Technical Assistance for Brownfields Program
EPA Region 1

Planning and Funding Brownfield Site Investigations

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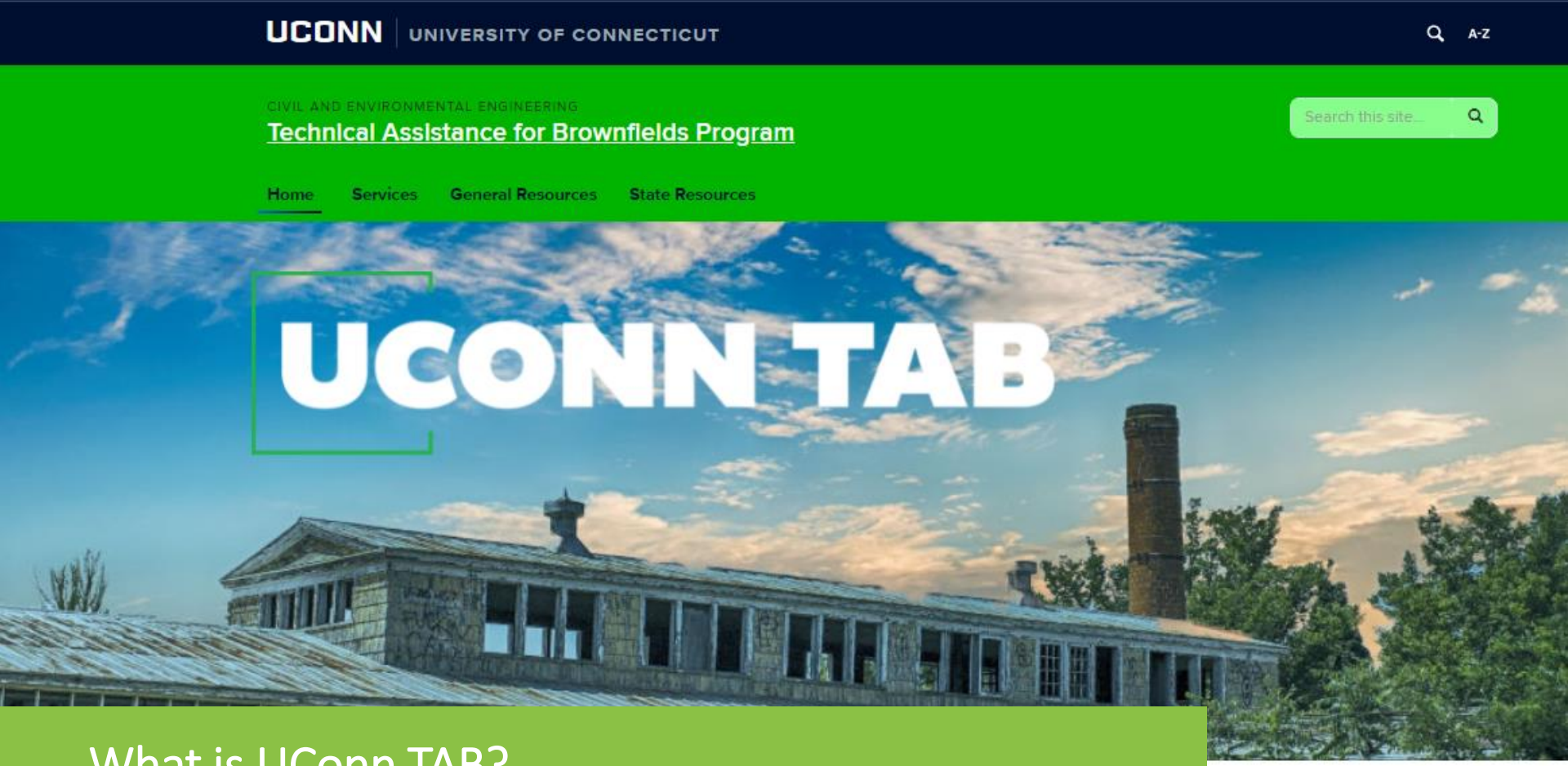
Webinar Outline

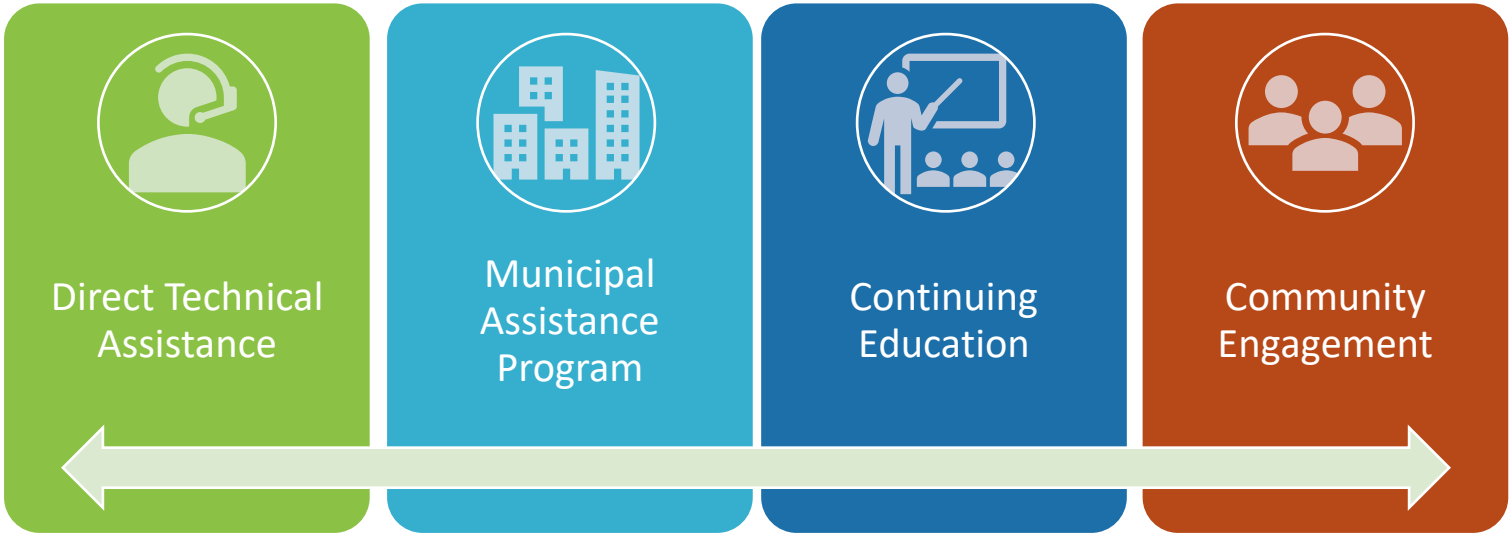
- UConn TAB & Overview of Services
- Introduction to Environmental Site Assessments
- Average Cost & Funding for Environmental Site Assessments
- Technical Assistance for Environmental Site Assessments
- Q&A



