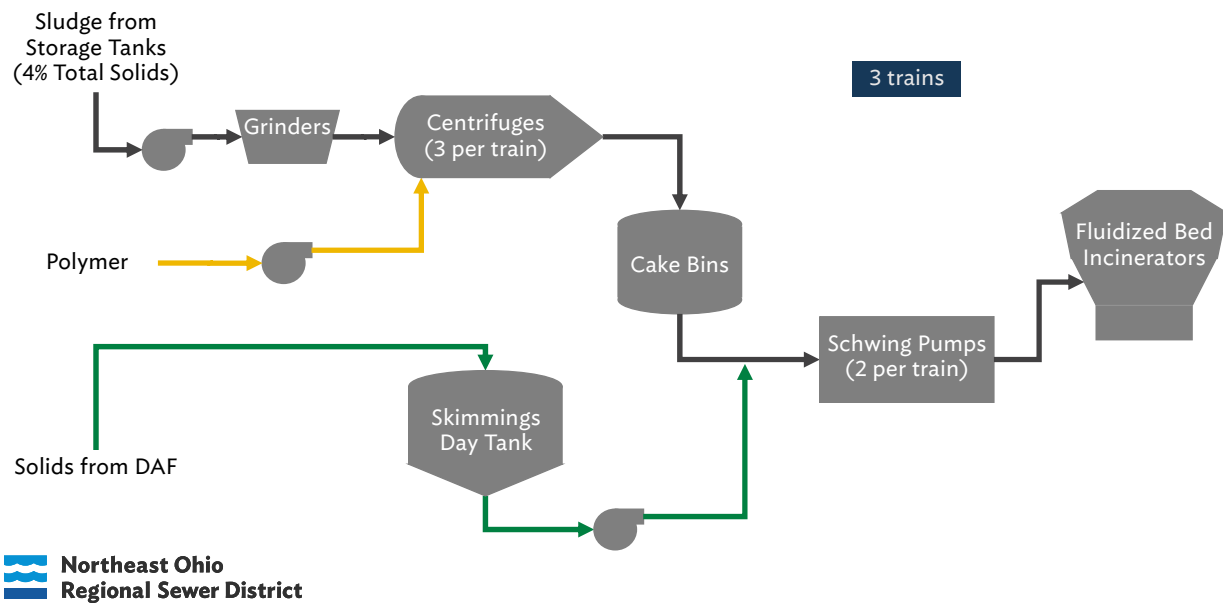
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Contaminants in foul air adsorb to the filter media to be consumed by resident bacteria and fungi

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Sludge Dewatered to about 30% Total Solids



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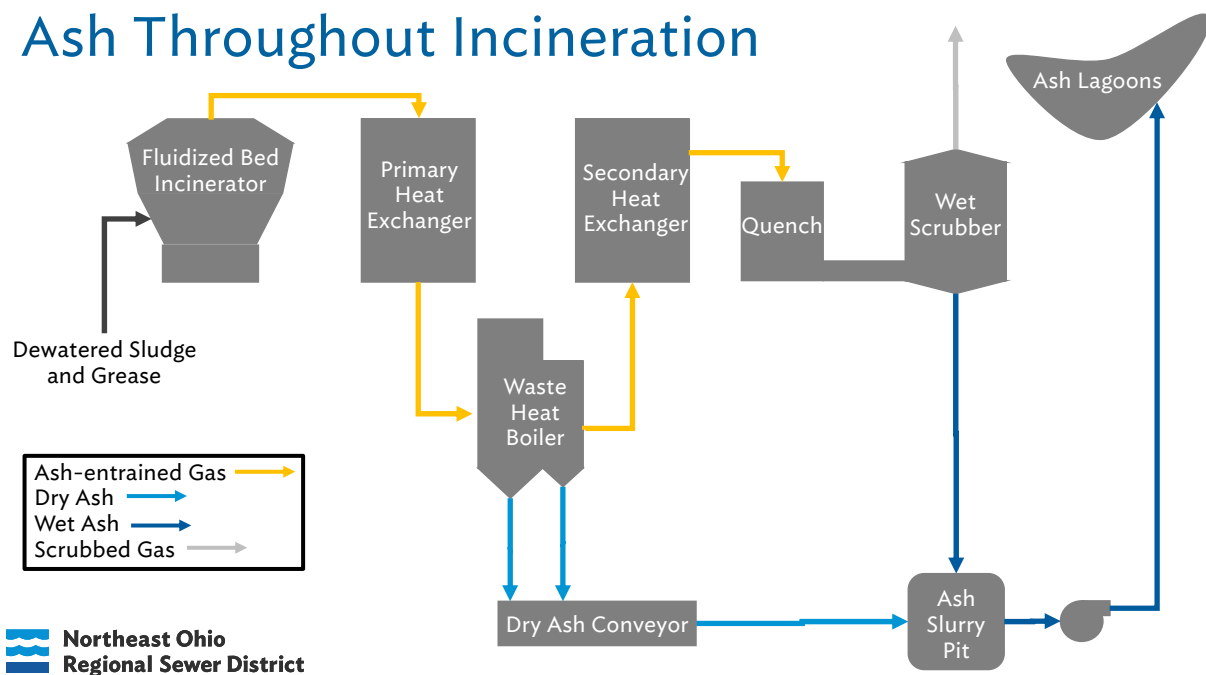


