

MNRF Ignace Borehole Drilling Project Submission

General Information

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Project Name:

Initial Borehole Drilling in Ignace/Wabigoon

Proposal Context

The NWMO is implementing Adaptive Phase Management (APM), Canada's plan for the long-term management of used nuclear fuel. Used fuel will be safely and securely contained and isolated from people and the environment in a deep geological repository in a suitable rock formation using a multiple barrier system. We are currently in the site selection phase of the project.

The Ignace/Wabigoon area described in this submission is one of nine areas in Ontario that are still in the site selection process. Through an increasing level of technical and social assessment, a suitable location will be identified to site the used fuel repository. The initiation of borehole drilling is one of the means to better understand the geological and physical conditions of the rock at repository depth. Once a preferred site is selected, additional detailed site characterization activities would be undertaken.

It is expected that the Borehole Drilling Project in the Ignace/Wabigoon area will consist of as many as ten (10) boreholes as part of the initial borehole drilling program. The location and depth of the boreholes will be dependent in part on the information collected through the preceding boreholes, taking into account site access and potential environmental constraints, as well as the geological understanding of the area. As described in the sections below, this submission is for the first borehole as part of this initial borehole drilling. The borehole site has been selected based on NWMO's technical requirements, while considering accessibility and minimizing the potential impact on the environment. There will be subsequent submissions for future boreholes addressing the specifics for each of the sites.

Summary of Technical and Environmental Work Completed To Date

Geoscientific work to date:

Prior to planning for borehole drilling, an assessment of the geoscientific suitability of the Ignace area was done following an iterative and systematic approach through a series of progressively more detailed geoscientific assessments. In 2013, a Phase 1 Geoscientific Desktop Preliminary Assessment was completed by Golder Associates to assess whether the Ignace area contained general areas that had the potential to satisfy the geoscientific site evaluation factors outlined in NWMO's site selection process (Golder, 2013; NWMO, 2010). The desktop preliminary assessment built on an initial screening conducted by Golder Associates in 2011 (Golder, 2011).

The Phase 1 Geoscientific Desktop Preliminary Assessment was conducted using available geoscientific information and key geoscientific characteristics that could be realistically assessed at the desktop stage. These included: bedrock geology; structural geology; interpreted lineaments; distribution and thickness of overburden deposits; surface conditions; and the potential for economically exploitable natural resources. The consideration of these key geoscientific characteristics revealed that the Ignace area contained at least four general areas that had the potential to satisfy NWMO's geoscientific site evaluation factors. The Phase 1 Geoscientific Desktop Preliminary Assessment also identified geoscientific uncertainties associated with these areas, including the low resolution of available geophysical data over most of the potentially suitable areas and significant overburden cover in some areas (Golder, 2013). In order to facilitate Phase 2 field studies, portions of land were temporarily removed from staking for mineral claims in the four identified general potentially suitable areas.

In 2014, as part of Phase 2 of the preliminary geoscientific assessment of the Ignace area, NWMO initiated a series of initial geoscientific field studies including the acquisition and interpretation of high-resolution airborne geophysical surveys and initial geological mapping to observe and ground truth general geological features. The objective of these initial field studies was to advance understanding of the geology of the general potentially suitable areas identified in the Phase 1 Geoscientific Desktop Preliminary Assessment, and assess whether it was possible to identify candidate areas for further field studies, beginning with Detailed Geological Mapping. The high-resolution airborne geophysical surveys included both magnetic and gravity surveys that greatly improved understanding of the geological characteristics of the Ignace area. The high-resolution surveys provided new information on rock type, homogeneity, and the depth and extent of the potentially suitable host rock formations. High-resolution geophysical and remote sensing data were then used to conduct a magnetic and surficial lineament interpretation to identify the presence of potential structural features such as fractures and dykes. Initial geological mapping, also referred to as "observing general geological features", was conducted to better understand the lay of the land, and to confirm the presence and nature of key geological features such as fractures, rock types, extent of bedrock exposure and surface constraints. The results from the initial Phase 2 field studies are documented in three supporting documents: Geophysics Interpretation report (SGL, 2015); Lineament Interpretation report (SRK, 2015); and Observation of General Geological Features report (SRK and Golder, 2015). The findings from these Phase 2 initial field studies are reported in Golder (2015).

In 2015 and 2016, Detailed Geological Mapping was conducted in the Ignace area to advance understanding of the bedrock geology of the four candidate areas, with an emphasis on observation and analysis of the structural geological and lithological framework, in the context of the results from the

Phase 2 Lineament Interpretation (SRK, 2015). Information collected during Detailed Geological Mapping also helped identify areas of exposed bedrock, assess overburden thickness, and identify surface constraints affecting accessibility within candidate areas. Based on all geoscientific information gathered to date, including Detailed Geological Mapping, potential repository areas (PRAs) were identified.

The integration of geoscientific and other technical and social considerations, led to identification of the location for an initial borehole within a potential repository area in the Revell batholith in the Ignace area, as described in this permission application.

Environmental work performed to date:

In 2013, Golder Associates performed an Environmental Desktop Assessment for the Ignace area. The assessment included the following: sensitive and Species at Risk (SAR); natural features mapping; preliminary Ecological Land Classification (ELC) mapping; identification of sensitive species habitat use and/or suitability; and an evaluation of existing terrestrial and aquatic habitat.

Tulluch Engineering (Sudbury, Ontario), was contracted to support the environmental studies in 2016. They completed Desktop Mapping and field verification for the smaller target locations within five Ignace areas. This work focused on (1) proposing potential siting areas based on identified environmental constraints; and; (2) conducting an impact assessment to identify potential environmental impacts which may result from the siting activities and proposing methods to avoid, manage, or mitigate those potential impacts. This work is ongoing, and will continue through the Phase 2 site selection activities (i.e., borehole drilling).

Detailed description of Proposed Borehole Drilling Activity

The initial borehole location is planned for: EASTING & NORTHING (UTM Zone 15N, NAD83):_555895, 5486024

The borehole location is on the Revell batholith, approximately 5 Km northeast of Mennin Lake, 41 Km northwest of the Municipality of Ignace, 20 Km southeast of Wabigoon Lake Ojibway Nation, and 63 Km southeast of Dryden.

Figure 1 shows the approximate location of the initial borehole in the context of the Ignace region. Figures 2 and 3 show the approximate location of the fenced drill site area (50 m by 70 m yellow rectangle) and initial borehole location (purple marker).

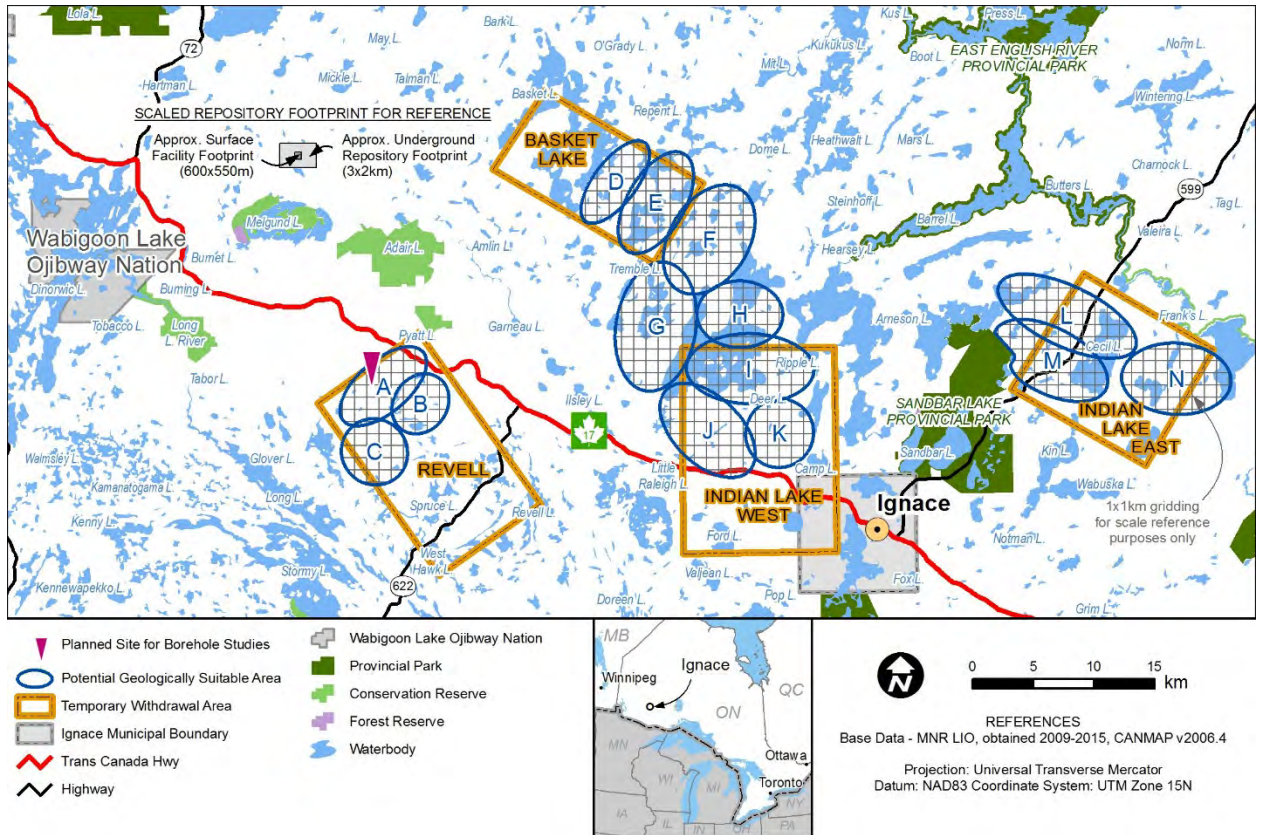


Figure 1: Approximate location of Initial Borehole in Ignace in the Revell Batholith

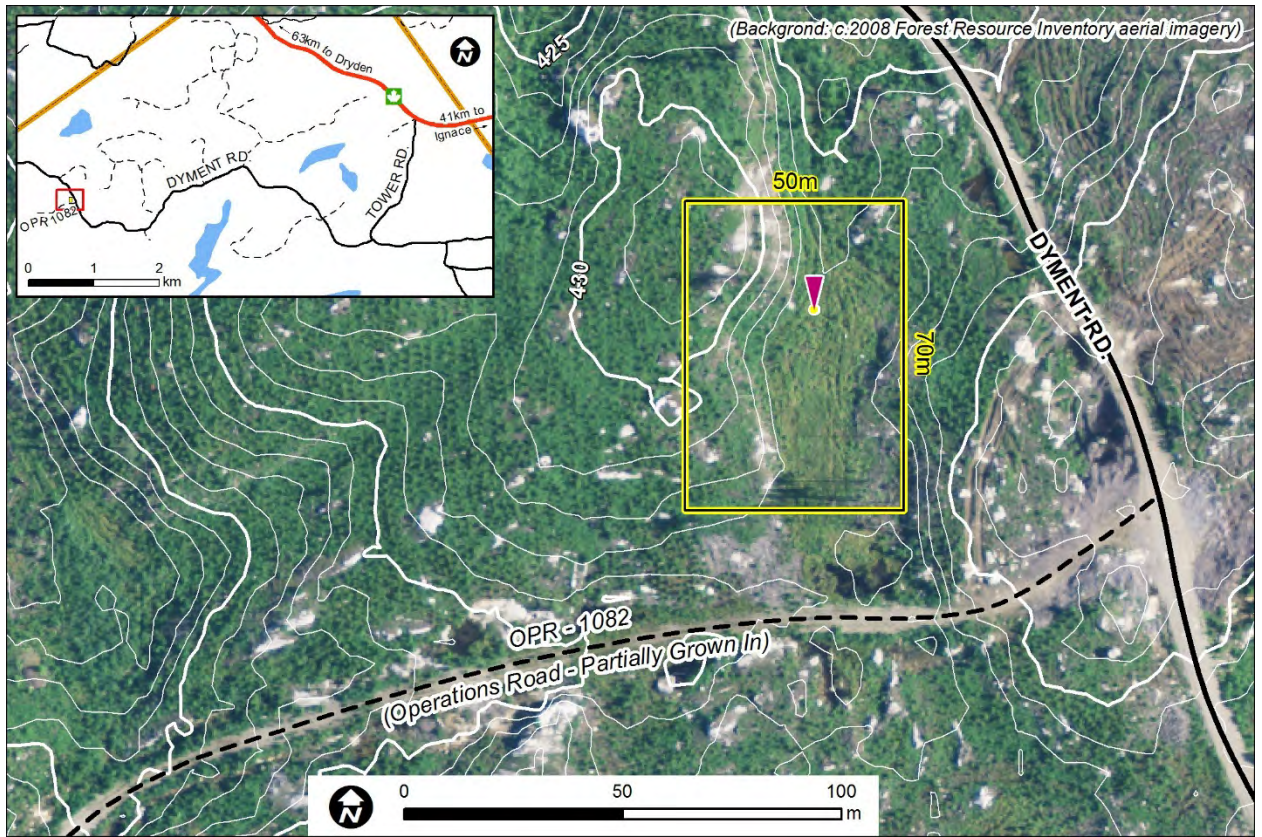


Figure 2: Approximate initial Borehole Location – 50 m by 70 m rectangle represents the fenced drill site location, purple marker indicates location of initial borehole



Figure 3: Photo of approximate initial borehole location

(a) Borehole Drilling Activities:

1. Construction of permanent and temporary structures

For the planned drilling work, no permanent structures are planned. Temporary structures will be brought to site and setup on the drill site. These structures will include various sizes of trailers that will serve as offices, storage and work areas.

All drilling, power generation equipment and fuel storage areas will be setup atop of spill containment structures. This is to provide additional spill protection in the event of an accidental spill or equipment failure.

2. Construction of, or improvements to, infrastructure such as access roads or trails, water crossings, including design specifications, methods, equipment, and materials to be used

a) Site Access

Access to the site chosen for the initial borehole location was selected in part based on existing road infrastructure and logging roads.

Equipment has been selected that can be driven into the sites based on the

existing road conditions. There may be a need to fill in areas on the roads with aggregate to level out potholes, large ruts or to smooth the transition where there is a sharp change in road angle.

A short access area is expected to be cleared to the site from the main access (Dyment) road. The distance is approximately 30 m. This would negate the clearing of the new growth on the old logging trail (OPR-1082).

b) Site Establishment

The pad (approximately 70 m x 50 m) will be prepared using aggregate sourced from a local supplier. The aggregate will be spread out using a skid steer or similar equipment and compacted using a small compacting roller. It is planned to fence the drilling site with an 8' high fence. This is to prevent wildlife from entering the site and to limit site spread. The fence may be removed at the end of the planned work (depending on decision to instrument and monitor borehole).

Equipment used during site establishment will likely include trucks for towing in the trailers, drilling support equipment and possibly the drill rig (may also be self-propelled), a small mobile crane to remove equipment from the transport trailers and place into final location (if required), pickup trucks and small equipment such as a skid steer.

c) Site Utilities

The site will operate diesel powered generators to provide the electrical power needed support the planned work activities. Power will be for offices, core logging activities, lighting, portable ablution facilities, yard lighting, etc.

Potable and process water will be brought to site.

Designated waste disposal bins will be setup on the site for the collection of all garbage generated during the work program. The garbage bins will be removed from site and taken to a licensed disposal facility located at the nearest town (Dryden or Ignace).

3. *Hazardous materials*

Hazardous materials will be stored according to regulated requirements. As required, and at the end of the planned work, hazardous waste will be removed from site and disposed of at a licensed disposal facility. Hazardous materials are likely to be limited to diesel and gasoline fuel, hydraulic fluid, grease and oil.

4. *Equipment fueling activities, including planned location for re-fueling and any fuel storage on site*

Due to the remote nature of the work location, all fuel for equipment and tools will be brought to site in a certified fuel transportation container and transferred to certified fuel storage containers. These containers will be double walled and stored in a dedicated fuel storage location with additional containment.

Fueling of large equipment will be done at the equipment e.g. the drill rig and power generator. This equipment will be positioned atop of containment. Where required, temporary spill trays will be placed beneath the refueling point to capture any leaks of fuel during the refueling activities e.g. when refueling small equipment such as a skid steer or pickup truck. Refueling of small tools e.g. a chainsaw, will be performed in a designated refueling area or atop of a spill tray. Fuel storage and refueling areas will be set away from temporary offices and drilling equipment.

Hand held fire extinguishers and spill kits will be located at the fuel storage and refueling locations.

5. *Vegetation and ground clearing activities, including equipment and methods to be used and the location and size of area(s) to be cleared*

Prior to the start of any work the Lead Contractor and NWMO will work with the MNRF representative to visit the site and review the planned work so as to minimize the required ground clearing for access and site establishment.

The site indicated in Figures 2 and 3 has been chosen in part to minimize the need for ground clearing and reduce the effects of erosion from water runoff. Where required, the ground will be cleared of small trees and left over wooded material remaining after previous logging activity. This material will be pushed to a suitably agreed area where it will be piled and left at the end of the drilling activity.

Minor clearing of fresh growth may be required if a previously overgrown logging route is to be used. This will likely be completed using a small dozer, skid steer or similar equipment.

6. *The planned activities to be performed once the site is established include:*

- a) Drilling and coring – A drill rig will be setup to drill and core either a NQ3 (75.7 mm (3 in)) or HQ3 (96 mm (3-3/8 in)) hole to a maximum depth of 1000 m. Included in the drilling setup will be the installation of conductor casing which will be bedded to a depth of 1 m below bedrock (casing length will be based on overburden depth). Drilling fluids and cuttings will be managed at surface and recirculated. Drilling fluids will be traced using a combination of naturally occurring water isotopes (oxygen, deuterium and tritium) and a fluorescent tracer.

Field measurements will be made regularly in order to maintain consistent drill fluid properties and to identify any component of drilling fluid in the groundwater and pore water samples.

- b) Core logging - All core retrieved will be logged, photographed and sampled on site and stored in core boxes. Some core samples will be taken and shipped off-site for laboratory testing. The core boxes, with the remaining core, will be removed from the site and stored in the core laboratory located in Ignace. All core will be logged and labelled for traceability.
- c) Geophysical well logging – the well will be logged using the appropriate truck-based equipment that will be lowered down into the drilled hole. At the completion of each activity, the equipment will be retrieved from the hole. One or more of the tests may require a radioactive source. All regulatory requirements for transporting, handling and removing the equipment will be followed.
- d) Hydraulic testing – A straddle packer system and accompanying equipment will be used to perform the hydraulic testing to determine the hydraulic conductivity of the rock at regular intervals down the borehole. The test locations will be based on the information gained from the geophysical well logging and core logging activities.
- e) Groundwater sampling and testing – If permeable zones are detected during the drilling and coring activities, samples of water from those areas will be collected, prepared for testing and shipped out for further laboratory analysis.
- f) Well sealing – At this time, it isn't determined if the borehole will be abandoned, or revisited and instrumented for additional monitoring. Based on the results from the planned program, there may be a requirement to return to the hole to perform additional testing at a later stage. The borehole will be temporarily sealed at surface and between zones that have differing hydraulic pressures or ground water chemistry (if any are identified). The wells may be instrumented to perform longer term data collection. If longer term data collection is not required, the well will be permanently sealed and abandoned according to provincial regulations.
- g) Site operation - The site will operate on a 24/7 basis during drilling and certain testing operations. Workers will access the work site on a daily basis as required for their working shift. The number of workers at the site will vary from 1 to an expected maximum of 15 per shift over the course of the work program. NWMO personnel and authorized visitors may be periodically at the site. Workers will drive to and from the work site.

7. *Decommissioning and clean-up of the Borehole Drilling Site*

At the end of the drilling and testing program all equipment and materials will be removed from the site (excluding potential long-term drill hole monitoring instruments). There may be a need to request retaining the prepared pad in the event that further testing is required.

In the event of a contaminant spill, the spill will be cleaned up according to the requirements of the contractor's Environmental Management Plan and the satisfaction of the regulating authority.

8. *Schedule*

The work is planned to begin in early July 2017 and be concluded within 6 months. The timing of the initiation of the work could be impacted by social engagement considerations.

9. *Alternate drilling locations*

Several sites have been reviewed based on project suitability and minimizing impact on the environment. The identified borehole location was selected in part because of its minimal impact on the environment.

Assessment Area

1. *Environment: physical and ecological features*

The borehole drilling site is located within ecosite B049TI (Dry to Fresh, Coarse: Jack Pine - Black Spruce Dominated). This ecosite reflects a recent (ca. 2005) clear-cut of the previous poplar/birch dominated stand classified by the eFRI as ecosite B055TI. Areas immediately abutting the drill site appear to have been re-planted to Jack Pine however the sparseness of the tree cover on much of the drill site proper indicates that either this area was left to regenerate through natural recruitment and existing understory (i.e. no planting) or that the planted crop may have failed. Soils on and around this site are indicated to be mostly sandy, and likely range from shallow to moderately deep (reflecting the bedrock dominated topography). One exception appears to be a linear depression running north/south through the center of the drill site along the toe slope of a rocky knoll. Sumac ELC suggest this depression may support a conifer swamp over deep organic soils (B128TIDn). This is supported by the sparseness of the tree cover and a change in lead species to stunted Black Spruce.

It should be noted that the soil depths for the ecosite interpretation may be overestimated. The site is more likely shallow to moderately deep rather than moderately deep to deep. The B128 swamp should be verified in the field; several factors for ecosite confirmation are not decipherable from the photographs. Also note that the B128 swamp is rather small (less than 0.5ha) and may be more appropriate as a secondary ecosite rather than a separate delineation. It is also possible that the size is overestimated given the change in elevation at its northern extent. The ecosite delineations will be confirmed as part of the environmental surveys completed prior to site disturbance.

The drill area and sensitivity buffers are shown on Figure 4. Note that the drill location was

selected, in part, due to the absence of sensitive areas as a means to avoid potential environmental impacts. Maps showing the field-verified results of the environmental characterization desktop work completed in the Revell withdrawal area (Appendix E) include:

- Land Use;
- Wildlife Habitat;
- NHIC Element Occurrences;
- Stream Reach Classification;
- eFRI ecosite Delineation;
- Sensitivity Buffers and Field Plots; and
- Field Verification Effort.”

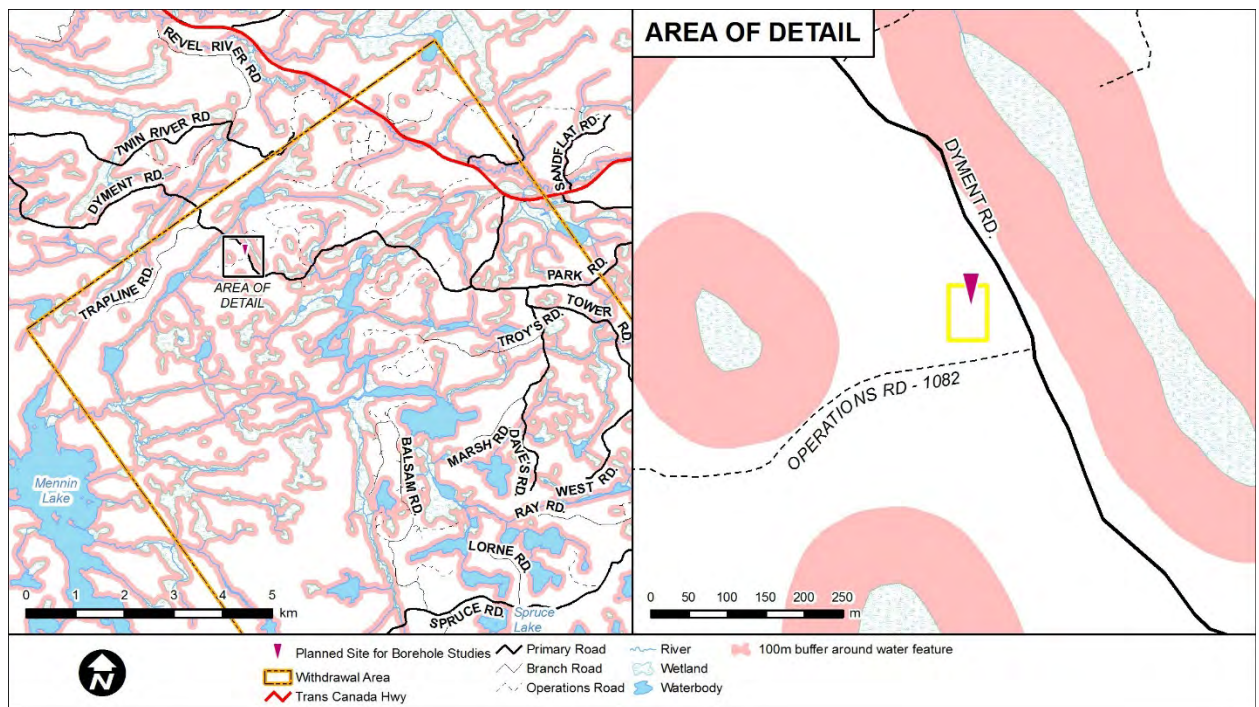


Figure 4: Drill area and sensitivity off-set buffers

NOTE: The NWMO will perform environmental field investigations to confirm conditions to support the development of the Environmental Management Plan for the drilling and borehole testing work planned (May/June 2017).

2. Land Use: present and past uses of the land, e.g. traditional use, recreational activities, industrial and commercial, residential, infrastructure;

The preferred site has been logged within the past few years. The area is identified on the 2017 Forest management plan as areas for mechanical preparation (Appendix A) however recent aerial imagery indicates the area has been recently replanted. Pre-disturbance site

investigations will be conducted and will confirm the current state of the site as well as the occurrence of species of concern and SWH.

3. Cultural Heritage

As part of the Initial Screening completed for the Ignace area (Golder, 2011), a cultural heritage screening examined known archaeological and historic sites in the Ignace area, using the Ontario Archaeological Sites Database. No known archaeological or historic sites are located in or near the initial borehole location.

The NWMO, in conjunction with the Wabigoon Lake First Nation community, will walk the land as part of a cultural verification study to verify that the site does not contain any archaeological artifacts prior to the start of site establishment.

Evaluation of Potential Effects

The following is a list of potential environmental effects that the Borehole Drilling Project could have on the Assessment Area:

- Open drill hole as conduit for groundwater contamination, including rod greases, drilling water and drilling muds/fluids
- Diversions and grading causing altered surface water flow and increased erosion
- Compaction and degradation of surface soil and root/seed stock from site clearing
- Solid waste storage or disposal, including drill core, refuse, and scrap metal
- Soil, surface water, and ground water contamination from spills
- Storage or usage of materials such as petroleum hydrocarbons, drilling fluids/muds or other chemicals
- Increasing stress that affects, for example, breeding, migration, or nesting
- Vehicle strikes causing injury or death
- Introducing non-indigenous species that upset and imbalance the ecosystem
- Disturbance or destruction of habitat and food supply

The following sections describe how these potential effects will be avoided or mitigated.

Avoidance and Mitigation of Potential Effects

Avoidance:

The drilling site was selected in part based on the potential to avoid environmental impacts in that location:

- Remote area isolated from known recreational, residential, and commercial uses to prevent nuisance disturbance to human receptors from potential drilling effects, such as noise, dust, and lighting.
- The location is greater than 100 m from a wetland, watercourse, or waterbody
- Area was selected in a recently forested areas to minimize clearing
- The area is adjacent to an open access road to minimize impacts resulting from road or path construction and water crossings.
- The drill pad area is small (approximately 50 m by 70 m) to avoid any unnecessary impacts.
- The drill area will be fenced to avoid site creep and wildlife interactions.
- To avoid all water taking, water will be trucked in.
- To avoid any discharge of water or effluent, all drilling water will be re-circulated, captured and trucked offsite to a designated licensed facility.

Mitigation

The following is a summary list of planned mitigations based on planned work. A detailed table will be produced. The Environmental Management Plan will detail the required management of all Significant Environmental Aspects identified based on the planned project work:

- Perform surface water and soil sampling prior to the start, during and at the end of the planned work.
- Setup of silt curtains and berms to manage silt from water runoff
- Dedicated storage areas with spill containment for storage of fuel, oil and drilling fluids.
- Water management system for drilling fluids (Recirculation, filtering, offsite disposal)
- Waste disposal bins on site for garbage (disposed of offsite at registered waste disposal site)
- Offsite disposal of sewerage waste from ablution facilities.
- Placing of all drilling and support equipment over additional containment (drill rig, generators, testing equipment)
- Casing of drill hole from surface into competent rock
- Environmental Site surveys to be conducted prior to start of site prep to determine the need for species specific mitigation.
- Environmental management plan to address site survey findings – will be monitored by NWMO.
- Traffic management plan to minimize possible vehicle accidents and unnecessary ground compaction.
- Fenced work area to limit wildlife entering the work site and prevent site creep.
- Site lighting to be focused on working areas.
- Management of cleared vegetation in accordance with MNR guidelines

- Surface soil management and root mat preservation for re-use during site decommissioning to minimize erosion and to preserve native seed stock.
- Site spill management plan and onsite spill kits.
- Contractors will be trained on NWMO's Environmental Guidelines for Contractors (based on Leave No Trace principles) to minimize impact, harvesting, and hunting or harassment of wild animals).
- Site survey with Aboriginal community members prior to start of site clearing

Record of Public and Stakeholder Engagement

The NWMO has had extensive engagement with the local communities over the past years. Please see the following attached documents for a summary of activities to date.

1. Record of Aboriginal Engagement in the Ignace Area – Appendix C
2. Borehole Drilling: Public and Stakeholder Engagement Report, Ignace and area – Appendix D

It should be noted that this engagement is ongoing and will continue for the duration of this, and the planned future borehole drilling work.

As the project progresses further engagement and communication will occur with other identified stakeholders. These include those that will be identified to the NWMO by the MNRF.

Appendix B – Example of Potential effects and Mitigation Measures table (to be developed with contractor).

Potential effect	Mitigation
Surface water contamination (fuel, greases, metals)	Conduct baseline surface water sampling program prior to drill pad preparation and site clearing. Multiple levels of containment will be used to minimize contamination.
Potential soil contamination (fuel, greases, metals)	Conduct baseline soil sampling program prior to drill pad preparation and site clearing. Multiple levels of containment will be used to minimize contamination.
Increase erosion/sediment transport during spring melt from snow buildup	Winter work will include snow clearing. Snow will be cleared for safety and work access, and piled in multiple smaller piles or berms to minimize the risk of soil erosion and due to runoff.
Loss and damage of vegetation from land clearing	<p>Clear land of vegetation just in advance of when it is required. Avoid clear cutting and bulldozer blading. Drive over flattened vegetation, to preserve rootstock and prevent soil erosion. Limit the amount of clearing with heavy machinery.</p> <p>Wherever possible, preserve the organic mat.</p> <p>Avoid cutting commercial plant species (presume someone is cultivating them). Cut and remove unstable or snagged trees where they pose a danger to workers or could fall across the roadway. Shall not leave trees leaning into marginal timber. Leave large trees standing, if possible. Weave site vehicle access around trees or relocate facilities to help reduce the visual impact of vegetation clearance.</p>
Disturbance or destruction of habitat	Surveys will be completed in advance of site disturbance for whip-poor-will. The drill pad is small, to avoid unnecessary disturbance.
Introduction of non-indigenous species	Ensure that revegetation programs do not introduce any non-indigenous plant species. Ensure that all equipment arrives on site in clean condition, with no visible earth or vegetation debris.
Contamination of shallow groundwater	Minimal cut and fill will be required. Any required cuts will remain shallow and will not extend to the water table.
Dust and deposition	Reduce vehicle speed on dusty roads and trails. Install temporary windbreaks to control dust dispersion by using polyethylene netting, burlap or lath fencing if required
Migratory bird disturbance	No clearing between restricted time
Impacts from road construction	Avoided. The borehole location was selected along existing access roads to avoid any impacts related to road construction.
Contamination of groundwater from use of drilling fluids	Avoided. Drilling fluids are limited to water, and will be trucked in, collected, and trucked out to an approved facility.

Oil spill	Secondary Containment and the maintenance of the majority of equipment off site will minimize potential oil spills. Spill kits will be available in the event of an incident.
Soil compaction	Minimization of the drill pad area to minimize area of compaction. All vehicle movement (including trucks, site access vehicles, drill rigs, heavy equipment, snowmobiles, etc.) shall be kept to a minimum and vehicles shall not deviate from the assigned route to the site. Area and routes shall be clearly demarcated.
Disturbance of soil ecosystem. Topsoil contains valuable nutrients, micro-organisms, minerals, seeds, and root stocks, vital to the ecosite. Seeds of native species are contained in topsoil and is important plant species diversity in the disturbed area.	Stockpile topsoil separately from subsoil and protect it for future use in reclamation. Heavy mulch of decaying vegetation should be removed first and stockpiled separately. Topsoil (top 10-20 cm of soil), and subsoil will be stockpiled in separate piles no higher than 1-2 m and used for rehabilitation of the disturbed areas. Soil will be covered with permanent or temporary vegetation to prevent erosion.
Sensitive habitats: whip-poor-will	Qualified specialist to survey site in advance of site preparation to determine the presence of whip-poor-will.
Sensitive habitats - bat hibernacula	Survey site in advance of site preparation to determine the presence of sensitive habitats (suitable deadwood etc).
Sensitive habitat - breeding bird	Clearing work will be completed outside of migratory bird nesting schedule (see Figures 1 and 2 below). If clearing work is required during the nesting schedule, breeding bird surveys will be conducted prior to disturbance, and efforts will be made to clear land prior to after peak nesting period. Monitoring may continue throughout the drilling program at appropriate intervals.
Collecting or harvesting of plant material	All contractors will be trained on NWMO's Environmental Guidelines for Contractors which adopts the Leave No Trace principles. No harvesting or collecting of plant materials will be permitted
Hunting and harassing of wild animals	All contractors will be trained on NWMO's Environmental Guidelines for Contractors which adopts the Leave No Trace principles. No hunting and harassing of wild animals will be permitted.
Disturbance of wildlife - lighting	No spotlights will be pointed away from the work area. All lights used for drilling activities shall be shielded and pointed downward to avoid light spillage.

<p>Fire</p>	<p>The following shall be observed to prevent bush fires:</p> <ul style="list-style-type: none"> - Smoking shall be restricted to designated areas and cigarettes shall be extinguished and disposed of in appropriate designated receptacles - onsite fire extinguishers in sufficient numbers for the number of maximum employees -regular fire drills - regular inspection and clearing of site around equipment with ignition or sparking potential for dry debris - records will be kept of all drills and inspection - No fires (cooking, heating, waste management) permitted on site.
<p>Impacts from water taking</p>	<p>Avoided. All water will be trucked in.</p>
<p>Impacts from effluent/discharge water</p>	<p>Avoided. All water will be trucked out.</p>
<p>Solid waste</p>	<p>All solid waste will be collected in appropriate receptacles and removed from site and transferred to an appropriate licensed facility. Upon completion of the borehole, all rock core will be removed from the drill site and stored in an NWMO off-site core storage facility. Good housekeeping practices shall be maintained at all times. All contractors be trained on the NWMO Environmental Guidelines for Contractors, and training records shall be retained and inspected.</p>
<p>Disturbance of site of anthropological or archeological importance</p>	<p>Agreement with MNRF to share non-aboriginal historical element occurrences verified prior to disturbing the site.</p>
<p>Increase soil erosion and sedimentation: Degradation of surface waters with eroded sediment. Altered patterns of surface water flow and drainage. Increased stream flow velocity or channelling flow (channelization). Loss of valuable and productive topsoil. Generation of non-point source pollution (mainly sediment, but also spilled fuels). Destruction of natural habitat (on land and in aquatic ecosystems). Compaction of soil, which reduces the capacity of water to infiltrate soil resulting in higher runoff volumes.</p>	<p>Minimizing vegetation, soil and bedrock disturbance and exposure to wind and water, collecting and managing (dispersing) runoff and drainage, and collecting and removing sediment. Control structures: Straw bales and sandbags, incorporating geotextile filter cloth, silt fences, brush barriers, diversions and dams, sediment traps or basins.</p>

Management of cut vegetation	Store removed vegetation so that it can be later used as a seed source, moisture retention aid, and shade for new growth during reclamation. Incorporate some of the cut timber and slash into a road/drill pad sub grade and dispose of the remainder of the slash by scattering, piling or burying. Use some of the vegetation that was removed as mulch. Lop or limb cut bulldozed trees and scatter the branches and limbs. Use some of the removed vegetation as mulch. Cut slashed vegetation (slash) into less than 4 m lengths, cover with at least 1 m of soil, reseed, and fertilize. Dispose of slash such that it does not degrade aquatic habitats or pose a fire hazard.
Erosion: soil on slopes	N/A

Zone	Regional nesting period
C1	Late March - Late August
C2	Early April - Late August
C3 and C4	Mid-April - Late August
C5	Late April - Late August
C6	Late April - Mid-August
C7 and C8	Early May - Mid-August
Zone	Regional nesting period

Figure 1 - Regional nesting periods for different zones

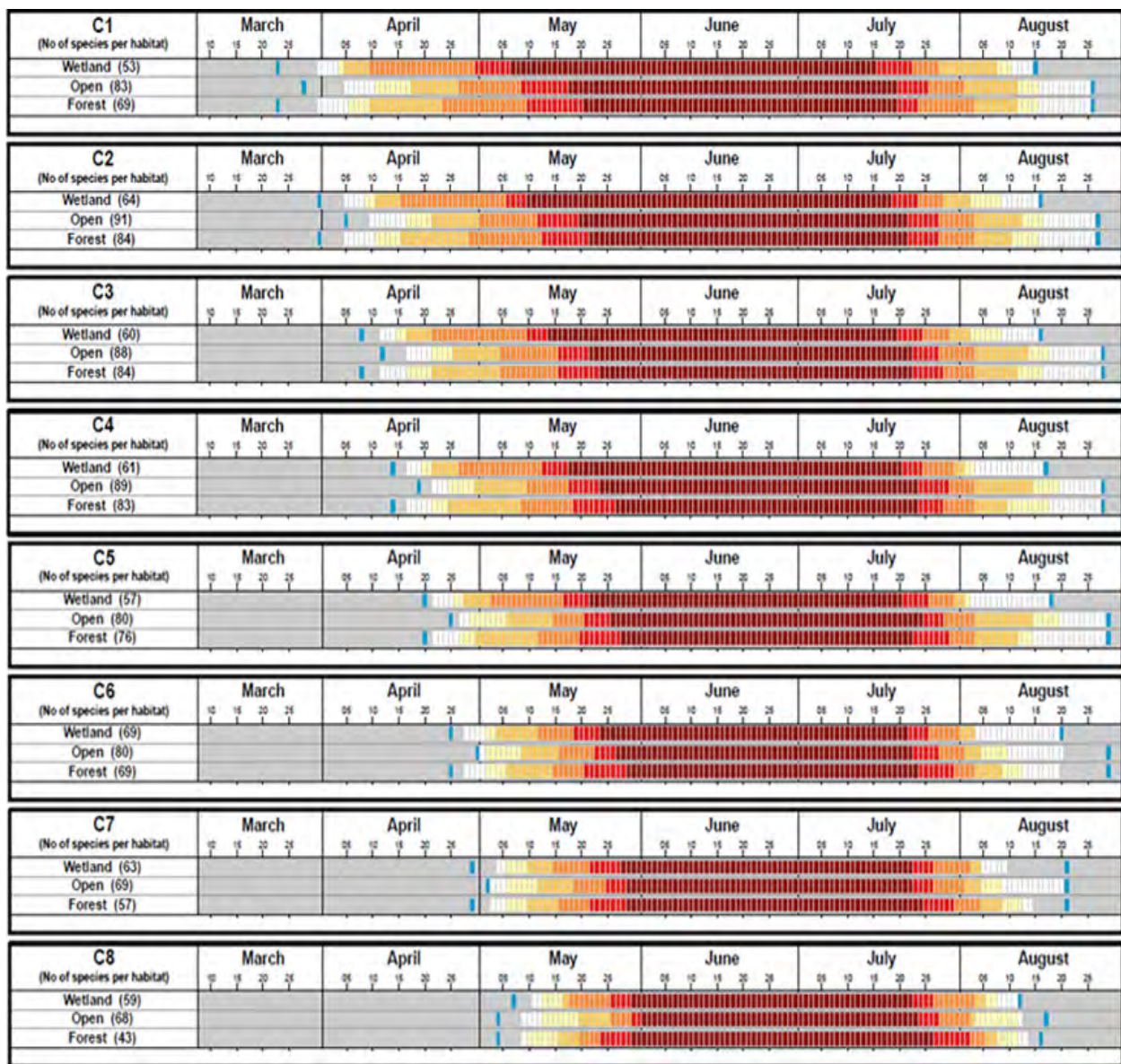


Figure 2.

Appendix C - Record of Aboriginal Engagement in the Ignace Area – March 2017



NUCLEAR WASTE SOCIÉTÉ DE GESTION
MANAGEMENT DES DÉCHETS
ORGANIZATION NUCLÉAIRES

Record of Aboriginal Engagement in the Ignace Area



March 2017

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1. INTRODUCTION

This Record of Aboriginal Engagement in the Ignace Area is being submitted by the Nuclear Waste Management Organization (NWMO) as part of the Ignace Borehole Drilling Project Description.

The Record of Aboriginal Engagement is made in accordance with section 4.3(f) of the Memorandum of Understanding between Her Majesty the Queen in right of Ontario as represented by the Minister of Natural Resources and Forestry (the “Minister”) and Nuclear Waste Management Organization (“NWMO”) made as of March 20, 2017 (the “MOU”). As such, this record of engagement provides a description of any actions taken by NWMO to engage Aboriginal communities up to the date of submitting the Borehole Drilling Project Description Submission.

2. ENGAGEMENT OF FIRST NATION AND MÉTIS COMMUNITIES AND ORGANIZATIONS IN THE IGNACE AREA

2.1 The NWMO's Approach to Aboriginal Engagement

The NWMO's approach to engagement of Aboriginal peoples is based on a set of key principles founded in the *Nuclear Fuel Waste Act (2002)*¹, and supplemented by advice from Elders, key court decisions regarding the importance of Aboriginal and Treaty rights, the notion of community wellbeing, and the Final Report of the Truth and Reconciliation Commission of Canada²:

- Broad-based Aboriginal engagement
- Respect for Aboriginal and Treaty rights
- Recognition of the valuable role Indigenous peoples can play in the development of major projects e.g. interweaving Traditional Knowledge
- Ensuring strengthened community wellbeing
- Contributing to reconciliation between Indigenous and non-Indigenous Canadians

For the purpose of this Aboriginal Engagement Report, NWMO considered Indigenous communities in proximity to the proposed site for the borehole drilling activities within the "Revell" parcel as set out in Appendix "A" to this Aboriginal Engagement Report.

2.2 First Nation Engagement

The NWMO has engaged with First Nations communities in the Ignace area since 2011, when it signed a Liaison Agreement with Grand Council of Treaty #3, providing funding for both a Chiefs and an Elders forum to deliberate on APM, as well as salaries and benefits for support staff.

In 2014 the NWMO's Council of Elders, and that of the Grand Council of Treaty #3, held a joint meeting to deliberate and plan for future engagement between the two organizations.

In 2013 NWMO entered into a Liaison Agreement with Nishnawbe Aski Nation (NAN), a political organization representing 49 First Nation communities in northern Ontario, to provide it with funding to facilitate community information sessions and other activities such as Learn More Briefings and Dry Storage Tours.

With respect to specific First Nations, in 2012 NWMO provided notification letters to all the First Nations detailed in Section 4.2, below [see Appendix B, "Step 3 Notification (Site Selection) Letter"] offering to meet with leadership to provide a project briefing. To date, WLON, ELFN, SRFN, and LDML have accepted the offer of a project briefing. In 2013, the same First Nations were offered funding under the NWMO's APR Program to support their learning about Adaptive Phased Management (APM), and NWMO learning about them (see Section 3.1, above).

¹ <http://laws-lois.justice.gc.ca/eng/acts/N-27.7/>

² http://www.myrobust.com/websites/trcinstitution/File/Reports/Volume_6_Reconciliation_English_Web.pdf

2.2.1 Wabigoon Lake Ojibway Nation

Wabigoon Lake Indian Reserve No. 27 is located approximately 34km northwest of the proposed drill site via TransCanada Highway (17).

(Content below in section 2.2.1 provided by Wabigoon Lake Ojibway Nation)

NWMO became engaged with the Town of Ignace in about 2009 regarding NWMO's Adaptive Phase Management (APM) siting process.

In 2010 WLON notified NWMO that their siting process is taking place within WLON's traditional and treaty territory and will have impacts on WLON's constitutionally protected Aboriginal and Treaty rights.

WLON entered into a Protocol Agreement with NWMO that states clearly that a DGR will not be located within our territory without the informed and written consent of WLON

WLON is involved in a learning and sharing process with NWMO to gather information to better understand the project and to engage our community with a focus on Nishnabe values, culture and the protection of the natural environment and the potential impacts on WLON and our lands and resources.

2.2.2 Lac Seul First Nation

Lac Seul Indian Reserve is located approximately 80 kilometres due north of the proposed drill site, to the immediate west of Sioux Lookout, Ontario. LSFN was notified of the entrance of Ignace in the site selection process and offered a briefing in 2012, and in 2013 was offered APRP funding to participate in learning about APM in 2013, but declined both offers.

Lac Seul concluded their election process during the fall of 2016 and has now expressed an interest in entering into Learn More relationship with NWMO by participating a Dry Storage Tour at a nuclear generating station in Ontario. The target date for the tour is May 10th, 2017.

2.2.3 Lac Des Mille Lacs First Nation

LDML has two reserves: Seine River Indian Reserve No. 22A2 (approximately 143 kilometres southeast of the proposed drill site), and Lac Des Milles Lacs Indian Reserve No. 22A1 (approximately 155 kilometres southeast of the proposed drill site). NWMO began its engagement of LDML in November 2015 with a briefing of Chief and Council, and entered into a Learn More agreement in March of 2016, which provided funding for community information sessions, workshops, and Traditional Knowledge gatherings. NWMO continued to engage with LDML First Nation through 2017 to provide information relevant to planning for bore hole drilling. In March 2017, a meeting was held with Band staff to discuss the proposed borehole drilling plans, at which point NWMO committed to returning to the community in May of 2017 to make a presentation on borehole drilling to the Chief and Council and another presentation to the community at a later date.

2.2.4 Seine River First Nation

SRFN has a number of reserve land parcels approximately 100 kilometres south of the proposed drill site. NWMO entered into a Learn More agreement with SRFN in September of 2016, providing funding for community information sessions, Traditional Knowledge learning and demonstration, and translation. Subsequently, NWMO met with leadership and community members in October, 2016 and February, 2017 to discuss numerous aspects of APM, including geophysical fieldwork.

2.2.5 Eagle Lake First Nation

ELFN is located approximately 100 kilometres northwest of the proposed drill site, to the immediate west of Dryden, Ontario. NWMO first engaged with ELFN in October of 2015 through a meeting with the Chief and Council to introduce the APM project. NWMO subsequently met with ELFN's Elders and Chief and Council to present the overall project description in November, 2016. Although NWMO does not have a Learn More agreement or regular briefings scheduled with ELFN, it has deferred to its "sister community" WLON to keep it apprised of developments related to APM, and borehole drilling. At a briefing meeting with ELFN in April, 2017, ELFN notified the NWMO that they would like to enter into a Learn More agreement.

2.2.6 Ojibway Nation of Saugeen

The ONS reserve is located approximately 140 kilometres northeast of the proposed drill site, to the immediate north of Savant Lake, Ontario. ONS was notified of the entrance of Ignace in the site selection process and offered a briefing in 2012, and in 2013 was offered APRP funding to participate in learning about APM in 2013, but declined both offers. However, NWMO staff met with the Chief of ONS in the fall of 2015 to provide an update on the site selection process, and has since regularly solicited ONS's interest in entering into a Learn More agreement. To date, ONS has declined that offer.

2.2.7 Nootkamegwanning First Nation

Nootkamegwanning First Nation is located over 200km east of the study area and has expressed an interest to learn more about the APM process. On April 26, 2017, NWMO and Nootkamegwanning entered into a "learn more agreement" to learn more about the APM process. Nootkamegwanning has asserted commercial fishing rights on Lake Wabigoon, among other things.

2.3 Métis, non-status and off-reserve

The NWMO has engaged with the Métis, non-status and off-reserve Aboriginal organizations indicated in section 4.3 (MNO, APOW, and OCIP) since 2010:

2.3.1 Métis Nation of Ontario

NWMO's engagement of MNO on APM began in August 2010, shortly after the NWMO's site selection process began. NWMO arranged with MNO to conduct a half-day workshop prior to the start of MNO's Annual General Assembly (AGA) in Thunder Bay

that year. Since that time, NWMO has conducted a half-day briefing and update on the site selection process at every MNO AGA.

