Cortland, NY Anaerobic Digestion Improvements

From Antiquated to Updated and Ready for Yogurt

WesTech
Process Equipment. Process Driven.

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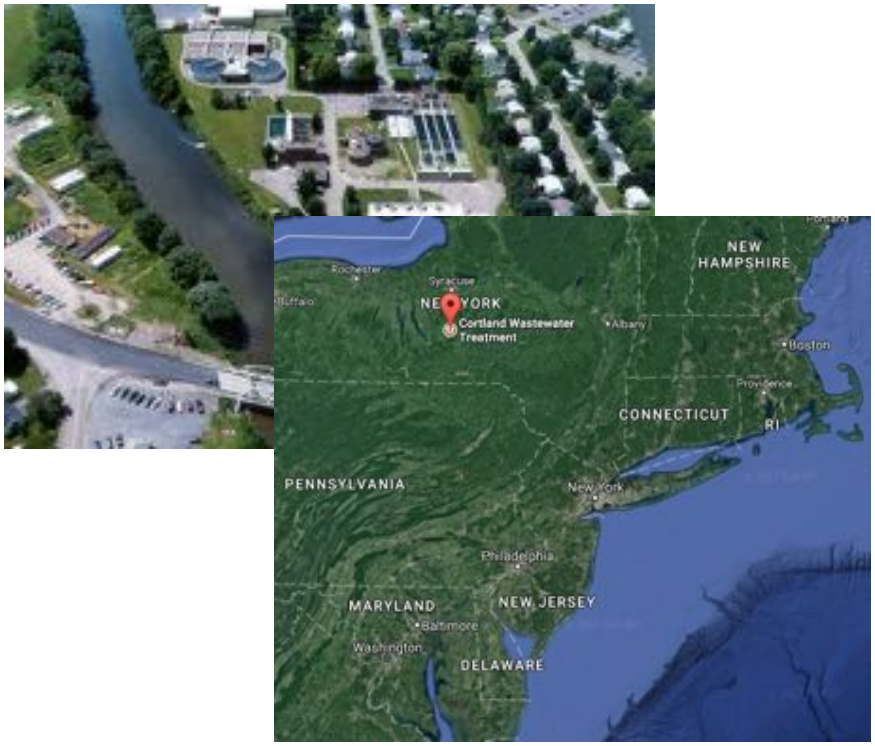
Cortland, NY WWTP

- Serves Cortland, Homer, McGraw and a portion of Cortlandville
- Funding through state revolving loan fund CWSRF, with an additional $2 million grant for a digester and CHP
- They had to upgrade to meet Chesapeake Bay nutrient requirements



The Phases of Change

- **Phase 1:** Solids Handling Deficiencies
- **Phase 2:** Installing SBR and replacing the antiquated SCADA system
- **Phase 3:** Digesters and CHP

Wooing Industry

- Historically lost thousands of manufacturing jobs
- Needed new development
- Offered a renovation opportunity for the WWTP

Yogurt Necessitates Change

- Acidic whey needed disposal.
- Existing system couldn't handle the additional load plus future growth.
- A quick and forward-thinking solution was needed.
- This all happened during Phase 3.

Old Milk is Bad Milk

- Old steel fixed & floating covers (36’ diameter)
- Gas mixing system (red compressor house)
- 75-year-old digester complex

