

# ASTM E1527 Phase I ESA Standard

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History, Purpose and Changes in the  
Standard through 2013

June 16, 2022  
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# TOPICS OF DISCUSSION

- Environmental Laws and Regulations
- Creation of The 1993 ASTM Phase I Standard
- The Phase I ESA Process
- 1994, 1997, 2000 ASTM E1527 Revisions
- 2005, 2013 ASTM E1527 Revisions



*Photography by Michael Temchine*



## Select Environmental Laws, Regulations and Creation of the E1527 Phase I ESA Standard

- 1970 – *Clean Air Act*
- 1972 – *Federal Water Pollution Act*
- **1976 – *Toxic Substance Control Act, Resource Conservation and Recovery Act with Hazardous Solid Waste Amendments in 1984***
- **1980 – *Comprehensive Environmental Response Compensation and Liability Act***
- **1986 – *Superfund Amendments and Reauthorization Act***
- 1990 – *Oil Pollution Act*
  - 1990 ASTM E1527 Committee established
  - 1993 ASTM E1527 Standard first published (revisions in 1994, 1997, 2000, 2005, 2013, and 2021)
- 1995 / 2002 – *EPA Brownfields Program Inception / Small Business Liability Relief and Brownfields Revitalization Act*

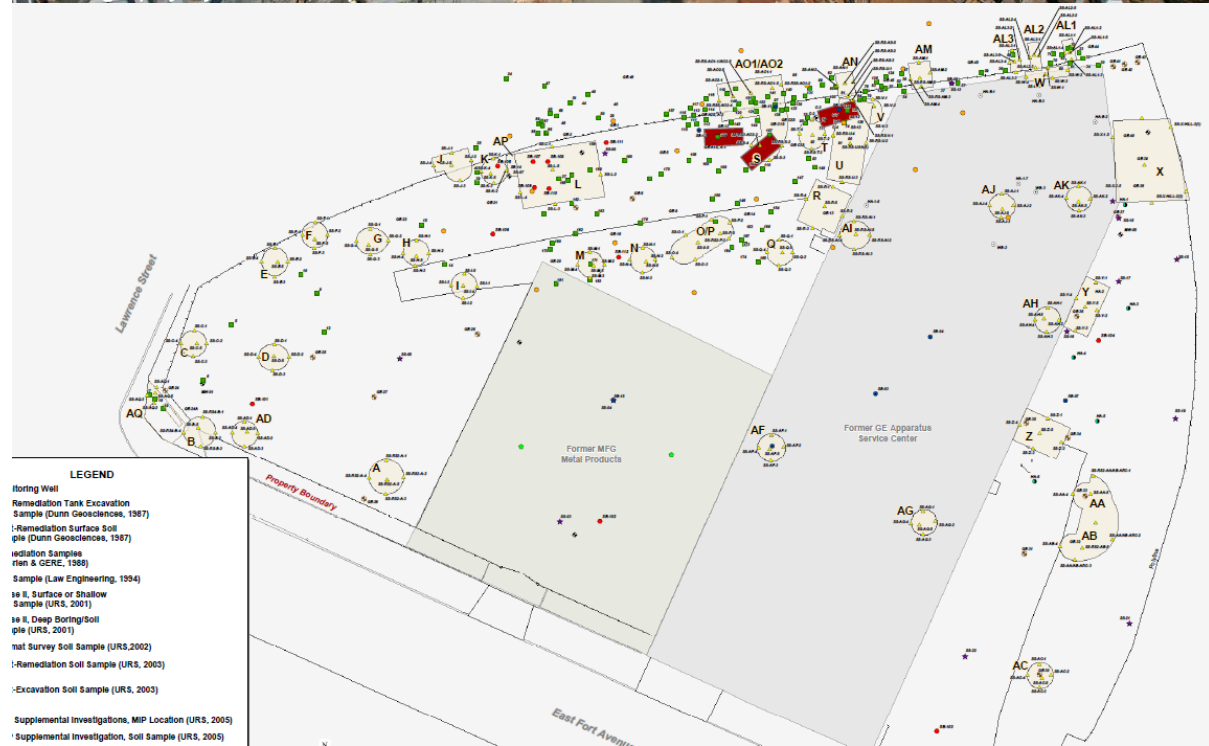
# THE RESOURCE CONSERVATION AND RECOVERY ACT



- ***Proactive*** Management of Environmental Pollution