In 2011 NWMO entered into an Engagement Liaison agreement with MNO that provided funding for a part-time position within MNO to assist in coordinating NWMO's participation in their AGA, and any other engagement activities related to APM that may arise.

In 2012 NWMO and MNO entered into a comprehensive engagement agreement covering the period 2012-2013 that saw the salary for an Engagement Liaison increased to full-time, funding for the annual AGA NWMO workshop, funding to enable leadership from five MNO regions to travel to the GTA to tour used nuclear fuel "dry storage facilities," a series of community briefings and feasts, and funding for the inclusion of information about NWMO and APM in the Voyageur newsletter, MNO website, etc. (Communications).

In 2013 the NWMO made available to MNO funding under the new Aboriginal Resources program to undertake research on MNO citizens' long-term aspirations for the six MNO regions NWMO was engaged with, and their traditional, historical and current use of land. During the months of March and April of 2013, the NWMO travelled to Sault Ste. Marie, Timmins, Owen Sound, Terrace Bay and Sudbury to meet with the respective Regional Consultation Committees and to deliver an update on their plans for the long-term management of Canada's used nuclear fuel during a community gathering. All of the above engagement activities have included high-level information related to Step 3 Phase 2 geophysical work, which includes aerial surveys, rock sampling, and borehole drilling. Some general questions related to these activities have been received in the past, but no major concerns have been expressed.

Throughout 2014-2017 NWMO maintained engagement with MNO through funding agreements (General Relationship Agreements, or "GRAs") of a similar scope and funding level as the 2012-2013 Agreement. In addition, during this time NWMO provided MNO with funding to facilitate Community Wellbeing workshops with citizens at the Regional level, and undertake an Engagement Review, intended to inform future directions/approaches to NWMO-MNO Engagement on APM.

In December 2016, NWMO and MNO entered into a Traditional Knowledge and Land Use Study (TKLUS) that provided funding to MNO Region 1 to interview traditional land users in the Ignace area for historic and contemporary land use and Métis interests, and to review and comment on documentation related to NWMO's application for permission to undertake borehole drilling in the Ignace area in 2017. While it was not expected at the time the agreement was entered into that all activities would be complete by the time NWMO sought permission from Ontario for its planned activities, it was anticipated that the TKLUS could provide an early indication of any concerns with the particular location NWMO was planning to drill its first borehole, and lay the foundations for ongoing research and documentation of MNO interests in the Ignace area throughout the site selection process.

Since 2013, NWMO has included in all of its presentations to AGAs, briefings of Regional Consultation Committees (RCCs), Community Information Sessions, and Dry

Storage tours, information about planned geoscience research activities, including borehole drilling.³

2.3.2 Aboriginal Peoples of Wabigoon

The Aboriginal Peoples of Wabigoon (APOW) were identified in 2015 as having an interest in the project given their proximity to Ignace and the Proposed Borehole Drilling Site. Based on information as of the date of this Aboriginal Engagement Report, the members of APOW consist of 71 full members, 9 associate members and 45 youth members. The majority of members live in the Hamlet of Wabigoon while a small number live on the WLON reserve and some in nearby Dryden, Ontario. Some members of APOW had at one time identified as Métis, but have since obtained status as Registered Indians as members of WLON (living both on and off-reserve). Others continue to identify as Métis, or non-status Indians.

Since 2015, the NWMO has delivered a number of community information sessions to members of APOW, and has taken a group of nine on a tour of the Western Waste Management Facility at Bruce Nuclear Generating Station in April of 2016. In all presentations to the members of APOW, mention was made of plans to undertake borehole drilling in the Ignace area.

2.3.3 Ontario Coalition of Indigenous People

The Ontario Coalition of Indigenous People (OCIP) advocates on behalf of off-reserve Aboriginal peoples (Métis, Status and non-Status Indians) living in urban, rural and remote areas throughout Ontario. OCIP is an incorporated, not-for-profit, and membership-based coalition of Aboriginal peoples in Ontario. It is not known how many members belong to OCIP, nor where they live. However, NWMO has been engaged in community Learn More sessions with OCIP members since 2015, including in the Ignace area.

In both 2015 and 2016, presentations were made to members of OCIP throughout Ontario, including in Ignace, Dryden, and Thunder Bay. As well, OCIP members have toured used nuclear fuel management facilities at Darlington and Pickering nuclear generating stations on a number of occasions.

3. SPECIFIC ENGAGEMENT OF ABORIGINAL PEOPLES ON BOREHOLE DRILLING IN THE AREA OF IGNACE, ONTARIO

3.1 Aboriginal communities and organizations contacted for engagement on borehole drilling

The map at Appendix C provides an overview of Treaties and First Nation communities in relation to the Revell Parcel (100 km buffer), and the map at Appendix D provides an overview of MNO Consultation Committee areas (Ignace falls within Region #1 - Treaty #3, Lake of the Woods/Lac Seul and Rainy Lake/Rainy River Traditional Territories).

³ Information provided to MNO Regions 1, 2, 3, 4 and 5 in northern Ontario differed from that provided to Region 7 in southern Ontario because the difference in geology gives rise to a different approach to selecting potential drill sites.

The following communities have been notified of NWMO's intention to apply for permission to undertake borehole drilling on Crown land in 2017, and or offered a briefing:

- Wabigoon Lake Ojibway Nation (WLON)
- Lac des Milles Lacs First Nation (LDML)
- Eagle Lake First Nation (ELFN)
- Ojibway Nation of Saugeen (ONS)
- Lac Seul First Nation (LSFN)
- Seine River First Nation (SRFN)
- Naotkamegwanning First Nation
- MNO Region 1

3.2 Briefing on borehole drilling

As of March 31, 2017, and as part of the Learn and Sharing process, the communities indicated below have been provided technical briefings on NWMO's intention to undertake borehole drilling:

Community/Organization	Date	Location
Métis Nation of Ontario Region 1 Consultation Committee	January 18, 2017	Dryden
Wabigoon Lake Ojibway Nation	February 22, 2017	Winnipeg (Chief and Council)
	March 2, 2017	Wabigoon Lake (Community Meeting)
Lac des Milles Lac First Nation	March 20, 2017	Thunder Bay

The communities and organizations above were provided a presentation delivered by senior NWMO Geoscience and Aboriginal Relations staff.

3.3 Interweaving Indigenous Knowledge

In discussing potential borehole locations with Indigenous people in the area, the following considerations were shared with us:

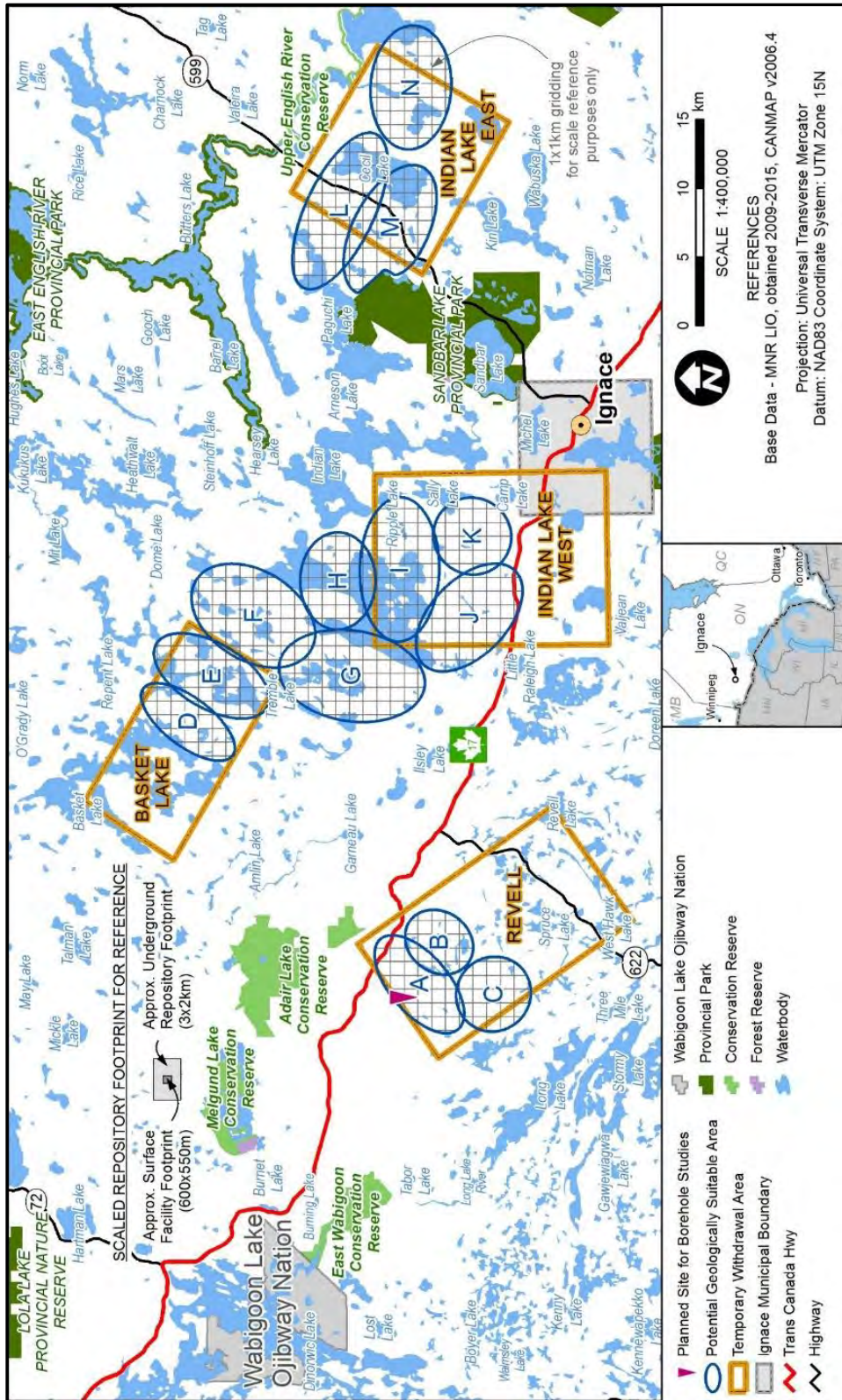
- Traditional Knowledge
- Land use and occupancy
- Ceremony
- Asserted and Established Aboriginal and Treaty rights
- Trap lines

The NWMO will ensure Indigenous intellectual property is protected as agreed with the people who choose to share that knowledge and as in the Indigenous Knowledge Policy.

3.4 Funding to Support Participation in the Borehole Drilling Review Process

MNO Region 1 have been provided funding to review and comment on the Project Description and Record of Aboriginal Engagement, participate in community borehole drilling update presentations, observe the borehole drill site, and comment on both the Consultation Plan, and the final Record of Aboriginal Consultation.

APPENDIX A: Proposed Site for Borehole Drilling



APPENDIX B: Sample Step 3 (Site Selection Process) Notification Letter

April 20, 2012

Chief Clifford Bull
Lac Seul First Nation
PO Box 100
Hudson, ON P0V 1X0

Dear Chief Bull:

As you may be aware, the Nuclear Waste Management Organization (NWMO) is federally mandated to implement Canada's plan for the long term management of used nuclear fuel, which is a by-product of the production of electricity from nuclear power plants. Canada's plan, which is called Adaptive Phased Management or APM, involves the construction of a large, high-technology project. This \$16- to \$24-billion national infrastructure project will involve the development of a deep geological repository for the long-term management of used nuclear fuel and a national centre of expertise.

In 2010 the NWMO began a process to find a willing host community for Canada's deep geological repository. Although only one site is needed, currently 17 communities in Ontario and Saskatchewan, two of which are Aboriginal communities, have expressed initial interest in learning more about the project. Most of these communities have gone through an initial screening to see if there is potential for their community to be part of our process. This is a very early step in our process and I wish to assure you that no commitment has been made to any community or region. The site for a facility will not be chosen for many years.

Elders whom we work with have advised us to explore the possibility of working together with Aboriginal communities to assess the possible environmental effects of the project on Mother Earth through the application of Traditional Knowledge. They have also advised us to work closely with potentially affected Aboriginal communities in order to ensure that these communities benefit from this project should it be built in their territory. This could include matters such as, assessing the suitability of a particular site for the project and identifying the terms and conditions on which the project might proceed. The process could also include agreements with Aboriginal communities to ensure that they benefit from the economic opportunities, employment, education and capacity building a project this size will bring. Building a project of this size will generate thousands of jobs in the host region and potentially hundreds of jobs in a host community for many decades.

Because interest has been expressed by the Township of Ignace which is in your area, I am writing to update you on our process and to let you know we are available to meet and to try and answer any questions you may have.

The Township of Ignace recently passed a resolution expressing interest in having NWMO conduct a preliminary study of its potential suitability for hosting the project.

The first phase of the Preliminary Assessment is expected to take a year or more to complete and involves desktop technical and social studies and broad engagement of communities and Aboriginal peoples who may be affected in the area. I wish to assure you that the NWMO will work with Aboriginal communities in every region in which we are involved in a shared decision-making process

leading to strong and lasting partnerships. In all of our work the health and safety of the environment and of people is the first priority.

I want to emphasize the importance of ensuring the neighbours of any potential host community, including all Aboriginal communities, are fully informed of our project. The NWMO's work with Aboriginal peoples is guided by a few key principles:

- We acknowledge, respect and honour that Aboriginal peoples have unique status and rights as recognized and affirmed in s. 35 of the *Constitution Act (1982)*.
- We respect Aboriginal and Treaty rights.
- We recognize the unique circumstances of the Aboriginal peoples we will be working with and therefore our need to have an open mind on process.
- We believe that collaboration is key to a project of this size and therefore seek to make strong and lasting partnerships and relationships.
- We believe that Aboriginal Traditional Knowledge will make our processes and our project better and therefore will seek to engage Traditional Knowledge holders in all aspects of our work and to interweave this knowledge with our work as appropriate and as agreed with the owners of this Knowledge.

NWMO also works in an environment of the highest regard for safety to protect the present generation and all our children yet to come. Transparency and accountability are therefore vital commitments in our plans and operations.

Our process recognizes the importance of working with Aboriginal peoples in whose traditional territories we are proposing to work and the need to ensure there is on-going involvement and participation in decisions that affect them.

Given the importance of your participation at this very early step in the process, we would welcome the opportunity to brief you on the work that is underway and to discuss how to ensure you are informed and involved in the process and the project to the extent that you desire. The NWMO and the Township of Ignace are strong believers in transparency and inclusiveness and we intend to ensure we are partners communities can count on as we move forward.

Bob Watts, Director, Aboriginal Community Relations, will be in touch with your office in the coming weeks to arrange a time to meet to discuss our project.

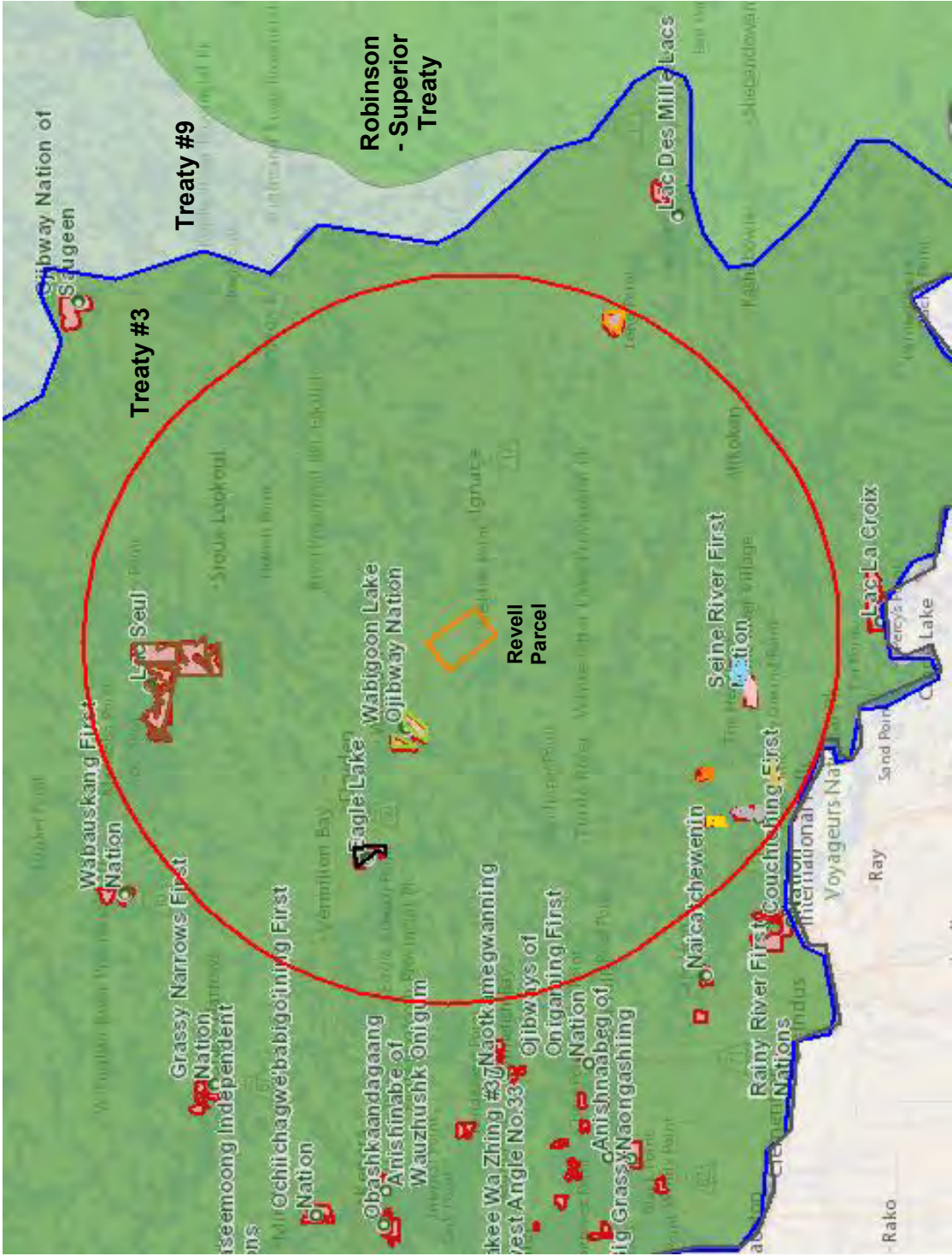
Sincerely,



Kathryn Shaver
Vice President, APM Engagement and Site Selection

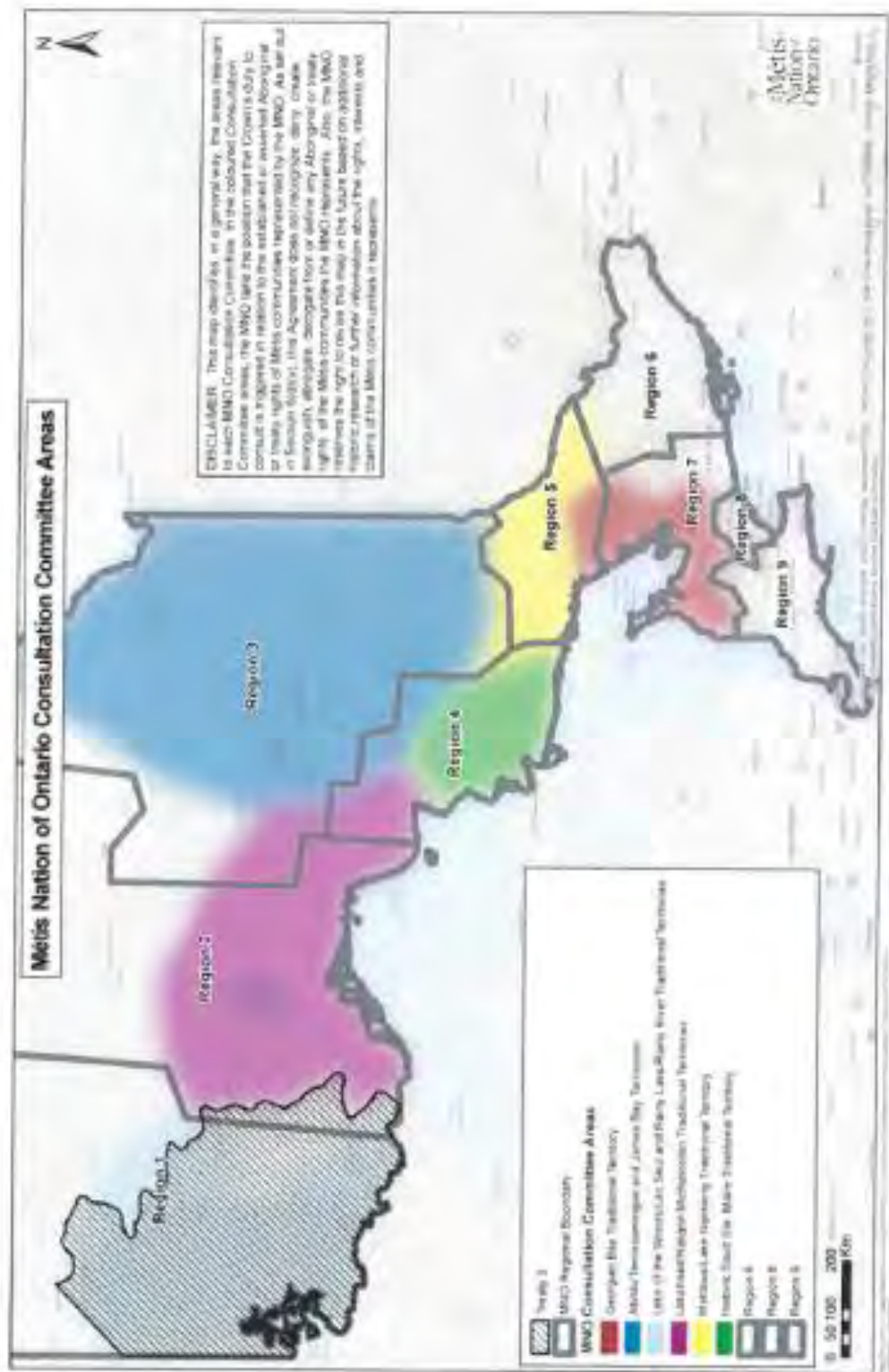
Copy:
Grand Chief Diane Kelly, Grand Council Treaty 3
Regional Chief Angus Toulouse, Chiefs of Ontario
Mayor Lee Kennard, Township of Ignace

APPENDIX C: Treaties and First Nation Communities in relation to the Revell Parcel (100 km buffer)



Source: Aboriginal Treaty Rights Information System (www.inac.gc.ca)

APPENDIX D: Métis Nation of Ontario Consultation Committee Areas



Appendix D - Borehole Drilling: Public and Stakeholder Engagement Report, Ignace and area – March 2017

nwmo

NUCLEAR WASTE
MANAGEMENT
ORGANIZATION

SOCIÉTÉ DE GESTION
DES DÉCHETS
NUCLÉAIRES

Borehole Drilling: Public and Stakeholder Engagement Report

IGNACE AND AREA



MARCH 2017

This report is based on a document prepared by Hardy Stevenson and Associates Limited entitled:
*'Nuclear Waste Management Organization Borehole Drilling: Public and Stakeholder Engagement Report
for Ignace, ON'* Rev. 3, dated March 28, 2017.

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1.0 Introduction

The Nuclear Waste Management Organization (NWMO) is proposing to undertake borehole drilling in the vicinity of the Township of Ignace in support of its Adaptive Phased Management (APM) siting process for a Deep Geological Repository (DGR). The borehole drilling process requires the Ministry of Natural Resources and Forestry (MNRF) to issue permission.

MNRF wishes to understand public comments regarding potential environmental, land use, and social effects of borehole drilling at the proposed borehole site. MNRF also wants to understand public comments related to field work timing (e.g., restrictions, timing windows, etc.), proposed setback from waterbodies, proposed access routes and alternatives, borehole drilling site rehabilitation and plans for the borehole drilling site.

To gather public and stakeholder comments, the NWMO engaged the Ignace community and stakeholders within the region to obtain their feedback and comments regarding the borehole drilling process. The NWMO's ongoing engagement activities related to the APM Project also include the surrounding communities of the City of Dryden, Municipality of Sioux Lookout, Wabigoon Village¹, and Thunder Bay. At the request of residents, due to the locations of the proposed borehole drilling sites, the NWMO communicated with the Local Services Board of Meglund (regarding the hamlets of Borups Corners and Dymont).

To ensure that residents and other stakeholders are well informed about the purpose and technical details of borehole drilling and testing, communications about borehole drilling began in July of 2016. The NWMO gathered public comments regarding the acceptability of various Potential Geologically Suitable Areas (PGSAs) through a series of one-on-one meetings, meetings with community groups, attendance at local and area events, Ignace Community Nuclear Liaison Committee (ICNLC) meetings, and open houses. The Revell area and the specific drilling site were presented to the community. No substantive effects of the borehole drilling process were identified on social, cultural, economic or natural environmental considerations.

This report presents a summary of the public and stakeholder engagement activities completed by the NWMO and the comments received. This report has been prepared in accordance with the requirements set out by MNRF in their submission guide entitled: *Ministry of Natural Resources and Forestry's (MNRF) Guide for NWMO Borehole Drilling Project Description Submission – Preliminary Assessment Phase*, ('Guide'), December 2016. Please note that the details of engagement with First Nation communities are documented separately.

2.1 Engagement Goals, Objectives and Plan

The NWMO conducted a variety of public and stakeholder engagement activities related to the APM project in the Township of Ignace and vicinity since 2010. In summer 2016, the NWMO prepared a public and stakeholder engagement and communications plan to support the borehole drilling process and related permitting requirements. The plan was reviewed and updated in October 2016, and iteratively reviewed going forward, to ensure requirements would be met.

¹ Wabigoon Village is in an unorganized area which is serviced by the Wabigoon Local Services Board.

The engagement plan scoped the public and stakeholder engagement process for the proposed borehole drilling; identified appropriate communities to engage; and specified the NWMO's engagement goals and objectives. These were to:

- Provide participants with relevant information so they could be knowledgeable and feel comfortable about commenting on the PGSAs;
- Answer public questions accurately and consistently;
- Seek and obtain public comments and preferences about the PGSAs for borehole drilling;
- Understand the social, cultural and natural environment considerations relevant to the PGSAs;
- Document public comments, particularly about questions specific to the borehole location;
- Ensure participants are informed about the proposed timing of borehole drilling; and
- Solicit other comments and provide information on the go-forward engagement process.

In addition, the overall objectives for the borehole drilling engagement process were to:

- Identify social, cultural and environmental considerations that would lead to a small number of potentially suitable borehole drilling sites that are socially preferred;
- To confirm the appropriateness of a borehole drilling site;
- Identify and provide appropriate information to people who may be new to the process; and
- Document comments sufficiently to allow an Engagement Record to be completed.

3.0 Borehole-Specific Engagement Activities Prior to Submission of the Application

The Guide requires the NWMO to engage the public and stakeholders on specific matters before submitting the application for permission. We outline all the information provided to the public and stakeholders as well as all of the engagement activities that have occurred in relation to the borehole drilling process. In addition, we provide the results of the engagement.

3.1 Information Provided to the Public and Stakeholders

The NWMO provided the public and stakeholders with a detailed description of the proposed borehole drilling activities, the environment potentially affected, the potential effects and how those effects would be evaluated and mitigated.

Table 1 describes the information regarding the borehole drilling process that was provided to the public by the NWMO during its engagement activities. The information listed below can be found in the appendices as indicated in the table.

Table 1 Community Engagement Support Materials

Information Source	Description	Appendix
Printed Materials for Distribution	<ul style="list-style-type: none"> • Brochure entitled '<i>Preliminary Assessment of Potential Suitability - Initial Borehole Drilling and Testing in or Near Ignace</i>'. • A sample of the open house comment forms with map from each round of open houses (October 2016 and March 2017). 	A
PowerPoint Presentations and Open House Display Panels	<ul style="list-style-type: none"> • PowerPoint presented to ICNLC meetings, and open house display panels. • Ignace Council Presentation. • Description of the borehole drilling process. • Summary of natural environment and geologic fieldwork and information collected. • Overview of natural environmental features, geologic features in relation to the 14 PGSAs examined. • Maps indicating potentially acceptable borehole locations, relevant natural features, nearby communities, roads, trails for accessing potential borehole location. 	B
Advertisements and Invitation Notices	<ul style="list-style-type: none"> • Published advertisements and newsletters regarding the October 2016 and March 2017 open houses in the local paper - the Ignace Driftwood and mail drop to all households. • Posted advertisements at local businesses regarding the October 2016 and March 2017 open houses. • Provided invitations at Community Harvest Feast (October 2016). • Provided invitations at Family Day Free Skate (February 2017). • Media coverage. 	C
Borehole Drill Rig Exhibit	<ul style="list-style-type: none"> • Borehole drill rig exhibit available at October 26th and 27th, 2017 open house. • Display of how borehole drilling is conducted including presence of a borehole drilling rig and personnel and discussions with borehole drillers who operate the rig. • NWMO experts were on hand to answer questions on potential effects and how effects would be evaluated. Also, they discussed effect avoidance and mitigation measures. 	N/A

3.2 Engagement Activities

NWMO's public and stakeholder engagement activities were undertaken in three stages corresponding to various decision points in selecting an acceptable borehole site location:

Stage 1 Initial and preliminary engagement activities. Conducted to scope the first round of open houses to solicit public comment on the potential borehole drilling areas (July 2016 and onwards).

Stage 2 Engagement Activities in October 2016 to receive comments on 14 potential borehole locations.

Stage 3 Engagement Activities in March 2017 to identify the initial borehole drilling site.

Appendix D provides a chronological listing of all NWMO engagement activities completed for the borehole drilling process. The following describes these activities.

3.2.1 Ignace Community Nuclear Liaison Committee Meetings

Various aspects of the borehole drilling project were presented and discussed at five open and publicly advertised ICNLC meetings. See **Appendix E** for ICNLC meeting agendas.

At the ICNLC meeting held on July 12, 2016, the NWMO presented its plans to complete borehole drilling in the Ignace area. A PowerPoint presentation was given by the NWMO's Dr. Mahrez Ben Belfadhel on the borehole drilling process framework. The borehole drilling brochure was distributed to ICNLC members, made available to the public at the Learn More Centre and published on the NWMO web site.

At the September 27, 2016 ICNLC meeting, a presentation was given by NWMO's Dr. Mahrez Ben Belfadhel and Jo-Ann Facella that:

- Described the borehole drilling process;
- Summarized the natural environment and geologic fieldwork and airborne surveys completed to date;
- Described the natural environmental features (e.g. rivers and lakes), geologic features in relation to the original 14 PGSAs examined; and
- Presented maps indicating potential borehole locations, relevant natural features (e.g. rivers and lakes), nearby communities, roads, and trails for accessing potential borehole locations.

On October 25, 2016, the ICNLC were led through a facilitated mapping conversation in a workshop setting to solicit their comments for the identification of acceptable borehole locations (PGSAs). The NWMO staff and consultants confirmed that ICNLC members had the information they needed to comment on the maps and to identify features within the PGSAs. From this mapping conversation, specific social, economic, or natural environmental considerations were identified and participants indicated which areas would be preferred.

On January 31, 2017, ICNLC members were presented with the general findings of the October 2016 open house. A presentation given by Dr. Mahrez Ben Belfadhel, identified the Revell area as the preferred borehole drilling site.

During the ICNLC meeting held on February 28, 2017, ICNLC members were given the opportunity to discuss the specific borehole drilling location within the Revell area. The ICNLC members were supportive of the identified site. No substantive effects of the borehole drilling process were identified on social, cultural economic or natural environmental considerations.

As indicated earlier, the PowerPoint presentations given at each ICNLC meeting are provided in **Appendix B**.

3.2.2 NMWO Engagement with Individuals and Attendance at Local Events

Throughout the engagement process, the NWMO conducted a variety of discussions with several stakeholders and key individuals. At each interaction, the NWMO distributed the copies of the proposed borehole drilling locations map specific to the PGAs and a general information brochure. Closer to the date of the fall 2016 and winter 2017 open houses, these individuals and groups were invited to attend the events. Please see Table 2 for NWMO engagement activities with local individuals and groups.

Table 2 NWMO Engagement with Individuals and Groups

NWMO Engagement Activity	Date
NWMO booth at Dryden Fall Fair.	August 25-28, 2016
Meetings with 13 local business owners.	October 17-18, 2016
NWMO attendance at local Harvest Dinner.	October 18, 2016
Meeting with Ignace Area Business Association.	October 20, 2016
In addition to the notification received through the mail drop and newspaper ads, some personal meetings were held to share the borehole mapping geologic areas with camp owners and invite them to the open house.	October 21, 2016
Meeting with Red Hat Ladies.	October 26, 2016
Presentation to Ignace Council at its regular meeting.	November 30, 2016
NWMO attendance at Badminton Club Breakfast.	November 30, 2016
NWMO attendance at Seniors Lunch.	December 1, 2016
NWMO attendance at Mary Berglund Centre Board Dinner.	December 1, 2016
Introduction of initial borehole site at Learn More Centre.	February 16, 2017
Participation in Snowmobile Club activity.	February 18, 2017
Participation at Family Day Skate event.	February 20, 2017
Discussion with Ignace men's hockey team.	March 2, 2017
Outreach to seasonal residents.	March 8, 2017
NWMO attendance at Ignace School Career Fair.	March 23, 2017

See **Appendix D** for details about these interactions. The NWMO's follow-up activities are listed in **Appendix F**.

3.2.3 Walking the Land and Communication with Seasonal Residents

In the summer of 2016, the NWMO discussed the plan for detailed geological mapping that helped identify potential social, economic and cultural considerations related to the land in the borehole siting areas. Many community members were able to identify specific areas that were considered to be socially acceptable as locations for borehole drilling. Engagement occurred on a one-on-one basis as well as small group meetings. Individuals were also invited to the fall 2016 open house. Seasonal residents who were not available to attend the open house were offered individual opportunities to comment via Skype or a follow-up session when they return in the summer.

3.2.4 Learn More Centre

On May 11, 2016, the NWMO Learn More Centre opened at the Town Plaza in Ignace. The facility supports local residents and those from neighbouring communities, including First Nation and Métis organizations and communities in the area, as they continue to explore Canada's plan for the safe, long-term management of used nuclear fuel. The centre is home to a variety of interactive learning materials and exhibits as well as having NWMO staff available to speak with and answer any questions from visitors. The Learn More Centre has since become a hub of activity for the community, with a variety of groups meeting in the space in order to learn about NWMO and APM, as well as for general community use. Throughout the borehole drilling engagement process, the Learn More Centre staff were available to answer questions and to share information (e.g. brochures, displays, etc.) with visitors to the centre.

3.2.5 Regional Dialogue with Municipal Organizations and Others

The NWMO held discussions with regional representatives from the City of Dryden and Wabigoon Local Services Board (Wabigoon Village) regarding the borehole drilling process. Invitations to attend the publicly advertised open houses were given to the regional representatives. Points of interaction with regional stakeholders are listed in Table 3 below.

Table 3 NWMO Regional Engagement Activities

NWMO Engagement Activity	Date
NWMO booth at AMO Conference.	August 14-16, 2016
NWMO Booth at Dryden Fall Fair.	August 25-28, 2016
Interview with Mayor of Dryden and CAO.	August 26, 2016
Participation in the Canadian Nuclear Society Conference with Dryden representatives.	September 11, 2016
Learn More Tour with local residents from Wabigoon Village.	November 15, 2016
Teleconference with Mayor of Dryden and CAO.	December 1, 2016
Meeting with Mayor of Dryden at Learn More Centre.	December 2, 2016
ROMA Conference in Toronto. Updates to Mayor of Sioux Lookout and CAO.	January 20, 2017
Delivered presentation to Kenora District Municipal Association.	February 2-3, 2017
Meeting with MP Bob Nault (Kenora).	February 9, 2017
Meeting with MPP Sarah Campbell	April 6, 2017

3.3 Open Houses for the Borehole Drilling Process

The NWMO held two rounds of open houses in relation to the borehole drilling process. The first round was held in the fall of 2016 and the second round was held in the winter of 2017. We provide details of each in the following sections.

3.3.1 Fall 2016 Open House

An open house was held at the Ignace NWMO Learn More Centre on Wednesday October 26 (1 pm to 9 pm) and October 27, 2016 (10 am to 2 pm). There were 166 attendees at the open house over the two days (including 20 school children and their parents). The borehole drilling rig was set up outside the Learn More Centre for the duration of the two days, manned by drill rig operators.

NWMO staff at the open house walked members of the public through a series of display panels explaining the overall siting process, APM and reference materials on the borehole drilling process. Each member of the public was provided information about the environmental, social, technical and geologic

characteristics of the area. The map was explained by pointing out key features they would likely be familiar with (e.g. roads, lakes, communities). They were also asked if their comments could be recorded in writing.

The following items were available to participants:

- Brochure: *'Preliminary Assessment of Potential Suitability Initial Borehole Drilling and Testing in or Near Ignace'*;
- Display boards;
- Paper copies of maps; and
- Take home comment forms that included the map.

Members of the public were directed to maps of the *'Potential Geologically Suitable Areas Based on Early Phase 2 Studies – For Discussion with People in the Area'* showing potentially suitable geology for borehole locations. Refer to **Appendix A** for the Display Panels of map with the 'potentially suitable repository areas based on geology for discussion' labelled A through N.

Participants identified and commented on areas where the drilling of boreholes had potential. NWMO staff explained that they were confirming existing information and learning from each member of the public about social, geological, cultural and environmental opportunities and constraints of the boreholes in the Ignace area. Staff asked the members of the public to identify items and locations on the maps that may have meaning to them or the local community, where they live and what they know about the land. NWMO staff suggested that social features may include camps and recreational areas, hunting, fishing and gathering areas, cultural features, historic sites, areas with views and vistas, etc. Members of the public also asked about the issues and other considerations important to the borehole drilling process.

Participants were asked to consider three guiding questions:

- **What is important to know about each of the areas identified on the map, before decisions are made about where to focus borehole drilling at or near a potential repository site?**
- **What about each area would make it a good site to drill a borehole? What, if any, concerns would you have?**
- **Are some of these areas preferred over others for initial boreholes? Which ones? Why?**

3.3.2 Winter 2017 Open Houses

Open houses were held March 1 (10 am to 8 pm) and March 2, 2017 (10 am to 1 pm) at the Learn More Centre in Ignace and at the Wabigoon Memorial Hall in Wabigoon Village March 2, 2017 (3 pm to 7 pm). There were 91 participants in attendance at the three events. School children and teachers came to open house on March 2 (two teachers and 12 high school students and 10 elementary French school children and their teacher).

The NWMO staff at the open house walked members of the public through display panels explaining the overall siting process, APM and reference materials on the borehole drilling project. Participants were reminded of the borehole mapping exercise from the last open house in October 2016 and were shown the proposed borehole location in the Revell area.

The following items were available to participants:

- Brochure: ‘*Preliminary Assessment of Potential Suitability Initial Borehole Drilling and Testing in or Near Ignace*’;
- Display boards;
- Paper copies of maps; and
- Take home comment forms that included the map.

Participants were asked to consider the question:

- **Are you aware of any social, economic, cultural or natural environment matters in relation to this site? If so, what are they and how should they be addressed?**

3.3.3 Public Comment Documentation

At each of the open houses, note takers were on hand to record all comments provided by the public. Each comment provided was documented in a comment form (refer to **Appendix A** for a sample form). The comments were then incorporated into an Engagement Record for each round of open houses.

3.4 Comments Received About Borehole Drilling

The following provides a summary of what the NWMO heard from the public regarding the mapping exercise at the fall 2016 open houses as well as the initial site at the winter 2017 open houses.

3.4.1 Comments Received on Geologic Areas in Fall 2016 Open House

The comments received from the participants were detailed and well thought through. The NWMO gained insight into the social considerations within the PGSAs, as well as identifying certain geological and natural environmental features. Participants provided input on where they believed appropriate sites would be as well as those that were undesirable. Participants saw the open house process as being an additional step closer to finding a final location for the facility in their community.

Site Specific Comments from Participants

There were very few sites in the PGSAs, A through N, that were free from perceived either minor or more significant social or environmental considerations. Participants preferred Revell PGSAs A and B as sites for the borehole drilling because these areas had the least camps and recreational activities that would be affected. PGSA C was acceptable although closer to recreational water bodies and camps. No significant natural features such as wildlife, fish or species at risk were identified for the accepted Revell site.

The Basket Lake study area and PGSAs D through H were determined to be not appropriate due to plentiful water resources, the presence of trout lakes, tourism and recreational uses, as well as First Nations interests.

Indian Lake West PGSAs I, J and K had more social considerations for borehole drilling sites due to the higher level of recreational use of the area. In particular, the presence of camp owners who would be concerned about potential impacts. Conversely, a number of participants suggested that some parts of PGSAs J and K would be good possibilities due to a small number of lakes, less recreation usages than other area, and good access to infrastructure and proximity to the highway. The southern parts of PGSAs J and K were seen to be potential borehole sites as they are somewhat removed from the recreation areas and are closer to Ignace.

Parts of the western portions of Indian Lake East PGSA L and M were also identified as appropriate sites for borehole drilling. The presence of recreational uses and private camps, as well as the presence of First Nations traditional lands in area PGSA N would be a challenge, but a lesser challenge in the western portion closer to Highway 599.

Analysis of an Acceptable Site

After conducting analyses on the data provided by the participants, it was concluded that PGSA A and B in the Revell area are preferred in terms of social considerations. PGSA C is also preferred but less so than A and B. PGSA J and K (southern part) in the Indian Lake West area are also seen to have social acceptability in terms of bore hole drilling, however they are closer to camps and recreational areas. PGSA L, M and N in the Indian Lake East area that were seen to be positive (western section) were also socially acceptable but had more camp, Aboriginal and recreational uses.

3.4.2 Comments Received on Proposed Borehole Activities in Winter 2017 Open Houses

At the winter 2017 open houses held in Ignace and Wabigoon Village, participants were informed about the borehole drilling process and were asked to comment on the identified location for the initial borehole study. A new map was used, providing greater detail in the Revell site (see **Appendix B** for map).

Participants asked a variety of questions about the borehole siting process, the drilling process, the geotechnical considerations that would make this an acceptable site. They asked general questions about the next steps for the APM process. The NWMO staff provided detailed explanations of the variety of factors that went into identifying the borehole area and participants understood the reasons for and agreed with the decision to locate within PGSA A of the Revell area. No substantive effects of the borehole drilling process were identified on social, cultural, economic or natural environmental considerations.

Regarding the specific borehole location within PGSA A, the majority of participants said that they had no concerns about the borehole site as it is relatively remote and undeveloped. It was noted that there is very little recreational activity in that area compared to other locations that had been considered. No concerns were expressed about camps in the area, construction impacts, or the need to clear a working area and maintain a fenced secure site. No significant natural features were identified in the area.

Impacts on wildlife were considered to be minimal as no significant fish population or species at risk were identified. A moose rutting area was identified several kilometres away, however the participant who identified it stated that it should not be an issue due to distance and the secure fencing surround the drilling site. No conflicts with land uses were identified, though a number of participants stated that there were a few trappers in the area. The NWMO staff explained that those trappers would be contacted. No cultural heritage areas were identified in the area.

A few suggestions were given to help the positive perception of the project by the community. Many participants expressed interest in the borehole drilling process and suggested that having a sign explaining the project on Dyment Road near the site would be helpful. Also, some participants asked if it would be possible to tour the site during drilling so that they could see the process. Finally, it was suggested that hunters or trappers in the area be informed, including any with a bear management area licence.

Overall, participants gave a very strong expression of support for the specific borehole location, without a single person expressing any opposition to the site. People agreed that this area had the least number of concerns, and were happy to hear that the geotechnical and natural environmental studies aligned closely with the identified social considerations.

See **Appendix B** for the open house display panels that show the map of the accepted site.

5.0 Conclusions

From the comments received regarding the original 14 PGSAs and the Revell site, the NWMO has concluded that the public did not identify any potential for significant adverse impacts to the natural environment or to public land use that might result from the borehole drilling process. No mitigation measures were identified by members of the public.

In this Engagement Report, the NWMO discussed how the borehole drilling engagement process has been a deliberative and collaborative process. Public input was sought at every step to ensure that all voices were heard and incorporated fully into the NWMO decision making process. Because of the iterative nature of the incorporation of public's comments and their important role in the decision-making process, it can be concluded that the engagement process was meaningful and the choice of the Revell site is robust.

6.0 Record of Public and Stakeholder Engagement

The following provides an overview of how the NWMO has been responsive to the MNRF's public and stakeholder engagement recommendations (page 13 of the Guide) specific to the accepted site. Please note that all interactions with the following stakeholders had been on a self-identification basis only.

Table 4 NWMO Engagement Activities Consistent with Guide

Member of Public/ Stakeholder	NWMO Engagement Activities
Sustainable Forest Licence holders (forestry company)	NWMO contacted Domtar (Niall Scarr) via telephone and follow up email with maps on the borehole location on March 23, 2017.
Forest Resource Licence holders (other wood harvesters)	NWMO contacted wood harvester, Louie Ricci (Raleigh Falls Timber) via telephone on March 28, 2017. Followed up with maps and brochure on March 29, 2017.
Cottagers/camp owners	NWMO had multiple points of interaction with self-identified cottagers and camp owners in the wider Ignace area. NWMO engaged in conversations as part of planning field studies with land owners as early as 2014. NWMO met with several commercial camp owners, as available, on October 21, 2016 to provide a project update, share the map of technically suitable locations and invite them to the fall open house 2016. See Appendix D for more details.
Tourism operators	NWMO had multiple points of interaction with self-identified tourism operators in the wider Ignace area. Tourism operators also met with NWMO to discuss the open house on October 20, 2016. Subsequent comments were also received from camp owners. See Appendix D for more details.
Trappers	NWMO had multiple points of interaction with self-identified trappers. NWMO attended and had a booth at the Ignace Trappers open house and Fur Workshop (January 2015) as well as breakfast meetings (February 2014). The borehole is located in within the boundary of trap lines located within DR 024 trap line. In addition, NWMO contacted the self-identified trapper (Erik Treftlin) on March 23, 2017 via telephone and follow up email with maps on the borehole location. Follow up meeting scheduled for April 12, 2017.
Bear Management Area Operators	NWMO have not been able to identify any Bear Management Area Operators in the area.
Snowmobile Clubs	In terms of self-identified snowmobilers in the wider Ignace area, NWMO engaged representatives of the Ignace Snowmobile Club on October 21, 2016 and February 18, 2017.
Land Use Permit Holders	NWMO have not identified any Land Use Permit Holders in the area. For the wider Ignace area, NWMO has attended the MNR Local Citizen's Advisory Committee's meetings (Dec. 8, 2015 and March 8, 2016).

Member of Public/ Stakeholder	NWMO Engagement Activities
Boat Cache Owners	NWMO have not identified any boat cache owners in the area.
Commercial fisheries operators	NWMO have not identified any commercial fisheries in the area.
Industrial or commercial land owners	<p>NWMO have not identified any industrial or commercial land owners in the area.</p> <p>In terms of self-identified businesses in the wider Ignace area, NWMO invited industrial/commercial business owners to the October open houses by going door to door in October 17-18, 2016. See Appendix D for more details.</p>

APPENDICES

APPENDIX A: NWMO Printed Materials

A1. Brochure: Preliminary Assessment of Potential Suitability – Initial Drilling and Testing in or Near
Ignace

PRELIMINARY ASSESSMENT
OF POTENTIAL SUITABILITY

Initial Borehole Drilling and Testing in or Near Ignace

DRAFT FOR DISCUSSION
WITH COMMUNITIES

In 2010, the Nuclear Waste Management Organization (NWMO) began technical and social studies in and around a number of communities, including Ignace, that expressed interest in assessing their suitability for safely hosting a deep geological repository for the long-term management of Canada's used nuclear fuel. These studies have become increasingly more detailed over time and focused on locations that have potential to safely host a repository.

Before selecting a potential repository site, the NWMO needs to be confident that a deep geological repository can be developed with a strong safety case at that location. A safety case brings together all the information that contribute towards understanding whether or not a repository at the site could safely contain and isolate used nuclear fuel. This information includes Indigenous Knowledge, geoscientific assessments, environmental surveys and monitoring, engineering design studies, and safety assessment analyses.

The focus of early geoscientific studies is to determine if there are rock formations in the area that have potential to satisfy the NWMO's safety requirements for a deep geological repository.

The next site evaluation activity in the area involves drilling a small number of initial boreholes in potential repository locations to further understand the geology. Depending on findings, additional borehole drilling and testing in one or more locations may be warranted in the future.

Drilling initial boreholes and associated testing will build upon findings of earlier studies. Selecting locations for initial boreholes provides an opportunity for the NWMO, the interested community, and First Nation and Métis communities in the area to work together and to reflect upon where the project might best fit.