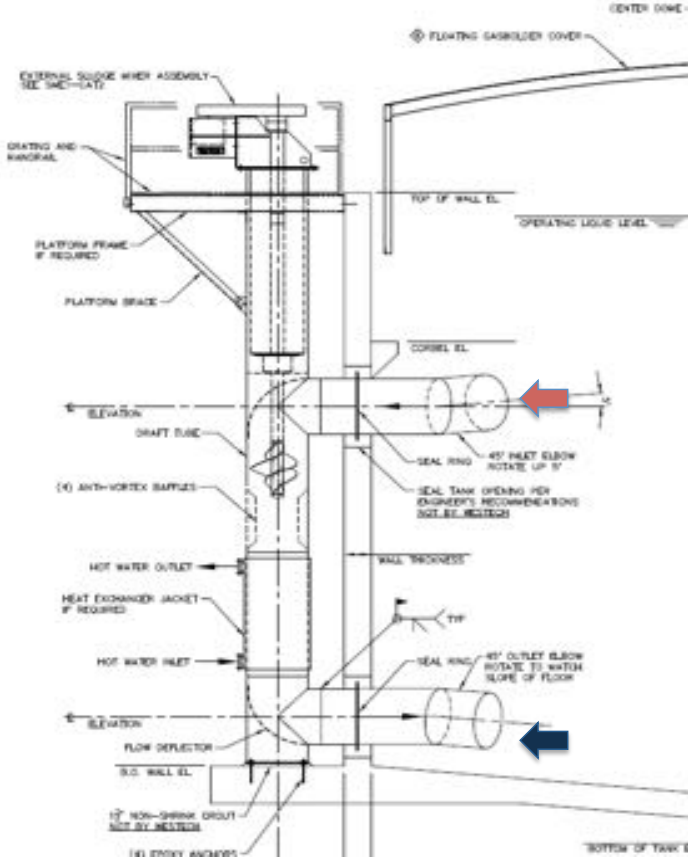
Tight Quarters

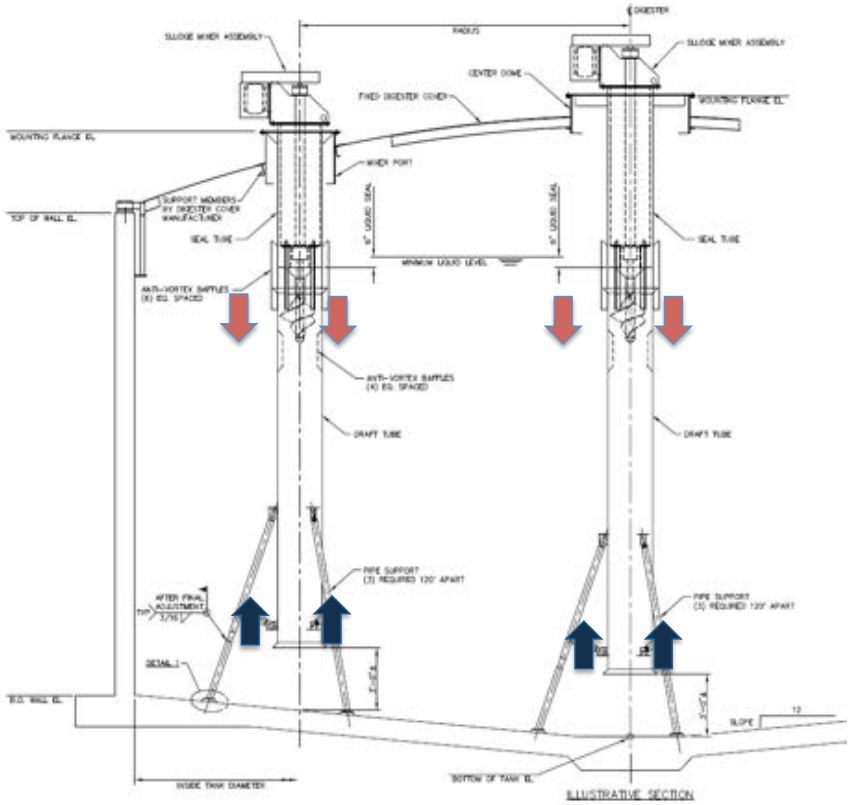
- Spiral Heat Exchangers upstairs
- Pumps downstairs
- Digester building was very crowded with existing piping and equipment.

Mixing Improvements

- Could not add mixing equipment to digester building.
- Needed something aggressive that would minimize foaming.
- Internal and External Mechanical Draft Tube mixers were selected.
- Reliable Operation 10+ years expected before rebuild, 5-year guarantee.

Draft Tube Mechanical Digester Mixers





New Digester Covers & Gas Storage

- 36’ dia. Dual Membrane Gasholder provided more gas storage
- (2) 36’ dia. Stainless Steel Fixed Covers

Working Through Design While Purchasing

- The plant, engineer, agent and equipment supplier went through design, purchasing and installation quickly so the plant could start receiving whey.

Where there's a will there's a Whey

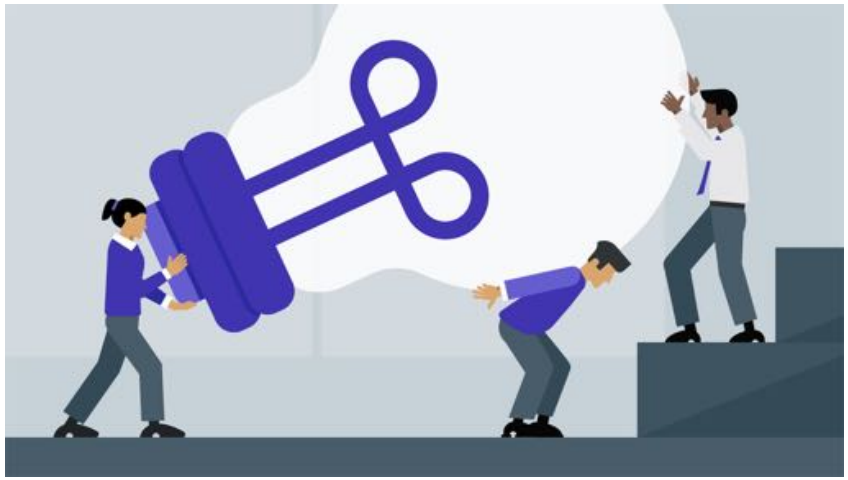
- Heat exchanger for the liquid whey holding tank
- Glass-lined to prevent milkstone buildup
- Tank is mixed and whey is fed to digester at ~95 degrees F.
- Heat Exchanger Installation Challenges

Quality on a Deadline

- Stainless steel fixed covers to work with the timeline
  - No blast or paint
  - Reduced welding
  - Avoiding inspection and repainting
- DuoSphere™ instead of floating steel gasholder cover
  - Quick install (weeks vs. months)
  - More gas storage (~100% more)
  - No annular gap (fully gastight)

From Cows to Lightbulbs

- Next phase will add CHP
- Larger than previously planned due to high-strength waste.
- Project will provide significant savings.



Creating New Jobs and Great yogurt

- Goal is to put the city in a competitive economic position to attract more jobs
- The facility is now able to treat 9 MGD more sustainably.

Thank You & Questions

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