- Gave EPA the authority to control hazardous waste
  - “Cradle to Grave” - includes the generation, transportation, treatment, storage, and disposal of hazardous waste
  - Sets forth a framework for the management of non-hazardous wastes.
- RCRA focuses only on active and future facilities and does not address abandoned or historical sites.

# CERCLA AND SARA

- ***Retroactive*** aspects of environmental pollution
- CERCLA imposes liability on parties responsible for, in whole or in part, the presence of hazardous substances at a site.
- Liability is triggered if:
  - Hazardous substances are present at a facility
  - There is a release (or a possibility of a release) of these hazardous substances
  - Response costs have been or will be incurred, and
  - The defendant is a liable party.
- EPA finds parties responsible for contamination and negotiates with them for clean up to occur
- ***RCRA, CERCLA and the Superfund Amendments and Reauthorization Act (SARA) are considered companion statutes and the primary drivers behind the growth of the environmental assessment and due diligence industry***



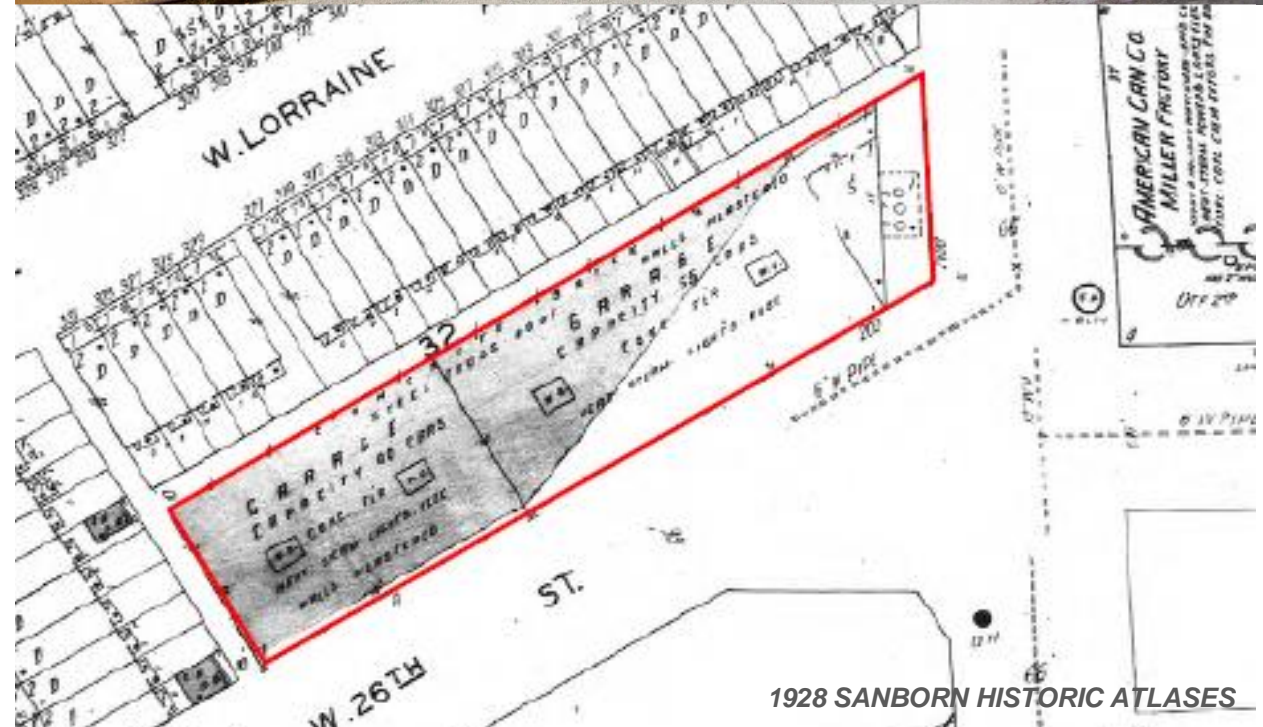
# Creation of the ASTM E1527 Standard PHASE I ENVIRONMENTAL SITE ASSESSMENT

