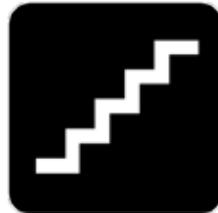


# Step by Step: Making Progress through Partial NFAs

Jim Sobieraj, PE  
David Carstens

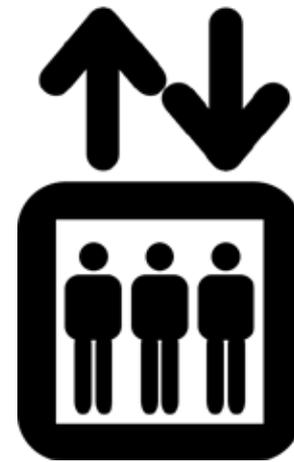


Emily Bertolini  
RRD



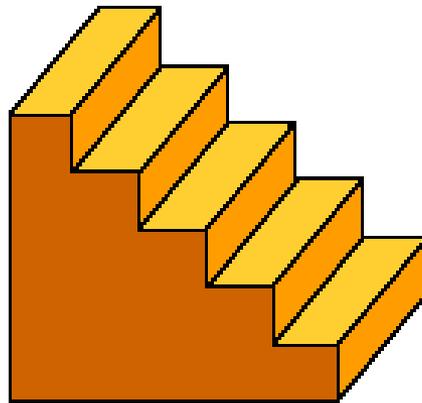
# Traditional NFA Approach

- Site Characterization
- Site-wide Remediation
- NFA Report Submittal
- DEQ Approval



# What's Different with a Partial NFA?

- Limited to area, medium, contaminant
- Submit NFAs as cleanup is completed



# Case Study: Former Numatics Sites



# Who's Involved?



# Project Obstacles

## Operational History

Different Operations  
Multiple COCs  
Small and large sources

## Geologic Setting

Different media  
Heterogeneity between sites

## No Further Action

One Goal – multiple possible pathways

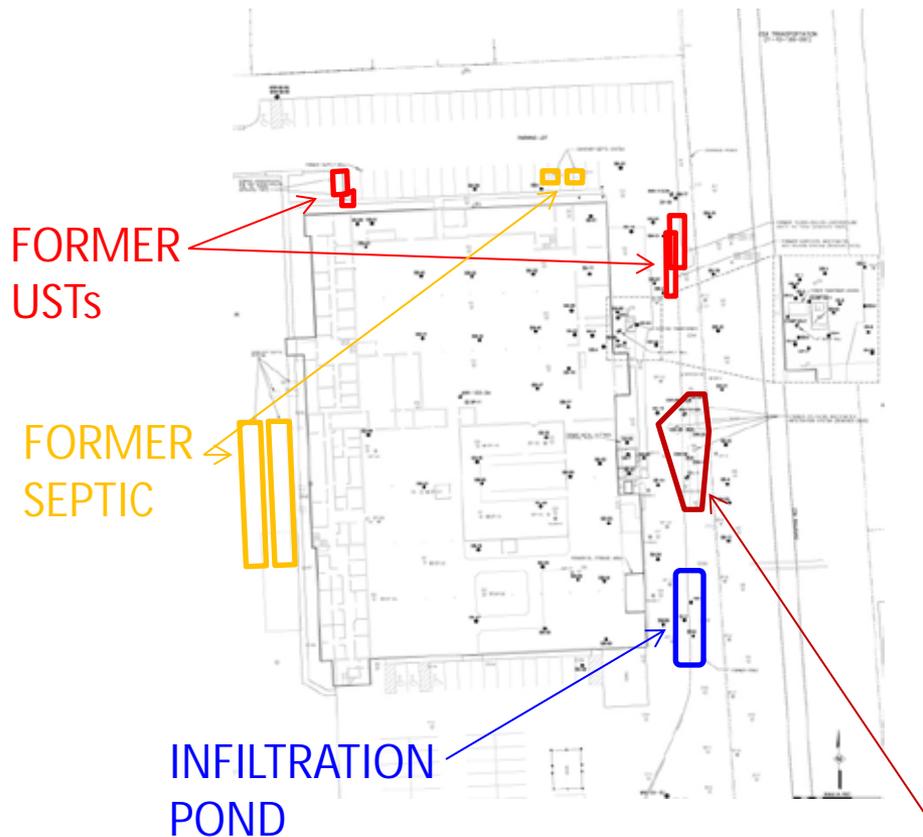


# Case Study: N. Milford Road Facility



- Numatics operated at the site from 1956 - 2008
- Facility manufactured air-valve components
- 76,000 ft<sup>2</sup> building

# Site History: N. Milford Road Facility



- Fuel oil USTs
- Septic System
- Dry well and infiltration system
- Infiltration Pond
- Discharges to ground surface

