**OVERVIEW OF PHASE II AND III ENVIRONMENTAL SITE ASSESSMENTS (ESA)**

Developmental First Nations (FNs) would have done a Phase I ESA. Phase I ESA only suggests potential or actual contamination, based on available reports and field observation. No physical sampling (e.g., of soil or water) is conducted, so a Phase I ESA cannot confirm the presence or extent of contamination on reserve land. Furthermore, a Phase I ESA report is accurate only at the time of assessment, and may become outdated if conditions at a site change.

A FN ideally would have ensured that its Individual Agreement and work plan contain a commitment by Canada to assist the FN in identifying contaminated sites by conducting a Phase II ESA and a workplan and timeline to remediate them in a Phase III ESA. Without a Phase II ESA, a FN will not be sure about the extent of contamination on its lands, and without a Phase III, it will not know the cost of remediation.

Phase II and III investigations may be required to support, refute or extend the Phase I ESA findings and fulfill Canada’s obligations set out in the Individual Agreement environmental work plan.

**WHAT IS A PHASE II ESA?**

**Phase II ESA** is an intrusive investigation and assessment of a property's surface and subsurface media. Phase II studies typically investigate “Areas of Potential Environmental Concern” (APECs) identified by Phase I ESAs to determine whether they are “Areas of Environmental Concern” (AECs). A Phase II ESA investigates and confirms the environmental condition of the APECs and determines the site characteristics (chemicals, contamination, and concentrations) present. This information is necessary to file a Record of Site Condition (RSC) and perform a Risk Assessment, which assesses and physical pathways to human exposure, ecological effects, and the potential for off-site migration of contaminants.

**Phase II ESAs** are intended to examine the areas identified during a Phase I ESA and to determine

whether contamination actually exists on a site. The Phase II ESA focuses on gathering specific information as required about an APEC and can include the following tasks:

* Sampling of surface and subsurface soil, groundwater and surface water, soil vapour (along with laboratory analysis), sediment, and collection of terrestrial or aquatic plant samples;
* Aboveground and underground fuel storage tank content and tightness testing, asbestos containing material (ACM) sampling, polychlorinated biphenyl (PCB) sampling and identification, geomagnetic or geophysical surveys;
* Directly measuring conditions such as noise levels or radiation;
* Using environmental fate or transportation models to evaluate the potential migration of the contamination.

The result of a Phase II ESA is the determination of the need for a remedial work plan and may also reveal whether conditions or events at the site are causing or likely to cause adverse effects that require notification of regulatory authorities. The results of Phase II analyses are typically compared with federal guidelines and provincial standards for contaminant concentrations. If contaminant concentrations exceed these established levels, then AECs may be identified.

The typical scope of work may include:

* collection of soil, groundwater, surface water, sediment, or vapour samples,
* chemical analysis of samples for relevant parameters,
* surveying the site and establishing groundwater flow direction,
* determining the appropriate criteria to which the results must be compared,
* interpretation of data, possibly including modeling, qualitative risk assessment, or development of a Conceptual Site Model,
* preparation of a clear, comprehensive report documenting the findings and presenting a conclusion regarding the environmental condition of the site.

**Phase II ESAs** are guided by the Canadian Standards Association (CSA) Standard Z769 (1998) - [**CAN/CSA-Z769-00**](http://www.csa-intl.org/onlinestore/GetCatalogItemDetails.asp?mat=000000000002008040)

The CSA standard establishes the principles and practices that are applicable to a Phase II ESA. The standard is intended to provide a consistent framework and minimum requirements for conducting Phase II ESAs that can accommodate broad regulatory and liability requirements, and can address pertinent site-specific conditions. The CSA framework involves developing a sampling plan, preparing for and undertaking an investigation for sampling and measuring, and interpreting and reporting on the information gathered. This Standard is an updated version of the previous CSA Standard Z768.

**WHAT IS A PHASE III ESA?**

Phase III ESA examines the need for, and methods of, remediating identified contamination on a site. If delineation was not conducted during the Phase II investigations, Phase III sampling is conducted to delineate the physical extent of previously-identified contamination. Phase III investigations may involve intensive testing, sampling, and monitoring, “fate and transport” studies and other modeling, and the design of feasibility studies for remediation and remedial plans. A Phase III study normally involves assessment of alternative cleanup methods, risk management strategies, and costs and logistics. Phase III reports detail the steps needed to minimize human or ecological risk, to perform site cleanup, and conduct follow-up monitoring for residual contaminants.

If a Phase II confirms contamination and determines that unacceptable levels of contamination exist, a Phase III Remedial Investigation should be carried out to determine what approach should be taken to clean up or contain the contaminants present at the site.