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.

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Standard Guide for Recognition and Derecognition of Environmental Liabilities[1]

This standard is issued under the fixed designation E3123; 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 (ε) indicates an editorial change since the last revision or reapproval.

1. Scope

1.1 *Purpose*—The purpose of this guide is to provide a series of options or instructions consistent with good commercial and customary practice for recognition and derecognition of environmental liabilities. This guide is consistent with Generally Accepted Accounting Principles (GAAP). Recognition of environmental liabilities is essential to determining the current book value of an entity. An entity may have future spending to extinguish risk and liabilities triggered in the past. Serious consequences, ranging from failed audits and poor capital stewardship to financial fraud and bankruptcy, exist for entities omitting material information from financial statements.

1.2 *Objective*—This guide enables users to reliably determine if a given type of environmental liability exists and subsequently has been settled, consistent with the accounting definitions in place.

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

2.1 *ASTM Standards:*[2]

E2137 Guide for Estimating Monetary Costs and Liabilities for Environmental Matters

E2173 Guide for Disclosure of Environmental Liabilities

E3033 Guide for Beneficial Use of Landfills and Chemically Impacted Sites

Generally Accepted Accounting Principles:

2.2 *FASB – Financial Accounting Standards Board*[3]

Statement of Accounting Concepts No. 6 Elements of Financial Statements

Statement of Accounting Concepts No. 8 Conceptual Framework for Financial Reporting

ASC Topic 410-20 – asset retirement obligations

ASC Topic 410-30 – other environmental obligations

ASC Topic 420 – exit/disposal costs

ASC Topic 440 – commitments

ASC Topic 450 – contingencies

ASC Topic 460 – guarantees

ASC Topic 805 – business combinations

ASC Topic 820 – fair value measurement

2.3 *GASB – Government Accounting Standards Board:*[4]

Section A10: Certain Asset Retirement Obligations (originally Statement 83)

Section F30 : Financial Guarantees

Section P40 : Pollution Remediation Obligations (originally Statement 49)

Section L10 : Landfill Closure and Postclosure Care Costs (originally Statement 18)

Section 1500 : Reporting Liabilities

Section 2250 : Additional Financial Reporting Considerations

Section 3100 : Fair Value Measurement (originally GASB 72)

2.4 *IASB–International Accounting Standards Board:*[5]

IAS 37 – provisions, contingent liabilities and contingent assets

IFRS 3 –business combinations

IFRS 13 –fair value measurement

3. Terminology

3.1 *Definitions:* (italicization identifies defined terms.)

3.1.1 *acceptable use*—an environmental professional's description of a proposed beneficial use, characterized by the nature and duration of activities involved, for a property that is evaluated and determined to be protective of human health,

[1] This test method is under the jurisdiction of ASTM Committee E50 on Environmental Assessment, Risk Management and Corrective Action and is the direct responsibility of Subcommittee E50.05 on Environmental Risk Management.

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[2] 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.

[3] Available from Financial Accounting Standards Board 401 Merritt 7 P.O. Box 5116 Norwalk, Connecticut 06856-5116, http://www.fasb.org

[4] Available from Governmental Accounting Standards Board, 401 Merritt 7 P.O. Box 5116 Norwalk, Connecticut 06856-5116 http://www.gasb.org/

[5] Available from International Accounting Standards Board, 30 Cannon Street London, EC4M 6XH United Kingdom http://www.ifrs.org

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public safety, and welfare with, if necessary, specified engineering and institutional controls and established signage.

3.1.2 *accounting framework*—the accounting standards and principles relevant to an entity's function. As many issuers of accounting standards and principles exist worldwide, it is common for entities to observe the standards of several issuers concurrently.

3.1.3 *accrual*—a value placed on a recognized environmental liability. Accruals are adjusting entries to accounting records so that the financial statements report these amounts. This forms the basis of "accrual accounting" methods.

3.1.4 *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."

3.1.5 *activity and use limitations, or AUL*—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 restrictions are intended to prevent adverse impacts to individuals or populations or environmental receptors that may be exposed to chemicals of concern.

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

3.1.7 *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.

3.1.8 *claim*—a demand for payment or performance of services.

3.1.9 *commitment*—contracts creating environmental risks, typically outside of regulatory oversight. For example, a lease requirement to "return a property to original condition at lease-end" may create duties beyond those obligations caused by environmental regulations. Another example is a cost-sharing agreement for environmental liabilities between a buyer and a seller, or between an insurer and their insured.

3.1.10 *component*—a portion of a liability.

3.1.11 *contingency*—an existing condition, situation or set of circumstances involving uncertainty as to possible gain or loss to an entity that will ultimately be resolved when one or more future events occur or fail to occur (ASC 450-20-20). Examples include *(a)* injury or damage caused by products sold; *(b)* risk of loss or damage of property by fire, explosion or other hazards; *(c)* actual or possible claims and assessments; *(d)* threat of expropriation of assets; and *(e)* pending or threatened litigation. (ASC 450-30-05-10)

3.1.12 *constructive obligation*—the concept that past practice or statement 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.

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

3.1.14 *derecognize*—remove previously recognized assets or liabilities from the statement of financial position.

3.1.15 *dutyholder*—entity responsible for the costs and liabilities.

3.1.16 *environmental liabilities*—a set of liabilities consisting of five types: *asset retirement obligations, other environmental obligations, commitments, contingencies and guarantees*. Outside of a transaction, the ordinary value of these liabilities are their provisions (consisting of long-term and short-term portions). Within an actual or proposed transaction, environmental liabilities have "fair value measurement" (also "due diligence") values.