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Incineration of Biosolids Reduces the Sludge Volume
through the Combustion of Volatile Solids

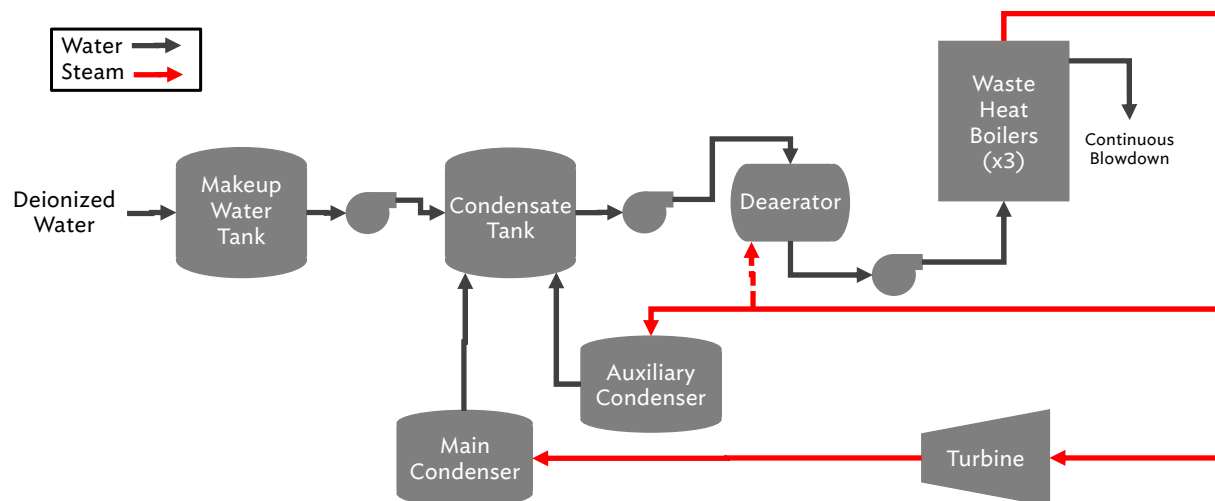
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Ash Throughout Incineration



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Renewable Energy Facility – Steam System



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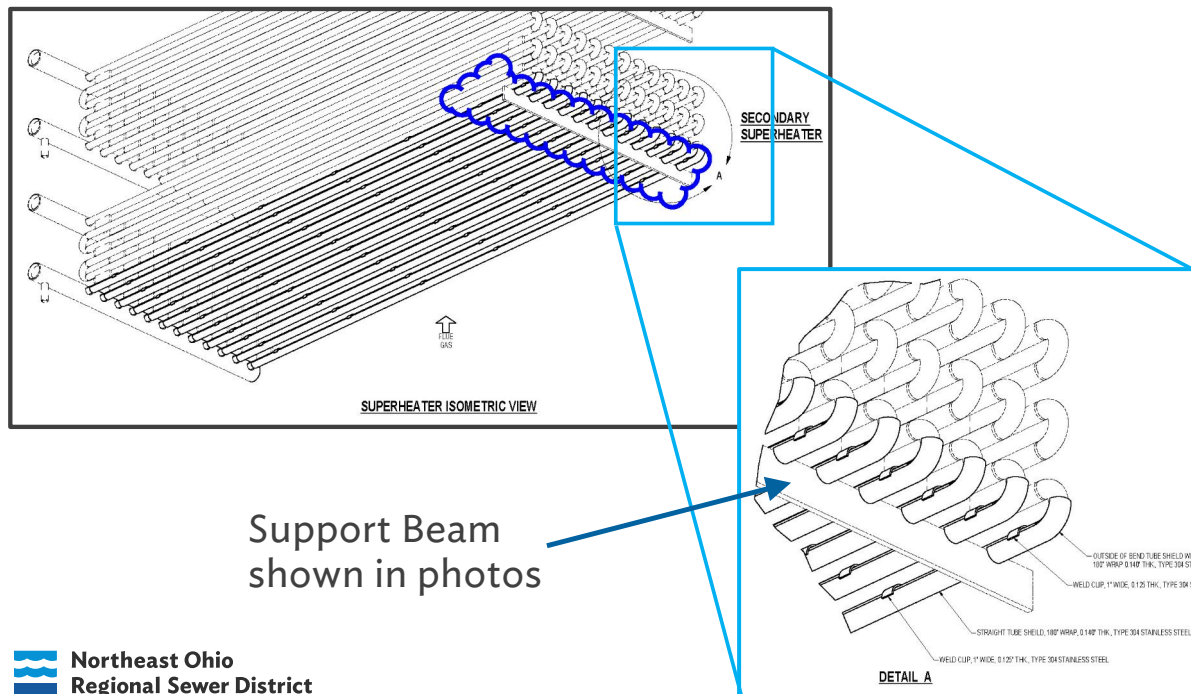
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3.5-Megawatt Turbine