What is UConn TAB?

Supported by the US EPA Technical Assistance for Brownfields Program, the UConn TAB supports New England communities to advance investigation, cleanup and redevelopment of abandoned, potentially contaminated sites, protect public health and promote environmental justice.

Our Services at a glance



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Brownfield Redevelopment Process

Planning (site reuse assessment & property recovery actions)

Due Diligence (Environmental Assessment & Cleanup)

Redevelopment (Pro Forma Calculations, Risk Management)

Environmental Due Diligence

Phase I — Site History: Determine potential sources and locations for releases

Phase II — Sample in these locations and find out if a release occurred

Phase III — Perform additional sampling where release did happen and identify extent of contamination

Phase IV — Develop and Execute Remedial Action Plan

Phase V — Monitor site and make sure there is no residual pollution

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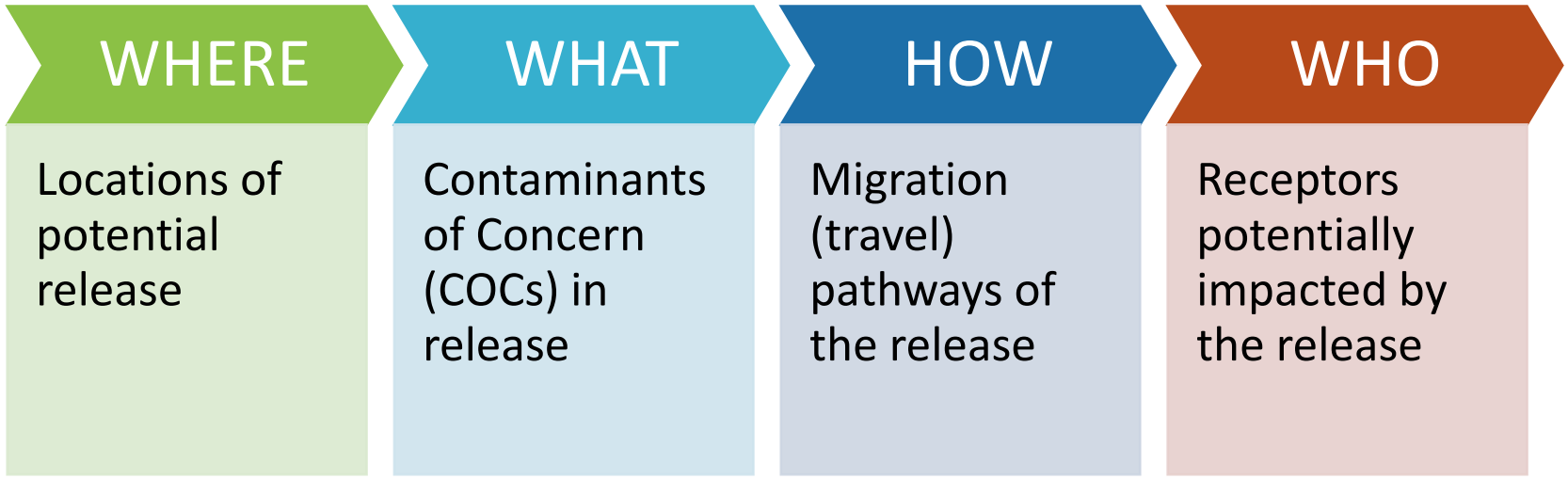
Investigation Questions



All Appropriate Inquiries (AAI)

The process of evaluating a property's environmental conditions and assessing potential liability for contamination.

When seeking protection from potential liability under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) as an innocent landowner, contiguous property owner, or a bona fide prospective purchaser, AAIs must be conducted.

Phase I environmental site assessment conducted with EPA Brownfields Assessment Grant funds must be conducted in compliance with the AAI Final Rule at 40 CFR Part 312.

The AAI Final Rule provides that **ASTM International Standards** (E1527-13 & E2247-16) are consistent with the requirements of the final rule and can be used to satisfy the statutory requirements for conducting AAI.