3.1.17 *equitable*—a type of obligation based on moral or social expectations, which is typically not enforceable. However, it is uncommon for an equitable obligation to lack a concurrent contractual, regulatory and/or constructive obligation(s).

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

3.1.19 *event*—a condition or incident which occurred, or may occur, with respect to an environmental condition and/or environmental compliance issue, that causes exposure to risks, and may result in liabilities.

3.1.20 *extinguishment*—settlement of environmental liabilities, normally through the performance of services or cash payments. Extinguishment through bankruptcy or corporate dissolution is uncommon. Extinguishment (or settlement) is the normal condition for derecognition.

3.1.21 *fair value*—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. Sometimes interchangeably called "due diligence value". Also, this approach implies a comprehensive and auditable expected value calculation.

3.1.22 *fines and penalties*—a subtype of environmental liabilities defined primarily in ASC Topic 450 Contingencies; tax deductibility of fines and penalties is typically a relevant factor in the value and materiality of an environmental liability.

3.1.23 *guarantee*—a type of environmental liabilities defined primarily in ASC Topic 460 Guarantees, the distinct value of a promise to perform or pay, in the event that another party does not. Under "joint and several liability", a guarantee typically exists among the PRPs at a Superfund site. The cost of a CERCLA financial assurance instrument, such as a letter of credit or performance bond, is a guarantee above and beyond the cost of the guaranteed work or payment itself.

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3.1.24 *incurred*—In GARS A10 – Certain Asset Retirement Obligations (formerly Statement 83), part of a two-factor test that an asset retirement obligation exists; *incurred* is used in place of *probable*.

3.1.25 *interperiod equity*—from GASB Concepts Statement 4 – "the state in which current period inflows of resources equal current period cost of services." When this is achieved, it goes on to say, "the burden of the cost of [current period] services is borne by present-year taxpayers and revenue providers" rather than "shifted to future-year taxpayers or revenue providers through an increase in the level of borrowing" or paid from net resources accumulated in past periods.

3.1.26 *legal obligation*—duty to carry out what the law (regulation) or a contract states.

3.1.27 *liability*—In FASB Concepts Statement No. 6, Elements of Financial Statements, "probable future sacrifices of economic benefits arising from present obligations of a particular entity to transfer assets or provide services to other entities in the future as a result of past transactions or events." Alternatively, a portion of an enterprise's balance sheet containing long-term debt, short-term accounts payable, pensions and for the purpose of this guide, environmental liabilities. This includes legal obligations as well as constructive *obligations* (promissory estoppel), and may also be in the form of *commitments, contingencies or guarantees*.

3.1.28 *long-tail liability*—a liability with a long settlement period. Environmental liabilities are a type of long-tail liability.

3.1.29 *materiality*—the significance of an item to users of a financial statement that considers all relevant and surrounding circumstances. For this guide, materiality is essential in the recognition process, but is not a factor in the derecognition process. A material item is one that its omission or misstatement is of such a magnitude in the surrounding circumstances that either the judgment of a reasonable person relying on the financial statement would have been changed or influenced by its inclusion or correction, or there is a substantial likelihood that the item, after assessing the inferences, and their significance, drawn from the given set of facts associated with the financial statement, would be viewed as significantly altering the information made available to statement's user. Relevant sources of information and references are included in Appendix X2.

3.1.29.1 *Discussion*—This definition is not intended to replace the definition of materiality periodically issued by the SEC (See Appendix X2).

3.1.30 *noncontingent*—not dependent on a future outcome.

3.1.31 *obligating event*—a past outcome which confirmed an obligation.

3.1.32 *obligation*—a legally enforceable duty of several types: *(a)* contractual, *(b)* regulatory, *(c)* constructive (promissory estoppel), or rarely *(d)* equitable.

3.1.33 *other environmental obligation*—in contrast to an asset retirement obligation to remove an asset from service, other environmental obligations include "environmental remediation liabilities", "pollution remediation obligation", "Superfund cleanup costs, "spill response costs" and others (see ASC 410-30).

3.1.34 *present obligation*—an existing duty to achieve an outcome; whether enforced or not, conditions already exist for enforcement.

3.1.35 *probable (ASC 410-20)*—one part of a two-factor test for liability recognition in FASB ASC 410-20, meaning that which can be reasonably expected or believed on the basis of available evidence or logic but is neither certain nor proved.

3.1.36 *probable*—(Merriam Webster definitions):

- Supported by evidence strong enough to establish presumption but not proof
- Establishing a probability
- Likely to be or become true or real

3.1.37 *probable (ASC 450-20 and by reference ASC 410-30)*—one part of a two-factor test for liability recognition in FASB ASC 450, meaning likely to occur. This has commonly been (but not authoritatively) interpreted to mean more than 75 or 80 percent likely to occur (see 5.2.3 for further information).

3.1.38 *probable (IAS 37)*—one part of a three-factor test for liability recognition in IAS 37, meaning that which is more likely than not (that is, more than 50% likely).

3.1.39 *provision (IAS 37)*—an accrual or accrued liability, sometimes of uncertain timing or amount

3.1.40 *purchase accounting adjustment*—the process by which assets and liabilities are adjusted to fair value, promptly after an acquisition. For environmental liabilities, this commonly results in corrections based on significant findings and decisions learned after the due diligence process and transaction negotiations.

3.1.41 *reasonably estimable*—one part of a two-factor test for liability recognition in FASB ASC 410 and 450, GASB Statements 10, 18, 49 and 83, intended to prevent the accrual in the financial statements of amounts so uncertain as to impair the integrity of those statements.

