



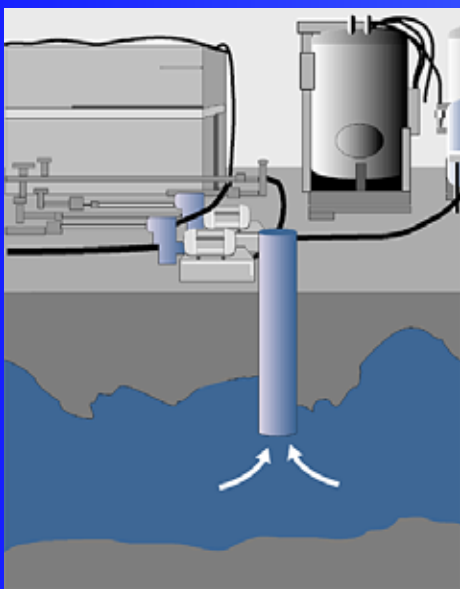
# **New Jersey DEP & Remediation Process Optimization**

**Tom O'Neill  
NJDEP RPO Team  
Division of Remediation  
Management & Response**



# Remediation Process Optimization

- Focuses on optimizing remediation systems to ensure protectiveness by maximizing risk protection and efficiency
- Examines both the how and why of clean-up



- How: Evaluates existing technology, regulatory environment, and SOPs.
- Why: Looks at the Conceptual Site Model and Data Quality Objectives



# Benefits of RPO

- Enhance the effectiveness of systems in meeting cleanup goals
- Accelerate site closeout
- Reduce OM&M costs
- Collect appropriate data to evaluate progress
- Establish a review and tracking mechanism



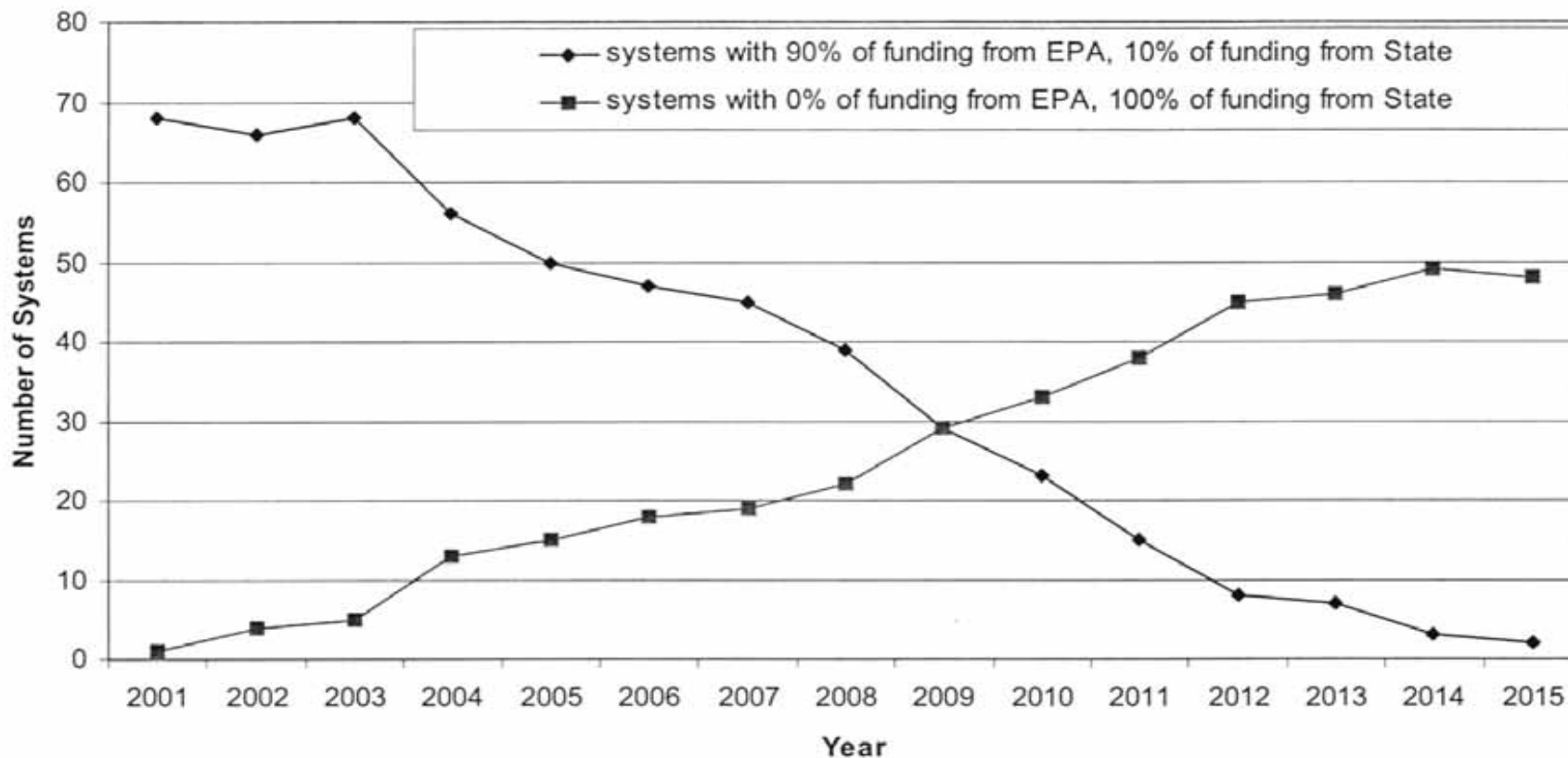
# Why RPO in New Jersey?