# Site Investigation: N. Milford Road Facility

## Major Environmental Concerns

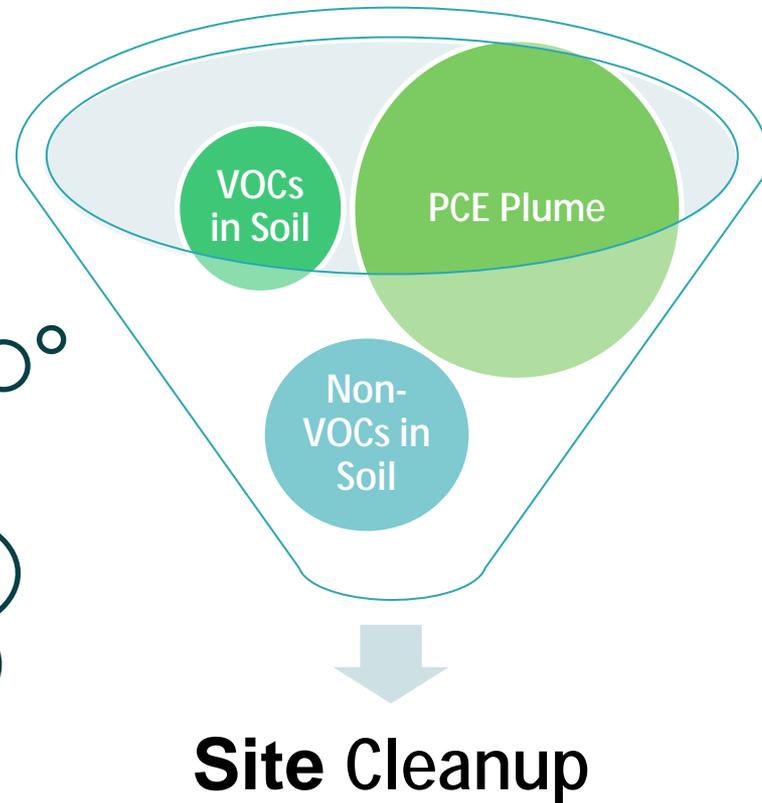
- Chlorinated solvents (PCE) in onsite soil and GW, offsite GW

## Minor Environmental Concerns

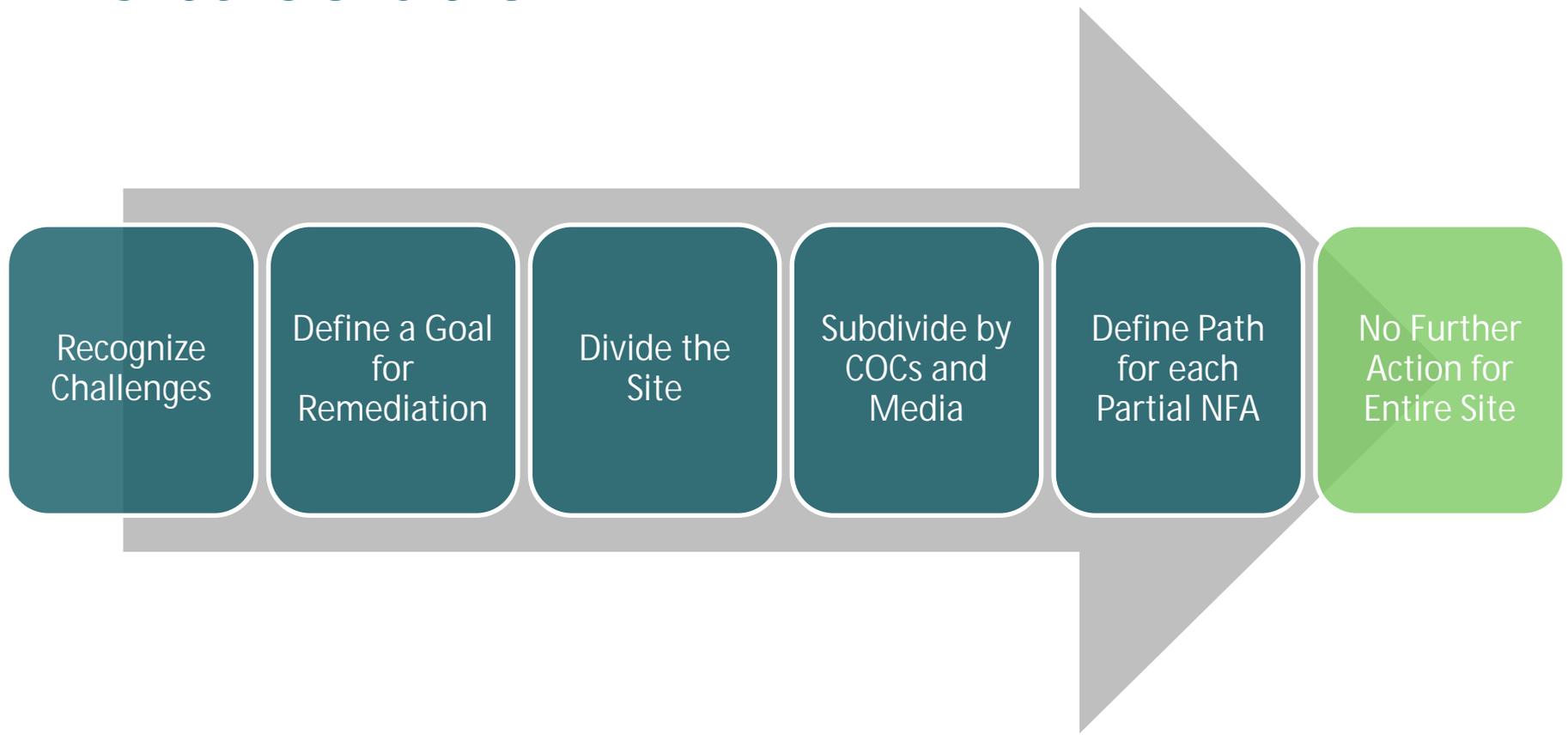
- Mercury released within facility
- Metals, PAHs, PCBs, and TPH in onsite soil

