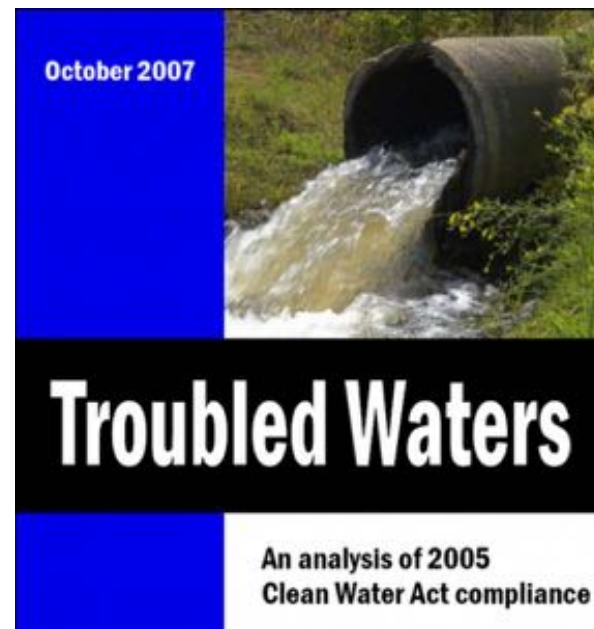


# Analyzing Your Resources: What Goes on Around You is Important!



# Knowing your territory

- ▶ Be aware of WWTP issues for receiving waste
- ▶ Local farming manure application trends
- ▶ Local trends of public environmental awareness
- ▶ Area development: residential and commercial



# Current cost of disposal

- ▶ Current costs at WWTP
- ▶ Time to and from WWTP
- ▶ Hours WWTP is open
- ▶ Materials that they accept



# Company

- ▶ Does it run you or do you run it?
- ▶ Size
- ▶ Public relations
- ▶ Employees
- ▶ Customers
- ▶ State and local authorities



# Resources

- ▶ NAWT
  - Symposium
  - Cost analysis spread sheet
- ▶ Field trips
  - Look at facility lay outs
  - No need to reinvent the wheel



# Resources



- ▶ Talk to existing facility owners
  - We usually love to talk dewatering!!
- ▶ Be involved with the Industry
- ▶ Do you own your property?
- ▶ Farmers in your area
- ▶ Other pumpers to partner with
  - Co-op     Other industries do it, why can't we?

# Sighting your facility

- ▶ Zoning concerns
- ▶ Access
- ▶ Centrally located
- ▶ Look for existing properties and buildings that could be great opportunities



# Your Facility

- ▶ Recycling of machines and repurpose of materials ([www.govdeals.com](http://www.govdeals.com))
- ▶ KISS (Keep It Simple Stupid)
- ▶ Gravity is your friend
- ▶ Keep it safe





# Your Facility

- ▶ Have necessary safeguards to protect the environment
- ▶ Be a good neighbor
- ▶ Allow room for expansion
- ▶ Waste streams to be accepted
- ▶ Layout is important



# Your Facility

- ▶ Plan ahead for unique opportunities
- ▶ Storage
  - Importance of mixing
  - Incoming wastes
  - Supernatant water
  - Sludge cake



# Don't forget screening

- ▶ Screen out trash early in facility
- ▶ The cleaner the better
- ▶ Do not grind – will come back to haunt you



# Facility project team

- ▶ You
- ▶ Employees
- ▶ Operator
- ▶ Accountant
- ▶ Engineer
  - Must understand the project and vision
- ▶ Regulators
- ▶ Construction
  - Hired to do job
  - You and employees



# Simple transfer station

- ▶ Low volume
- ▶ Low cost at WWTP
- ▶ Low investment
- ▶ Lets trained employees keep servicing customers



# Land applying

- ▶ May need to purchase equipment
- ▶ Fields
  - Rent
  - Purchase
- ▶ Follow **THE RULES** and **KEEP PROPER RECORDS**
- ▶ Must have options for storage