- **61 publicly funded state lead sites**
  - 14 Superfund sites
  - 23 pump & treat sites
  - 4 POETS sites > 60 homes
  - 3 active landfill gas systems
- **3 to 4 sites added per year (net)**
  - Superfund LTRA cases



# Why Perform RPO?

Figure 4-1: Trend of Financial Responsibility of Fund-lead P&T Systems



Data reflect estimates provided by site Remedial Project Managers between February and May 2001. These estimates may vary from actual values. Data, including the number and status of systems, may change over time.

Notes:

1. Fund-lead P&T systems refers to systems where groundwater extraction and treatment is specified in the Record of Decision and oversight is provided by the EPA or by a State with financial support from Superfund.
2. This chart only shows the trends between 2001 and 2015. Existing systems and new systems are expected to operate beyond 2015.



# NJDEP RPO Team

- “Buy in” by upper management
- Experienced
- Multidisciplinary:
  - Geology
  - Science
  - Operations
  - Innovative Technology
- Long term commitment





# RPO Candidates

**Initial Selection Criteria:**

**Typical Site**

**Age of Site / Forecast  
Duration**

**Risk / Threat**







# RPO Candidates







# RPO Candidates







# RPO Candidates

## USEPA & Other LTRA Sites:

- **Bog Creek Farm, 2005\***
  - **Lang Property, 2006**
  - **Higgins Farm, 2009\***
  - **Garden State Cleaners S. Jersey Clothing, 2009**
  - **GEMS Landfill, TBD**
- \* RSEs have been performed on these sites**



# RPO Team Activities

- Conducted an RPO using the USACE RSE model at an abandoned UST site
- Participated in USACE RSEs at USEPA lead LTRA CERCLA sites
- Supported a USEPA pilot project targeting UST sites and the RSE process
- Examined an NJDEP lead Superfund site using the AFCEE RPO Handbook as a guide





# Results



**Modified the SVE system at the State Lead abandoned UST site per the recommendations of the RSE consultant**

- **Within one year the site now meets the P&T shut down criteria**
- **Have established an exit strategy**
- **Private parties are now interested in development**