*To define “good commercial and customary standards and practices” for conducting “all appropriate inquiries” to satisfy innocent landowner defense*

*To investigate a property by non-intrusive means and evaluate a release or potential release of hazardous materials or petroleum products to the environment*



Photography by Michael Temchine



# PHASE I ENVIRONMENTAL SITE ASSESSMENTS

- ASTM E1527-93 first created the standardization and minimum expectations for best practices
- Key Elements of the Phase I ESA
  - Site Inspection
  - Historical Records Review
  - Regulatory Records Review
  - Interviews
  - Report Preparation



# Phase I ESA – Site Visit

- *General Site Setting*
- *Methodology*
- *Neighboring Properties*
- *Current Use and Operations*
- *Past Use and Operations*
- *Improvements and Roads*
- *Site Utilities – Water, Sewer, Heating/Cooling*
- *Storage Tanks*
- *Chemical Storage*
- *Drums / Containers*
- *Solid Waste Disposal*
- *Pools of Liquid*
- *Ponds, Pits, and Lagoons*
- *Odors*
- *PCB Equipment*
- *Drains/Sumps*
- *Leaks, Stains, and Corrosion*
- *Stressed Vegetation*
- *Wells*





## Phase I ESA – Historic Records

- *Historic Fire Insurance Maps – e.g. Sanborn maps*
- *City Directory Listings*
- *Ownership Information*
- *Aerial Photographs*
- *Topographic Maps*
- *Local Agency Information*

## Phase I ESA – Regulatory Records

- *Local Environmental Agency Records*
- *State Environmental Agency Records*
- *Federal Environmental Agency Records*

## Phase I ESA – Interviews

- *Current Owners*
- *Current Operators / Tenants*
- *Historic Owners*
- *Historic Operators / Tenants*
- *Adjacent Property Owners*

# 1994 / 1997 / 2000 ASTM E1527 Standard Revisions

- 1994 Revisions - Editorial with primary focus on historical review section
- 1997 Revisions – Editorial; modifications regarding data records searches
- 2000 Revisions / Significant New Definitions
  - Material Threat
  - Historical Recognized Environmental Condition (HREC)
  - Activity and Use Limitations
  - Report Section updates
  - Report must include Environmental Professionals opinion(s) of the impact on the property of conditions identified in the findings

# 2005 / 2013 ASTM E1527 Standard Revisions

- Followed signing of the 2002 Small Business Liability Relief and Brownfields Revitalization Act (Brownfields Amendment)
  - Introduced Landowner Liability Protections or LLPs
- ASTM and EPA worked together to ensure proposed ASTM revisions did not conflict with All Appropriate Inquiry (AAI) rule
- 2005 ASTM E1527-05
  - Codified as constituting All Appropriate inquiry
  - Environmental Professional Requirements
  - Data Gaps
  - Minimum requirements for agency and historical reviews

# 2005 / 2013 ASTM E1527 Standard Revisions

- 2013 ASTM E1527 Revisions
  - Clarified Environmental Professional and User Responsibilities
  - Regulatory Agency File Reviews
  - Vapor Migration
  - New and Updated Definitions including RECs (simplified), HRECs (modified) and CRECs (new)
  - Findings and Conclusions Sections Updates



