

# Food Digestion Feasibility

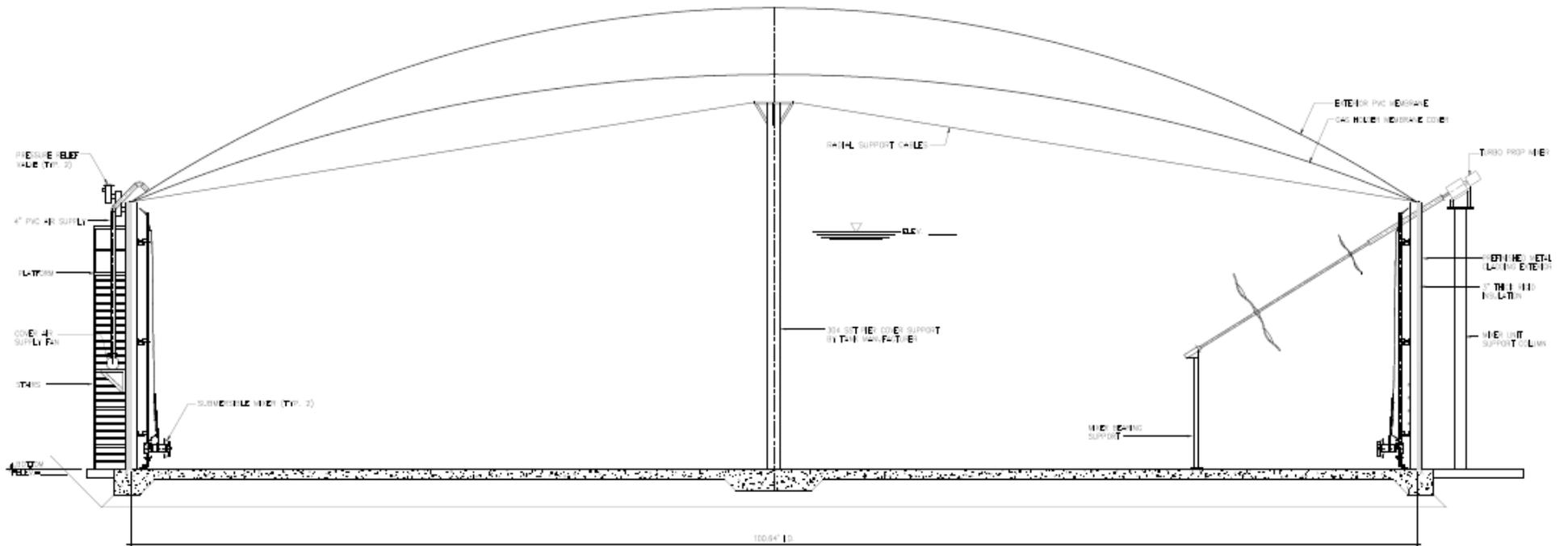
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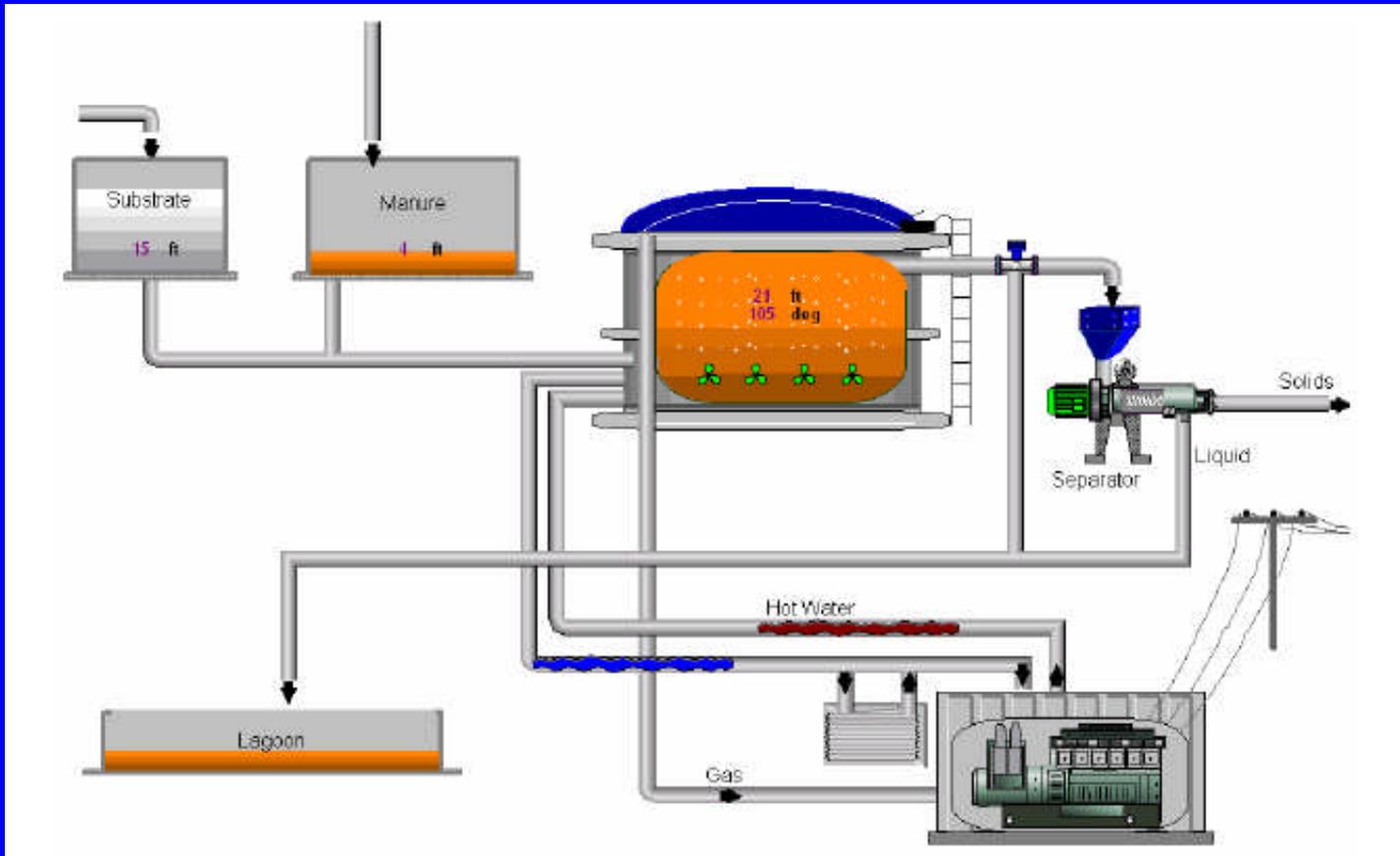


