INTERNATIONAL

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Standard Guide for Estimating Monetary Costs and Liabilities for Environmental Matters[1]

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1. Scope

1.1 *Purpose*—The purpose of this document is to provide a standard guide for good commercial and customary practice in estimating *costs and liabilities* for environmental matters.[2] Many possible uses for estimates of *costs and liabilities* for environmental matters exist, including but not limited to business decision making and portfolio optimization, due diligence and communications involving acquisitions and divestitures, regulatory requirements, third-party lawsuits, insurance premium calculation and claim settlement, change of property use, revitalization, compliance planning, construction and project control, analysis of remedial alternatives, budgeting, strategic planning, audit defense, financing, and investment analysis by shareholders. The use of estimated *costs and liabilities* developed in accordance with this standard may be subject to other standards applicable to the matter involved. For example, it is not intended to supersede accounting and actuarial standards. This standard does not address the establishment of reserves or disclosure requirements.

1.2 *Objectives*—The objective of this standard is to provide guidance on approaches for estimating *costs and liabilities* for environmental matters.

1.3 *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[3,4]

2.1 *ASTM Standards:*

E1527 Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process
E1739 Guide for Risk-Based Corrective Action Applied at Petroleum Release Sites
E2081 Guide for Risk-Based Corrective Action
E2091 Guide for Use of Activity and Use Limitations, Including Institutional and Engineering Controls
E2107 Practice for Environmental Regulatory Compliance Audits
E2150 Classification for Life-Cycle Environmental Work Elements—Environmental Cost Element Structure
E2173 Guide for Disclosure of Environmental Liabilities
E2205 Guide for Risk-Based Corrective Action for Protection of Ecological Resources
E2247 Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process for Forestland or Rural Property
E2637 Guide for Utilizing the Environmental Cost Element Structure Presented by Classification
E2718 Guide for Financial Disclosures Attributed to Climate Change
E3123 Guide for Recognition and Derecognition of Environmental Liabilities
E3228 Guide for Environmental Knowledge Management

3. Terminology

3.1 *Definitions:*

3.1.1 *accretion*—an increase to the present value of a *liability* solely due to the passage of time, normally a year; also known as "unwinding the discount."

3.1.2 *activity and use limitations (AULs)*—legal or physical restrictions or limitations on the use of, or access to, a site or facility to eliminate or minimize potential exposures to chemicals of concern, or to prevent activities that could interfere with the effectiveness of a response action, to ensure maintenance of a condition of "acceptable risk" or "no significant risk" to human health and the environment. These legal or physical

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[2] For the purposes of this standard, costs and values are defined as monetary estimates.

[3] Appendix X1 includes citations for additional relevant documents and requirements from other organizations including FASB, GASB, PCAOB, FASAB, IASB, and SEC.

[4] For referenced ASTM standards, visit the ASTM website, www.astm.org, or contact ASTM Customer Service at service@astm.org. For *Annual Book of ASTM Standards* volume information, refer to the standard's Document Summary page on the ASTM website.

restrictions are intended to prevent adverse impacts to individuals or populations that may be exposed to chemicals of concern.

3.1.3 *allocation or allocated share*—the portion of *cost or liability* for which a party is responsible for payment or reimbursement.

3.1.4 *asset retirement obligation (ARO)—legal* or *constructive obligations* associated with the retirement of a tangible long-lived asset that result from the acquisition, construction, development, or normal operation of a tangible long-lived asset. Activities include (but are not limited to) demolition, decommissioning, decontamination, reclamation, restoration and abandonment.[5]

3.1.5 *constructive obligation*—the concept that past practice creates a valid expectation on the part of a third party. An example of this is a company policy to excavate underground storage tanks once removed from service. Also known as promissory estoppel.

3.1.6 *costs and liabilities*—economic expenses, accrued liabilities, *asset retirement obligations*, and loss contingencies.

3.1.7 *dutyholder*—party responsible for the *costs and liabilities*.