# The New Phase I Environmental Site Assessment Standard

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SUMMARY OF THE MAIN CHANGES IN THE NEW ASTM E1527-21  
PHASE I ESA STANDARD

JUNE 16, 2022

# E1527 Standard Practice Background

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- Committee established in 1990
- Purpose was to define “**good commercial and customary standards and practices**” for conducting “all appropriate inquiries” to satisfy innocent landowner defense
- First standard published in 1993
- Minor revisions in 1994, 1997, and 2000
- 2005 Revisions to incorporate EPA AAI Rule
- 2013 Revisions:
  - Clarified Recognized Environmental Condition (REC) definition.
  - Revised Historical Recognized Environmental Condition (HREC) definition
  - Established Controlled Recognized Environmental Condition (CREC)
  - Clarified role of vapor migration
  - Clarified standards for review of regulatory records
  - Clarified that user responsibilities are mandatory

# ASTM Standards Update Process

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- ASTM Standards have 8-Year shelf life
- Action Options:
  1. No Action – let standard sunset;
  2. Ballot to re-approve with no change; or
  3. Reconvene Task Group to undergo revision effort.



# “21” Revision Drivers

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- Evolving Notions of “**good commercial and customary standards and practices**”.
- Inconsistencies in process and quality signal areas where the standard can be improved.
- Recent litigation and insurance claims provide insight where the standard can be improved.



# “21” Revision Process

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- E1527 Task Group formally convened in February 2018 - Comprised both users, producers, and other interested parties
- Task Group objectives were:
  - Clarify and improve existing language;
  - Update to reflect current customary practice; and
  - Strengthen the deliverable.
- Over 75 full Task Group meetings (in-person and virtual) and dozens (if not hundreds) more focus group meetings
- Revised standard balloted multiple times

# The New Standard: ASTM E1527-21

This international standard was developed in accordance with internationally recognized principles on standardization established in the Decision on Principles for the Development of International Standards, Guides and Recommendations issued by the World Trade Organization Technical Barriers to Trade (TBT) Committee.



Designation: E1527 – 21

## Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process<sup>1</sup>

This standard is issued under the fixed designation E1527; the number immediately following the designation indicates the year of original adoption or, in the case of revision, the year of last revision. A number in parentheses indicates the year of last reapproval. A superscript epsilon ( $\epsilon$ ) indicates an editorial change since the last revision or reapproval.

### 1. Scope

1.1 *Purpose*—The purpose of this practice is to define good commercial and customary practice in the United States of America for conducting an *environmental site assessment*<sup>2</sup> of a parcel of *commercial real estate* with respect to the range of contaminants within the scope of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) (42 U.S.C. § 9601) and *petroleum products*. As such, this practice is intended to permit a *user* to satisfy one of the requirements to qualify for the *innocent landowner, contiguous property owner, or bona fide prospective purchaser* limitations on CERCLA liability (hereinafter, the “*landowner liability protections*,” or “*LLPs*”): that is, the practice that constitutes

1.1.1 *Recognized Environmental Conditions*—The goal of the processes established by this practice is to identify *recognized environmental conditions*. The term *recognized environmental condition* means (1) the presence of *hazardous substances or petroleum products* in, on, or at the *subject property* due to a *release* to the *environment*; (2) the likely presence of *hazardous substances or petroleum products* in, on, or at the *subject property* due to a *release* or likely *release* to the *environment*; or (3) the presence of *hazardous substances or petroleum products* in, on, or at the *subject property* under conditions that pose a *material threat* of a future *release* to the *environment*. A *de minimis condition* is not a *recognized environmental condition*.

