Improving the quality of life

MAN-MADE HAZARDS: HAZARDOUS AND TOXIC SUBTANCES (ESAs)

OHIO COMMUNITY DEVELOPMENT CONFERENCE

JENNIFER MILLER NOVEMBER 20, 2014

ENVIRONMENTAL SITE ASSESSMENTS

- "The assessment or evaluation of a property to identify potential environmental contamination and assess potential liability for any contamination present at a property."

  - U.S. EPA All Appropriate Inquiry guidelines

ENVIRONMENTAL SITE ASSESSMENTS

- Why do we do environmental site assessment?
  - > CERCLA (Superfund) and All Appropriate Inquiry
  - > General liability: protecting occupants of and visitors to the completed project protects the owner as well
  - > Economic benefit: finding and addressing environmental concerns results in a more marketable property

ENVIRONMENTAL SITE ASSESSMENTS

- How to use your ESA report and consultant

PHASE I ESA

- How do we do phase I ESAs?
  - All Appropriate Inquiry: 40 CFR 312
  - ASTM E 1527-13 – Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process (revised version in full effect as of this month)
  - OEPA Voluntary Action Program: OAC 3745-300-06

PHASE I ESA

- Changes to ASTM E1527
  - Changed definition of recognized environmental condition (REC)
  - Added definition of controlled REC (contaminants are still present but under conditions okayed by regulators)
  - Added definition of de minimis condition (contaminants are present at levels that don't threaten human health or the environment and that wouldn't concern regulators)

PHASE I ESA

- Changes to ASTM E1527
  - > User must do Lien/AUL search for All Appropriate Inquiry under CERCLA, but it's not a necessary part of an ASTM phase I
  - > Reasonable time and cost for obtaining records from a source: within 20 days of request and at nominal cost (excluding travel)
  - > Review of regulatory files for subject property and adjoining sites is required (unless the Environmental Professional provides sufficient reasoning to justify not doing the review)

PHASE I ESA

- Changes to ASTM E1527
  - > Recommendations are specifically excluded from the practice, though they can be included as an extra item in the contract between the report user and the Environmental Professional

PHASE I ESA

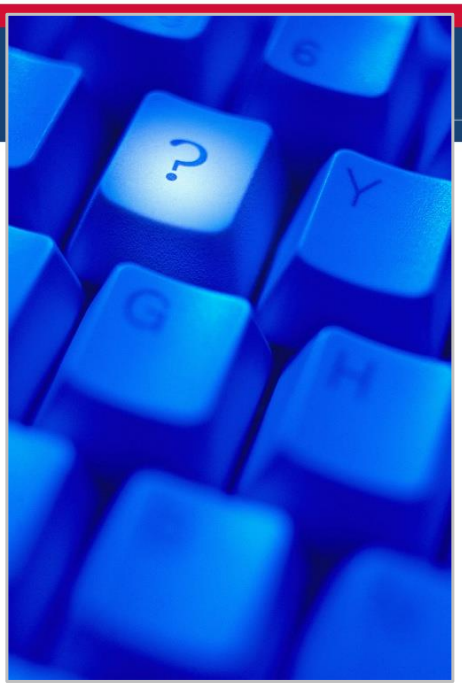
- Recognized Environmental Condition:
  - the presence or likely presence of any hazardous substances or petroleum products in, on, or at a property: (1) due to release to the environment; (2) under conditions indicative of a release to the environment; or (3) under conditions that pose a material threat of a future release to the environment. De minimis conditions are not recognized environmental conditions.

PHASE I ESA

- What is included in the investigation?
  - Site history (to 1940 or first developed use)
  - Government databases (at minimum, databases listed by ASTM)
  - Site inspection
  - Interviews (property owners/operators, local government officials)
  - Report

PHASE I ESA

- What should the report contain?
  - Scope of services
  - Identification of data gaps and evaluation of their significance
  - Identification of deviations from ASTM/AAI
  - Discussion of all information collected
  - Environmental professional's opinion of the impact on the property of the items discussed in the findings
  - References (sources used)



- Questions?

PHASE II ESA

- Why do we do it? To provide information relevant to:
  - Assessing whether there has been a release
  - Meeting continuing obligations of landowner under CERCLA liability defenses
  - Qualifying for a brownfields remediation grant
  - Identifying, defining and evaluating property conditions associated with target analytes that could present a risk to human health or the environment and therefore result in potential liability
  - Allocating business environmental risk
  - Supporting liability disclosures

PHASE II ESA

- How do we do it?
  - ASTM E 1903-11 for most initial investigations
  - Can also be informed by multiple agency and regulatory program standards, e.g.:
    - OEPA Voluntary Action Program (VAP)
    - RCRA Corrective Action
    - CERCLA Site Assessment

PHASE II ESA: CONCEPTUAL SITE MODEL

- ASTM Definition:
  - A representation of hypothesized current site conditions, which describes the physical setting characteristics of a site and the likely distribution of target analytes that might have resulted from a known or likely release, and which is based on all reasonably ascertainable information relevant to the objectives of the investigation and the professional judgment of the Phase II Assessor.