Fact Sheet: All Appropriate Inquiries: Reporting Requirements Checklist for Assessment Grant Recipients, EPA-560-F-17-194

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State Guidance Documents

Connecticut

CT Department of Energy and Environmental Protection

Site Characterization Guidance Document

Maine

ME Department of Environmental Protection

Remediation Program Guidance: Guidance for the Investigation and Clean-up of

Massachusetts

MA Department of Environmental Protection

310 CMR 40.0000 Massachusetts Contingency Plan

New Hampshire

NH Department of Environmental Services

NH Code of Administrative Rules: Env-Or 600 Contaminated Site Management

Rhode Island

RI Department of Environmental Management

Rules and Regulations for the Investigation and Remediation of Hazardous Material Releases

Vermont

VT Department of Environmental Conservation

Investigation and Remediation of Contaminated Properties Rule

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Environmental Professional state programs

LEP	LSP	No State Program
Licensed Environmental Professionals	Licensed Site Professionals	Maine
Connecticut	Massachusetts	New Hampshire
		Vermont
		Rhode Island

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Phase I Site Investigation

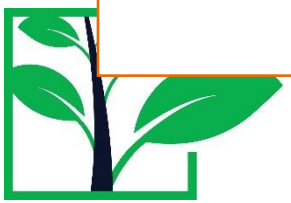
- ASTM E1527-13 (2013) (commercial real estate) and E2247-16 (forestland or rural property)

Site Visit

- ***Site reconnaissance survey*** (check ASTM for details, i.e., identify paths with no obvious outlet – these could have been pathways for waste disposal)
- **Interviews** with past and current owners or responsible personnel

Record review

- **Site Description** (location, land use, buildings, utilities, areas of operation, surface cover, abutting properties, access/egress locations)
- **Site History** (ownership, uses, history and nature of processes, substances used, material processing)
- **Site records** (federal, state)
- **Environmental setting** (geology, hydrology, gw classification)
- **Graphics** (topographic map, Sanborn maps, historic, hydrogeologic, previous sampling etc.)



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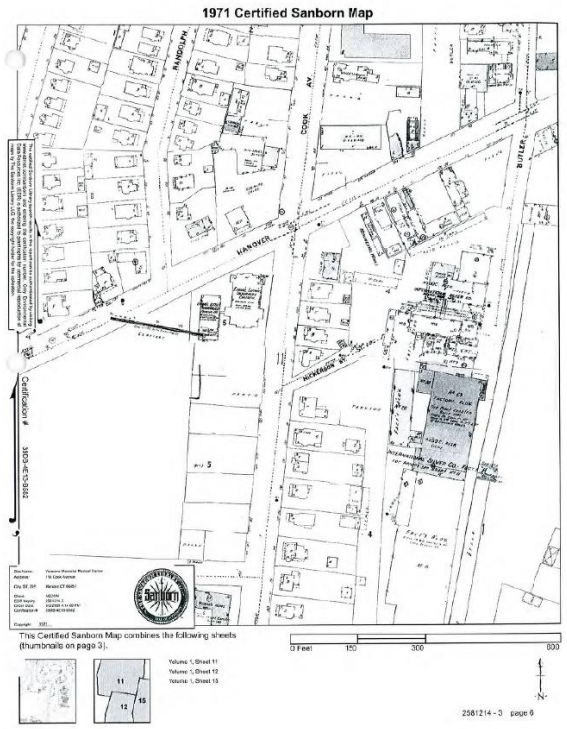
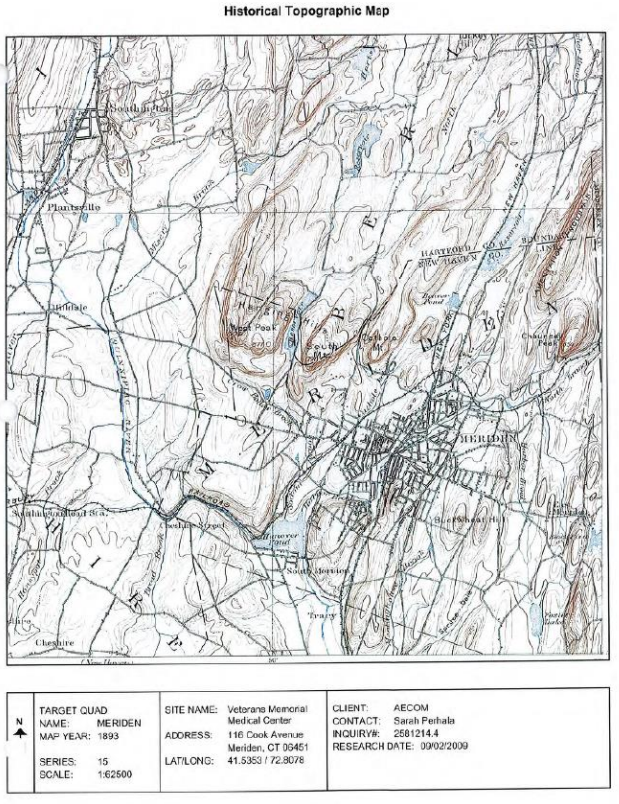
Phase I Site Investigation