Beyond ensuring safety, the NWMO has committed to communities and the surrounding area that the project will be implemented in a way that fosters long-term well-being as defined by the community.

Key Steps

To date, the NWMO has completed a number of studies to explore potential suitability of the area to meet the robust technical safety requirements to host the project. The NWMO has shared these findings with communities in the area and published reports on its website.

- » Desktop studies, using available information, identified broad areas that have the potential to host a deep geological repository (2013). These areas were temporarily withdrawn from staking for mineral claims to provide an opportunity for initial field studies to proceed.
- » Initial field studies, including airborne geophysical surveys and observing general geological features, identified candidate areas for further field studies, such as detailed geological mapping (2014).
- » Detailed geological mapping, beginning in fall 2015 and expected to be completed in summer 2016, will provide additional information to understand the suitability of geology in the area. These studies will help identify smaller areas that have potential to meet technical safety requirements for a deep geological repository. These smaller areas could be the focus of more detailed study, beginning with drilling initial boreholes.

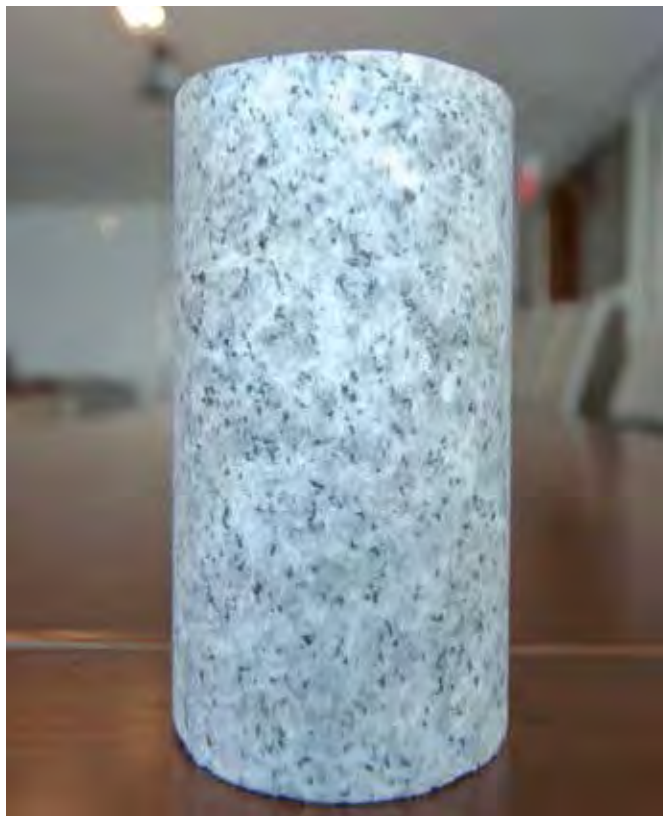
Selecting a Site for the Long-Term Management of Canada's Used Nuclear Fuel

Canada has a comprehensive plan for the safe, long-term management of the used nuclear fuel produced by its nuclear power plants. The plan includes a process to identify an informed and willing host for a deep geological repository that will contain and isolate the material.

Next steps involve the NWMO and people in the area working together to review findings from technical studies completed to date and plan next steps. Together, we will:

1. Review findings from detailed geological mapping and the smaller areas that have been identified as potentially suitable for hosting a deep geological repository;
2. Decide which of these smaller areas should be the focus of further study, beginning with initial borehole drilling at or near a potential repository site, and develop plans for these studies;
3. Seek permits and work authorizations for borehole drilling, as required;
4. Initiate borehole drilling and testing; and
5. Review study findings and decide on next steps.

Should the area proceed beyond these initial studies, the next phase of work would involve additional borehole drilling and testing focused on a preferred potential repository site in the area. We would decide together on a preferred location. Ultimately, any preferred site will need to have the potential to meet the project's robust safety requirements and be in a place where a strong partnership reflecting area support can be developed.



Example of core

What is borehole drilling?

A borehole is a narrow, deep, circular hole made in the ground using motorized equipment (drilling equipment). The process involves drilling the borehole and retrieving cylinder-shaped rock samples, called core. A wide range of testing is performed on samples of the core and in the borehole to investigate properties of the rock.

What is the purpose of this initial borehole drilling and testing?

Initial borehole drilling will provide more information about whether the geology in the area could be a safe place for a repository. Borehole drilling and testing will help further assess and understand key geological features and uncertainties identified in previous studies. It will provide information about the depth of geological formations, rock types, and the nature of fractures in the rocks.

Building a better understanding of the geology will help the NWMO as it works with people in the area being studied to identify potential repository sites.

Where will initial boreholes be drilled?

We need to decide on possible locations for initial borehole

drilling together with people from the area, including the interested community of Ignace, and First Nation and Métis communities in the area. In addition to meeting technical objectives, borehole drilling locations will be selected to respect land use, and cultural and spiritual values of people in the area related to siting of the repository.

To get the discussion started, the NWMO will propose possible locations for initial borehole drilling once the detailed geological mapping is completed. These locations will be in or near potential repository sites. The NWMO will review these potential drilling locations together with people in the area to determine where it should focus initial borehole drilling and testing activities.

How many boreholes will the NWMO drill initially?

The NWMO anticipates drilling three initial boreholes, one after the other. The location of the boreholes and the order in which it drills them will be informed by data from detailed geological mapping and the geoscientific information collected in previous studies.

Eventually, more extensive borehole drilling may be undertaken in a location identified together with people in the area as a preferred potential repository site.

How will the NWMO interweave Indigenous Knowledge into initial borehole drilling and testing?

As part of its promise to work collaboratively with First Nation and Métis communities, the NWMO is committed to interweaving local Indigenous Knowledge in all phases of its work.

The NWMO will work together with Aboriginal peoples in the area to respectfully apply Indigenous Knowledge of the natural environment and traditional lands, and cultural and spiritual values they may wish to share to guide borehole drilling and testing.

The NWMO will ensure Aboriginal intellectual property is protected as agreed to with Aboriginal peoples who choose to share that knowledge.

Aboriginal peoples have a special relationship with the natural environment, and unique stewardship responsibilities that are part of this relationship. The knowledge that comes from this relationship with the land brings special understanding to the broad range of factors that should be considered in field studies, social assessments, and assessing benefits and effects to be managed.

What permits are required?

Depending on borehole locations identified, the NWMO may require work authorizations from the Ministry of Natural Resources and Forestry (MNRF) to access and prepare drill sites. Work permits may be required to develop access trails to the drill site for using water and for crossing streams.

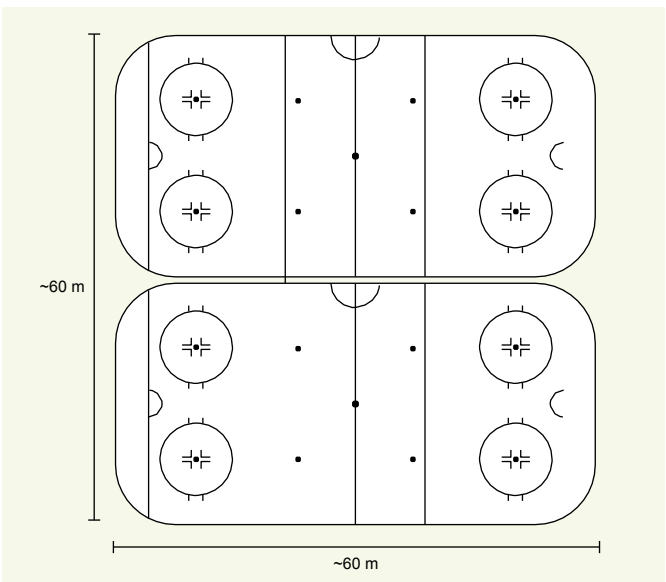
The NWMO will prepare permit applications in collaboration with affected First Nation and Métis communities, and the interested community of Ignace. Once a permit application is submitted, the process will involve the community of Ignace, and consultation with affected First Nation and Métis communities.

When will the initial boreholes be drilled?

Scheduling for the first stage of borehole drilling and testing will depend on the time needed to identify preferred locations, collaborate with communities to develop work plans, and obtain any required permits and work authorizations.

How much land is needed to drill a borehole?

The footprint required for a drill site is around 60 metres by 60 metres, or about the size of two NHL-sized hockey rinks side by side. The area may be fenced depending on its location.



Footprint required to drill a borehole



Rotary drilling

What equipment is used?

Boreholes are drilled using a conventional truck-mounted or track-mounted rotary drill rig. The drill site will likely need to be prepared and graded using granular materials, such as sand and gravel.

Trailers will be set up at the site for use as field offices, for on-site equipment storage, and for a small field lab for on-site testing and preserving rock core and water samples. Electricity for these facilities will be supplied by power generators.

Rock core will be stored in a core storage facility in a nearby community. Depending on the location of the borehole, rock core may be stored on a temporary basis at the drill site, and later, moved to the core storage facility.

Will drilling and testing cause any impact to the environment?

Drilling activities will be managed to minimize impact on the environment. During all stages of fieldwork, the natural environment will be protected.

A source of water and a drill water management system will be required. The NWMO may bring water to the site or source it from a nearby body of water.

Water will be recycled on-site during drilling to minimize

use and release to the environment. Drilling water and cuttings will be managed safely in accordance with provincial regulations. This may involve on-site management or transportation off-site.

During preparation of access routes and use of water, drilling fluids and solids will be managed in accordance with provincial regulations. The NWMO will work with communities in the area to confirm plans, including how it will minimize the impact of these drilling activities on the local environment.

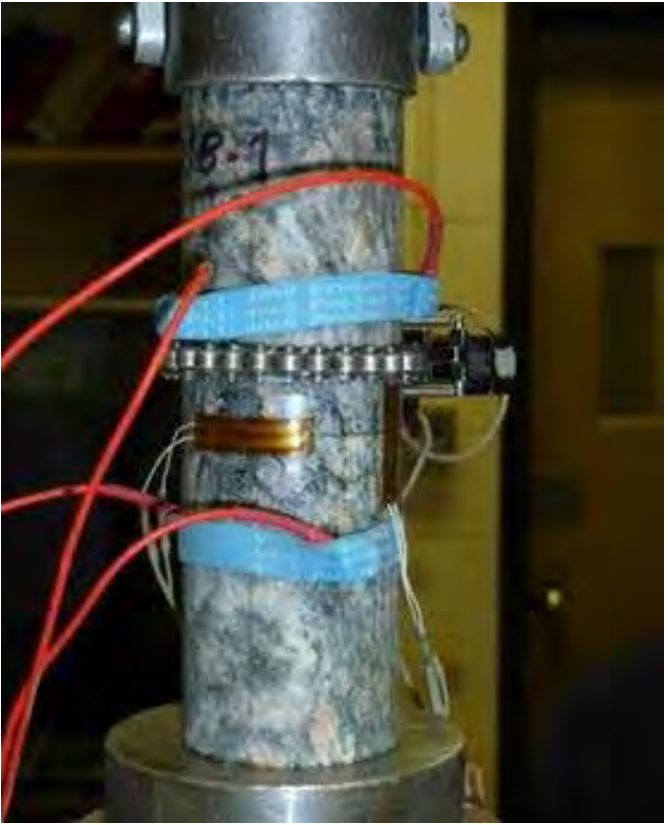
How deep will the boreholes be?

Boreholes will be drilled and cored to a depth of about one kilometre. It is anticipated that the deep geological repository in the type of geology found in the Ignace area (crystalline rock) would be developed at a depth of approximately 500 metres below ground surface. That is about 25 times the height of the fire tower in Ignace or 40 times the height of the White Otter Castle. Deep boreholes are required to assess suitability of the host rock at depth.

What kind of testing is conducted?

Testing will be used to develop a more detailed understanding of the geological suitability of the rock in the area. Testing includes:

- » Logging of the rock core, which involves a geologist inspecting the core to find out the main rock types present, as well as the location and direction of any natural breaks in the core (fractures or faults), and recording this information;
- » Geomechanical measurements, which involve testing rock core samples taken from the borehole to provide information about rock strength;
- » Geophysical measurements made along the length of the borehole to provide information on minerals, fractures and zones of groundwater flow present within the rock;
- » Hydraulic conductivity measurements made at selected locations along the length of the borehole will provide information on groundwater flow conditions at the location being tested; and
- » Chemical and isotopic analyses of groundwater samples collected from within the borehole, to determine the nature of the groundwater (e.g., whether it is fresh or saline) and to begin to understand how the groundwater has changed over time.



Example of geomechanical testing

As field studies progress, the NWMO will work with people in the area to share information and build awareness and understanding.

How long will it take to complete the borehole drilling and testing?

For a borehole approximately one kilometre deep, the entire process can last about 90 days, depending on the number of shifts worked each day.

Once initial borehole drilling and testing is complete, geoscience, environmental, engineering, and repository safety specialists will need several months to review the data and share the findings with an expert group for peer review. Once that is complete, the NWMO will share findings with the community. The findings, along with those from earlier studies, will guide the NWMO in working with communities in planning any future study activities.

What happens to the borehole once drilling and testing is complete?

Upon completion of the planned tests, drilled boreholes will be sealed on a temporary basis using hard rubber plugs.

The NWMO will review findings and reflect on whether or not to continue with further studies with people in the area, including the interested community of Ignace, and First Nation and Métis communities.

If the decision is taken not to conduct further studies at a borehole location, the temporary seals will be removed, and the borehole will be permanently sealed along its entire length in accordance with MNRF requirements.

If the decision is taken to proceed with further studies in the area, then the temporary plugs could be removed, and the boreholes instrumented.

Instrumentation would be installed in the open borehole to measure and record bedrock properties, such as the water pressures over time frames of months to years. These types of measurements provide additional information about the characteristics of the groundwater systems.

When will a site be selected for a repository?

Confirming a safe site will take several years of progressively more detailed technical, scientific, social, cultural, and economic studies, as well as engagement of people from the area, including the interested community, and First Nation and Métis communities. The NWMO is conducting studies to explore suitability to host the project in a number of areas in Ontario, including both crystalline rock sites like those found in the Ignace area and sedimentary rock formations such as those found in southern Ontario.

If findings from drilling and testing initial boreholes provide additional confidence that a location may be potentially suitable to host a repository, the communities and the NWMO may decide together to further advance studies at that location by drilling and testing additional boreholes.

If these additional studies increase confidence that the location may be suitable, and if strong partnerships reflecting area support can be developed, detailed site characterization activities could be conducted and would require several more years. During site characterization, the NWMO would collect additional information and complete analyses required to assemble a safety case for a deep geological repository at that location.

Ultimately, the preferred site will need to meet robust technical requirements focused on safety. The implementation of the project must also foster the well-being of the area as defined by people who live there, and will need to be supported by strong partnerships. The project can only proceed with the involvement of the interested community, First Nation and Métis communities in the area, and surrounding communities.

Be Involved

Be involved in this initial borehole drilling phase of work as we select borehole drilling sites, plan, and complete these studies together.

Learn more by attending an Ignace Community Nuclear Liaison Committee meeting, dropping by the NWMO community office, or joining in on public events such as open houses conducted in the area.

For more information, please contact:

Learn More Centre
304 Main Street
Ignace, ON P0T 1T0
807.934.2472



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
Website: www.nwmo.ca



A2. Comment Form - October 26 and 27, 2016 Open House

Township of Ignace

Initial Borehole Community Conversations

We need your input

The map on the other side of this form identifies the areas with potential to meet robust technical safety requirements for a deep geological repository, based on early studies and analysis which is continuing. We need your input to help decide where to focus our next phase of studies. This next phase begins with drilling an initial borehole at or near a potential repository site.

1. What is important to know about each of the areas identified on the map?

2. What about each area would make it a good site to drill a borehole? What, if any, concerns would you have?

3. Are some of these areas preferred over others for initial boreholes? Which ones? Why?

Contact information:

All comments will be shared with the Township. However, your name and contact information will be treated as confidential unless you indicate otherwise by checking the box below.

Name (Required): _____ Affiliation (if any): _____

Address: _____

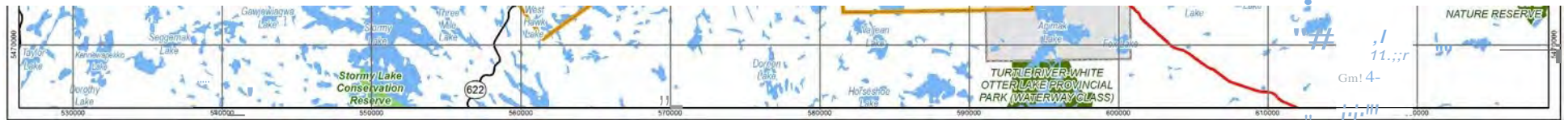
Telephone: () _____ Fax: _____ Email: _____

Please share my name and contact information with municipal representatives.

Thank you! Please drop off the comment sheet at the NWMO community office or send to:
 Nuclear Waste Management Organization
 22 St. Clair Avenue East, Sixth Floor, Toronto, ON M4T 2S3
 Fax: 647.259.3692, Email: learnmore@nwm.ca



Potential Geologically Suitable Areas Based on Early Phase 2 Studies For Discussion with People in the Area



LEGEND Potentially Suitable Repository Area Based on Geology For Discussion Ignace Municipal Boundary Trans Canada Hwy Highway Provincial Park Conservation Reserve Forest Reserve N. J. Bigoon Ulke Ojibway Nation V41 Withdrawal Area Water Body		 SCALE 1:250 000 REFERENCES S. se Data MNR LIO. obtaine 2009-2015. CANMAP v2006.4 Projection: Universal Transverse Mercator Datum: NA083 Coordinate System: UTM Zone 18N	 IGNACE AREA 2/02/2016
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A3. Comment Form – March 1 and 2, 2017 Open House



NUCLEAR WASTE SOCIÉTÉ DE GESTION
 MANAGEMENT DES DÉCHETS
 ORGANIZATION NUCLÉAIRES

Township of Ignace Initial Borehole Community Conversations

We need your input

The NWMO is conducting geoscientific studies in the area to determine if there are rock formations that have the potential to satisfy safety requirements for a deep geological repository for the long-term management of Canada’s used nuclear fuel. The next site evaluation activity involves drilling an initial borehole at a potential repository location to further understand the geology. Depending on findings, additional borehole drilling and testing in one or more locations may be warranted in the future.

Through discussion with people in the area about a number of potentially geologically suitable areas, the NWMO has identified an initial borehole location. It is located in a rock formation known as the Revell Batholith.

1. Are you aware of any social, economic, cultural or natural environment matters in relation to this site?

2. How should these be addressed?

Contact information:

All comments will be shared with the Township. However, your name and contact information will be treated as confidential unless you indicate otherwise by checking the box below.

Name (Required): _____ Affiliation (if any): _____

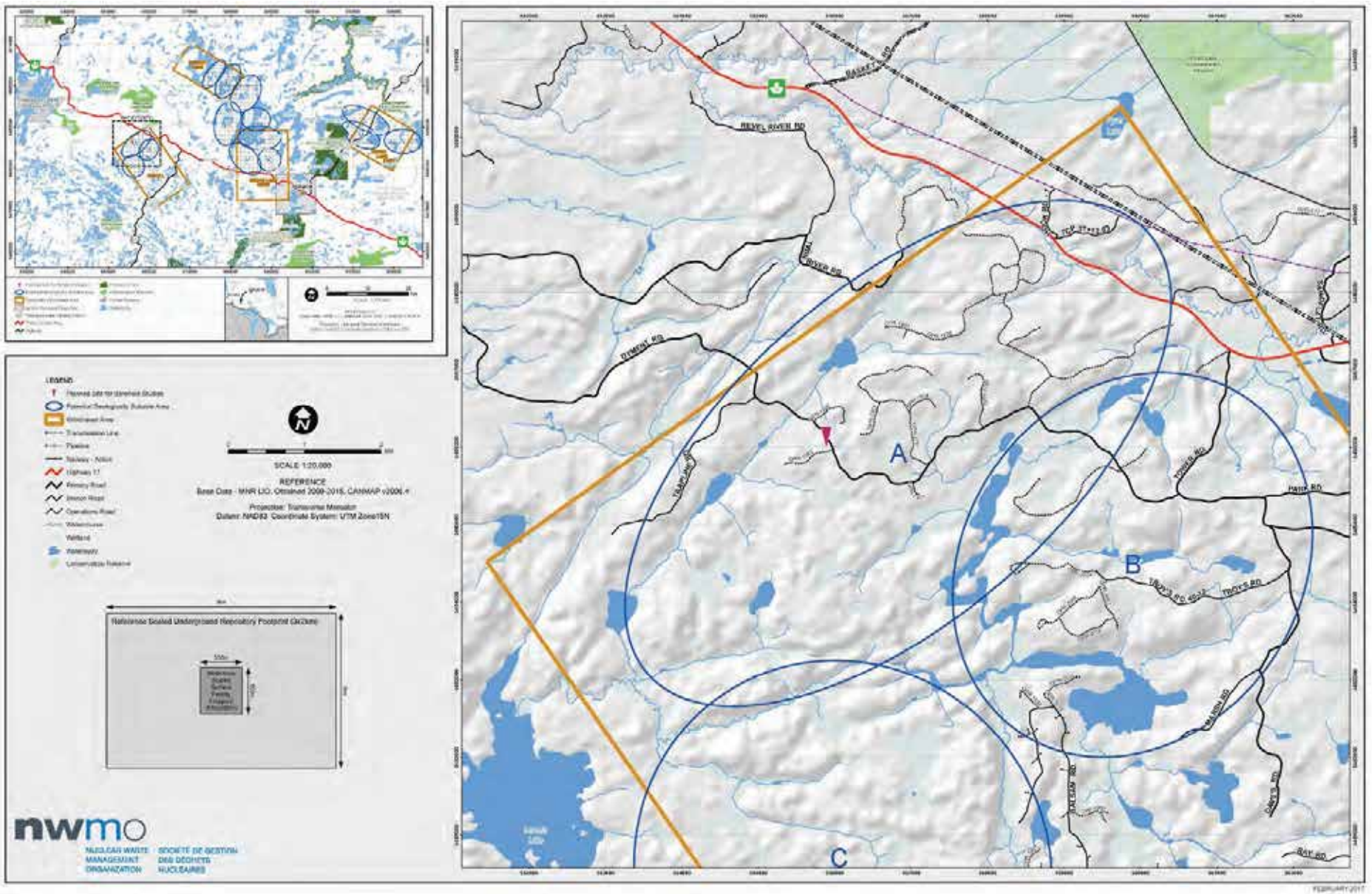
Address: _____

Telephone: () _____ Fax: _____ Email: _____

- Please share my name and contact information with municipal representatives.

Thank you! Please drop off the comment sheet at the NWMO community office or send to:
 Nuclear Waste Management Organization
 22 St. Clair Avenue East, Sixth Floor, Toronto, ON M4T 2S3
 Fax: 647.259.3692, Email: learnmore@nwmo.ca

Initial Borehole Location Based on Early Phase 2 Studies – And Discussion with People in the Area



APPENDIX B: NWMO PowerPoint Presentations and Open House Display Panels

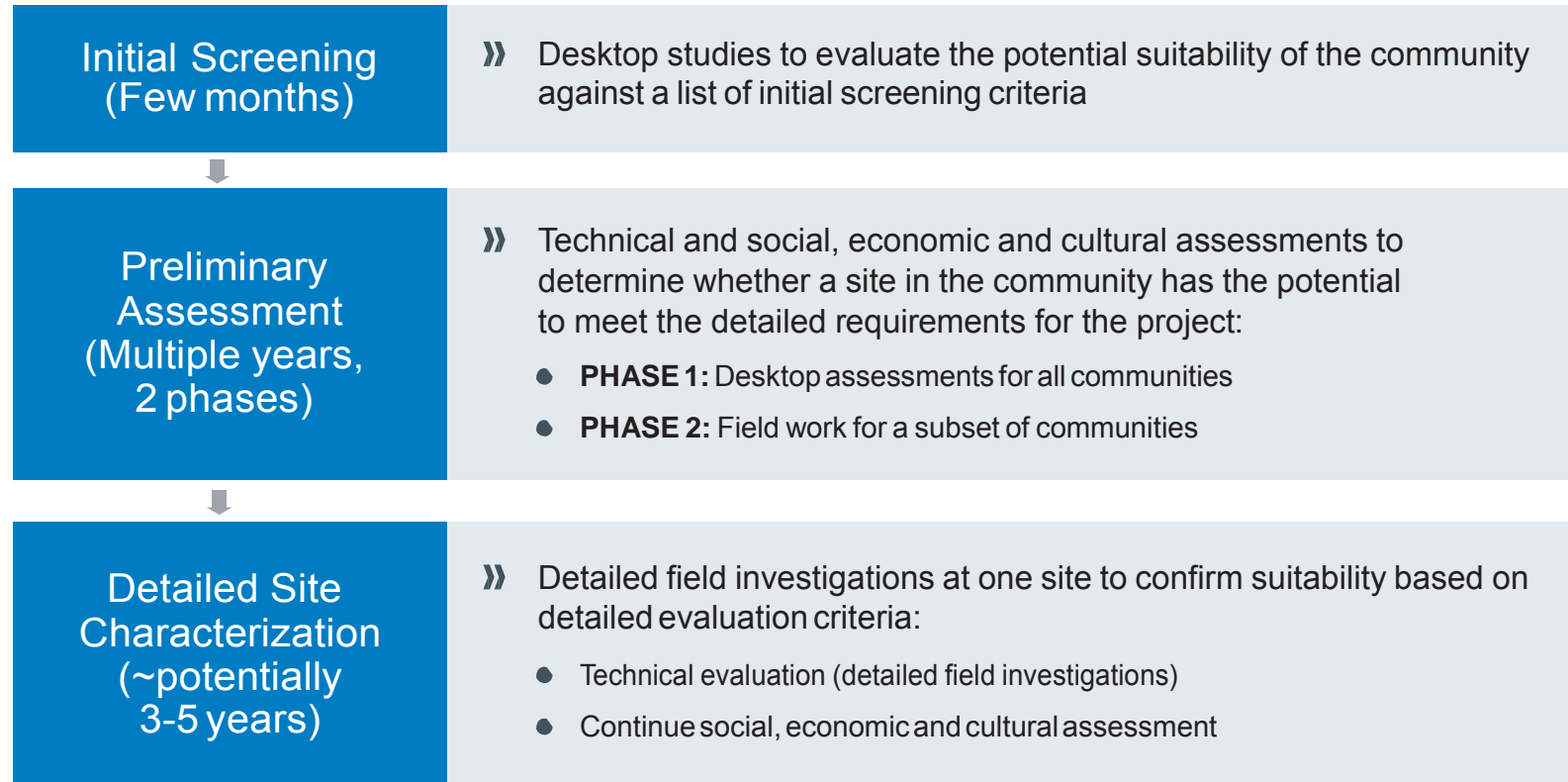
B1. Display Panels - October 26 and 27, 2016 Open House

We Need Your Input to Help Decide Where to Focus Borehole Drilling

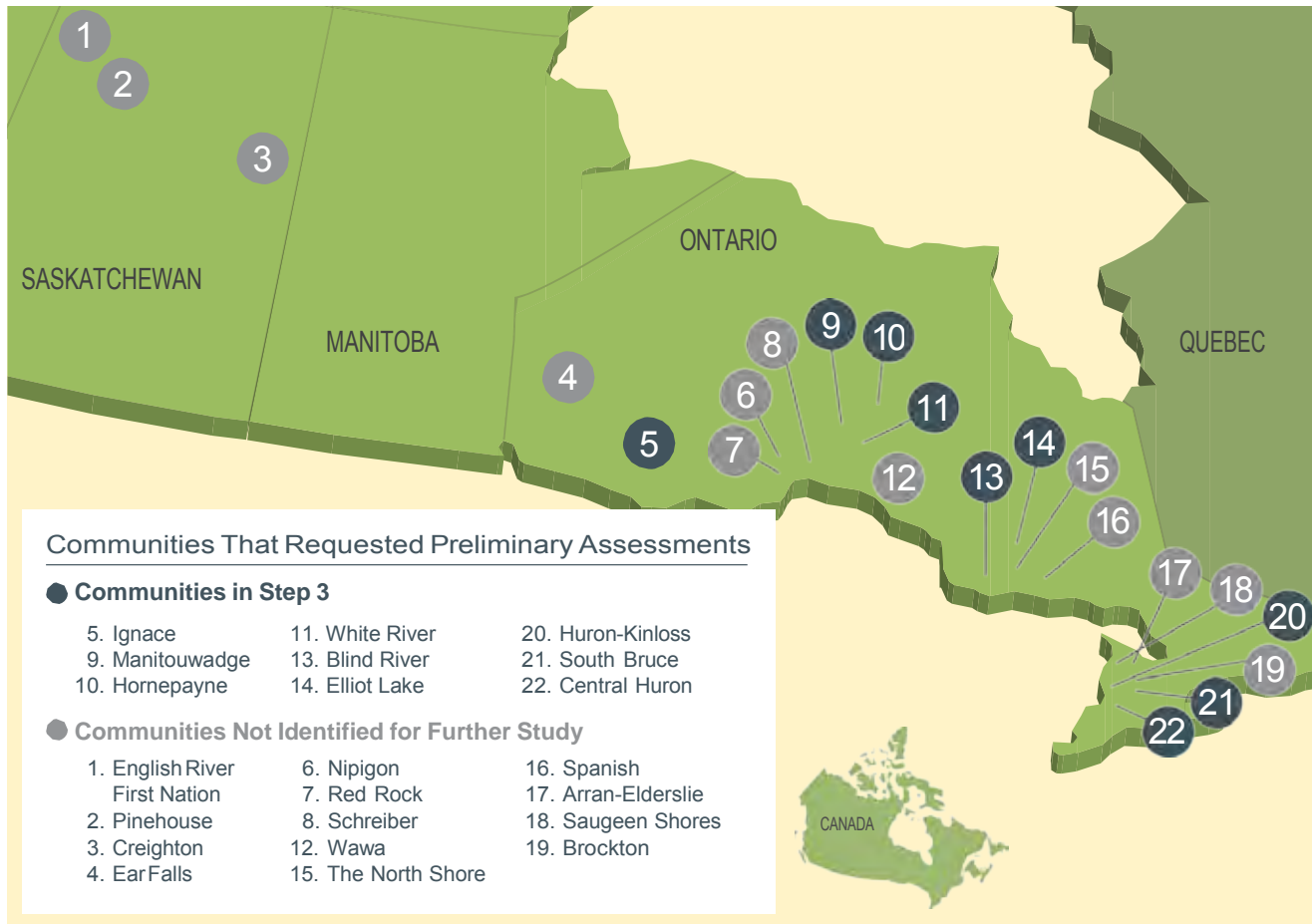
- » The Ignace area is one of several that are involved in the site selection process for a deep geological repository for Canada's used nuclear fuel. Studies are being conducted in each of these areas. No decision will be made on a preferred site before Phase 2 studies are completed, several years from now.
- » The next site evaluation activity in this area involves drilling an initial borehole at a potential repository location.
- » This next phase of studies needs to focus on locations that have potential to meet robust technical safety requirements, and would also be considered a good location for the deep geological repository by people living in the area.
- » Studies to date suggest there are many areas that have potential to meet robust technical requirements.
- » On which of these locations would you prefer we focus? Which of these locations might make a good repository site, and so should be the focus of borehole studies?

Site Evaluation Process

The site evaluation process is driven by a community's interest to participate.



Communities That Requested Preliminary Assessments



Status of Studies in the Ignace Area

- » Ignace entered the learning and site selection process in 2010
 - Initial Screening: Completed in August 2011
 - Phase 1 Preliminary Assessment: Completed in December 2013
 - **Currently in Phase 2 of Preliminary Assessment**

- » Findings to date:
 - The Ignace area contains large areas that have the potential to satisfy the NWMO's geoscientific site evaluation factors
 - Borehole drilling is needed to further advance understanding of the geology in the area

- » Findings to date have been shared with people in the area and assessment reports are available on the NWMO's website

Objective of Phase 2 Assessments of Sites

To develop confidence on selection of a preferred location to take into detailed site characterization.



Status of Phase 2 Preliminary Field Investigations (Ignace)

In Collaboration with Communities

Initial Studies



- » High-resolution airborne geophysical surveys (Completed in 2014)
- » Observing geological features and detailed mapping (Completed in August 2016)



Intensive Field Work



- » Borehole drilling and testing (In planning stages)

Ongoing Field Studies

- » Complete environmental field mapping – October 2016
- » Complete interpretation of field data (geological and environment) – December 2016



Approach for Initial Borehole Drilling

- » We need to decide where to focus our next phase of study beginning with initial borehole drilling at or near a potential repository site
- » Purpose is to further advance understanding of geology and its suitability for a deep geological repository
- » Based on early studies, potential geologically suitable areas have been identified for discussion



Rotary drilling

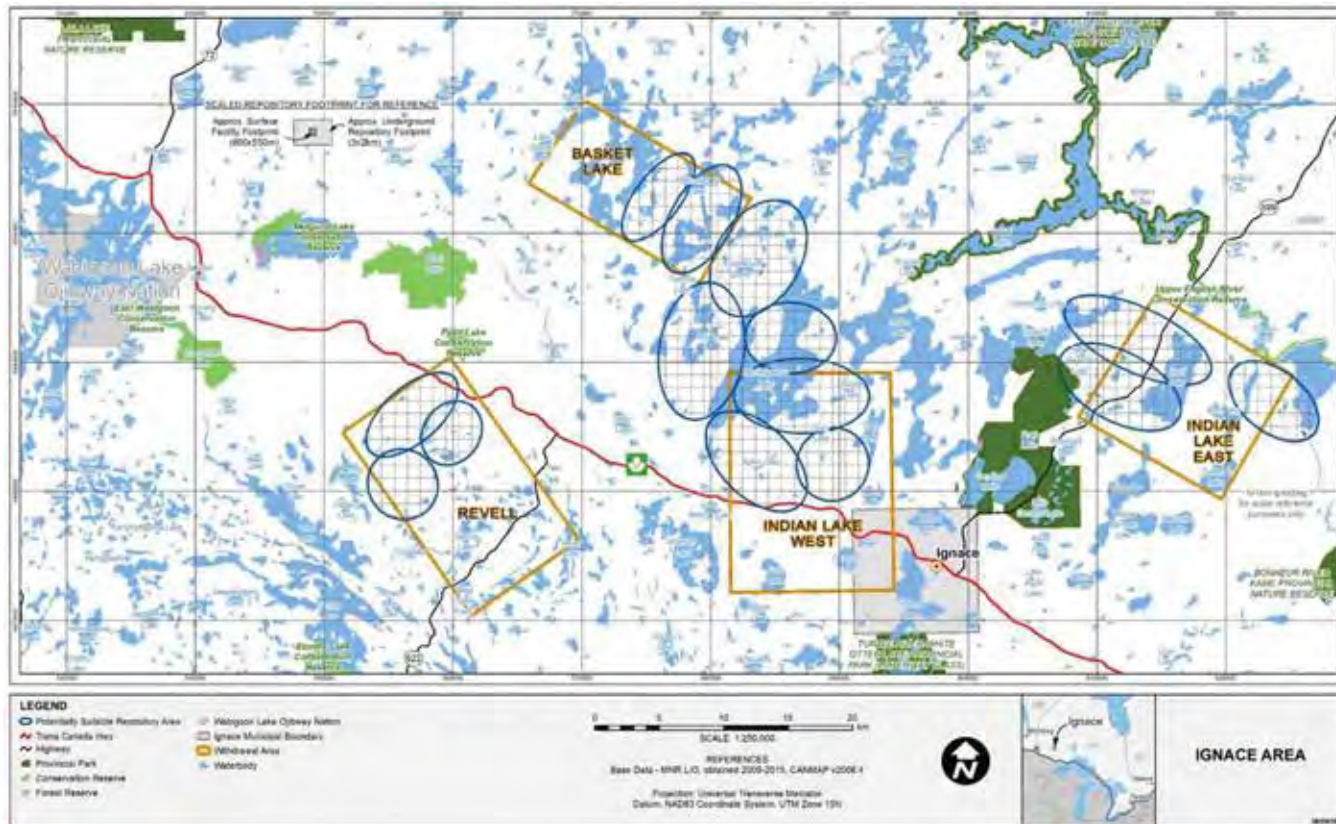
We Need Your Input

The map identifies the areas with potential to meet robust technical safety requirements for a deep geological repository, based on early studies and continuing analysis.

We need your input to help decide where to focus our next phase of studies.

1. What is important to know about each of the areas identified on the map, before decisions are made about where to focus borehole drilling at or near a potential repository site?
2. What about each area would make it a good site to drill a borehole? What, if any, concerns would you have?
3. Are some of these areas preferred over others for initial boreholes? Which ones? Why?

Potential Geologically Suitable Areas Based on Early Phase 2 Studies For Discussion with People in the Area



Purpose of Borehole Drilling and Testing

Building a better understanding of the geology will help the NWMO as it works with people in the area to identify a potential repository site.

- » Provide more information about whether the geology could be a safe place for a repository
- » Further assess key geological features and uncertainties identified in previous studies
- » Provide information about depth of geological formations, rock types and the nature of fractures in the rocks



Example of core

Interweaving Indigenous Knowledge

The NWMO respects the value of what Indigenous Knowledge can contribute to the work involved in the site selection process. Through the guidance of the Council of Elders and Youth, the NWMO has recently published an Indigenous Knowledge Policy. The policy will help guide us in the application of Indigenous Knowledge.

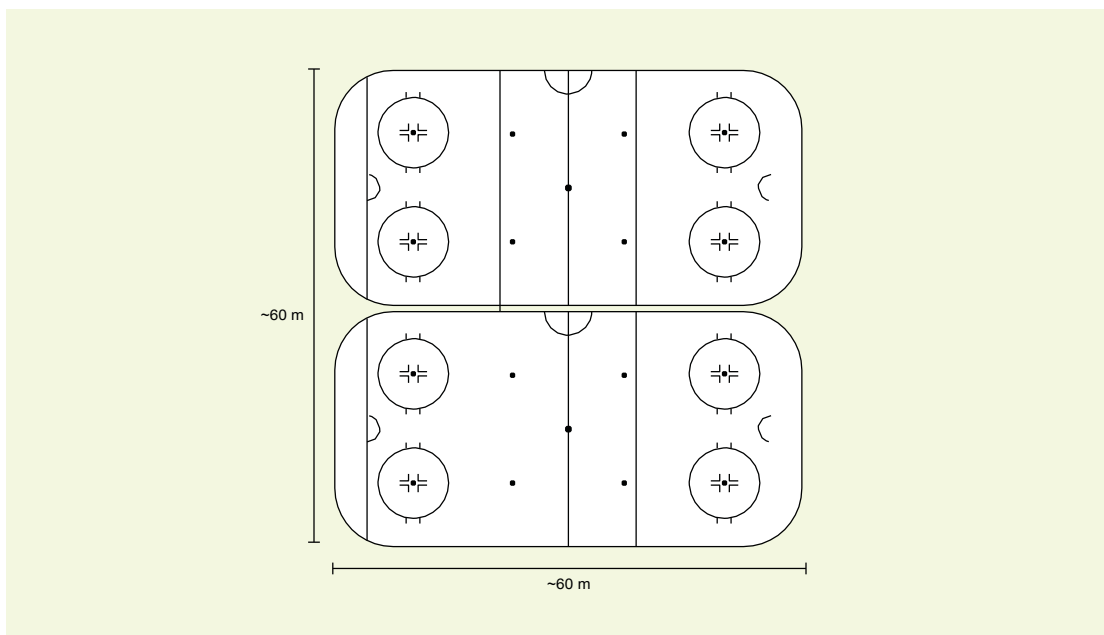


A Council of Elders advises the NWMO on the application of Indigenous Knowledge.

The NWMO will ensure Indigenous intellectual property is protected as agreed with the people who choose to share that knowledge and as in the Indigenous Knowledge Policy.

What's Involved in Borehole Drilling and Testing

- » The process involves drilling a hole and retrieving cylinder-shaped rock samples, called core.
- » Boreholes will be drilled and cored to a depth of about one kilometre.
- » The process could last about 90 days, depending on the number of shifts worked each day.
- » The drill site will be about 60 metres by 60 metres, or about the size of two NHL-sized hockey rinks side by side.



Footprint required to drill a borehole

Borehole Drilling Equipment

- » Boreholes are drilled using a conventional truck-mounted or track-mounted rotary drill rig.
- » Trailers at the site will be used as offices, for equipment storage, and for on-site testing and preserving rock core and water samples.



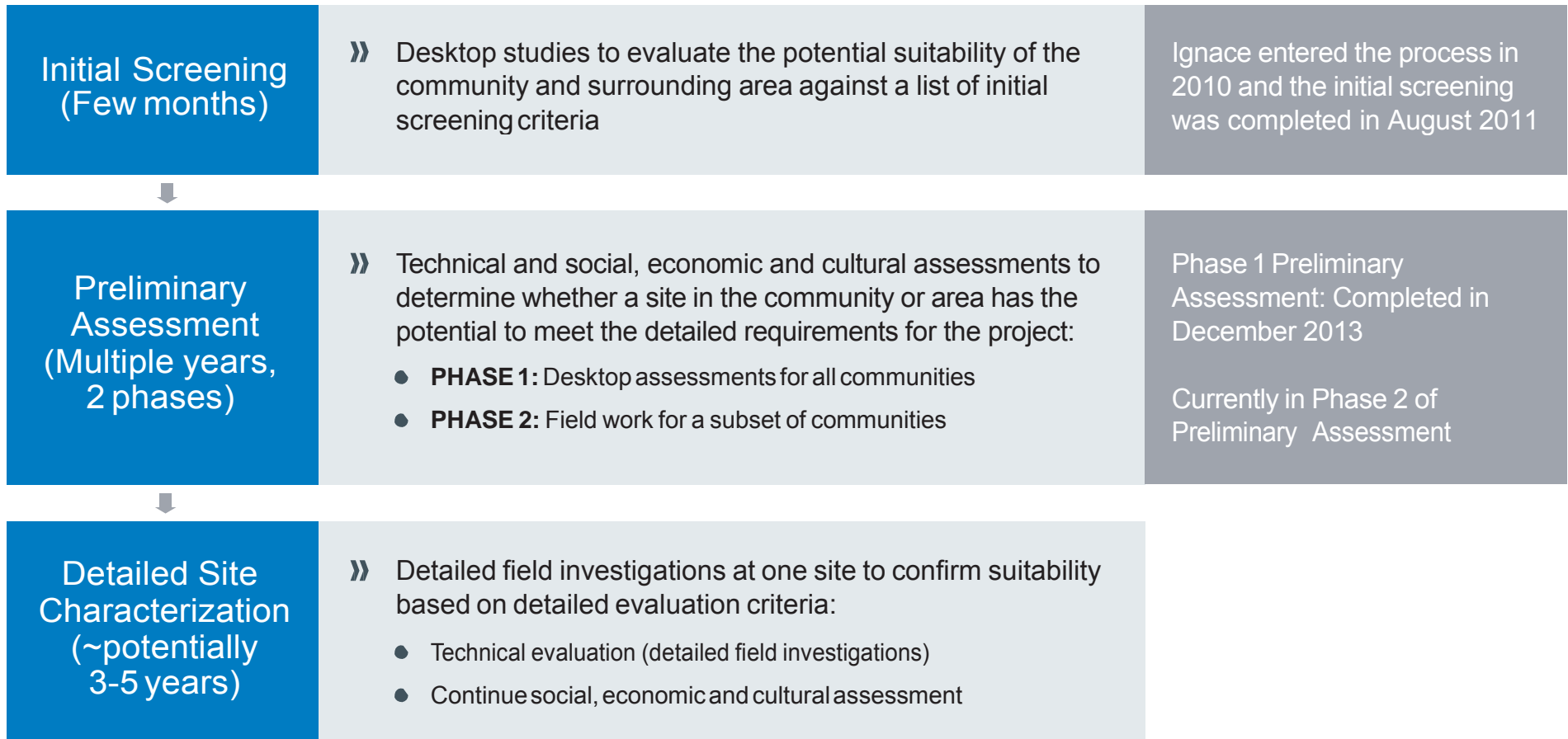
Go outside to see an example of a drill rig.

B2. Display Panels - March 1 and 2, 2017 Open House

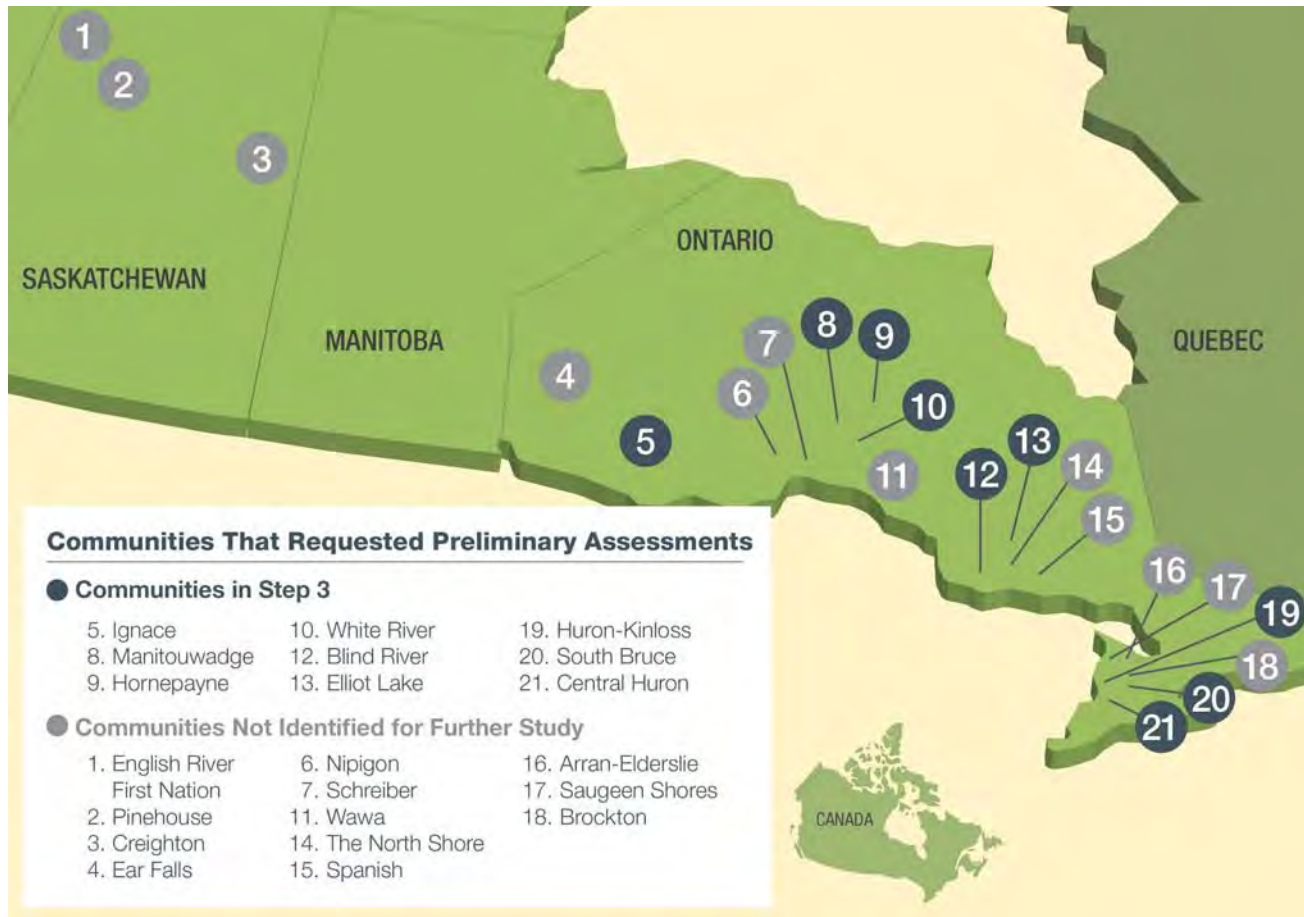
Review Our Borehole Drilling Plans

- » This area is one of several that are involved in the site selection process for a deep geological repository for Canada's used nuclear fuel. Studies are being conducted in each of these areas. No decision will be made on a preferred site before Phase 2 studies are completed, several years from now.
- » The next technical phase of study in this area involves drilling an initial borehole to further explore suitability at a potential repository location.
- » This next phase of studies will focus on a location that has potential to meet robust technical safety requirements, and could also be considered a good location for the deep geological repository by people living in the area.
- » Based on technical studies and input from people in the area, we have identified an area in which to focus initial borehole drilling.

Site Evaluation Process



Communities That Requested Preliminary Assessments



Objective of Phase 2 Assessments

To develop confidence on selection of a preferred location to take into detailed site characterization.