3.1.42 *reasonably possible*—used in ASC 450, an outcome expressed as a likelihood, or probability, associated with a given event occurring that lies in the range between remote and probable. The probability values assigned to remote and probable are determined by the enterprise, based on such factors as the industry, peer behavior, the aggregate number of environmental liabilities, spending experience, and other possible outcomes (including associated uncertainties).

3.1.43 *recognition*—creation of an accrual for an environmental liability. Also, "booking a liability".

3.1.44 *recognition benchmark*—an accounting term from US GAAP noting specific points in the life of an environmental risk or liability, such as a remedial investigation, feasibility study, or remediation, when a revised estimate of the liability is advisable or necessary.

3.1.45 *reliably estimable*—one part of a three-factor test for liability recognition in IAS 37 intended to prevent the accrual in the financial statements of amounts so uncertain as to impair the integrity of those statements.

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3.1.46 *remote*—an accounting term from US GAAP; the chance of the future event or events occurring is slight, generally in the range of 1% to 5% as determined by a financial statement preparer.

3.1.47 *reserve*—less formally, any accrual for environmental liabilities; more precisely, a provision that is matched with sequestered assets to fund future expenditures.

3.1.48 *risk*—exposure to a possible liability

3.1.49 *settlement*—extinguishment of environmental liabilities, normally through the performance of services or cash payments. Settlement through bankruptcy or corporate dissolution is uncommon. Settlement (or extinguishment) is the normal condition for derecognition.

3.1.50 *tax deductibility*—whether spending on an environmental liability reduces taxable income.

3.1.51 *unasserted claims*—As stated by FASB in ASC 410-30-25-23, future actions of an entity, when they occur, may create a legal obligation to perform environmental remediation; however, no obligation exists currently (for example, if the obligation arises only when and if an entity ceases to operate a facility). Costs related to asset retirement, including costs of future site restoration or closure that are required upon the cessation of operations or sale of facilities, may create a current obligation that would be recognized in accordance with Subtopic 410-20.

3.1.52 *unenforced obligations*—If an environmental remediation or asset retirement obligation is expected to exist but has not yet been enforced, an entity may face uncertainty as whether or not the unenforced obligation represents an unasserted claim and therefore, under certain circumstances, is not recognizable as a liability.

3.1.53 *unit of account*—the level at which an environmental risk or liability is aggregated or disaggregated for recognition purposes, commonly a combination of site location and liability type ("Main Street plant ARO").

3.2 *Acronyms and Initialisms*:

3.2.1 *AICPA*—American Institute of Certified Public Accountants

3.2.2 *ARO*—Asset Retirement Obligation

3.2.3 *ASC*—Accounting Standards Codification, from the Financial Accounting Standards Board

3.2.4 *AULs*—activity and use limitations

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

3.2.6 *CFR*—Code of Federal Regulations

3.2.7 *EPA*—United States Environmental Protection Agency

3.2.8 *FASB*—Financial Accounting Standards Board

3.2.9 *FIN*—FASB Interpretation Number

3.2.10 *GAAP*—Generally Accepted Accounting Principles

3.2.11 *GARS*—Governmental Accounting Research System, from the Governmental Accounting Standards Board

3.2.12 *GASB*—Governmental Accounting Standards Board

3.2.13 *IAS*—International Accounting Standard

3.2.14 *IASB*—International Accounting Standards Board

3.2.15 *IFRS*—International Financial Reporting Standard

3.2.16 *NPL*—National Priorities List

3.2.17 *PRP*—potentially responsible party

3.2.18 *RCRA*—Resource Conservation and Recovery Act (as amended 42 USC Section 6901 et seq.)

3.2.19 *SEC*—Securities and Exchange Commission

4. Significance and Use

4.1 *Use*—this guide is intended for use on a voluntary basis for evaluating environmental liabilities, often with Guide E2137 for estimation and Guide E2173 for disclosure. The user may elect to apply this guide for any or all of these purposes:

4.1.1 Determining if an environmental risk or liability exists,

4.1.2 Determining if similar environmental risks (for example, permits, plant or process expansion) are being recognized at similar points in their lifecycle,

4.1.3 Determining if several similar environmental risks and liabilities are being managed to similar outcomes,

4.1.4 Determining liability values,

4.1.5 Due diligence analysis for proposed mergers, acquisitions, or spinoffs,

4.1.6 Documenting key decisions on environmental liability provisions, reserves, budgets and cash flow forecasts.

4.1.7 Identifying and analyzing liabilities associated with the following:

4.1.7.1 certain remedial alternatives,

4.1.7.2 future land uses, property transfer and redevelopment decisions,

4.1.7.3 land use alternatives for former landfills and chemically impacted sites,

4.1.7.4 Meeting regulatory requirements,

4.1.8 Designing and implementing project and program controls,

4.1.9 Defending against third-party lawsuits,

4.1.10 Calculating insurance premiums,

4.1.11 Making and settling insurance claims,

4.1.12 Making purchase accounting adjustments,

4.1.13 Preparing an audit defense, and

4.1.14 Completing financial and investment analysis.

4.2 *Principles*—the following principles are an integral part of this guide and should be used to resolve ambiguity or dispute regarding the recognition and derecognition of environmental liabilities. These principles are drawn from several sources, including historical and current accounting principles, court decisions, academic studies, as well as good commercial and customary practice.

4.2.1 Current awareness of an entity's accounting framework and applicable generally accepted accounting principles (GAAP) is expected of everyone. Developing related environmental liability recognition policies and procedures commonly requires inputs from internal and external sources, including (but not limited to) accounting, finance, legal, environmental health and safety, capital projects and real estate.