# Community Manure Digester

- Located in the Town of Vienna
- Serves three primary farms: Ripp, Endres, Maier
- In total, the three farms have ~2800 cows
- Manure piped and trucked to facility
- Complete mix mesophilic digestion, followed by solids separation with a centrifuge

# Typical Digester Tank





# Evaluate Food Waste Digester

- Food Waste Sources - issues
- Economics
- Environmental Effects
- System Design

# Food Waste Sources

- Quantity
  - Seasonality
  - Variability
- Quality
  - Bags or no bags
  - Contaminants
- Available Information
- Distance
- Gas Potential

# Quality Characteristics

1. **Biochemical methane potential**
2. **Anaerobic toxicity assay**
3. Volatile solids content
4. % Total solids
5. Total suspended solids
6. Moisture content
7. Waste temperature
8. Trace metal deficiency assay
9. pH
10. COD
11. Particle size
12. Heavy metals, toxics (pesticides, high ammonia, oils), sulfur, disinfectants (phenol, arsenic, bleach), etc.
13. Bio-agents (aflatoxins, antibiotics)
14. Contaminants (plastics, metals, glass, etc)

# Other System Considerations

- Net Environmental Effects
- Revenue
  - Tipping fees
  - Electricity
  - Environmental attributes
  - By-products
- Digestion By-products
- Permitting

# How to Encourage Future Projects

- Financial
  - Electric Buyback Rate
  - Investment Tax Credit
  - Cap & Trade
- Standardization
  - Contracts
  - Utility Requirements
  - Permits and regulations
- Public Awareness

# Questions?

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