Status of Phase 2 Preliminary Field Investigations

In Collaboration with Communities

Initial Studies



- » High-resolution airborne geophysical surveys (Completed in 2014)
- » Observing geological features and detailed mapping (Completed in August 2016)



- » Preliminary environmental mapping (Completed in October 2016)



Intensive Field Work



- » Borehole drilling and testing (In planning stages)

Technical Considerations

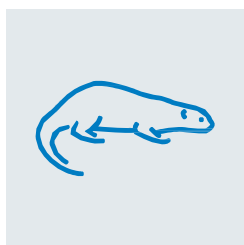
Preliminary field investigations identified potentially suitable sites based on technical considerations.

- » The site must have the potential to satisfy the NWMO's geoscientific evaluation factors:
 - **Safe containment and isolation of used nuclear fuel.** Are the characteristics of the rock at the site appropriate to ensuring the long-term containment and isolation of used nuclear fuel?
 - **Long-term resilience to future geological processes and climate change.** Is the rock formation at the siting area geologically stable and likely to remain stable over the very long term?
 - **Safe construction, operation and closure of the repository.** Are conditions at the site suitable for the safe construction, operation and closure of the repository?
 - **Isolation of used fuel from future human activities.** Is human intrusion at the site unlikely, for instance through future exploration or mining?
 - **Amenable to site characterization and data interpretation activities.** Can the geologic conditions at the site be practically studied and described on dimensions that are important for demonstrating long-term safety?

- » Environmental studies have helped understand if there are:



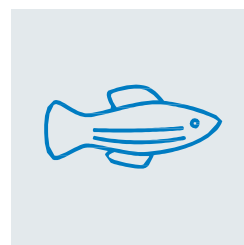
Significant
wildlife habitat



Sensitive or
'at risk' species



Sensitive vegetation
communities



Sensitive fish
habitat

What We Heard From People in the Area

In deciding on where to drill an initial borehole, first and foremost the site must be safe. In reviewing potentially geologically suitable areas last fall, people in the area raised other important considerations.

» Economic Considerations

- What will be the impact on area business, including fishing and hunting camps and logging activities?
- Will it benefit tourism in the area?
- Will it take advantage of existing infrastructure such as roads, power lines and rail lines?
- How will it benefit Ignace business and help build population consistent with Ignace's plan?

» Cultural Considerations

- Will it affect popular fishing and hunting areas, snow mobile and ATV trails?
- What will be the effect on private homes and seasonal residences, including property value?
- How will it be sensitive to people who do not want the project near them?
- Are culturally significant First Nations lands respected, including the presence of archeological artifacts such as petroglyphs and pictographs?

» Natural Environment and Resources

- Is proximity to bodies of surface water taken into account?
- Is the presence of sensitive species (fish, birds, mammals, other) considered, as well as the potential effect on caribou herd migration?
- Are existing mining claims considered?
- Is proximity to a Provincial Park or protected lands addressed?

Interweaving Indigenous Knowledge

In discussing potential borehole locations with Indigenous people in the area, the following considerations were shared with us:

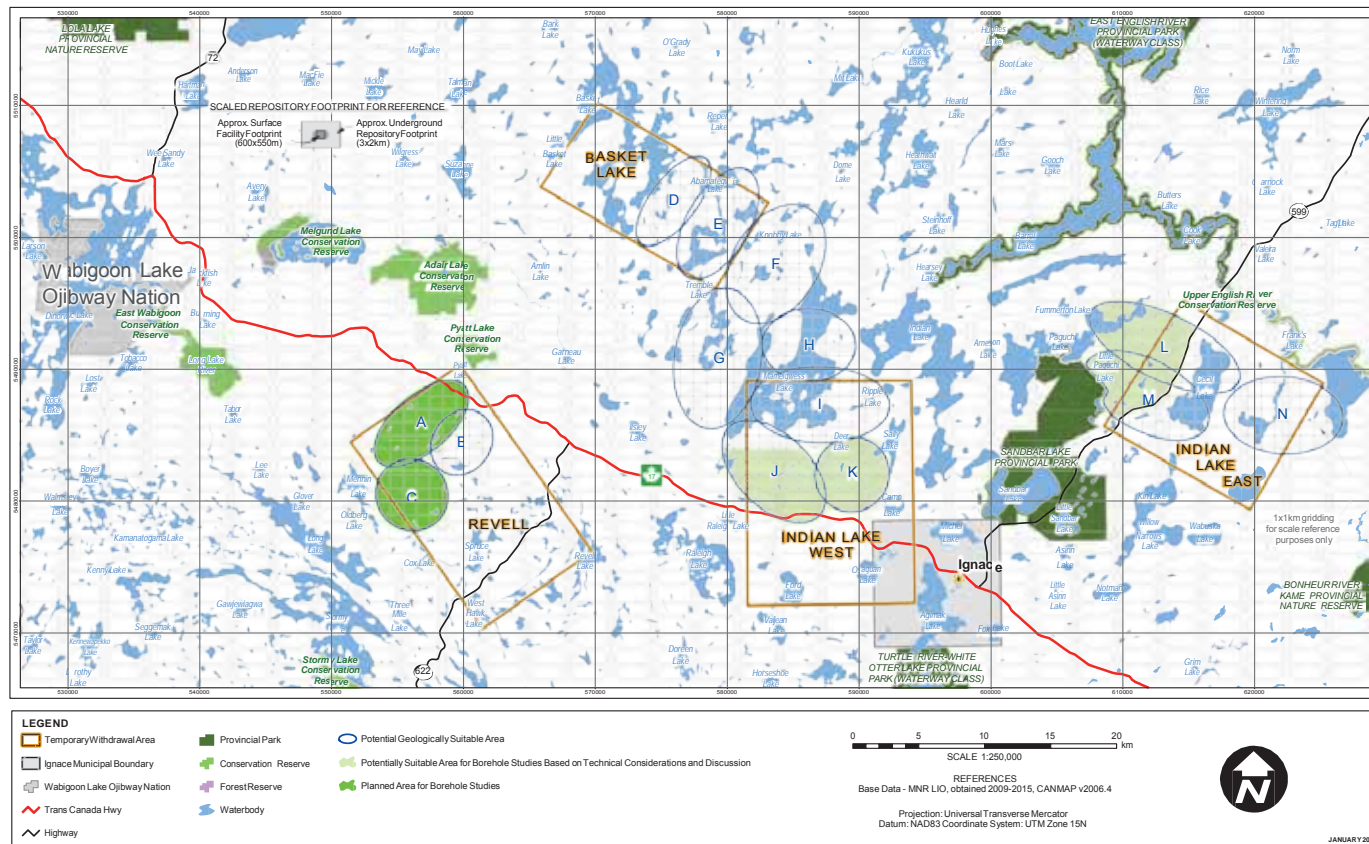
- » Traditional Knowledge
- » Land use and occupancy
- » Ceremony
- » Asserted and established Aboriginal and treaty rights
- » Traplines



The NWMO will ensure Indigenous intellectual property is protected as agreed with the people who choose to share that knowledge and as outlined in the Indigenous Knowledge Policy.

Borehole Study Plan

Based on Technical Considerations and Discussion with People in the Area to Date



Purpose of Borehole Drilling and Testing

Building a better understanding of the geology will help the NWMO as it works with people in the area to identify a potential repository site.

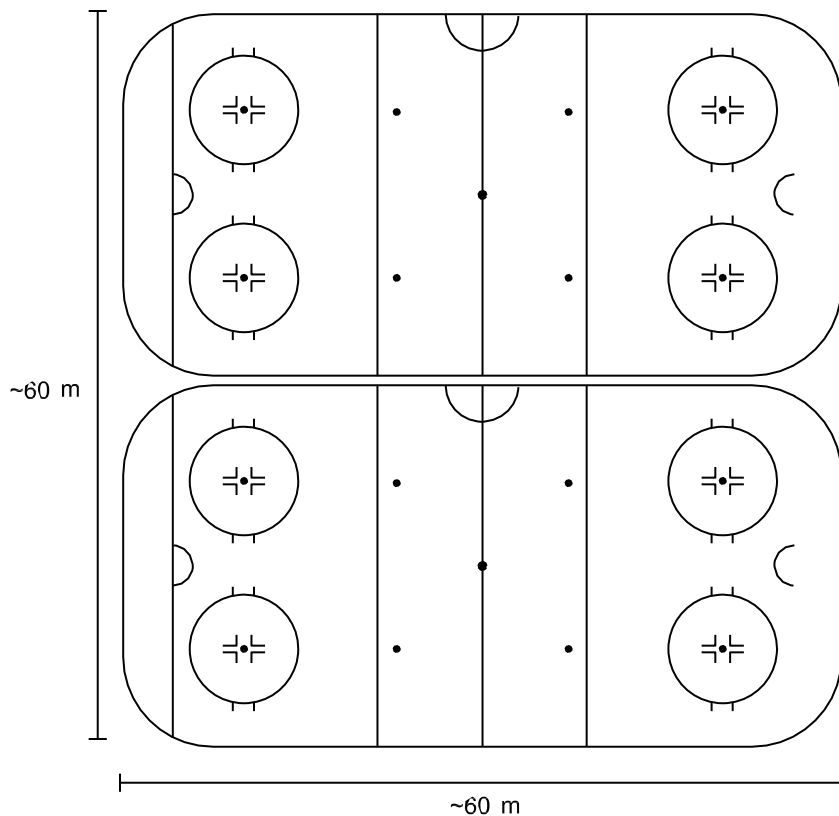
- » Provide more information about whether the geology could be a safe place for a repository
- » Further assess key geological features and uncertainties identified in previous studies
- » Provide information about depth of geological formations, rock types and the nature of fractures in the rocks



Example of core

What's Involved in Borehole Drilling and Testing

- » The process involves drilling a hole and retrieving cylinder-shaped rock samples, called core.
- » Boreholes will be drilled and cored to a depth of about one kilometre.
- » The process could last about 90 days, depending on the number of shifts worked each day.
- » The drill site will be about 60 metres by 60 metres, or about the size of two NHL-sized hockey rinks side by side.
- » The area will be fenced and gated, as well as graded with granular material.



Borehole Drilling Equipment

- » Boreholes are drilled using a conventional truck-mounted or track-mounted rotary drill rig.
- » Trailers at the site will be used as offices, for equipment storage, and for core logging, on-site testing and preserving rock core and water samples.
- » Other equipment and facilities needed include a water storage tank, drill rod and equipment laydown areas, and vehicle traffic lanes.



What Kind of Testing is Planned?

- » Logging of the rock types and structures (e.g., fractures)
- » Geophysical logging of the borehole (e.g., fracture location and orientation, mineralogy, presence of groundwater)
- » Hydraulic conductivity tests at selected depths in the borehole
- » Geomechanical tests of selected rock core samples (e.g., rock strength)
- » Chemistry of groundwater samples

B3. Presentation – July 12, 2016 ICNLC Meeting



Planning for Initial Borehole Drilling and Testing in the Ignace Area

Presented by:
Mahrez Ben Belfadhel
July 12, 2016

Outline

- Approach for Phase 2 Preliminary Assessment
- Status of field studies in the Ignace area
- Borehole drilling: Why, when and where?
- Drilling and testing activities



Main site evaluation stages

Initial Screening
(Few months)

Desktop studies to evaluate the potential suitability of the community against a list of initial screening criteria

- Completed for 22 Communities



Preliminary
Assessment
(Multiple years)

- **PHASE 1:** Desktop for all communities
- Completed for 21 communities
- **PHASE 2:** Field Work for subset of communities
- Ongoing for 9 communities




Detailed Site
Characterization
(~potentially 3-5 years)

Detailed field investigations **at one site** to confirm suitability

Communities that are currently in the site selection process and requested Preliminary Assessments





Preliminary Assessment- Phase 2 Studies

Objective of Phase 2 Assessments of sites:

To develop confidence on selection of a preferred location to take into detailed site characterization

Safety

Confidence a deep geological repository can be developed with strong safety case at that location

Transportation

Confidence a safe, secure and socially acceptable transportation plan can be developed

Partnership

Confidence a strong partnership can be developed – with interested community, First Nation and Métis communities in the area, and surrounding communities

PRELIMINARY ASSESSMENTS

SAFETY

BEYOND SAFETY

Geoscientific
Suitability

Engineering

Transportation

Environment
and Safety

Social,
Economic and
Cultural

Potential to find
a suitable site ?

Potential to
safely construct
the facility?

Potential for
safe and secure
transportation?

Potential to
manage any
environmental
effects, and
ensure health
and safety of
people and the
environment?

Potential to
foster the
well-being of the
community and
region, and to
lay the
foundation for
moving
forward?

ABORIGINAL TRADITIONAL KNOWLEDGE

DIALOGUE AND ENGAGEMENT

Technical site evaluation criteria

18 technical site evaluation factors under six safety functions

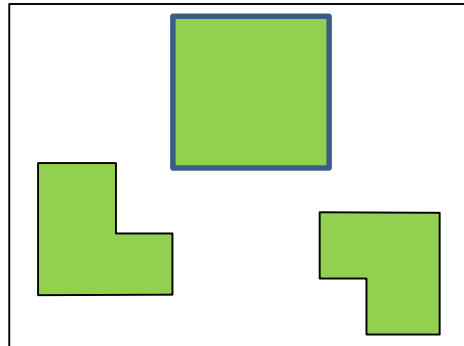
1. Safe containment and isolation of used nuclear fuel
2. Long-term resilience to geological processes and climate change
3. Isolation of used nuclear fuel from future human activities
4. Amenable to site characterization and data interpretation activities
5. Safe construction, operation and closure of the repository
6. Safe, secure transportation routes



Preliminary Assessment Phases

PHASE 1

Desktop
For all communities

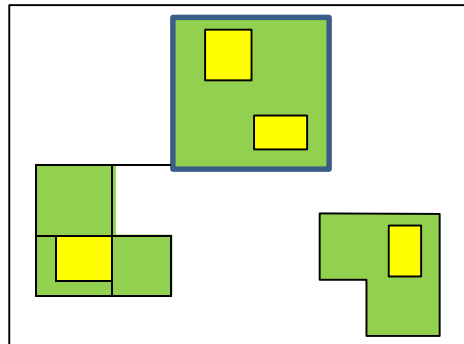


- Are there any general areas that may contain potentially suitable site?



PHASE 2

Field Work
For a subset of communities



- Is there a potential to find repository-scale sites?
- Focused borehole drilling areas selected in collaboration the community

Phase 2 preliminary field investigations

Initial Studies



High resolution airborne
geophysical surveys
(completed in 2014)



Observing geological
features and detailed
mapping
(ongoing)



Intensive Field Work



Borehole Drilling
& Testing
(in planning)



In Collaboration with Communities

Where are we with Phase 2 field studies in the Ignace area?

- Airborne surveys : completed in 2014
- Observing geological features: completed in 2014
- Detailed geological mapping: planned to be completed in summer 2016
- Initial borehole drilling: in planning



Initial Borehole Drilling and Testing

Advance understanding of the rock at depth

Why borehole drilling?

- Advance understanding of the geology and hydrogeology at depth (up to 1,000 m)
- Provide information about the depth of geological formations, rock types, and the nature of fractures in the rocks
- Help the NWMO to identify potential repository sites, in collaboration with people in the area



How many boreholes in Phase 2 and where?

- Begin with three initial boreholes drilled and tested one after the other
- Locations of initial boreholes will be in or near potential repository sites identified together with people in the area
- More extensive borehole drilling may be undertaken in a location identified together with people in the area as a preferred potential repository site



Interweaving Aboriginal Traditional Knowledge

The NWMO will work together with Aboriginal peoples in the area to respectfully apply Indigenous Knowledge of the natural environment and traditional lands, and cultural and spiritual values they may wish to share to guide borehole drilling and testing

- Develop work plans jointly with communities
- Hold ceremonies prior to initiating field work
- Hold cultural awareness training for contractors
- Work together to collect information and interpret study findings

Borehole drilling: vertical and/or inclined



Borehole coring and storage

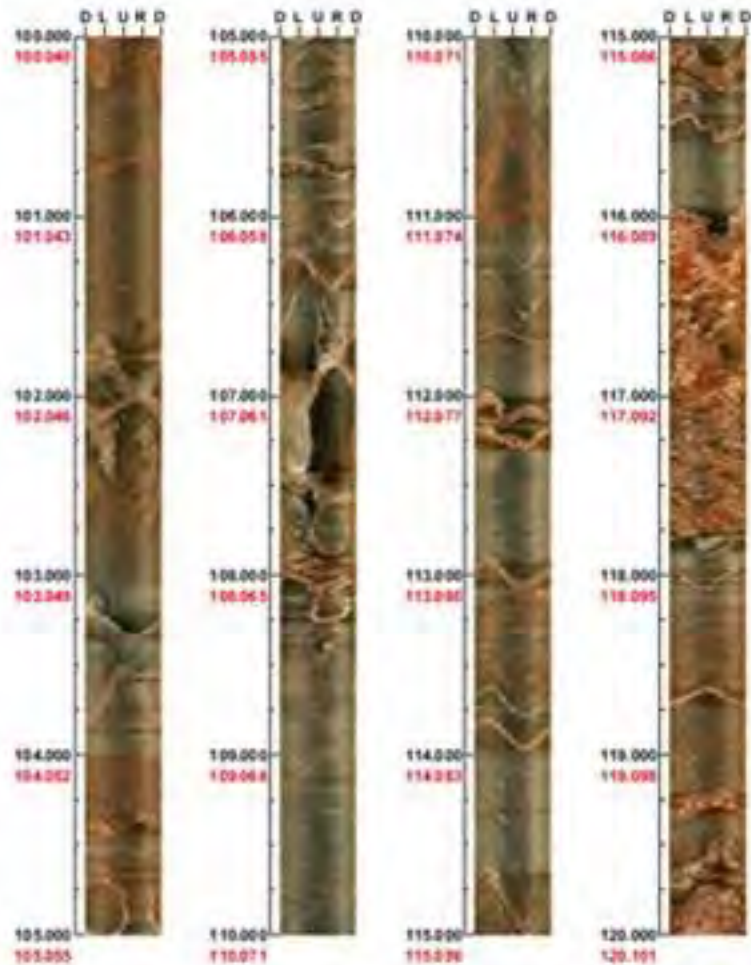


www.miningmarkets.ca

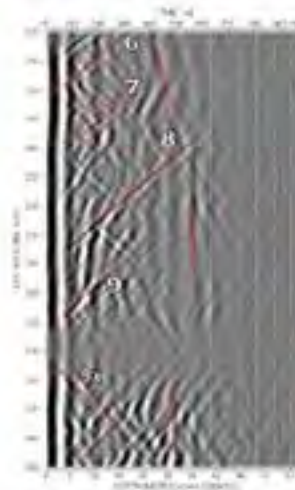
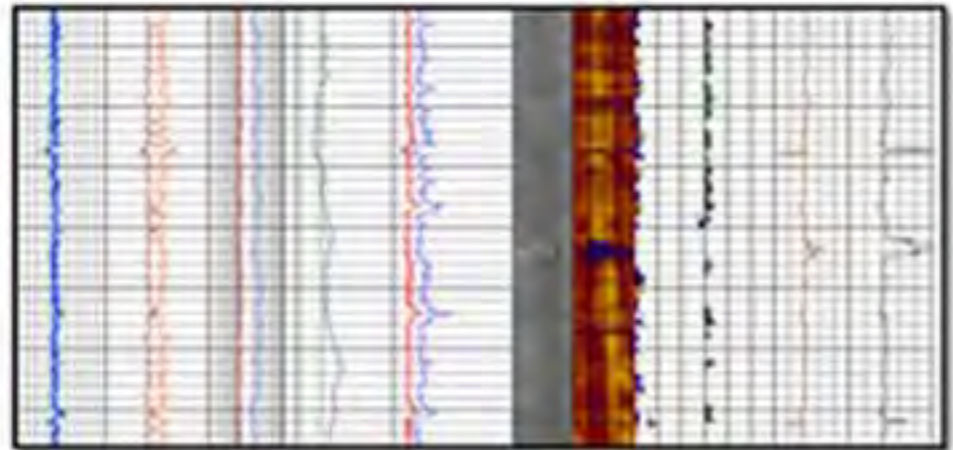
Core sampling and laboratory testing



Geophysical borehole logging



<http://www.skb.se/upload/publications/pdf/P-10-36.pdf>



<http://www.skb.se/upload/publications/pdf/P-09-11.pdf>



Borehole hydraulic testing



Key milestones prior to drilling

- Complete detailed mapping and interpretation of data collected to date
- Identify possible locations of initial boreholes
- Work together with people in the area to select locations for initial boreholes
- Obtain required permits for drilling activities
- Conduct cultural awareness training and ceremonies
- Prepare access to drill site
- Initiate drilling and testing





Thank you
www.nwmo.ca

B4. Presentation – September 27, 2016 ICNLC Meeting



Adaptive Phased Management

**Phase 2 Preliminary Assessments:
Initial Borehole Drilling to Advance
Learning**

Site Evaluation Process

Site evaluation process is driven by community's interest to participate.

Initial Screening (Few months)

Desktop studies to evaluate the potential suitability of the community against a list of initial screening criteria



Preliminary Assessment (Multiple years, 2 phases)

Technical and Social, economic and cultural assessments to determine whether a site in the community has the potential to meet the detailed requirements for the project:

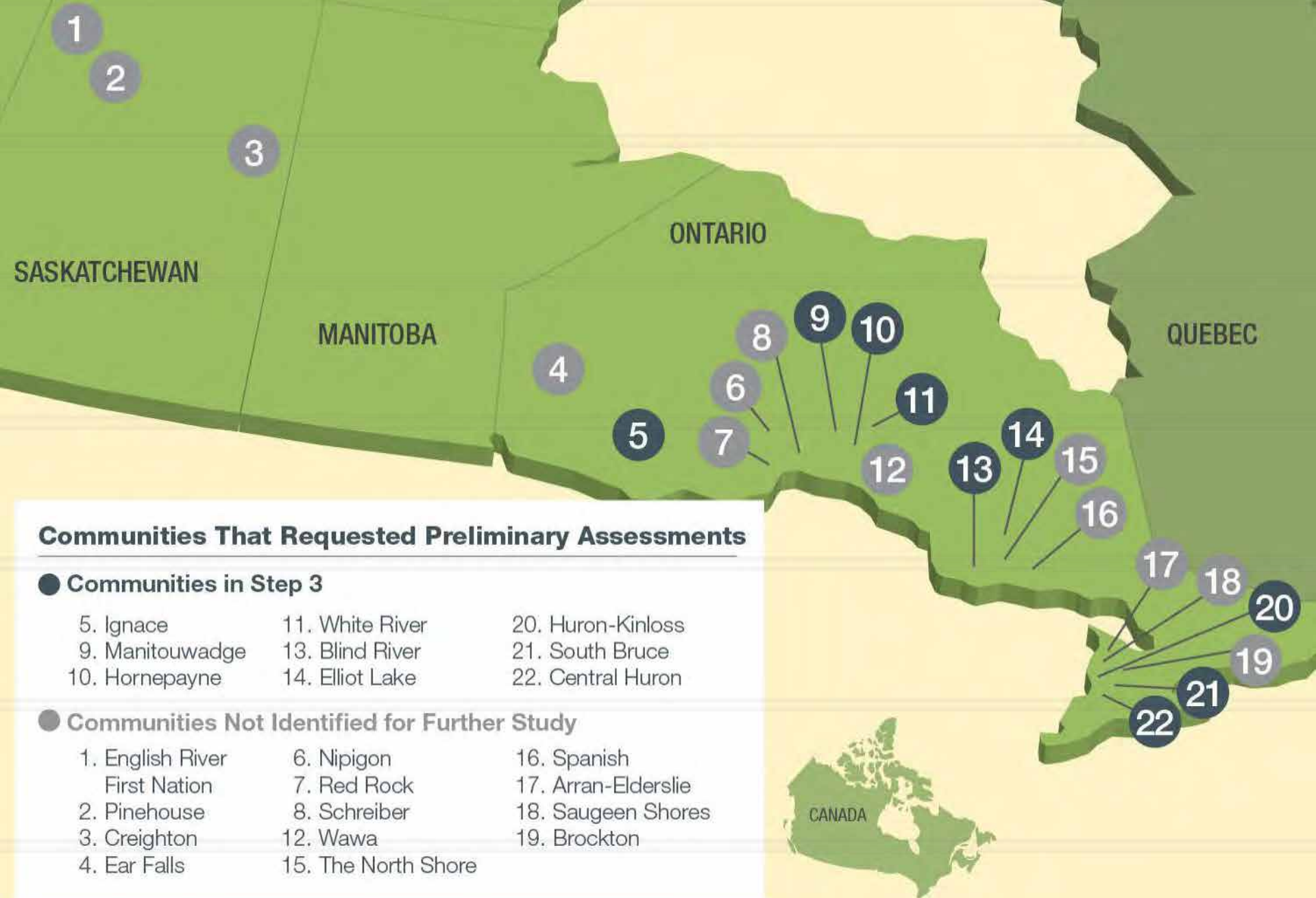
- **PHASE 1:** Desktop for all communities
- **PHASE 2:** Field Work for a subset of communities



Detailed Site Characterization (~potentially 3-5 years)

Detailed field investigations at one site to confirm suitability of the site based on detailed site evaluation criteria:

- Technical evaluation (detailed field investigations)
- Continue social, economic and cultural assessment



Status of Studies in the Ignace Area

- Ignace entered the learning and site selection process in 2010
 - Initial Screening: Completed in August 2011
 - Phase 1 Preliminary Assessment: Completed in December 2013
 - **Currently in Phase 2 of Preliminary Assessment**
- Findings to date:
 - The Ignace area contains large areas that have the potential to satisfy NWMO's geoscientific site evaluation factors
 - Borehole drilling is needed to further advance understanding of the geology in the area
- Findings to date have been shared with people in the area and assessment reports are available on NWMO's website

Objective of Phase 2 Assessments of Sites

To develop confidence on selection of a preferred location to take into detailed site characterization

Safety

Confidence a deep geological repository can be developed with strong safety case at that location

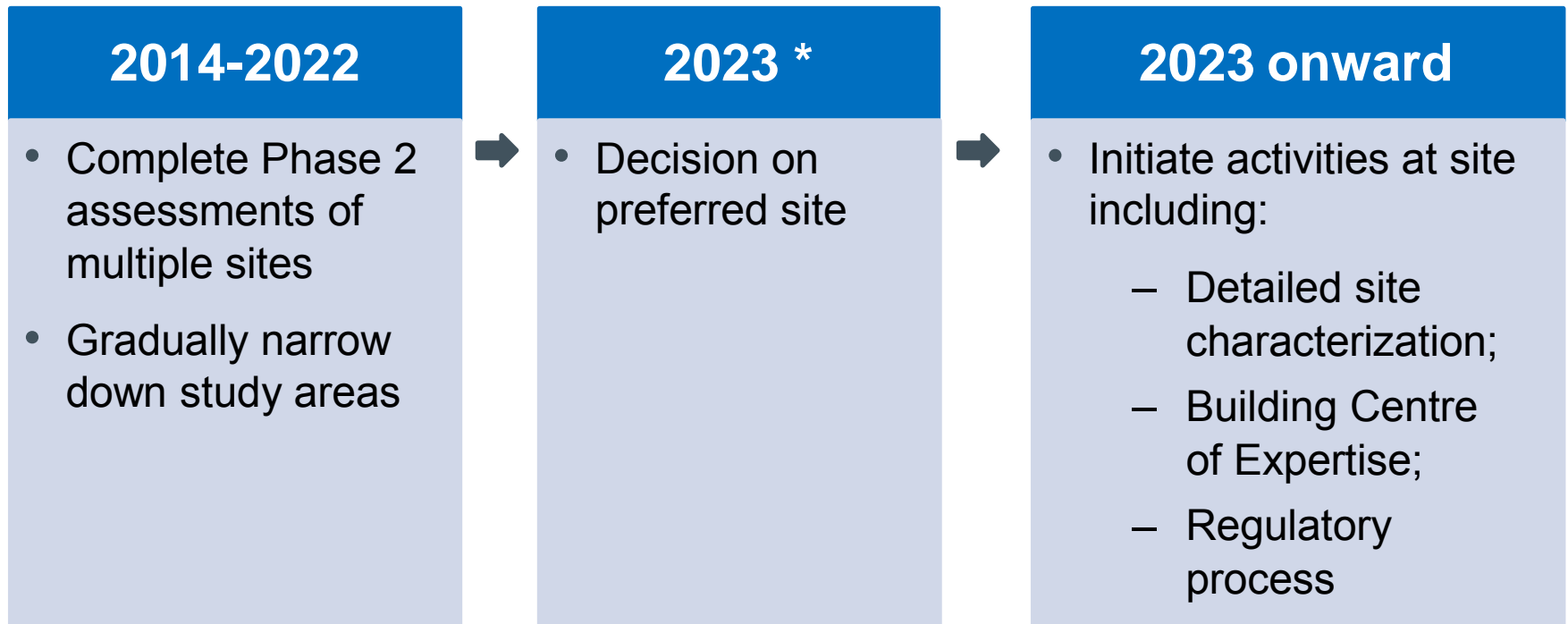
Transportation

Confidence a safe, secure and socially acceptable transportation plan can be developed

Partnership

Confidence a strong partnership can be developed – with interested community, First Nation and Métis communities in the area, and surrounding communities

Looking Ahead: Phase 2 Site Selection Planning Assumptions*



** Timelines are illustrative, to guide planning. Actual timelines may vary.*

Status of Phase 2 Preliminary Field Investigations (Ignace)

Initial Studies



High resolution airborne geophysical surveys
(Completed in 2014)



Intensive Field Work



Observing geological features and detailed mapping
(Completed in Aug. 2016)



Intensive Field Work

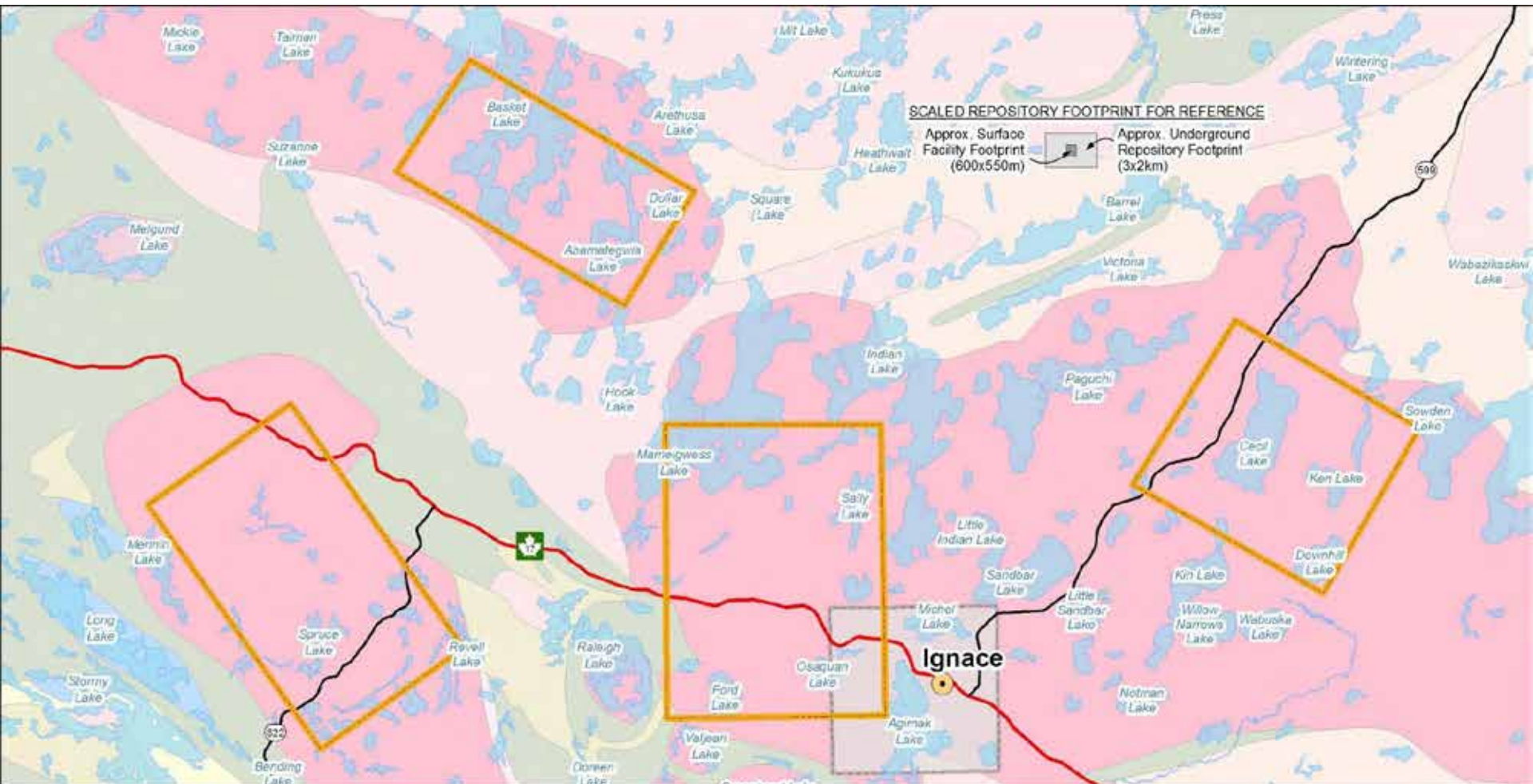


Borehole Drilling & Testing
(in planning)



In Collaboration with Communities

Geology of the Ignace area



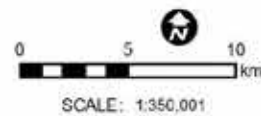
SCALED REPOSITORY FOOTPRINT FOR REFERENCE

Approx. Surface Facility Footprint (600x550m)
 Approx. Underground Repository Footprint (3x2km)

REFERENCES

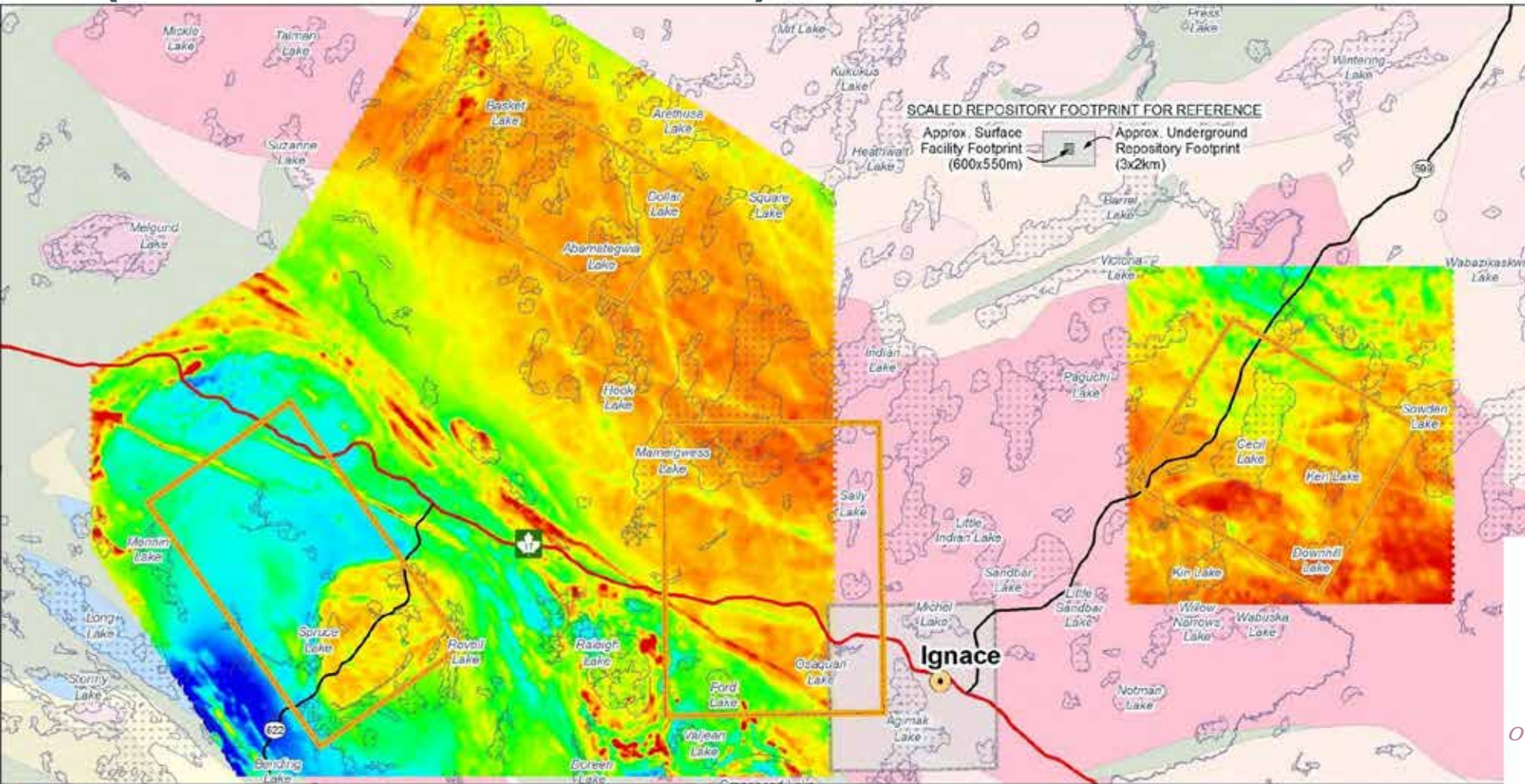
Base Data - MNR LIO, obtained 2009-2015, CANMAP v2006.4

Projection: Universal Transverse Mercator
 Datum: NAD83 Coordinate System; UTM Zone 15N



19/09/2016

Airborne Surveys in the Ignace Area- Magnetic (24,453 Line km's flown)



- Withdrawal Area
- Ignace Municipal Boundary
- Trans Canada Hwy
- Highway
- Waterbody

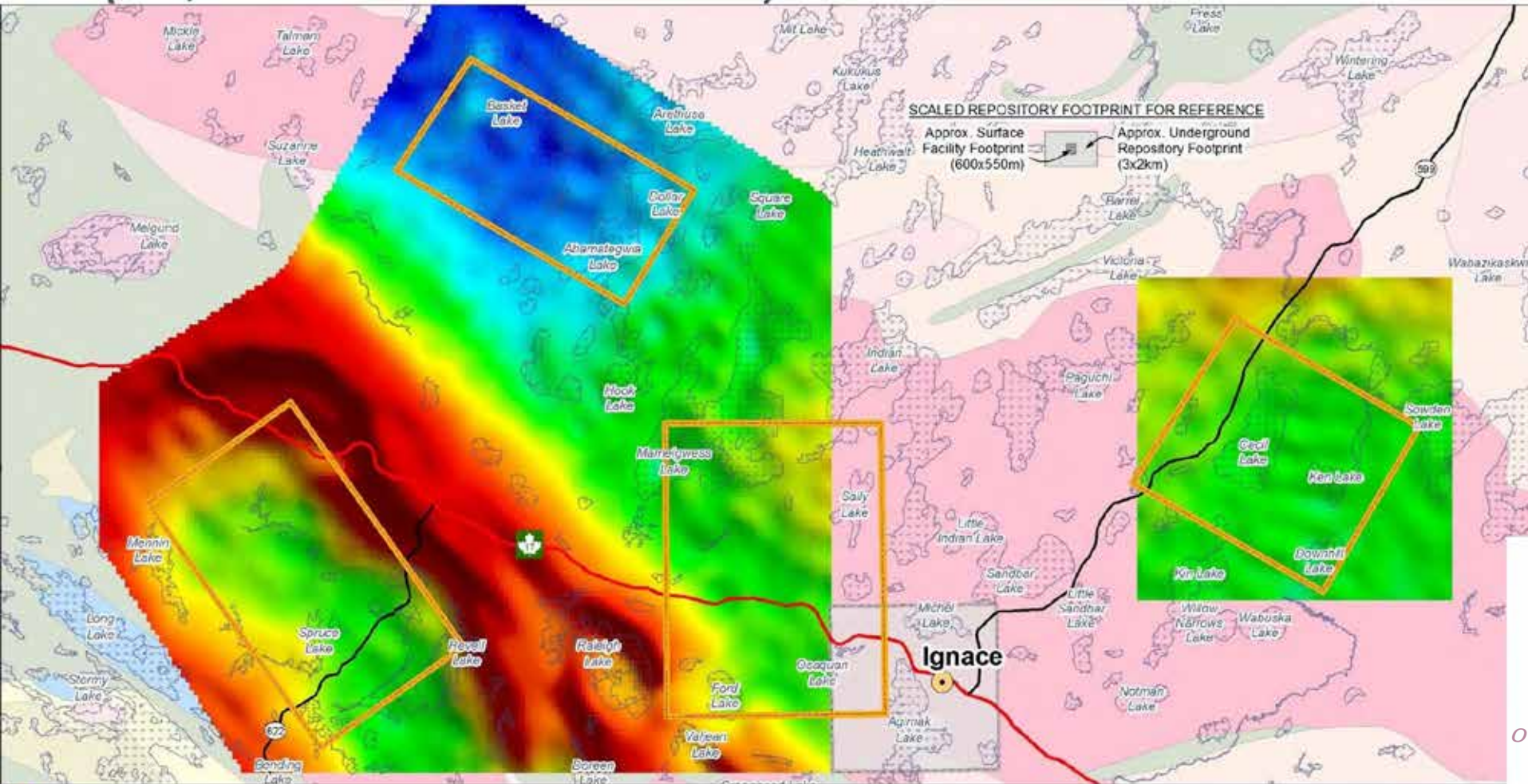
-290 MAG-Reduction to Pole 2750

REFERENCES
 Base Data - MNR LIO, obtained 2009-2015, CANMAP v2006.4
 Projection: Universal Transverse Mercator
 Datum: NAD83 Coordinate System: UTM Zone 15N



19/09/2016

Airborne Surveys in the Ignace Area- Gravity (24,453 Line km's flown)



- Withdrawal Area
- Ignace Municipal Boundary
- Trans Canada Hwy
- Highway
- Waterbody

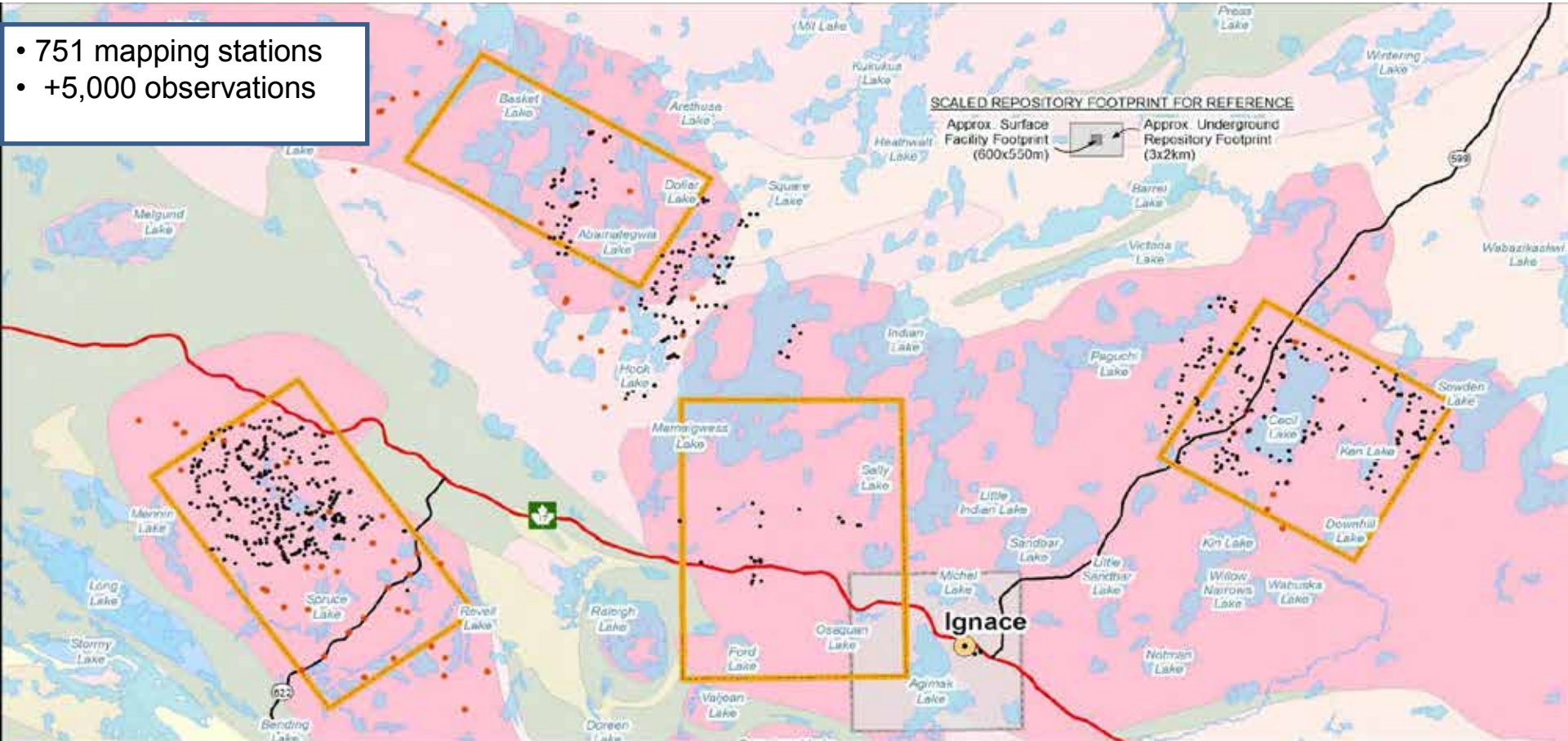
-89 BOUGER GRAVITY [mGal] -44

REFERENCES
Base Data - MNR LIO, obtained 2009-2015, CANMAP v2006.4
Projection: Universal Transverse Mercator
Datum: NAD83 Coordinate System: UTM Zone 15N



Geological Mapping Locations

- 751 mapping stations
- +5,000 observations



- Withdrawal Area
- Ignace Municipal Boundary
- Trans Canada Hwy
- Highway
- Waterbody
- OGGF Mapping Station (83)
- Detailed Mapping Station (668)

REFERENCES
 Base Data - MNR LIO, obtained 2009-2015, CANMAP v2006.4
 Projection: Universal Transverse Mercator
 Datum: NAD83 Coordinate System: UTM Zone 15N



19/03/2016

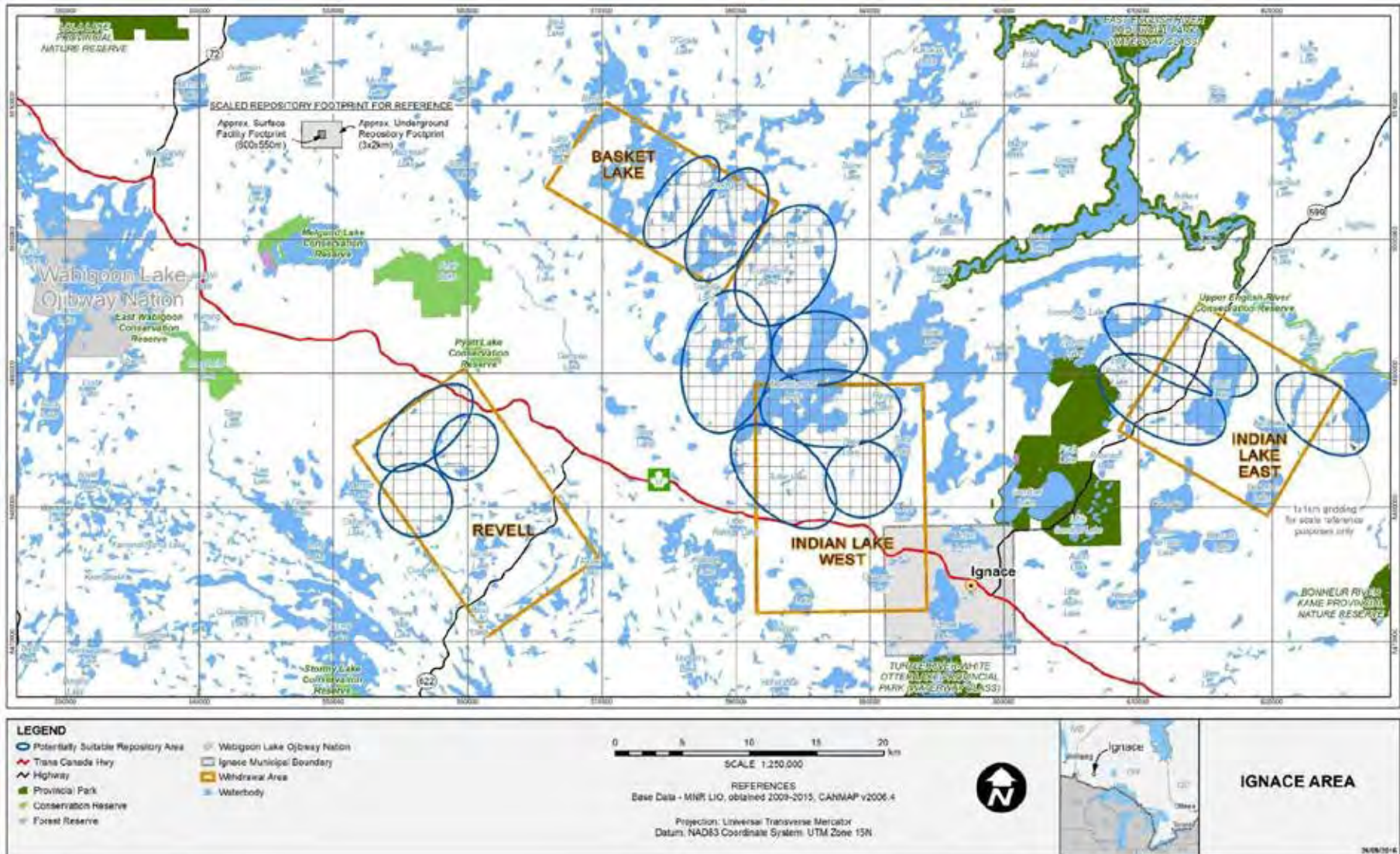
Technical Studies- Next Steps

- Complete interpretation of field data geological mapping data- December 2016
- Complete environmental field mapping – December 2016
- Complete early engineering studies- December 2016
- Identify borehole drill sites based on technical studies and feedback from people in the area – Early 2017

Approach for Initial Borehole Drilling

- We need to make some decisions. We need to decide where to focus our next phase of study beginning with initial borehole drilling at or near a potential repository site
- Purpose is to further advance understanding of geology and its suitability for a deep geological repository
- To begin the discussion with people in the area and learn from them on where to focus initial borehole drilling, potential geologically suitable repository areas based on early Phase 2 studies have been identified

Potential Geologically Suitable Areas Based on Early Phase 2 Studies – For Discussion with People in the Area



Advancing the Discussion

- Share the map of potential geologically suitable areas based on early Phase 2 studies and invite discussion through a variety of engagement activities on where we should focus borehole drilling
- Provide briefings to groups and individuals who are interested
- Engage with First Nation and Metis communities in the area
- Invite people to share their perspectives through coming to the Learn More community office, and at an open house planned for late October and other activities



We need your input

The map identifies the areas with potential to meet robust technical safety requirements for a deep geological repository, based on early studies and analysis which is continuing. We need your input to help decide where to focus our next phase of studies.