# Key E1527-21 Changes

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- Revised Definitions (stronger, clearer)
- Guidance Language (“Discussion”)
- Historical Research
- Report Content
- Revised and Additional Appendices

# Summary: REC vs. HREC vs. CREC

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## *“Recognized Environmental Condition”*

- Presence or likely presence of a release . . . to the environment

## *“Historical Recognized Environmental Condition”* (revised in 2013, “tweaked” in 2021)

- Past releases affecting the subject property, addressed to **unrestricted** use
- Must consider current regulatory framework (rules change)
- HRECs are not RECs

## *“Controlled Recognized Environmental Condition”* (introduced in 2013)

- Past releases affecting the subject property, addressed to anything **above unrestricted use**
- CRECs are a subset of RECs (meets the “presence” test) and must be included in the conclusions section of the report

*“De Minimis Condition” – see later slide*

**New Appendix 4:** REC logic breakdown and flow diagram, and many helpful examples

# Revised REC Definition (§3.2.73)

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*“...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.”*

**Now changed to:**

*“...(1) the presence of hazardous substances or petroleum products in, on, or at the subject property due to a release to the environment; (2) the likely presence of hazardous substances or petroleum products in, on, or at the subject property due to a release or likely release to the environment; or (3) the presence of hazardous substances or petroleum products in, on, or at the subject property under conditions that pose a material threat of a future release to the environment.”*

# Revised Definition “Release” (§3.2.75)

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“a *release* of any *hazardous substance* or *petroleum product* shall have the same meaning as the definition of “release” in CERCLA 42 U.S.C. § 9601(22). **There are a number of statutory exclusions from the definition of *release* that may impact the *environmental professional's* opinions and conclusions, such as the normal application of fertilizer.** For additional background information, see Legal Appendix (Appendix X1 to X1.1.1) *Releases* and Threatened. ~~*Release*~~ *Releases.*”

# New “Likely” “Definition” (§3.2.73.1)

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“For the purposes of this “definition”, ‘likely’ is that which is neither certain nor proved, but can be expected or believed by a reasonable observer based on the logic and/or experience of the environmental professional, and/or available evidence, as stated in the report to support the opinions given therein.”

Note: Legal definition of “likely” is having a high probability of occurring or being true (typically 67% to 90% certainty)

# Revised Definition “Material Threat” (§3.2.52)

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“a ~~physically observable or obvious~~ threat which is ~~reasonably~~ likely to lead to a *release* and that, in the opinion of the *environmental professional*, ~~is threatening and might~~ would likely result in impact to public health or the environment. An example might include an aboveground storage tank system that contains a *hazardous substance* and which shows evidence of damage. The damage would represent a *material threat* if it is deemed serious enough that it may cause or contribute to tank integrity failure with a *release* of contents to the *environment*.”



# Revised Definition of “Obvious” (§3.2.55)

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*“...that which is plain or evident; a condition or fact that could not be ignored or overlooked by a reasonable ~~observer while visually or physically observing the~~ observer. ~~property.~~”*

# Revised CREC Definition (§3.2.17)

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*“...a recognized environmental condition resulting from a past release of hazardous substances or petroleum products that has been addressed to the satisfaction of the applicable regulatory authority (for example, as evidenced by the issuance of a no further action letter or equivalent, or meeting risk-based criteria established by regulatory authority), with hazardous substances or petroleum products allowed to remain in place subject to the implementation of required controls (for example, property use restrictions, activity and use limitations, institutional controls, or engineering controls)...”*

Now changed to:

*“...recognized environmental condition affecting the subject property that has been addressed to the satisfaction of the applicable regulatory authority or authorities with hazardous substances or petroleum products allowed to remain in place subject to implementation of required controls (for example, activity and use limitations or other property use limitations)...”*

## New Definition “Property Use Limitation” (§3.2.67)

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*“...limitation or restriction on current or future use of a property in connection with a response to a release, in accordance with the applicable regulatory authority or authorities that allows hazardous substances or petroleum products to remain in place at concentrations exceeding unrestricted use criteria.”*

# De Minimis Condition

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*“A condition that is **related to a release** that generally:*