3.1.8 *environmental compliance*—operations, permits, equipment, facilities, products, records, documentation, reports, training, procedures, inspections, certifications, monitoring, controls, or other conditions or activities that must conform to environmental statutes including, but not limited to, CAA, CWA, OPA, RCRA, CERCLA, TSCA, FIFRA, SDWA, and state and local laws, as well as any international jurisdictional requirements.

3.1.9 *estimator*—an individual or entity that prepares and analyzes *costs and liabilities*.

3.1.10 *event*—a condition or incident which occurred, or may occur, with respect to an environmental condition and/or *environmental compliance* issue, that affects or leads to potential *costs and liabilities*. Examples of events include: a new requirement for air emission controls (for example, NO_x), a hazardous waste site that requires remediation, a claim for personal injury related to an alleged environmental incident, or the need to comply with NPDES standards as a result of a process change.

3.1.11 *fair value measurement*—an estimate of the price that could be received for an asset or paid to settle a *liability* in a current transaction between marketplace participants that are unrelated, knowledgeable about factors relevant to the *liability* and the transaction, able, and willing to transact in the reference market for the *liability*.[6]

3.1.12 *legal obligation*—duty to carry out what the law or a contract states.

3.1.13 *liability*—an actual or potential obligation that may or may not be accrued. This includes *legal obligations* as well as *constructive obligations* (promissory estoppel), and may also be in the form of commitments, guarantees or contingencies.

3.1.14 *obligating event*—a past outcome which confirmed a financially recognizable obligation.[7]

3.1.15 *orphan share—liability* assigned to a *PRP* that cannot be located or that is insolvent, or the *liability* associated with pollutants which cannot be attributed to a *PRP*.

3.1.16 *potentially responsible party (PRP)*—any individual, legal entity, or government—including owners, operators, transporters, or generators—potentially responsible for, or contributing to, the environmental impacts at an *event*.

3.1.17 *recognition benchmark*—stages in the assessment and remediation process which create the expectation of a more comprehensive or robust estimate.[8]

3.1.18 *studies*—investigations such as regulatory interpretations and applicability studies, compliance analysis, environmental regulatory compliance audits, operating scenarios study, engineering design and analysis, cost estimation, process hazard analysis, modeling, communication plans, preliminary investigation, sampling and analysis, site assessment, site characterization, Phase I and II studies, remedial action plan, remedial investigation, contamination assessment report, feasibility study, risk assessment, treatability study, ecological impact assessment, environmental impact report, work plans, ASTM Risk-Based Corrective Action (RBCA) analysis, RCRA facility investigation, RCRA facility assessment, report of waste discharge, corrective measures study, corrective action report, health and safety plan, quality assurance plan, and other studies.

3.2 *Acronyms:*

3.2.1 *AICPA*—American Institute of Certified Public Accountants.

3.2.2 *ASC*—Accounting Standards Codification

3.2.3 *AULs*—Activity and Use Limitations.

3.2.4 *CAA*—Clean Air Act.

3.2.5 *CERCLA*—Comprehensive Environmental Response, Compensation and Liability Act of 1980 (as amended, 42 USC Section 9601 et seq.).

3.2.6 *CWA*—Clean Water Act.

3.2.7 *EPA*—United States Environmental Protection Agency.

3.2.8 *EV*—expected value; an estimate of the weighted mean value of an unknown quantity that represents a probability-weighted average over the range of all possible values.

3.2.9 *FAF*—Financial Accounting Foundation.

3.2.10 *FASAB*—Federal Accounting Standards Advisory Board

3.2.11 *FASB*—Financial Accounting Standards Board, a part of FAF.

[5] See FASB ASC 410-20 and GASB 18 references in Appendix X1.

[6] See FASB ASC 820, GASB 72, and IFRS 13 references in Appendix X1.

[7] See GASB 49:11 references in Appendix X1.

[8] See GASB 49:12-13 and ASC 410-30-25-15 references in Appendix X1.