# Site Challenges

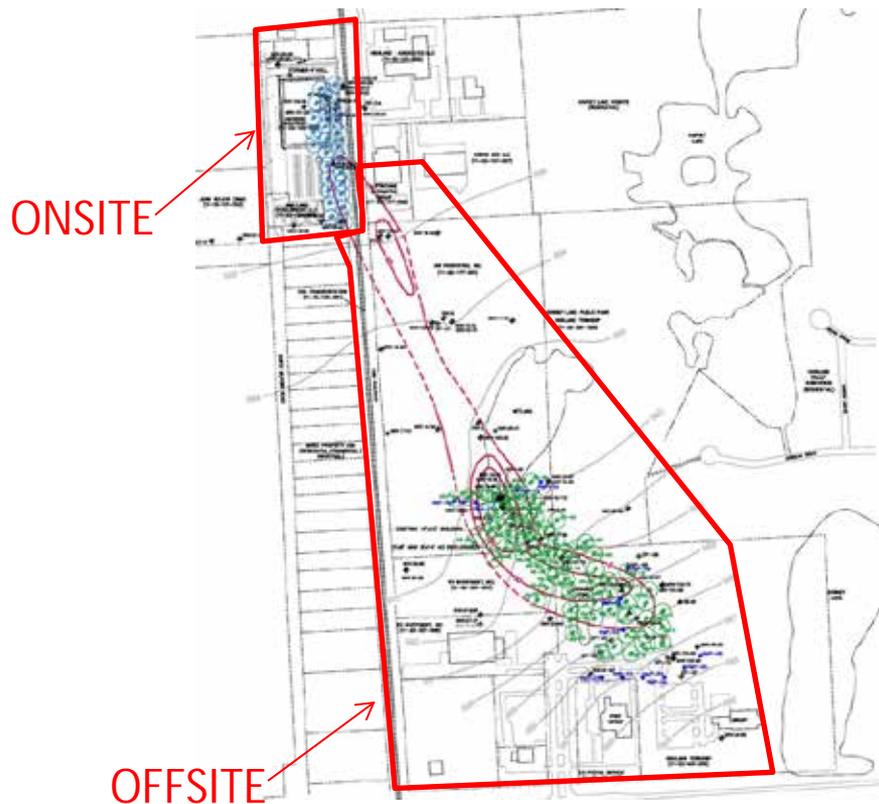
How can we address the minor concerns without waiting for cleanup of the PCE plume?



# Site Solution



# Remediation Strategies



- Site was divided by area: onsite and offsite
- Remediation targeted specific COCs by area
- Strategies focused on incremental NFAs

