Annex V

Archaeological Assessments

Contents

1. Stage 1 Archaeological Impact Assessment of Proposed Vermilion River, Wabageshik Hydroelectric Project, FIT-G0BZK, Township of Foster, District of Sudbury- *Woodland Heritage Services Limited*
2. Stage 2 Archaeological and Cultural Heritage Resource Assessment of a Proposed Hydro Development on the Vermilion River, Foster Township, Sudbury District, Ontario FIT-G0BZK- *Woodland Heritage Services Limited*
3. Review and Entry into the Ontario Public Register of Archaeological Reports: Stage 2 Archaeological and Cultural Heritage Resource Assessment of a Proposed Hydro Development on the Vermilion River, Foster Township, Sudbury District, Ontario FIT-G0BZK. Report dated July 31, 2012, received by MTCS Toronto office December 19, 2012 (filed January 10, 2013). MTCS Project Information Number P065-157-2011 (P065-138-2010) MTCS RIMS HD00603- *Ministry of Tourism, Culture and Sport*
4. Wabagishik- Monitoring Commitment Letter- *Xeneca Power Development*
5. Belmer Site, CbHj-1 and the proposed Wabageshik Hydroelectic Project- *Woodland Heritage Services Ltd.*
6. Original Report- Stage 1 Archaeological Assessment of Proposed Wabageshik Hydro Project Transmission Lines and roads FIT-G0BZK- *Woodland Heritage Services Ltd.*
7. Supplemental Documentation- Stage 1 Archaeological Assessment of Proposed Wabageshik Hydro Project Transmission Lines and roads FIT-G0BZK- *Woodland Heritage Services Ltd.*

N.B. Maps and text highlighting the location of the 'Belmer site' were redacted from public documentation, in accordance with the guidelines of the Ministry of Tourism, Culture and Sport with respect to archaeological discoveries.

SUMMARY REPORT
Stage 1 Archaeological Impact Assessment of Proposed Vermillion River, Wabageshik Hydroelectric Project, FIT-G0BZK, Township of Foster, District of Sudbury

Report Author:
Luke Dalla Bona
Woodland Heritage Services Limited
69 Lansdowne Ave
Sault Ste. Marie ON P6B 1K5
Telephone: 705-256-5418
Fax: 705-256-7254
E-Mail: luke@woodlandheritage.com

Province of Ontario, Licence to Conduct Consulting Archaeology
PO65-2010 (Woodland Heritage Services Limited)

Project Information:
Vermillion River - Wabageshik
Township of Foster
District of Sudbury

Proponent Information:
Xeneca Power Development Inc.
5180 Yonge Street, North York ON M2N 6L8
p: 416.590.9632
f: 416.590.9955
e: elaratta@xeneca.com
attn: Ed Laratta

December 31, 2010

TABLE OF CONTENTS

EXECUTIVE SUMMARY

Xeneca Power Development Inc of North York, Ontario retained Woodland Heritage Services Limited to conduct a Stage 1 archaeological assessment of a proposed hydropower development at Wabageshik on the Vermillion River in Foster Township, Ontario.

A Stage 1 archaeological assessment was conducted for this project.

Areas of high archaeological potential were identified within the study area. It is recommended that these areas be subjected to Stage 2 archaeological assessment as outlined in the Stage 1 recommendations.

Should anything of historical or cultural value be discovered, or human remains found, appropriate measures should be taken.

1.0 PROJECT PERSONNEL

Luke Dalla Bona, M.A.
Partner
Woodland Heritage Services Limited
69 Lansdowne Ave
Sault Ste. Marie, ON P6B 1K5
Licence Holder (PO65-2010)

Licensee Information:
Luke Dalla Bona
Woodland Heritage Services Limited
69 Lansdowne Ave
Sault Ste. Marie, ON P6B 1K5
Telephone: 705-256-5418
Fax: 705-256-7254
E-Mail: luke@woodlandheritage.com
Province of Ontario, Licence to Conduct Consulting Archaeology
PO65-2010 (Woodland Heritage Services Limited)

Project Information:
Vermillion River - Wabageshik
Township of Foster
District of Sudbury

Proponent Information:
Xeneca Power Development Inc.
5180 Yonge Street, North York ON M2N 6L8
p: 416.590.9632
f: 416.590.9955
e: elaratta@xeneca.com
attn: Ed Laratta

2.0 PROJECT BACKGROUND

2.1 Development Context

Xeneca Power Development Inc of North York, Ontario retained Woodland Heritage Services Limited to conduct a Stage 1 archaeological assessment of a proposed hydropower development at Wabageshik on the Vermillion River in Foster Township, Ontario (Figures 1-4).

2.2 Historical Context

2.2.1 Record Review

Site files at the offices of the Archaeological Data Coordinator Ministry of Culture (MTC) and Woodland Heritage Services Limited site files were checked to determine if any prehistoric sites had been previously recorded and registered either in or near the study area.

2.2.2 Known/Registered Archaeological Sites

The registered site database maintained by the Ontario Ministry of Culture (MTC) (Mr. Robert Von Bitter, Site Database Coordinator) was queried for information for sites in and near the study area. There are no registered archaeological sites in or near the project area.

2.2.3 Cultural Prehistory

People have been living in the study area since the time glaciers receded and the land could support plants and animals. Archaeologists have divided the precontact era (that is, before the time of European arrival) into time periods, described briefly below.

2.2.4 Paleo-Indian Period (ca. 10,000 - 7000 B.P. [before present time])

These precontact peoples were the first inhabitants of the area. Most likely, they arrived by following herds of caribou across the tundra/parkland environment of newly opened lands left by the retreating glaciers. Within a few hundred years, the Boreal forest moved in, causing an adaptation to a forest environment and settlement concentrations along lakes and river systems. Several types of early spear points indicate that different groups of these early hunters moved in at various times.

However, because of the later retreat of the glaciers in the northern part of the province and subsequent flooding of the glacially-compressed landscape by pre and post glacial lakes, there was a time delay in the settlement of northern regions by colonizing vegetation, animals and humans. It appears that people may have entered the eastern Lake Superior/ northern Lake Huron area about 9,000 years ago, while archaeological work farther north in the Hudson's Bay Lowlands suggests that human occupation there may be limited to about the last 6,000 years.

2.2.5 Archaic Period (ca. 7000 B.P. - 2500 B.P.)

An environmental transition brought about warmer, drier conditions resulting in a change in the plant and animal communities, which consequently impacted the subsistence patterns of humans living in the region now represented by north-central Ontario. These alterations of subsistence patterns are reflected in the artifact assemblages. For instance, in response to the hunting of smaller game, large spear points were replaced by smaller, notched projectile points and stone knives generally became smaller. A new technology involving the production of stone tools by grinding rather than chipping was also utilized.

About 3,000 B.C., people started to make use of copper, which was cold-hammered to form spear points, knives, gaff hooks and elaborate jewelry. One of the most complete copper assemblages for northwestern Ontario comes from a burial south of Lake Nipigon, dating to about 1,500 B.C.

2.2.6 Initial Woodland Period (ca. 2500 B.P. - 1100 B.P.)

The Early Woodland Period marks the first appearance of ceramics in the archaeological record, a technological development which becomes increasingly important to the archaeologist as a means of determining the age and occupation of a site. Just as projectile points in the preceding Archaic and Paleo stages underwent stylistic alterations through time, which permitted the determination of the age of a site, ceramics also reflect changes: in vessel form, method of construction, decorative motif (design) and mode of decoration (method). The evolution of ceramic construction was gradual and subtle enough to allow archaeologists to determine the placement of a site within a cultural chronology on the basis of the ceramics recovered from it.

Archaeologists refer to the first pottery-using period in northern Ontario as the Laurel Tradition. Laurel peoples sites are marked by the introduction of fired clay pottery vessels. These vessels were made by the coil method, had conical bases and were smooth, with the exception of the neck and rim which were decorated with distinctive toothed or sinuous-edged tools. The Laurel peoples also practised a way of life similar to the Archaic peoples who lived in the region before them: fishing, hunting and collecting wild plants on the major waterways.

There are two major theories concerning the origin of the Laurel culture. One is that it arose out of an Archaic base, differing only by the adoption of pottery. The other is that the people moved into the region following the expansion of wild rice habitats about 500 B.C.

2.2.7 Terminal Woodland (ca. 1100 B.P. - 400 B.P.)

Two distinctive cultures, both of which appear to have developed from a Laurel cultural base, are present in the Terminal Woodland Period. One of these cultures is referred to as the Blackduck tradition; the other distinct culture is the Selkirk tradition.

The Blackduck culture is characterized by unique globular pottery vessels. The body of these vessels is textured by cord-wrapped paddles and the rim is decorated with cord-wrapped object impression. Some archaeologists believe the Blackduck tradition was ancestral to the modern Ojibway (Anishnabek) Aboriginal Peoples and First Nations.

The other Late Woodland culture, the Selkirk tradition, is distinguished by their fabric-impressed globular vessels. They are found farther north. According to many archaeologists, the Selkirk peoples are ancestral to the Cree Aboriginal Peoples and First Nations.

2.2.8 Historic Period (ca. 400 B.P. to present)

This period begins with the arrival of Europeans and settlers to the area, specifically French, then English traders, bringing with them trade goods such as axes, guns, beads and metal products.

2.3 Archaeological Context

There are no previous archaeological studies on record for the project area. It is important to note, however, that the lack of archaeological studies does not indicate or suggest that there is no archaeological or cultural heritage potential within the project area. Rather, it should be interpreted to mean simply that no archaeologist has conducted a study in this area.

The Vermillion River at the project location is relatively undeveloped and in its natural state. The overstory in the general project area is typical of that encountered in the Sudbury area. A poplar/birch second growth with some softwoods predominate. Overall, the overstory is highly disturbed by more than a century of logging and also from the effects of industrial/mining development in Sudbury. Soils are thin and wildly undulating bedrock is primarily encountered. In the low 'valleys' between the bedrock highs, one encounters wetlands that have been filled with mineral soils washed from the surrounding bedrock during postglacial times. The Vermillion River flows through a bedrock-controlled valley.

At the location of the proposed dam, the valley constricts and a natural set of rapids exists. A narrow bedrock controlled river valley with steep sides exists upstream from the dam to the outlet of Wabageshik Lake. The proposed 1km headpond will extend from the dam to the beginning of Wabageshik Lake.

Due to the steep nature of the valley, while the river levels will be raised above the dam, the extent of new flooding will be minimal.

3.0 PROPERTY INSPECTION

3.1 Determination of Areas Surveyed

The client provided detailed survey maps identifying the boundaries of the project area. In association with satellite and air photo imagery of the project area, high potential areas were determined using the Ministry of Tourism and Culture checklist for determining high potential.

4.0 ANALYSIS AND CONCLUSIONS

The area under investigation for development is identified on Figures 1-5. An analysis of the subject project area was undertaken using high resolution aerial imagery, detailed topographic maps prepared by Hatch Energy from LIDAR data, topographic maps and other records. There are no archaeological sites within or near the project area.

At this location, Xeneca Power Development Inc. proposes two options: to construct an earthfilled dam, a control dam, a powerhouse, spillway and power channel, or; a closed coupled site layout located further upstream which will result in less inundation. A headpond approximately 1km in maximum length will be created. There are several options for road access into the area with roads currently existing within a kilometre of the proposed project.

According to MTC's own checklist for determining archaeological potential, areas in northern Ontario within 150m of a major water source are considered to have high cultural heritage potential.

The location of the proposed dam at Wabageshik has high archaeological potential due to its proximity to a major water source (Vermillion River) and the existence of rapids. In the past, rapids would certainly have required river travellers to go around the rapids by means of a portage. It is reasonable to assume that a portage trail exists at this location on one or both sides of the river but an analysis of the topographic map suggests that the optimal location for a portage would be on the south side of the river.

It is also proposed that roads will be constructed to access the proposed damsite.

Finally, it is proposed that new transmission corridors and lines be constructed to transport power from the proposed damsite to the main electric transmission line.

5.0 RECOMMENDATIONS

It is recommended that Stage 2 archaeological assessments take place at the location of the proposed Wabageshik hydropower development on the Vermillion River.

Specifically, it is recommended that Stage 2 assessments take place at the location of the damsites, powerhouse and spillways.

While a 1km headpond is proposed to be created, there is no need to conduct Stage 2 surveys outside of the damsite and associated roads/transmission line project area due to the steep nature of the river valley being not generally suited to the application of high archaeological potential. The valley walls are steeply sloped and the river is, for the most part, one long set of rapids from the outlet of Wabageshik Lake to the conclusion of the rapids below the proposed damsite.

It is also recommended that once the final location of new access roads, new transmission corridors and any areas that will be newly disturbed as a result of the construction of the damsite (e.g., laydown areas, borrow pits, fill areas etc) that those areas be subjected to Stage 2 assessment if they are determined to have high archaeological potential.

6.0 ADVICE ON COMPLIANCE WITH LEGISLATION

6.1 This report is submitted to the Minister of Culture as a condition of licensing in accordance with Part VI of the Ontario Heritage Act, R.S.O. 1990, c 0.18. The report is reviewed to ensure that the licensed consultant archaeologist has met the terms and conditions of their archaeological licence, and that the archaeological fieldwork and report recommendations ensure the conservation, protection and preservation of the cultural heritage of Ontario.

6.2 Should previously undocumented archaeological resources be discovered, they may be a new archaeological site and therefore subject to Section 48 (1) of the Ontario Heritage Act. The proponent or person discovering the archaeological resources must cease alteration of the site immediately and engage a licensed consultant archaeologist to carry out archaeological fieldwork, in compliance with sec. 48 (1) of the Ontario Heritage Act.

6.3 The Cemeteries Act requires that any person discovering human remains must notify the police or coroner and the Registrar of Cemeteries, Ministry of Small Business and Consumer Services.

