

Difference Between Phase 1, Phase 2, and Phase 3 Environmental Site Assessment

by Pinaaz Rahman | Jun 1, 2020 | Environmental Site Assessment | 0 comments

Are you buying, selling, or refinancing a commercial or industrial property in Canada? Understanding the critical differences between [phase 1 2 and 3 environmental site assessments](#) is essential to protecting your investment, managing environmental liability, and ensuring regulatory compliance with provincial environmental ministries.

To capture the phases of environmental site assessment at a glance, here is the industry-standard breakdown used by senior [environmental consultants](#):

- **Environmental Phase 1:** A non-invasive investigative process involving historical records review, interviews, and site reconnaissance to identify potential environmental concerns.
- **Limited Phase II ESA:** Invasive testing of media (soil, groundwater, and soil vapor) to confirm the presence, type, and concentration of contaminants identified during a phase 1 ESA, also known as a [phase i environmental site assessment](#).
- **Phase 3 Environmental Site Assessment:** The technical development and execution of [remediation strategies](#) or risk management plans to address identified environmental hazards.

The Regulatory Framework: CSA Standards vs. ASTM

In Canada, environmental assessment phases are generally governed by the CSA Group (formerly Canadian Standards Association) Z768-01 (Phase I) and Z769-00 (Phase II) standards. While many lenders also recognize the ASTM E1527-21 standard (common in U.S.-led transactions), Canadian projects must often adhere to specific provincial regulations—such as Ontario's O. Reg. 153/04—to obtain a Record of Site Condition (RSC).

By following these phase 1 2 3 environmental site assessments, developers and lenders mitigate the risk of “absolute liability.” Without a comprehensive environmental site assessment phase 1, a new owner may inherit the legal and financial responsibility for historical contamination caused by previous occupants.

Phase 1: The Critical First Step in Real Estate

All phase i ii iii environmental site assessments must begin with a Phase I ESA. This stage is strictly investigative and does not involve any physical “breaking of ground” or chemical sampling.

What Does a Phase 1 ESA Include?

- **Historical Records Review:** Examining fire insurance maps, city directories, and aerial photographs dating back to the property’s first developed use.
- **Site Reconnaissance:** A visual inspection of the property and neighboring lands to identify “Areas of Potential Environmental Concern” (APECs).
- **Interviews:** Consultations with past and present owners, site managers, and government officials to uncover historical site activities.
- **Regulatory Search:** Checking provincial databases for spills, registered waste generators, or underground storage tanks (USTs).

Does a Phase 1 ESA include soil sampling? No. A phase 1 in real estate identifies “Recognized Environmental Conditions” (RECs) or APECs through observation and documentation but does not include laboratory analysis.

Phase 2: Confirmation Through Technical Testing

If the environmental site assessment phase 1 identifies a potential risk, a limited phase ii esa is typically recommended. This involves “invasive” sampling to determine if hazardous substances exceed provincial cleanup criteria (such as the CCME Canadian Environmental Quality Guidelines).

Commonly Tested Substances in Phase II:

- **Volatile Organic Compounds (VOCs):** Frequently associated with dry cleaners or chemical storage.
- **Petroleum Hydrocarbons (PHCs):** Often resulting from leaking fuel tanks or service station operations.
- **Heavy Metals:** Such as Lead, Arsenic, or Mercury from industrial manufacturing.

- **Polycyclic Aromatic Hydrocarbons (PAHs):** Common in sites with historical coal or “fill” material.

The environmental site assessment phase 1 2 3 progression is designed to be cost-effective. You only move to expensive lab testing (Phase 2) if the evidence gathered during the [environmental phase 1](#) justifies the concern.

Phase 3: Remediation and Cleanup

What is a phase 3 environmental site assessment? While Phase 1 identifies a potential problem and Phase 2 confirms its presence, phase 3 of an environmental assessment involves determining the vertical and horizontal extent of the contamination (delineation) and performing the actual cleanup.

Key Activities in a Phase 3 ESA:

- **Delineation:** Identifying the exact boundaries of the contaminant plume in soil or groundwater to calculate the volume of material requiring treatment.
- **Remediation Planning:** Designing a strategy to remove or treat the contamination, often including a cost-benefit analysis of different technologies.
- **Execution:** Excavating impacted soil, installing “pump and treat” systems, or using “In-Situ” chemical oxidation (ISCO).
- **Confirmatory Sampling:** Testing the area after cleanup to ensure it meets regulatory standards for the intended land use.

Whether you refer to it as a Phase III ESA or a Phase 3 Environmental Site Assessment, this stage is the most intensive and technically complex among the phases of environmental site assessment.

What are the 4 Phases of Environmental Assessment?

While many stakeholders focus on phase 1 2 3 environmental site assessments, a “Phase 4” is often required for long-term compliance.

Phase IV involves ongoing site monitoring and verification. Even after a phase 3 esa is complete, regulatory bodies may require periodic groundwater monitoring or the implementation of “Institutional Controls” (such as a Certificate of Property Use) to ensure the site remains safe for its designated land use (e.g., transitioning from industrial to residential).

Comparison Summary: ESA Phases

Phase	Purpose	Typical Timeline	Involves Sampling?
Phase I	Risk Identification	2–3 Weeks	No
Phase II	Risk Confirmation	4–8 Weeks	Yes (Soil/Water/Vapor)
Phase III	Remediation/Delineation	3–12 Months+	Yes (Excavation/Treatment)
Phase IV	Long-term Monitoring	Ongoing	Yes (Periodic Testing)

Frequently Asked Questions (FAQ)

When is an Environmental Site Assessment required?

Esa phases are typically triggered during property acquisitions, refinancing of commercial loans, or land-use changes (e.g., redeveloping a factory into condos). Lenders almost always require a phases of environmental assessment report to ensure the property value is not compromised by hidden liabilities.

How long is a Phase 1 ESA valid?

Under most Canadian guidelines and ASTM E1527-21, a phase 1 in real estate is generally considered current for 180 days. If the report exceeds one year, a completely new assessment is usually required to account for any new site activities.

What is the difference between Phase 2 and Phase 3 ESA?

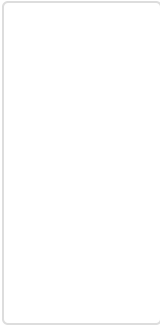
A limited phase ii esa is designed to confirm if a “hit” exists on the property. In contrast, a phase iii environmental site assessment defines the “size” of the problem and involves the physical removal or management of that contamination.

Who performs these assessments?

All phase 1 2 3 environmental site assessments must be completed by a Qualified Professional (QP) or a licensed Professional Engineer (P.Eng.) / Professional Geoscientist (P.Geo.) as defined by provincial legislation.

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Pinaaz is a Chemical Engineering graduate who has years of experience conducting Environmental Site Assessments. She studied at University of Alberta and brings a fresh perspective on projects. Pinaaz has an impressive background in process analysis/design and is our lead Environmentalist.

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