Sanborn® Fire Insurance



Aerial photos

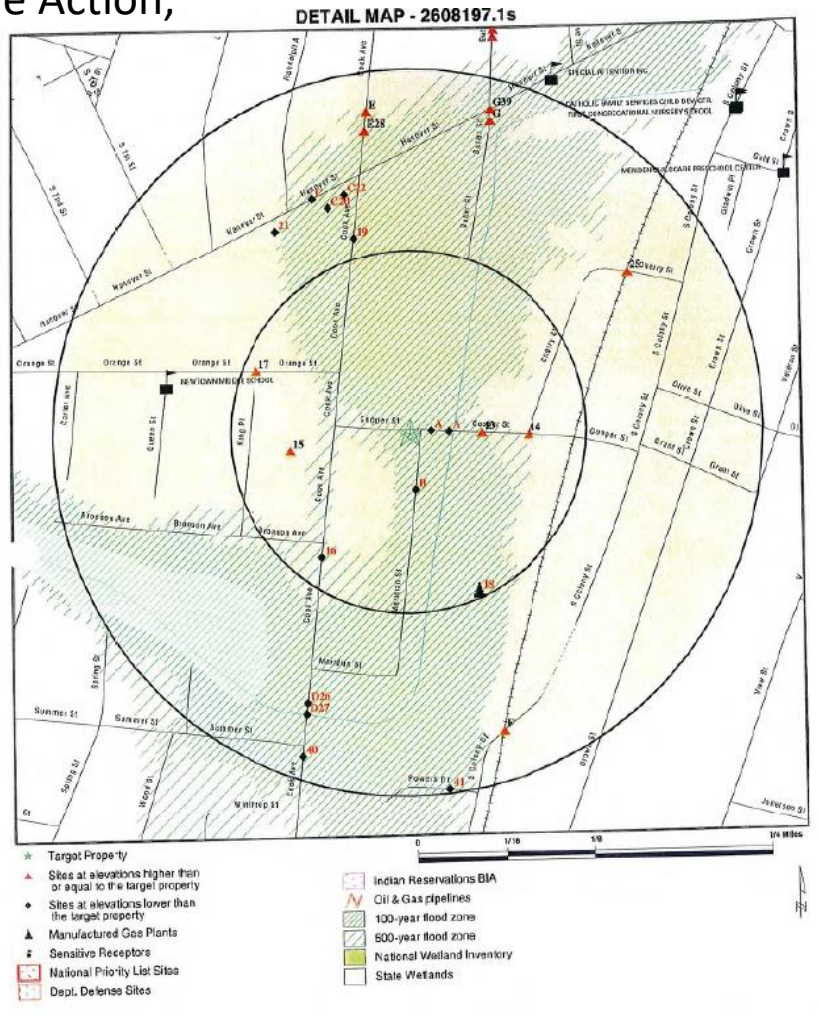
Topographic maps



Phase I Site Investigation

Regulatory Database Review
Federal Databases: CERCLA, RCRA, RCRA Corrective Action, Toxic Substances Control Act, (TSCA), Superfund
State Databases

Site Name	Site Address	Location and Elevation Relative to Site	Database Containing Site	Nature and Status of Site
116 Cook Avenue	116 Cook Avenue	Target Property	SPILLS	Spill case #104163860, reported 3/24/99, 5 po released from air conditioner, case reporte
Radiology Associates, Inc.	116 Cook Avenue	Target Property	MTLS	Licensed issued in 1993 and expired in
Meriden Diagnostic Imaging Center	116 Cook Avenue	Target Property	NPDES	Permit #GPH000161 issued in 1992 and exp
Meriden Medical Center	116 Cook Avenue	Target Property	UST	10,000 gallon steel underground heating oil tar 1977. Currently in use.
INSILCO/International Silver Corporation	55 Cooper Street	Adjoining Parcel	MANIFEST	CT manifests for hazardous waste liquid shipp 4,000 pounds environmentally hazardous subst
International Silver	Adjoining	Adjoining Parcel	LWDS	Leachate and wash water discharge. Discha Inactive
International Silver	77 Cooper Street	Adjoining Parcel	LWDS; Brownfield; CERCLIS; SDADB	Misc. Surface Leachate, Inactive, not on the Inactive; CT Brownfields; Spill/Dump of Chlori and Metals
Kwik Mart	80 Cook Avenue	< 1/8 mile NNW (Lower)	NPDES	Permit #GGR001131 issued in 1998 and exp
South End Garage	181 Hanover Street	< 1/8 mile NW (Higher)	MANIFEST	Two CT manifests for hazardous waste liquid 1994 (8 gallons pertoleum distillates) and gallons).
Expert Auto	181 Hanover Street	< 1/8 mile NW (Higher)	MANIFEST	Two CT manifests for hazardous waste liquid 2006 (8 gallons and 10 gallons pertoleum dis manifest for 550 gallons of flammable liquid shi Case reported closed.
XTRA Mart	80 Cook Avenue	<1/8 mile North (Higher)	MANIFEST	CT manifest for 100 gallons of waste flamm shipped in 1986
Firestone	72 Cook Avenue	<1/8 mile North (Higher)	MANIFEST	CT manifest for 50 gallons of hazardous waste in 1991
Firestone	72 Cook Avenue	<1/8 mile North (Higher)	RCRA - SQG, FINDS; UST	Small quantity generator, no violations ; A 2,00 heating UST was installed in 1972 and remove 500 gallon waste oil UST was installed in 1973 in 1988. Both USTs permanently clo