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4.2.2 The reporting entity has a duty to identify a risk in order to determine if it meets the criteria for recognition and derecognition. A default assertion of immateriality without data or structured judgement is inconsistent with GAAP and with good commercial and customary practice.

4.2.3 Accrued liabilities must represent losses in future periods. Consequently, certain costs are treated differently for accounting and tax purposes:

4.2.3.1 Costs for response activities resulting from an event in the current reporting period that will be fully completed within the current period (with no on-going future obligations) do not require accrual but are expensed as incurred in the current period.

4.2.3.2 Costs for environmental cleanup activities that are related to active ongoing operations (not a past event), including ongoing discharge treatment and monitoring, groundwater or air monitoring, etc. are not appropriate for inclusion in environmental liability accruals.

4.2.3.3 Costs for capital expenditures (investments) in new property, plant and equipment are also not appropriate for accrual. Rarely, certain capital expenditures will effectively settle a liability, but accounting and tax rules for accruals and investments are specialized and distinct. An entity's accounting framework will already address these differences.

4.2.4 Over time, some risks become recognized liabilities and vice versa.

4.2.5 Comprehensive data sources regarding environmental risks and liability quantification are readily available and have improving levels of accuracy (or precision).

4.2.6 Imperfect or incomplete information is a common obstacle to environmental liability recognition: the lack of comprehensive and current data on an environmental risk does not prevent comparison of a past environmental liability with a prospective one. Even with complete knowledge of property and regulatory issues, a reliable calculation of all costs is still challenging but possible.

4.2.7 While uncertain timing of spending is a common factor to determining a present value of a risk or liability, an expected value can generally be calculated from comparable sites, open source estimates, and vendor quotes.

4.2.8 Application of the materiality constraint (FASB Concepts Statement 8; Appendix X2) should enable users of this guide to determine which environmental risks should be recognized and potentially disclosed (Guide E2173). Users of this guide should consider whether an aggregation of many related immaterial risks constitute a recognizable liability.

4.2.9 Application of the cost constraint (FASB Concepts Statement 8) should enable users of this guide to filter or screen which risks should be evaluated in more detail (see 6.3 on the Watch list, also Guide E2137). Users should consider the opportunity costs of not developing a more rigorous estimate, as well as whether data exists to justify an improved estimate.

4.2.10 Recognition may be for a specific phase of activity or other incremental component of a liability. Particularly, GASB 49 specifies the recognition of components of a liability based on the occurrence of certain (commonly sequential) obligating events and recognition benchmarks. The unit of account applied to measurement and recording environmental liabilities must be consistent with the entity's accounting framework. See 9.9 for further detail on unit of account.

4.2.11 Where terminology such as "probable" and "reasonably estimable" is used to identify risks for recognition, users should clearly state and consistently apply any numerical definitions and ensure these definitions are consistent with their relevant accounting framework(s).

4.2.12 No part of GAAP (or IFRS) specifies a minimum or maximum time horizon for measurement, recognition or derecognition of environmental liabilities. Users should be aware of applicable regulations or policies in determining an appropriate/reasonable timespan. For example, a financial assurance valuation may cover 30 years of forecasted costs, while a contract may presume perpetual spending to manage a liability. [Guide E2173 contains recommendations about displaying key assumptions in X4.4 "Portfolio Assumption Tracking Table"].

4.2.13 US GAAP and IFRS express the preference for calculating liabilities at their prices (ideally "fair value measurement"). There are complexities with calculating some costs (remedy failure, counterparty risk) to determine fair value. Users of this guide should use caution in stating that a single remedy – once implemented – contains all of the possible costs and will successfully extinguish all risks and liabilities anticipated at a site. As noted in Guide E2137, price and cost approaches yield estimates which can differ significantly.

4.2.14 Litigation is both a method of enforcement and type of liability in its own right. The risk of litigation is continuous and generally unavoidable. Awareness of litigation conditions are often part of the determination of recognition and derecognition.

NOTE 1—When estimating litigation exposure and potential costs, the user should consider if the litigation includes the potential for fines that are imposed on a daily basis for each violation.

4.2.15 Spending correlates positively with (but is not identical to) liability reduction.

4.2.16 Spending may fail to reduce liabilities.

4.2.17 Spending to address a liability indicates that a liability exists.

4.2.18 It is not unusual for a liability to require immediate recognition under the accounting standards although spending on the liability may not occur in the foreseeable future.

4.2.19 Environmental risks should be regularly reviewed, documented and analyzed to record events, decisions, obligations and responsibilities (see Section 6 and 9.8).

4.2.20 The tools, procedures and vendor experience needed to promptly provide a cost or timing forecast, or both, already exists and is continuously improving; lack of resources or a brief turnaround time are not reasonable justifications for continuously misstating a risk or liability.

4.2.21 Strategic transactions can bring changes to the accounting framework used by an entity, which can trigger recognition and derecognition of liabilities.

4.2.22 Periodic reiterations of recognition steps are useful to stakeholders. If an entity finds that similar liabilities are being recognized and settled in varying ways, a reiteration of policies and procedures can express an entity's current tolerance for risk and for recognition of environmental liabilities.

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4.2.23 As an entity successfully grows while simultaneously extinguishing environmental liabilities, the aggregate liability will eventually become immaterial. See 9.7 for further detail.

4.2.24 The same physical location may have multiple environmental risks and liabilities. The definition and application of the term "unit of account" should be evaluated as an entity grows and settles key risks and liabilities; see 9.7 and 9.9 for further detail.

