

Former Colonial Lacquer and Cadillac Paint Brownfield Property

# A PATH FORWARD TO REUSE

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# Presentation Overview

- Site Operational History
- Summary of Historical Investigations
- Summary of Historical Remediation
- Summary of Nobis 2017 Investigations
- Human Health and Environmental Risk Assessment
- Proposed Remediation Work

# Site Operational History

- Operated as a paint and chemical manufacturing for approximately 50 years (1937-1987).
- Fire occurred in March of 1977 and destroyed the manufacturing building.
- A new manufacturing building was constructed and the operations continued until approximately 1987.



# Historical Investigations and Remediation

- 1986 through 2017: Several environmental investigations performed that included soil and groundwater sampling, several ground penetrating radar (GPR), private drinking water well sampling.
- 1986 through 1987: 14 underground storage tanks (USTs) were removed.
- 1987: approximately eighty 55-gallon drums (empty and crushed) were excavated from a burial area.

# Historical Investigations and Remediation

- 1990 through 1991: Approximately 800 cubic yards of contaminated soil were excavated, stockpiled, and treated using bioventing and vacuum extraction.
- 1996: Massachusetts Department of Environmental Protection (MassDEP) contractor removed 22 drums of manufacturing resins.

# Historical Investigations and Remediation

- 1999: MassDEP contractors removed three drums of resin, 80 gallons of residual oil and sludge from an above ground storage tank (AST) and 4.1 tons of oil contaminated soil from below the AST.
- 485 gallons of residual fuel oil removed from existing 1,000 gallon UST.

# Historical Investigations and Remediation

- To date, contamination detected at the site includes:
- Volatile organic compounds (VOCs) [Soil and Groundwater]
- Semi-volatile organic compounds (SVOCs) [Soil and Groundwater]
- Volatile petroleum hydrocarbons (VPH) [Soil and Groundwater]
- Extractable petroleum hydrocarbons (EPH) [Soil and Groundwater]
- Heavy metals (primarily chromium and lead) [Soil]
- Polychlorinated biphenyls (PCBs) [Soil]

# Historical Investigations and Remediation

- 2012/2013 Nobis TBA investigation identified concentrations of PCBs in shallow soil at concentrations representing a Potential Condition of Imminent Hazard as defined in the Massachusetts Contingency Plan (MCP).
- The MCP is a set of Massachusetts regulations that govern the reporting, cleanup, risk assessment and closure of sites where oil and hazardous material have been released to the environment.

# Historical Investigations and Remediation

- 2014 through 2015: U.S. EPA contractors perform additional investigations and remedial actions to remediate PCB contamination.
- Remedial actions included:
  - Excavation transportation and disposal of approximately 1,700 tons of contaminated soil;
  - Excavation transportation and disposal of 46 tons of crushed drums;
  - Disposal of 20 gallons of hazardous liquids; and
  - Disposal of cleared trees and brush.



# Nobis 2017 Investigations

- Collected additional soil and groundwater samples.
- Soil samples were collected from beneath the existing site buildings to evaluate potential future risks if buildings were demolished and site is redeveloped.



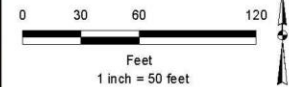
© 2017 Nobis Engineering, Inc. Former Colonial Lacquer - Tier 1 of Assessment Report Figure 3-2 Colonial Lacquer 2017 Boring Plan - 3/30/2017 - Birmingham

**Notes:**

1. Source: Nobis, October 2015; Green Environmental, 2005; Weston Solutions, March 2016.
2. Aerial photo and parcels from MassGIS, revised 2013.
3. Locations of site features depicted hereon are approximate and given for illustrative purposes only.

**Legend**

- 2017 Soil Borings
- Historical Excavation
- 2015 EPA Excavation
- Storage Tank
- Building
- Site Boundary
- Parcel Boundaries



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<b>FIGURE 3-2</b>	
2017 SOIL BORING AND MONITORING WELL LOCATIONS COLONIAL LACQUER AND CHEMICAL CO. 409 ELIOT STREET ASHLAND, MASSACHUSETTS	
PREPARED BY: JH	CHECKED BY: AR
PROJECT NO. 93420	DATE: MARCH 2017

# Nobis 2017 Investigations

- 2017 investigation concluded:
  - Concentrations of VOCs, VPH, and EPH were not detected in groundwater samples above applicable MCP standards.
  - Additional excavation of contaminated soil from beneath the existing lab building and areas outside the main manufacturing building is required to achieve a condition of No Significant Risk under the MCP.





# Risk Assessment Using the MCP

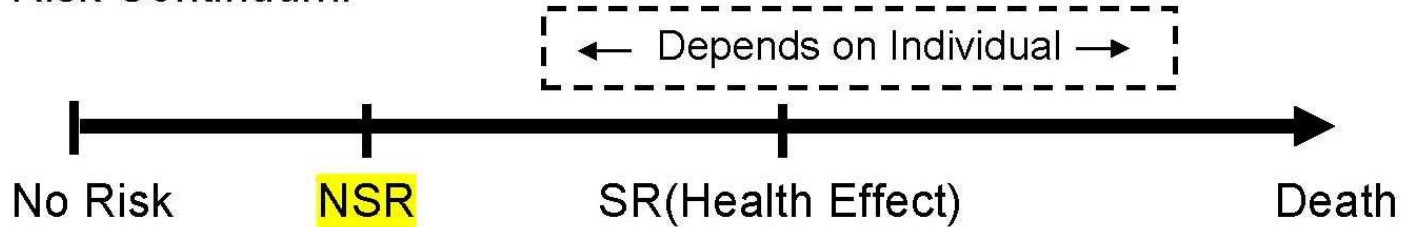
- Site cleanup under the MCP is risk-based.
  - Risks to Human Health
  - Risks to Public Safety
  - Risks to Public Welfare
  - Risks to the Environment

# Risk Assessment Using the MCP

- Risk Characterization – Quantifies the degree of risk posed by a contaminated site.
- Risk Management – Specifies the degree of risk that is acceptable.
- Under the MCP human risk assessment is:
  - Used to predict potential adverse health impacts.
  - Used to develop cleanup standards.

# Risk Assessment Using the MCP

Risk Continuum:



# Risk Assessment Using the MCP

- MCP has three distinct methods to characterize risk:
  - Method 1
  - Method 2
  - Method 3
- Method 1 provides the highest degree of certainty and conservatism.
- Allows for direct comparison of Exposure Point Concentrations (EPCs) to soil and groundwater standards established by MassDEP that are considered to be protective of human health, environment, and public welfare.
- If the EPCs are less than the established standards you have achieved a condition of No Significant Risk.



# Risk Assessment Using the MCP

- What is an EPC?
- EPC is the average of concentration of a specific chemical at a contaminated site.



# Risk Assessment Using the MCP

- EPCs Excluding Hot Spots Soils

Analyte	Method 1 S-1 Soil Standards (mg/kg)	EPC (mg/kg)	MassDEP Background Value for "Natural" Soil* (mg/kg)
PCBs	1	0.49	None Established
Lead	200	85.1	100
Chromium	100	34.3	30

\*Table 1 – Historic Fill/Anthropogenic Background Public Comment DRAFT Technical Update Version 1.0 – May 24, 2016.

# Estimated Costs

- Estimated Building Demolition Costs:
  - \$100K - \$200K
- Estimated Soil Remediation, UST Removal Costs, and Associated MCP Reporting to Achieve Site Closure:
  - \$100K - \$150K