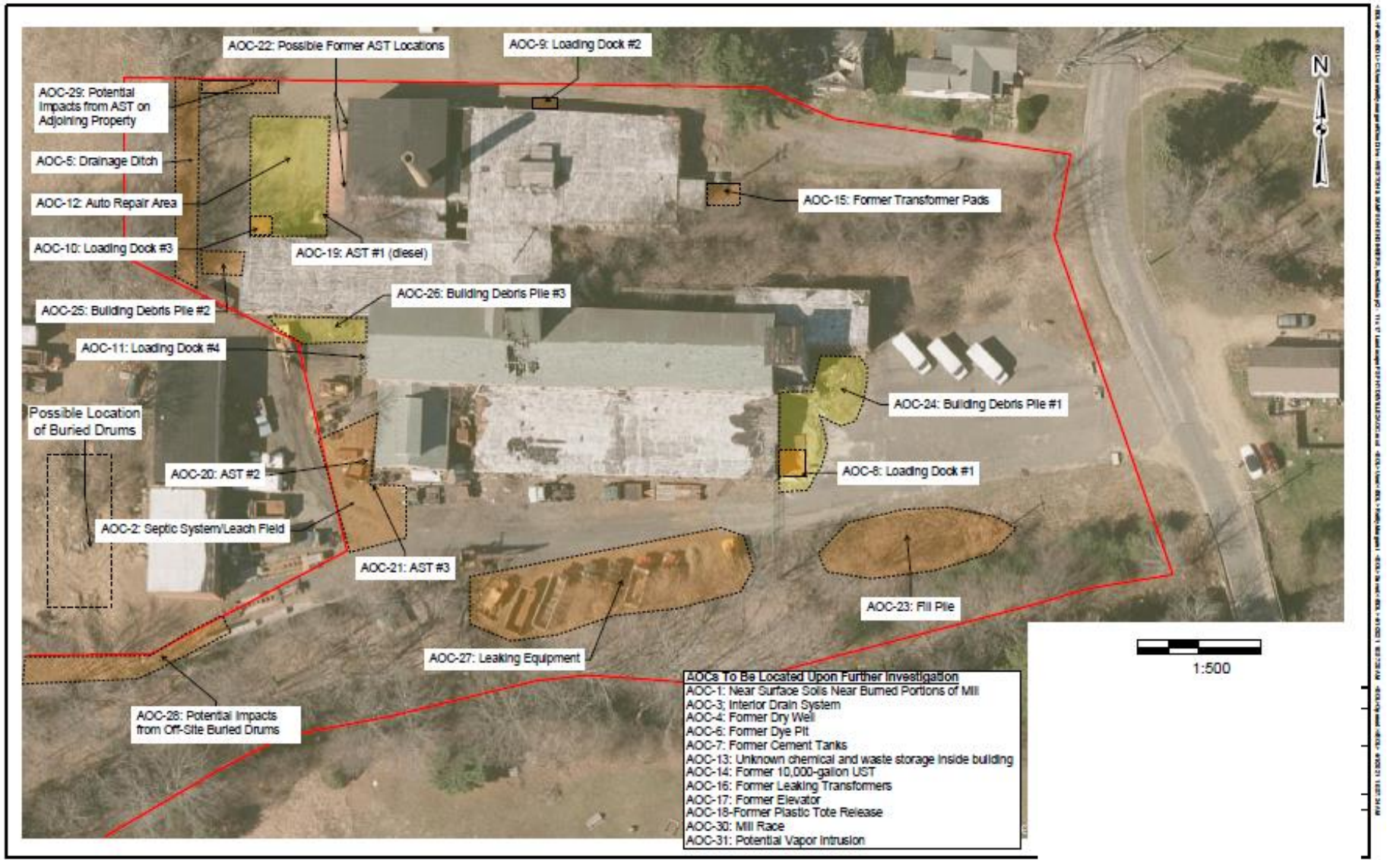
Phase I ESA Key Findings

1. Recognized Environmental Conditions (RECs) or Areas of Concern (AOCs): Areas where contamination is suspected based on the previous uses and current conditions of the site.

From the work described herein, has found several issues pertinent to environmental conditions at the Site. From an evaluation of these findings, has identified the following list of RECs. These RECs are summarized (by number) as follows:

1. Mold/Water Intrusion – Water damage was observed throughout the building. Mold may be present on the building;
2. Lead-Based Paint (LBP) – Based on the age of the building, LBP may potentially be present in building materials. However, renovations have occurred in various portions of the building throughout the 1980s and early 1990s;
3. Asbestos-Containing Materials (ACM) – Due to the age of the facilities, ACM may potentially be present in building materials including insulation materials;
4. Urban Fill - Ash was reportedly found in soil borings previously conducted by ERL;

Phase I ESA Key Findings



Phase I ESA Key Findings

2. Recommendation for a Phase II ESA to confirm if a <u>contaminant release has occurred or not</u>.

A Phase II Environmental Site Investigation is recommended to be conducted at the Site to determine the presence or absence of contamination at The investigation would include conducting limited soil borings, installation of groundwater monitoring wells, and collecting and analyzing soil and groundwater samples to evaluate potential impacts to soil and groundwater from hazardous materials, petroleum products, and potentially contaminated fill materials. The results from the limited Phase II Environmental Site Investigation would be used to assist the City of in facilitating property redevelopment and/or transfer.

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Phase II ESA

Collect sufficient information to determine whether or not a release has occurred at each REC/AOC in Phase I ESA.

Phase II Timeline & Activities

1. Develop Phase II Scope of Work (SOW)
2. Perform field activities (analyze samples)
3. Update Conceptual Site Model
4. Identify potential releases
5. Identify potential data gaps and recommend further investigation
6. Summarize all of the above in a Phase II report