7.0 FIGURES

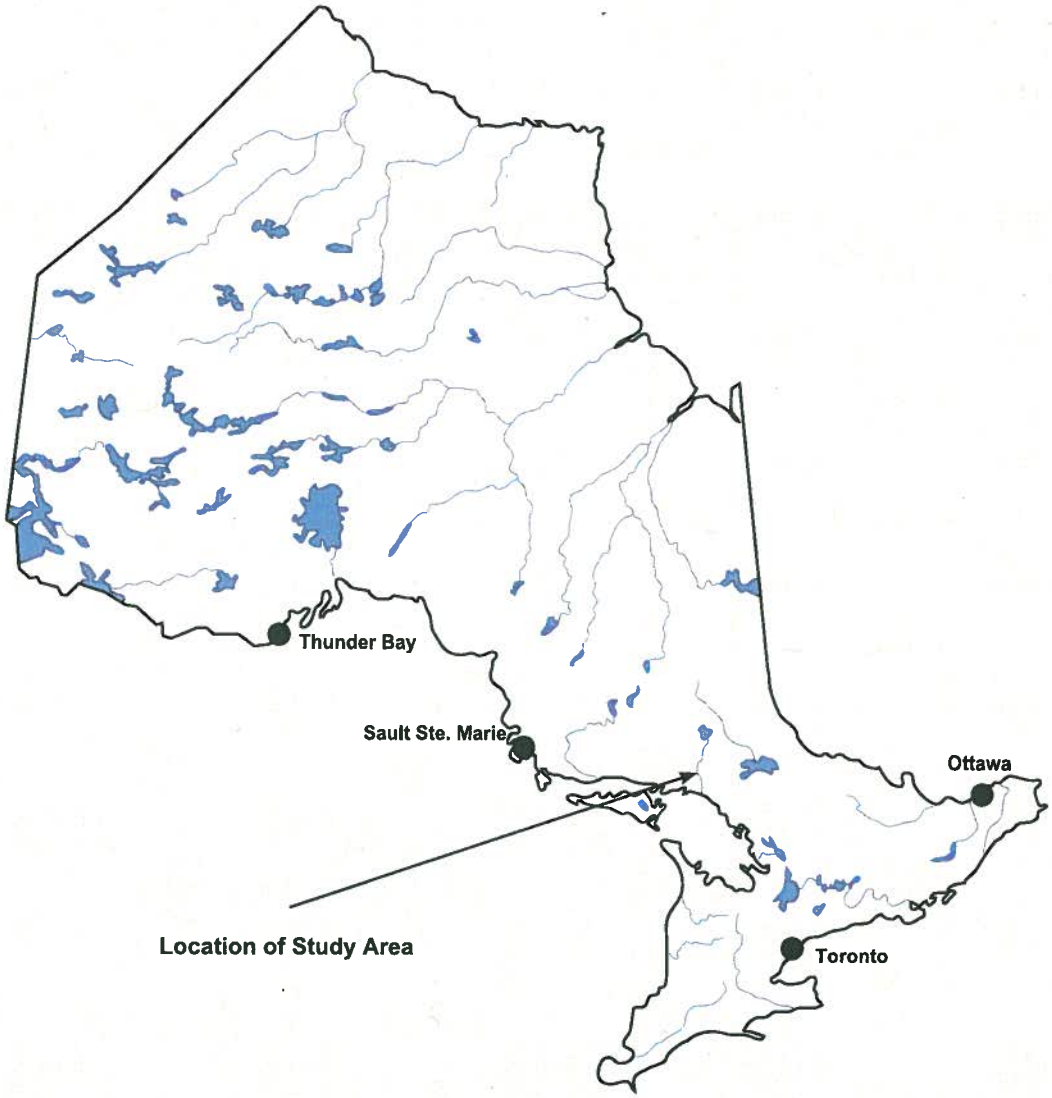

Figure 1. Key map illustrating the location of the Wabageshik Hydropower Development on the Vermillion River, Ontario.

Figure 2. Satellite image illustrating the location of the Wabageshik Hydropower Development on the Vermillion River, in the Township of Foster.

Figure 3. Satellite image detail, illustrating the specific damsite location of the Wabageshik Hydropower Development on the Vermillion River, in the Township of Foster.

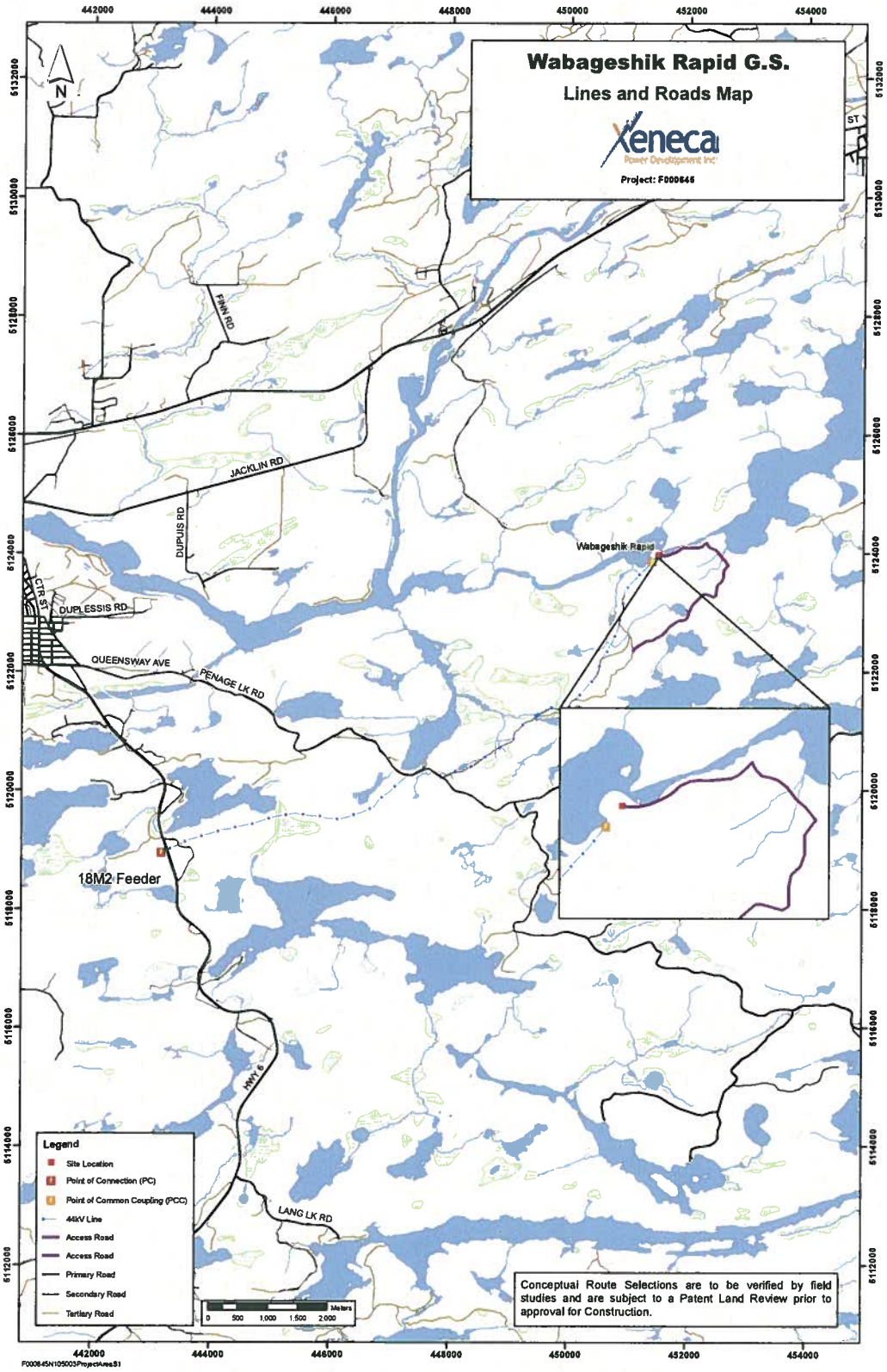

Figure 4. Location of the Wabageshik Hydropower Development on the Vermillion River, in the Township of Foster, and proposed lines and roads.

Figure 5. Development map of the proposed hydropower facility at Wabageshik on the Vermillion River, in the Township of Foster. Contour intervals are 50cm.

Provincial Registry Report 2012 - Original

Woodland Heritage Services Limited Stage Two Project Report

Stage 2 Archaeological And Cultural Heritage Resource Assessment Of A Proposed Hydro Development On The Vermillion River, Foster Township, Sudbury District, Ontario

FIT - G0BZK

Submitted by

Xeneca Power Development Inc.
5160 Yonge St., Suite 520,
Toronto, Ontario M2N 6L9
Attention: Ed Laratta
Telephone: 416.590.9632
Fax: 416.590.9955
Email: elaratta@xeneca.com

Woodland Heritage Services Limited
Luke Dalla Bona
69 Lansdowne Ave
Sault Ste. Marie ON P6B 1K5
Telephone: 705-256-5418
Fax: 705-256-7254
E-Mail: luke@woodlandheritage.com

Province of Ontario Archaeological Licence #P065
MTCS PIF # P065-157-2011 continued from PIF # P065-138-2010

July 31, 2012

Provincial Registry Report 2012 - Original

July 31, 2012

Woodland Heritage Services Limited
69 Lansdowne Ave
Sault Ste. Marie, Ontario
P6B 1K5

XENECA POWER DEVELOPMENT INC.
5160 Yonge St., Suite 520,
Toronto, Ontario M2N 6L9
Attention: Ed Laratta

Re: Stage 2 Archaeological and Cultural Heritage Resource Assessment of a Proposed Hydro Development on the Vermillion River at Wabageshik Rapids - Foster Township, Sudbury District, Ontario.

Dear Mr. Laratta:

Please find attached three copies of an Archaeological and Cultural Heritage Resource Assessment Report for the above captioned project.

For licence and regulatory purposes, we will be sending an additional three copies on your behalf to the following offices:

Ministry of Tourism and Culture
Programs and Services Branch
401 Bay Street, Suite 1700
Toronto, Ontario
M7A 0A7

We were pleased to have assisted you with this project and hope to be of continuing service with your future undertakings.

Yours truly,

Luke Dalla Bona
WOODLAND HERITAGE SERVICES LIMITED.

TABLE OF CONTENTS

EXECUTIVE SUMMARY

Executive Summary

A Stage 2 Archaeological and Cultural Heritage Resource Assessment was undertaken for a proposed FIT-G0BZK hydroelectric project on the Vermillion River in Foster Township, Sudbury District. The proposed dam location is situated on the Vermillion River west of Wabageshik Lake.

All areas of archaeological potential as identified in the Stage 1 report were assessed using sub-surface techniques at a 5-metre grid with all soils screened through 6mm mesh.

One pre-contact archaeological site (CbHj-1) was located through the field work portion of this Stage 2 assessment.

The sites has been registered with the archaeological sites data base of the Ministry of Tourism, Culture and Sport (MTCS) and is entitled to protection under the Ontario Heritage Act. Refer to Supplementary Documentation for exact site locations.

The pre-contact archaeological site may be impacted to various degrees through the future development of this hydroelectric project.

As the sites is of further cultural heritage value or interest, recommendations have been made in this report to conduct Stage 3 archaeological assessment work at the site prior to any proposed construction activities.

PROJECT PERSONNEL

Luke Dalla Bona, M.A.
Partner
Woodland Heritage Services Limited
69 Lansdowne Ave
Sault Ste. Marie, ON P6B 1K5
Licence Holder (PO65-2011)

Field Assistants: Charlie Binguis, Forrest Hinich

Licensee Information:

Luke Dalla Bona
Woodland Heritage Services Limited
69 Lansdowne Ave
Sault Ste. Marie, ON P6B 1K5
Telephone: 705-256-5418
Fax: 705-256-7254
E-Mail: luke@woodlandheritage.com
Province of Ontario, Licence to Conduct Consulting Archaeology
P065-2011 (Woodland Heritage Services Limited)

Project Information:

Vermillion River, Wabageshik 2 (St 2 FIT: G0BZK)
PIF#: P065-157-2011 continued from P065-138-2010

Proponent Information:

Xeneca Power Development Inc.
5160 Yonge St., Suite 520,
Toronto, Ontario M2N 6L9
Attention: Ed Laratta
Telephone: 416.590.9632
Fax: 416.590.9955
Email: elaratta@xeneca.com

1.0 PROJECT BACKGROUND

This section of the project report provides the context for the archaeological fieldwork. The project background section covers three areas: development context, historical context and archaeological context.

1.1 Development Context

The archaeological and cultural heritage field work was required by the Ministry of Tourism, Culture and Sport in advance of the development of this proposed hydro power project. This proposed power project in Foster Township can be located by referring to figures in the Supplementary Documentation.

The archaeological field work was performed in advance of any new ground-disturbing activities.

The area of disturbance will include transportation corridors; laydown areas; dam, penstock and powerhouse construction; and ~1 km of variable inundation west of the dam site.

Woodland Heritage Services received permissions to access the subject property and perform all activities related to archaeological and cultural heritage assessments.

1.2 Historical Context

Cultural Prehistory

The human history of the study area goes back a minimum of 6,000 years and perhaps several thousand years earlier to the days of the glacial lakes.

Archaeologists generally divide northeastern Ontario's history into the following generalized temporal/cultural sequences (Note: BP refers to years Before Present):

Late Palaeo (circa 10,000 – 7000 BP)
Shield Archaic (circa 7000 - 2500 BP)
Middle Woodland (circa 2500 BC – 800 BP)
Late Woodland (800 – 400 BP)
Historic (400 BP - present)

Late Palaeo

These precontact peoples were the first inhabitants of the area. Most likely, they arrived by following game across the tundra/parkland environment of the newly vegetated lands left by the retreating glaciers. Within a few hundred years after the glaciers melted, the Boreal forest was established resulting in humans adapting to a forested environment and settlements were concentrated along lake and river systems. Several types of spear point styles indicate that different groups of these hunters moved in a various times.

However, because of the later retreat of the glaciers in the northern part of the province and subsequent flooding of the glacially-compressed landscape by pre- and post-glacial lakes, there was a time delay in the settlement of northern regions by colonizing vegetation, animals and humans. It appears the people may have entered the eastern Lake Superior/ northern Lake Huron area approximately 9000 years ago, while archaeological work farther north in the Hudson's Bay Lowlands suggests that human occupation there may be limited to about the last 6000 years.

Shield Archaic

The peoples to whom archaeologists refer as the Shield Archaic Tradition were big game hunters who lived in northern Ontario following the last glacial ice age. The Shield Archaic era is comparable to the Archaic period in southern Ontario in terms of its longevity, representing as it does some 4,000 years of prehistoric occupation of northern Ontario. The entire area was utilized including small lakes and creeks during this time period.

The Shield Archaic Tradition appears to have evolved directly out of the preceding Late Palaeo-Indian occupations. This transition is suggested by the presence of Shield Archaic quarry/workshop and habitation sites on the Nipissing beach line (the next glacial lake stage below Minong in the Thunder Bay area) combined with an emphasis on the same raw materials used in the Palaeo-Indian period and a similar technology centred on the production of large bifaces and somewhat less refined lanceolate points. Following what appears to be the initial Shield Archaic period characterized by large bifaces and lanceolate points, there occurs a proliferation of point styles including various forms of stemmed and notched points.

Middle Woodland (Laurel)

The Middle Woodland or Laurel Tradition, which emerged about 2,000 years ago from the Shield Archaic Tradition, continued to practice a hunting/gathering subsistence pattern, but shifted to an economy of smaller game and fishing which required smaller tools and a seasonal round to exploit various resources at different times of the year.