# Remedial Milestones



## Remediation

2005 – 2009: Site Investigation

2009 – 2013: Onsite Treatment

2009 - 20???: Offsite Treatment

## No Further Action

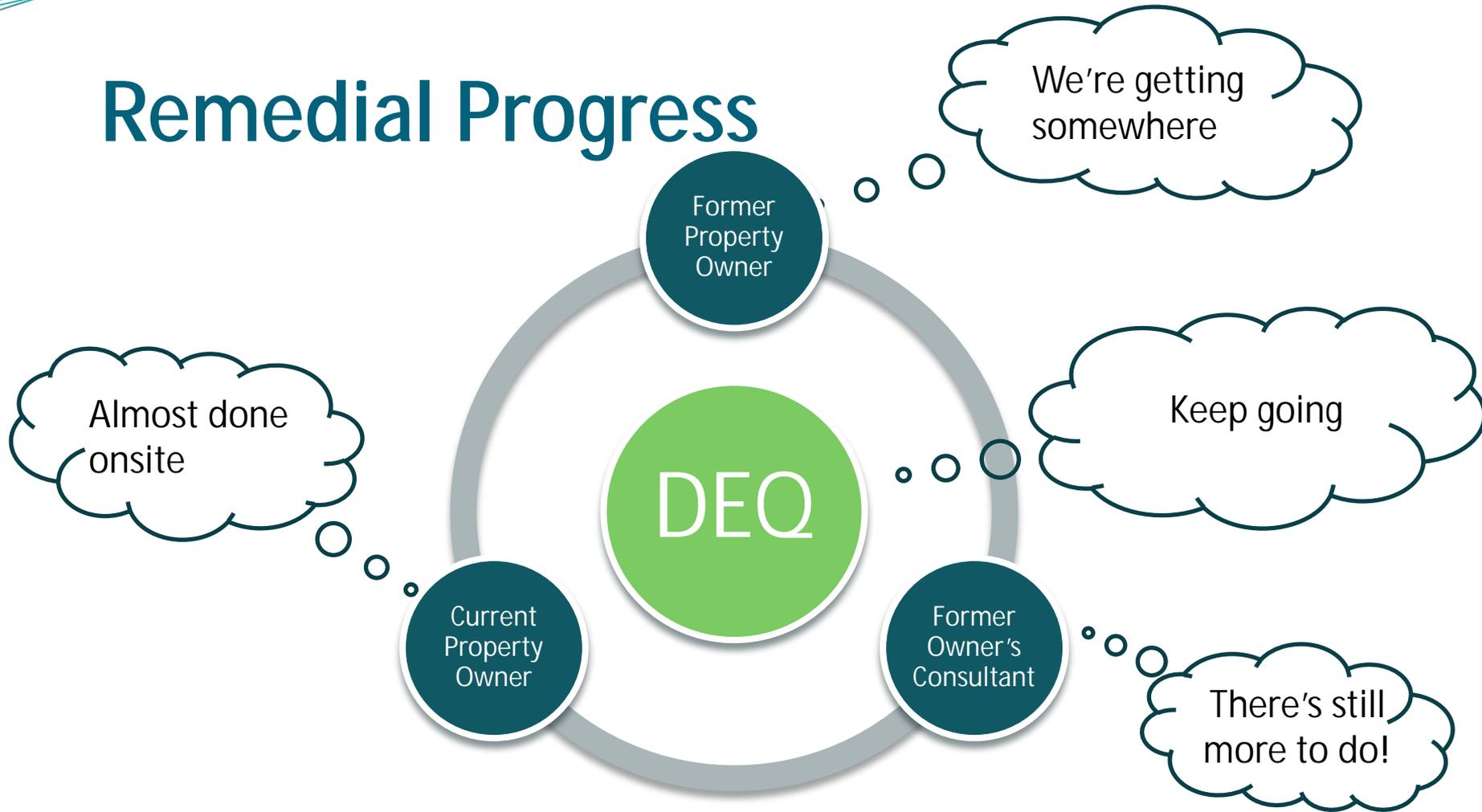
2014: NFA approved for metals in GW

2015: NFA approved for all COCs in onsite soil

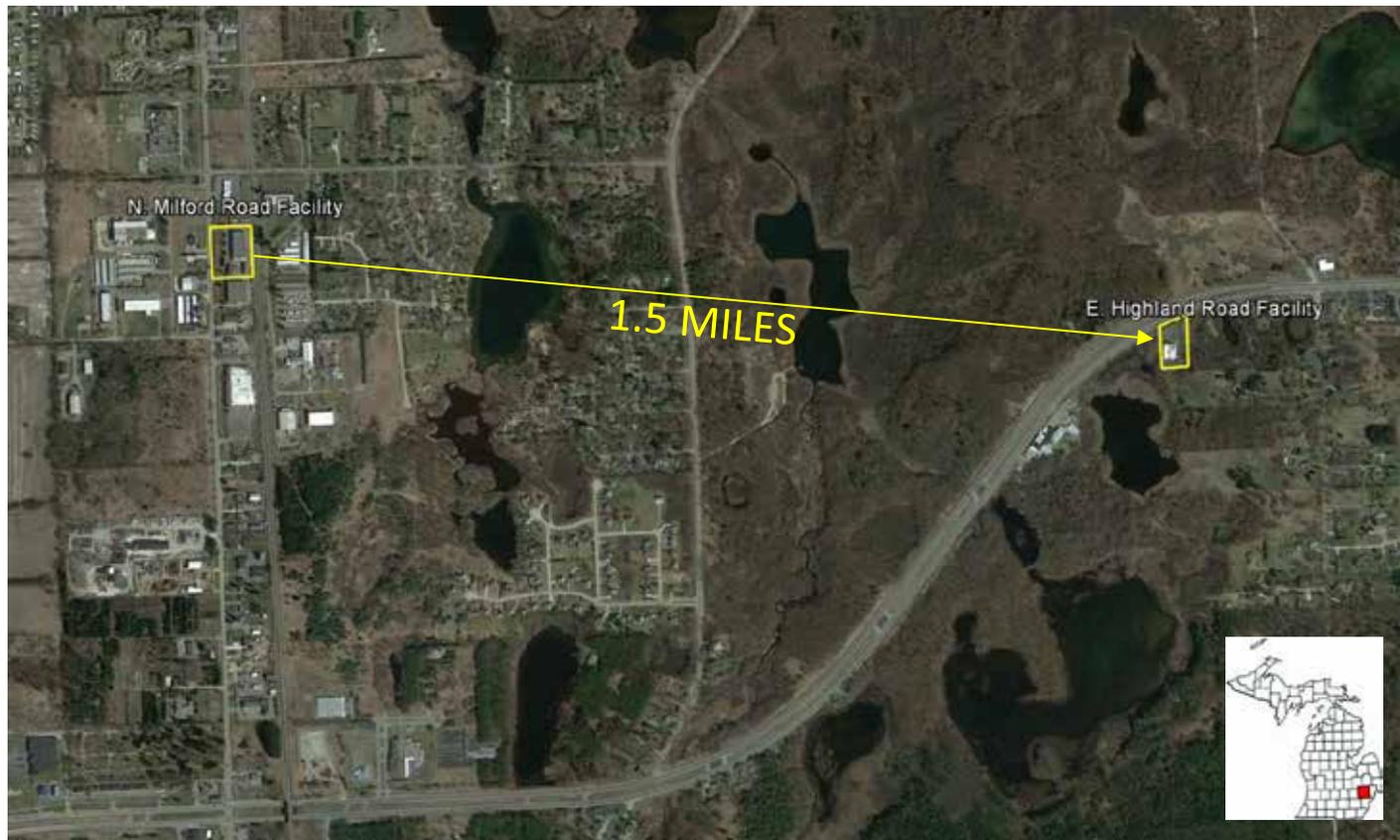
2015: NFA pending for VOCs and PAHs in onsite GW