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Sampling in Phase II ESAs

Soil Sampling

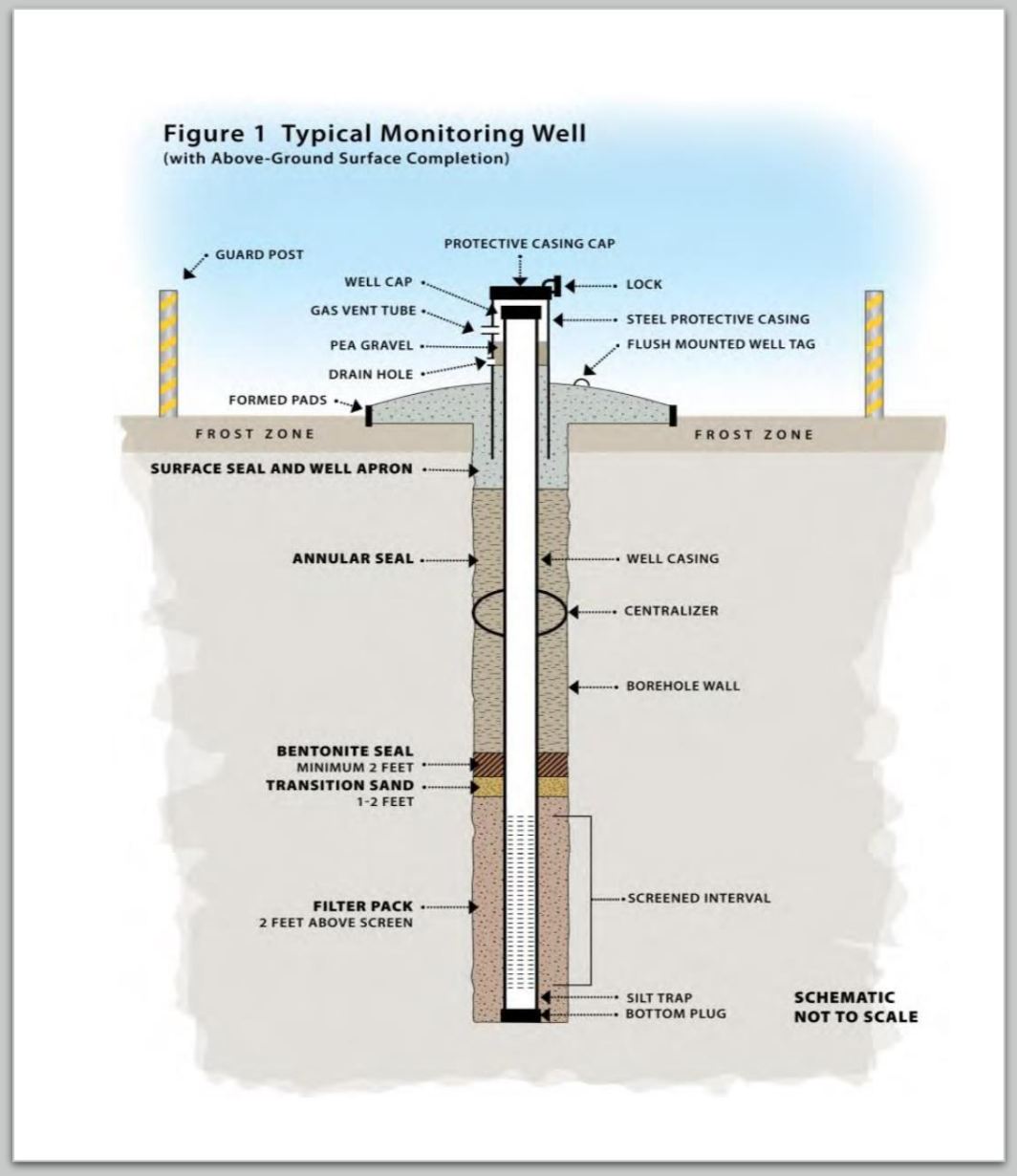
Surface soils (Test pits)

Soil Borings

Sampling in Phase II ESAs

Groundwater sampling

Monitoring wells



Sampling in Phase II ESAs

Soil Vapor

If there are buildings and closed structures on-site and there is a presence of volatile compounds, soil vapor might need to be sampled as well.

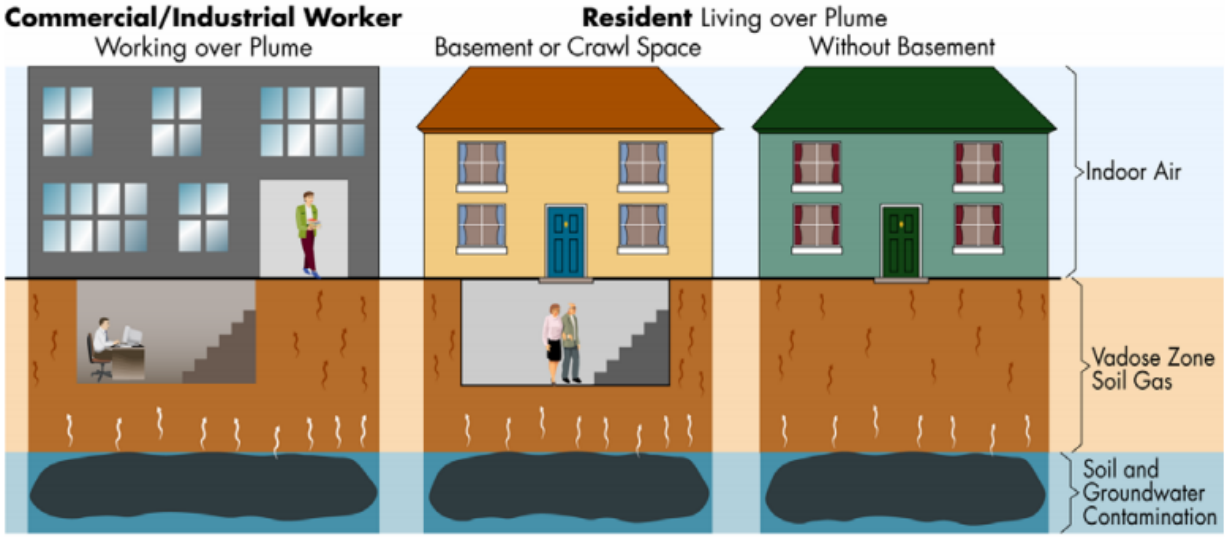
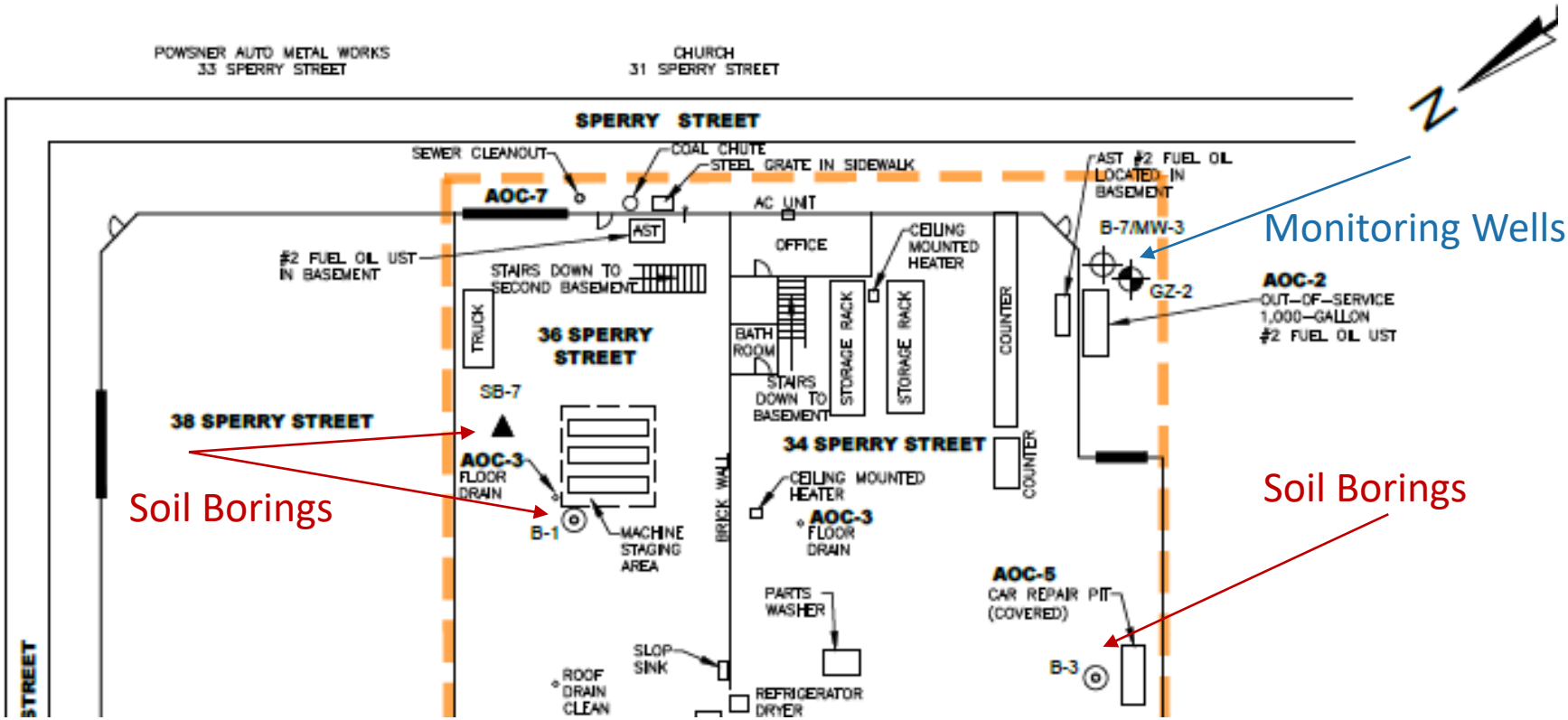