1. What is important to know about each of the areas identified on the map, before decisions are made about where to focus borehole drilling at or near a potential repository site?
2. What about each area would make it a good site to drill a borehole? What, if any, concerns would you have?
3. Are some of these areas preferred over others for initial boreholes? Which ones? Why?

Timelines

The manner and pace of engagement will advance collaboratively with people in the area

- By March 2017, engagement could provide input to support any government authorizations which may be needed
- Consistent with input from engagement activities, and obtaining any drilling authorizations, borehole drilling could begin as early as next year
- If more time is needed to discuss and plan the work with people in the area, we will take the time that is needed and adjust timing for the initial borehole



B5. Presentation – November 30, 2016 Ignace Council Meeting



2016 Phase 2 Preliminary Assessment Update

Presented by: Ann Aikens, NWMO

November, 2016

Objective of Phase 2 Assessments of Sites

To develop confidence on selection of a preferred location to take into detailed site characterization

Safety

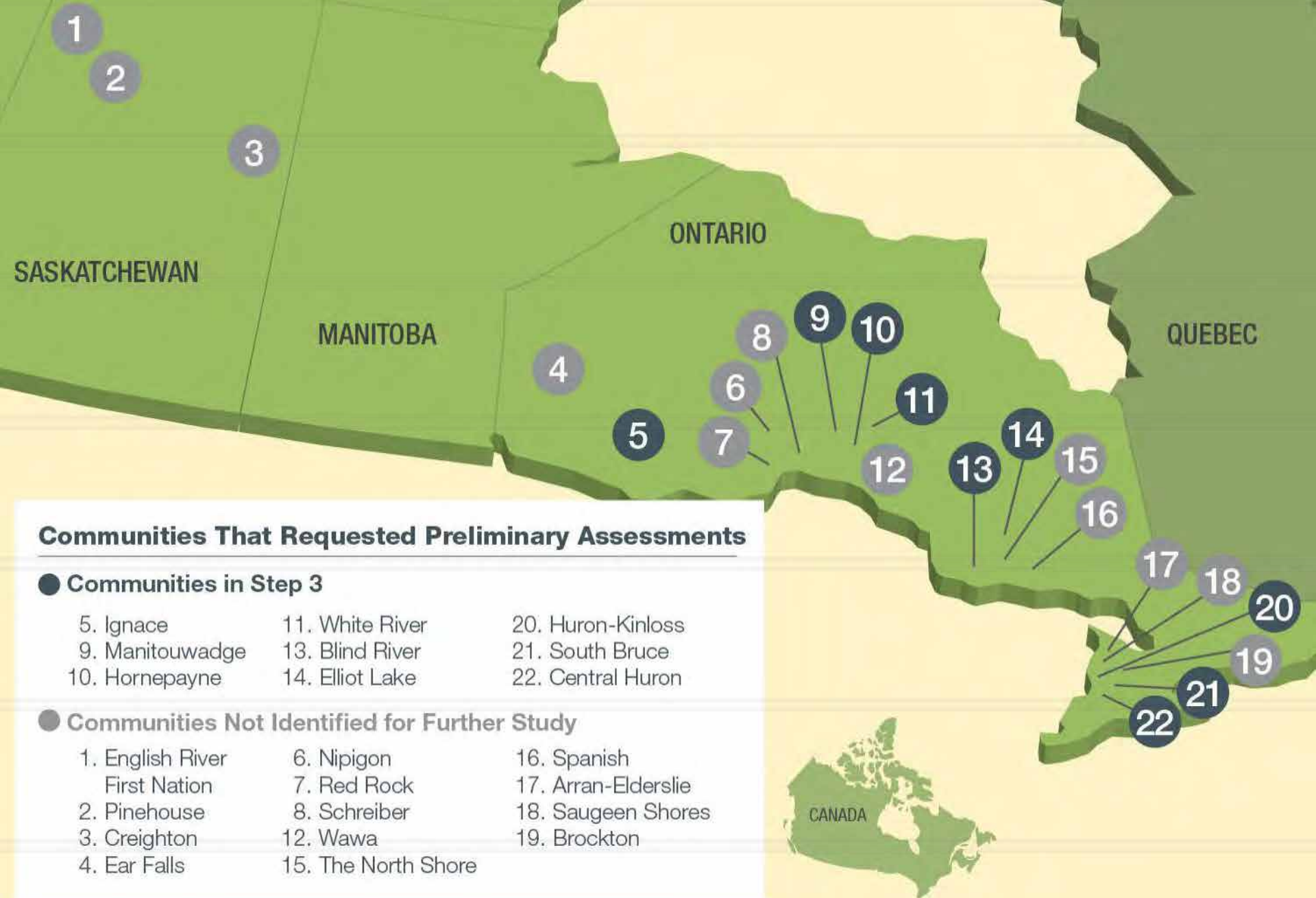
Confidence a deep geological repository can be developed with strong safety case at that location

Transportation

Confidence a safe, secure and socially acceptable transportation plan can be developed

Partnership

Confidence a strong partnership can be developed – with interested community, First Nation and Métis communities in the area, and surrounding communities



Communities That Requested Preliminary Assessments

● Communities in Step 3

- | | | |
|-----------------|-----------------|-------------------|
| 5. Ignace | 11. White River | 20. Huron-Kinloss |
| 9. Manitouwadge | 13. Blind River | 21. South Bruce |
| 10. Hornepayne | 14. Elliot Lake | 22. Central Huron |

● Communities Not Identified for Further Study

- | | | |
|----------------------------------|---------------------|---------------------|
| 1. English River
First Nation | 6. Nipigon | 16. Spanish |
| 2. Pinehouse | 7. Red Rock | 17. Arran-Elderslie |
| 3. Creighton | 8. Schreiber | 18. Saugeen Shores |
| 4. Ear Falls | 12. Wawa | 19. Brockton |
| | 15. The North Shore | |

Status of Studies in Ignace

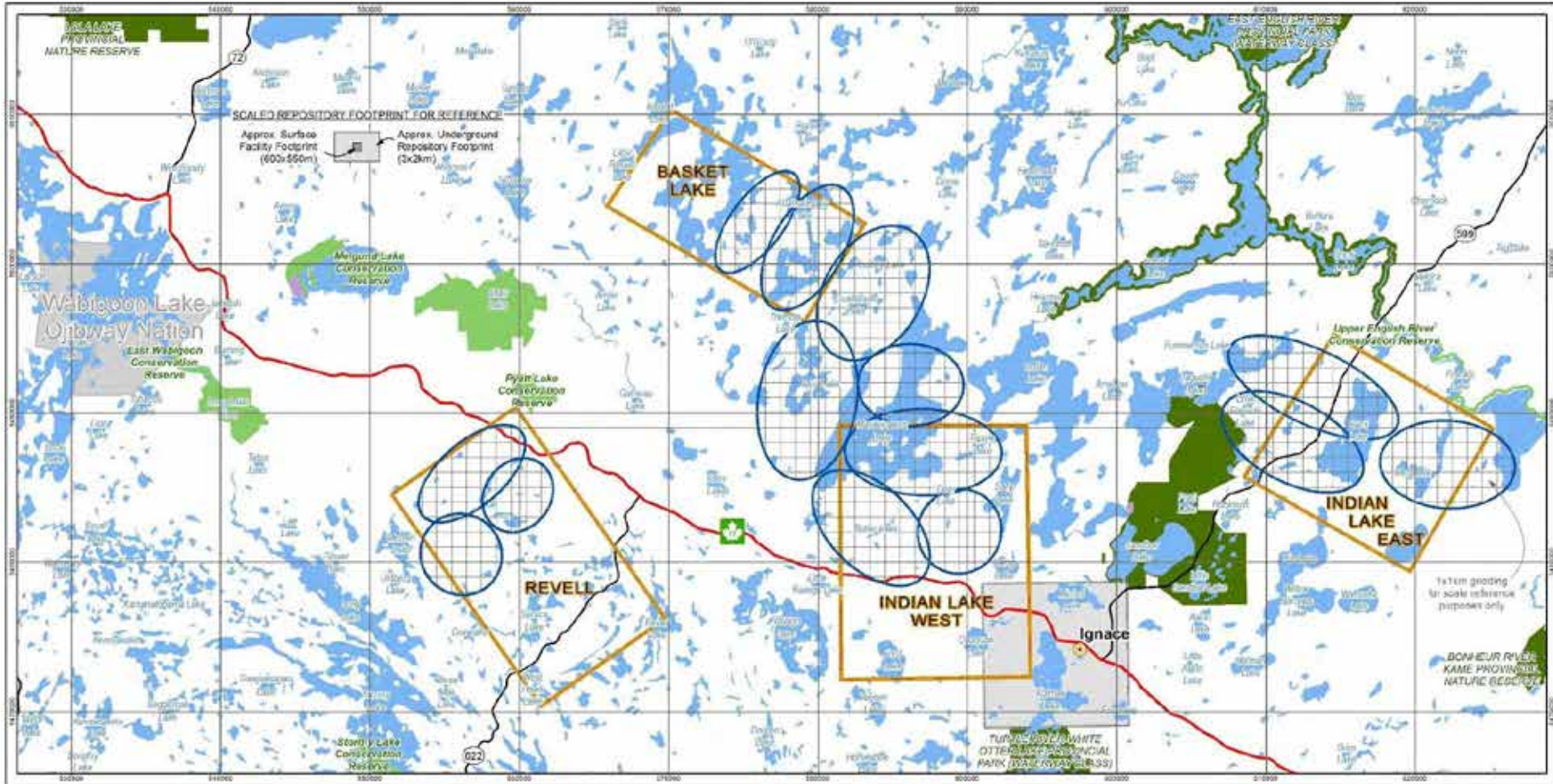
- Ignace entered the learning and site selection process in 2009
- Initial Screening was completed in March 2011
- Phase 1 Preliminary Assessment was Completed in November 2013 and **Phase 2 of Preliminary Assessment** is underway
- Findings to date indicate Ignace contains large areas that have the potential to satisfy NWMO's geoscientific site evaluation factors. More studies are needed to further advance understanding of the geology in the area

The Project will only proceed with the involvement of the interested community, First Nation and Métis Communities in the area, and surrounding communities, working in partnership to implement it

Approach for Initial Borehole Drilling

- We need to decide where to focus our next phase of study beginning with initial borehole drilling at or near a potential repository site
- Purpose is to further advance understanding of geology and its suitability for a deep geological repository
- Potential geologically suitable repository areas, based on early Phase 2 studies, have been identified for discussion with people in the area

Potential Geologically Suitable Areas Based on Early Phase 2 Studies – For Discussion with People in the Area



Advancing the Discussion

- Share the map of potential geologically suitable areas based on early Phase 2 studies and invite discussion through a variety of engagement activities on where we should focus borehole drilling
- Provide briefings to groups and individuals who are interested
- Engage with First Nation and Metis communities in the area
- Invite people to share their perspectives through coming to the Learn More community office, and at the open house, and other community engagement activities



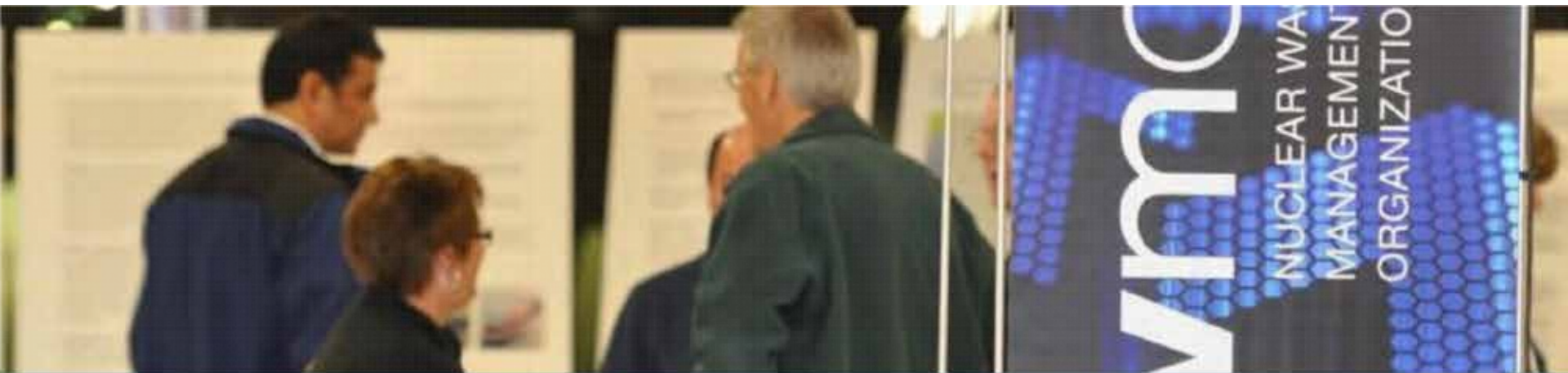
Some Key Activities in 2016

- Project Economics update
- Review of updated project description
- Opening of the new Learn More Centre
- UFTP exhibit and community BBQ, Ignace and Village of Wabigoon LSB
- Two WMF / Learn More Tours and Briefings
- CSR Local Initiatives program



Some Key Activities in 2016, Continued...

- Two Open Houses
- Presentation to Ignace School students on understanding radiation
- CNS 3rd Canadian Conference on Nuclear Waste Management
- Grades 7 and 8 tour of NWMO Oakville Test Facility
- Summer student employment
- Community use of Learn More space



Corporate News

- March – NWMO submits Annual Report to the Minister of Natural Resources, who tabled it in parliament
- April – NWMO updates project cost estimate and associated timeline estimates (this happens approx. every five years)
- August – NWMO issues updated 5-year strategic plan for public comment
- President Ken Nash retired Sept 30, and new President Laurie Swami began leading the NWMO in November



Looking Forward

- Tour of the NWMO Oakville Test Facility
- Issue RFP for initial borehole work to begin preparations
- 2017 Spring/Summer Open House
- UFTP exhibit
- Planning for early investments in education and skills in 2017
- Advancing the discussion on project economics, community wellbeing, and Centre of Expertise
- Continuing field studies

NWMO Learn More Centre

- 304 Main Street, Ignace
807-934-2370
www.nwmo.ca
- Open Mondays to Friday
8:30 am to 4:30 pm
- Please drop in with questions
or comments



Ignace Community Nuclear Liaison Committee

ICNLC meets the last Tuesday of every month unless otherwise noted at the NWMO Learn More Centre. 304 Main Street, Ignace at the Town Plaza.

Everyone is welcome.

(Visit online at <http://clinfo.ca/ignace>)

B6. Presentation – January 31, 2017 ICNLC Meeting

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Adaptive Phased Management

Update on Technical Studies

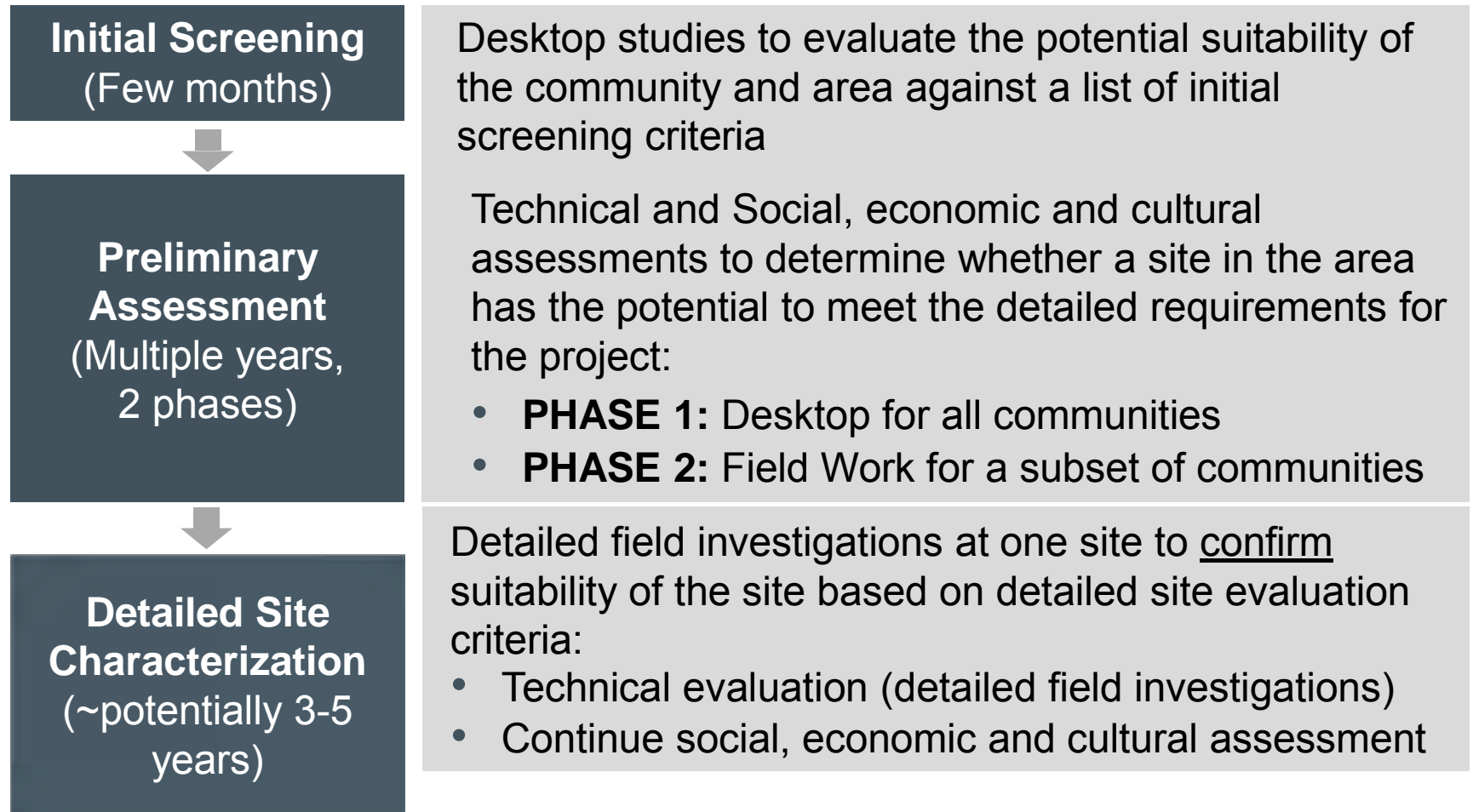
NWMO
January 2017

Update

- At our last meeting, the NWMO committed to:
 - Complete interpretation of field geological and environmental mapping data - **complete**
 - Complete early engineering studies - **complete**
 - Engage people in the area in review of sites with strong potential to meet geoscientific criteria to determine where to drill an initial borehole to further explore geology – **conducted engagement activities**
 - Identify borehole drill sites based on technical studies and feedback from people in the area – **in progress**

Site Evaluation Process

Site evaluation process is driven by community's interest to participate.



Objective of Phase 2 Assessments of Sites

To develop confidence on selection of a preferred location to take into detailed site characterization

Safety

Confidence a deep geological repository can be developed with strong safety case at that location

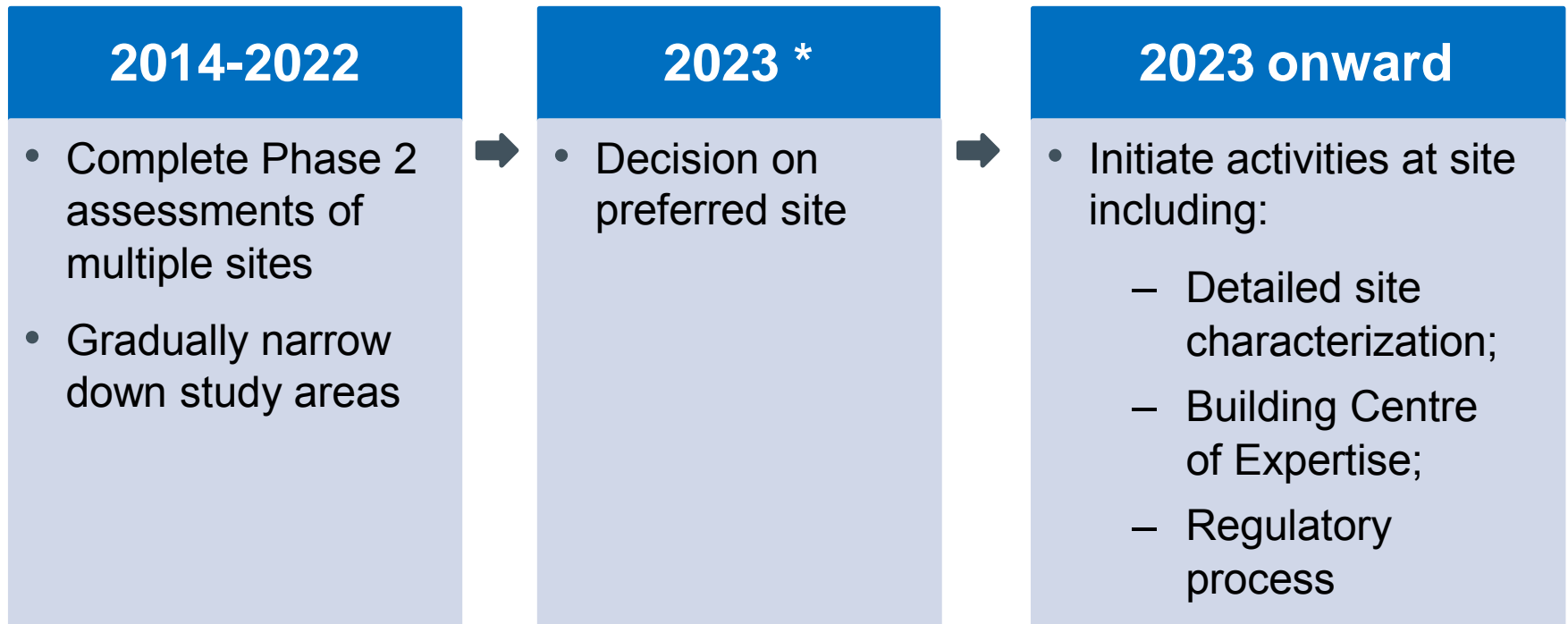
Transportation

Confidence a safe, secure and socially acceptable transportation plan can be developed

Partnership

Confidence a strong partnership can be developed – with interested community, First Nation and Métis communities in the area, and surrounding communities

Looking Ahead: Phase 2 Site Selection Planning Assumptions*



** Timelines are illustrative, to guide planning. Actual timelines may vary.*

Technical Studies to date

- Desktop assessment
- Airborne geophysical surveys and interpretations
- Observing geological features and detailed geological mapping
- Environmental surveys
- Preliminary engineering studies
- Identification of potentially suitable areas, including initial borehole location
- Incorporating local and Aboriginal knowledge

Next step: initial borehole drilling and testing



Technical Considerations – Safety

- In deciding where to drill an initial borehole, safety is first
- Preliminary field investigations identified potentially suitable sites based on technical considerations:
 - **Safe containment and isolation of used nuclear fuel.** Are the characteristics of the rock at the site appropriate to ensuring the long-term containment and isolation of used nuclear fuel?
 - **Long-term resilience to future geological processes and climate change.** Is the rock formation at the siting area geologically stable and likely to remain stable over the very long term?
 - **Safe construction, operation and closure of the repository.** Are conditions at the site suitable for the safe construction, operation and closure of the repository?
 - **Isolation of used fuel from future human activities.** Is human intrusion at the site unlikely, for instance through future exploration or mining?
 - **Amenable to site characterization and data interpretation activities.** Can the geologic conditions at the site be practically studied and described on dimensions that are important for demonstrating long-term safety?

Technical Considerations

– Safety (cont’)

- Environmental studies have helped understand if there are:
 - Significant wildlife habitat;
 - Sensitive or ‘at risk’ species;
 - Sensitive vegetation communities; and
 - Sensitive fish habitat.



Engagement Activities to date

- Engagement with individuals and groups in the community and area since project inception
- In-depth discussions with a cross-section of opinion leaders, ICNLC meetings, open houses, community events, community briefings, sustained community presence
- Meetings with regional planning and municipal groups and participation in regional events
- Household and area outreach through advertorials, newsletters, advertising, communication material

What We Heard From People in the Area

Once safety is assured, we heard there are other important considerations:

- Economic considerations
- Cultural considerations
- Natural Environment and Resources.

Indigenous Knowledge a critical input.



What We Heard From People in the Area

Economic Considerations

- What will be the impact on area business, including fishing and hunting camps and logging activities?
- Will it benefit tourism in the area?
- Will it take advantage of existing infrastructure such as roads, power lines and rail lines?
- How will it benefit Ignace business and help build population consistent with Ignace's plan?



What We Heard From People in the Area (cont')

Cultural Considerations

- Will it affect popular fishing and hunting areas, snow mobile and ATV trails?
- What will be the effect on private homes and seasonal residences, including property value?
- How will it be sensitive to people who do not want the project near them?
- Are culturally significant First Nations lands respected, including the presence of archeological artifacts such as petroglyphs and pictographs?

What We Heard From People in the Area (cont')

Natural Environment and Resources

- Proximity to bodies of surface water taken into account?
- Presence of sensitive species (fish, birds, mammals, other) considered, as well as the potential effect on caribou herd migration?
- Existing mining claims?
- Proximity to a Provincial Park or protected lands?



Interweaving Indigenous Knowledge

In discussing potential borehole locations with Indigenous people in the area, the following considerations were shared with us:

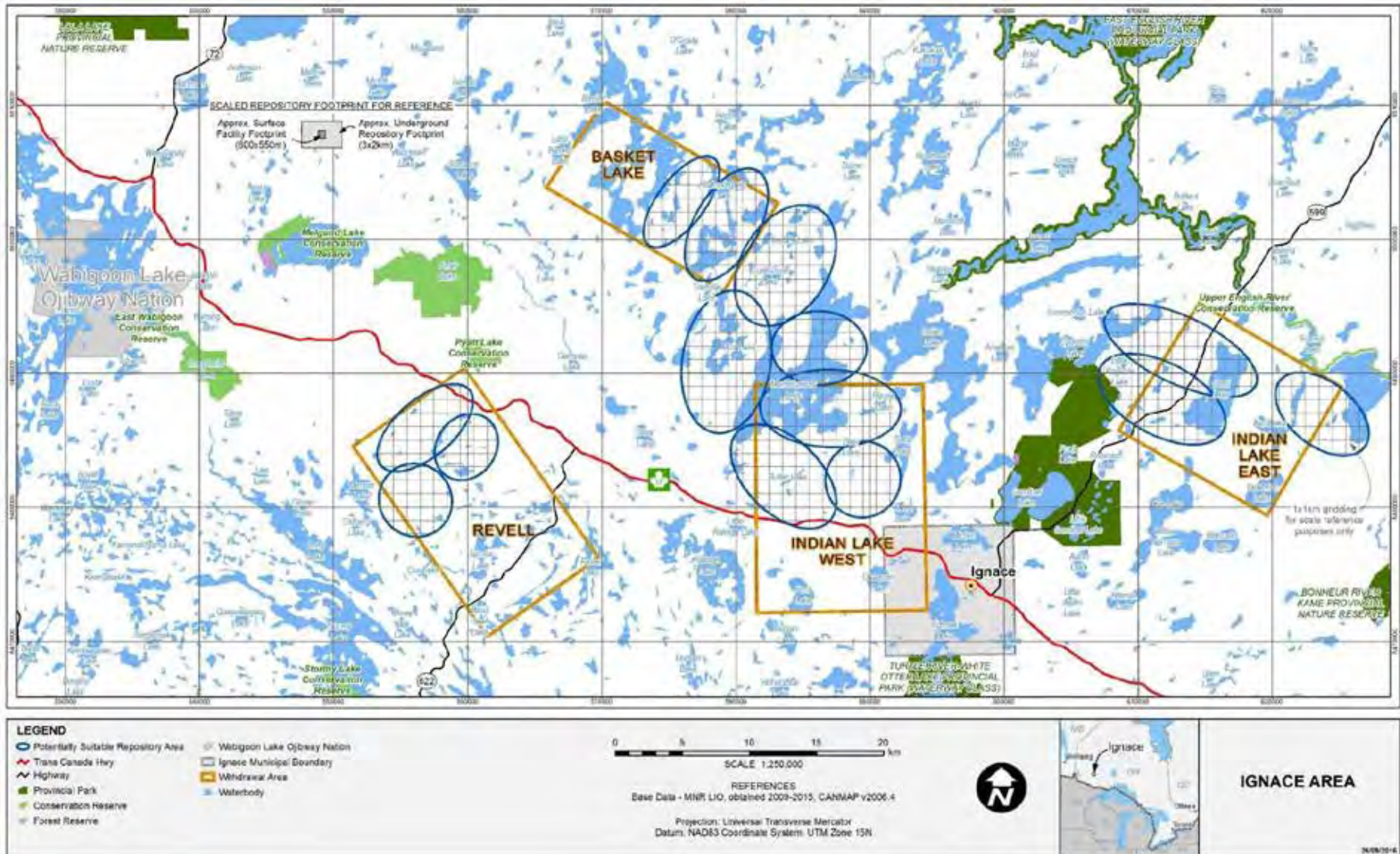
- Traditional Knowledge
- Land use and occupancy
- Ceremony
- Asserted and Established Aboriginal and Treaty rights
- Trap lines

The NWMO will ensure Indigenous intellectual property is protected as agreed with the people who choose to share that knowledge and as outlined in the Indigenous Knowledge Policy.

Technical Findings to Date

- The Ignace area contains large areas that have the potential to satisfy NWMO's geoscientific site evaluation factors
- Borehole drilling is needed to further advance understanding of the geology in the area, and to help address identified uncertainties (e.g. Nature of fractures at depth)
- Potentially geologically suitable areas were identified based on the integrated interpretation of all technical information gathered to date, including detailed geological mapping, engineering, and environmental mapping.

Potential Geologically Suitable Areas Based on Early Phase 2 Studies – For Discussion with People in the Area



What's Involved in Borehole Drilling and Testing

- Involves drilling a hole and retrieving cylinder-shaped rock samples, called core
- Boreholes will be drilled and cored to a depth of about one kilometre.
- The process could last about 90 days, depending on the number of shifts worked each day.
- The drill site will be about 60 metres by 60 metres, or about the size of two NHL-sized hockey rinks side by side.
- The area will be fenced and gated, as well as graded with granular material

Purpose of Borehole Drilling

- Advance understanding of the geology and hydrogeology at depth (up to 1,000 m)
- Provide information about the depth of geological formations, rock types, and the nature of fractures in the rocks



Borehole Drilling Equipment

- Boreholes are drilled using a conventional truck-mounted or track-mounted rotary drill rig.
- Trailers at the site will be used as offices, for equipment storage, and for core logging, on-site testing and preserving rock core and water samples.
- Other equipment and facilities needed include a water storage tank, drill rod and equipment laydown areas, and vehicle traffic lanes.



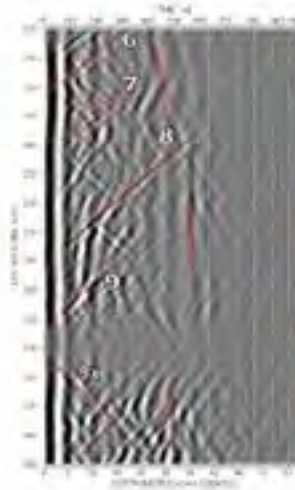
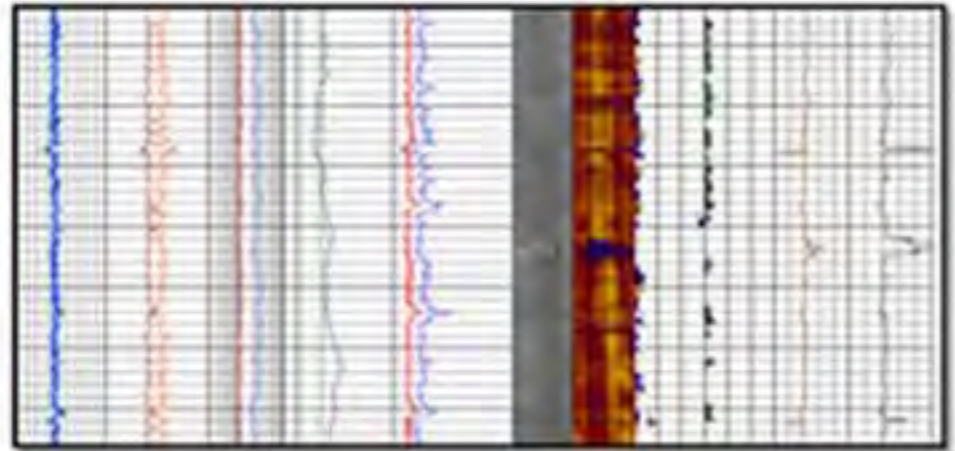
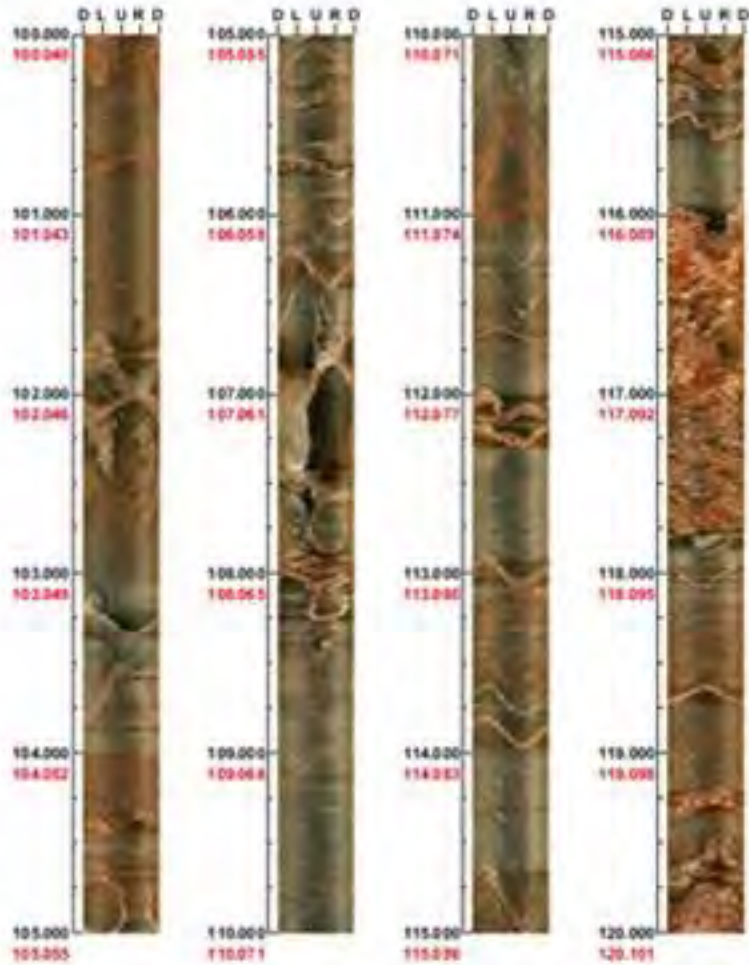
Borehole drilling: vertical and/or inclined



Planned testing

- Logging of the rock types and structures (e.g., fractures)
- Geophysical logging of the borehole (e.g., fracture location and orientation, mineralogy, presence of groundwater)
- Hydraulic conductivity tests at selected depths in the borehole
- Geomechanical tests of selected rock core samples (e.g., rock strength)
- Chemistry of groundwater samples

Geophysical borehole logging



<http://www.skb.se/upload/publications/pdf/P-10-36.pdf>

<http://www.skb.se/upload/publications/pdf/P-09-11.pdf>

Borehole hydraulic testing



Core sampling and laboratory testing



Next steps

- Continue information sharing and engagement, including review of specific location of first borehole
- Hold open house event in March
- Continue conversations with Wabigoon Lake Ojibway Nation and other First Nation and Metis communities in the area
- Prepare submission for borehole drilling permissions
- Initiate drilling of first borehole with the involvement of people in the area
- Review findings with people in the area and decide on next steps



APPENDIX C: NWMO Media Releases

The NWMO have pro-actively worked to promote community engagement activities and produced a variety of publicly available information materials regarding the borehole studies including:

- Promotion of open houses and drop-in sessions with full page advertisements in local weekly newspaper, The Ignace Driftwood (distribution 350);
- Promotion of activities through local mail drops/ advertising bags (distribution 600), websites and community bulletin boards;
- Reaching out to regional media (e.g., The Dryden Observer Newspaper [distribution 2,500], CKDR-FM Dryden and region) to encourage news coverage of NWMO and updates on the site selection process; and
- Production of a variety of information materials, which are available on the NWMO website and at the Ignace Learn More Centre. E.g. maps, brochures, fact sheets, web stories, and Q & A documents.
 - Site Selection => Study Areas: <https://www.nwmo.ca/en/Site-selection/Study-Areas/Ignace-and-Area/What-Were-Doing> (first accordion menu)
 - Open House web story: <https://www.nwmo.ca/en/More-information/News-and-Activities/2017/03/02/15/18/Ignace-Open-House-Reviewing-Initial-Borehole-Drilling-Plans>
 - Site Selection => steps in process: <https://www.nwmo.ca/en/Site-selection/Steps-in-the-Process/Step-3-Preliminary-Assessments-of-Suitability/Step-3-Phase-2--Field-Studies-and-Engagement/Borehole-Drilling-and-Testing> (second .pdf file has draft discussion document)

Listing of Published Advertisements

Media Listing	Date
Notices in the Ignace Driftwood Newspaper.	October 12, 2016
Full page notice in Ignace Driftwood Newspaper (French and English).	October 12, 2016 for 2 weeks
Article in Ignace Driftwood Newspaper.	October 14, 2016
Advertisement for Borehole Drilling Open House in Ignace Driftwood newspaper.	October 18 and 25, 2016
Mail drop of open house ads to all households in Ignace.	October 21, 2016
'Ad Bag' - open house advertisements in flyers.	Week of October 21, 2016
Newsletter in newspaper and mail drop to each household.	February 8, 2017
Advertisement for Borehole Drilling Open House in Ignace Driftwood newspaper.	February 15 and 22, 2017
Mail drop of open house ads to all households in Ignace.	February 24, 2017

Attachments: Advertisements and media coverage.

C1. Open House Advertisements



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NWMO Open House

Meet the NWMO and Learn More About Canada's Plan for the Long-Term Management of Used Nuclear Fuel

The Township of Ignace has invited the NWMO to host an open house.

Come out, meet with NWMO staff and learn more about upcoming detailed geological studies, the updated project description, ongoing engagement activities and potential economic impacts.

A number of areas in Ontario are being considered.

Several years of progressively more detailed studies are needed before any decisions on a potential site are made.

Light refreshments will be served and everyone is welcome.

» The open house will be held:

Wednesday, May 11, 2016
1 p.m. to 9 p.m.

Learn More Centre
304 Main Street
Ignace Town Plaza
Ignace, Ontario

All area residents are invited to attend a ribbon cutting ceremony for the new Learn More Centre at 1 p.m.

Portes ouvertes de la SGDN

Rencontrez la SGDN et apprenez davantage sur le plan canadien de gestion à long terme du combustible nucléaire irradié

Le canton d'Ignace a invité la SGDN à tenir une journée portes ouvertes.

Venez rencontrer des membres du personnel de la SGDN pour en apprendre davantage sur les études géologiques détaillées à venir, sur la description du projet mise à jour, sur les activités d'engagement qui se poursuivent et sur les retombées économiques potentielles du projet.

Un certain nombre de régions en Ontario sont envisagées.

Plusieurs années d'études de plus en plus détaillées seront nécessaires avant qu'aucune décision quant à un site potentiel puisse être prise.

Des rafraîchissements seront servis et vous êtes tous les bienvenus.

» La journée portes ouvertes se tiendra :

Le mercredi 11 mai 2016
de 13 h à 21 h

Centre En savoir plus
304, rue Main
Ignace Town Plaza
Ignace, Ontario

Tous les résidents sont invités à assister à la cérémonie d'inauguration du nouveau Centre En savoir plus à 13 heures.



From left, Paige Burgstaler, Odin Girardin, Gracie Tucker, Captain Falcon, Cam Corbeil



From left, Jayna Ferrara, Mya Scott-Dakins, Captain Falcon, Erik Qualie, Fisher Parker



Tianna Russell, Marshall Hyatt, Jack Qualie, Sierra Corbeil, Annabelle Belanger, Captain Falcon, Caitlyn Senio, Kristin Marsh, Terry Fox, Bruce Panacheese, Kaleb Woods

Final assembly of the year at Ignace School

Ignace School had their last Falcon Assembly on Friday, May 27th for the 2015-2016 school year. Students from grades kindergarten to grade 8 gathered in the gym to celebrate their most recent accomplishments. Students were recognized for a variety of successes including improvement in reading, taking risks in learning French, being hard working and achievement in math. Students enjoyed viewing pictures of themselves on the large screen, they chanted for mascot Captain Falcon to come for their awards, they were surprised by a teacher dancing performance and then students danced themselves. It was a truly joyful event! Congratulations to all students for their hard work and triumphs throughout the school year.



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Learn More Event

The Township of Ignace has invited the Nuclear Waste Management Organization to host a Learn More Event about planning for the safe and secure transportation of used nuclear fuel.

Check out our hands on exhibit, ask questions, and learn more about Canada's plan for the safe, long-term management of used nuclear fuel.

We look forward to meeting you.

» Where: Ignace Plaza Parking Lot
When: Tuesday, June 14, 1 p.m. to 7 p.m.

As part of the event, there is a barbecue from 4 p.m. to 6:30 p.m. The barbecue is free of charge and everyone is invited.

Événement *En savoir plus*

Le canton d'ignace a invité la Société de gestion des déchets nucléaires à tenir un événement *En savoir plus* sur la planification du transport sûr et sécuritaire du combustible nucléaire irradié.

Venez voir notre exposition interactive, poser des questions et apprendre davantage sur le plan canadien de gestion à long terme sûr du combustible nucléaire irradié.

Nous espérons vous rencontrer.

» Où : stationnement de la place commerciale d'ignace
Quand : le mardi 14 juin de 13 h à 19 h

Dans le cadre de l'événement, il y aura une grillade de 16 h à 18 h 30. La grillade est gratuite et tout le monde est invité.





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Open House

Learn More About the Next Phase of Geological Studies

The Ignace area is one of several in Ontario currently involved in the site selection process for a deep geological repository for Canada's used nuclear fuel. Before a potential site can be identified, several years of progressively more detailed studies are needed, as well as engagement of interested communities, First Nation and Métis communities in the area, and surrounding communities.

The next activity involves planning to drill an initial borehole at or near a potential repository site to further understand the geology.

Early studies helped identify areas that have the potential to be geologically suitable.

This open house will begin the discussion with people in the area on where to focus this drilling.

Journées portes ouvertes

Apprenez-en davantage sur la prochaine phase des études géologiques

La région d'Ignace compte parmi d'autres régions en Ontario qui participent actuellement au processus de sélection d'un site pour un dépôt géologique en profondeur pour le combustible nucléaire irradié canadien. Avant qu'un site potentiel soit identifié, il faudra encore plusieurs années d'études de plus en plus détaillées ainsi que des activités d'engagement des collectivités intéressées, des collectivités des Premières nations et métisses de la région et des collectivités environnantes.

La prochaine activité consiste à planifier le forage d'un trou de sonde initial sur le site potentiel d'un dépôt ou à proximité pour mieux en comprendre la géologie.

Les études antérieures ont aidé à identifier des sites susceptibles d'être géologiquement propices.

L'événement portes ouvertes amorcera la discussion avec les résidents de la région sur le lieu de ce forage.

» Meet NWMO staff and help shape this next phase of studies.

Learn More Centre
304 Main Street
Ignace Town Plaza

Wednesday, October 26, 2016
1 p.m. to 9 p.m.

Thursday, October 27, 2016
10 a.m. to 2 p.m.

www.nwmo.ca

» Rencontrez des membres du personnel de la SGDN et aidez-nous à façonner cette prochaine phase d'études.

Centre *En savoir plus*
304, rue Main
Place commerciale d'Ignace

Le mercredi 26 octobre 2016
de 13 h à 21 h

Le jeudi 27 octobre 2016
de 10 h à 14 h

www.nwmo.ca



A borehole drill rig and examples of equipment to be used in the next phase of geological studies will be on display.

Une installation de forage de trous de sonde et des exemples d'équipements qui seront utilisés au cours de la prochaine phase des études géologiques seront présentés.



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Open House

Learn More About Planned Borehole Drilling in the Area

» **Where:**
Learn More Centre
304 Main Street
Ignace Town Plaza

When:
Wednesday, March 1, 2017
10 a.m. to 8 p.m.

Thursday, March 2, 2017
10 a.m. to 1 p.m.

www.nwmo.ca

Drop by the open house at the Learn More Centre to meet NWMO staff. Learn more about the project and share your thoughts about the next planned activity: drilling an initial borehole at or near a potential repository site in order to further understand the geology.

The Ignace area is one of several in Ontario currently involved in the site selection process for a deep geological repository for Canada's used nuclear fuel. Before a potential site can be identified, several years of progressively more detailed studies are needed, as well as engagement of interested communities, First Nation and Métis communities in the area, and surrounding communities.





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Portes ouvertes

Apprenez-en davantage sur les travaux de forage prévus dans la région

» Où :
Centre En savoir plus
304, rue Main
Place commerciale d'Ignace

Quand :
Le mercredi 1^{er} mars 2017
De 10 h à 20 h

Le jeudi 2 mars 2017
De 10 h à 13 h

www.nwmo.ca

Venez à la journée portes ouvertes au *Centre En savoir plus* pour rencontrer des membres du personnel de la SGDN. Vous pourrez en apprendre davantage sur le projet et donner votre avis sur la prochaine activité prévue : le forage d'un trou de sonde initial sur un site potentiel de dépôt, ou à proximité, pour approfondir notre compréhension de la géologie.

La région d'Ignace est une des plusieurs collectivités en Ontario qui participent actuellement au processus de sélection d'un site pour un dépôt géologique en profondeur pour le combustible nucléaire irradié canadien. Avant qu'un site potentiel puisse être choisi, il faudra encore plusieurs années d'études de plus en plus détaillées ainsi que d'engagement des collectivités intéressées, des collectivités des Premières nations et métisses de la région et des collectivités environnantes.





