

## PRELIMINARY ASSESSMENTS – PHASE 2

# Observing General Geological Features



### Preliminary Assessments: Geology

**Phase 1** Desktop studies

Identifying broad areas for further studies

**Phase 2** Geophysical surveys

Observing general geological features from the ground

Geological and environmental mapping

Borehole drilling

Safety is the first consideration in finding a site for a deep geological repository for Canada’s used nuclear fuel.

Desktop studies began the process of learning about rock characteristics using available geological maps and reports. Preliminary study areas that may contain suitable bodies of rock were identified based on findings from desktop studies. Reports summarizing desktop studies and maps of preliminary study areas are available at NWMO community offices, at [www.nwmo.ca](http://www.nwmo.ca) and on local Community Liaison Committee websites.

Phase 2 activities build on this earlier work.

## Observing general geological features

The purpose of this activity is to visually observe key geological features in the areas being studied. These observations will help build more knowledge about the rock in the area and inform more detailed study in the future.

The location and nature of the observations depend on the geological setting of the areas being studied (crystalline rocks in northern Ontario or sedimentary rocks in southern Ontario). Field observations will cover features such as bedrock type, the extent of bedrock exposure, the nature and characteristics of fractures if any, evidence of seismic activities in the recent past (neotectonics) and specific features such as the occurrence of Karst (limestone dissolution in shallow rock formations) in sedimentary rocks.

NWMO staff and contractors will make these observations over a period of several weeks depending on the size of the area and the number of features of interest. They will travel on existing roads and trails, and may occasionally walk off these trails for short distances to explore specific features. It may be necessary to view some features from canoe or boat. The scope, locations and access for these activities will be planned and conducted in collaboration with communities.



## Planning for future studies

Geoscience experts will need several months to review the data and share findings with the community. Based on findings from this work, combined with data collected from other field studies such as geophysical surveys and through earlier desktop studies, the NWMO will work with communities and First Nation and Métis communities in the area to develop plans for future studies.

This future work could include more geological and environmental mapping (walking the land) to observe the rock in more detail, and begin to understand the environmental, spiritual, cultural and social aspects of the land. This future work will help the NWMO and people in the area to identify and reflect upon locations where there is potential to host a repository. Eventually, borehole drilling may be planned in smaller areas that the NWMO, communities and First Nation and Métis communities identify as warranting more detailed study as potential repository sites.

Confirming a safe site will take several years of progressively more detailed technical, scientific, social, cultural and economic studies, as well as extensive engagement with people in the area. The project will only proceed with the involvement of the interested community, First Nation and Métis communities, and surrounding communities working together to implement it.



## Canada's plan for the safe, long-term care of used nuclear fuel

In May 2010, the NWMO launched a nine-step process to identify a site where Canada's used nuclear fuel can be safely contained and isolated in a deep geological repository. The NWMO is implementing a plan called Adaptive Phased Management (APM), which was selected as Canada's plan by the Government of Canada in 2007.

Many communities are engaged in learning about the project. At this early stage, no specific sites are being considered – only broad areas have been identified for preliminary study. No communities have made a decision about whether the project is a fit for their area.

## Learn more. Be involved.

The NWMO is in each interested community nearly every month and participates in a number of community events. Contact us at the community office in your area or at [contactus@nwmo.ca](mailto:contactus@nwmo.ca).



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