Figure 1-1. Typical conceptual model of vapor intrusion.

Sampling Map in Phase II ESA



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Phase II ESA Key Findings

- Confirm if a release has occurred or not
- Levels and types of contaminants in RECs/AOCs

> ETPH, PAHs and metals were detected in soil sample SB-13 (0-2) at concentrations below RSR criteria, except for arsenic (10.9 mg/kg), which was above the R-DEC and I/C-DEC, and benzo(a)anthracene (1.04 mg/kg) which was above the R-DEC. SPLP PAH results indicate compliance with the GB-PMC. No impacts to groundwater were detected.

- Recommendation for additional sampling

> Based on field observations and the results of the laboratory analyses, it appears a release to the subsurface from the inground hydraulic lifts (AOC-15) has occurred. recommends conducting additional investigation to evaluate the extent and degree of the impacts and removing the lifts. The soil impacts detected in sample SB-5 (0-2) may be attributable to fill. As indicated for the other parcels, if disturbed, recommends developing a soil management plan to manage the fill.

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Phase III ESA

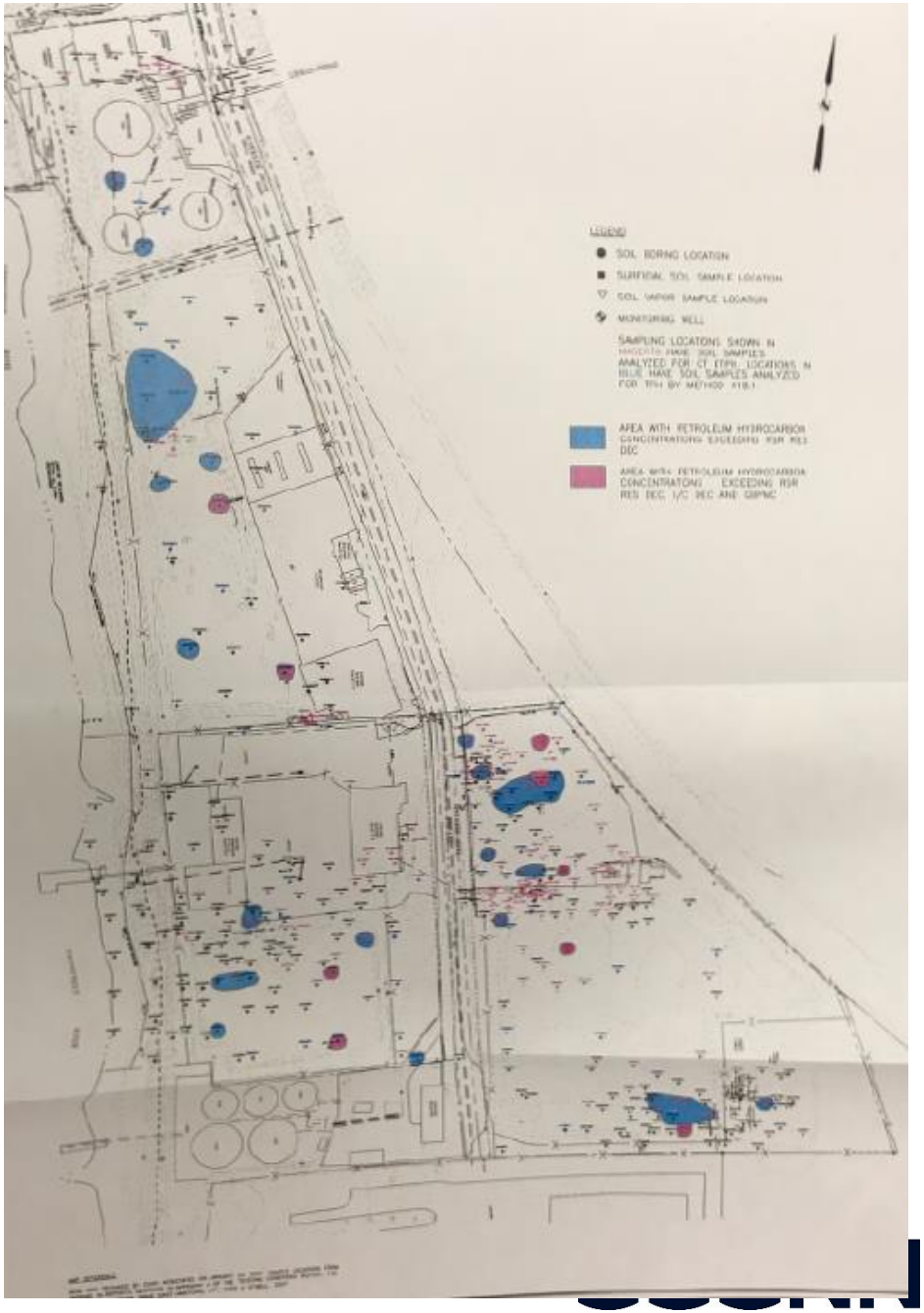
Additional investigation of the site conditions which control the migration of substances **at each release area** by assessing the environmental media (soil, sediment, groundwater, surface water, soil vapor, and indoor air)

