NYC DEP Biosolids Program

A Review and Update

10/12/2016
Overview

Today’s discussion
• DEP’s NYC WWTP Operations
• Beneficial Use in the 1990s
• Current Program - Landfilling
• Future of DEP’s Biosolids Program
DEP’s NYC Wastewater Treatment Plants

- 14 Water Treatment Plants treat over 1.3 billion gallons of wastewater per day
- Biosolids production varies between 1,000 and 1,400 Wet Tons Per Day
- Average daily loading is 1,200 Wet Tons
DEP’s Dewatering Operation

- 6 Dewatering facilities
- 5 Sludge Vessels and 3 Force Mains
- 24/7 365 Disposal Program
- On Site Storage Capacity Limited
NYC Biosolids Program – 1990s

- 1988 Congress Passed the Ocean Dumping Ban Act an amendment to the Marine Protection Research and Sanctuaries Act
- 1992 EPA Consent Decree
  - 100% Beneficial Use Program, 1992-1999
Background of NYC’s Biosolids Program

1992 NYC DEP begins land management of biosolids

- Over $100,000,000 per year program
- 50% land applied in Colorado and Texas
- 50% to Pelletization plant in the Bronx (1993-2010)
Move to Landfill

2009 Budgetary Concerns led to a re-evaluation of Landfill Disposal

• Economic downturn reduced the amount of construction debris headed to landfills

• Landfilling less expensive than beneficial use
• 5 contracts for biosolids removal and disposal

• Removal of approximately 300 tons per day

• Contracts have 3 to 5 years duration (to 2019)
Landfill Challenges

• Contracts written with the intent to prioritize low cost led to all of our eggs in one basket

• 2 Waste Management Landfills in Pennsylvania ceased accepting NYC biosolids: odor complaints and violations

• Other landfills are further distance from NYC
  • Contractors no longer able to have a single driver perform 2 pick-ups on one shift
New York City and DEP Goals

- PlaNYC and OneNYC
  - 80 x 50
  - Energy Neutrality
  - Eliminate Landfilling

- DEP
  - Aging Infrastructure
  - Old and New Technology Opportunities
  - Need to Diversify Biosolids Handling and Disposal Options
Benefits of Improving Biosolids Process

Improved thickening and anaerobic digestion leads to:

- Achieving PSRP, allows for diversification and land disposal
- Greater biogas production - renewable energy options
- Reduced biosolids production - reduced disposal costs
- Reduced odors – increased disposal/land application options
- Reduced Greenhouse Gas emissions
Various Biosolids Options

- Energy generation - incineration
- Pyrolysis – Gasification – Biochar
- Biogas production
- Alkaline Treatment
- Pelletization
- Composting
- Mine Reclamation
- Agriculture
- Soil amendment
- Landfilling
Biogas Projects at Newtown Creek WWTP

Partnering with Waste Management on Co-Digestion Project
  • Successful Pilot Project
  • Started Demonstration Project
  • Potential Full-Scale Project

Partnering with National Grid on Gas Injection Project
  • Use biogas generated in excess of boiler use
  • National Grid will scrub biogas and inject into their local natural gas distribution line
Conclusions

• DEP BWT core mission is wastewater treatment, moving toward water resource recovery
• Goals to decrease GHG and energy consumption as well as minimize landfiling
• Evaluating ways to optimize our biosolids process