# Results

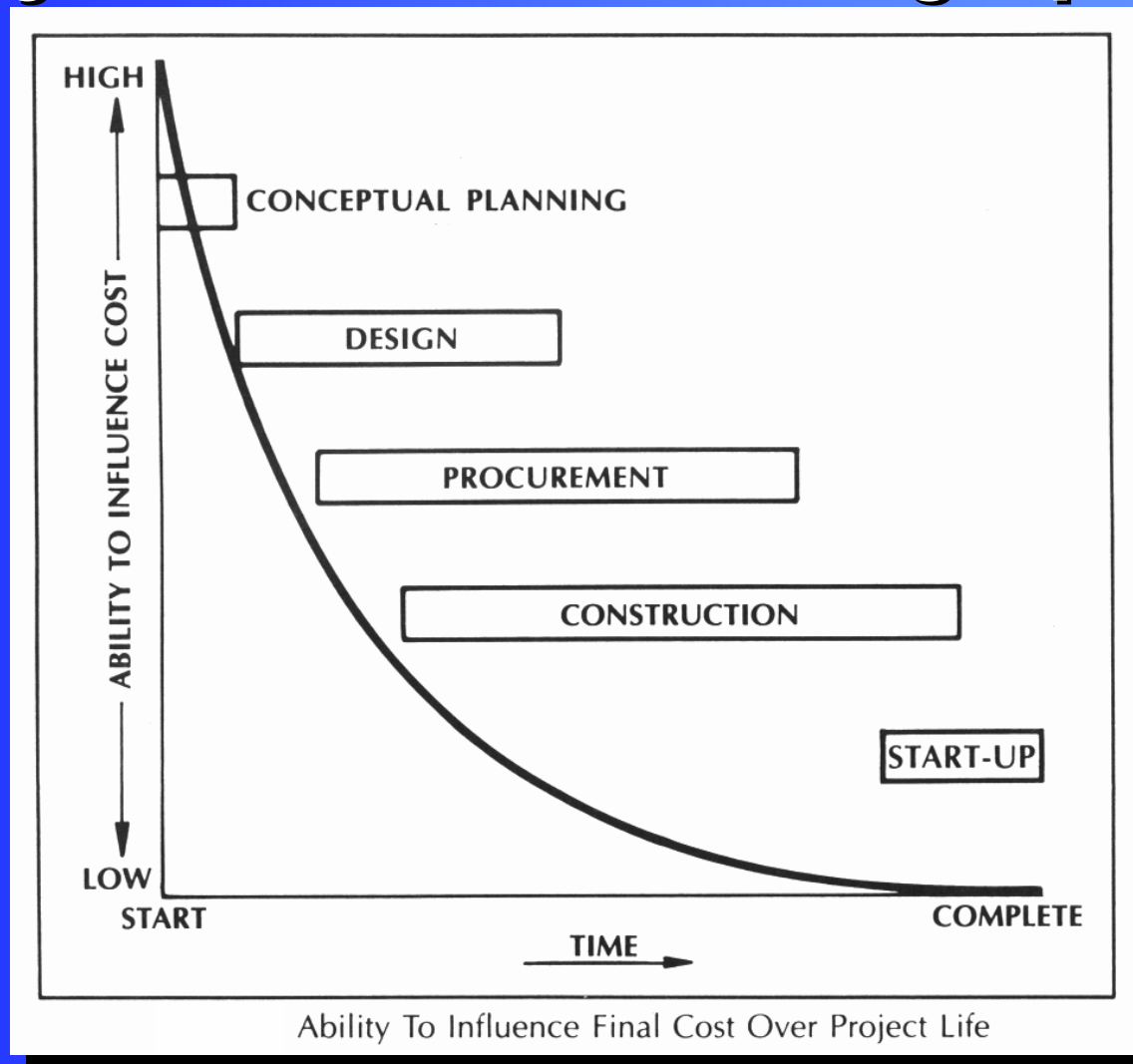
## Bog Creek Farm Superfund Site

- Site had reached asymptotic conditions
- RSE and on-going investigation developed alternatives for "Hot Spots"
- LTRA period to be revised



# The Future

Create link / feed back loop to the remedy selection and design process



Adapted from the Construction Industry Institute publication, "Constructability A Primer", Bureau of Engineering Research, University of Texas, Austin, July 1986





# Results

## Higgins Farm Superfund Site

- Multi-well groundwater pump and treatment system that is not receiving the contaminant concentrations that were expected
- RSE completed and under review by Region 2's RPM
- NJDEP will continue to follow up on recommendations



# Results

## USEPA RSE Pilot at UST Sites



- Two New Jersey UST cases were included in the national pilot program
- NJDEP provided staff support, files, and site access to the USEPA contractors and staff
- Currently supporting report writing process



# Results

## Syncon Resins Superfund Site



- New Jersey lead Superfund site that is not receiving the contaminants to ground water treatment plant that were expected
- Conducted an RPO evaluation with methods found in the AFCEE RPO handbook
- In implementation stage, change order to initiate plant modifications underway



# Next Steps

- Conduct an RPO evaluation using the *Navy Guidance for Optimizing Remedial Action Operation*
- Present the RPO Team findings to management, recommend RPO method(s)
- Prepare an SOP on RPO
- Incorporate RPO in business practice
- Continue to monitor implementation of completed RPO projects



# The Future

Support RPO in the private party clean-up process.

New Jersey's "Technical Requirements for Site Remediation", N.J. A.C. 7:26 E, a.k.a. the Tech Rules, recognize that "continuous effectiveness monitoring" and "periodic site condition reviews" may occur.





**Tom O'Neill**

**Section Chief, NJDEP RPO Team**

**Team Leader, ITRC RPO Team**

**P. O Box 413**

**401 E. State St., 6th. Floor**

**Trenton, NJ 08625-0413**

**609-292-2150**

**[tom.o'neill@dep.state.nj.us](mailto:tom.o'neill@dep.state.nj.us)**