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Standard Practice for Environmental Site Assessments: Phase II Environmental Site Assessment Process[1]

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1. Scope

1.1 This practice[2] covers a process for conducting a Phase II environmental site assessment (*ESA*) of a parcel of property with respect to the *presence* or the likely *presence* of *substances* including but not limited to those within the scope of the Comprehensive Environmental Response, Compensation and Liability Act (*CERCLA*) (e.g., *hazardous substances*), pollutants, contaminants, petroleum and *petroleum products*, and controlled *substances* and constituents thereof. It specifies procedures based on *the scientific method* to characterize *property* conditions in an objective, representative, reproducible, and defensible manner. To promote clarity in defining *Phase II ESA* objectives and transparency in communicating and interpreting *Phase II ESA* results, this practice specifies adherence to requirements for documenting the scope of assessment and constraints on the conduct of the assessment process.

1.1.1 A *user's* interest in the *presence* or likely *presence* of *substances* in *environmental media* at a property may arise in a wide variety of legal, regulatory, and commercial contexts, and may involve diverse objectives including those listed in 1.2. This practice contemplates that the *user* and the *Phase II Assessor* will consult to define the scope and objectives of investigation in light of relevant factors, including without limitation the *substances* released or possibly released at the *property*, the nature of the concerns presented by their *presence* or likely *presence*, the *behavior*, *fate* and *transport characteristics* of *substances* released or possibly released, the portion of the property to be investigated, the information already available, the degree of confidence needed or desired in the results, the degree of investigatory sampling and *chemical testing* needed to achieve such confidence, and any applicable time and resource constraints. This practice requires that Phase II activities be conducted so that the resulting scope of work is performed, and the stated objectives are achieved, in a scientifically sound manner.

1.1.2 A *Phase II ESA* in accordance with this practice may be conducted after site assessment activities in accordance with Practice E1527 for *Phase I Environmental Site Assessments: Phase I Environmental Site Assessment Process*, Practice E2247 for *Environmental Site Assessments: Phase I Environmental Site Assessment for Forestland or Rural Property*, *EPA*'s *All Appropriate Inquiries* (*AAI*) Rule, 40 C.F.R. Part 312, or Practice E1528 for *Limited Environmental Due Diligence: Transaction Screen Process*. In defining the scope and purposes of a *Phase II ESA*, however, previous decisions to classify *property* conditions or areas as *RECs*, or to refrain from doing so, are not determinative as to whether investigation of the same conditions or areas is appropriate to meet the objectives of the *Phase II ESA*.

1.2 *Objectives*—This practice is intended for use where a *user* desires to obtain sound, scientifically valid data concerning actual property conditions, whether or not such data relate to property conditions previously identified as *RECs* or *data gaps* in *Phase I ESAs*. Without attempting to define all such situations, this practice contemplates that *users* may seek such data to inform their evaluations, conclusions, and choices of action in connection with objectives that may include, without limitation, one or more of the following:

1.2.1 *Objective 1*—Assess whether there has been a *release* of *hazardous substances* within the meaning of *CERCLA*, for purposes including *landowner liability protections* (i.e., *innocent landowner*, *bona fide prospective purchaser*, and *contiguous property owner*).

1.2.2 *Objective 2*—Provide information relevant to identifying, defining or implementing landowner "*continuing obligations*," or the criteria established under *CERCLA* (e.g., exercising appropriate care by taking *reasonable steps* to

[1] This practice is under the jurisdiction of ASTM Committee E50 on Environmental Assessment, Risk Management and Corrective Action and is the direct responsibility of Subcommittee E50.02 on Real Estate Assessment and Management.

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[2] As used herein, a "standard" is a document that has been developed and established within the consensus principles of the Society and that meets the approval requirements of ASTM procedures and regulations. A "practice" is a definitive set of instructions for performing one or more specific operations that does not produce a test result. A "guide," in contrast, is a compendium of information or a series of options that does not recommend a specific course of action. A guide increases the awareness of information and approaches in a given subject area. See Form and Style for ASTM Standards, http://www.astm.org/COMMIT/Blue_Book.pdf.

prevent or limit exposures to previously released *hazardous substances*) for maintaining the *CERCLA landowner liability protections*.

1.2.3 *Objective 3*—Develop threshold knowledge of the *presence* of *substances* on properties within the scope of the *CERCLA* definition of a "brownfield site" and as required for qualifying for brownfields *remediation* grants from the *EPA* Brownfields Program.

