NUCLEAR WASTE MANAGEMENT ORGANIZATION
SOCIÉTÉ DE GESTION DES DÉCHETS NUCLÉAIRES

MAY 2015

PRELIMINARY ASSESSMENT OF POTENTIAL SUITABILITY

Detailed Geological Mapping

Safety is the first consideration in finding a site for a deep geological repository for Canada's used nuclear fuel. Detailed geological mapping (also known as detailed outcrop mapping) is one of a series of technical studies that will help identify a safe and secure location for the repository.

Why This Study Is Done

The purpose of detailed outcrop mapping is to further advance our understanding of the bedrock geology in the areas being studied. These mapping investigations will help refine our understanding of the rock type. We will study the structural character of the bedrock, especially the size, type and location of fractures. We will also look at the rock's physical characteristics, such as colour and texture.

Detailed outcrop mapping will also help us better understand the distribution and thickness of overburden, which is made up of looser materials like clay, sand or gravel overlying the bedrock. We will also document the accessibility of the areas studied.

How This Study Is Done

The scope, locations and access for detailed outcrop mapping activities will be planned and conducted in collaboration with people in the area who have an interest in the land. Geoscience specialists will complete the detailed outcrop mapping over a period of two to three months and investigate as many locations of exposed bedrock as possible. They will travel throughout the identified study areas using all-terrain and four-wheel drive vehicles, boats/canoes, and aircraft.

Planning for Future Studies

The results of this work, combined with data collected from earlier studies such as airborne geophysical surveys, observation of general geological features and desktop studies, help inform decisions about future studies. Study findings will be shared with communities.

Eventually, borehole drilling may be undertaken in smaller areas that the NWMO, communities, and First Nation and Métis communities identify together. Borehole drilling will be planned with environmental, spiritual, cultural and social considerations in mind.

Site Selection

The NWMO is conducting a series of studies to explore potential suitability to host the project in a number of areas in Ontario, including both crystalline rock sites and sedimentary rock sites. Confirming a safe site will take several years of progressively more detailed technical, scientific, social, cultural and economic studies, as well as engagement with interested communities, First Nation and Métis communities in the area, and surrounding communities.

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

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 and on local Community Liaison Committee websites.

Phase 2 field studies build on this earlier work.

Preliminary Assessments: Geology

Phase 1	Desktop studies
Phase 2	Geophysical surveys
	Observing general geological features from the ground
	» **Detailed geological mapping**
	Borehole drilling

Learn More. Be Involved.

NWMO representatives regularly visit each community involved in the site selection process. You can also find us at a number of community events throughout the year. Contact us at the community office in your area or at contactus@nwmo.ca.

For more information, please contact:

Nuclear Waste Management Organization
22 St. Clair Avenue East, Sixth Floor
Toronto, Ontario M4T 2S3 Canada
Tel 416.934.9814 Toll Free 1.866.249.6966
Email contactus@nwmo.ca
www.nwmo.ca