Bands consisted of groups of closely related families, and people probably spent much of the year in smaller kinship groups. During the summer, the band would have camped together on a large lake or river. For the fall, winter and spring periods of the year, the larger group would break up into individual families to more effectively exploit available resources. Other than the summer group campsites, Laurel sites are generally small, possibly reflecting the establishment of this seasonal round.

Laurel peoples showed a preference for large lakes and rivers with campsites located on sandy bays, portage ends, points, peninsulas and locations near waterfalls, below rapids and at river mouths. These locations suited the establishment of small, seasonal hunting and fishing camps. Laurel site distribution and settlement patterns therefore differed from the inland site pattern noted for the Archaic period and set the pattern for settlement in the following Late Woodland period.

Fired clay pottery was added to the material culture at this time. The Laurel tradition gradually evolved into the Late Woodland Blackduck (Ojibway) and Selkirk (Cree) pottery styles.

Late Woodland
The Late Woodland peoples were the ancestors of present day regional cultural/social groups called First Nations. Recent data from northern Ontario indicate a trend in site recovery suggestive of population growth during the Late Woodland period (based on an increased frequency of sites recovered during archaeological surveys).

Archaeological evidence also suggests that a seasonal cycle of travelling to resource exploitation areas may have been well established during this era. Site locations follow an established pattern with preference given to level places on islands, peninsulas, narrow parts of lakes, sandy beaches and portage ends, as well as rapids and waterfalls on rivers.

With the advent of the fur trade, traditional subsistence and settlement patterns became somewhat disrupted, with settlements often occurring in the vicinity of fur trade posts or near the railways, especially later in the period.

Early First Nation History
The First Nation Peoples have shared the area for more than three hundred years with Europeans. First contact with Europeans dates back to encounters with the Recollects and Jesuit missionaries and other French explorers and traders during the period 1616 to 1649.

1.3 Archaeological Context

1.3.1
Before initiation of fieldwork, the site files and catalogued reports at Woodland Heritage Services Limited and the office of the Archaeological Data Coordinator, MTCS, were checked to determine if any pre-contact or historic archaeological sites had been previously recorded either in or near the study area. There are no previous archaeological studies on record for the project area.

1.3.2 Current Land Use(s), Field Conditions, Soils and Topography
The lands directly associated with the property in question current do not appear to be used for a particular purpose other than as a seasonal recreation area or canoe route. An ATV/snowmobile bridges crosses the Vermillion River upstream from the proposed dam location but the bridge and the associated trail will not be impacted by the proposed project.

The soils encountered were dominantly bedrock. The field work component of this Stage 2 assessment confirmed localised deposits of sand and some sandy soils during sub-surface testing.

1.3.3 Field Work Schedule
The field work was carried out in September and October 2011.

1.3.4 Past Fieldwork
A Stage 1 archaeological assessment was conducted by Woodland Heritage Services Limited under PIF # P065-112-2010

1.3.5 Physical Features Affecting Fieldwork Strategy, Decisions or the Identification of Artifacts or Cultural Features
None encountered.

2.0 STAGE 2 FIELD METHODS

2.0.1
During the Stage 2 assessment sub-surface test pits were placed in level well drained areas of archaeological potential. This work was undertaken in order to locate buried archaeological or cultural heritage resources, and also to determine the level of disturbance at selected locations. The test pits were spaced at a maximum of five metres apart with all soil screened through 6mm mesh, with all pits dug to a depth where sterile soil was encountered. Test pit spacing was affected by trees although every effort was made to maintain a regular grid as per the 2011 Guidelines.

Photographs and GPS waypoints were used to document the state of the ground conditions, the area tested and any findings.

2.0.2 Areas of Disturbance
There were no identified areas of disturbance located within the study area.

2.0.3 Delimitation of the Study Area

i. a map depicting the exact limits of the area

Maps in the Supplementary Documentation provide a clear illustration of the study area limits and physiographic features.

ii. documentation describing how the limit of the area was determined during the survey and confirming that the area included enough overlap to ensure that all adjacent impacted lands were surveyed.

Communication with Xeneca Power Development Inc. provided the locations of those areas to be affected.

2.1 Stage 2 Property Survey – As relevant, provide detailed and explicit descriptions:

a. of how each standard was addressed for property survey generally
All of the standards referring to a Stage 2 property survey were carried out in full for the area to be impacted.

b. of how each standard was addressed for pedestrian survey and test pit survey
All of the standards for test pit survey were carried out in full for the areas identified in the Stage 1 report to have archaeological potential. For areas of low potential from the Stage 1 report, we mapped them as provided for in S&G Section 7.8.1, s.1(c).

c. to address any differences in approach for areas possessing different conditions
Not applicable.

d. of how each standard was addressed where alternative methods acceptable through Guidelines or Special Conditions were used.
Not applicable.

2.2 Stage 2 Property Assessment – Provide estimates of the percentage of each of the following:

2.2.1 The Property Surveyed, by Coverage and Survey Interval
All areas of archaeological potential were tested using sub-surface techniques at a 5 metre interval with soil screened through 6mm. mesh with all pits dug to a depth where sterile mineral soil was encountered and explored. The areas of testing focused on the lands subject to inundation that were level and well drained. The areas that were the subject of the Stage 2 sub-surface testing were outlined in the Stage 1. In the field, the areas were assessed in detail and some of the previously delimited areas were modified based on the specific potential variables (i.e. steep slopes, saturated soils, absence of mineral soil). As mentioned, all areas of high archaeological potential were assessed using sub-surface testing methods with each pit a minimum of 30 cm. in diameter dug to a depth sufficient to expose any cultural remains. All pit locations were recorded and photographs were taken to document the ground conditions at the time.

2.2.2 The Property Not Surveyed Because There Were Areas of No Archaeological Potential

Some areas in the project area were not tested due to their being within a high energy environments and have suffered from high erosion and deposition episodes along with seasonal scouring by the ice during the spring freshet. They are readily identified in the field as those areas that exhibit only scrub vegetation (i.e. weeds, grasses and thick willow, dogwood and alder) and/or a lack of mineral soil. These tenacious plants are the only ones that can survive the action of the ice and inundation. The banks of the river are continually being worked and reworked in these high energy environments. Testing was carried out and found a gravel/rock environment with virtually no mineral soil deposition.

2.3 Record of Finds

Inventory of field documentation.

x Photographs were taken of the study area landforms and vegetation.
x Photographs were taken of the areas to be impacted and of the Stage 2 testing.
x Areas were noted on maps of all the areas to be impacted.
x GPS coordinates were taken using a Garmin Montana 600 with an error rated (with WAAS) to +/- 5 metres on average. All coordinates are in UTM 17T NAD 83.
x Artifacts were collected and processed at Woodland Heritage Services facilities. Due to the lack of diagnostic artifacts at the Belmer Site (CbHj-1) conclusions cannot be drawn regarding the age and cultural affiliation of the site apart from describing it as pre-contact.

Subsurface testing and surface inspection resulted in the recovery of artifacts and the identification of one pre-contact archaeological site: Belmer Site (CbHj-1). This site has been registered with the Ministry of Tourism, Culture & Sport and is now protected under the *Ontario Heritage Act*.

Seven test pits proved positive for the discovery of cultural material.

Test Pit 1:
Test Pit 2:
Test Pit 3:
Test PIt 4:
Test Pit 5:
Test Pit 6:
Test Pit 7:

Redacted for privacy purposes and/or MTCS Guidelines compliance

Due to the lack of Stage 2 identified diagnostic artifacts and features at CbHj-1, conclusions cannot be drawn from the Stage 2 work regarding the age and cultural affiliation of the site apart from describing it as pre-contact.

Additionally, due to the lack of diagnostic artifacts and their small site size, it is unknown from the Stage 2 work whether or not the site will eventually require Stage 4 mitigation.

However due to the potential for disturbance, the lack of comparable sites and general lack of knowledge about small pre-contact sites in the watershed, it is recommended that Stage 3 work be undertaken at this site (S&G, Section 7.8.3, s.2) if it will be impacted by the proposed project.

2.5 Stage 2 Recommendations

The Belmer Site (CbHj-1) is of further cultural heritage value or interest and therefore, it is recommended that the site be subject to a Stage 3 Archaeological Assessment to further determine the presence of buried artifacts, define the site stratigraphy, cultural features and collect a representative sample of artifacts. This site meets the definition of requiring Stage 3 survey (Section 2.2).

This Stage 3 archaeological work can only be undertaken after consultation with First Nations and MNO and must be done in advance of any future development. Therefore the Stage 3 work should follow the small pre-contact site test unit strategy as outlined in Section 3.2 and specifically Table 3.1 of the MTCS 2011 Standards and Guidelines.

Stage 3 work can be avoided if the proposed project will create no impacts to the site. Impacts include protective measures put in place to protect the site from possible impacts (e.g., rip rap along the river to prevent erosion).

Finally, MTCS regulations require that reports recommending further archaeological fieldwork or protection for one or more archaeological sites must include the following standard statement: '*Archaeological sites recommended for further archaeological fieldwork or protection remain subject to Section 48 (1) of the Ontario Heritage Act. and may not be altered, or have artifacts removed, except by a person holding an archaeological licence'.*

2.6 Advice on Compliance with Legislation

Advice on compliance with legislation is not part of the archaeological record. However, for the benefit of the proponent and approval authority in the land use planning and development process, the report must include the following standard statements:

a. This report is submitted to the Minister of Tourism, Culture & Sport as a condition of licensing in accordance with Part VI of the Ontario Heritage Act, R.S.O. 1990, c 0.18. The report is reviewed to ensure that the licensed consultant archaeologist has met the terms and conditions of their archaeological licence, and that the archaeological fieldwork and report recommendations ensure the conservation, protection and preservation of the cultural heritage of Ontario.

b. Should previously undocumented archaeological resources be discovered, they may be a new archaeological site and therefore subject to Section 48 (1) of the Ontario Heritage Act. The proponent or person discovering the archaeological resources must cease alteration of the site immediately and engage a licensed consultant archaeologist to carry out archaeological fieldwork, in compliance with sec. 48 (1) of the Ontario Heritage Act.

c. The Cemeteries Act requires that any person discovering human remains must notify the police or coroner and the Registrar of Cemeteries, Ministry of Small Business and Consumer Services.

Provincial Registry Report 2012 - Original

Woodland Heritage Services Limited Stage Two Project Report Supplementary Documentation

Stage 2 Archaeological And Cultural Heritage Resource Assessment Of A Proposed Hydro Development On The Vermillion River, Foster Township, Sudbury District, Ontario

FIT - G0BZK

Submitted by

Xeneca Power Development Inc.
5160 Yonge St., Suite 520,
Toronto, Ontario M2N 6L9
Attention: Ed Laratta
Telephone: 416.590.9632
Fax: 416.590.9955
Email: elaratta@xeneca.com

Woodland Heritage Services Limited
Luke Dalla Bona
69 Lansdowne Ave
Sault Ste. Marie ON P6B 1K5
Telephone: 705-256-5418
E-Mail: luke@woodlandheritage.com

Province of Ontario Archaeological Licence #P065
MTCS PIF # P065-157-2011 continued from PIF # P065-138-2010

July 31, 2012

Provincial Registry Report 2012 - Original

TABLE OF CONTENTS

Figures and Photos

FIGURES AND PHOTOS

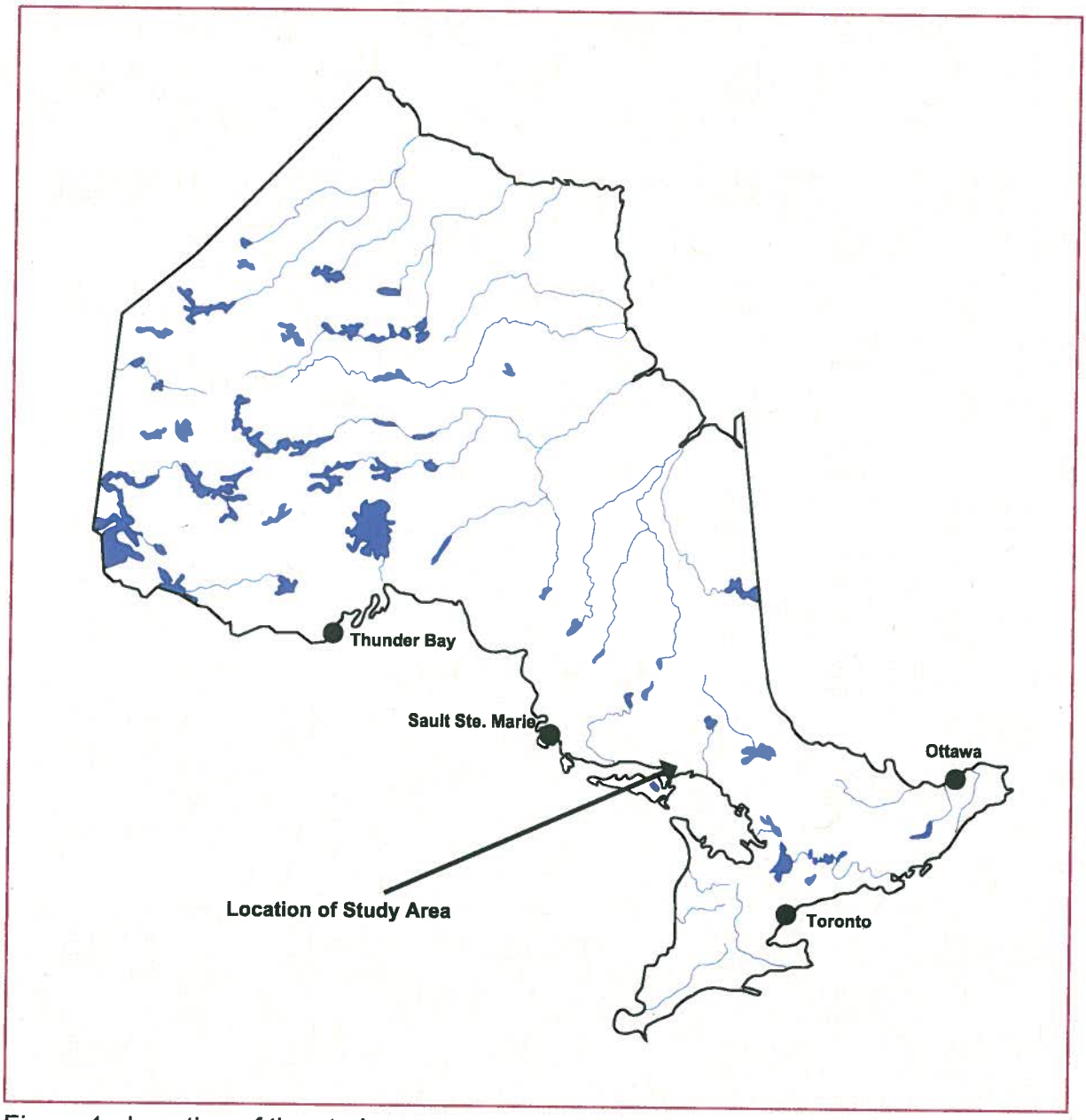

Figure 1. Location of the study area.