20???: Site Closure for all COCs and media

# Remedial Progress



# Case Study: Former Numatics Sites

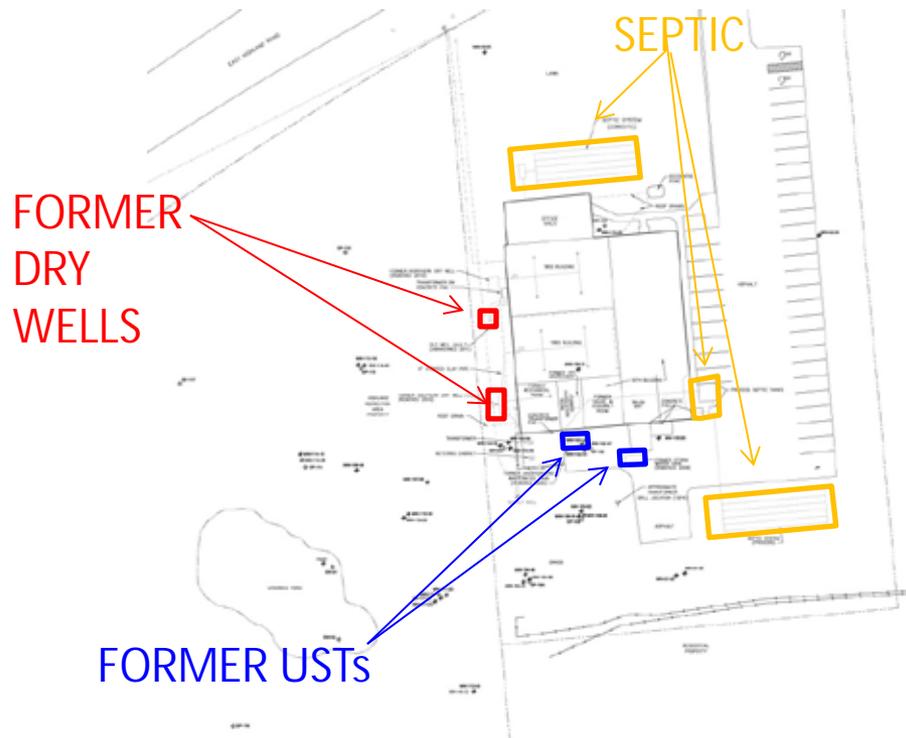


# Case Study: E. Highland Road Facility



- Numatics operated at the site from 1974 - 1996
- Facility was used for precision grinding and honing of stainless steel bars
- 12,000 ft<sup>2</sup> building

