The Former Lewis Chemical Site
12 Fairmount Court, Hyde Park
Project Update
Wednesday, April 22, 2015
Fairmount Hill Neighborhood
Association Monthly Meeting
85 Williams Ave, Hyde Park
(Boston Police Academy)

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The Former Lewis Chemical Property

1983: EPA ID MAD053455911

1987: MA DEP issued Release Tracking Number (RTN) 3-1616
Property History

- Leather Tannery: 1940s-1960s
- Lewis Chemical: Solvent recovery from waste liquids: 1963-1983
  - MA DEP Revokes Lewis Chemical hazardous waste handling license and Lewis Chemical ceases operation: 1983
  - Building owner leases property to various tenants
- City of Boston receives property through tax foreclosure: 2000
Lewis Chemical MCP Site History

• 1987 - Lewis Chemical Property designated a MCP Release Site (RTN 3-1616)
• 2003 - Phase I Initial Site Investigation
• 2005 – Site Classified as Tier 1B Site
• 2007 – Interim Phase II CSA
• 2010- 2013 – Soil Vapor Extraction (SVE) System installed and operated (RAM)
• 2014 – MCP Regulations Revised
• 2014 – Site Reclassified as Tier 2 Site
• 2015 – Final Phase II CSA completed
Lewis Chemical Site Assessment & Remediation Activities

- Removal of 8,000-gallon UST (February 2006)
- Soil Assessment (June 2002 – January 2015)
  - 120 Soil Borings/320 Soil Samples
  - 12 Test Pits
  - 17 Groundwater Monitoring Wells / 54 Groundwater Samples
- Sub-slab Soil Vapor Assessment (March 2006 & Nov. 2008)
- Design, Installation & Operation of Soil Vapor Extraction (SVE) remediation system (July 2010 – February 2013)
- Demolition of Lewis Chemical Building (Sept. 2013)
Before Demolition
Phase II Comprehensive Site Assessment

Purpose:

• Define Lateral and Vertical Extent of Contamination (i.e. Define the “Site”)

• Determine if Encountered Contamination poses Significant Risk to Human Health, Safety, Public Welfare or the Environment
Most Recent Assessment Activities Completed at Lewis Chemical Site

September/November 2013:
Soil Sampling beneath Building Slab
• Evaluate Effectiveness of SVE System (VOC Remediation)
• Define Vertical and Horizontal Extent of PCB and Heavy Metals Contamination in Soil

September 2014:
Groundwater Sampling (Site-wide)
• Evaluate Impact of Source Reduction (SVE VOC Removal) on Groundwater Quality

January 2015:
Soil Sampling beyond Building Footprint
• Define Vertical and Horizontal Extent of PCB Contamination in Soil
Concerns for Human Health and the Environment

- Volatile organic compound (VOC) vapors from the soil and groundwater to building
  - Building demolished, but this pathway must be considered for future buildings
  - Reduction of source material under the former building accomplished 2010-2013 treatment system

- Impacts to the Neponset River

- Contaminated Soil
  - VOCs, PCBs, Metals
  - Property access restricted
Contaminants of Concern at Lewis Chemical

- Soil & Groundwater
  - Volatile Organic Compounds
    - Chlorinated Solvents
      - Trichloroethylene (TCE)
      - Perchloroethylene (PCE)
    - Petroleum Hydrocarbons
      - Gasoline Constituents
    - Polychlorinated Biphenyls (PCBs)
  - Heavy Metals
    - Lead
- Neponset River Sediments
  - PCBs
- Neponset River Surface Water
What is Risk Assessment?

• Tool used to quantify the probability of a harmful effect to individuals or populations from certain human activities or chemical releases.
Environmental Risk

Risk = f[Concentration, Exposure, Toxicity]
Manage Risk at Sites

• Identify levels of exposure

• Assess if level of exposure is acceptable:
  – “Risk Characterization”

• Change level of exposure if risk is unacceptable:
  – Prevent exposure,
  – Reduce exposure, or
  – Eliminate exposure

COST $$_{\text{SS}}$$
MCP Risk Assessment

Evaluate Risk to:

• Human Health
• Safety
• Public Welfare
• Environment
Human Health Risks Receptors

- **Existing Site Worker**
- **Future Site Worker** ✖ Unacceptable Risk (Hot Spot 1/3 Soil)
- **Existing Site Resident**
- **Future Site Resident** (Site will restrict Residential use)
- **Existing Site Visitor** (Site is Fenced & Secured)
- **Future Site Visitor** (Less Exposure (Risk) than Site Worker)
- **Existing Site Trespasser** (Site is Fenced & Secured)
- **Future Site Trespasser** ✖ Unacceptable Risk (Hot Spot 1/3 Soil)
- **Existing Site Recreational User** (Site is Fenced & Secured)
- **Future Site Recreational User** ✖ Unacceptable Risk (Hot Spot 3 Soil & Sediment)
- **Existing Site Construction Worker**
- **Future Site Construction Worker** ✖ Unacceptable Risk (Hot Spots 1, 2 & 3 Soil & Groundwater)
Next Steps

• Evaluate Options for Site Clean-up
  – Additional soil sampling on remainder of property to determine limits of Hazardous Waste
  – Groundwater monitoring to determine effectiveness of natural attenuation
  – Pumping Tests to determine how much water needs treating
  – Chemical Oxidation Treatability Study

• Select future cleanup options and associated costs vs. future use scenarios
For More Information on Lewis Chemical

• http://dnd.cityofboston.gov/#page/LewisChemical

• http://public.dep.state.ma.us/SearchableSites/
  – Search for RTN 3-1616