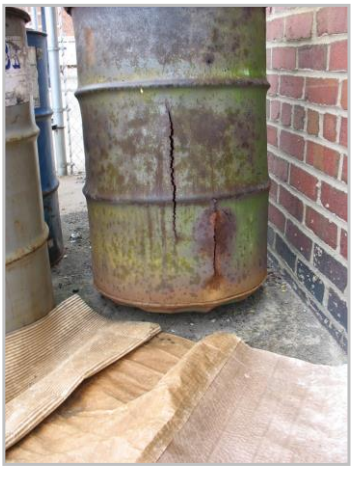
PHASE II ESA: CONCEPTUAL SITE MODEL

- What do we know or suspect through our observations and data sources?
  - Site buildings, site and nearby soils, groundwater and bedrock
  - Suspected or known releases
- And what do we need to investigate as a result?
  - Confirm presence or absence of releases
  - Define risks to human health and the environment

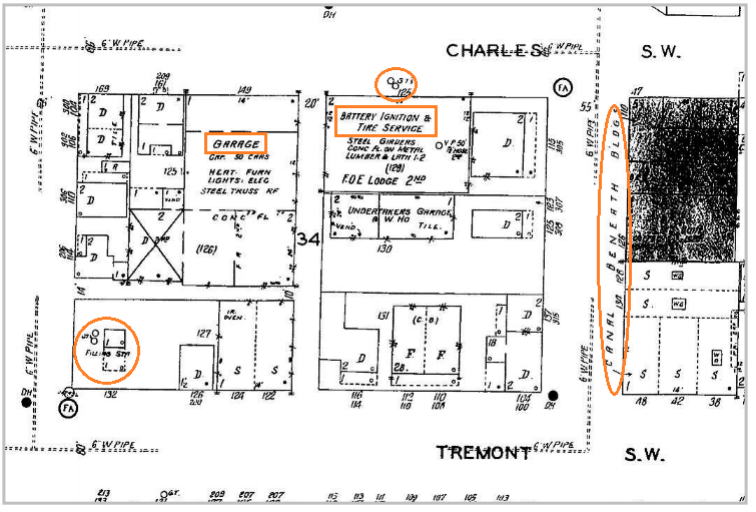
Goal: Redevelop Site for Senior Housing

- Existing building – former auto dealer, became F.O.E hall

- Site visit concerns, including workshop across street



- Drums behind building showed signs of leaking



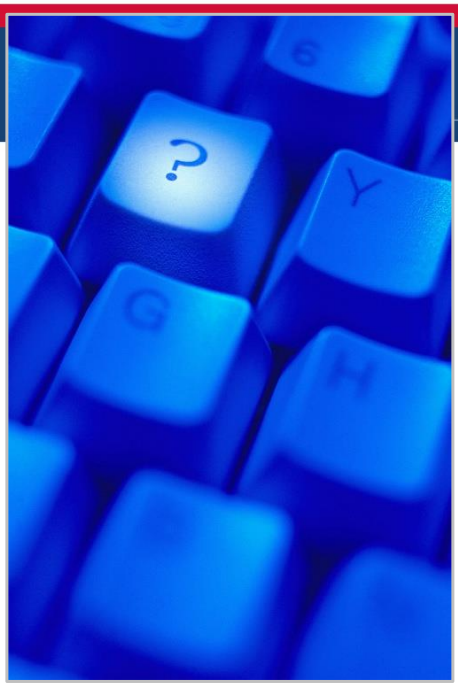
- 1928 Sanborn: auto-related uses and buried canal nearby

PHASE II ESA: CONCEPTUAL SITE MODEL

- What do we need to investigate as a result?
  - > Are tanks or tank piping still present?
  - > Did the drums near the surface drain cause a release into soils around the underground drain piping?
  - > Did the auto-related activities on the site and in the area result in contamination at the site?
  - > Where (depth, formation) is groundwater and which way is it moving?

PHASE II ESA: CONCEPTUAL SITE MODEL

- Always check for existing data!
  - OEPA files
  - BUSTR files
  - Health Department records of wells, septic systems, etc.
- Why spend the money to repeat investigations someone else has already done? Use existing data to refine the site conceptual model.



- Questions?