4.2.25 Completion of some activity (see Section 7) usually precedes derecognition.

4.3 *Liability management practices*—the following practices are an integral part of this guide and users should employ them to reliably recognize and derecognize environmental liabilities

4.3.1 Independent of an organization's standard record retention policies, indefinitely maintaining searchable listings of the following should be given consideration:

4.3.1.1 Extensive spending history, provision or reserve change decisions, project phase decisions, and key site activities, including remediation, capital expenditures, permitted discharges, asset retirement.

4.3.1.2 Correspondence with regulators, especially documents which identify specific obligations (such as notices of violation, consent decrees, administrative orders). Environmental data collected in support of this correspondence.

4.3.1.3 Active, inactive and closed business units and corporations.

4.3.1.4 Properties used (whether owned, leased, divested, or a common ecological resource) in a way that causes environmental liabilities, especially those with *activity and use limitations*.

4.3.1.5 Activity and use limitations needed, requested and issued, even for divested properties.

4.3.1.6 Zoning change requests, applications to create or remove *activity and use limitations*.

4.3.1.7 Environmental permits (such as RCRA, NPDES, etc.)

4.3.1.8 Vendor, property, general liability insurance policies, along with listings of any claims submitted and their respective disposition.

4.3.1.9 Waste disposal and treatment sites used, along with transporters, corresponding insurance, waste manifesting.

NOTE 2—These may include Publicly-Owned Wastewater Treatment Plants that receive and process liquid wastes transported by pipe way, sewer or in bulk (tanker truck).

4.3.1.10 Purchased, processed, marketed, recycled and waste chemical compounds; end users, recyclers, and transporters.

4.3.1.11 Environmental counterparties, such as successor property owners, adjacent property owners, nearby contributors to common ecological resources (wetlands, aquifers, river sediments), other PRPs on multiparty cleanup projects (Superfund sites), unrelated entities which promised to settle some ARO or remedial obligation.

4.3.2 Periodically, an organization may find it necessary to study, evaluate or maintain databases of the following:

4.3.2.1 Bankruptcy filings of environmental counterparties

4.3.2.2 Regulator websites covering environmental compliance, enforcement, permitting, spills, to confirm those records are accurate

4.3.2.3 Regulator websites covering similar (unrelated) liabilities to determine if data provides predictive insights.

4.3.2.4 Public interest and news websites that track environmental compliance issues.

4.4 *General Process for Recognition and Derecognition:*

4.4.1 *Overall Process*—described in Fig. 1 Environmental Liability Lifecycle – the process is iterative, continuous, and controlled through periodic settlement of liabilities. The four steps are:

4.4.1.1 *Watch list (pre- and postrecognition)*—consists of a screened listing of risks, identified by type, location and other attributes. A detailed explanation is in 6.3 and Section 7 of this guide.

4.4.1.2 *Recognition (liability accrual and footnoting)*—each type of environmental liabilities has a recognition process for converting a risk to an accrual (or footnote) listed in Section 5 of this guide.

4.4.1.3 *Settlement (work, spending, negotiations)*—consists of routine activities to study, remediate, restore, monitor, redevelop and manage a property to satisfy one of the five types of liabilities. This also includes payments to others for their performance or guarantee or cashout of these activities.

4.4.1.4 *Extinguishment and Derecognition*—confirmation that your entity settled the obligation, commitment, contingency or guarantee and that the liability no longer exists. The accrual is removed from the financial statements.

4.4.2 *Classification by location*—any risk or liability must be associated with a specific location. In the case of product warranty risks, this may be an entire nation or customs union. In the case of soil or groundwater contamination, this may be a street address or waste disposal facility. See 9.9 for more detail on applying the concept of a "unit of account".

4.4.3 *Classification by type*—there are five common types of environmental liabilities, which may exist simultaneously at

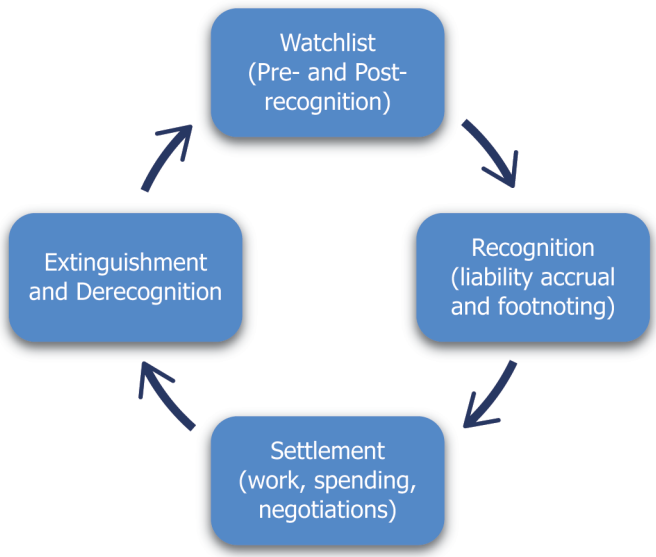

FIG. 1 Environmental Liability Lifecycle

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the same location: asset retirement obligation, other environmental obligations, commitments, contingencies, and guarantees.

4.4.4 This guide uses the five liability types in the numerical order stated in the 2009 Accounting Standards Codification (ASC) developed by the Financial Accounting Standards Board. Users of this guide should consult the references noted in the following Fig. 2 as well as Appendix X1, and – at least annually – develop an understanding of any recent changes:

4.4.5 In Section 5 of this guide, users may find it useful to follow a more comprehensive process to recognize certain liability types and consider past activity at that location. See Appendix X5 for a process flow example.