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NUCLÉAIRES

Open House

Learn More About Planned Borehole Drilling in the Area

» **Where:**
Learn More Centre
304 Main Street
Ignace Town Plaza

When:
Wednesday, March 1, 2017
10 a.m. to 8 p.m.

Thursday, March 2, 2017
10 a.m. to 1 p.m.

www.nwmo.ca

Drop by the open house at the Learn More Centre to meet NWMO staff. Learn more about the project and share your thoughts about the next planned activity: drilling an initial borehole at or near a potential repository site in order to further understand the geology.

The Ignace area is one of several in Ontario currently involved in the site selection process for a deep geological repository for Canada's used nuclear fuel. Before a potential site can be identified, several years of progressively more detailed studies are needed, as well as engagement of interested communities, First Nation and Métis communities in the area, and surrounding communities.





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SOCIÉTÉ DE GESTION
DES DÉCHETS
NUCLÉAIRES

Portes ouvertes

Apprenez-en davantage sur les travaux de forage prévus dans la région

» Où :
Centre En savoir plus
304, rue Main
Place commerciale d'Ignace

Quand :
Le mercredi 1^{er} mars 2017
De 10 h à 20 h

Le jeudi 2 mars 2017
De 10 h à 13 h

www.nwmo.ca

Venez à la journée portes ouvertes au *Centre En savoir plus* pour rencontrer des membres du personnel de la SGDN. Vous pourrez en apprendre davantage sur le projet et donner votre avis sur la prochaine activité prévue : le forage d'un trou de sonde initial sur un site potentiel de dépôt, ou à proximité, pour approfondir notre compréhension de la géologie.

La région d'Ignace est une des plusieurs collectivités en Ontario qui participent actuellement au processus de sélection d'un site pour un dépôt géologique en profondeur pour le combustible nucléaire irradié canadien. Avant qu'un site potentiel puisse être choisi, il faudra encore plusieurs années d'études de plus en plus détaillées ainsi que d'engagement des collectivités intéressées, des collectivités des Premières nations et métisses de la région et des collectivités environnantes.



C2. NWMO Newsletters

Open Office Event at the Ignace Learn More Centre

The NWMO, in collaboration with the community, held an Open Office event at the Ignace Learn More Centre on December 2. The event provided an opportunity for Ignace and area residents to get an update on recent field studies completed in the area and to provide input into plans for upcoming fieldwork. These types

of engagement activities are held to support the learning process, and to encourage people to share their views, ask questions and exchange information about Canada's plan for the safe, long-term management of used nuclear fuel.



Test Your Knowledge of Canada's Long-Term Plan for Used Nuclear Fuel (True / False)

- | | | | | | |
|--|----------------------------|-----------------------------|--|----------------------------|-----------------------------|
| 1. Adaptive Phased Management (APM) is Canada's plan for the safe, long-term management of used nuclear fuel. | True <input type="radio"/> | False <input type="radio"/> | 6. Nine communities/areas are currently learning more about APM through their participation in preliminary assessments. | True <input type="radio"/> | False <input type="radio"/> |
| 2. The Nuclear Waste Management Organization (NWMO) engaged Canadians and Aboriginal peoples in the development of APM. | True <input type="radio"/> | False <input type="radio"/> | 7. Communities/areas learning about Canada's plan have made a commitment to host the deep geological repository. | True <input type="radio"/> | False <input type="radio"/> |
| 3. APM involves the containment and isolation of Canada's used nuclear fuel in a deep geological repository utilizing a multiple-barrier system. | True <input type="radio"/> | False <input type="radio"/> | 8. The project will only move forward with the involvement of the interested community, local First Nations and Métis communities, and municipalities in the surrounding area. | True <input type="radio"/> | False <input type="radio"/> |
| 4. The deep geological repository will host used nuclear fuel from other countries. | True <input type="radio"/> | False <input type="radio"/> | 9. Preferred communities or regions and areas have already been selected for a deep geological repository. | True <input type="radio"/> | False <input type="radio"/> |
| 5. The deep geological repository could adversely affect the watersheds and other drinking water sources. | True <input type="radio"/> | False <input type="radio"/> | 10. The transportation of used nuclear fuel poses many risks and has an unproven track record. | True <input type="radio"/> | False <input type="radio"/> |

Answers to the True or False Quiz

1. True – The endpoint for APM is the safe containment and isolation of Canada's used nuclear fuel in a deep geological repository in an area with suitable geology and an informed and willing host. 2. True – APM emerged from a three-year dialogue with over 18,000 citizens and reflects common priorities and values, including a commitment to safety and security. 3. True – The repository uses a combination of engineered and natural barriers to safely contain and isolate the used nuclear fuel: ceramic fuel pellet/element in the fuel bundle, a robust container, sealing materials and suitable host rock. 4. False – The *Nuclear Fuel Waste Act* established a mandate for the NWMO to manage Canada's used nuclear fuel. APM was developed in collaboration with Canadians, recommended by the NWMO, and federally approved. 5. False – Safety is the leading consideration of APM, and the objective is the protection of people and the environment, including water courses, now and in the future. The repository will safely contain and isolate the used nuclear fuel. Any site that is selected for the repository will have to satisfy robust safety criteria and will also have to pass the scrutiny of the regulatory process. 6. True – Ignace, Hornepayne, White River, Manitouwadge, Blind River, Elliot Lake, Huron-Kinloss, South Bruce and Central Huron are learning more about Canada's plan and the site selection process through preliminary assessment studies. 7. False – The only commitment these communities have made is to learning about Canada's plan for the safe, long-term management of used nuclear fuel. They may exit the process at any time. 8. True – The project will only move forward with the interested community, First Nation and Métis communities, and surrounding municipalities working together to implement it – there must be a strong potential for partnership to advance the project. 9. False – No preferred region or area has been identified. Any site selected must demonstrate its ability to safely contain and isolate the used nuclear fuel on behalf of people and the environment for a very long period of time. 10. False – The transportation of used nuclear fuel is a well-established practice in Canada and internationally. Canada has proven, and continues to demonstrate, its ability to safely transport used fuel with hundreds of shipments since the 1960s.

Of note...

- » After many months of planning, the NWMO is excited to reveal its new and improved website at www.nwmo.ca. The new website was designed to help people learn more about Canada's plan for the safe, long-term management of used nuclear fuel. We invite you to explore this new learning tool and note the link to "Which areas are involved?" located on the home page. Enjoy!
- » The Learn More Centre is located at 326 Main Street in the Ignace Town Centre Plaza. Visitors are encouraged to visit the office, email icnlc.office@gmail.com or phone 807.934.2379 for more information. Please note a new Learn More Centre, also located in the Ignace Town Centre Plaza, is anticipated to open this spring. Watch local media for more information as opening dates are confirmed.
- » Geologists from the NWMO began detailed geological mapping in the Ignace area last fall. They spent several weeks travelling throughout the area to examine exposed bedrock and rock. It's expected the mapping will resume this spring and be completed throughout the summer months. The mapping will further understanding of the area's geology and help inform decisions about future studies to assess the suitability of the Ignace area.

Journée bureau ouvert du Centre En savoir plus d'Ignace

La SGDN, en collaboration avec la collectivité, a ouvert les portes du Centre En savoir plus d'Ignace, le 2 décembre dernier. L'événement a permis aux résidents d'Ignace et du secteur environnant d'obtenir des renseignements à jour sur les études de terrain récemment réalisées dans le secteur et de donner leur point de vue sur les

plans proposés pour la réalisation des études subséquentes de terrain. Ces types d'activités sont organisés pour soutenir le processus d'apprentissage et pour encouragé les gens à faire part de leur point de vue, à poser des questions et à échanger des informations sur le plan canadien de gestion à long terme sûr du combustible nucléaire irradié.



Vérifiez vos connaissances sur le plan canadien de gestion à long terme du combustible nucléaire irradié (Vrai / Faux)

- | | |
|--|---|
| <p>1. La Gestion adaptative progressive (GAP) est le plan canadien de gestion à long terme sûr du combustible nucléaire irradié. Vrai <input type="radio"/> Faux <input type="radio"/></p> <p>2. La Société de gestion des déchets nucléaires (SGDN) a engagé les Canadiens et les peuples autochtones lors de l'élaboration de la GAP. Vrai <input type="radio"/> Faux <input type="radio"/></p> <p>3. La GAP prévoit le confinement et l'isolement du combustible nucléaire irradié canadien au sein d'un dépôt géologique en profondeur employant un système à barrières multiples. Vrai <input type="radio"/> Faux <input type="radio"/></p> <p>4. Le dépôt géologique en profondeur pourra servir à stocker du combustible nucléaire irradié venant d'autres pays. Vrai <input type="radio"/> Faux <input type="radio"/></p> <p>5. Le dépôt géologique en profondeur pourrait avoir des conséquences néfastes sur les bassins hydrographiques et d'autres sources d'eau potable. Vrai <input type="radio"/> Faux <input type="radio"/></p> | <p>6. Neuf collectivités/secteurs travaillent actuellement à en apprendre davantage sur la GAP dans le cadre de leur participation à des évaluations préliminaires. Vrai <input type="radio"/> Faux <input type="radio"/></p> <p>7. Les collectivités/secteurs en processus d'apprentissage sur le plan canadien se sont engagés à accueillir le dépôt géologique en profondeur. Vrai <input type="radio"/> Faux <input type="radio"/></p> <p>8. Le projet ne sera mis en oeuvre qu'avec la participation de la collectivité intéressée, des collectivités des Premières nations et métisses locales et des municipalités du secteur environnant. Vrai <input type="radio"/> Faux <input type="radio"/></p> <p>9. Des collectivités ou des régions et secteurs de prédilection ont déjà été choisis pour l'établissement d'un dépôt géologique en profondeur. Vrai <input type="radio"/> Faux <input type="radio"/></p> <p>10. Le transport du combustible nucléaire irradié pose de nombreux risques et aucun bilan de sûreté n'existe en la matière. Vrai <input type="radio"/> Faux <input type="radio"/></p> |
|--|---|

Réponses au vrai ou faux

1. Vrai – L'aboutissement de la GAP est le confinement et l'isolement sûrs du combustible nucléaire irradié canadien au sein d'un dépôt géologique en profondeur établi dans un secteur doté d'une géologie propice et avec un hôte informée et consentante. 2. Vrai – La GAP est le fruit d'un dialogue mené pendant trois ans avec plus de 18 000 citoyens et tient compte des priorités et valeurs communes, y compris d'un engagement ferme à l'égard de la sûreté et de la sécurité. 3. Vrai – Le dépôt met à contribution une combinaison de barrières ouvragées et naturelles pour confiner et isoler de manière sûre le combustible nucléaire irradié : les pastilles de céramique et les éléments de combustible des grappes de combustible, des conteneurs robustes, des matériaux de scellement et une roche hôte appropriée. 4. Faux – La Loi sur les déchets de combustible nucléaire a confié à la SGDN le mandat de gérer le combustible nucléaire irradié canadien. La GAP a été élaboré en collaboration avec les Canadiens, recommandée par la SGDN et approuvée par le gouvernement fédéral. 5. Faux – La sûreté est la plus grande priorité de la GAP et l'objectif est de protéger le public et l'environnement, y compris des cours d'eau, maintenant et à l'avenir. Le dépôt confiner et isolera en toute sûreté le combustible nucléaire irradié. Tout site choisi pour le dépôt devra répondre à des critères rigoureux de sûreté et devra satisfaire aux exigences du processus réglementaire. 6. Vrai – Ignace, Hornepayne, White River, Manitowadge, Blind River, Elliot Lake, Huron-Kinloss, South Bruce et Central Huron travaillent à en apprendre davantage sur le plan canadien et le processus de sélection d'un site dans le cadre d'études d'évaluation préliminaire. 7. Faux – Le seul engagement pris par ces collectivités est celui d'en apprendre davantage sur le plan canadien de gestion à long terme sûr du combustible nucléaire irradié. Elles peuvent se retirer du processus en tout temps. 8. Vrai – Le projet n'ira de l'avant que dans le cadre d'une collaboration entre la collectivité intéressée, les collectivités des Premières nations et métisses et les municipalités environnantes à sa mise en oeuvre – de bonnes conditions liées à la réalisation du projet en partenariat doivent être réunies. 9. Faux – Aucune région ni aucun secteur de prédilection n'ont été identifiés. Tout site choisi doit pouvoir démontrer son aptitude à confiner le combustible nucléaire irradié et à l'isoler de manière sûre de la population et de l'environnement pour une très longue période. 10. Faux – Le transport du combustible nucléaire irradié est une pratique très bien établie au Canada et ailleurs dans le monde. Le Canada a prouvé et continue de démontrer sa capacité à transporter en toute sûreté le combustible irradié, ayant effectué des centaines d'expéditions depuis les années 60.

À noter...

- » Après plusieurs mois de préparation, la SGDN est heureuse de présenter son site Web remodelé et amélioré, qui peut être consulté à l'adresse www.nwmo.ca. Son nouveau site Web est conçu pour aider les visiteurs à en apprendre davantage sur le plan de gestion à long terme du combustible nucléaire irradié canadien. Nous vous invitons à explorer ce nouvel outil d'apprentissage et à prendre en note le lien « Quels secteurs participent au processus? », situé sur la page d'accueil. Bonne lecture!
- » Le Centre En savoir plus d'Ignace est situé au 326, rue Main, dans le centre commercial du centre-ville d'Ignace (Town Centre Plaza). Pour de plus amples renseignements, les visiteurs sont invités à visiter le bureau, ou de communiquer par courriel icnlc.office@gmail.com ou par téléphone 807.934.2379. Veuillez prendre note qu'un nouveau Centre En savoir plus, également situé dans le centre commercial du centre-ville d'Ignace, devrait ouvrir ce printemps. Consultez les médias locaux pour les dernières nouvelles concernant la date d'ouverture de ce nouveau bureau.
- » Des géologues de la SGDN ont entrepris la cartographie géologique détaillée du secteur d'Ignace l'automne dernier. Ils ont passé plusieurs semaines à parcourir le secteur pour examiner les affleurements de substratum rocheux et les roches présents. On prévoit que les travaux de cartographie reprendront au printemps et qu'ils seront achevés au cours des mois d'été. Cette cartographie permettra d'acquérir une meilleure compréhension de la géologie du secteur et d'éclairer les décisions concernant les études subséquentes qui devraient être menées pour évaluer l'aptitude du secteur d'Ignace.

Ignace and the NWMO Open New Area Learn More Centre in Town Plaza

The Township of Ignace and the Nuclear Waste Management Organization (NWMO) opened a new Learn More Centre in Ignace on May 11.

The facility will support local residents and those from neighbouring communities, including First Nation and Métis organizations and communities in the area, as they continue to explore Canada's plan for the safe, long-term management of used nuclear fuel. The centre, located at 304 Main Street in the Ignace Town Plaza, is home to a variety of

interactive learning materials and exhibits.

"The new centre marks an important development for our community. It will support the many regional engagement efforts that are underway," said Ignace Mayor Lee Kennard. "It also serves as the new home for the Ignace Community Nuclear Liaison Committee. As we continue to learn together, I encourage all area residents to visit."

"We look forward to this new facility supporting ongoing collaboration and learning

activities," said Kathryn Shaver, Vice-President of APM Engagement and Site Selection at the NWMO. "The centre will be an important hub as we enter the next several years of studies and regional engagement required to identify a safe site for a deep geological repository."

The Ignace area is one of several currently engaged in preliminary assessments. These assessments are part of a multi-year process to evaluate potential suitability to host a repository and Centre of Expertise for the safe, long-term

management of Canada's used nuclear fuel.

The studies are designed to assess the potential for areas to meet strict safety and geotechnical requirements, and for the project to align with the area's long-term goals and vision. Any decisions regarding a preferred site are still several years away.

The NWMO anticipates expanded learning centres will eventually be needed in other areas as the site selection process continues and more detailed studies begin.



Above: The Ignace Community Nuclear Liaison Committee (ICNLC) and NWMO staff tour the new Learn More Centre. The centre will support community learning and provide a new home for the ICNLC.

Left: Members of the public are invited to stop in and visit the new Learn More Centre in Ignace, which officially opened on May 11. Office hours are Monday to Friday, from 8:30 a.m. to 4:30 p.m. (lunch 12:30 to 1:30 p.m.).

Economic Impacts of APM Project Shared with Ignace

Canada's plan for the safe, long-term management of used nuclear fuel, at an estimated cost of \$22.8 billion (2015 \$), has the potential to be an economic engine for many decades. The Township of Ignace got a much better idea of the potential impacts of the project at the February Ignace Community Nuclear Liaison Committee (ICNLC) meeting.

Economist Marvin Stemeroff from AECOM (contracted by the NWMO) noted Canada's plan is a major national infrastructure project with dedicated funds. Adaptive Phased Management (APM) will generate benefits, including jobs, for Ontario and the region and area where it is located for more than 100 years. Expanding on this point, Mr. Stemeroff provided initial estimates of the numbers and types of jobs the project would bring to Ignace, the region and the province.

He emphasized these findings are meant as a starting point for discussing how to maximize the project's economic benefits. Communities will be involved in planning how to best leverage the project to enhance the area's well-being. For example, communities/areas will need to examine what kind of planning and preparation are required for training, fostering local business development, and infrastructure reflective of their long-term visions.

Information about preliminary economic modelling is available at www.nwmo.ca/ignace, under "What We're Doing". Economics is just one consideration in fostering community well-being. Other aspects include people, infrastructure, environment, and community and culture.



Marvin Stemeroff

Of Note...

- » The NWMO publishes an annual report, which is submitted to the federal Minister of Natural Resources Canada. *Progress Through Collaboration – Annual Report 2015* was submitted to the Honourable James Gordon Carr. He tabled the report in both Houses of Parliament on May 6. The NWMO Annual Report is made public simultaneously with its submission to the Minister. It is available online at www.nwmo.ca, under "Reports". For a hard copy, please call 807.934.2379.
- » The NWMO also published an annual update to its five-year strategic plan. The plan is regularly assessed, strengthened and redirected based on new information and comments. Following a public review period, *Implementing Adaptive Phased Management 2016 – 2020* was revised to reflect comments from the public. It is available online at www.nwmo.ca, under "Reports". For a hard copy, please call 807.934.2379.
- » Members of the community and area are invited to visit the new Learn More Centre located at 304 Main Street, Ignace Town Plaza.

Ignace et la SGDN ouvrent un nouveau *Centre En savoir plus* régionale dans la place commerciale de la ville

Le 11 mai, le canton d'Ignace et la Société de gestion des déchets nucléaires (SGDN) ont ouvert un nouveau *Centre En savoir plus* à Ignace.

Le centre constituera une ressource pour les résidents locaux et ceux des collectivités environnantes, y compris les membres des organisations et collectivités des Premières nations et métisses de la région, alors qu'ils continuent d'explorer le plan canadien de gestion à long terme sûr du combustible nucléaire irradié. Il est situé dans la place commerciale d'Ignace, au 304 de la rue Main, et on y trouvera un éventail de matériels d'apprentissage interactifs et de

présentations visuelles.

« Le nouveau centre marque un pas important pour notre collectivité. Il soutiendra les nombreux efforts d'engagement régionaux qui ont été entrepris, a déclaré M. Lee Kennard, maire d'Ignace. Il sera aussi le nouveau domicile du Comité de liaison communautaire nucléaire d'Ignace. Alors que nous continuons d'apprendre ensemble, j'encourage tous les résidents de la région à le visiter. »

« Nous sommes heureux de pouvoir compter sur ce nouveau centre pour soutenir les activités de collaboration et d'apprentissage, a souligné Mme Kathryn Shaver, vice-présidente

responsable de l'Engagement et de la Sélection d'un site pour la GAP, à la SGDN. Il constituera un carrefour important au cours des prochaines années, alors que nous entamons une série d'études et d'activités de mobilisation régionale visant à identifier un site sûr pour un dépôt géologique en profondeur. »

La région d'Ignace est l'une de plusieurs régions qui participent actuellement à des évaluations préliminaires. Ces évaluations font partie d'un processus pluriannuel destiné à évaluer l'aptitude potentielle à accueillir un dépôt et le Centre d'expertise associé pour la gestion sûre à long terme du combustible

nucléaire irradié canadien.

Les études doivent évaluer l'aptitude des régions à répondre aux rigoureuses exigences de sûreté et exigences géotechniques et l'aptitude du projet à s'harmoniser aux objectifs et à la vision à long terme de la région. Aucune décision quant au choix d'un site ne sera prise avant plusieurs années.

La SGDN prévoit que des centres d'apprentissage élargis devront être aménagés dans d'autres régions à mesure que le processus de sélection d'un site avancera et que s'amorceront des études de plus en plus détaillées.



En haut : Le Comité de liaison communautaire nucléaire d'Ignace (CLCNI) et des membres du personnel de la SGDN visitent le nouveau *Centre En savoir plus*. Le centre soutiendra l'apprentissage communautaire et servira de lieu de rencontre du CLCNI.

À gauche : Les membres du public sont invités à venir visiter le nouveau *Centre En savoir plus* d'Ignace, qui a été inauguré le 11 mai. Il sera ouvert du lundi au vendredi, de 8 h 30 à 16 h 30 (pause de 12 h 30 à 13 h 30).

Les retombées économiques du projet de la GAP présentées à Ignace

Le plan canadien de gestion à long terme sûr du combustible nucléaire irradié, dont le coût prévu est approximativement 22,8 milliards \$ (dollars de 2015), est susceptible de devenir un véritable moteur économique pour plusieurs décennies. Lors de sa réunion du mois de février, le Comité de liaison communautaire nucléaire d'Ignace (CLCNI) a pu se faire une bien meilleure idée des retombées potentielles du projet.

L'économiste Martin Stemeroff, d'AECOM (sous-traitant de la SGDN), a relevé que le plan canadien constitue un projet d'infrastructure national majeur, financé par des fonds réservés à cet effet. La Gestion adaptative progressive (GAP) générera des retombées, y compris des emplois, pour l'Ontario ainsi que pour la région et le secteur où elle sera située sur une période de plus de 100 ans. En développant ce sujet, M. Stemeroff a fourni des estimations préliminaires des quantités et des types d'emplois que le projet amènerait à Ignace, à la région et à la province.

Il a souligné que ces constats se veulent des points de départ à une discussion sur la façon de maximiser les retombées économiques du projet. Les collectivités participeront à la planification afin d'en tirer le plus grand parti possible du projet en vue d'améliorer le bien-être de la région. Par exemple, les collectivités/régions devront réfléchir à la planification et aux préparatifs qui seront requis pour la formation, le développement des entreprises et les infrastructures locales qui s'harmonisent avec leurs visions à long terme.

Des informations sur la modélisation économique préliminaire sont disponibles à l'adresse www.nwmo.ca/ignace, sous « Ce que nous faisons ». L'économie ne constitue qu'un seul des aspects qui doivent être considérés pour favoriser le bien-être de la collectivité. Autres aspects incluent les gens, l'infrastructure, l'environnement et la collectivité et la culture.



Marvin Stemeroff

À noter...

- » La SGDN publie un rapport annuel, qui est présenté au ministre des Ressources naturelles du Canada. *Le progrès par la collaboration – Rapport annuel 2015* a été présenté à l'honorable James Gordon Carr. Celui-ci a déposé le rapport dans les deux chambres du Parlement le 6 mai. Le Rapport annuel de la SGDN est rendu public au même moment qu'il est soumis au ministre. Il est disponible en ligne à l'adresse www.nwmo.ca, sous « Rapports ». Pour obtenir un exemplaire imprimé, veuillez appeler au 807.934.2379.
- » La SGDN a également publié une mise à jour annuelle de son plan stratégique quinquennal. Ce plan est régulièrement évalué, renforcé et réorienté en s'appuyant sur les nouvelles informations disponibles et les commentaires. Au terme d'une période d'examen public, *Mise en oeuvre de la Gestion adaptative progressive 2016 à 2020* a été révisé en tenant compte des commentaires reçus. Le plan est disponible en ligne à l'adresse www.nwmo.ca, sous « Rapports ». Pour obtenir un exemplaire imprimé, veuillez appeler au 807.934.2379.
- » Les membres de la collectivité et de la région environnante sont invités à visiter le nouveau *Centre En savoir plus*, situé au 304 rue Main, à la place commerciale d'Ignace.

Geological Mapping Completed – Planning for Next Step

The Nuclear Waste Management Organization (NWMO) has completed detailed mapping in the Ignace area. These studies, undertaken in collaboration with people in the area, are part of Phase 2 Preliminary Assessment work and will provide a better understanding of the area's geology.

Detailed mapping began in fall of 2015 and was recently finished in August.

The geological mapping work looked at areas where the rock was exposed or visible at the surface and focused on an examination of:

- Structural character, such as location, size and type of fractures;
- Physical characteristics of bedrock, such as color and texture;
- Distribution and thickness of the overburden, which is made of loose materials like clay, sand or gravel overlying the bedrock; and
- Study area accessibility.

Findings from this work will help shape the work plans for the next step in the series of technical studies. The next site evaluation activity in the area may involve drilling a small number of initial boreholes in potential repository locations to further understand the geology.

Planning for Borehole Drilling

Borehole drilling may be undertaken in smaller areas that are identified collaboratively with people in the area. Plans for borehole drilling would



Information from geological mapping in the Ignace area will help inform future studies.

be made with environmental, spiritual, cultural and social considerations in mind, and the preferences and involvement of people in the area.

"It's important for people to have an understanding of what's involved with drilling activities, and get involved in planning these activities," said Jo-Ann Facella, Director of Social Research and Dialogue for the NWMO. "There are a number of areas that are potentially suitable for a deep geological repository from a technical safety perspective. Drilling a borehole will help further explore technical suitability. We need to decide together where to focus these more detailed studies. We look forward to talking with community members at the upcoming open house, or at the Learn More Centre over the coming months, to review these areas and hear your perspective."

What is Borehole Drilling?

The process of borehole drilling involves drilling a narrow, deep, circular hole in the ground and retrieving cylinder-shaped rock samples called core. Core samples will provide information about true orientation, thickness and other characteristics of the rock layers, such as whether or not they contain hydrocarbons.

An initial borehole will provide:

- Information about the geology of the area;
- An opportunity for the public to observe the drilling activity; and
- An opportunity for the public to learn about Canada's plan for the safe, long-term management of used nuclear fuel.

Confirming a safe site will take several years of progressively more detailed technical, scientific, social, cultural and economic studies as well as continued engagement with people in the area, including First Nations and Métis communities in the area and surrounding communities. At this early stage, no specific sites are considered – only broad areas have been identified for preliminary study.

Rachelle Davenport joins the NWMO

Rachelle Davenport has joined the NWMO as the Community Liaison Manager for the Ignace area. Working with Relationship Manager Ann Aikens and with her broad knowledge of the people and the area, Rachelle will be focussed on fostering learning and dialogue about the project in Ignace and the area.

Rachelle comes to the NWMO as a teacher and vice-principal with many years of experience working with children and families throughout the Keewatin Patricia District School Board area. She is a long-time northwestern Ontario resident with roots in Dryden and Ignace who enjoys camping, fishing and sports.

"I'm very excited to be involved in this project," Rachelle said. "My years of experience in education will be helpful as we engage our community members and partners to further their learning about the NWMO and Canada's plan to safely manage used nuclear fuel."

Rachelle is working out of the community office in Ignace.



NWMO Relationship Manager Ann Aikens welcomes new team member Rachelle Davenport at the Dryden Fair, held August 25 to 27. NWMO staff attended the fair in support of regional engagement efforts for Canada's plan for the safe, long-term management of used nuclear fuel.

Of Note...

- » An open house will be held October 26 from 1 to 9 p.m. and October 27 from 10 a.m. to 2 p.m. at the Learn More Center in the Ignace Town Plaza, located at 304 Main Street. This is an excellent opportunity to discuss upcoming fieldwork and next steps.
- » Members of the community and area are invited to visit the Learn More Centre located at 304 Main Street, Ignace Town Plaza.

Travaux de cartographie géologique complétés – Planification de la prochaine étape

La Société de gestion des déchets nucléaires (SGDN) a complété ses études de cartographie géologique dans la région d'Ignace. Ces études entreprises en collaboration avec les gens de la région font partie des travaux de la Phase 2 des évaluations préliminaires et permettront de mieux connaître la géologie de la région.

Le programme de cartographie détaillée a débuté à l'automne 2015 et vient de se terminer au mois d'août dernier.

Les travaux de cartographie géologique ont été réalisés là où la roche était exposée ou visible en surface et visaient l'examen des aspects suivants :

- les caractéristiques structurales, telles que l'emplacement, la taille et le type des fractures;
- les caractéristiques physiques du substratum rocheux, telles que la couleur et la texture;
- la répartition et l'épaisseur des morts-terrains, constitués de matières meubles, telles que l'argile, le sable ou le gravier et qui reposent sur le substratum rocheux;
- l'accessibilité du secteur étudié.

Les constats de ces travaux aideront à orienter les plans de travail de la prochaine étape de la série d'études techniques. La prochaine activité d'évaluation de sites dans la région consiste à forer un petit nombre de trous de sonde initiaux à des endroits potentiellement propices à l'établissement d'un dépôt afin de mieux comprendre la géologie locale.



Les renseignements tirés des travaux de cartographie géologique réalisés dans la région d'Ignace aideront à informer les études futures.

Planification des forages

Le forage de trous de sonde pourrait être entrepris sur des sites plus localisés qui ont été identifiés en collaboration avec les gens de la région. Les plans de forage seraient dressés en tenant compte de considérations environnementales, spirituelles, culturelles et sociales ainsi que des préférences et de l'implication des gens du secteur.

« Il est important que les gens comprennent en quoi consistent les activités de forage et qu'ils participent à la planification de ces activités », a déclaré Mme Jo-Ann Facella, directrice de la recherche sociale et du dialogue à la SGDN. « Il y a un nombre de régions qui sont potentiellement propices, sur le plan technique sûr, à l'établissement d'un dépôt géologique en profondeur. Le forage d'un trou de sonde permettra de vérifier plus avant leurs qualités sous l'angle technique. Nous devons décider ensemble où réaliser ces études plus détaillées. Nous avons hâte de discuter avec les membres de la collectivité pour examiner ces secteurs et connaître leur point de vue lors des journées portes ouvertes que nous tiendrons bientôt ou lors de leur visite, au cours des prochains mois, au Centre *En savoir plus*. »

En quoi consiste le forage d'un trou de sonde?

Le processus consiste à percer un trou de sonde étroit, profond et circulaire dans le sol et à prélever des échantillons rocheux cylindriques, appelés carottes. Ces carottes fourniront des renseignements sur l'orientation véritable, l'épaisseur et d'autres caractéristiques des strates rocheuses pour savoir, par exemple, si elles contiennent des hydrocarbures.

Confirmer un site sûr prendra plusieurs années d'études techniques, scientifiques, sociales, culturelles et économiques de plus en plus détaillées ainsi que la participation continue des populations de la région, y compris des collectivités des Premières nations et métisses de la région et des collectivités environnantes. À ce stade préliminaire, aucun site n'a été déterminé comme étant sûr ou propice par la population de la région.

Rachelle Davenport se joint à la SGDN

Mme Rachelle Davenport s'est jointe à la SGDN à titre de gestionnaire de liaisons communautaire pour la région d'Ignace. Travaillant en collaboration avec la gestionnaire des relations Ann Aikens et, forte de sa connaissance profonde des gens de la région, elle s'emploiera à promouvoir l'apprentissage et le dialogue sur le projet à Ignace et dans la région environnante.

Mme Davenport arrive à la SGDN après de nombreuses années de travail comme enseignante et directrice adjointe auprès des enfants et des familles de l'ensemble du secteur de la commission scolaire du district Keewatin Patricia. Elle est une résidente de longue date du nord-ouest de l'Ontario avec des racines à Dryden et Ignace et aime le camping, la pêche et le sport.

« Je suis très heureuse de participer à ce projet », indique Mme Davenport. « Mes années d'expérience en éducation seront utiles lorsque nous engagerons avec les membres de la collectivité et nos partenaires pour les renseigner sur la SGDN et le plan canadien de gestion sûre du combustible nucléaire irradié. »

Mme Davenport travaillera au bureau local d'Ignace.



Ann Aikens, gestionnaire des relations à la SGDN, souhaite la bienvenue à Rachelle Davenport, nouvelle membre de l'équipe de la SGDN, lors de la Foire de Dryden, qui a eu lieu du 25 au 27 août. Des membres du personnel de la SGDN ont participé à la foire pour soutenir les efforts d'engagement régionale sur le plan canadien de gestion à long terme sûre du combustible nucléaire irradié.

À noter...

- » Des journées portes ouvertes se tiendront le 26 octobre, de 13 h à 21 h, et le 27 octobre, de 10 h à 14 h au Centre *En savoir plus* de la place commerciale d'Ignace, située au 304, rue Main. Ce sera une excellente occasion de discuter des travaux qui seront bientôt menés sur le terrain et des étapes suivantes.
- » Les membres de la collectivité et du secteur sont invités à visiter le Centre *En savoir plus*, situé au 304, rue Main, dans la place commerciale d'Ignace.

Area Residents Provide Local Knowledge About Proposed Borehole Locations in Ignace and Area

The Township of Ignace and the surrounding area are learning more about Canada's plan for the safe, long-term management of used nuclear fuel and the current step in the site selection process now underway: Phase 2 Preliminary Assessment Studies.

An open house held in Ignace on October 26 and 27 provided an opportunity for Ignace and area residents to help guide this phase of work.

Area residents at the open house had an opportunity to view proposed areas for possible initial borehole locations. Many people shared local knowledge about the area and shared their input.

To view a map of potential areas for consideration, please visit www.nwmo.ca/ignace, under "What We're Doing".

Studies conducted to date show there are a number of areas that are potentially suitable for a deep geological repository from a technical safety perspective. Borehole drilling is done to obtain core samples in order to better understand the geology at or near these sites.

The Nuclear Waste Management Organization (NWMO) is working collaboratively with people in the area to decide where to focus this work. The valuable comments heard at the open house will help the NWMO and area residents work together to identify the preferred location for



Many area residents came out to talk with NWMO staff and share their input on possible locations for initial borehole drilling. This is the next step in better understanding the geology at, or near, a potential repository site.

the final borehole, and develop a drilling work plan that reflects community preferences.

The NWMO plans to continue to provide opportunities for area residents to provide comments about the proposed borehole locations throughout the remainder of 2016 and into early 2017. Citizens are encouraged to visit the Learn More Centre to view maps showing potential areas for consideration and provide their input. Ultimately, the decision on where to drill the final borehole will reflect area residents' input.

It's important for people to know initial borehole studies are planned for several areas in northern and southern Ontario, and are expected to take

a number of years to complete. Selecting and ultimately confirming a safe site for the repository will take several years of progressively more detailed technical and social studies, as well as engagement with the communities that initiated their area's involvement in the

process, First Nations and Métis communities in the area, and surrounding communities.

For additional information or to comment about borehole drilling, please email askthenwmo@nwmo.ca or visit the Learn More Center in the Ignace Town Plaza, located at 304 Main Street.



Several community representatives and NWMO staff members attended the Canadian Nuclear Society's 3rd Canadian Conference on Nuclear Waste Management, Decommissioning and Environmental Restoration. The Ignace delegates were part of a contingent of about forty-plus community members, including representatives from interested communities, First Nation and Métis communities in the surrounding areas, and nearby municipalities. Representatives from First Nation and Métis groups were also on hand, as were two members of the NWMO's Council of Elders and Youth.

Front left: Chicki Pesola, Township of Ignace Councillor, Diana Beril, Ignace Area Business Association, Ann Aikens, NWMO, Shaun Defeo, Township of Ignace Council Representative on the Ignace Community Nuclear Liaison Committee (ICNLC), Jodi Defeo, Community Member, and Rachelle Davenport, NWMO.



Aaron Parsons and his son Nash were two of the many area residents who attended the open house and checked out the drilling rig that was on display in the town plaza.

Of Note...

- » The NWMO is working with people in the area to plan for the drilling of an initial borehole at a potential deep geological repository location. Your comments on a proposed borehole location are valuable and will help the community and the NWMO plan our work together. Drop by the Learn More Centre to view the maps and share your comments.

C3. Detailed Geologic Mapping Advertisements



Sin

Awful news this last week; a two-year-old boy killed by an alligator in Florida.

It seems a family from Nebraska was vacationing down in Disney World, and were on the shores of a lagoon when an alligator came out of the water and grabbed the boy. The parents tried to free their son from the grip of the animal, but to no avail; alligators are brutally strong and tremendously quick. The alligator took the boy and when the searchers found him, the child was dead. I cannot even fathom what the parents went through and still must be going through. They will never be the same, no doubt.

This story reminds me of sin. The Bible says in Romans 6:23 - "For the wages of sin is death;" Nice people just like the family from

Nebraska, just out to have a good time, are ambushed by sin.

That alligator had nothing against those people, it is a reptile acting mostly on blind instinct; in other words, it was just being an alligator.

Sin is like that; it destroys whoever it can. No one is safe, or immune from it.

Everyone is a sinner and sin kills. It is just being sin.

Romans 3:23 - For all have sinned, and come short of the glory of God;

That poor child, we can be assured, is safe in the arms of the Lord Jesus Christ. He was too young to be accountable for his sin. God automatically takes small children to heaven when they die. Romans 4:15 - Because the law worketh wrath: for where no law is, there is no transgression.

We needn't worry about the child's soul. He was still affected though, wasn't he? His innocence did not give him a pass from suffering or physical death.

Sin, like the alligator, will ambush, kill, and destroy anyone. It doesn't care how old, how innocent, or how

many loved ones valiantly try to save them. It is indiscriminate.

So what is the answer? Let's look at the whole verse this time, ok?

Romans 6:23 - For the wages of sin is death; but the gift of God is eternal life through Jesus Christ our Lord.

Your hope...your ONLY hope lies not in some THING you do; religion, good works, church, or what have you; no...your hope lies in a PERSON: The Lord Jesus Christ. He defeated sin, died on the cross for your sins, was buried and rose again the third day. Will you believe Him? Do you believe what the Bible says about Him? If the answer is "yes" then there is only one thing to do: Turn to Him with your heart (repent) and trust Him as your Saviour. Then (if you trust Him)...no matter what this life has for you, you are fit for heaven and are saved.

'Til next time, Folks
Pastor Steve Dunk
Redemption Baptist Church

NDP open letter on Northern Ontario gas prices

The Hon. Glenn Thibeault, Minister of Energy
4th Floor, Hearst Block
900 Bay Street
Toronto, Ontario M7A 2E1

Re: Gas Prices

Dear Minister,
People across Ontario, and especially the North, are being ripped off at the gas pumps.

As an opposition MP you were vocal on this issue. Now is the time for you to act. As the Minister responsible for the Ontario Energy Board, you should direct the OEB to monitor gas pricing, reduce volatility and increase competition. This is something you can do today.

As every driver in Ontario knows long weekends often lead to big spikes in gas prices. We are calling on you to act now, before the Canada Day long weekend. We are also calling for a meeting at your earliest convenience to discuss ways to get gas prices and energy prices in Northern Ontario under control.

There is something seriously wrong when Sudburians pay above the average 90% of the time, and when drivers in Sudbury consistently pay more than people in North Bay, something you have suggested is price fixing. As you know, this isn't unique to Sudbury: all across Ontario there are communities being gouged.

In the past you specifically highlighted the fact provinces can and should take a leading role in regulating prices and ending gouging, noting,

"A way to deal with rising prices could be regulation, [Thibeault] added, and with that, 'anything is on the table...' 'There's regulation in place in places like New Brunswick and other Atlantic provinces where ... it's not all of a sudden going to jump on a Friday ... by five or 10 cents a litre and then drop back down on a Monday.'"

You went further, noting that "The Government needs to bring forward a system that allows consumer complaints and concerns to be properly

heard." Why does this matter to people? As you, yourself, told the Sudbury Star in November 2014,

"When they have to worry about putting another 10 bucks in gas in their car, it takes away from food on the table"

This summer, people across Ontario will be heading out on the road to visit friends and family, go fishing, camping and enjoy the outdoors. They deserve to pay a fair and predictable price when they fill their tanks.

For years you promised people you wanted to take action to get gas prices under control. Here's your chance to act.

Sincerely,
Gilles Bisson
MPP Timmins-James Bay
Sarah Campbell
MPP Kenora-Rainy River
France Gelin
MPP Nickel Belt
Michael Mantha
MPP Algoma-Manitoulin
John Vanthof
MPP Timiskaming-Cochrane



Forest tent caterpillar

The forest tent caterpillar (*Malacosoma disstria*) is a forest defoliating insect found in Ontario.

Overview

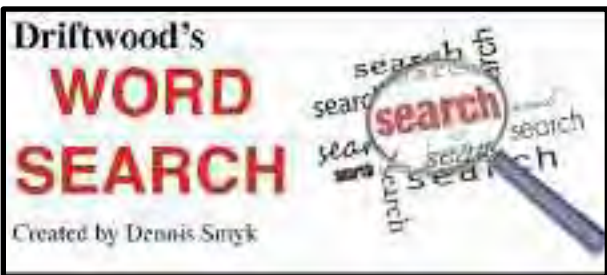
- native to North America
- forest tent caterpillar is the most widespread defoliator of hardwood trees in North America
- periodic outbreaks approximately every 10 to 12 years and typically last from 3 to 6 years in a particular area

Host species

In northern Ontario, forest tent caterpillar prefers trembling aspen (*Populus tremuloides*) and other poplars, as well as white birch (*Betula papyrifera*). In southern Ontario, the preferred hosts are sugar maple (*Acer saccharum*) and oak (*Quercus* spp.), but it can also be found defoliating many other hardwoods excluding red maple (*Acer rubrum*).

Characteristics and life cycle

- adults are buff-brown moths with three darker bands across each forewing
- they are in flight from late June to early August
- eggs are laid in bands of a hundred or more, cemented together in bands completely encircling a twig and covered with a glue-like protective coating
- eggs are laid in the summer, with the larvae emerging the following spring at time of bud break
- full-grown caterpillars are 50mm long, hairy and brownish, with a slate-blue stripe along each side and a row of



D E F O L I A T O R T T P F Q
 D I X C M S D O O W D R A H X
 K Y B W A R V X S W H I T E M
 B T Y I A T I P O T B U Z A Q
 D C D I R J E U Z K A L Z Y Z
 A E N J A C T R E M B L I N G
 S S O S I B H E P T H H V S C
 P N O E R P Y E G I L L B E E
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 T S E R O F X T E N T E D R X
 B U M O T P M Y S R I C X L B
 R C D D P S Z U Z J D F F I E
 U K H S C I D O I R E P R H K

**FOREST
TENT
CATERPILLAR
DEFOLIATOR
INSECT
HARDWOOD
TREES
OUTBREAK
PERIODIC**

**SPECIES
ASPEN
TREMBLING
WHITE
BIRCH
LIFE
CYCLE
SYMPTOM
DAMAGE**

keyhole-shaped white spots along the back
- after feeding for six weeks, the caterpillars spin yellowish cocoons in a sheltered place and then pupate inside
- forest tent caterpillars have one generation per year

Symptoms and damage
- defoliator feeds on leaves of plants
- outbreaks of this insect are periodically very widespread reaching millions of hectares
- sustained heavy infestation results in growth reduction and branch killing
- tree mortality can occur, especially if trees are suf-

fering from other stresses as well (i.e. drought or other insect damage)
- while this insect does not form a tent, it is often confused with the eastern tent caterpillar, which forms a tent in branch crotches and prefers cherry (*Prunus* spp.) and apple (*Malus* spp.) trees

Control measures
Bacillus thuringiensis var. kurstaki (Btk) is a bacterial spray that can be used to protect tree health during outbreaks. Parasites are also important in controlling this pest, such as the large flesh fly (*Sarcophaga aldrichi*) or the nuclear polyhedrosis virus (NPV).

Ignace Skating Club Fundraiser

2016 Summer Fish Derby

Over \$2,000.00 in prizes
Sponsored by VERN'S MINNOWS

JULY 1 to AUGUST 31, 2016



Detailed Geological Mapping

Over the next several weeks, the NWMC will be conducting detailed geological mapping in the vicinity of Ignace. This is a continuation of work that began last fall, and is part of a multi-year process to identify a potential site for a deep geological repository for used nuclear fuel.

The objective of the mapping is to advance understanding of the geology by identifying and accessing areas where the rock is visible at the surface and making visual observations on the characteristics of the rock. Depending on the location of these areas, the mappers will be using all-terrain and four-wheel drive vehicles, as well as boats/canoes.

The results of this work will help increase our understanding of rock in the area and inform decisions about future studies. Before a potential site can be identified, several years of progressively more detailed studies are needed, as well as engagement of interested communities, First Nation and Métis communities in the area, and surrounding communities. The NWMO is also conducting studies in the vicinity of eight other communities in Ontario that expressed interest in participating in the process for selecting a site.

» For more information, please visit www.nwmo.ca/detailedmapping

Cartographie géologique détaillée

Au cours des prochaines semaines, la SGDN réalisera des travaux de cartographie géologique détaillée à proximité d'Ignace. Ces travaux constituent le prolongement d'autres travaux entrepris l'automne dernier et font partie d'un processus pluriannuel qui a pour but d'identifier un site potentiel pour un dépôt géologique en profondeur pour le combustible nucléaire irradié.

L'objectif des travaux de cartographie est de mieux comprendre la géologie locale en identifiant et en accédant les régions où la roche est visible en surface et en documentant des observations visuelles sur les caractéristiques de la roche. Selon les régions visitées, les cartographes utiliseront des véhicules tout-terrain et à quatre roues motrices ainsi que des bateaux ou canoës.

Les résultats de ces travaux permettront de mieux comprendre les formations rocheuses dans la région et d'étayer les décisions concernant des études futures. Avant qu'un site potentiel soit identifié, il faudra encore plusieurs années d'études de plus en plus détaillées ainsi que des activités d'engagement des collectivités intéressées, des collectivités des Premières nations et métisses de la région et des collectivités environnantes. La SGDN mène aussi des études à proximité de huit autres collectivités en Ontario qui ont exprimé l'intérêt de participer au processus de sélection d'un site.

» Pour en savoir plus, veuillez visiter www.nwmo.ca/fr/detailedmapping

Pokémon Go: Don't Forget Safety When Trying to Catch 'Em All!

The wait finally ended for Canadian Pokémon fans in mid-July, as the highly anticipated mobile game Pokémon Go launched north of the border, a few weeks after the game first launched in the United States.

At its core, the premise is deceptively simple: after downloading the game, the player walks around in search of Pokémon, which spawn on their screens at random based on their surroundings. For instance, a player is more likely to encounter a water-type Pokémon if they are around

water. The player then swipes on their screen, "throwing" a Pokéball at the creature, and if thrown correctly, they catch the Pokémon. It can then be trained, evolved and used in virtual battles.

Many people, young and old, have been using this latest craze as an opportunity to explore their surroundings, wandering around their neighbourhoods in search of that elusive Rhydon. Any opportunity to get physical exercise and become more familiar with surroundings is, of course,

extremely beneficial for anyone, and goes to show the benefits of advancement in technology and augmented reality-style games.

While the game is fantastic as far as physical exercise and exposure to the outdoors is concerned, though, it's important that would-be Pokémon trainers not get so immersed in the virtual world that they lose sight of the real world. Since the release of the game, stories have begun to emerge of people walking into the street, falling due to lack of attention of their surroundings, or walking into compromising situations. Keep your head up, and ensure you're stopping in a safe area before attempting to catch a Pokémon or stop at a gym.

A few more tips to consider:

- Wear proper clothing when walking around. This includes a good pair of running shoes, appropriate clothing for the weather and, if walking around at night, brightly-coloured clothing to ensure that oncoming motorists can see you.

- Stay in public areas, preferably where there are other people around. Never trespass onto private property and, if you see a Pokémon in an area that doesn't feel safe – no matter if it's a common Rattata or an ultra-rare Mewtwo – trust your instincts and steer clear of the area. There have been reports in the United States of malicious users dropping "incense," an in-game item that lures wild Pokémon to an area, in secluded areas then mugging unsuspecting players who arrive to the area.


- Go Pokémon hunting in groups. This will ensure that you will have other people keeping an eye out for you and vice-versa in case one of you accidentally veers off or is in danger of walking into something or falling.

- When you're driving, it should be Pokémon STOP. Leave the phone alone while you're behind the wheel.

- If you've got a child who wants to go out on a Pokémon hunt, make sure they're accompanied by an adult or supervised by a responsible adult at all times. Our recommendation is that any child 12 years of age or younger should be accompanied, but that's not a hard rule. Consider the child's maturity and temperament, and use your judgment.


The Canada Safety Council wishes you good luck, safe adventures and fully believes that you can be the very best, like no one ever was!