Figure 2. Topographic development map of the proposed Wabageshik project on the Vermillion River. The location of Belmer Site (CbHj-1) is indicated on the map.

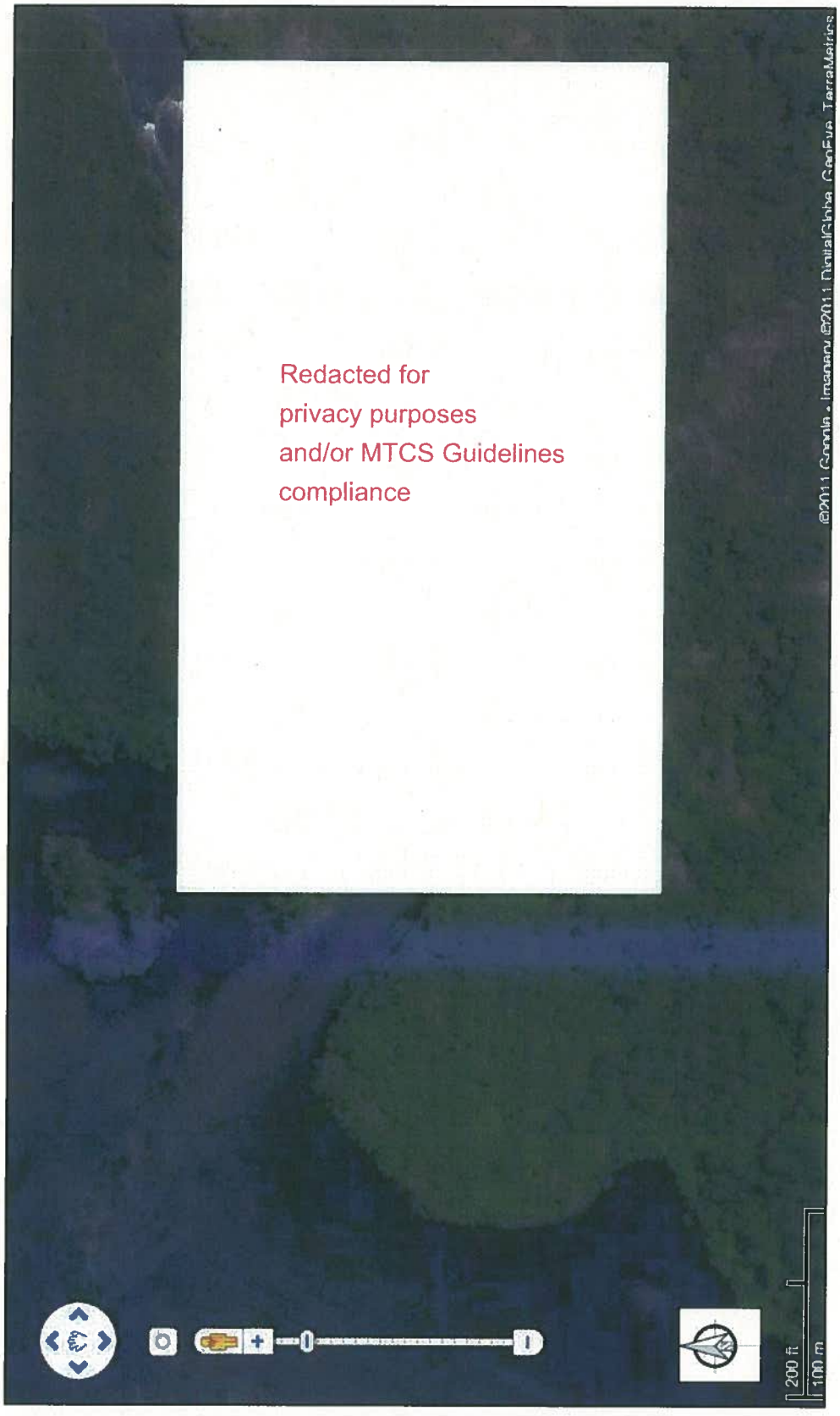

Figure 3. Aerial imagery of the study area with the location of the Belmer Site (CbHj-1) indicated.

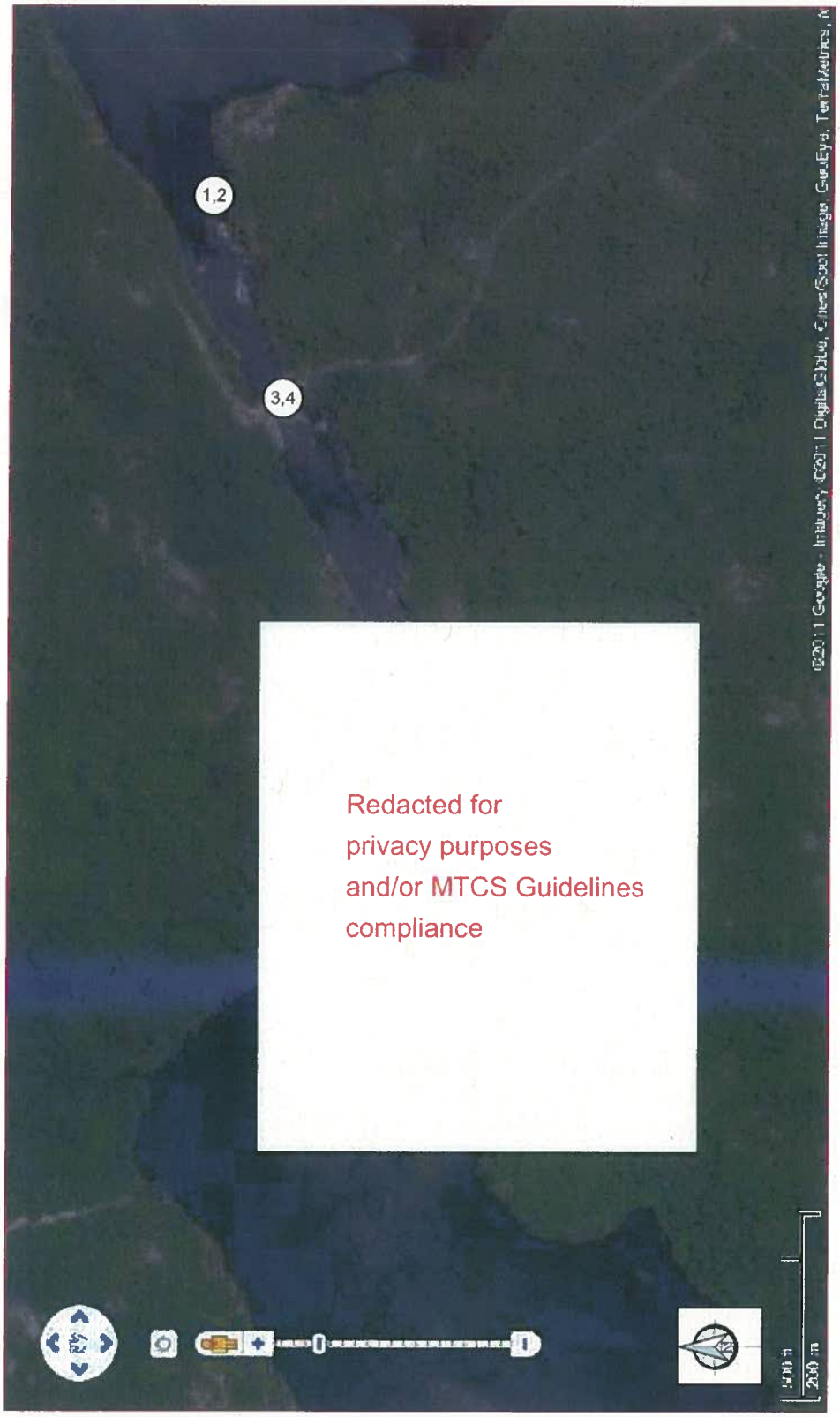

Figure 4. Location of photos illustrated in this report.

Redacted for
privacy purposes
and/or MTCS Guidelines
compliance

Figure 5. Sketch map of the Belmer Site

Photo 1. Looking westerly down the Vermillion River at the top of the rapids.

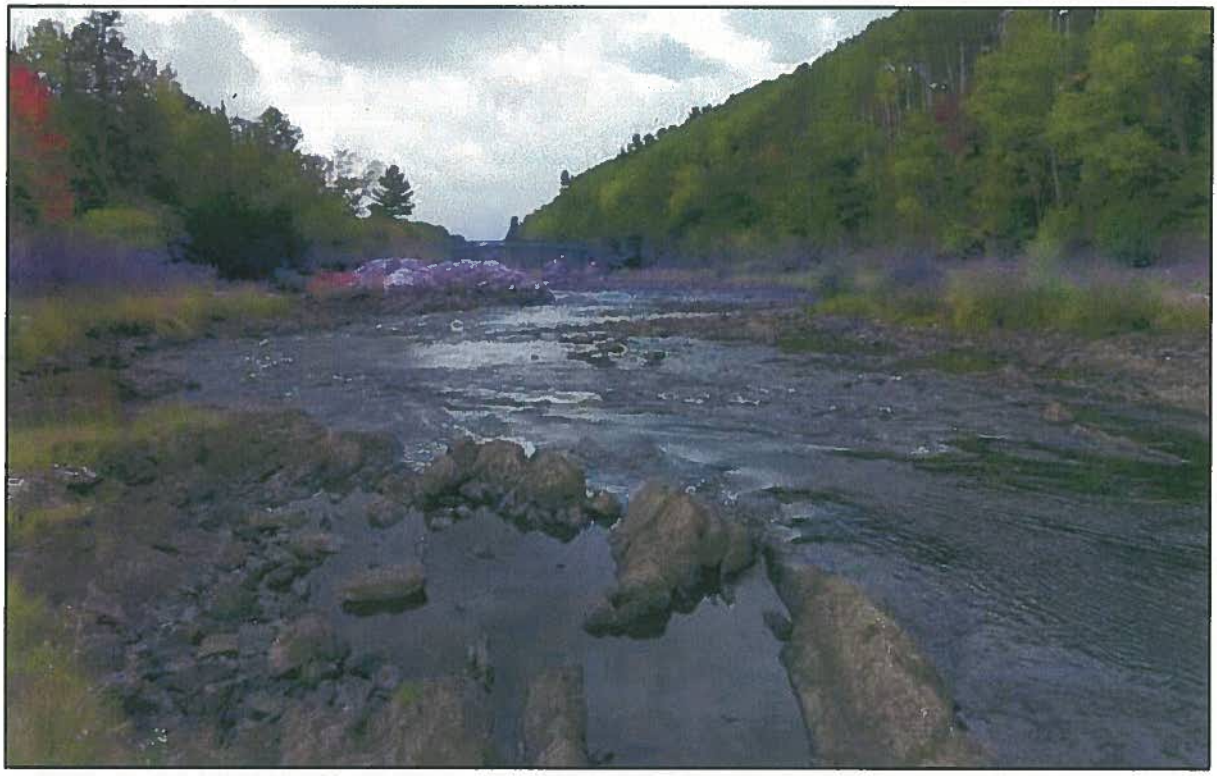

Photo 2. Looking westerly down the Vermillion River.

Photo 3. Looking westerly down the Vermillion River from the bridge.

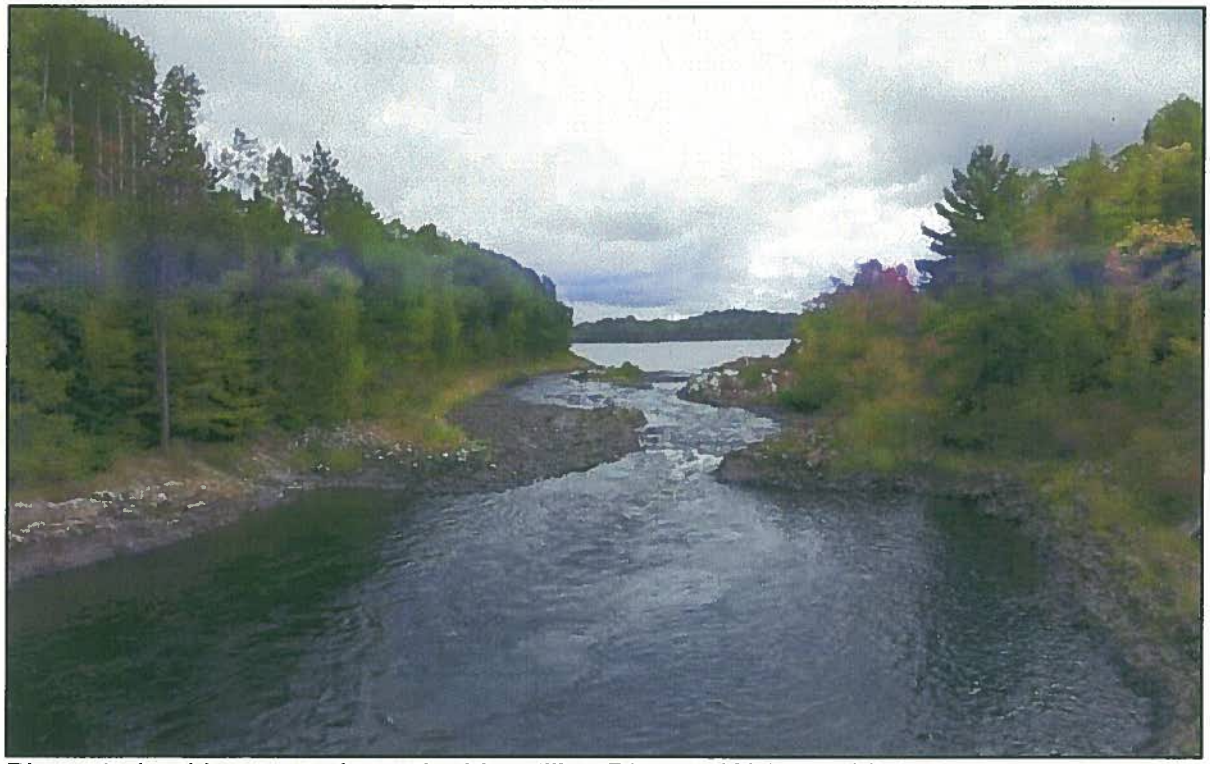

Photo 4. Looking easterly up the Vermillion River to Wabageshik Lake.