5. Recognition Process for Specific Liability Types

GENERAL GUIDANCE: recognition and derecognition is an accounting activity requiring concurrent work in other disciplines (law, science, construction). Users of this guide are presumed to be using an accounting framework appropriate to their entity, and maintaining the tools, policies and procedures to ensure compliance with that framework. For a new entity, building an accounting framework commonly requires consideration of the principal standard setting organization for a given entity. For US-based corporations, FASB (X1.2) is the primary authority. For non-Federal governments in the US, GASB (X1.3) is the primary standard issuer. For non-US corporations, IASB is the primary standard issuer (see X1.6) or country-specific "local GAAPs" or a combination. A more comprehensive listing is in Appendix X1; while these are the primary standard setters, users of this guide should confirm with their internal financial reporting specialists that tools, policies and procedures already reflect appropriate accounting citations. As previously noted, while the accounting frameworks discussed in this guide contain some similarities in process, they also demonstrate differences in some key provisions. A leading practice is for members of an entity's accounting, legal, and environmental functions to confer and collaborate on the applications and conventions of the entity's relevant guidance and the assessment of potential obligations for recognition. Ideally, such cooperation is formalized in process and procedure documents to maximize the documentation and memorialization of key assumptions and conclusions and to improve consistency in the development of the same. Citations have been provided in this guidance to the applicable standards under FASB (US), GASB (US) and IASB (multiple international jurisdictions) for the user but it is not intended to be a comprehensive discussion of these standards.

5.1 *Asset retirement obligations*—Fig. 3 describes the process for determining if an asset retirement obligation exists. Examples are listed in Appendix X4 (1.)

5.1.1 Determine the accounting framework relevant to the recognition of asset retirement obligations.

5.1.2 Is there an asset in service now? Alternatively, has the entity recently acquired an asset which was:

5.1.2.1 *Built*—normally as an investment or capital expenditure, or sometimes as a joint venture with partners

5.1.2.2 *Bought*—as an operating asset; sometimes through an investment in a partnership where the ARO is shared among by the owners

5.1.2.3 Otherwise conveyed as an obligation, through such obligating events as those listed in 6.1. For example, a government may complete tax forfeiture, condemnation or expropriation proceedings (and assume title to property) and thereby assume an asset retirement obligation.

5.1.3 Will there be an ARO activity? Does the asset retirement obligation have an known end-of-service-life activity? Common activities include demolition, decontamination, surface reclamation, abandonment. Excludes certain transactions, such as obligations resulting from improper operations (that is, environmental remediation liabilities).Will there be a cost ("probable future sacrifice of resources") to take the asset out of service, even if the exact date and/or method of settlement is uncertain? Is there little or no discretion to avoid the ARO activity? The lack of enforcement of an obligation does not cancel the obligation or prevent recognition of the obligation.

5.1.3.1 Has a new government action (law, statute, ordinance) been enacted which changes the ARO activity? Is there an incremental activity to an ARO – regardless of cause –