# Site History: E. Highland Road Facility



- Wastewater USTs
- Septic System
- Dry wells
- Transformer release

# Site Investigation: E. Highland Road Facility

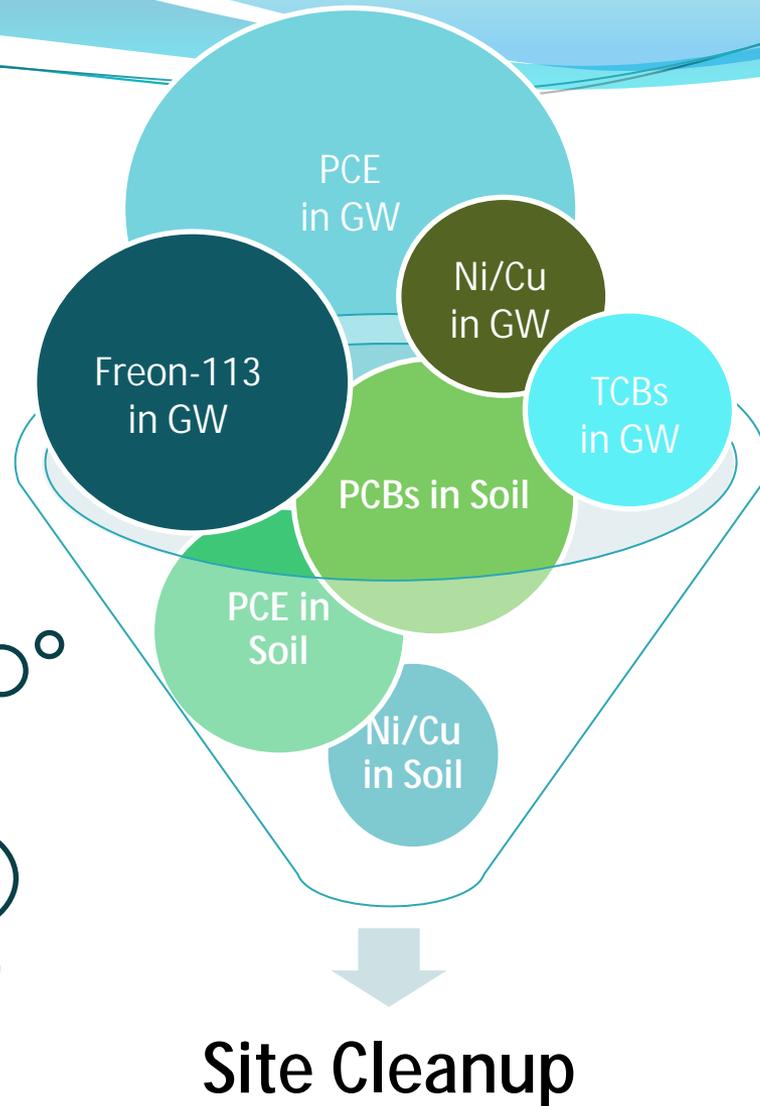
## Major Environmental Concerns

- PCBs in onsite soil
- VOCs in onsite soil, onsite and offsite GW
  - Freon-113
  - PCE
  - Trichlorobenzenes (TCBs)

## Minor Environmental Concerns

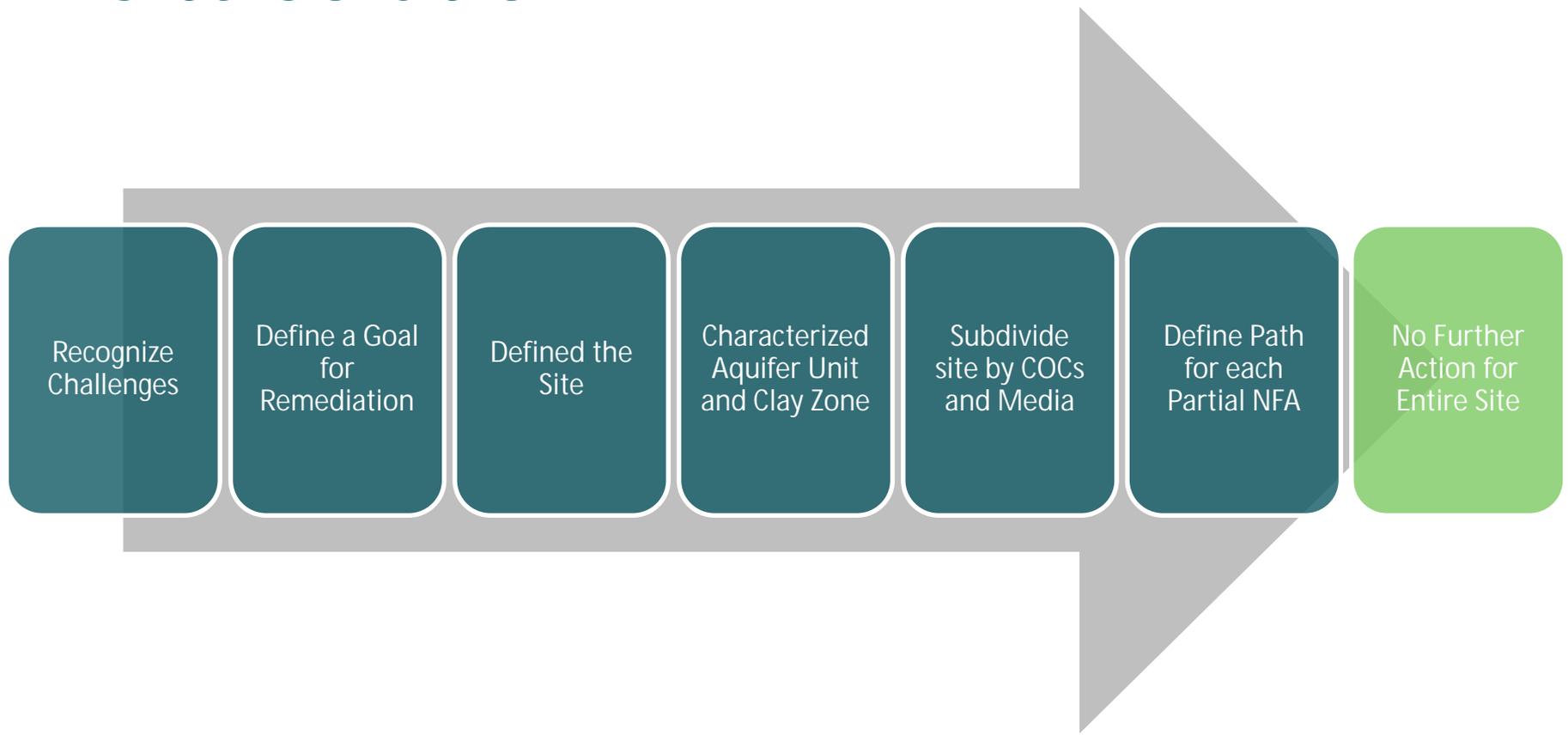
- Nickel (Ni) and Copper (Cu) in onsite soil and GW