- *does not present a threat to human health or the environment*

*AND*

- *would not be the subject of an enforcement action if brought to the attention of appropriate governmental agency*

*A De Minimis Condition is not a REC nor a CREC.”*

# New Definition: “Land Title Records” (§3.2.45)

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“...records that affect the title of real estate, which may include, among other things, deeds, mortgages, leases, land contracts, court orders, easements, liens, and *AULs* recorded within the recording systems or land registration systems created by state statute in every state and ordinarily administered in the local jurisdiction (usually the county) in which the *subject property* is located, and available by performing a title search. Such records are publicly accessible, though the process of performing a title search to find *land title records* often requires specialized expertise or knowledge of the local system (see Section 5.4 – *AULs and Environmental Liens in Land Title Records*). Information about the title to the *subject property* that is filed or stored in any place other than where *land title records* are, by law or custom, recorded for the local jurisdiction in which the *subject property* is located, are not considered *land title records*.”

# Revised definition “visually and/or physically observed” (§3.2.96)

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~~“during a site visit pursuant to this practice, this term means observations made by vision while walking through a **visual, auditory**, property and the structures located on it and observations made by the sense of smell, particularly observations of noxious or foul odors. The term “walking through” is not meant to imply that disabled persons who cannot physically walk may not conduct a **or olfactory** site visit; they may do so by the means at their disposal for moving through **means while performing** the property site and reconnaissance. the structures located on it.”~~

# Emerging Contaminants

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Per- and polyfluoroalkyl substance (PFAS)

- Not currently regulated as hazardous substances by US EPA under CERCLA (Superfund), therefore, ASTM Standards do not govern them.
- Many states recognize PFAS as emerging contaminants.
- How then, since PFAS is currently a state issue, are PFAS compounds addressed under the new ASTM Standard?

# Emerging Contaminants(cont'd)

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Section 1.1.4 of ASTM E1527-21 states that *“Substances that are outside the scope of this practice (for example, emerging contaminants that are not hazardous substances under CERCLA), may be regulated under state law and may be federally regulated in the future. Although the presence or any release/threatened release of these substances are ‘non-scope considerations’ under this practice, the user may nonetheless decide to include such substances in the defined scope of work for which the environmental professional conducting the Phase I Environmental Site Assessment is engaged”*. See also Section 13.1.5.15 and Appendix X6.10.

What does it all mean?

- As is the case with asbestos and other non-scope issues that are sometimes requested to be included in a Phase I, yet are outside of the scope of ASTM, Emerging Contaminants, i.e.: PFAS, are to be evaluated and discussed in the Non-Scope Considerations section of the Phase I report.



# Records Review (2013)

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“New” in the 2013 standard revision:

3.2.56 migrate/migration—for the purposes of this practice, “migrate” and “migration” refers to the movement of hazardous substances or petroleum products in any form, including, for example, solid and liquid at the surface or subsurface, and vapor in the subsurface.

Records review is required if subject property or adjoining property is identified on one or more standard regulatory databases. Requirement can be bypassed if:

- In EP’s opinion the review is not warranted

- If records can be obtained from a different source

Potentially adds time and expense to the Phase I ESA

# Records Review (§8.3) (2021)

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“New” in the 2021 standard revision:

- Not all redline is new text – much has been moved and reordered
- Clarifies the objective of this section – it’s about RECs, not only basic historical chronology.
- Clearer distinct scopes of work for
  - i) Subject property;
  - ii) adjoining properties; and
  - iii) surrounding area.

# Records Review (§8.3) (2021) (cont'd)

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- “Type of Use” clarified:
  - “Retail” now added to “industrial and manufacturing”
  - Specific information about uses is more helpful than general information
- The nature of properties change
- Note: “Source” vs. “Resource”
- Historical review including aerials, historical fire insurance maps, city directories, topographic maps, property tax files, recorded land title records, local municipal records, interviews, etc.