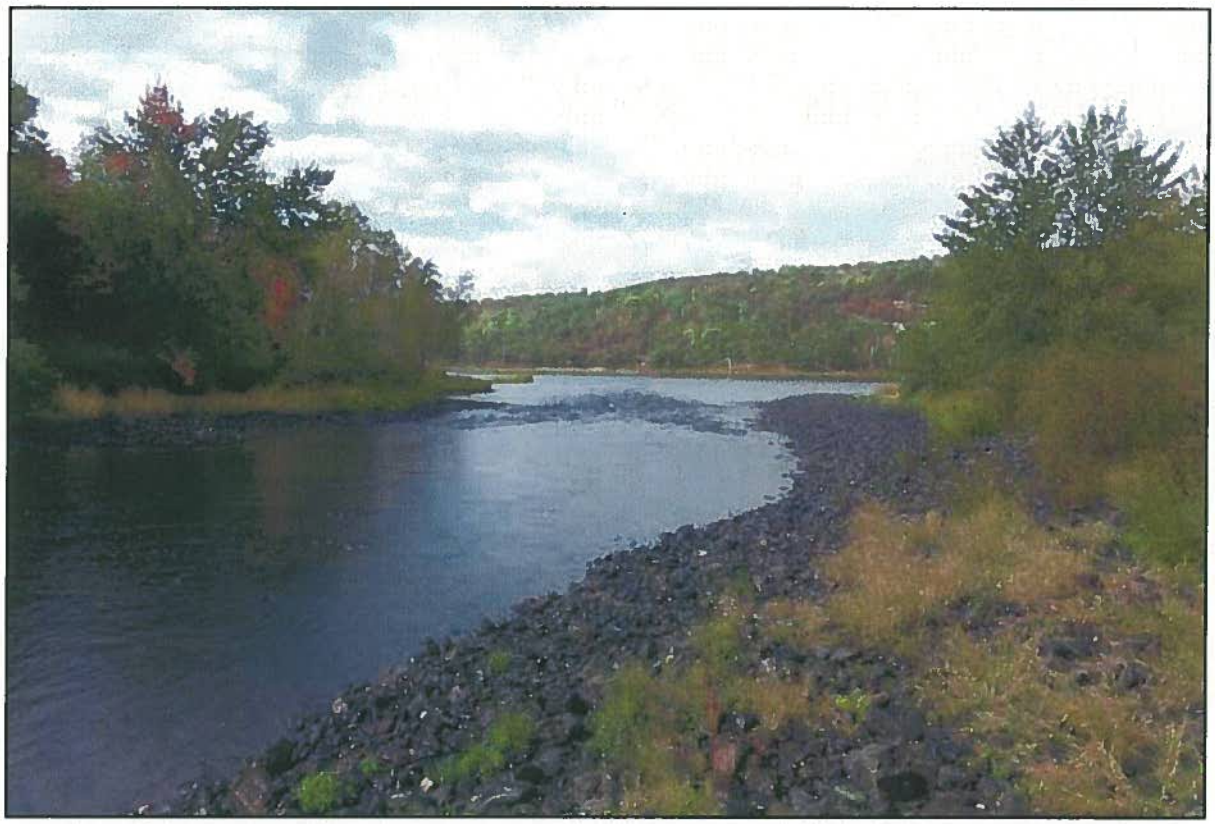

Photo 5. Looking northwesterly across the mouth of the rapids. Note extensive gravels.

Photo 6. Looking southeasterly upstream from the mouth of the rapids.

Photo 7. Steep slopes encountered on the north side of the river.

Photo 8. Steep slopes/bedrock encountered on south side of the river (looking north).

Photo 9. Cobbles and rocks on point of land south side of mouth of rapids.

Photo 10. Steep slopes, south side of mouth of rapids.

Redacted for
privacy purposes
and/or MTCS Guidelines
compliance

Photo 11. Charlie Binguis excavating a test pit at the Belmer Site.

Redacted for
privacy purposes
and/or MTCS Guidelines
compliance

Photo 12. A test pit at the Belmer Site.

Redacted for
privacy purposes
and/or MTCS Guidelines
compliance

Photo 13. More test pits at the Belmer Site.

Redacted for
privacy purposes
and/or MTCS Guidelines
compliance

Photo 14. A cobble/rock bar in the river opposite the Belmer Site looking west.

Redacted for
privacy purposes
and/or MTCS Guidelines
compliance

Photo 15. Artifacts collected from Test Pit 2 at the Belmer Site (CbHj-1).

Redacted for
privacy purposes
and/or MTCS Guidelines
compliance

Photo 16. Artifacts recovered from test pit 1 at the Belmer Site (CbHj-1).

Ministry of Tourism, Culture and Sport

Culture Programs Unit
Programs and Services Branch
Culture Division
435 S. James St., Suite 334
Thunder Bay, ON, P7E 6S7
Telephone: 807-475-1632
Facsimile: 807-475-1291

Ministère du Tourisme, de la Culture et du Sport

Unité des programmes culturels
Direction des programmes et des services
Division de culture
435 rue James sud, Bureau 334
Thunder Bay, ON, P7E 6S7
Téléphone: 807-475-1632
Télécopieur: 807-4751291

Email: andrew.hinshelwood@Ontario .ca

Ontario

January 31, 2013

Luke Dalla Bona
Woodland Heritage Services Limited
69 Landsdowne Ave.
Sault Ste. Marie, ON P6B 1K5

RE: Review and Entry into the Ontario Public Register of Archaeological Reports: *Stage 2 Archaeological and Cultural Heritage Resource Assessment of a Proposed Hydro Development on the Vermillion River, Foster Township, Sudbury District, Ontario, FIT-G0BZK.* Report dated July31, 2012, received by MTCS Toronto office December 19, 2012 (filed January 10, 2013).

MTCS Project Information Form Number P065-157-2011 (P065-138-2010)
MTCS RIMS HD00603

Dear Luke,

This office has reviewed the above-mentioned report, which has been submitted to this ministry as a condition of licensing in accordance with Part VI of the Ontario Heritage Act, R.S.O. 1990, c 0.18. This review has been carried out in order to determine whether the licensed professional consultant archaeologist has met the terms and conditions of their licence, that the licensee assessed the property and documented archaeological resources using a process that accords with the 1993 *Archaeological Assessment Technical Guidelines* set by the ministry, and that the archaeological fieldwork and report recommendations are consistent with the conservation, protection and preservation of the cultural heritage of Ontario.*

The report documents the Stage 2 archaeological assessment of the proposed hydroelectric installation and portions of the resulting headpond on the Vermillion River, as depicted in Figures 2 and 3 of the above titled report, and recommends the following:

- The Belmer Site (CbHj-1) is of further cultural heritage value or interest and therefore, it is recommended that the site be subject to a Stage 3 Archaeological Assessment to further

determine the presence of buried artifacts, define the site stratigraphy, cultural features and collect a representative sample of artifacts. This site meets the definition of requiring Stage 3 survey (Section 2.2).

- This Stage 3 archaeological work can only be undertaken after consultation with First Nations and MNO and must be done in advance of any future development. Therefore the Stage 3 work should follow the small pre-contact site test unit strategy as outlined in Section 3.2 and specifically Table 3.1 of the MTCS 2011 Standards and Guidelines.

- Stage 3 work can be avoided if the proposed project will create no impacts to the site. Impacts include protective measures put in place to protect the site from possible impacts (e.g., rip rap along the river to prevent erosion).

- Finally, MTCS regulations require that reports recommending further archaeological fieldwork or protection for one or more archaeological sites must include the following standard statement: '*Archaeological sites recommended for further archaeological fieldwork or protection remain subject to Section 48(1) of the Ontario Heritage Act and may not be altered, or have artifacts removed, except by a person holding an archaeological licence'.*

Based on the information contained in the report, the ministry is satisfied that the fieldwork and reporting for the archaeological assessment are consistent with the ministry's 1993 Archaeological Assessment Technical Guidelines and the terms and conditions for archaeological licences. This report has been entered into the Ontario Public Register of Archaeological Reports. Please note that the ministry makes no representation or warranty as to the completeness, accuracy or quality of reports in the register.

Should you require any further information regarding this matter, please feel free to contact me. For further guidance on the Standards and Guidelines and the Terms and Conditions for Archaeological Licences please visit the ministry's website www.ontario.ca\archaeology.

Yours,

A Hinshelwood.

Andrew Hinshelwood
Archaeology Review Officer

cc. Archaeology Licensing Officer
Ed Laratta, Xeneca (elaratta@xeneca.com)

* In no way will the Ministry be liable for any harm, damages, costs, expenses, losses, claims or actions that may result: (a) if the Report(s) or its recommendations are discovered to be inaccurate, incomplete, misleading or fraudulent; or (b) from the issuance of this letter. Further measures may need to be taken in the event that additional artifacts or archaeological sites are identified or the Report(s) is otherwise found to be inaccurate, incomplete, misleading or fraudulent.

5255 Yonge St., Suite 1200, North York, ON M2N 6P4
tel 416-590-9362 fax 416-590-9955 www.xeneca.com

Andrew Hinshelwood
Archaeology Review Officer - Thunder Bay
Suite 334, 435 James St S
Thunder Bay, ON P7E 6S7

Friday, May 17, 2013

Re: Wabagishik – Monitoring commitment letter

Hi Andrew,

Thanks again for participating in our March 21 Wabagishik teleconference. We are still working with the agencies to finalize the meeting minutes. I have attached a draft copy, but for your quick reference, here are the action items from the archaeology section of the draft meeting minutes:

Archaeology:

ACTION: Xeneca to put its archaeology protocols in a letter to MTCS.
ACTION: Xeneca to use contour maps that denotes construction areas and location of archaeology test pits. (Luke will send UTM coordinates that can be super imposed on topographic maps showing archaeology sites.)
ACTION: Xeneca to forward the monitoring plan for archaeology for construction to MTCS

Regarding the avoidance plan, Woodland Heritage Services (WHS) proposes the following avoidance plan for the Belmer Site [redacted] located at Wabagishik Rapids:

Prior to Commencement of Construction Activities
A site visit by WHS staff with representatives of the Xeneca construction team and other interested parties will take place to erect a "fence" marking the [redacted] boundary of the Belmer Site. A second fence will be erected 70m east of the first fence. This second fence will be clearly marked and identified as a "Do Not Cross" line.

Appropriate documentation will be created as part of the construction protocols that will instruct all Xeneca staff and subconsultants, construction crews etc. that this line is not to be crossed for any reason.

At a convenient time, prior to the commencement of construction activities, the site supervisor, construction boss, and/or other senior on-site staff will be briefed as to the nature of the fence and the requirement that no people or equipment are to venture any further west than the second fence line nor is the integrity of the fence to be compromised in any way. A cultural heritage protocol will also be presented to the senior on-site staff with instructions to follow in the event of the unexpected discovery of cultural resources.

1/3 of the way through schedule construction activities
A site visit by WHS staff will be undertaken to confirm the integrity of the fence line and that construction activities remain east of the second fence.

2/3 of the way through schedule construction activities
A site visit by WHS staff will be undertaken to confirm the integrity of the fence line and that construction activities remain east of the second fence.

Completion of construction activities
A site visit by WHS staff will be undertaken to confirm the integrity of the fence line and that construction activities remain east of the second fence.

Letter reports will be submitted to Xeneca by WHS upon completion of each site visit detailing observations made at that time.

Discovery of unexpected cultural resources
In the event that cultural resources of any kind are uncovered during construction activities, all work at the location of the discovery are to stop. No further work can occur until the area is examined and written confirmation is given to senior on-site personnel to continue work. No further disturbance of the locality is permitted and all personnel are to be instructed to avoid the area. Xeneca and WHS staff are to be notified immediately.

In the event of the discovery of human remains, all work in that locality is to cease immediately. The area is to be secured and covered (e.g., with a tarp) and the OPP is to be notified immediately. Xeneca and WHS are to be notified as well. In the event that OPP determine that they have no interest in the human remains (e.g., it is not the result of criminal activity), Xeneca will contact First Nations representatives for advice on how to proceed further.

Appropriate contact information will be provided in the final protocol document to be circulated to all relevant personnel.

Please also find attached a map with archaeology stage 2 positive test pits locations and detail contour lines. The contour elevations indicate the rapid change in elevation between the archaeology site and the construction site. This difference in elevation will also help ensure the site will not be impacted by construction activities.

If you have any further questions or comments, please let me know.

Yours truly,

Steph Hodsoll
Stakeholder Relations Officers
shodsoll@xeneca.com
416-590-3077

WHS Woodland Heritage Services
(A Division of Settlement Surveys Limited and Pictographics Ltd.)

February 21, 2013

re: Belmer Site, CbHj-1 and the proposed Wabageshik Hydroelectric project

To whom it may concern,

My firm conducted the archaeological assessment for this project. The resulting report was submitted to the Ontario Ministry of Culture, Tourism and Recreation (MTCS). On January 31, 2013, MTCS accepted the report into the provincial registry of archaeology reports (letter attached) and accepted the recommendations made therein. In short, the report recommends that if the site can be avoided and there are no impacts resulting from the proposed project, then no further archaeological work is required.

I have reviewed the letter of Michael J. Vance, PEng. dated February 20, 2013 (attached herein) regarding Xeneca's proposed plans for developing a hydroelectric facility at Wabageshik Rapids on the Vermillion River near Espanola, Ontario. The letter indicates that Xeneca can avoid impacts to the archaeological site and that Xeneca commits to avoiding the site and will take reasonable precautions to ensure as much.

Avoidance is consistent with MTCS policy of protecting Ontario's cultural resources and, in fact, is the preferred option when dealing with archaeological sites. These artifacts, features and sites have existed for hundreds and thousands of years "in the ground" and leaving them there untouched is best. Any investigation by an archaeologist is destructive and indeed a Stage 3 and or Stage 4 excavation, if it is not needed, will result in the destruction of the site.

In my professional opinion, requiring a Stage 3 investigation of a site when a proponent commits to avoiding the locality is not in the best interests of the archaeological resource.

Woodland Heritage Services will continue to work with Xeneca to ensure that the site area is appropriately protected.