# Partnering with farmers

- ▶ Farmers understand agronomic loading
- ▶ May have existing equipment
- ▶ Must have options for storage
- ▶ No land purchase expense
- ▶ Follow THE RULES and KEEP PROPER RECORDS



# Dewatering boxes

- ▶ Low investment
- ▶ Liners (Bags)
  - permanent or disposable
- ▶ Polymer addition necessary
- ▶ Plan to move and haul boxes
- ▶ Can be done inside or outside





# Dewatering boxes

- ▶ Need storage
- ▶ Now have two materials to dispose of
  - filter cake
  - water
- ▶ Good stepping stone
- ▶ Expandable



# Mechanical dewatering

- ▶ Many different technologies
- ▶ Two materials to dispose of
- ▶ Drier cake
- ▶ Polymer addition necessary
- ▶ Need storage
- ▶ Larger expense
- ▶ Can be designed for larger volumes and expansion



# You have separated it – now what?

- ▶ Water needs to have further treatment
  - WWTP
    - Will have to purchase capacity at plant
    - Price per gallon will vary by facility
    - Surcharges
  - Spray irrigation
  - Sub surface



# You have separated it – now what?

- ▶ Sludge cake
  - Landfill
  - Land applied
  - Further treatment



# NAWT Symposiums



# Tim Frank Septic

- ▶ Family owned since 1966
  - 3<sup>RD</sup> generation now on board
- ▶ Located Northeast Ohio
  - Snow belt



# Tim had a philosophy:

We should have the ability to properly dispose of the materials we pump and not rely on others to provide us with disposal options.



# Tim Frank Septic

- ▶ Options for disposal were minimal
- ▶ Site of the first waste symposium
- ▶ Treats septage and aerated waste
- ▶ Does not accept outside haulers





# The Evolution of Disposal

- ▶ Started early with land application
- ▶ Added holding lagoons for winter storage
- ▶ 503 regulations and company growth
  - A press is added outdoors (WHAT WERE WE THINKING??!!)
- ▶ 1999 Started construction of 1<sup>ST</sup> building



- ▶ 2005 wetlands, holding pond, and spray irrigation are put into use
- ▶ December 2007 – fire levels building and destroys contents




- ▶ June 2008 building rebuilt and operational again
- ▶ 2012 Ohio EPA issues a NPDES permit for our spray irrigation discharge






# Kline Services

- ▶ Hosted 2<sup>nd</sup> waste treatment symposium
  - ▶ Large full service company located in central Pennsylvania
  - ▶ Saw need early to have the ability to properly handle the volume and types of waste they were called to dispose of
  - ▶ Has adapted there waste handling options over the years to provide not only disposal but waste to energy production
- 






# Septic Services

- ▶ Located in Union, Missouri
  - ▶ Started facility from scratch
  - ▶ Treatment included a belt press, circular clarifier, and aerated lagoons which discharge to the Bourbeuse River
  - ▶ Recently a large soil absorption field was designed, once installation is completed the discharge will be abandoned
- 





# Select Processing

- ▶ Located in Orlando, Florida
  - ▶ Totally open air facility
  - ▶ Started as lime stabilization and land application
  - ▶ Belt press added – solids disposed of at landfill and water transported to WWTP
  - ▶ Connection made to WWTP for water
- 





# Liquid Assets Disposal

- ▶ Located in Wheeling, West Virginia
- ▶ Built on bare lot
- ▶ Small foot print





# Sierra Septic Service

- ▶ Located in Sutter Creek, California
- ▶ Used site topography to their advantage
- ▶ Utilizes dewatering boxes and Alar press
- ▶ Sunny California and solar panels provide electric for facility







# JAMES PENNER'S FACILITY

- ▶ Located in Clayton, Indiana
- ▶ Reinvented the wheel using his own technology, In The Round Dewatering
  - Works like a dewatering box but slowly turns
- ▶ Low power
- ▶ Small foot print
- ▶ Partnered with WWTP





# QUESTIONS

- ▶ 2015 SYMPOSIUM
  - Virginia Beach, Virginia    November 2016