# Records Review (§8.3) (2021) (cont'd)

- Review of the “Big 4” for subject property and adjoining properties:
  - Certain standard historical resources must be reviewed if, based on the judgment of the environmental professional, they are reasonably ascertainable, likely to be useful, and applicable to the subject property, including:
    - **i) aerial photographs, ii) fire insurance maps, iii) local street directories, and iv) historical topographic maps.**
  - If the above four historical resources were researched for the subject property (and provide coverage of one or more **adjoining properties**, and are likely to be useful in satisfying the historical research section objective), **they should also be reviewed for the adjoining properties.**
- Deleted “...only...”
- Note: disclaimers/limitations/”off-ramps”

# Records Review (§8.3) (2021)(cont'd)

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- Reduce “low quality” Phase I ESAs – historical section is often the section where time/resources are cut.
- Defines “good commercial and customary practice”.

Will it add time and cost? Depends...

# Shelf life

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- ASTM E1527-21 clarifies that the 180-day shelf life “begins to run” from the first date of the following inquiries (incorrectly, sometimes the *date of issuance* of the report was used):
  - Interviews with knowledgeable persons;
  - Review of government records;
  - Review of environmental liens;
  - Visual inspection of the property; or
  - Declaration by the EP.
- In addition, it is possible to rely upon a Phase I ESA for a period of 6 to 12 months. To qualify for that period of reliance, the above five inquiries must be started within 180 days of the transaction date.

# Photos and Figures

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- Although commonly included in Phase I ESAs performed to date by most consultants, ASTM E1527-21 is the first version of the standard which requires the inclusion of figures and photo logs.

# Significant Data Gaps

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- ASTM E1527-13 defined a data gap as “*a lack or inability to obtain information required by this practice despite good faith efforts by the environmental professional to gather such information*” and required that “significant” data gaps be identified in the Phase I ESA Report.
- However, though implied, the term “significant data gap” wasn’t defined.
- ASTM E1527-21 standard now includes a definition of what constitutes a “significant data gap”:
  - *“a data gap that affects the ability of the environmental professional to identify a recognized environmental condition.”* An example of a significant data gap could include a building that is located at a subject property which is inaccessible during the site reconnaissance, and based upon the EP’s experience, such a building is one that involves activities that might typically result in a REC. Conversely, not having city directories to review, for example, would not be characterized as a significant data gap if other sources of data were used by the EP to draw a reasonable conclusion.
- In addition, the new E1527-21 Standard requires a discussion of how significant data gaps affected the EP’s ability to form conclusions regarding RECs.



# Report Findings, Opinions, & Conclusions

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- Findings, Opinions, Conclusions (and Recommendations, if applicable) have often varied between consultants and between reports prepared by the same consultant.
- New standard aims to encourage increased consistency and clearer understanding of requirements.
- Recommendations are not necessarily the same as Opinions.
- Significant Data Gaps are to be listed by the Environmental Professional (EP) in the Conclusions section.

# EPA Rulemaking Status

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- EPA published a direct final rule and proposed rule providing that E1527-21 could be used to comply with All Appropriate Inquiries, but also retained E1527-13.
- EPA received negative comments, largely because of its plan to retain reference to the now historical E1527-13 standard.
- EPA has withdrawn the Final Direct Rule and will proceed with rulemaking process for proposed rule.
- Unclear if EPA will remove E1527-13 in this rulemaking.

# When & How To Use E1527-21

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- Until EPA officially recognizes “21”, ASTM recommends using one of the following implementation strategies:
  - Continue using and citing the ASTM E1527-13 Standard until the EPA approves the new ASTM E1527-21 Standard for compliance with the AAI regulations;
  - Use and cite the new ASTM E1527-21 Standard now; or
  - Cite the ASTM E1527-13 Standard and indicate that the Phase I ESA also incorporates procedures as prescribed in the new ASTM E1527-21 Standard.

# Contact Us

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