Sincerely,

Luke Dalla Bona
Woodland Heritage Services Limited

69 Lansdowne Ave
Sault Ste. Marie, ON P6B 1K5
P: 705.256.5418
web: www.woodlandheritage.com
email: luke@woodlandheritage.com

17 Wellington Street, Box 2529
New Liskeard, ON P0J 1P0
P: 705.647.8833
F: 705.647.7026
web: www.woodlandheritage.com
email: john@woodlandheritage.com

ORIGINAL REPORT
Stage 1 Archaeological Assessment of Proposed
Wabageshik Hydro Project Transmission Lines & Roads
FIT - G0BZK

Report Author:
Luke Dalla Bona
Woodland Heritage Services Limited
Suite 140, 143A Great Northern Road
Sault Ste. Marie, ON P6B 4Y9
P: 705.256.5418
E-Mail: luke@woodlandheritage.com
Province of Ontario, Licence to Conduct Consulting Archaeology
P065-2013 (Woodland Heritage Services Limited)

Project Information:
Vermilion River, Wabageshik T & R
District of Sudbury
P065-187-2013

Proponent Information:
Xeneca Power Development Inc.
5160 Yonge St., Suite 520,
Toronto, Ontario M2N 6L9
Attention: Ed Laratta
Telephone: 416.590.9632
Fax: 416.590.9955
Email: elaratta@xeneca.com

July 8, 2013

TABLE OF CONTENTS

EXECUTIVE SUMMARY

Xeneca Power Development Inc of North York, Ontario retained Woodland Heritage Services Limited to conduct a Stage 1 archaeological assessment of a proposed hydropower development at Wabageshik on the Vermillion River in Foster Township, Ontario.

A Stage 1 archaeological assessment was conducted for this project.

As a result of the assessment, it was determined that there are no areas of high archaeological potential within the project area.

It is recommended that Stage 2 work is *not* required within areas identified as proposed for transmission lines, roads and construction laydown areas for the Wabageshik Hydro project on the Vermilion River as identified in the Supplemental Documention.

1.0 PROJECT PERSONNEL

Luke Dalla Bona, M.A.
Partner
Woodland Heritage Services Limited
Suite 140, 143A Great Northern Road
Sault Ste. Marie, ON P6B 4Y9
Licence Holder (PO65-2013)

Licensee Information:
Luke Dalla Bona
Woodland Heritage Services Limited
Suite 140, 143A Great Northern Road
Sault Ste. Marie, ON P6B 4Y9
P: 705.256.5418
E-Mail: luke@woodlandheritage.com
Province of Ontario, Licence to Conduct Consulting Archaeology
P065-2013 (Woodland Heritage Services Limited)

Project Information:
Vermilion River, Wabageshik T & R FIT - G0BZK
District of Sudbury
P065-187-2013

Proponent Information:
Xeneca Power Development Inc.
5160 Yonge St., Suite 520,
Toronto, Ontario M2N 6L9
Attention: Ed Laratta
Telephone: 416.590.9632
Fax: 416.590.9955
Email: elaratta@xeneca.com

2.0 PROJECT BACKGROUND

2.1 Development Context

Xeneca Power Development Inc of North York, Ontario retained Woodland Heritage Services Limited to conduct a Stage 1 archaeological assessment of a proposed hydropower development at Wabageshik on the Vermillion River in Foster Township, Ontario.

2.2 Historical Context

2.2.1 Record Review

Site files at the offices of the Archaeological Data Coordinator Ministry of Tourism, Culture and Sport (MTCS) and Woodland Heritage Services Limited site files were checked to determine if any prehistoric sites had been previously recorded and registered either in or near the study area.

2.2.2 Known/Registered Archaeological Sites

The registered site database maintained by the Ontario Ministry of Tourism, Culture and Sport (MTCS) (Mr. Robert Von Bitter, Site Database Coordinator) was queried for information for sites in and near the study area. One archaeological site exists within the project area. CbHj-1 was discovered as a result of the Stage 2 surveys conducted under PIF# P065-157-2011. This site will not be impacted by the proposed transmission lines or road corridors considered in this report.

2.2.3 Cultural Prehistory

People have been living in the study area since the time glaciers receded and the land could support plants and animals. Archaeologists have divided the precontact era (that is, before the time of European arrival) into time periods, described briefly below.

2.2.4 Paleo-Indian Period (ca. 10,000 - 7,000 B.P. [before present time])

These precontact peoples were the first inhabitants of the area. Most likely, they arrived by following herds of caribou across the tundra/parkland environment of newly opened lands left by the retreating glaciers. Within a few hundred years, the Boreal forest moved in, causing an adaptation to a forest environment and settlement concentrations along lakes and river systems. Several types of early spear points indicate that different groups of these early hunters moved in at various times. In the Thunder Bay region, Paleo-Indian sites are commonly associated with the 221 m contour elevation (±22 metres).

However, because of the later retreat of the glaciers in the northern part of the province and subsequent flooding of the glacially-compressed landscape by pre and post glacial lakes, there was a time delay in the settlement of northern regions by colonizing vegetation, animals and humans. It appears that people may have entered the eastern Lake Superior/ northern Lake Huron area about 9,000 years ago, while archaeological work farther north

in the Hudson's Bay Lowlands suggests that human occupation there may be limited to about the last 6,000 years.

2.2.5 Archaic Period (ca. 7,000 B.P. - 2,500 B.P.)

An environmental transition brought about warmer, drier conditions resulting in a change in the plant and animal communities, which consequently impacted the subsistence patterns of humans living in the region now represented by north-central Ontario. These alterations of subsistence patterns are reflected in the artifact assemblages. For instance, in response to the hunting of smaller game, large spear points were replaced by smaller, notched projectile points and stone knives generally became smaller. A new technology involving the production of stone tools by grinding rather than chipping was also utilized.

About 5,000 B.P., people started to make use of copper, which was cold-hammered to form spear points, knives, gaff hooks and elaborate jewelry. One of the most complete copper assemblages for northwestern Ontario comes from a burial south of Lake Nipigon, dating to about 3,500 B.P.

2.2.6 Initial Woodland Period (ca. 2,500 B.P. - 1,100 B.P.)

The Initial Woodland Period marks the first appearance of ceramics in the archaeological record, a technological development which becomes increasingly important to the archaeologist as a means of determining the age and occupation of a site. Just as projectile points in the preceding Archaic and Paleo stages underwent stylistic alterations through time, which permitted the determination of the age of a site, ceramics also reflect changes: in vessel form, method of construction, decorative motif (design) and mode of decoration (method). The evolution of ceramic construction was gradual and subtle enough to allow archaeologists to determine the placement of a site within a cultural chronology on the basis of the ceramics recovered from it.

Archaeologists refer to the first pottery-using period in northern Ontario as the Laurel Tradition. Laurel peoples sites are marked by the introduction of fired clay pottery vessels. These vessels were made by the coil method, had conical bases and were smooth, with the exception of the neck and rim which were decorated with distinctive toothed or sinuous-edged tools. The Laurel peoples also practised a way of life similar to the Archaic peoples who lived in the region before them: fishing, hunting and collecting wild plants on the major waterways.

There are two major theories concerning the origin of the Laurel culture. One is that it arose out of an Archaic base, differing only by the adoption of pottery. The other is that the people moved into the region following the expansion of wild rice habitats about 2500 B.P.

2.2.7 Terminal Woodland (ca. 1,100 B.P. - 400 B.P.)

Two distinctive cultures, both of which appear to have developed from a Laurel cultural base, are present in the Terminal Woodland Period. One of these cultures is referred to as the Blackduck tradition; the other distinct culture is the Selkirk tradition.

The Blackduck culture is characterized by unique globular pottery vessels. The body of these vessels is textured by cord-wrapped paddles and the rim is decorated with cord-wrapped object impression. Some archaeologists believe the Blackduck tradition was ancestral to the modern Ojibway (Anishnabek) Aboriginal Peoples and First Nations.

The other Terminal Woodland culture, the Selkirk tradition, is distinguished by their fabric-impressed globular vessels. They are found farther north. According to many archaeologists, the Selkirk peoples are ancestral to the Cree Aboriginal Peoples and First Nations.

2.2.8 Historic Period (ca. 400 B.P. to present)

This period begins with the arrival of Europeans and settlers to the area, specifically French, then English traders, bringing with them trade goods such as axes, guns, beads and metal products.

2.3 Archaeological Context

Two previous archaeological reports have dealt with this project but focused on the proposed dam and inundation area only (P065-112-2010 and P065-157-2011).

The study area is primarily located south of the Vermilion River and east of the town of Espanola.

The Vermillion River at the project location is relatively undeveloped and in its natural state. The overstory in the general project area is typical of that encountered in the SudburyEspanola area. A poplar/birch second growth with some softwoods predominate. Overall, the overstory is highly disturbed by more than a century of logging. Soils are thin and wildly undulating bedrock is primarily encountered. In the low 'valleys' between the bedrock highs, one encounters wetlands that have been filled with mineral soils washed from the surrounding bedrock during postglacial times. The Vermillion River flows through a bedrock-controlled valley. Numerous logging roads exist in the area. The local ATV/snowmobile trail utilizes one of the these tertirary logging roads.

It is important to note that the transmission line is a single pole line spaced on average approximately 30m apart. The line is proposed to follow beside the road that is built into the project area. The road that is built into the project area proposed to utilize existing primary and secondary logging roads and improve existing tertiary roads into the proposed construction site.

3.0 PROPERTY INSPECTION

3.1 Field Methods: Determination of Areas Surveyed

Detailed maps and survey plans identifying the project limits were provided by the proponent to the archaeologist. Identifying features of the landscape made it easy to determine the project limits on the landscape.

The proponent authorized access to the study area.

The area was visited on July 25-26, 2013. I was able to walk a considerable portion of the proposed construction laydown areas, new road allowances, drive the established roads. The weather conditions during the Stage 1 site visit day was satisfactory for observation of the study area.

4.0 ANALYSIS AND CONCLUSIONS

The area under investigation for development is identified in the Supplementary Documentation.

With respect to the proposed road construction, much of the plan will utilized existing roads that will not require upgrading. Proposed upgraded/new roads south of the Vermilion River exist in an area of undulating bedrock with thin soil coverings. No major waterbodies will be crossed and although the proposed road may be constructed near some lakes, they will remain outside the 30m AOC boundaries for these lakes. This coupled with the bedrock uplands and poorly drained lowlands does not indicate any areas of high archeological potential in the proposed new road constructions.

The proposed transmission line routes will be constructed beside road access and/or will utilize existing utlity poles.

The proposed transmission line route does cross Darkie Creek, a body of water 50-75m wide. This creek is an artificial construct that exists because of the dam constructed on the Spanish River. Prior to the construction of this dam, it is likely that this creek was an insignificant water body. *If* there was any archaeological potential associated with this creek, it was flooded and has been under water for the last 100 years.

The proposed construction and laydown areas occur on bedrock outcrops with little to no significant soil development. Additionally, the undulating terrain and their high elevation above the river render these areas not high archaeological potential.

There is a lack of any relevant post-glacial terrain features in the study area and the significant distance of the study area from any major water bodies do not suggest high archaeological potential based upon these factors proposed road corridors/transmission line routes within the study area.

There are no features or conditions within the study area that suggest a high potential for the existence of undiscovered archaeological sites along the routes of the proposed Wabageshik Hydro project transmission lines, roads and construction laydown areas.

5.0 RECOMMENDATIONS

It is recommended that Stage 2 work is *not* required within areas identified as proposed for transmission lines, roads and construction laydown areas for the Wabageshik Hydro project on the Vermilion River as identified in the Supplemental Documention.

6.0 ADVICE ON COMPLIANCE WITH LEGISLATION

This report is submitted to the Minister of Tourism, Culture and Sport as a condition of licensing in accordance with Part VI of the *Ontario Heritage Act*, R.S.O. 1990, c 0.18. The report is reviewed to ensure that it complies with the standards and guidelines that are issued by the Minister, and that the archaeological fieldwork and report recommendations ensure the conservation, protection and preservation of the cultural heritage of Ontario. When all matters relating to archaeological sites within the project area of a development proposal have been addressed to the satisfaction of the Minister of Tourism, Culture and Sport, a letter will be issued by the ministry stating that there are no further concerns with regard to alterations to archaeological sites by the proposed development.

It is an offence under Sections 48 and 69 of the *Ontario Heritage Act* for any party other than a licensed archaeologist to make any alteration to a known archaeological site or to remove any artifact or other physical evidence of past human use or activity from the site, until such time as a licensed archaeologist has completed archaeological fieldwork on the site, submitted a report to the Minister stating that the site has no further cultural heritage value or interest , and the report has been filed in the Ontario Public Register of Archaeological Reports referred to in Section 65.1 of the *Ontario Heritage Act.*

Should previously undocumented archaeological resources be discovered, they may be a new archaeological site and therefore subject to Section 48 (1) of the *Ontario Heritage Act*. The proponent or person discovering the archaeological resources must cease alteration of the site immediately and engage a licensed consultant archaeologist to carry out archaeological fieldwork, in compliance with Section 48 (1) of the *Ontario Heritage Act.*

The Cemeteries Act, R.S.O. 1990 c. C.4 and the *Funeral, Burial and Cremation Services Act*, 2002, S.O. 2002, c.33 (when proclaimed in force) require that any person discovering human remains must notify the police or coroner and the Registrar of Cemeteries at the Ministry of Consumer Services.