# Site Challenges

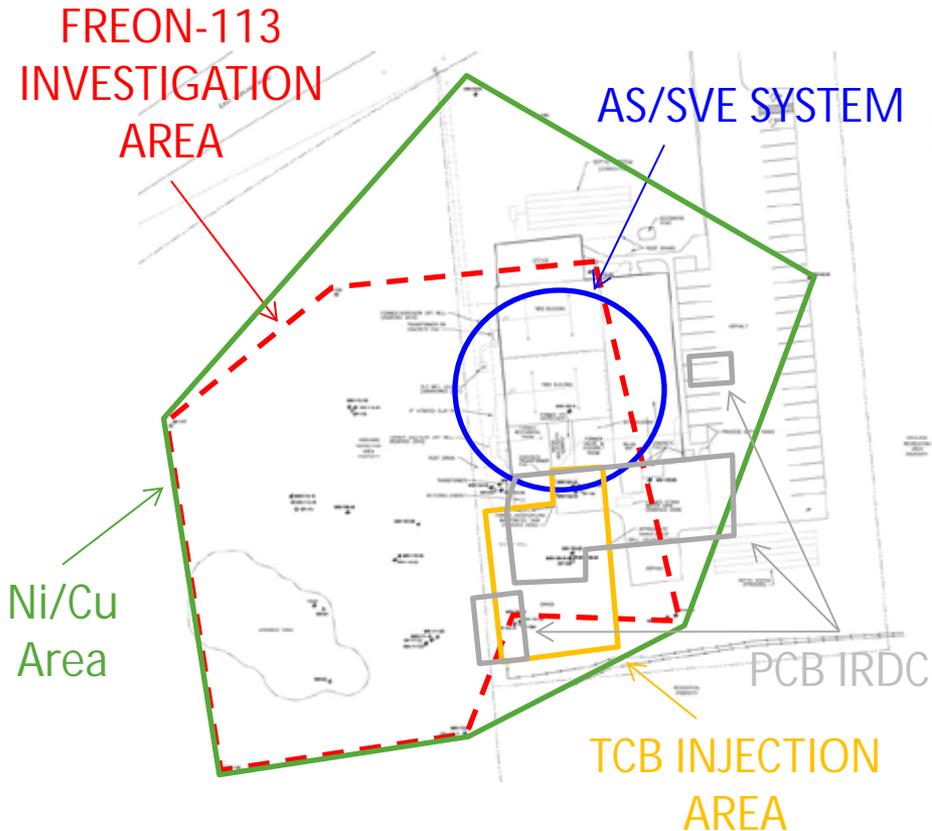


How can we address the complex, multiple, overlapping concerns in an organized fashion?

# Site Solution

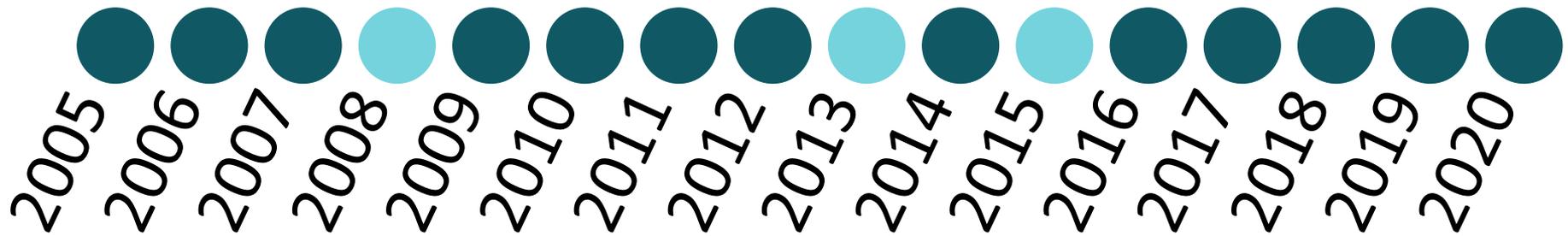


# Remediation Strategies



- IRDC for onsite PCBs Remediation
- AS/SVE to address PCE in soil
- MIP investigation define extent of Freon-113
- Targeted injections to address TCBs