This recipe is courtesy of Egg Farmers of Canada



get cracking.
eggs.ca

Cajun Eggs Benedict



Let the good times roll with this spicy twist on a brunch classic.

Serves: 4 Time to Prepare 12 min. Time to Cook 25 min.

Nutrition Facts (Per Serving)
Calories 650 Fat 50 g Saturated Fat 23 g Trans Fat 1.5 g
Sodium 1280 mg Sugars 1 g Protein 25 g Fibre 1 g
Carbohydrate 25 g

Ingredients
8 eggs
2 tsp (10 mL) vinegar
8 slices corn bread, toasted and buttered
8 oz (230 g) sausage meat, cooked and crumbled
2 tbsp (30 mL) sliced green onion

Ingredients (Cajun Hollandaise Sauce)
1/3 cup (75 mL) melted butter
2 egg yolks
1 tbsp (15 mL) lemon juice
1/2 tsp (2.5 mL) Dijon mustard
1 tsp (5 mL) Cajun seasoning

Instructions (Cajun Hollandaise Sauce)
STEP 1 In small saucepan, heat butter over medium-high heat until melted and bubbling. In blender, purée egg yolks, lemon juice and mustard until smooth. With motor running, pour the bubbling butter into blender in thin stream. Add 1 to 2 tbsp (15 to 30 mL) water if sauce is too thick. Season with Cajun seasoning; keep warm.

Instructions (Poached Eggs)
STEP 1 Meanwhile, fill saucepan with enough water to come 3 inches (8 cm) up side; heat to gentle simmer. Stir in vinegar. Break cold egg into small dish or saucer. Holding dish just above simmering water, gently slip egg into water. Repeat for remaining eggs. Cook in barely simmering water until white is set and yolk is cooked as desired, approximately 3 to 5 minutes. Remove eggs with slotted spoon. Drain well on paper towel.

STEP 2 Top each slice of corn bread with crumbled sausage and poached egg. Spoon Cajun Hollandaise Sauce over top. Garnish with green onion.

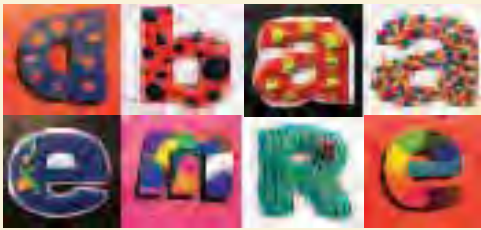
- To keep Cajun Hollandaise Sauce warm, store in thermal container for up to 20 minutes.
- Use corn bread mix and bake in loaf pan to get even slices.
- Substitute brioche bread for corn bread if desired.
- For authentic Cajun flavours, use andouille sausage, which can be found at butcher or gourmet food shops.

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Take 15 minutes a day
15 Minutes of Fun
 to learn with your family.

Family Literacy Day Honorary Chair, **Barbara Reid** suggests these special activities using modelling clay:

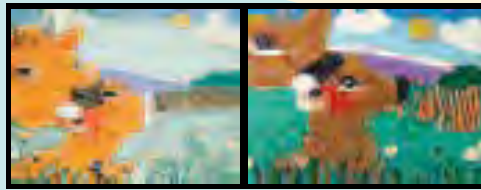
1. Create an alphabet



2. Make a sign



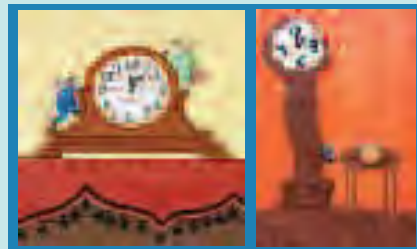
3. Recreate your favourite scene from a story



4. Build your own game pieces



5. Tell a story



Artwork by Barbara Reid reproduced by permission of Scholastic Canada Ltd.

Photos by: Ian Cryslar Photographer

Barbara Reid is a picture book illustrator and author whose award winning artwork is created using modelling clay.



Make family time learning time.

Find more activities you can do as a family at www.FamilyLiteracyDay.ca.



Happy 95th, Marian!

Marian Flayer celebrated her 95th birthday last weekend with family and friends at Agimak Lake Resort. She is currently hospitalized in Dryden, but received a day pass so her family could bring her home for the celebration.

Save a pile of money with a DRIFTWOOD SUBSCRIPTION!

Just \$42⁰⁰ a year including taxes (in Ignace)

If you buy it from the newsstand you pay \$53⁹⁹!

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***A subscription is a Great Birthday Present or Gift for other Special Occasion!**

(Contact information can be found on page 4.)



Preliminary Environmental Field Studies

Over the next several weeks, the NWMO will be conducting preliminary environmental field studies in the vicinity of Ignace. The objective of the studies is to advance understanding of the local environment by making on-the-ground observations. The environmental mappers will be using all-terrain and four-wheel drive vehicles and boats/canoes. This work is part of a multi-year process to identify a potential site for a deep geological repository for used nuclear fuel.

The results of this work will help increase our understanding of the environment in the area and inform decisions about future studies. Before a potential site can be identified, several years of progressively more detailed studies are needed, as well as engagement of interested communities, First Nation and Métis communities in the area, and surrounding communities. The NWMO is also conducting studies in the vicinity of eight other communities in Ontario that expressed interest in participating in the process for selecting a site.

For more information about Canada's plan for managing used nuclear fuel, visit www.nwmo.ca.

Études environnementales préliminaires sur le terrain

Au cours des prochaines semaines, la SGDN réalisera des études environnementales préliminaires dans les environs d'Ignace. Ces études auront pour objectif d'acquies une meilleure compréhension de l'environnement local au moyen d'observations au sol. Les cartographes environnementaux utiliseront des véhicules tout-terrain et à quatre roues motrices ainsi que des bateaux ou canoës. Ces travaux font partie d'un processus pluriannuel qui a pour but d'identifier un site potentiel pour l'établissement d'un dépôt géologique en profondeur pour le combustible nucléaire irradié.

Les résultats de ces travaux permettront de mieux comprendre l'environnement de la région et d'étayer les décisions concernant des études futures. Avant qu'un site potentiel soit identifié, il faudra encore plusieurs années d'études de plus en plus détaillées ainsi que des activités d'engagement des collectivités intéressées, des collectivités des Premières nations et métisses de la région et des collectivités environnantes. La SGDN mène aussi des études à proximité de huit autres collectivités en Ontario qui ont exprimé leur intérêt de participer dans le processus de sélection d'un site.

Pour de plus amples informations sur le plan canadien de gestion du combustible nucléaire irradié, visitez le site www.nwmo.ca.



C4. Ignace Driftwood Coverage

Ignace Driftwood

\$1⁰⁰ + 5¢ GST

Ignace, Ontario Volume 39, Number 44 November 2, 2016

Publications Mailing Agreement #40022487



Open House at Learn More Centre

Students from Ignace School grade 5 and 6 classes had the opportunity to see and learn firsthand how a drill rig works as part of last week's Nuclear Waste Management Organization (NWMO) Open House. The NWMO is planning to study core samples at, or near, a potential repository site. This work will provide a better understanding of the geology.

Held at the Learn More Centre in the town plaza on October 26/27, the open house provided an opportunity for area residents to give their input on a location for an initial borehole to be drilled in 2017. For more information and/or provide input, people are encouraged to drop by the Learn More Centre.

Ignace is one of nine communities/areas involved in the site selection process for the safe long-term management of Canada's used nuclear fuel. The NWMO are planning to decide on one of the nine as the focus of study by 2023. The actual facilities may be built and operational by 2040.



Break, Enter and Thefts in Ignace area

During the month of October 2016, members of the Ignace Detachment - Ontario Provincial Police (OPP) received several reports of Break, Enter & Thefts in the Raleigh Lake, Gulliver River and Hwy. 599 areas.

The following is a list of items stolen,

- Orange & White Stihl chainsaw with an 18 inch bar
- Red Millwaukee drill
- Blue Millwaukee grease gun
- Green Baffin rubber boots - Size 9
- Light blue Yamaha, 2 stroke outboard motor, Serial #1104687
- Blue Yamaha, 4 stroke outboard motor, Serial #1039333

- White Johnson, 2 stroke, outboard motor - approximately 35 years old -2 gas cans

- Green and White Johnson, 2 stroke, outboard motor with a two blade prop
- Green & Yellow Grumman, 16 ft boat with a flat bottom and square back

If you have any information regarding these stolen items, you can contact the Ignace OPP at 1-807-934-2265 or 1-888-310-1122.

You can also call Crime Stoppers at 1-800-222-8477 if you wish to remain anonymous. You could earn a cash reward up to \$2,000.00

Outdoor rink to fill gap in arena skating schedule

Jodie Defeo couldn't attend the last Council Meeting, but her husband, Councillor Shaun Defeo, brought forward her idea that the Municipality consider constructing an outdoor natural ice rink to allow skating early in the season because the arena condenser replacement won't be complete until the end of November at the earliest. Council readily agreed with the idea.

The best location would be the parking area at the western ball park on Davy Lake Road. This would allow Ignace School to begin the much anticipated Hockey Academy program within convenient walking distance. Residents would have 24/7 skating. The Ignace Fire Department has offered to make ice. The ground will have to be graded first, likely a Public Works job. Stay tuned...



Gwen Andrews, Joanne Armstrong, Lillian Harris & Yvonne Dungey.

Celebrating Early Childhood Educators

Staff of the Ignace Nursery School and Ignace Best Start Hub celebrated Early Childhood Educators and Child Care Worker Appreciation Day on Wednesday October 26, 2016.

They received a free luncheon in recognition for their dedication and years of work with the little ones of our community.

The ladies are pictured in costume as they celebrated for Halloween with the children at Nursery School.

Public Notice from the Ignace Trappers Council

Please be aware that legal fur trapping activity may occur almost anywhere in all parts of Ontario from October until April.

Be alert to your surroundings when walking on forest access roads and trails, and control your pets at all times.

If you walk your dog in wildlife habitat during fur harvesting season, in areas where traps and snares may be set, familiarize yourself with the methods to release a dog from a trap or snare. Your knowledge of these methods could save your dog's life. See; Removing Your Dog From a Trap or Snare

<http://novascotia.ca/natr/wildlife/sustainable/pdf/PetOwners.pdf>

Ignace Driftwood

\$1⁰⁰ + 5¢ GST

Ignace, Ontario Volume 39, Number 49 December 7, 2016

Publications Mailing Agreement #40022487



18th edition of the CP Holiday Train rolls into Ignace

CP's annual Holiday Train program is a rolling fundraising event that travels across Canada and the United States raising money, food and awareness for food banks and hunger issues, hosting free holiday concerts along the way. Since 1999 the program has raised more than \$12 million and 3.9 million pounds of food. Each Holiday Train is about 1,000 feet in length with 14 rail cars decorated with hundreds of thousands of technology-leading LED lights and a modified boxcar that has been turned into a traveling stage for performers.

This year the Holiday Train is proudly sporting an all-Canadian musical line up with multiple Canadian Country Music Award and Juno Award winners Dallas Smith and Odds.

Every pound of food and dollar raised at each stop stays with the local food bank to help feed those in need in that community, and in Ignace a financial contribution was made to the Ignace Food Bank. Mayor Lee Kennard and the Food Bank's Yvonne Romas accepted a cheque for \$5,500 (pictured).

"For nearly 20 years, CP has watched communities turn out to enjoy a wonderful event while taking a stand against hunger," said E. Hunter Harrison, CP's Chief Executive Officer. "We are proud of the role the Holiday Train plays, but more importantly, we're proud of the people and families that come out year after year to help their neighbours. They're the reason we keep bringing the train back."

NWMO Continues to Support Community Learning Process

At the November 30th meeting of Ignace and other Township council, the Nuclear Waste Management Organization (NWMO), reiterated its commitment to cover community costs in 2017 associated with learning about Canada's plan for the safe, long-term management of used nuclear fuel.

The NWMO routinely provides resources to assist communities that are participating in the site selection process for a deep geological repository and associated facilities. These resources ensure communities do not have to decide between learning more about the plan and meeting other worthy local needs.

In the latest update to its community resource program the NWMO has acknowledged that more tools for learning and the NWMO says it may be able to may be needed as studies and engagement activities become more intensive.

Canadians in this collaborative process", says NWMO Regional Communications Manager, Patrick Dolcetti. "These communities should not be out of pocket for the costs associated with learning about this important national infrastructure project."

The program covers costs for activities such as training and skills development, administrative expenses associated with the project, community strategic planning and activities to engage neighbouring communities.

Currently, the Township of Ignace is one of nine areas involved in the siting process and the NWMO says it may be able to select a preferred site as the sole focus of study by 2023. The site could be operational between 2040 and 2045.

No outdoor rink this year

At its meeting last week Council decided that the Township would not proceed with creating an outdoor ice rink this season. One reason was that our arena ice will be available shortly; according to the latest information we should have ice by mid-December. Another reason was the lack of a suitable site. The proposed site, at the ball diamond with the dugouts on Davy Lake Road, does not have adequate lighting. An outdoor skating rink will be looked at for next season. One Councillor mentioned that splash pads being built in other communities serve as ice rinks in the winter.



From left are TransCanada's Dan Stencil, Mayor Lee Kennard, Councillor Al Graver, Public Works Supervisor Lynda Colby, TransCanada's Steve Loney

TransCanada donates trucks to the Township of Ignace

Last Thursday two TransCanada employees came to Ignace from Thunder Bay to deliver the second of two used pickup trucks donated by the company to the Township. The first one came two weeks ago from Dryden. Last September the Township sent an application to TransCanada's Community Investment Division asking for used trucks. After new vehicles to replace the old vehicles were acquired this fall by TransCanada, the company was in a position to grant our request. Both donated trucks are 2010 Chevrolet 1500 extended cab trucks.

Council thanks TransCanada for this generous donation. Currently the Township is short of pickup trucks, so the two donated trucks are much needed. Over the years TransCanada has donated vehicles to the Township and has done it again. We hope the company will continue in the future support our Township with its Community Investment program.

Ignace Driftwood

\$1⁰⁰ + 5¢ GST

Ignace, Ontario Volume 40, Number 9 March 8, 2017

Publications Mailing Agreement #40022487



Holding a mock-up used fuel bundle, Joe Heil, Senior Engagement Advisor, speaks to Ignace High School students and Teachers.



Speaking with Ministry of Natural Resources & Forestry staff.



Ignace School Teacher Keith Drake and student examine a used nuclear fuel container.

NWMO hosts Ignace Open House: Next Step of Technical Studies

Local students were among the many people who attended last week's open house with the Nuclear Waste Management Organization (NWMO). The open house gave area residents an opportunity to review and share their thoughts on the initial bore-hole drilling program planned for 2017.

This work will provide core samples to advance understanding of the local geology and help assess the area's potential suitability to safely host a deep geological repository for used nuclear fuel. Based on technical studies and input from people in the area, a rock formation known as the Revell Batholith located northwest of the community has been identified for initial core sample study.

The Ignace area is one of several in Ontario currently involved in the site selection process. Any decisions are still years away.

More information is available at the Learn More Centre in the Town plaza



Students and staff from l'école Immaculée-Conception

(Photo courtesy of Patrick Dolcetto, NWMO)

C5. Ignace Area Media Coverage



NWMO Ignace Area Media October/ November 2016

Area residents will get one more shot today at information session			
Program:	News	Air Time:	6:00AM - 7:00AM
		Date:	2016-Oct-27 6:00AM
Station:	CKDR FM	Network:	Acadia Broadcasting Company Ltd.
		City:	Dryden
Reporter:	Mike Ebbeling	Length:	00:30
		Province:	Ontario
Interview:	None		
Note:	Area residents will get one more shot today to get updated on the current status of plans to establish an underground nuclear waste site in Canada. Officials with the Nuclear Waste Management Organization will be holding an Open House at the Learn More Centre in Ignace from 10 until 2.		
Log ID:	20161101R-0050		

The Nuclear Waste Management Organization is holding another Open House today			
Program:	News	Air Time:	6:00AM - 7:00AM
		Date:	2016-Oct-27 6:31AM
Station:	CKDR FM	Network:	Acadia Broadcasting Company Ltd.
		City:	Dryden
Reporter:	Mike Ebbeling	Length:	00:30
		Province:	Ontario
Interview:	None		
Note:	The Nuclear Waste Management Organization is holding another Open House today in Ignace, to update the public on plans to establish an underground nuclear repository. The session is being held from 10 until 2 at the Learn More Centre.		

Log ID: 20161101R-0051

Program: News DATE: 2016-Oct-27 8:02AM Time: 8:00AM - 9:00AM
Station: CKDR FM Network: Acadia Broadcasting Company Ltd. City: Dryden

HEADLINE: NWMO holding open house in Ignace

CKDR (MIKE EBBELING): Area residents will get one more shot today to get updated on the current status of plans to establish an underground nuclear waste site in Canada. An Open House is being held at the Learn More Centre in Ignace from 10 until 2. Officials with the Nuclear Waste Management Organization will focus this session on the next phase of geological studies. Ignace is one of the sites being considered to host the repository.

- 30 -

REPORTER: Mike Ebbeling Length: 00:30 Province: Ontario
MEDIA 20161101R-0048 Words: 76 Reach: Local
LOG ID:

Program: News DATE: 2016-Oct-27 8:31AM Time: 8:00AM - 9:00AM
Station: CKDR FM Network: Acadia Broadcasting Company Ltd. City: Dryden

HEADLINE: Nuclear Waste Management Organization holding Open House today in Ignace

CKDR (MIKE EBBELING): The Nuclear Waste Management Organization is holding another Open House today in Ignace, to update the public on plans to establish an underground nuclear repository. The session is being held from 10 until 2 at the Learn More Centre. The next phase of geological studies is the focus, as the Ignace area is still being considered as a possible.

- 30 -

REPORTER: Mike Ebbeling Length: 00:30 Province: Ontario

MEDIA LOG ID:	20161101R-0049	Words: 62	Reach: Local
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Program: News	DATE: 2016-Oct-28 7:03AM	Time: 7:00AM - 8:00AM
Station: CKDR FM	Network: Acadia Broadcasting Company Ltd.	City: Dryden

HEADLINE: Info on Potential Nuclear Storage Site Locations Being Discussed

CKDR (Mike Ebbeling): Information on potential nuclear storage site locations around Ignace are being discussed at Nuclear Waste Management Organization open house meetings. The next phase will involve drilling an initial borehole in 2017 to look at core samples at a potential site. Regional communications manager Patrick Dolcetti talks about how they figured out some potential sites in the area.

PATRICK DOLCETTI (Regional Communications Manager, NWMO): High resolution airborne surveys, the geologists have been out walking the land, there's been environmental mapping done, and obviously studying all the readily available information that existed prior to that.

CKDR: Dolcetti also says they expect to pick a location in Canada by 2023.

- 30 -

REPORTER: Mike Ebbeling	Length: 00:30	Province: Ontario
MEDIA LOG ID:	20161101R-0033	Words: 110
		Reach: Local

Program: News	DATE: 2016-Oct-28 8:03AM	Time: 8:00AM - 9:00AM
Station: CKDR FM	Network: Acadia Broadcasting Company Ltd.	City: Dryden

HEADLINE: NWMO Holding Open Houses in Ignace with Info on Potential Storage Site Location

CKDR (Mike Ebbeling): The Nuclear Waste Management Organization has been holding open houses in Ignace with information on a potential storage site location in the area. The information was provided by high resolution airplane surveys, geologists looking over the land, environmental mapping, and looking over already obtained information. Regional communications manager Patrick Dolcetti mentions when a site will be selected.

PATRICK DOLCETTI (Regional Communications Manager, NWMO): Immediately, we do hope to identify one of the nine areas as the sole focus of study by 2023. So that's only six years away.

CKDR: Dolcetti says the next phase will involve drilling an initial borehole in 2017 to look at core samples at a potential site.

- 30 -

REPORTER: Mike Ebbeling	Length: 00:30	Province: Ontario
MEDIA LOG ID: 20161101R-0034	Words: 114	Reach: Local

Program: News	DATE: 2016-Oct-28 12:04PM	Time: 12:00PM - 1:00PM
Station: CKDR FM	Network: Acadia Broadcasting Company Ltd.	City: Dryden

HEADLINE: Information Sessions on Potential Nuclear Waste Storage Site Around Ignace

CKDR (Mike Ebbeling): The Nuclear Waste Management Organization has been holding open houses with information on a potential storage site location around Ignace. The information was provided by high resolution airplane surveys, geologists looking over the land, environmental mapping, and

looking over already obtained information. Regional communications manager Patrick Dolcetti talks about what the next phase is.

**PATRICK
DOLCETTI
(Regional
Communications
Manager,
NWMO):**

The next phase would involve drilling an initial borehole in 2017 in order to look at the core samples obviously. And that would be done at or near the potential repository site.

CKDR:

He says they expect to pick a spot for the site in Canada by 2023.

- 30 -

REPORTER: Mike Ebbeling	Length: 00:30	Province: Ontario
MEDIA LOG ID: 20161101R-0036	Words: 111	Reach: Local



Here is the link to the Thunder Bay Television News website and youtube channel. The story starts at 10 min 3 secs of newscast. Original airdate October 30, 2016

<https://www.tbnewswatch.com/video/tbt-newshour/oct-27-2016-service-impact-449942>

https://www.youtube.com/watch?v=apEsi9yJ4Nk&list=PLDk2K5OmaANUff-gDuWguy0LrZt_yTOxG&index=1



[NWMO prepares for borehole drilling in Ignace area](#) (Amanda Wheatley, *The Dryden Observer* / November 2, 2016)

The Nuclear Waste Management Organization (NWMO) held an Open House in Ignace on October 26th and 27th. The Learn More Centre provided an opportunity for locals to engage with the project as the site selection continues.

Ignace is one of nine communities still in the running for the deep geological repository for the long-term management of Canada's used nuclear fuel. Ignace is the first community to begin prepping for borehole drilling and is using the Open House as a chance to let others learn more about the process.

The centre was outfitted with interactive displays, printed information, video presentation software, and other tactile learning materials. Tables were set up with maps and documents to help facilitate discussion and engage community members. Civil engineers and geologists were also on-site to help answer questions about the scientific process involved with site selection.

A truck-mounted drill rig was on display in the parking lot of the Ignace Town Plaza and inside the centre locals gathered to give input surrounding their opinions on potential drilling locations. The borehole drilling will involve extracting a narrow, circular core sample from approximately one kilometer below the Earth's surface.

Tests done on the core will include determining rock strength, minerals present and zones of groundwater flow, among others. The drilling process can last about 90 days, but the scientific study will take months of testing and review.

During this process the NWMO is working with Indigenous partners to ensure they are respectfully applying their knowledge of the natural environment and traditional lands. In addition, they take many precautions to ensure an environmentally friendly approach that helps to recycle natural resources.

As Ignace moves further along in the selection process, the NWMO continues to provide learning opportunities that help promote partnerships in the community. Regional Communications Manager, Patrick Dolcetti said, "Part of the goal is to provide social and economic partnerships to make the region a better place to live."

"We are looking for an informed and willing host," he said. The process isn't just about finding a suitable geological site; there needs to be a willing reciprocity between the host and the NWMO. Because of this, the organization opens as many channels as possible to engage with the public. They want to make sure that they are giving people learning opportunities to make informed decisions and to help challenge misconceptions.

Dolcetti spoke of the ability of the repository to help improve the quality of life to the region that hosts it. At the height of the project's economic potential they will be able to create 1,410 new jobs for the Northwest Region.

The site selection process is scheduled to go on for many years as the NWMO and the involved communities continue to complete the studies. As time goes on more Open Houses and learning opportunities will continue to present themselves. In the meantime, those looking for more information can visit the NWMO website.



Ignace

Driftwood

*1⁰⁰ + 5¢ GST

Ignace, Ontario Volume 39, Number 44 November 2, 2016

Publications Mailing Agreement #40022487



Open House at Learn More Centre

Students from Ignace School grade 5 and 6 classes had the opportunity to see and learn firsthand how a drill rig works as part of last week's Nuclear Waste Management Organization (NWMO) Open House. The NWMO is planning to study core samples at, or near, a potential repository site. This work will provide a better understanding of the geology.

Held at the Learn More Centre in the town plaza on October 26/27, the open house provided an opportunity for area residents to give their input on a location for an initial borehole to be drilled in 2017. For more information and/or provide input, people are encouraged to drop by the Learn More Centre.

Ignace is one of nine communities/areas involved in the site selection process for the safe long-term management of Canada's used nuclear fuel. The NWMO are planning to decide on one of the nine as the focus of study by 2023. The actual facilities may be built and operational by 2040.



Program: Regional News (Thunder Bay)	DATE: 2016-Nov-04 6:32AM	Time: 6:30AM - 6:35AM
Station: CBC Radio 1 (Thunder Bay) - CBQT FM	Network: Canadian Broadcasting Corporation	City: Thunder Bay

HEADLINE: NWMO Examining Potential Nuclear Waste Storage Site Around Ignace

CBC (Jeff Walters): The group that wants to bury nuclear waste in the Canadian shield will start a drilling program next year near Ignace. The Nuclear Waste Management Organization will examine four areas comprised of fourteen specific sites. Patrick Dolcetti speaks for the NWMO. He says all previous studies that have been examined, and they will then determine the best spot to bury the waste.

PATRICK DOLCETTI (NWMO): We've done airborne, high resolution surveys, the geologists have been out walking the land, we've done some initial environmental mapping. But this will be the first time going in, and getting some core samples to, again, further understand the geology in the region.

CBC: Dolcetti says a final community will get picked in 2023, and the goal is to have a waste repository completed and operational by 2040.

- 30 -

REPORTER: Jeff Walters	Length: 00:30	Province: Ontario
MEDIA LOG ID: 20161104R-0015	Words: 136	Reach: Local



[Is this northern Ontario township a good spot to bury nuclear waste?](#) (*CBC News* / November 4, 2016)

The group that's examining the feasibility of burying nuclear waste in the Canadian Shield will start a drilling program in 2017 near Ignace, Ont.

It's part of work being done by the **Nuclear Waste Management Organization (NWMO)** to find a suitable site for the disposal of spent uranium pellets. The group has been narrowing down its scope of possible sites to store the waste.

- [Schreiber dropped from list of potential nuclear waste sites](#)
- [Canada narrows list of possible locations for nuclear waste facility](#)

"We've done airborne high resolution surveys, the geologists have been out walking the land [and] we've done some initial environmental mapping," said Patrick Dolcetti, a spokesperson for the organization.

"But this will be the first time going in and getting some core samples to further understand the geology in the region."

The **NWMO** will examine four areas, comprised of 14 specific sites, all within 50 kilometres of Ignace and in virtually all directions. One of the four main sites is partially within the township boundaries.

Study of all these areas will eventually lead to a decision on where to drill a borehole in 2017 to take core samples for study, Dolcetti said.

"So, we haven't determined where that will be," he said.

"We have areas that we have identified, so we are asking local people and people in the region to give their input on what they think, why a certain area may be suitable or may not be suitable, or whatever concerns they have."

Ignace is one of nine communities still in the running to potentially serve as the final choice to bury the spent fuel.

Dolcetti said a final community will get picked in 2023, with the construction for the waste repository site to be completed by 2040.

[Nuke waste decision long way off](#) (Bryan Meadows, *The Chronicle Journal* | January 7, 2017)

Four communities in Northwestern Ontario remain in the hunt for a possible nuclear waste underground repository.

Ignace, White River, Hornpayne and Manitouwadge continue to be involved in the site selection process for a proposed underground nuclear-waste storage facility.

Studies such as geophysical and environmental surveys are currently being conducted in areas surrounding the communities to assess the potential suitability of rock formations to host a deep geological repository for the long-term management of Canada's used nuclear fuel. A number of open houses have also been held to keep residents apprised of developments.

The Nuclear Waste Management Organization is searching for a suitable underground storage site for 50,000 tonnes of spent nuclear fuel bundles - enough to fill six hockey rinks up to the boards. The proposed facility, which would go into service by 2040 at the earliest, is expected to create between 400 and 600 permanent jobs.

Those communities willing to consider having the site on their turf have so far each received \$400,000 for their trouble. Receiving the money from the NWMO doesn't mean the towns must accept a nuclear-waste storage site; they can spend the funds as they see fit for "community projects."

The NWMO has maintained that the project will only move forward with the approval of area communities, First Nations and Métis groups.

Ignace Mayor Lee Kennard said Friday that his community is still involved in the process because "there is still a lot to learn, not only for us but also for the other communities in this process.

"We continue to be involved in field studies and engagement activities as we learn more about this important national infrastructure project and whether or not it may be feasible in the Ignace area," he said, adding that "it will be several years before a potential host area is identified."

The NWMO has indicated they hope to be down to one of the nine communities as the sole focus of study by 2023, Kennard said, and that a facility may be operational between 2040 and 2045.

As for support of the project in the community, Kennard said that “no one is being asked or expected to make decisions at this point.

“It’s simply too early. We are currently involved in learning and research on the suitability of the geology and potential social and economic impacts. We won’t know the results for several years. The Ignace area may never even reach that point,” he said.

The Ignace mayor noted that this is a \$22 billion national infrastructure project. That means it brings significant social and economic impacts to a potential host area.

“An important part of the process is examining these impacts and how they may be managed to be a net benefit to our community and region. It’s not just about finding the right geology. Although,” he said, “without that nothing else would matter as safety is the number one priority.

“Over the last several years, we have held numerous open houses and many other engagement activities. That will continue and expand for as long as we remain in the process. I would encourage people to become involved. Right now, it’s very much about learning together,” Kennard added.

NWMO regional communications manager Pat Dolcetti said that there are currently nine Ontario communities involved in the site selection process.

Four of which are in Northwestern Ontario, while others are Elliot Lake, Blind River, South Bruce, Huron-Kinloss and Central Huron.

“All of these communities are in the preliminary assessment phase,” Dolcetti said, adding that the NWMO is planning to select one the nine as the focus of study by 2023.

He explained that the preliminary assessment phase focuses on studies of the local area geology (such as geological mapping, airborne surveys, initial environmental mapping and planning for core sample studies) and the potential social and economic impacts for the community and surrounding region. The process is conducted collaboratively with the involvement of communities in the area, he said.

“Learning and engagement continues and broadens to involve communities in the areas involved, including First Nation and Métis communities,” Dolcetti said. “Collaboration with both specialists and the public was key to the design of Canada’s plan for the long-term management of used nuclear fuel. The work of the NWMO is guided by the values and objectives identified during this process.

“Collaboration with interested communities and Canadians is at the heart of this process,” he said. Public engagement is an ongoing key element of working together. For example, the NWMO has held numerous open houses, information sessions, group and individual conversations with interested people in the potential siting communities and across the country.

"These efforts will continue to grow as the process unfolds," Dolcetti added.

For more information visit the NWMO website.

Three other Northwest communities, Schreiber, Ear Falls and Nipigon, are no longer involved in the site selection process. Rock formations near Ear Falls and Schreiber were deemed unsatisfactory for storing nuclear waste, while Nipigon pulled out because of its push for tourism was at odds with the nuclear waste plan.

Like a proposal to bury nuclear waste near Lake Huron, the Northwest plan does have its objectors.

A local White River citizens group staged a protest earlier against the storage-site proposal.

Proponents "think we should do the noble thing and accept the waste for the good of the country, but I don't want it here," protest organizer Jennifer Jacques said then. "We live up here for a reason. Everyone around traps, or goes hunting and fishing."

White River Mayor Angelo Bazzoni earlier said he "encouraged the community to become involved as we learn together with the NWMO and our neighbours about the potential impacts of the project on our region if it were to be implemented here."

Meanwhile, a new report released this week by Ontario Power Generation, says that relocating a nuclear-waste bunker from its currently proposed site on Lake Huron would cost billions of dollars, take decades to execute, and increase health and environmental risks,.

In May 2015, an environmental review panel approved the project - currently estimated to cost about \$2.4 billion - which would see a bunker built at the Bruce nuclear power plant near Kincardine, Ont. Hundreds of thousands of cubic metres of radioactive waste - now stored at the site above ground - would be buried in bedrock 680 metres deep about 1.2 kilometres from Lake Huron.

The federal government has since delayed making a final decision on the plan, instead asking OPG last February to provide information on locating the repository somewhere else.

Finding another community willing to take the waste - the municipality of Kincardine has been supportive of the project - won't be easy.

"There would be considerable uncertainties associated with a DGR at an alternate location including the time required to develop and implement a consent-based site-selection process and achieve a willing and supportive host community, as well as the consent of indigenous communities," the report states.

The Canadian Environmental Assessment Agency will now review and assess the utility's report, allow time for public comment, and come up with its own recommendations to Environment Minister

Catherine McKenna in the fall. The agency notes the timeline could change if it requires more information.

For its part, however, OPG insists it's time to set aside any criticism and get on with digging the bunker - at the Bruce site.

"Deferring costs to future generations, when a safe, cost-effective option already exists, is not necessarily in the best interests of society," the report states. "OPG therefore concludes that the DGR project at the Bruce nuclear site remains the preferred location."



NWMO Ignace Area Media February 2017



[NWMO Planning A Drilling Program In Ignace Area This Year](#) (CKDR Dryden / February 10, 2017)

Also on: [CJRL Kenora](#), [Know Nuclear Waste](#)

The Nuclear Waste Management Organization says it plans to conduct some more extensive testing in the Ignace area this summer.

Ignace is one of nine locations that have been short-listed for a long-term nuclear waste storage site.

Spokesperson Pat Dolcetti says it's just part of their on-going site selection process.

Dolcetti says prior to the drilling program they will be consulting with area residents and first nation communities to get some feedback about locations being considered for testing.

Program:	News	DATE:	2017-Feb-12 7:00AM	Time:	7:00AM - 8:00AM
Station:	CKDR FM	Network:	Acadia Broadcasting Company Ltd.	City:	Dryden

HEADLINE: NWMO Planning Drilling Work in Ignace Area

CKDR (Caroline Redsten): The Nuclear Waste Management Organization is planning to do some drilling work in the Ignace area this year. It's all part of their ongoing process to find a preferred site for a nuclear waste storage facility. Pat Dolcetti is a spokesperson for the agency, and says they will be doing some consultations before they actually start drilling boreholes.

PAT DOLCETTI (NWMO): Working collaboratively with the local community, people in the area including Aboriginal, Métis communities, to get their input on where they think may or may not be a good site. So we're doing all of that work, and we hope to analyze it all, go back to the people in the area, and say here's what we're thinking, what do you think?

CKDR: Ignace is one location in Ontario under the consideration for the nuclear waste storage facility, but an actual site likely won't be selected for another seven years.

- 30 -

REPORTER: Caroline Redsten	Length: 00:30	Province: Ontario
MEDIA 20170212R-0002	Words: 154	Reach: Local
LOG ID:		

Program: News	DATE: 2017-Feb-12 8:00AM	Time: 8:00AM - 9:00AM
Station: CKDR FM	Network: Acadia Broadcasting Company Ltd.	City: Dryden

HEADLINE: NWMO Planning More Public Consultations in Ignace Area

CKDR (Caroline Redsten): The Nuclear Waste Management Organization says it plans to do some more public consultations in the Ignace area this year. This time, it's surrounding a drilling program as it continues its search for a Nuclear Waste Storage Facility. Spokesperson for the agency, Pat Dolcetti, says they have been talking to residents and the First Nations community about preferred sites.

PAT DOLCETTI (NWMO): If everyone is on the same page, we'll move forward with the permitting application later this year, and drill an initial borehole. Now that's just the first step in better understanding the geology. After we look at the results of those core samples, and we'll make decisions about do we want to continue to do more or those types of things.

CKDR: Dolcetti says Ignace is still one of nine communities in Ontario in the running for the facility, but a final decision isn't expected until at least 2023.

- 30 -

REPORTER: Caroline Redsten	Length: 00:45	Province: Ontario
MEDIA 20170212R-0001	Words: 154	Reach: Local
LOG ID:		

Program: News	DATE: 2017-Feb-12 12:01PM	Time: 12:00PM - 1:00PM
Station: CKDR FM	Network: Acadia Broadcasting Company Ltd.	City: Dryden

HEADLINE: NWMO Planning More Extensive Testing in Ignace Area

CKDR (Caroline Redsten): The Nuclear Waste Management Organization says it plans to conduct some more extensive testing in the Ignace area this summer. Ignace is one of nine locations that have been shortlisted for a long term nuclear waste storage site. Spokesperson Pat Dolcetti says it's just part of their ongoing site selection process.

PAT DOLCETTI (NWMO): In order to better understand the local geology, we need to study core samples. So that means drilling some initial boreholes, and we're currently making plans to do that later in 2017. We are looking at the possible locations.

CKDR: Dolcetti says prior to the drilling program, they'll be consulting with area residents and First Nation communities to get some feedback about locations that are being considered for testing.

REPORTER: Caroline Redsten	Length: 00:30	Province: Ontario
MEDIA 20170212R-0003	Words: 126	Reach: Local
LOG ID:		

[KDMA delegates gather in Machin](#) (*Dryden Observer* / February 8, 2017)

Spread across a landmass the size of Sweden, the communities of the Kenora District share a great many challenges. How to best communicate those issues to audiences at the local, regional and provincial levels was a notable theme at last week's Kenora District Municipal Association (KDMA) meeting, held in Machin, Feb. 2-3.

A panel of media and communications professionals including CBC Radio's Jeff Walters, print media and the public relations field offered insights into the rapidly evolving state of the media, and strategies for interacting and building relationships with journalists.

Friday's packed agenda featured presentations from both the provincial and federal arms of the Ministry of Infrastructure which focused on funding programs.

NOMA president Dave Canfield updated the group on the issues at the forefront for the Northern Ontario Municipal Association: from arguing for a bottom-up approach to decision making in forestry matters; lobbying the Ministry of Finance for more tools in the municipal taxation toolkit to address a wave of new assessment challenges in the commercial sector; resolving deficiencies with inter-city bus travel in the region; provincial land tax reform; further lobbying on behalf on northern communities for natural gas expansion; as well as the forthcoming results of Common Voice Northwest's Energy East consultations.

Ann Aikens and Joe Heil of Nuclear Waste Management Organization (NWMO) provided an update on the past year's activities in the community of Ignace — one of nine locations being examined as a possible site for a deep geological repository for the long-term storage of Canada's high-level nuclear waste. Heil spoke on the NWMO's effort to engage First Nations communities and incorporate traditional knowledge into the site selection process.

Working closer with First Nations was a dominant theme throughout the conference and the delegates gained insights from a panel of guests including Lac Seul Chief Clifford Bull, Meno-Ya-Win Health Centre Co-Chair Barb Hancock and Sioux Lookout Mayor Doug Lawrance who spoke

on the front-line challenges of overcoming barriers to accessing care for First Nations people and bridging the cultural gaps that emerge during the delivery of care.

While KDMA includes nine member communities, its boundaries encompass 55 First Nations reserves and settlements. Thirty-nine per cent of the Kenora District's population self-identifies as Indigenous.

Sioux Lookout delegates also spoke on the Truth and Reconciliation process and their community's plans to act on the T&R report's calls to action for municipalities in 2017.

KDMA received a sobering report from Kenora District Services Board CAO Henry Wall on the skyrocketing demand for social housing in the district as well as promising new funding for the region's three emergency shelters in Kenora, Red Lake and Sioux Lookout.

Other guest speakers included Kenora MP Bob Nault, Medical Officer of Health Dr. Kit Young-Hoon and Kenora District Home for the Aged CAO Kevin Queen.

[Nuke waste decision long way off](#) (Bryan Meadows, *The Chronicle Journal* | January 7, 2017)

Four communities in Northwestern Ontario remain in the hunt for a possible nuclear waste underground repository.

Ignace, White River, Hornpayne and Manitouwadge continue to be involved in the site selection process for a proposed underground nuclear-waste storage facility.

Studies such as geophysical and environmental surveys are currently being conducted in areas surrounding the communities to assess the potential suitability of rock formations to host a deep geological repository for the long-term management of Canada's used nuclear fuel. A number of open houses have also been held to keep residents apprised of developments.

The Nuclear Waste Management Organization is searching for a suitable underground storage site for 50,000 tonnes of spent nuclear fuel bundles - enough to fill six hockey rinks up to the boards. The proposed facility, which would go into service by 2040 at the earliest, is expected to create between 400 and 600 permanent jobs.

Those communities willing to consider having the site on their turf have so far each received \$400,000 for their trouble. Receiving the money from the NWMO doesn't mean the towns must accept a nuclear-waste storage site; they can spend the funds as they see fit for "community projects."

The NWMO has maintained that the project will only move forward with the approval of area communities, First Nations and Métis groups.

Ignace Mayor Lee Kennard said Friday that his community is still involved in the process because "there is still a lot to learn, not only for us but also for the other communities in this process.

"We continue to be involved in field studies and engagement activities as we learn more about this important national infrastructure project and whether or not it may be feasible in the Ignace area," he said, adding that "it will be several years before a potential host area is identified."

The NWMO has indicated they hope to be down to one of the nine communities as the sole focus of study by 2023, Kennard said, and that a facility may be operational between 2040 and 2045.

As for support of the project in the community, Kennard said that “no one is being asked or expected to make decisions at this point.

“It’s simply too early. We are currently involved in learning and research on the suitability of the geology and potential social and economic impacts. We won’t know the results for several years. The Ignace area may never even reach that point,” he said.

The Ignace mayor noted that this is a \$22 billion national infrastructure project. That means it brings significant social and economic impacts to a potential host area.

“An important part of the process is examining these impacts and how they may be managed to be a net benefit to our community and region. It’s not just about finding the right geology. Although,” he said, “without that nothing else would matter as safety is the number one priority.

“Over the last several years, we have held numerous open houses and many other engagement activities. That will continue and expand for as long as we remain in the process. I would encourage people to become involved. Right now, it’s very much about learning together,” Kennard added.

NWMO regional communications manager Pat Dolcetti said that there are currently nine Ontario communities involved in the site selection process.

Four of which are in Northwestern Ontario, while others are Elliot Lake, Blind River, South Bruce, Huron-Kinloss and Central Huron.

“All of these communities are in the preliminary assessment phase,” Dolcetti said, adding that the NWMO is planning to select one the nine as the focus of study by 2023.

He explained that the preliminary assessment phase focuses on studies of the local area geology (such as geological mapping, airborne surveys, initial environmental mapping and planning for core sample studies) and the potential social and economic impacts for the community and surrounding region. The process is conducted collaboratively with the involvement of communities in the area, he said.

“Learning and engagement continues and broadens to involve communities in the areas involved, including First Nation and Métis communities,” Dolcetti said. “Collaboration with both specialists and the public was key to the design of Canada’s plan for the long-term management of used nuclear fuel. The work of the NWMO is guided by the values and objectives identified during this process.

“Collaboration with interested communities and Canadians is at the heart of this process,” he said. Public engagement is an ongoing key element of working together. For example, the NWMO has held numerous open houses, information sessions, group and individual conversations with interested people in the potential siting communities and across the country.

"These efforts will continue to grow as the process unfolds," Dolcetti added.

For more information visit the NWMO website.

Three other Northwest communities, Schreiber, Ear Falls and Nipigon, are no longer involved in the site selection process. Rock formations near Ear Falls and Schreiber were deemed unsatisfactory for storing nuclear waste, while Nipigon pulled out because of its push for tourism was at odds with the nuclear waste plan.

Like a proposal to bury nuclear waste near Lake Huron, the Northwest plan does have its objectors.

A local White River citizens group staged a protest earlier against the storage-site proposal.

Proponents "think we should do the noble thing and accept the waste for the good of the country, but I don't want it here," protest organizer Jennifer Jacques said then. "We live up here for a reason. Everyone around traps, or goes hunting and fishing."

White River Mayor Angelo Bazzoni earlier said he "encouraged the community to become involved as we learn together with the NWMO and our neighbours about the potential impacts of the project on our region if it were to be implemented here."

Meanwhile, a new report released this week by Ontario Power Generation, says that relocating a nuclear-waste bunker from its currently proposed site on Lake Huron would cost billions of dollars, take decades to execute, and increase health and environmental risks,.

In May 2015, an environmental review panel approved the project - currently estimated to cost about \$2.4 billion - which would see a bunker built at the Bruce nuclear power plant near Kincardine, Ont. Hundreds of thousands of cubic metres of radioactive waste - now stored at the site above ground - would be buried in bedrock 680 metres deep about 1.2 kilometres from Lake Huron.

The federal government has since delayed making a final decision on the plan, instead asking OPG last February to provide information on locating the repository somewhere else.

Finding another community willing to take the waste - the municipality of Kincardine has been supportive of the project - won't be easy.

"There would be considerable uncertainties associated with a DGR at an alternate location including the time required to develop and implement a consent-based site-selection process and achieve a willing and supportive host community, as well as the consent of indigenous communities," the report states.

The Canadian Environmental Assessment Agency will now review and assess the utility's report, allow time for public comment, and come up with its own recommendations to Environment Minister

Catherine McKenna in the fall. The agency notes the timeline could change if it requires more information.

For its part, however, OPG insists it's time to set aside any criticism and get on with digging the bunker - at the Bruce site.

"Deferring costs to future generations, when a safe, cost-effective option already exists, is not necessarily in the best interests of society," the report states. "OPG therefore concludes that the DGR project at the Bruce nuclear site remains the preferred location."

