



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)

James Smith – DND Sr. Environmental Compliance Manager
Craig Blake, LSP – Woodard & Curran

Martin J. Walsh, Mayor
Sheila A. Dillon, Chief & Director

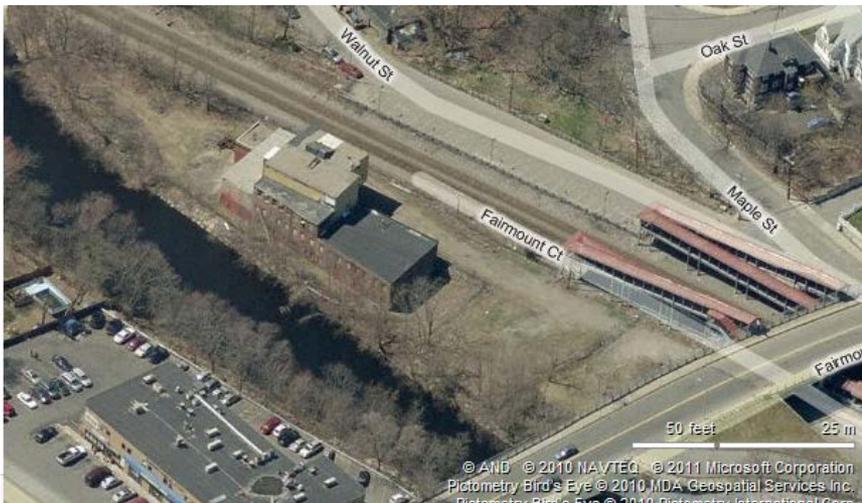


Department of
Neighborhood
Development

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
- Groundwater Assessment (6/2002, 4/2006, 6/2012, 9/2014)
 - 17 Groundwater Monitoring Wells / 54 Groundwater Samples
- Neponset River Sediment & Surface Water Sampling (July 2002 & May 2006)
- 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



Recent Photo



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

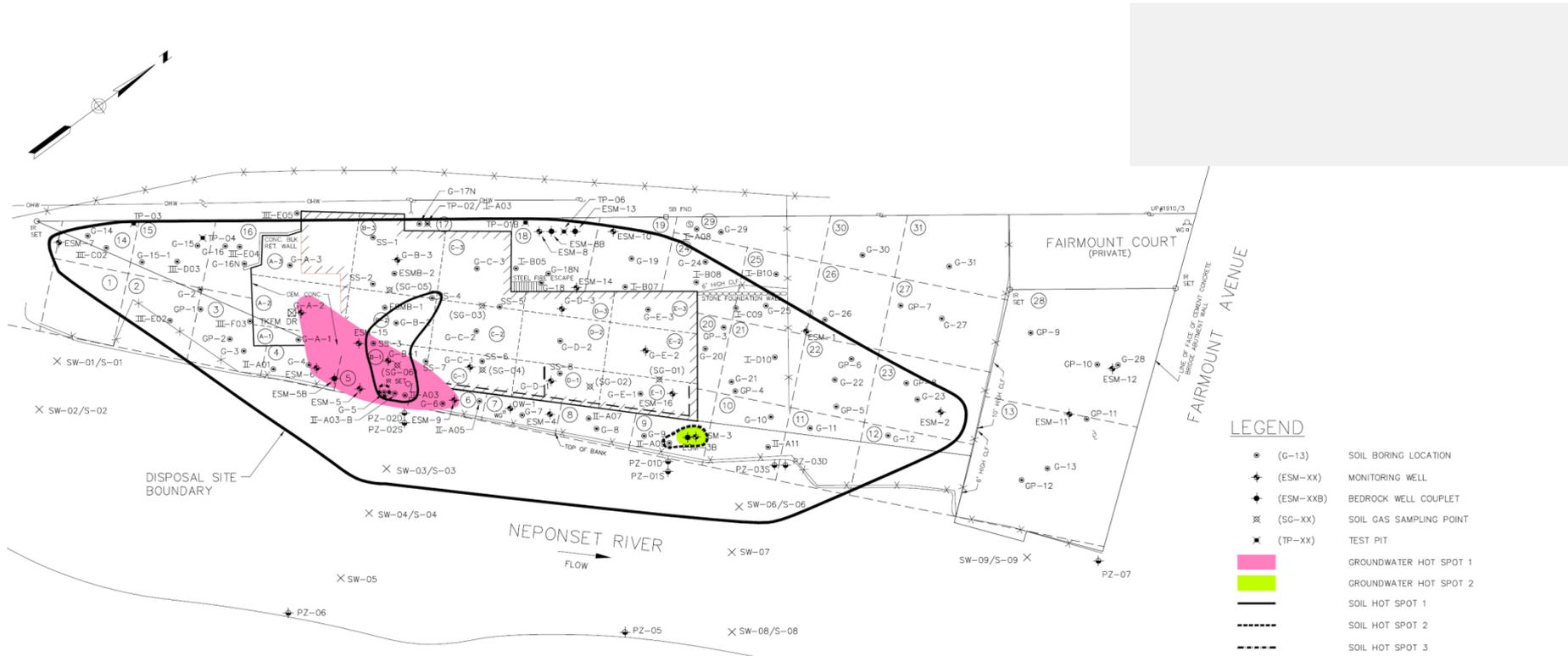


Contaminants of Concern at Lewis Chemical

- 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



AREAS OF CONCERN

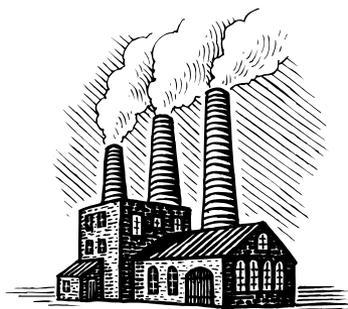


LEGEND

● (G-13)	SOIL BORING LOCATION
⊕ (ESM-XX)	MONITORING WELL
⊕ (ESM-XXB)	BEDROCK WELL COUPLER
⊗ (SG-XX)	SOIL GAS SAMPLING POINT
⊗ (TP-XX)	TEST PIT
■ (Pink)	GROUNDWATER HOT SPOT 1
■ (Yellow)	GROUNDWATER HOT SPOT 2
— (Solid)	SOIL HOT SPOT 1
- - - (Dashed)	SOIL HOT SPOT 2
- · - · (Dash-Dot)	SOIL HOT SPOT 3

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 \$\$



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