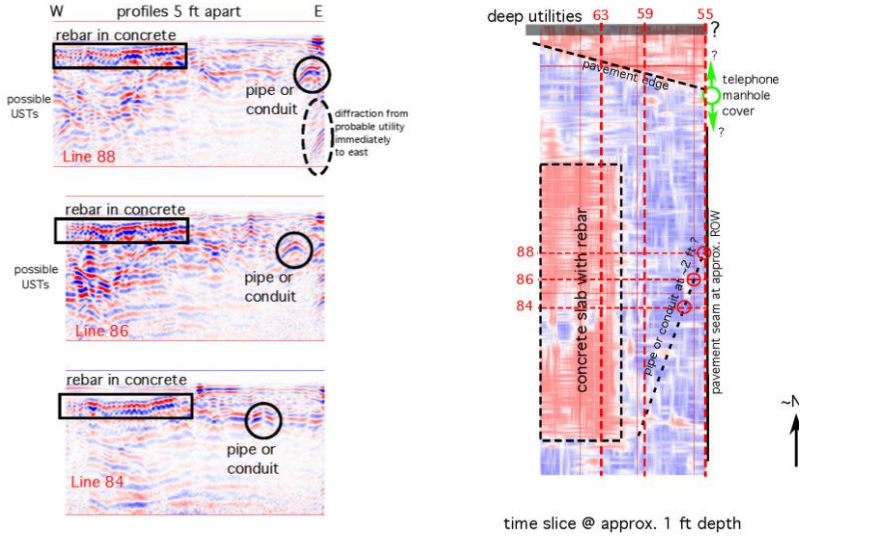
PHASE II ESA: INVESTIGATIVE METHODS

- Direct observation and sampling (no digging needed):
  - Surface soils, surface water, sediments
  - Indoor air
  - Outdoor air (much less commonly used)
- Target analytes (suspected contaminants) drive analytical methods, which are the main cost driver for these techniques

PHASE II ESA: INVESTIGATIVE METHODS

- Aboveground, remote sensing investigative methods

METHOD	DETECTS	LIMITATIONS
Magnetometer	Buried metal (tanks, drums, piping)	Depth, surface metal or rebar interference
Ground-penetrating radar (GPR)	Changes in density, texture (buried materials, voids)	Clay soils, damp soils, high subsurface variability
Seismic reflection	Changes in density	Natural & man-made noise (traffic, etc.)



PHASE II ESA: INVESTIGATIVE METHODS

- Subsurface, direct observation and sampling:
  - Test pits
  - Soil borings – drilling method determined by objectives and geological setting
  - Groundwater wells – temporary vs. permanent, bailers vs. pumps vs. passive samplers, borehole remote sensing meters
  - Soil gas

PHASE II ESA: INVESTIGATIVE METHODS

- Remember: the driller's and sampler's technique will have a large effect on the usefulness of the information collected and the validity of the samples.

PHASE II ESA: FIELD INVESTIGATIONS

- Questions to remember in talking to the consultant:
  - What will we know if the tests are positive?
  - What will we know if the tests are negative?
  - Will we have defined the site and the concerns well enough to meet our objectives? (Make sure objectives are clear!)
- Field investigation may require multiple phases to meet the objectives, depending on what they are.

- Consider the main concerns

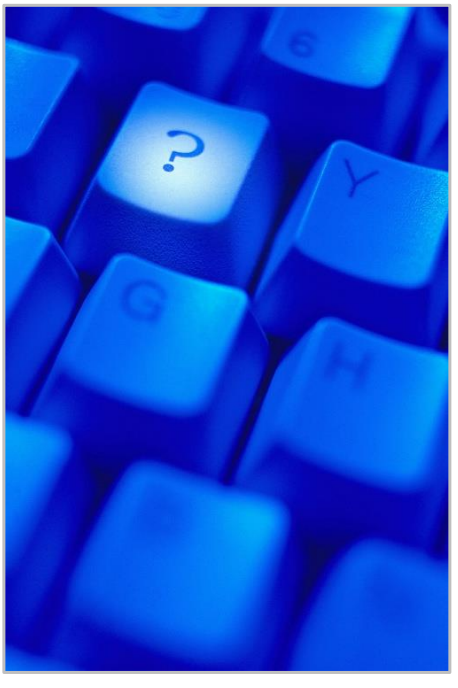
- Magnetic survey for tanks

- Soil borings and temporary wells in areas of concern

- Permanent wells for confirmation and groundwater flow

"PHASE III ESA" – RISK AND REMEDIATION

- Recap: remediation and mitigation
  - > Basically three options: remove, prevent contact or treat in place
  - > Always have:
    - Scientifically supportable and measurable endpoint
    - Means of verifying that the approach is working
  - > If preventing contact, also have a plan to ensure maintenance of the solution: deed restriction, O&M plan, tenant notification, etc.



- Questions?

FOR MORE INFORMATION

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