# Remedial Milestones



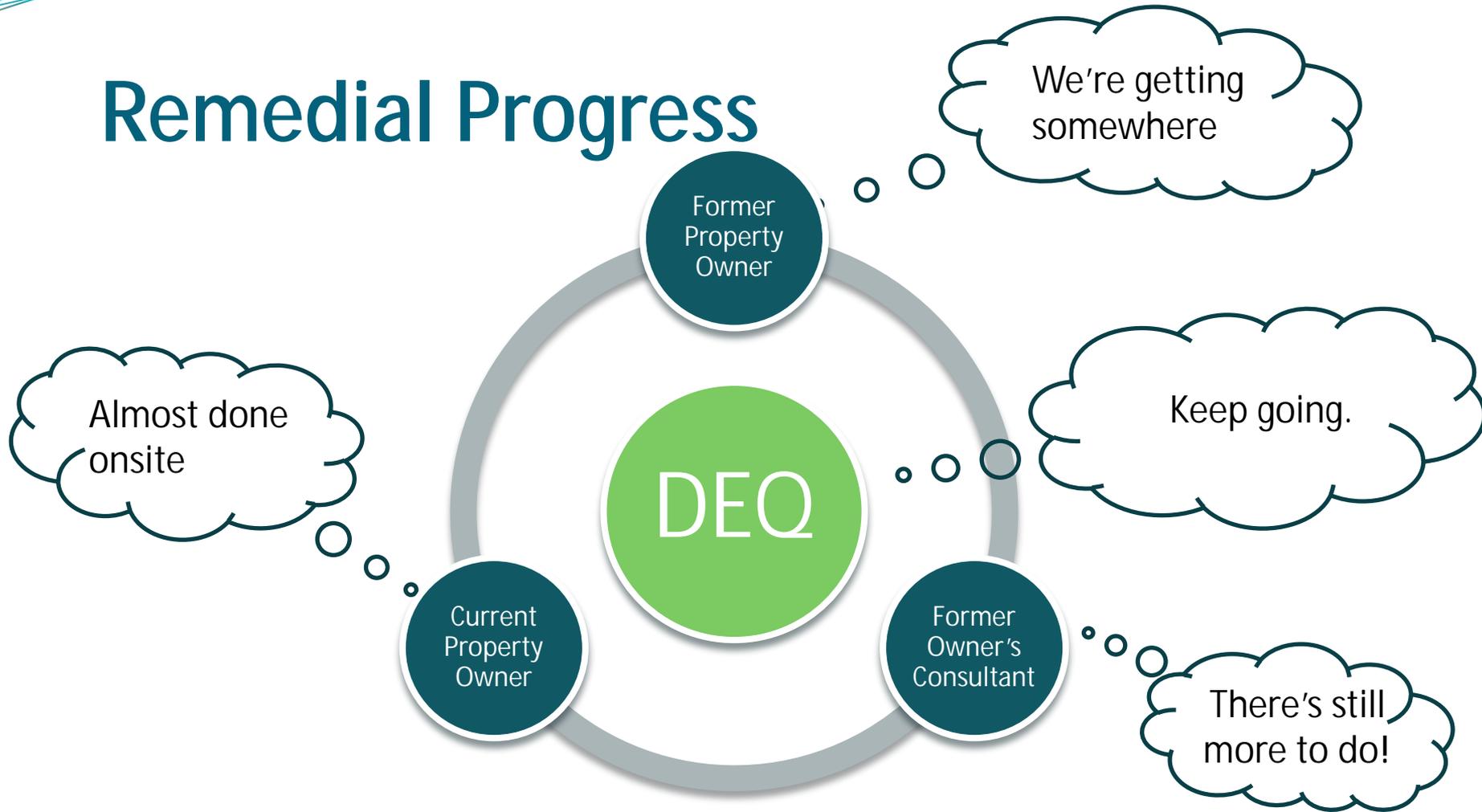
## Remediation

2005 – 2012: Site Investigation  
2006 – 2008: IRDC for PCBs in soil  
2010 – 2014: VOC treatment in soil  
2013 – 20???: TCB treatment & monitoring

## No Further Action

2013: NFA approved for Freon-113 in GW  
2015: NFA approved for Ni/Cu in soil and GW  
2015: NFA pending for PCE in soil  
20???: Site Closure for all COCs and media

# Remedial Progress



# Right for Your Site?



## Pros:

- Facilitates administrative focus to closure
- Demonstrates value to responsible party through tangible progress
- Potential for reduced cost



## Cons:

- Not applicable to simple sites
- Requires continuous adaptation to closure strategy in response to new data
- Potential for increased reporting costs



# Questions?





**PARSONS  
BRINCKERHOFF**

# Contact Us for More Info

[james.sobieraj@wspgroup.com](mailto:james.sobieraj@wspgroup.com); [dave.carstens@wspgroup.com](mailto:dave.carstens@wspgroup.com)

[www.michigan.gov/deq](http://www.michigan.gov/deq)



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