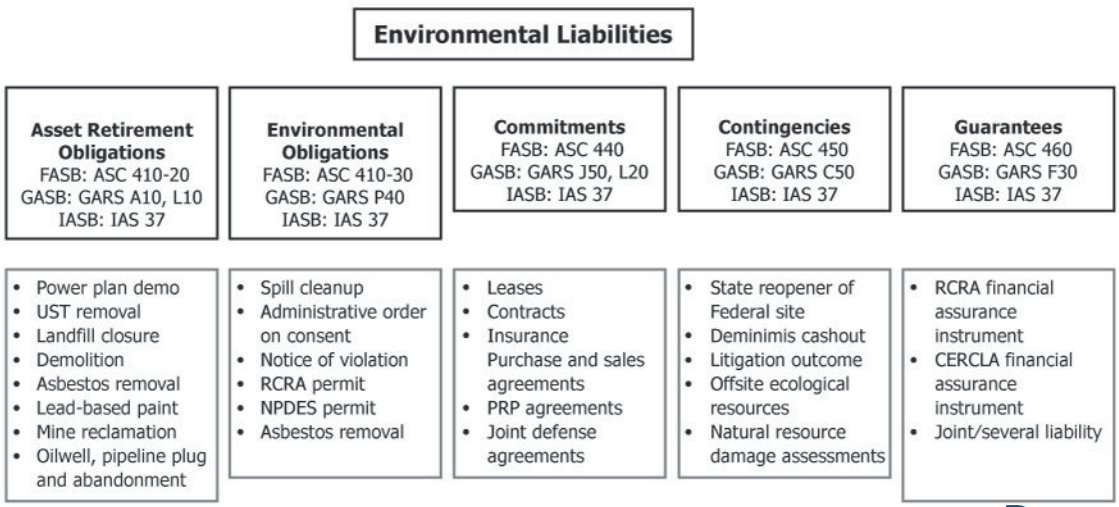

FIG. 2 Five Liability Types

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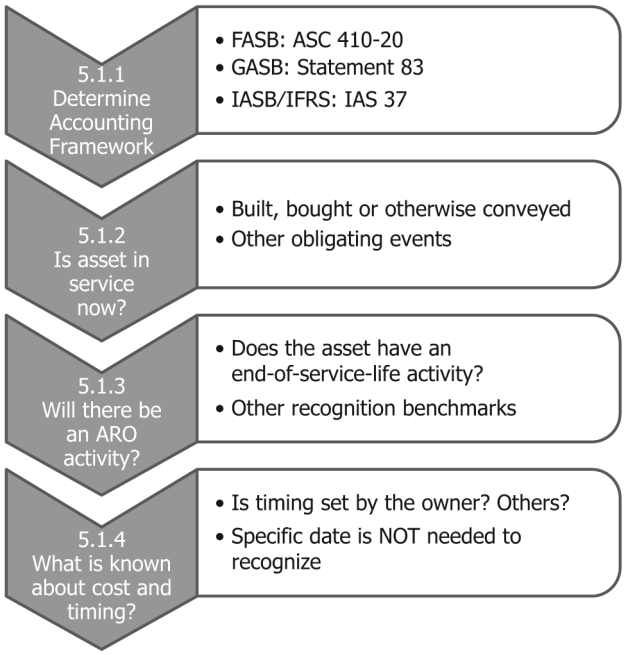

FIG. 3 Asset Retirement Obligations

which must be recognized in addition to the original scope, schedule and budget? For example, an adjustment (also, "new layer") to an existing ARO is appropriate when the valuation changes for new information or new investments at a facility. Other examples can be found in Appendix X4(1).

5.1.3.2 Agreement between entities (contract or commitment) defining financial responsibility for an ARO.

5.1.3.3 Has an ARO been conveyed from a third party, in a form such as promissory estoppel (also, constructive obligation)? For example, a large partnership may lose a small partner to dissolution or bankruptcy and need to reallocate that stranded share to the remaining partners. Alternatively, a county may rezone a property, causing the owner to remove some evidence of prior use(s).

5.1.4 Determine what is known about cost and timing of an ARO activity. Can a reasonable estimate of the ARO be made? Accounting presumption is that fair value measurement (ASC 820, GASB 72, IFRS 13) is the optimal measurement basis. See Guide E2137 for further detail on estimation techniques; the following conditions confirm that a reliable estimate can be developed:

5.1.4.1 It is evident that the fair value is embodied in the acquisition price of the asset. For example a purchase and sales agreement contains an explicit valuation for a conveyed ARO.

5.1.4.2 An active market exists for the transfer of the obligation.

5.1.4.3 Sufficient information exists to apply an expected present value technique

(1) The settlement date and method of settlement have been specified by others

(2) Information is available to reasonably estimate the settlement date or range of settlement dates, the method of settlement or potential methods of settlement, and the probabilities associated with potential settlement dates and methods of settlement.

(3) The entity is able to produce a cost estimate for a regulator's financial assurance process.

5.1.4.4 Instances may occur in which there is insufficient information to reasonably estimate the fair value. For example, assets may have several large components, each of which have a flexible and interdependent useful life; frequently recalculating an indeterminate useful life may not be meaningful. In these situations (see ASC 410-20-50-2), entities may be required to disclose the facts and reasoning for the opinion that reasonable estimate of the fair value measurement isn't possible.

5.1.4.5 Under IFRS, IAS 37 provides that the provision for a liability should be the best estimate of the expenditure that would be required to settle the obligation as of the balance sheet date. This is the amount that an entity would pay to settle the obligation or to transfer the liability to a third party as of the balance sheet date. Although it will often be "impossible or prohibitively expensive" to transfer or settle the liability as of the balance sheet date, estimating that amount provides the best indicator of the expense required to settle the obligation at such time.

5.1.4.6 Under U.S. GAAP, when an ARO is initially recognized, ASC 410-20-25-5 requires that an entity capitalize its asset retirement cost by increasing the long-lived asset's carrying value by the same amount. ASC 410-20-35-2 requires the asset's retirement cost to be recognized subsequently as expense using a "systematic and rational method" over the long-lived asset's useful life.

5.1.4.7 Periodically, market-driven variables – interest rates, discount rates, current exchange rates, diesel fuel costs, an entity's credit rating, time to product obsolescence for a factory – can change the valuation of an ARO while having no effect on the recognition of the ARO.

5.1.4.8 An owner's decision to idle or close a facility before the end of its useful life will necessarily revise an ARO.

5.2 *Environmental obligations* – Fig. 4—describes the process for determining if another type of environmental obligation (non-ARO) exists. This Section will address recognition arising from historical release practices or non-normal operations (non-ARO environmental remediation activities). In some cases, the assessment of whether the contamination results from normal or non-normal operations may be subject to judgement. Generally, it will be expected that releases that are of sufficient significance to report to the relevant environmental regulator upon their discovery and for which a regulator may expect immediate response, rather than a response at end of life, will be considered as resulting from non-normal operations and should be assessed for the potential recognition of a liability. Examples are listed in Appendix X4(2).

5.2.1 *Determine accounting framework*—Environmental remediation activities resulting from pollution, contamination or release events are referred to variously in different accounting frameworks. ASC 410-30 refers to these as "Environmental Obligations", GASB 49 refers to them as "Pollution Remediation Obligations" and IASB's IAS 37 includes them in the more general "Provisions" category along with other types of potential losses and obligations. Pollution cleanup and remediation activities, components, and costs are outlined