SUPPLEMENTAL DOCUMENTATION
Stage 1 Archaeological Assessment of Proposed
Wabageshik Hydro Project Transmission Lines & Roads
FIT - G0BZK

Report Author:
Luke Dalla Bona
Woodland Heritage Services Limited
Suite 140, 143A Great Northern Road
Sault Ste. Marie, ON P6B 4Y9
P: 705.256.5418
E-Mail: luke@woodlandheritage.com
Province of Ontario, Licence to Conduct Consulting Archaeology
P065-2013 (Woodland Heritage Services Limited)

Project Information:
Vermilion River, Wabageshik T & R
District of Sudbury
P065-187-2013

Proponent Information:
Xeneca Power Development Inc.
5255 Yonge Street, Suite 1200
North York, ON M2N 6P4
Tel: 416 590 3064 | Fax: 416 590 9955

Attention: Ed Laratta
Email: elaratta@xeneca.com

July 8, 2013

TABLE OF CONTENTS

Figures and Photos

7.0 FIGURES AND PHOTOS

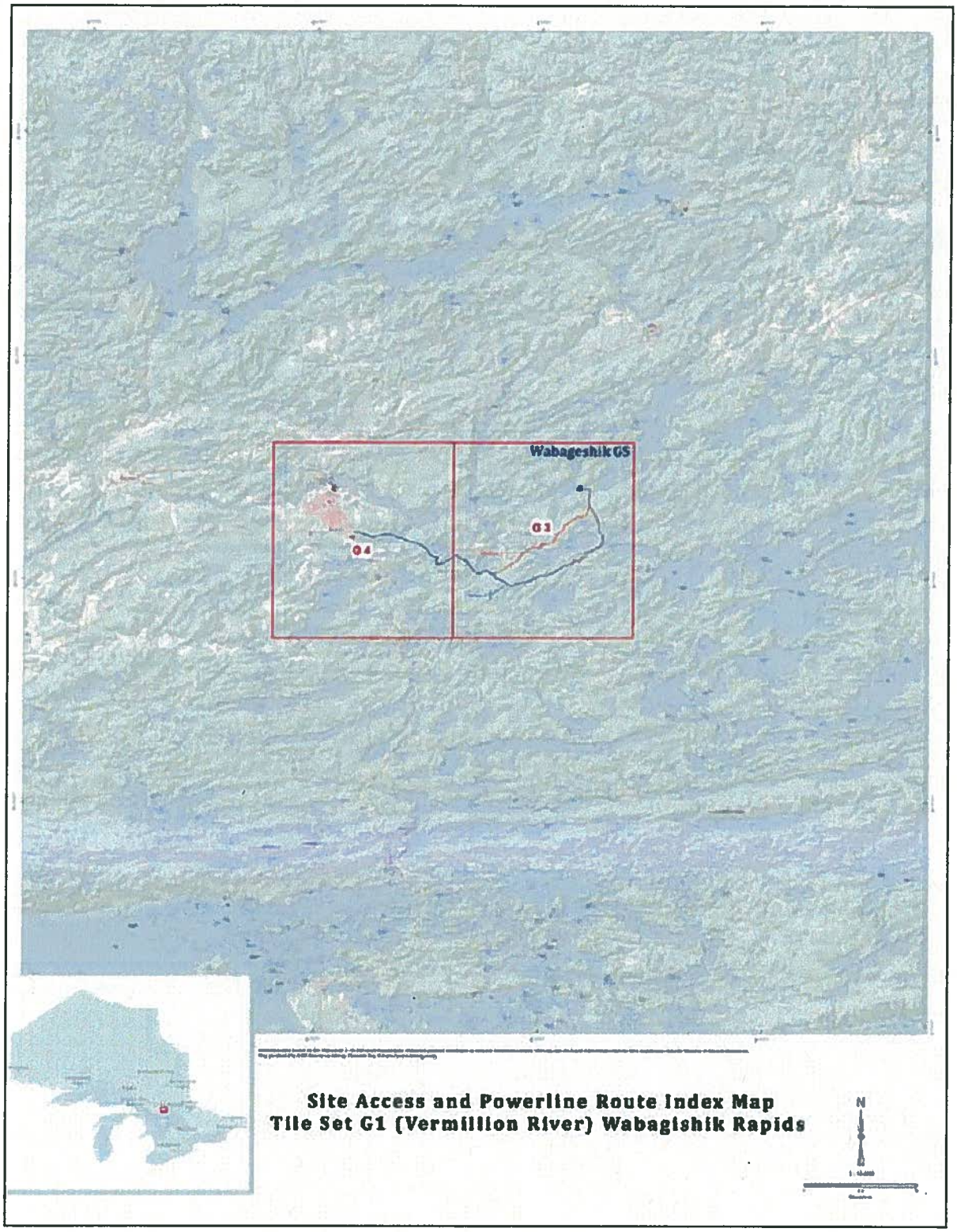

Figure 1. Location of the study area.

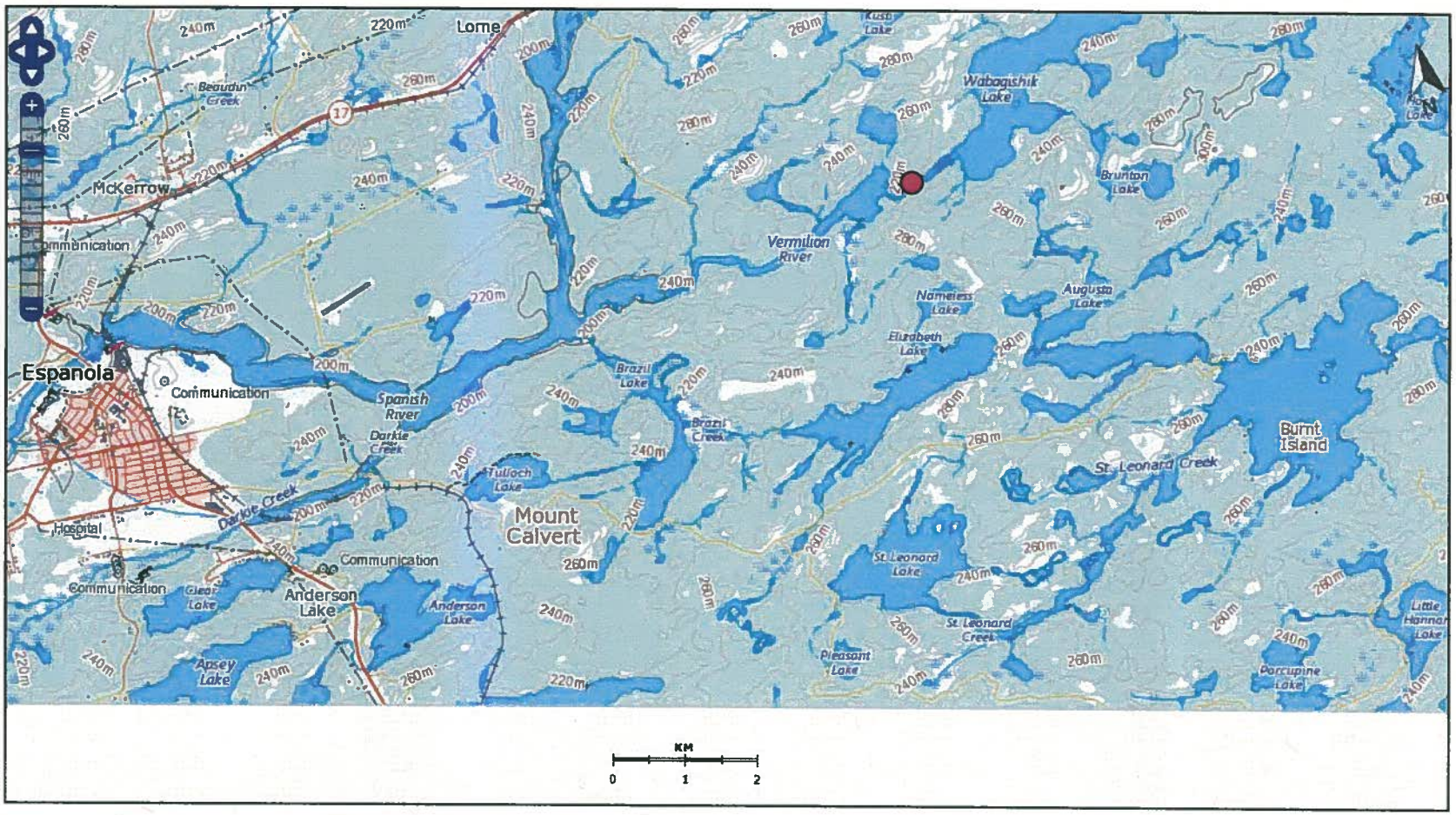

Figure 2. 1:50,000 NTS topographic map of the study area with the location of the proposed Wabageshik Dam indicated by the red dot (map reduced to fit on page).

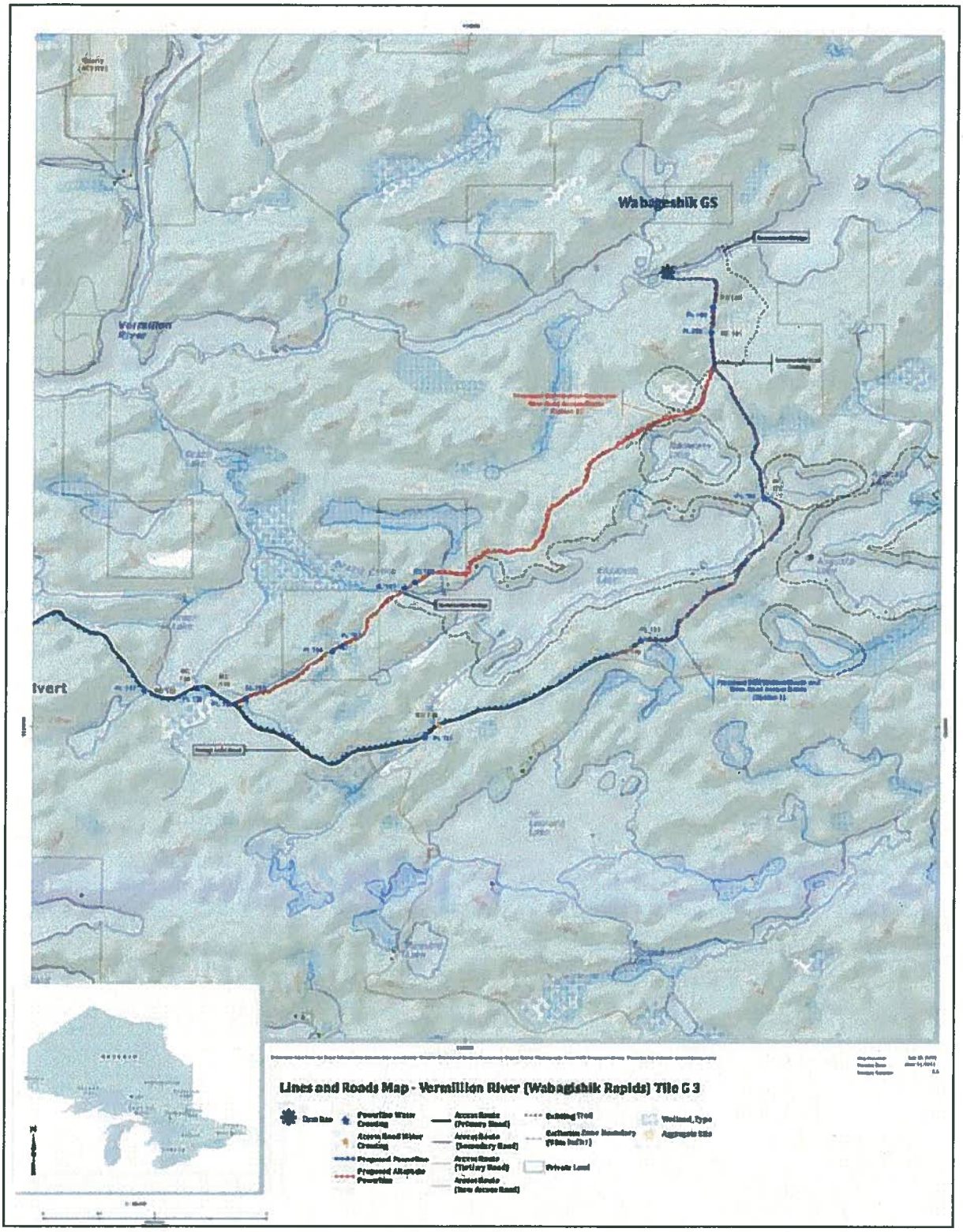

Figure 3. Proposed transmission lines and road options, Wabageshik Hydro project.

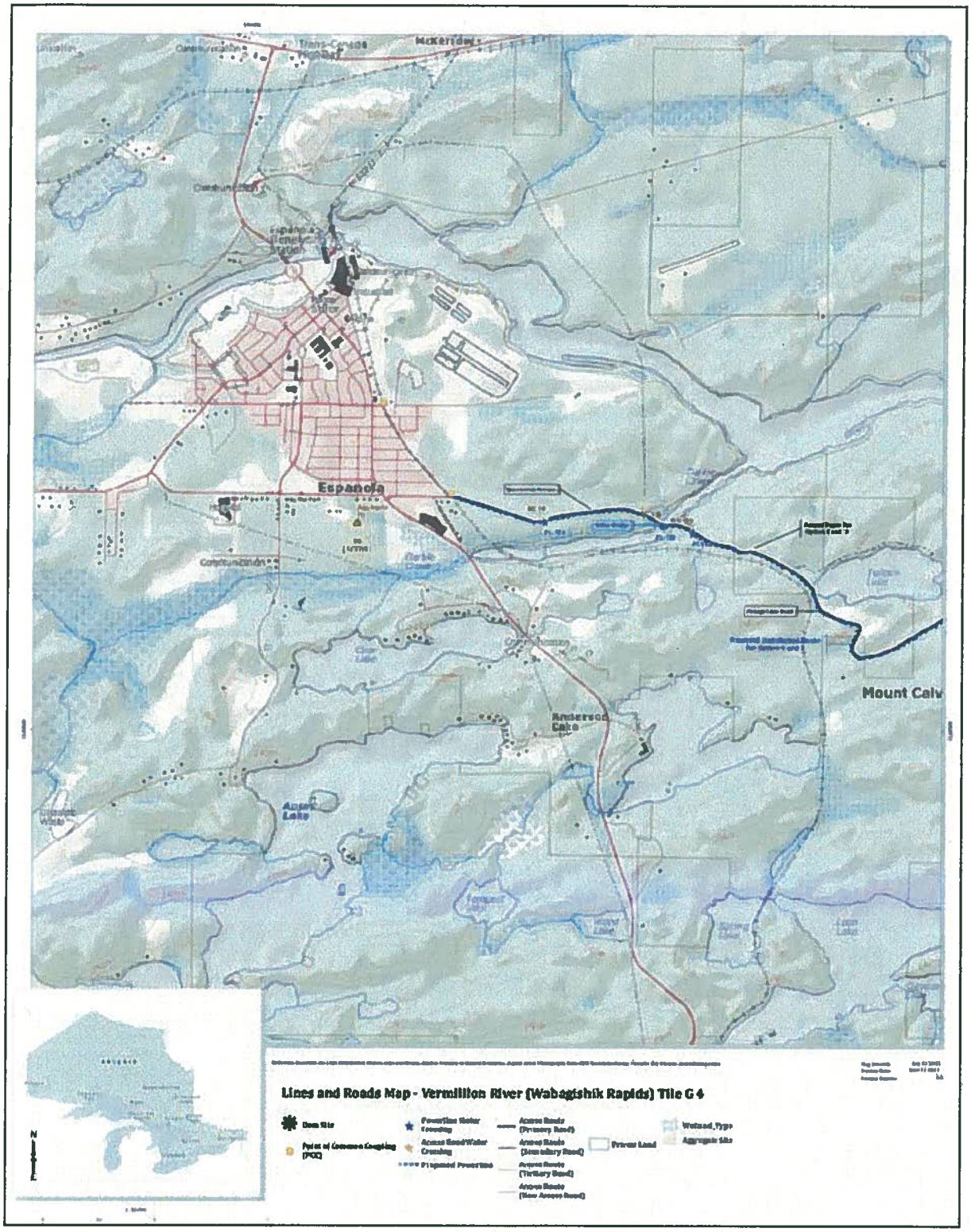

Figure 4. Proposed transmission lines and road options, Wabageshik Hydro project.