1.2.4 *Objective 4*—Provide information relevant to identifying, defining and evaluating property conditions associated with *target analytes* that may pose risk to human health or the environment, or risk of bodily injury to persons on the property and thereby give rise to potential liability in tort.

1.2.5 *Objective 5*—Provide information relevant to evaluating and allocating *business environmental risk* in transactional and contractual contexts, including transferring, financing and insuring properties, and due diligence relating thereto.

1.2.6 *Objective 6*—Provide information to support disclosure of liabilities and contingent liabilities in financial statements and securities reporting.

1.2.7 Additional information concerning these six objectives may be found in the Legal Appendix, Appendix X1.

1.3 *Scope of Assessment in Relation to Objectives*—The scope of a *Phase II ESA* is related to the objectives of the investigation. Both scope and objectives may require ongoing evaluation and refinement as the assessment progresses.

1.3.1 In developing the scope of work and in evaluating data and information concerning the property, the *Phase II Assessor* must determine whether the available information is sufficient to meet the objectives of the investigation. Even after conducting Phase II activities to generate additional data, the *Phase II Assessor* must independently evaluate the sufficiency of the data in relation to the objectives. As the investigation progresses, the objectives may be refined or redefined in consultation between the *user* and the *Phase II Assessor*.

1.3.2 A single round of sampling and *chemical testing* may not always provide data sufficient to meet the chosen objectives. If not, this practice contemplates additional sampling in an iterative sequence that concludes when the available data are sufficient. This practice also acknowledges, however, that the *user* may instead elect either to redefine the objectives so that they can be met with the data available, or to terminate the investigative process without meeting the stated objectives. The Phase II Assessment report must disclose any respect in which available data are insufficient to meet objectives.

1.3.3 This practice does not require full *site characterization* in every instance, but may be used to carry out an investigation sufficient for that purpose if desired to meet the *user's* objectives.

1.4 *Needs of the User*—The *user* and *Phase II Assessor* must have a mutual understanding of the context in which the *Phase II ESA* is to be performed and the objectives to be met by the investigation, i.e. the specific questions to be answered or problems to be resolved by the *Phase II ESA*. The scope of Phase II activities must be defined in relation to those objectives.

1.4.1 The degree of confidence desired by the *user* influences the scope of the investigation and the evaluation of data. More extensive testing and more iterations of sampling and analysis may be needed if the objectives require detailed conclusions with high confidence. Less testing and fewer iterations of sampling and analysis may be needed if the objectives of the assessment require only general conclusions.

1.5 *Limitations*—This practice is not intended to supersede applicable requirements imposed by regulatory authorities. This practice does not attempt to define a legal standard of care either for the performance of professional services with respect to matters within its scope, or for the performance of any individual *Phase II ESA*.

1.6 *Organization of This Practice*—This practice has nine sections and four appendices. Section 1 covers the Scope of the practice. Section 2, Referenced Documents, lists ASTM and other organizations' related standards and guidance that may be useful in conducting *Phase II ESAs* in accordance with this practice. Section 3, Terminology, contains definitions of terms and acronyms used in this practice. Section 4 addresses the Significance and Use of this practice, including the legal context into which *Phase II ESAs* may fall. Section 5 discusses development and documentation of the scope of the *Phase II ESA*, including the Statement of Objectives for the assessment. Section 6 provides a *Phase II ESA* Overview, with purpose and goal descriptions. Section 7 comprises the main body of Performing the *Phase II ESA*, and includes initiating scientific inquiry by formulating the question to be answered (7.1), collecting and evaluating information (7.2), identifying areas for investigation (7.3), developing the *conceptual model* (7.4), developing a plan and rationale for sampling (7.5), conducting the sampling (7.6), and validating the *conceptual model* (7.7). Interpretation of results is covered in Section 8. *Phase II Environmental Site Assessment* report preparation is addressed in Section 9. Appendix X1 supports Section 4, and contains legal considerations pertaining to *Phase II Environmental Site Assessment*. Appendix X2 contains contracting considerations between *Phase II assessor* and *user*. Appendix X3 supports Section 9, and describes two examples and a sample table of contents illustrating possible approaches to reporting the results of a *Phase II Environmental Site Assessment*. Appendix X4 supplements Section 2 with a list of standards and references that may be relevant in conducting a *Phase II Environmental Site Assessment*.

1.7 *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.*

2. Referenced Documents

2.1 The standards listed below are referenced in this practice.