Appendix D: Chronological Order of Engagement Activities in Ignace

Activity	Date
Stage 1: Initial and Preliminary Borehole Drilling Engagement	
Discussions on detailed geological mapping.	Fall 2015, Spring and Summer of 2016
July ICNLC Meeting, NWMO gave specific information on the plans to complete borehole drilling in the Ignace area. PowerPoint Presentation and borehole drilling pamphlet provided.	July 12, 2016
Pamphlet provided to people visiting NWMO booth at AMO conference. Meeting with Mayor and CAO of Sioux Lookout at AMO conference.	August 14-16
Regional residents informed at NWMO booth at Dryden Fall fair. Reached out to leadership in Dryden and provided information pamphlet.	August 25-28, 2016
Discussion with the Mayor of Dryden and CAO.	August 26, 2016
September ICNLC. Explanation of the borehole drilling maps and PowerPoint presentation.	September 27, 2016.
Discussions with 13 local business: <ul style="list-style-type: none"> • Bragg's • LCBO • Northwoods Motor Inn • Tempo Restaurant • Petro Canada • Westwood Motel • Robins Express • White Otter Inn • Vern's Minnows • Subway • Mary Berglund Community Health Centre Hub • Shoprite • Nexus Credit Union • Ignace Post Office 	From October 17 to 18, 2016
Community Harvest Dinner, copies of open house ads distributed, NWMO booth set up.	October 18, 2016

Activity	Date
Ignace Area Business Association, copies of the map distributed, pamphlet, and procurement RFP provided.	October 20, 2016
Borehole mapping information presented and informal discussions with local property owners and / or their agents: <ul style="list-style-type: none"> • Dan and Ann Burkholder (Cozy Camp Resort) • Rick Hansing (Breezy Point Camp) • Diana Baril (Private Camp, Robinson Lake) • Agent for David and Gayle Kadlec (Raven Lake Resort/Selwyn Lake Outfitters) 	October 21, 2016
Stage 2: First Round of Open Houses to Discuss Borehole Drilling Potential Sites	
ICNLC meeting. Mapping exercise completed.	October 25, 2016
Meeting with Red Hat Ladies.	October 26, 2016.
Ignace open house round 1 (Ignace).	October 26 and 27, 2016
Learn More tour attended by participants from Wabigoon Village and Ignace. Review of map.	November 15, 2016.
Additional email comments provided post open house by John Saunders, Cindy Layton, Kilowatt Lederer, Bob O'Donohue, Kim Ste. Croix, and Ron Legault.	November 21-29, 2016 comment sent, December 7, 2016, NWMO response.
Provided invitation and PowerPoint to the Mitton family.	November 2016
Additional email comments provided post open house by Cindy Layton (Hepp family). Originally sent PowerPoint presentation from October ICNLC and map.	November 21, 2016 comment sent, November 22, 2016, NWMO response.
Municipal Staff Lunch and Learn at the Township of Ignace (includes staff from Northern Water Works). Copy of maps provided to each participant.	November 29, 2016
November ICNLC meeting. Follow up on borehole drilling.	November 30, 2016
Badminton Club breakfast. Discussion on borehole drilling and copy of map provided.	November 30, 2016

Activity	Date
Ignace Council Meeting, map of borehole provided and PowerPoint presentation.	November 30, 2016
Teleconference with Mayor of Dryden and CAO. Reiterated borehole discussion.	December 1, 2016
Seniors Lunch. Provided maps to participant and discussion on borehole drilling.	December 1, 2016
Mary Berglund Health Centre Board Dinner. PowerPoint presentation and map provided.	December 1, 2016
Mayor of Dryden came to Learn More Centre took maps and pamphlet. Took additional copies.	December 2, 2016
Stage 3: Second Round of Open Houses to Discuss Initial Borehole Drilling Location	
Provided project update to: <ul style="list-style-type: none"> • Craig Nutall, former Mayor of Dryden • Dave Canfield, Mayor of Kenora 	January 20, 2017
ROMA Conference in Toronto. Attendees included Mayor Lawrence and CAO Ann Mitchell, Sioux Lookout. Update provided of NWMO activities and invitation to Learn More Tour May 10 th .	January 20, 2017
ICNLC Meeting. General findings from the October open house were presented.	January 31, 2017
Provided project update to Dennis and Jackie Smyk, Ignace Northwoods.	February 1, 2017
Delivered presentation to Kenora District Municipal Association. Participants included Mayor Wilson (Dryden), Mayor Canfield (Kenora), Mayor Drew Myers (Machin), Councillor Louis Roussin (Kenora), Mayor Karl Hopf (Pickle Lake), Mayor Kahoot (Ear Falls), Mayor Gerry O'Leary (Sioux Narrows and Nestor Falls), Mayor Lawrence (Sioux Lookout), Councillor Joyce Timpson (Sioux Lookout), Councillor Yolaine Kirlaw (Sioux Lookout), CAO Ann Mitchell (Sioux Lookout), Councillor Jim Desmarais (Ear Falls), CAL Kimberly Balance (Ear Falls), Councillor Tracy Simon (Ear Falls), Grace Protopapas (MP Bob Nault's Constituency Assistant – Kenora).	February 2-3, 2017

Activity	Date
Meeting with MP Bob Nault (Kenora).	February 9, 2017
Introduction of initial borehole site at Learn More Centre.	February 16, 2017
Participation in snowmobile club activity.	February 18, 2017
Participation at Family Day Skate event.	February 20, 2017
ICNLC Meeting. Presentation on the initial borehole drilling site.	February 28, 2017
Open houses round 2 (Ignace and Wabigoon Village).	March 1 and 2, 2017
Discussion with Ignace men's hockey team.	March 2, 2017
<p>Discussion of initial borehole location with residents and a copy of the map provided to the following individuals:</p> <ul style="list-style-type: none"> • Cindy Layton • Jessie and Rod Mitton 	March 8, 2017
<p>Letter issued to Mr. Saunders and Ms. Derouin in response to comments provided to NWMO on their land holdings regarding the potential borehole sites. Brochure and copy of map provided.</p>	<p>March 7, 2017, comment sent. March 9, 2017, NWMO response. Face to face meeting arranged for April 11, 2017</p>
<p>Ignace School Career Fair – NWMO attendance. Brochures, maps and comment forms distributed.</p>	March 23, 2017
<p>NWMO contacted trapper Erik Treftlin via telephone and follow up email with maps on the borehole location.</p>	March 23, 2017
<p>NWMO contacted Domtar (Niall Scarr) via telephone and follow up email with maps on the borehole location.</p>	March 23, 2017. Face to face meeting arranged for April 12, 2017
<p>NWMO contacted wood harvester, Louie Ricci (Raleigh Falls Timber) via telephone on March 28, 2017. Followed up with maps and brochure on March 29, 2017.</p>	March 28 – 29, 2017
<p>Local Services Board of Melgund (unincorporated areas of Borups Corners and Dyment) – NWMO held an information meeting at Dyment</p>	April 1, 2017

Activity	Date
Community Hall. Monthly public drop-in information sessions as requested will continue.	
MPP Sarah Campbell briefing.	April 6, 2017
NWMO met with MNRF Local Citizen Advisory Committee to provide an update. Follow-up from introduction in December 2015 and the meeting NWMO had in March 2016.	April 11, 2017
Follow up meeting with trapper Erik Treftlin.	April 12, 2017
NWMO attended the Northwest Response Forum in Dryden.	April 11-15, 2017

APPENDIX E: ICNLC Meeting Agendas

APPENDIX E: ICNLC Meeting Agendas



AGENDA

The Corporation of the Township of Ignace
Ignace Community Nuclear Liaison Committee

Tuesday, July 12, 2016

At 7:00 p.m. at the Learn More Centre
304 Main St., Ignace Town Plaza, Ignace, ON



- 1) Call to Order
- 2) Adopt Agenda
- 3) Declaration of Conflict of Interest
- 4) Approval of Previous Minutes
 - a) June 14, 2016
- 5) Business Arising from Minutes
 - a) Projector Stand
- 6) Old Business
 - a) Youth Representation on Committee
- 7) New Business
 - a) Statement of Revenue & Expenses – June 30, 2016
- 8) NWMO Updates
 - a) Bore Hole Framework – Dr. Ben Belfadhel
 - b) Environment Work – Joanne Jacyk
 - c) Centre of Excellence – Tomasz Wlodarczyk
 - d) Dryden Fall Fair – Ann Aikens
- 9) Correspondence & Information Articles
 - a) Thank You from Ignace School
 - b) Northwatch
- 10) Other
 - a) None
- 11) Adjournment



AGENDA

The Corporation of the Township of Ignace
Ignace Community Nuclear Liaison Committee
Tuesday, September 27, 2016
At 7:00 p.m. at the NWMO/ICNLC Office
304 Main St., Ignace Town Plaza, Ignace, ON



- 1) Call to Order
- 2) Adopt Agenda
- 3) Declaration of Conflict of Interest
- 4) Approval of Previous Minutes
 - a) July 12, 2016 - Motion
- 5) Business Arising from Minutes
 - a) None
- 6) Old Business
 - a) Canadian Nuclear Society International Conference – Ottawa, September 11-14/16
 - b) Communications Workshop – Saturday, October 15th, 2016
- 7) New Business
 - a) Statements of ICNLC Statement of Revenue & Expenses dated July 31st, 2016 and August 31st, 2016 presented for information
 - b) Final Reports from 2016 Summer Students
 - c) Canadian Nuclear Safety Commission – Presentation to ICNLC and/or Community
- 8) NWMO
 - a) Potential Geologically Suitable Areas Based on Early Phase 2 Studies - Initial discussion/next steps - Ben Belfadhel, Jo-Ann Facella
 - b) Aboriginal Cultural Awareness - Joe Heil
 - c) Community Well Being - Dave Hardy
 - d) Open House/Engagement update - Ann Aikens/Rachelle Davenport
- 9) Correspondence & Information Articles
 - a) none
- 10) Other
 - a) none
- 11) Adjournment



AGENDA

The Corporation of the Township of Ignace
Ignace Community Nuclear Liaison Committee
Tuesday, October 25, 2016
At 7:00 p.m. at the Learn More Centre
304 Main St., Ignace Town Plaza, Ignace, ON



- 1) Call to Order
- 2) Adopt Agenda - MOTION
- 3) Declaration of Conflict of Interest
- 4) Approval of Previous Minutes
 - a) September 27, 2016 - MOTION
- 5) Business Arising from Minutes
 - a) None
- 6) Old Business
 - a) Communications Workshop, Sat., Oct. 15/16 8:00 am to noon – Report from participants
- 7) New Business
 - a) Statement of Revenue & Expenditures – September 30, 2016 – for information
 - b) iPads for committee members – discussion - MOTION
- 8) Correspondence & Information Articles
 - a) None
- 9) Other
 - a) None
- 10) NWMO Updates
 - a) Potential Geologically Suitable Areas Based on Early Phase 2 Studies – Facilitated Discussion
- 11) Adjournment



AGENDA

The Corporation of the Township of Ignace
Ignace Community Nuclear Liaison Committee
Tuesday, January 31, 2017
At 6:00 p.m. at the Learn More Centre
304 Main St., Ignace Town Plaza, Ignace, ON



- 1) Call to Order
Welcome to: Austin Thompson, ICNLC Youth Rep and Ursula Chief, alternate for Danine Chief
- 2) Adopt Agenda - **MOTION**
- 3) Declaration of Conflict of Interest
- 4) DEPUTATION: Doug Pronger
- 5) Nomination and election of ICNLC:
 - a) Chair
 - b) Vice-Chair
- 6) Approval of Previous Minutes
 - a) October 25, 2016 - **MOTION**
 - b) November 29, 2016 – **MOTION**
 - c) December 19, 2016 - **MOTION**
- 7) Business Arising from Minutes
 - a) ICNLC Meetings and dates and time for 2017 – **MOTION**
 - b) Recruitment of Committee members – Letter from Kim Ste. Croix
 - c) CNA Conference & Trade Show – Recommendation #2017-0131-1 - **MOTION**
- 8) Old Business
 - a) Terms of Reference – Recommendation #2017-0131-2 - **MOTION**
 - b) iPad Update
- 9) New Business
 - a) Statement of Revenue & Expenses – November 30th and December 31st presented for information
 - b) 2017 Budget – Recommendation #2017-0131-3 - **MOTION**
 - c) Appointment of alternates for Nicole Gail
- 10) NWMO Updates
 - a) Update on Technical Studies - Dr. Mahrez Ben Belfadhel
 - b) Other – Ann Aikens
 - c) **Aboriginal Liaison - Joe Heil (Addition)**

11) Correspondence & Information Articles

- a) Emails from Northwatch courtesy of Lee Kennard
- b) Panel approves underground nuclear waste facility near Lake Huron

12) Other

- a) Communications practice/lesson
 - Lee Kennard/Pat Dolcetti/Brian Meadows, Chronicle Journal
- b) Family Day Skate sponsorship – **MOTION (Addition)**

13) Adjournment



AGENDA

The Corporation of the Township of Ignace
Ignace Community Nuclear Liaison Committee

February 28, 2017

At 6:00 p.m. at the Learn More Centre
304 Main St., Ignace Town Plaza, Ignace, ON



- 1) Call to Order
- 2) Adopt Agenda
- 3) Declaration of Conflict of Interest
- 4) Approval of Previous Minutes
 - a) Approval of January 31, 2017 minutes - MOTION
- 5) Business Arising from Minutes
 - a) Training for iPad use
- 6) Old Business
 - a) None
- 7) New Business
 - a) Statement of Revenue & Expenditures to January 31, 2017
 - b) Nuclear 101 – Ottawa May 1 & 2, 2017 - MOTION
 - c) Canadian Nuclear Safety Commission (CNSC) – Open House – MOTION
 - d) Summer Students for 2017 - MOTION
- 8) NWMO Updates
 - a) Initial Borehole Location – Alex Blyth
 - b) Environmental Observations - Joanne Jacyk
 - c) Open House/Open Office Discussion - Ann Aikens
 - d) Communications Update – Pat Dolcetti
 - e) Other
- 9) Correspondence & Information Articles
 - a) None
- 10) Communications Practice/Lesson
 - a) Media Interviews – Keeping on Message - discussion
- 11) Other
 - a) None
- 12) Adjournment

Appendix F: NWMO Follow Up Activities

The following activities will be undertaken by the NWMO in 2017.

Planned Activity	Date
Ongoing monthly public drop-in information sessions Village of Wabigoon.	April onwards
Ongoing monthly public drop-in information sessions Melgund (unincorporated areas of Borups Corners and Dymont).	April onwards
Two learn more tours: one for senior high school students from Ignace; one for community leaders from Dryden, Sioux Lookout, Pickle Lake and Ignace	May 9 - 11
NWMO will hold an open house in Ignace to follow up with seasonal residents.	July 22-24, 2017
NWMO will participate at Dryden Fall Fair.	August 24-26, 2017

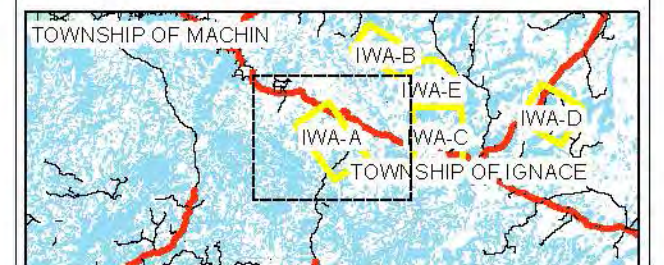
Appendix E - Environmental characterization desktop work completed to date in the Revell withdrawal area

NWMO Ignace APM Phase II

Land Use Map Ignace Withdrawal Areas **IWA-A**

Legend

- | | |
|--------------------------------|------------------------------|
| Ignace Withdrawal Area | Access Point |
| TransCanada Highway | Boat Cache, Commercial |
| Local Road | Boat Cache, Private |
| Other Road | Boat Cache, Resource Harvest |
| Rail Line | Designated Camping Site |
| Utility Line | Aerodrome - Abandoned |
| Trail Segment | Dump/Landfill - Operating |
| Watercourses | Main Base Lodge |
| Waterbodies | Outpost Camp |
| Ecodistrict | Building |
| Trapline Licence Area - In Use | Tower |
| Township | Groundwater Well |
| Patent Land | |
| Conservation Reserve | |
| Harvested Forest (since 2007) | |
| Research Plot | |
| Aggregate Site (non-MTO) | |
| Aggregate Site (MTO) | |



MAP: B-1A
PROJECT: 165010
DATE: 30/11/2016

SCALE: 1:100,000
Datum: NAD83
Projection: UTM Zone 15N



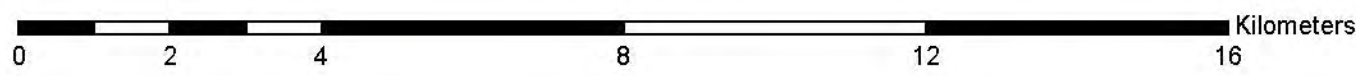
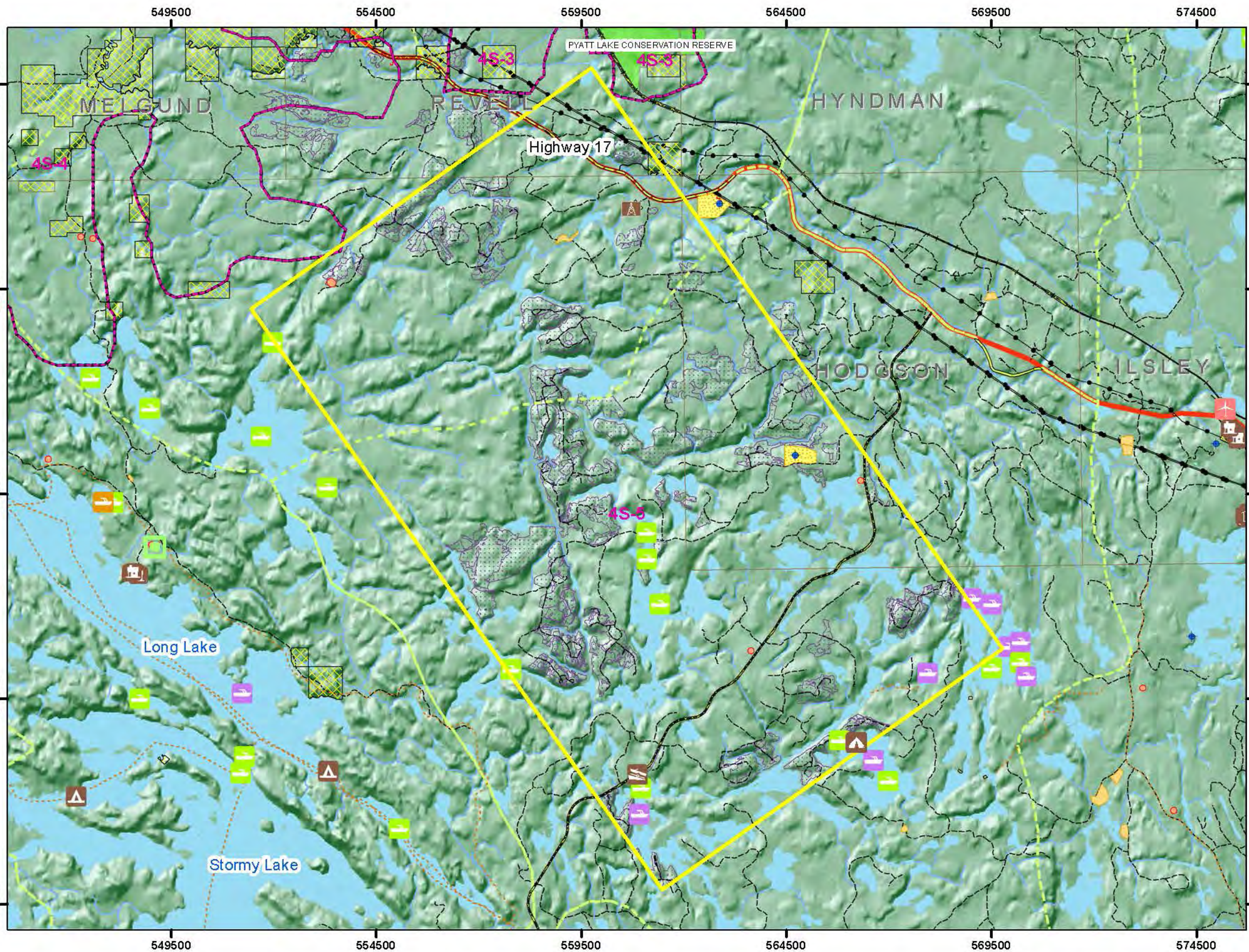
Data Provided by Land Information Ontario:
MNR Road Network, Utility Line, ORWN Track, Trail Segment, OTN Trailhead, Ecodistrict, Geographic Township Improved, Municipal Boundary - Lower and Single Tier, Research Plot, Aggregate Site Authorized Active, MTO Aggregates, Trapline, Recreation Point, Tourism Establishment Area, Airport - Official, Airport-Other, Fishing Access Point, Petroleum Well, Waste Management Site, Waste Management Attenuation Zone, Patent Land External, Federal Protected Area, Crown Game Preserve, Provincial Park Regulated Area, Conservation Reserve, ANSI, Natural Heritage Area, Significant Ecological Area, N.O. Nature Reserve, Municipal Park, Evaluated Wetlands. Updated January 2015 through June 2016.

Data Provided by Natural Resources Canada (GeoGratis):
CDEM Hillshade (Ignace Region), CANVEC Aggregate, Building, Dam, Leisure Area, Oil & Gas Site, Pipeline, Power Line, Residential Area, Ritual Cultural Area, Tank, Tower, Transformer Station, Valve, Waste. Retrieved July 2016.

Data Provided by the Ontario Ministry of the Environment and Climate Change:
Water Well Information System well locations. Last updated June 2015.

Data Provided by Sustainable Forest License (SFL) Holders:
Silvicultural data for harvests from 2007 to 2016 obtained for the English River Forest (Resolute Forest Products), Wabigoon Forest (Domtar) and Dryden Forest (Hyden Forest Management Company)

Data Provided by Tulloch Engineering:
Data obtained from field verification exercises performed in September 2016 have been incorporated in this map.




















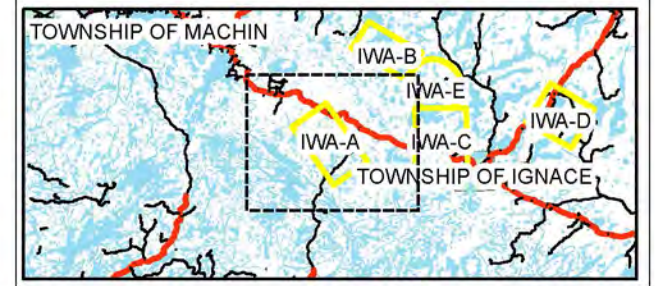
Project Located At: J:\2016 Projects\165010 - NWMO - Ignace5_Maps\3-1-1 Natural Features Maps
Spatial Data Stored in: GIS Warehouse external drive pathed as W:
Author: Kelly Major

NWMO Ignace APM Phase II

Wildlife Habitat
Ignace Withdrawal Areas **IWA-A**

Legend

-  Ignace Withdrawal Area
-  TransCanada Highway
-  Local Road
-  Resource / Recreation Road
-  Rail Line
-  Utility Line
-  Watercourse
-  Waterbody (Unknown Regime)
-  Waterbody (Cold Regime)
-  Waterbody (Cool Regime)
-  ELC Wetland
-  Moose Aquatic Feeding Area (Not Significant)
-  Moose Aquatic Feeding Area (Significant)
-  Trumpeter Swan Nesting Site
-  Tundra Swan Nesting Site
-  Unidentified Hawk/Owl Nest
- Rare Vegetation Candidates**
-  Rare Primary Ecosite

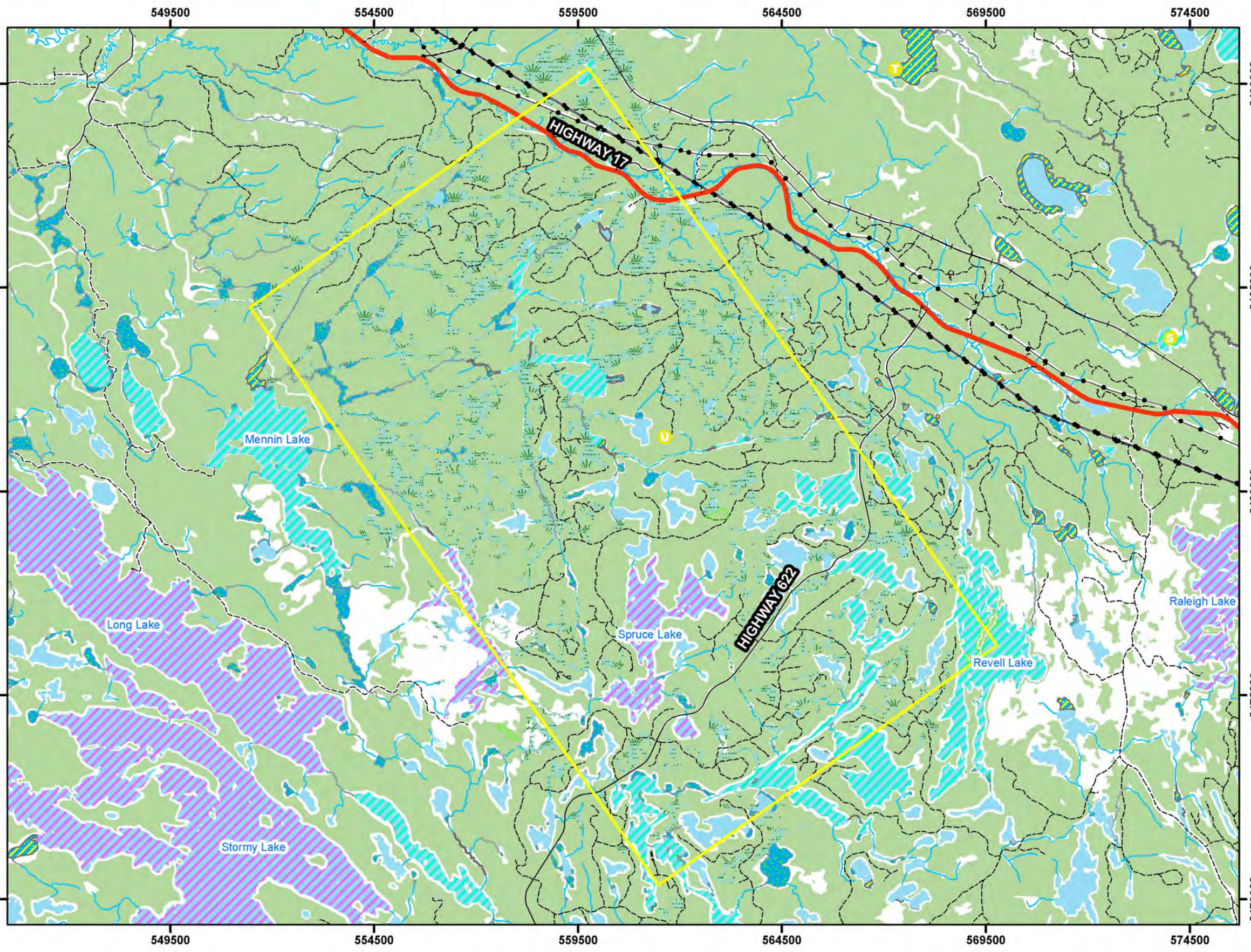


MAP: B-4A
PROJECT: 165010
DATE: 30/11/2016

SCALE: 1:100,000
Datum: NAD83
Projection: UTM Zone 15N

Data Provided by Land Information Ontario:
MNR Road Segment, Utility Line, ORWM Tracks, OHN
Waterbody, OHN Watercourse, Wetland
(Ecoregions 3S, 4S, 7 SS), Wooded Area, Nesting
Site, Breeding Area, Calving and Fawning Area,
Nursery Area Wildlife, Den Site, Feeding Area
Wildlife, Resting Area, Staging Area Wildlife,
Wintering Area, Travel Corridor Wildlife, Aquatic
Feeding Area, Spawning Area, Nursery Area Fish,
Feeding Area Fish, Staging Area Fish, Travel
Corridor Fish.

Data Provided by Tulloch Engineering:
Data obtained from field verification exercises
performed in September 2016 have been incorporated
into this map.



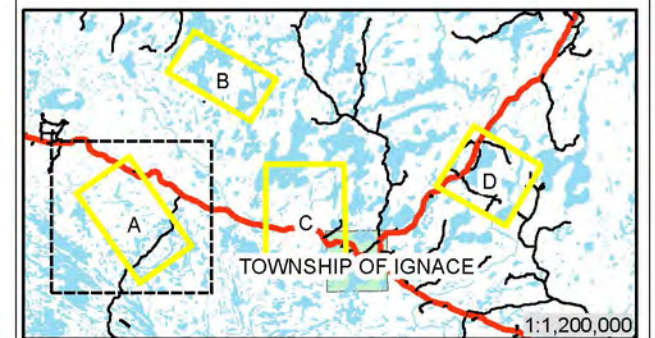
Project Located At: J:\2016 Projects\165010 - NWMO - Ignace\5_Maps\3-1-1 Natural Features Maps
Spatial Data Stored in: GIS Warehouse external drive pathed as W:
Author: Kelly Major

NWMO Ignace APM Phase II

Withdrawal Area A
NHIC Element Occurrences

Legend

-  Ignace Withdrawal Area
-  TransCanada Highway
-  Local Road
-  Resource / Recreation Road
-  Rail Line
-  Utility Line
-  Watercourse
-  Waterbody
-  Vasey's Rush (RA)
-  Macoun's Arctic Butterfly (RA)

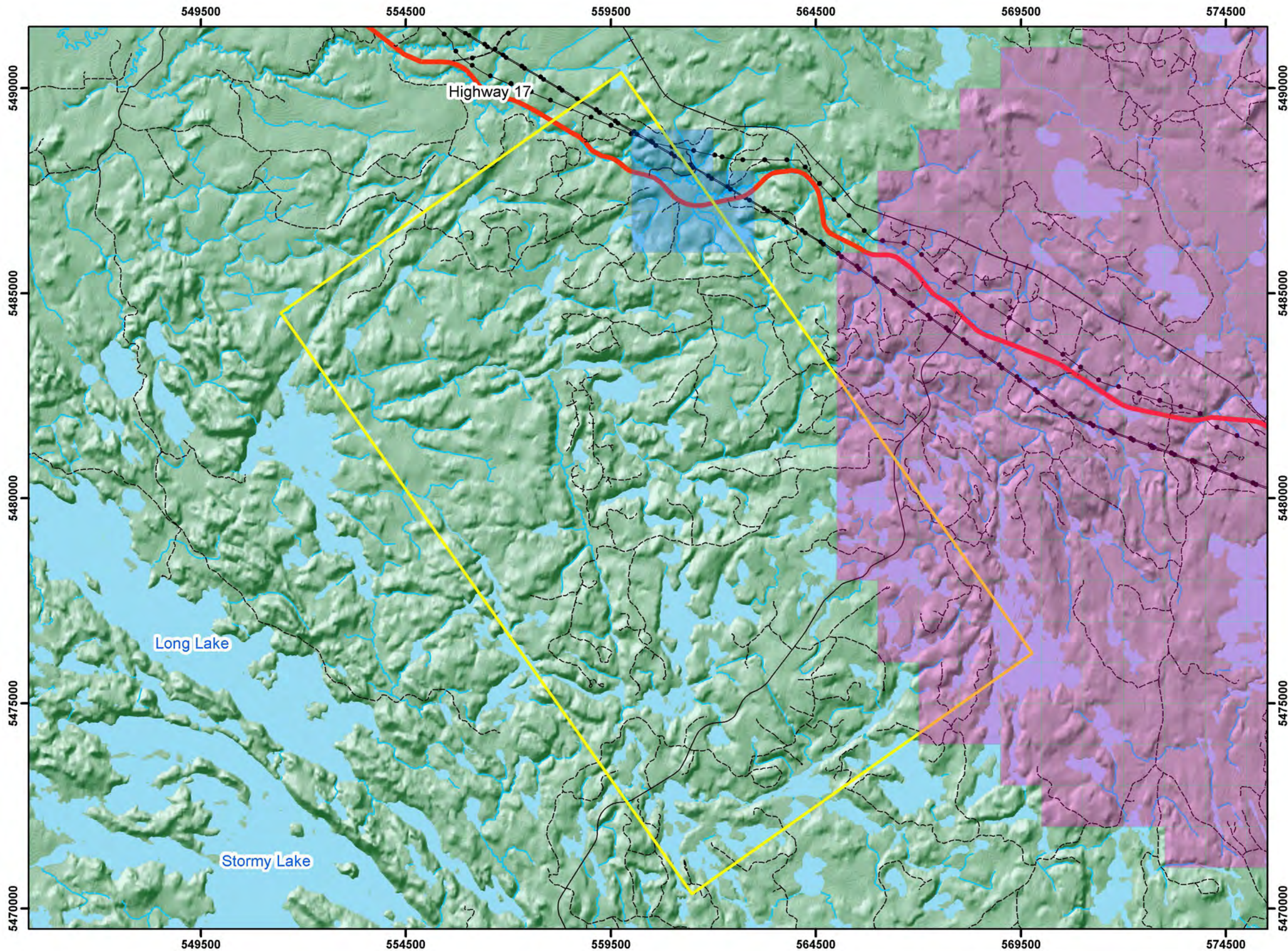


MAP: B-5A
PROJECT: 165010
DATE: 05/08/2016

Data Provided by Land Information Ontario:
MNN Road Segments, Utility Line, ORWM Tracks,
OHN

Data Provided by the Natural Heritage
Information Centre:
Observational and element occurrence
records for provincially tracked species.
Data generalized to 1km grid.

SCALE: 1:100,000
Datum: NAD83
Projection: UTM Zone 15N



Project Located At: J:\2016 Projects\165010 - NWMO - Ignace\5_Maps\3-1-1 Natural Features Maps
Spatial Data Stored in: GIS Warehouse external drive pathed as W:
Author: Kelly Major








NWMO Ignace APM Phase II

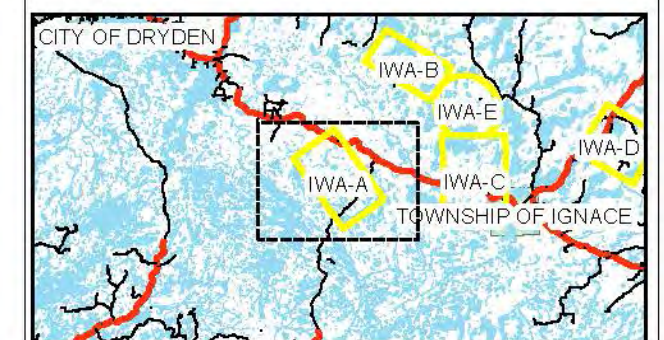
Withdrawal Areas
Stream Reach Classification **IWA-A**

Legend

-  Ignace Withdrawal Area
-  Highway
-  Local Road
-  Rail Line
-  Utility Line
-  Waterbody (Unknown Regime)
-  Waterbody (Cold Regime)
-  Waterbody (Cool Regime)

Stream Reach Class

-  H1
-  H2
-  O
-  U
-  Wf
-  Wm
-  Ws

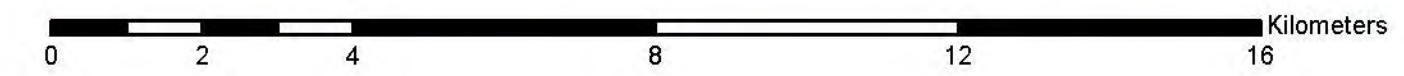
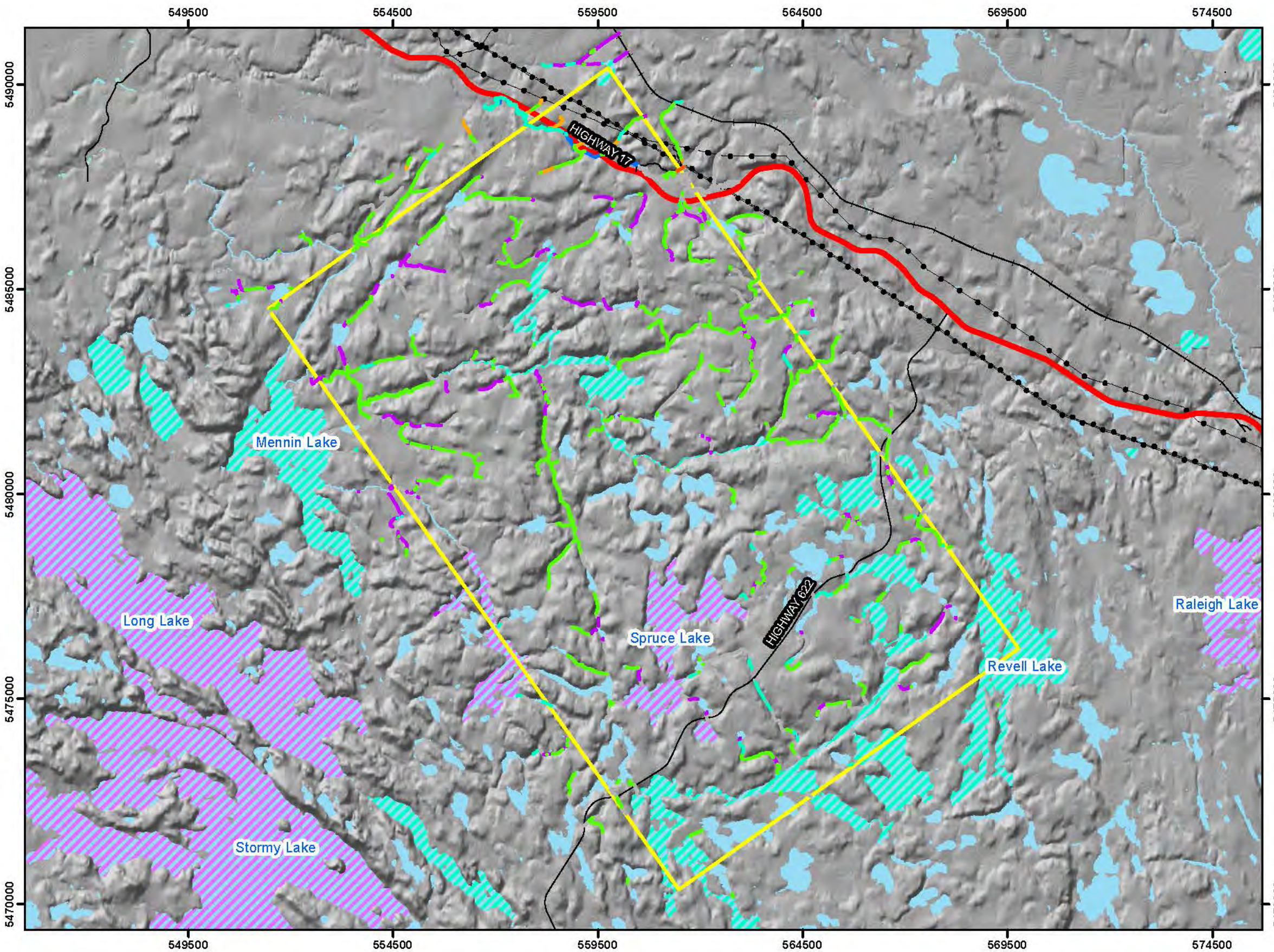


MAP: C- IWA-A
PROJECT: 165010
DATE: 05/12/2016

Data Provided by Land Information Ontario:
MNR Road Segments, Utility Line, DRWN Track, OHN
Watercourse, OHN Waterbody, OHN Watercourse,
Watershed. Updated January 2015 through June
2016.

SCALE: 1:100,000
Datum: NAD83
Projection: UTM Zone 15N

Data Provided by the Natural Resources
Canada (GeoGratis):
CDEM Hillshaded (Ignace Region). Retrieved July
2016.



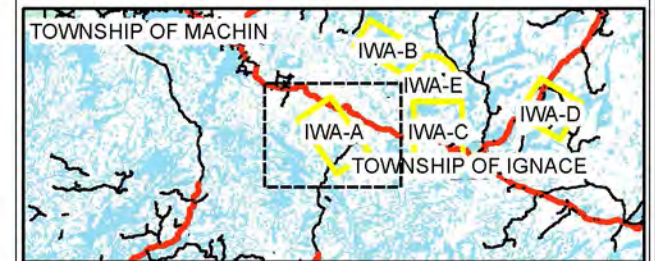
J:\2016 Projects\165010 - NWMO - Ignace\5_Maps\3-1-3 Stream Reach Assessment
Spatial Data Stored in: GIS Warehouse external drive pathed as W: and on Tulloch Sudbury Server pathed as J:
Author: Kelly Major

NWMO Ignace APM Phase II

Sensitivity Buffers & Field Plots Ignace Withdrawal Areas **IWA-A**

Legend

-  Ignace Withdrawal Area
-  Field Verification Area
-  TransCanada Highway
-  Local Road
-  Resource / Recreation Road
-  Rail Line
-  Utility Line
-  Watercourse
-  Waterbody
-  Waterbody (30m)
-  Watercourses (30m)
-  Wetland >2ha (120m)
-  SWH Candidate Rare Primary Ecosite
-  SWH Moose Aquatic Feeding (upland 120m)
-  Moose Aquatic Feeding Area (Not Significant)
-  Moose Aquatic Feeding Area (Significant)
-  Nesting Sites (Various)
-  NHIC Macoun's Arctic Butterfly (RA)
-  NHIC Vasey's Rush (RA)

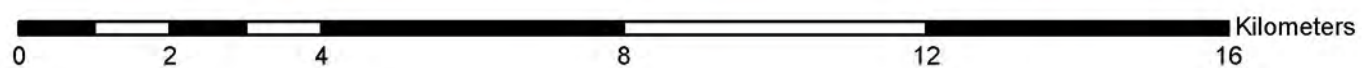
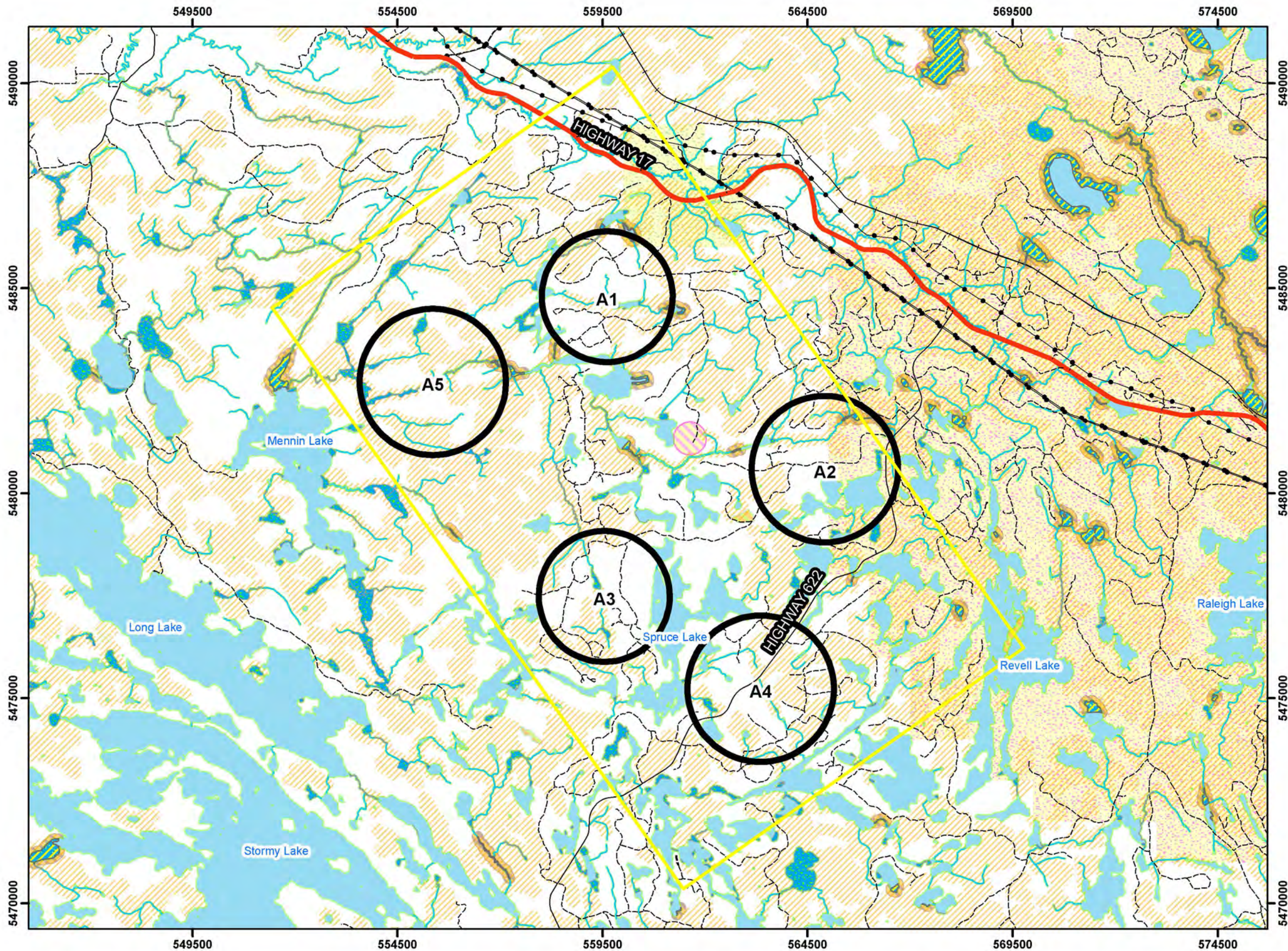


MAP: E2-A
PROJECT: 165010
DATE: 30/11/2016

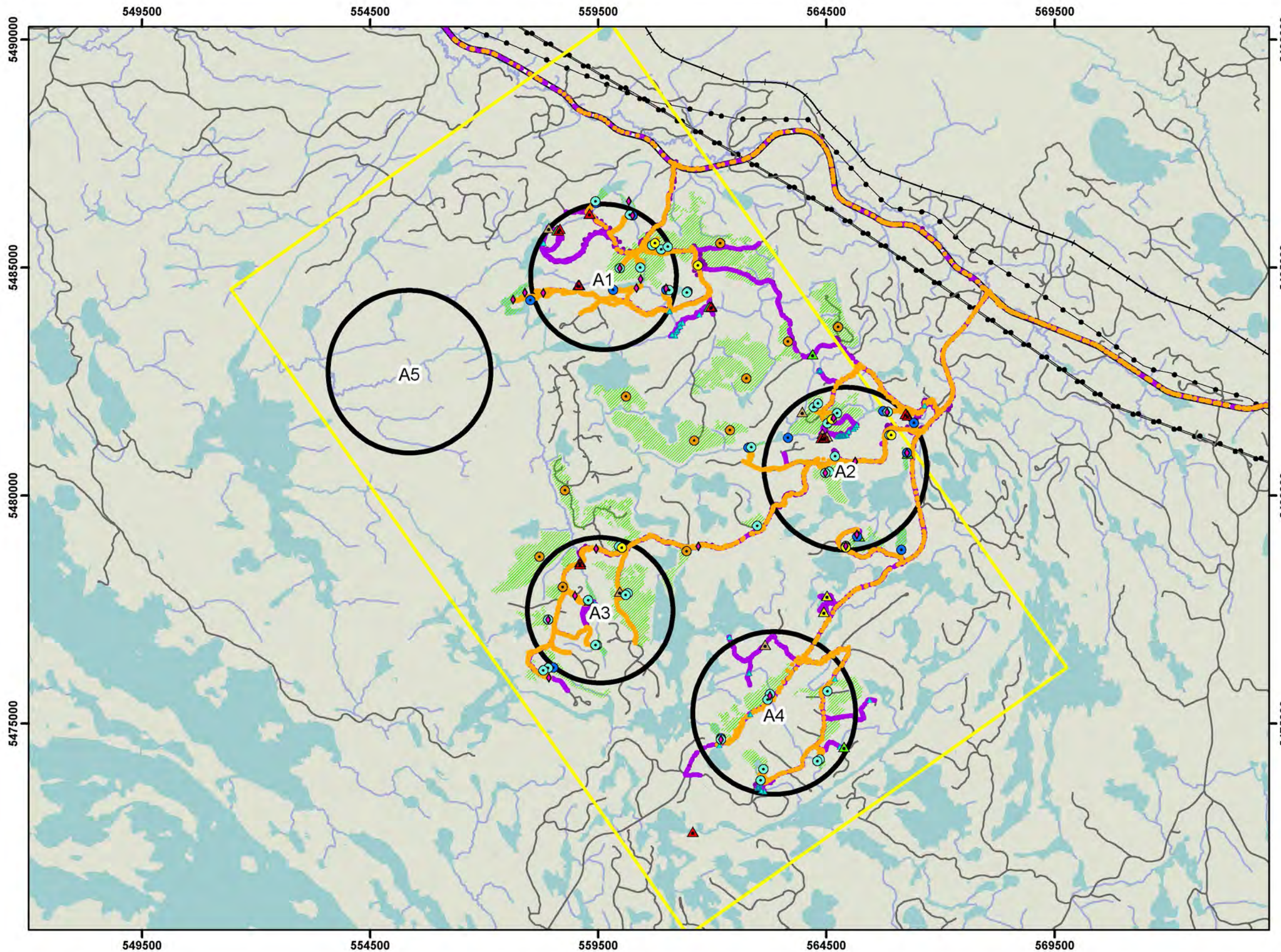
SCALE: 1:100,000
Datum: NAD83
Projection: UTM Zone 15N

Data Provided by Land Information Ontario:
MNR Road Segments, Utility Line, ORWM Tracks, OHN Waterbody, OHN Watercourse, Wetland (Ecoregions 3S, 4S, 7, 5S), Wooded Area, Nesting Site, Breeding Area, Calving and Fawning Area, Nursery Area Wildlife, Den Site, Feeding Area Wildlife, Resting Area, Staging Area Wildlife, Wintering Area, Travel Corridor Wildlife, Aquatic Feeding Area, Spawning Area, Nursery Area Fish, Feeding Area Fish, Staging Area Fish, Travel Corridor Fish.

Data Provided by Tulloch Engineering:
Data obtained from field verification exercises performed in September 2016 have been incorporated into this map.



Project Located At: J:\2016 Projects\165010 - NWMO - Ignace\5_Maps\3-1-1 Natural Features Maps
Spatial Data Stored in: GIS Warehouse external drive pathed as W:
Author: Kelly Major



NWMO Ignace APM Phase II

Ignace Withdrawal Areas Field Verification Effort Map **IWA-A**

Legend

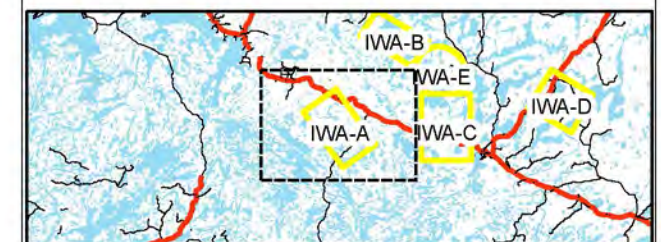
- Ignace Withdrawal Area
- Technote 1 Plots
- Expressway / Highway
- Local Road; Resource / Recreation; Winter
- Rail Line
- Utility Line
- Waterbody
- Watercourse

Terrestrial Assessment Points

- Ecological Land Classification
- Moose Aquatic Feeding Area
- SFL Forestry Data (on-site)
- SFL Forestry Data (aerial interp.)
- Incidental Wildlife Observation
- Terrestrial Biologist (Tracks)
- Field Verified Polygons (FVP)

Aquatic Assessment Points

- Electro Fishing
- Gill Net
- Minnow Trap
- Water Quality
- Habitat Assessment
- Aquatic Biologist (Tracks)



MAP: F-A
PROJECT: 165010
DATE: 02/12/2016

Data Provided by Land Information Ontario:
MNR Road Segments, Utility Line, ORWN Track, OHN Watercourse, OHN Waterbody. Updated January 2015 through June 2016.

Data Provided by Tulloch Engineering:
September 2016 field verification data: Terrestrial Assessment Points, Aquatic Assessment Points, Field Verified Polygons, Terrestrial Biologist Tracks, Aquatic Biologist Tracks, Incidental Wildlife Observations.

SCALE: 1:90,000
Datum: NAD83
Projection: UTM Zone 15N