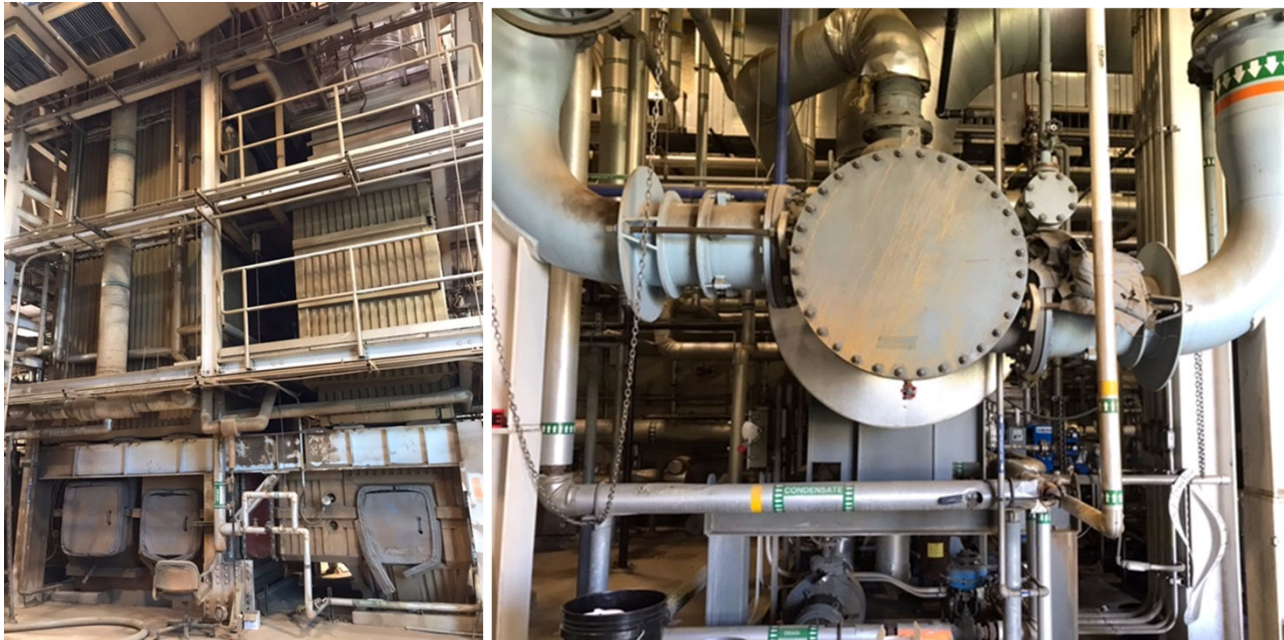
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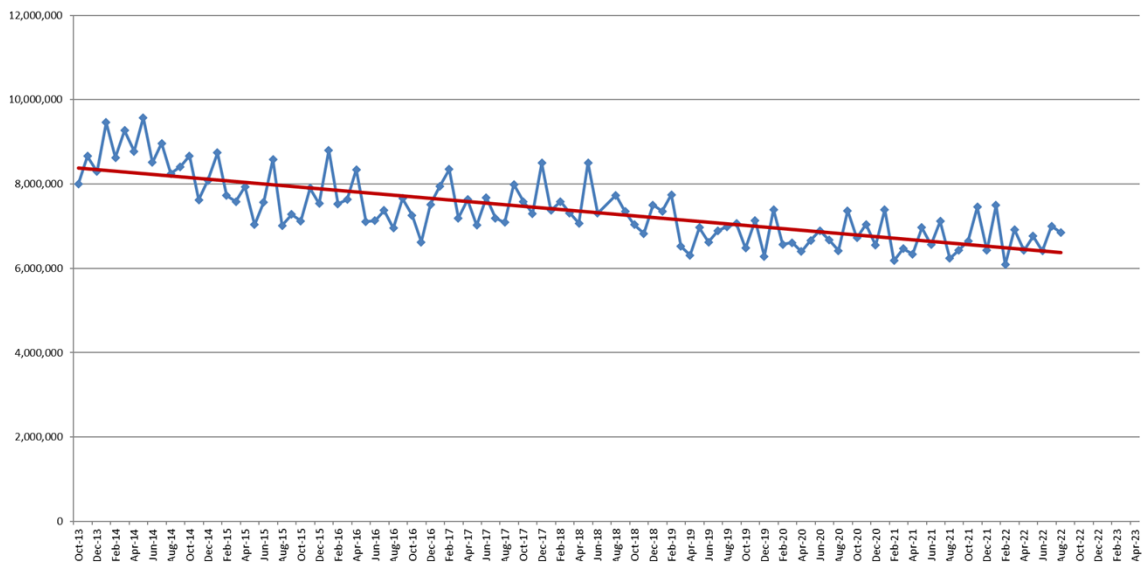