Phase III ESA

Defines the **3D extent** and distribution of substances associated with each release

Evaluates how the distribution and concentration of substances may change with time

Identifies receptors and describes how the current or future extent and concentration of such substances may affect human health or the environment.



Other Types of Investigation

Hazardous Building Materials (HBM) Surveys

Investigate the presence of hazardous materials in buildings. Mainly:

- Asbestos
- Polychlorinated Biphenyls (PCBs)
- Lead Based Paint

Pipe ACM inside wall cavity of 1st floor boys' room

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ESA Cost

- Phase I ESA $3K-$6K
- Phase II ESA $20-40K
- Phase III ESA $50-100K
- Hazardous Building Materials Survey $10K-$20K

How to fund ESAs

EPA's Brownfields Program: Upcoming Solicitation Opening Fall 2022

Types of Available Grants

	Assessment Grants	Cleanup Grants	RLF Grants	Multipurpose Grants
Common Eligible Grant Activities	inventory, characterize & assess sites; revitalization planning; site-specific cleanup & reuse planning; community involvement	cleanup activities; reuse planning; community involvement	capitalize an RLF program; provide loans and subgrants to carry out cleanup activities	assessment & cleanup activities; revitalization planning
Applicant Eligibility (see full list in Section III.A.)	Government, Quasi Governn ent, Regional Council, Tribe, Nonprofit Organization (501(c)(3)), Qualifie Community Development Entity (45D(c)(1))			ofit Organization (501(c)(3)), 5D(c)(1))
		Nonprofit organizations not organized primarily for profit (e.g., 501(c)(6) organizations)		
Amount of Funding Available	**Community-wide** • Up to $500,000 **Site-specific** • Up to $200,000 or up to $350,000 with a waiver **Community-wide Assessment Grants for States and Tribes** (will be covered in webinar on Oct 14)	**Single-site** • Up to $500,000 per site or up to $650,000 with a waiver **Multi-site** • Up to $500,000 per application Applicants may submit 1 application	**Community-wide** • Up to $1,000,000 **RLF Coalition** • Up to $1,000,000 • 1 lead + 1 or more eligible partners	**Community-wide within ONE Target Area** • Up to $800,000
Cost share Requirement	n/a	20%	20%	$40,000
Period of Performance	3 years for Community-wide/Site-specific	3 years	5 years	5 years
Anticipated # of Awards	92	26	8	10

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How to fund ESAs

EPA's Targeted Brownfields Assessment (TBA)

What the free TBA program does:

Site Assessments – including research about past uses, environmental sampling for potential contamination, and cleanup planning.

TBAs are conducted by an EPA contractor on behalf of an eligible entity. Services include site assessments, cleanup options and cost estimates, and community outreach. Services are for an average of $100,000. The sites for this program are selected on a rolling basis.

What the program is NOT:

- Not enforcement. This is a voluntary program to identify solutions, not to punish property owners or buyers.
- Not redevelopment funding. EPA does not have funding to build reuse projects.

Contact Jim Byrne – R1 Brownfield Coordinator for further information.

How to fund ESAs

State Programs

NH DES
RI DEM

CT DEEP
CT DECD

MassDEP

VT DEC

Maine DEP

$2M EPA Community-wide Assessment Grants for States and Tribes

State Brownfields Programs – Funding for Assessment & Cleanup activities

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We can help!

UConn TAB MAP

Fall Semester

EPA Brownfields Grant Proposals

Review of EPA Brownfield Grants
Assistance with research and technical components of the grant

Spring Semester & Summer

Technical Support

Support of technical brownfield projects and community engagement actiities

Fall MAP

Applications are now open! Apply by **July 15th**

Apply here: https://tab.program.uconn.edu/request-for-proposals-fall-2022/

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UCONN TAB MAP (Spring & Summer)

Summary of environmental site conditions

Summaries & data gap analysis of previous environmental assessements

Phase II Scope of Work and Budget Estimates

Redevelopment options for priority sites

Brownfields Inventories

Community Engagement and Outreach Materials

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Q&A

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