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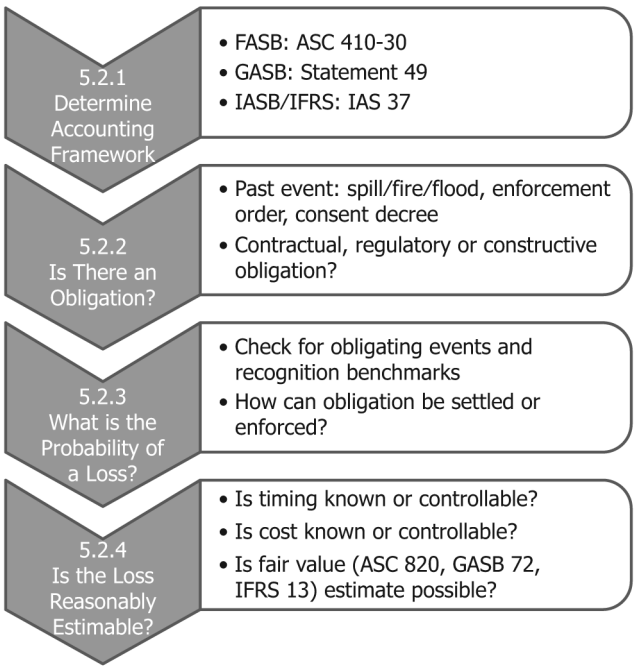

FIG. 4 Environmental Obligations

5.2.2 *Is there an obligation?*—Was there a past event (such as a release of potential contaminants in a current or prior reporting periods) that triggers a present obligation? The "past" in this requirement may be in the immediate past (1 day) or the historic past (for example, 100 years). An obligation is a legally enforceable duty of several types: *(a)* contractual, *(b)* regulatory, *(c)* constructive (promissory estoppel), or rarely *(d)* equitable. Note that an obligation may exist under the operation of law or promissory estoppel even without the existence of formal documentation of the obligation (for example, Administrative Order, Consent Decree, contract, etc.). Conversely, without the existence of an obligation, costs may not be accrued. If the activities anticipated are wholly discretionary and no settlement is anticipated to be required now or in the future based on the specific circumstances at the time of assessment, an obligation may be considered to not exist. Users of this guide are encouraged to confer with accounting and legal functions to confirm that an obligation, related to a past event, exists or does not exist, regardless of whether or not that obligation is formalized in agreements, orders, or similar.

5.2.3 *What is the probability of a loss?*—Accounting standards consistently state that probability is a factor in determining whether a liability can be recognized: a loss of resources (spending) must be "probable" in order to be accrued. However, definitions of "probable" are not identical. (see 9.2.2 for citations.) If the outflow of resources is considered "probable" under the framework, the recognition assessment proceeds to the next step. If an outflow is not considered "probable", it will instead have a lower probability (defined as "reasonably possible" or "remote") and that outflow may still be subject to various disclosure responsibilities. Definitions of these terms should be understood by the user, as they impact the form of the estimates and disclosures. As noted in 4.2.1, users of this guide are strongly encouraged to review the appropriate accounting guidance, and confer with accounting and legal functions, to assess the likelihood of such losses and to comply with disclosures as appropriate. See Guide E2173 for more information regarding the disclosures of environmental liabilities.

5.2.4 *Is the loss reasonably estimable?*—To accrue costs for a liability in the financial statements, the amount of the loss must be estimable with sufficient reliability that they do not compromise the integrity of the financial statements. FASB and GASB guidance require that a loss be "reasonably estimable" and IASB guidance requires that a loss be "reliably estimable." See 9.2.3 for a comparison of the citations for this term. While these terms are not defined specifically in the guidance, each standard contains common concepts. See Section 9 for further detail.

NOTE 3—This guide considers that environmental response actions have been performed at contaminated sites in many countries since at least 1985. Entities should presume a mature environmental services market exists. Further, regulatory agencies in many jurisdictions have published technical guides and recommendations for addressing environmental contaminant families and contaminated media (for example, soil, groundwater, sediment, surface water). Because of these and other factors, environmental engineering firms routinely offer "due diligence" services that specifically attempt to value potential environmental liabilities (within a range) based on site observations and industry data. Based on these conditions, it is expected that costs will be considered to be reasonably or reliably estimable in all but the rarest cases. If an entity determines that costs are inestimable, users of this guide are encouraged to document and validate that conclusion.

5.3 *Commitments*– Fig. 5—describes the process for determining if a commitment exists. Common starting points are leases, purchase and sales agreements, liability cost sharing agreements, merger agreements, spinoff agreements, claim adjudication with insurance carriers over cost sharing, and partnership agreements. Examples are listed in Appendix X4 (3).

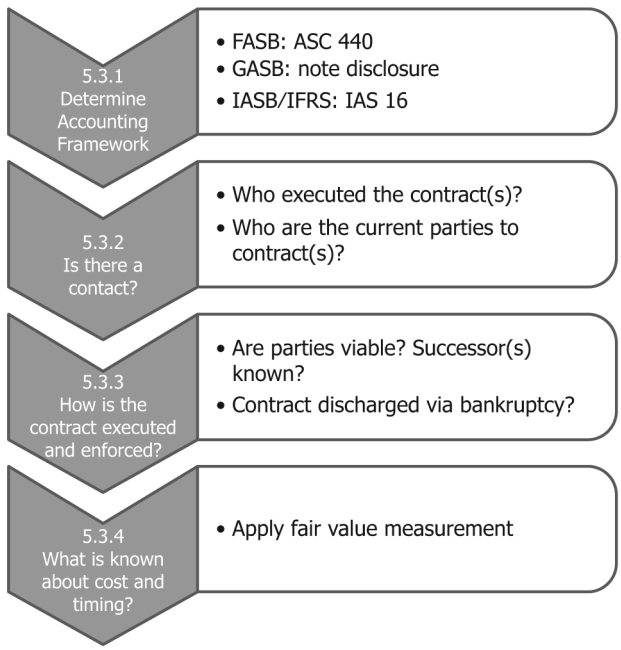

FIG. 5 Commitments

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