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Energy Recovery Provides over \$500,000 in
Electricity Savings per Year

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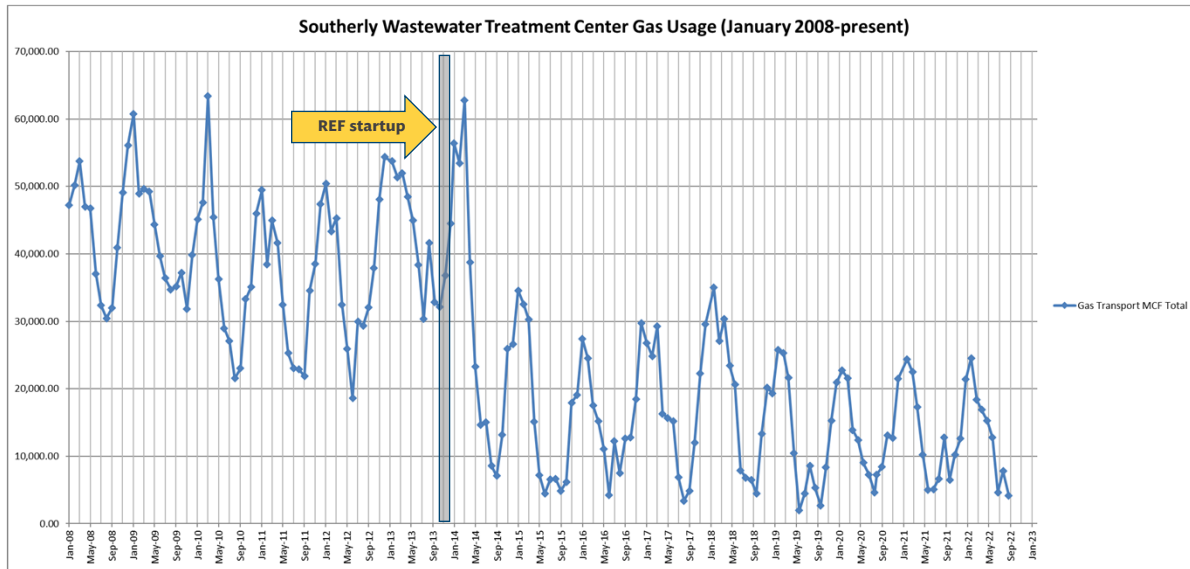
Southerly Wastewater Treatment Center Kilowatt Usage (October 2013 - present)



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— KW Usage
— Linear (KW Usage)

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- 100% diverted from landfill since 2018
- Savings of over \$900,000
- Greenhouse gas emissions reduction

Future Opportunities

- Westerly sludge treatment at Southerly
- Beneficial grit reuse
- Energy savings – Second Stage Aeration blower replacement



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