

Phase 1 & 2 Environmental Site Assessments

Phase I Environmental Site Assessments:

Ben Engineering provides Phase 1 & 2 Environmental Site Assessments (ESAs) services for any location across Ontario, performed by a Professional Engineer or Professional Geoscientist.

The purpose of the Phase I Environmental Site Assessment (ESA) report as defined in the CSA Z768-01 Standard is to identify potential site contamination through a process of collecting current visually accessible evidence on the site and the reviewing of background documents.

In Phase I Environmental Site Assessment, no laboratory testing, sample gathering, intrusive investigation, or physical analysis is required. A Phase I ESA, even if conducted in accordance with the CSA-Z768-01 Standard, is only intended to reduce but not necessarily to eliminate the possibility of potential contamination on the property.

The Phase I Environmental Site Assessment is mostly required when purchasing a commercial property, in order to minimize liability risks as a result of contamination. The requirement can come from the purchaser as a mean of discretion, the financial institute that finances the purchase, or the local municipality. While the scope of work is not absolutely defined in the Standard and can be modified in accordance with the client's needs.

There are four principles involved in the Phase I ESA process:

- ⇒ A records review in order to collect data on past activities on the site and neighbouring properties, at least to a distance of 250 metres from the subject site's boundaries, including mandatory documents and optional documents when applicable
- ⇒ A site visit to identify any visual evidence of actual or potential contamination (for example, an underground oil tank or asbestos pipe insulation)
- ⇒ Interviews with site personnel, persons who are familiar with the site, government officials and third parties, in some cases
- ⇒ Evaluation of the information and reporting of the findings and conclusions



Ben Engineering Inc.

7368 Yonge Street, Suite 307
Thornhill, Ontario, L4J 8H9

Phone: 416-628-9690

Fax: 1-877-225-8282

www.ben-engineering.com



Phase 2 Environmental Site Assessments:

Phase II Environmental Site Assessment (ESA) is generally conducted following a Phase I ESA. While the Phase I ESA is more theoretical and its purpose is only to determine if there are any potential issues that may affect the site, based on reviewing the current and historic uses of the property and the surrounding area, the purpose of the Phase II Environmental Site Assessment is to determine if such contamination actually exists, and to what extent

Commonly, a Phase 2 Environmental Site Assessment is required if a site or an adjacent property is or has been used as a dry cleaner, auto repair garage, manufacturing facility, gas service station, scrap yard, or if an underground storage tank (UST) is associated with the site.

Types of soil or groundwater contamination commonly found include petroleum hydrocarbons, organic compounds, metals and polychlorinated biphenyls (PCBs). The process typically includes an intrusive on-site sampling program, which consists of the following steps:

- ⇒ If soil or groundwater contamination is a concern, the process includes surficial and sub-surficial sampling. This may include drilling boreholes at a few strategic locations throughout the site, preferably to a depth that reaches the groundwater, installing monitoring wells, and collecting samples of the soil and the groundwater at each borehole.
- ⇒ If materials present at the site are suspicious (for example, construction materials containing asbestos or lead), collecting samples of these elements is required.
- ⇒ On-site measuring the moisture level of the sample gathered.
- ⇒ Laboratory analysis of the samples collected in order to determine if contaminating materials exist, what type of materials and their concentration.
- ⇒ Analysing the results received from the laboratory in order to determine if the concentrations of the contaminating materials exceed the regulations of other guideline limits.
- ⇒ Preparing a written report, which includes the description of the borehole locations, description of the content of each individual borehole, the laboratory results, the analysis of the findings and conclusions and recommendations for further actions, if required.

The Phase 2 Environmental Site Assessment can be completed in accordance to the CAN/CSA-2769-00 (R2013) standard or O.Reg. 153/04 (Records of Site Condition). The sampling procedure typically follows the Ontario Ministry of the Environment guidelines.



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