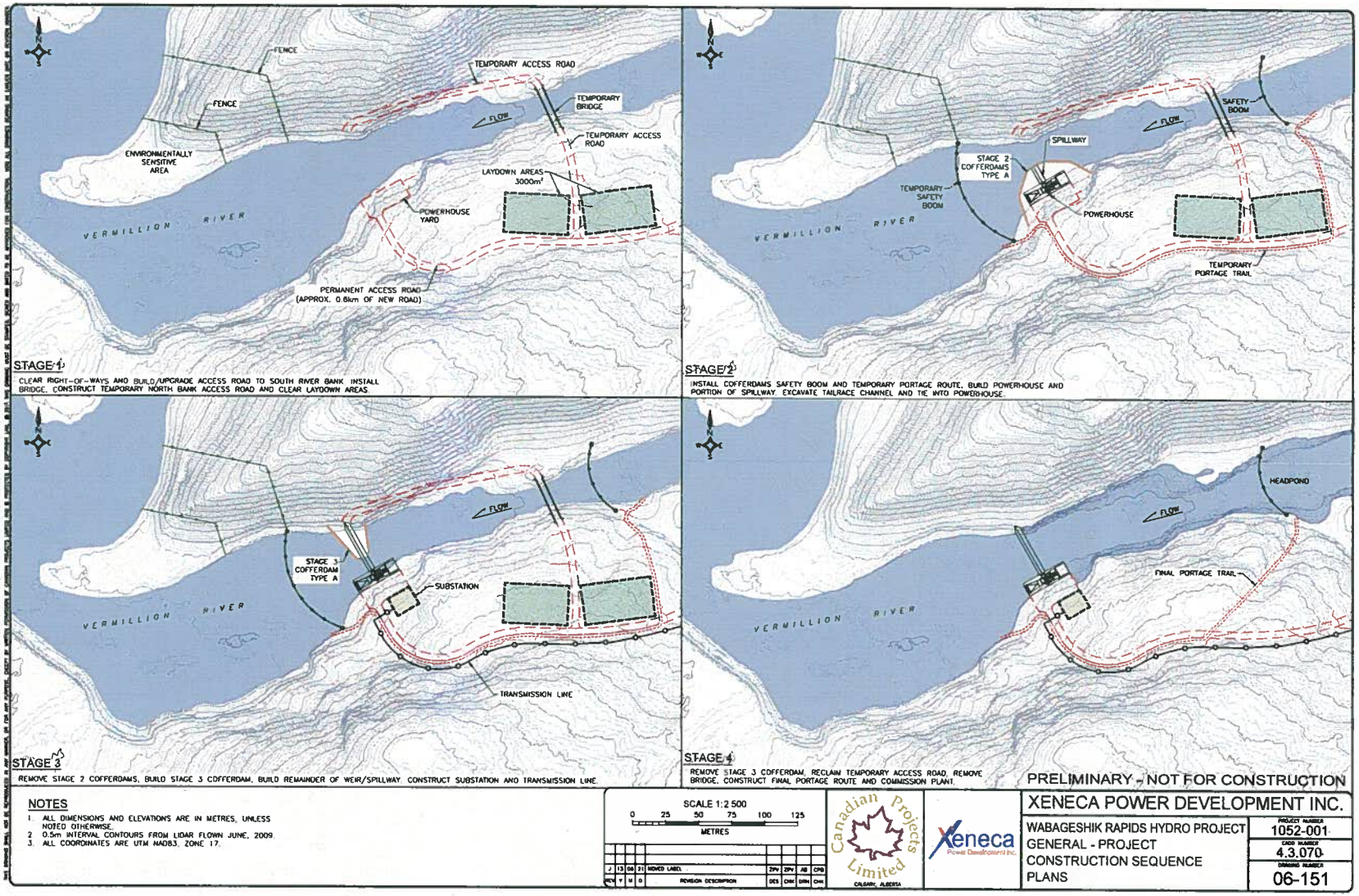

Figure 5. Proposed construction, laydown and temporary road options, Wabageshik Hydro project.

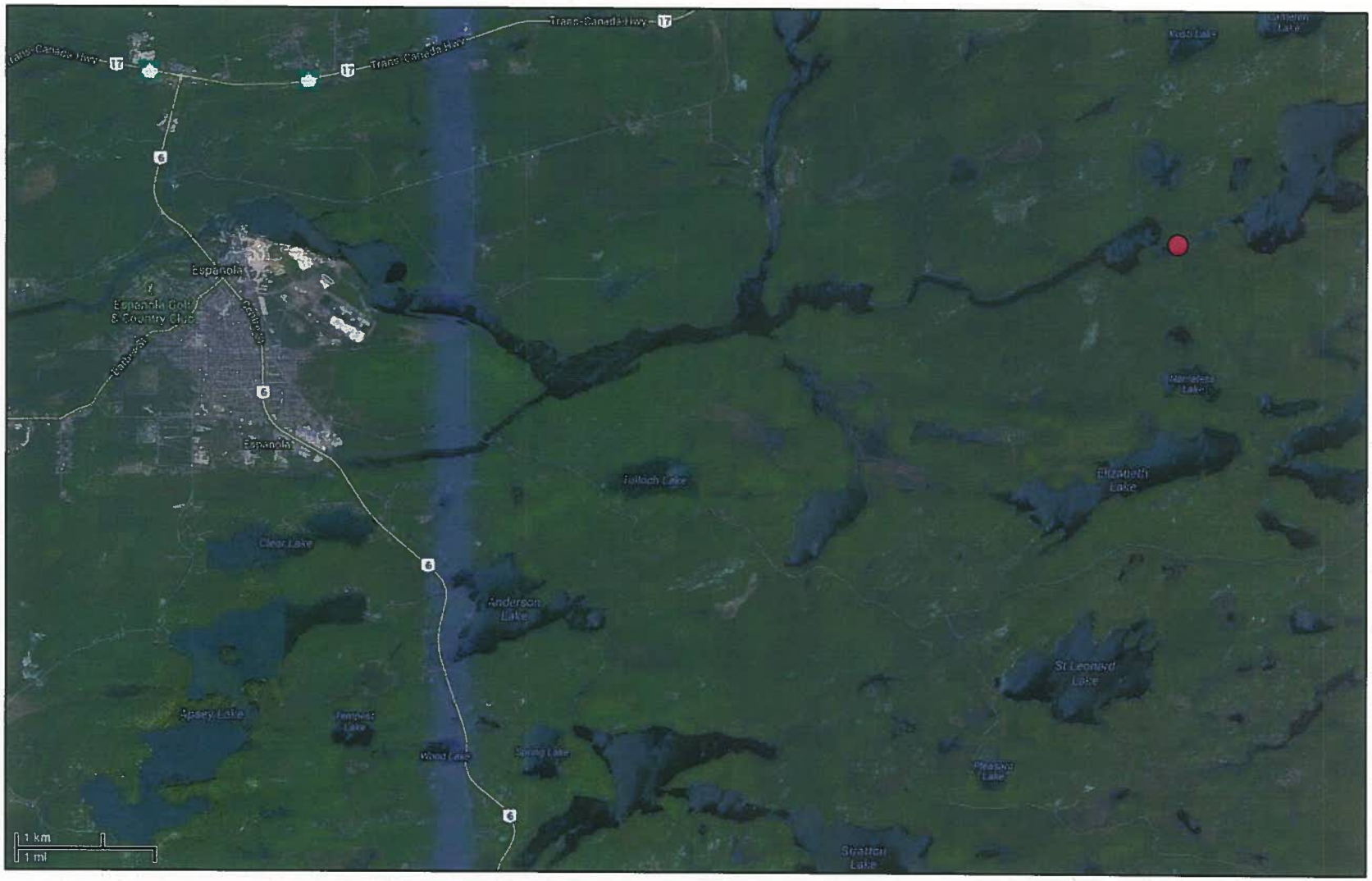

Figure 6. 1:50,000 NTS topographic map of the study area with the location of the proposed Wabageshik Dam indicated by the red dot (map reduced to fit on page).

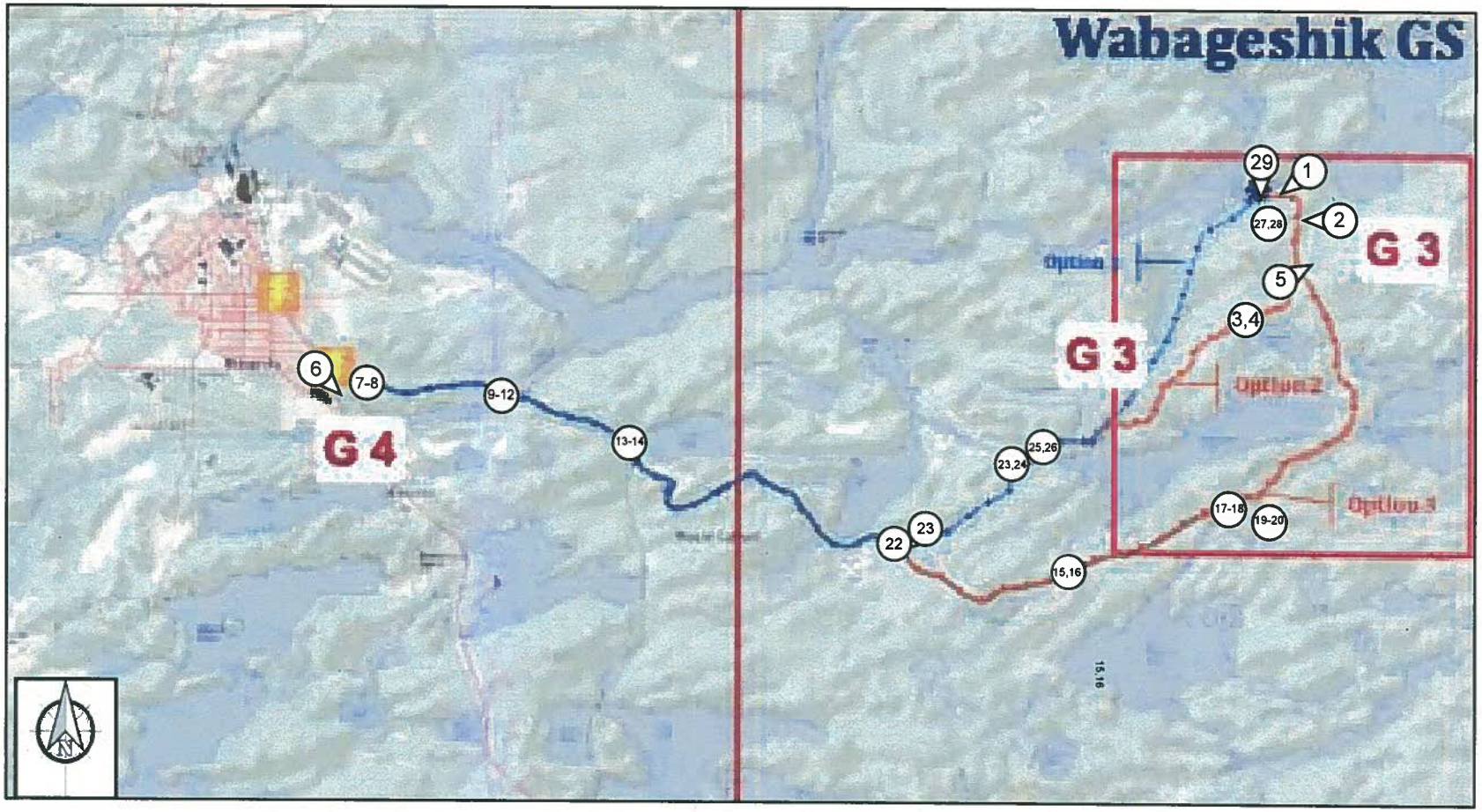

Figure 7. Location and direction of photos illustrated in this report.

Photo 1. Typical wetland encountered south of the proposed dam area.

Photo 2. Wetland encountered south of the proposed dam area.

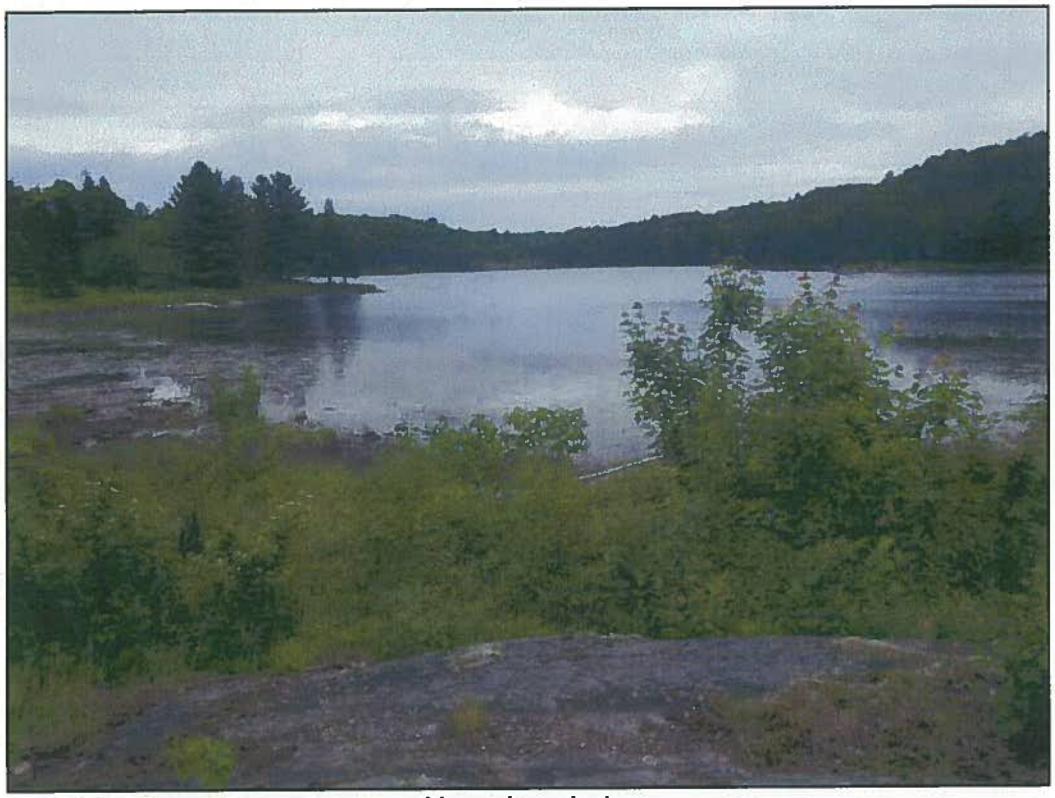

Photo 3. Looking southwest across Nameless Lake.

Photo 4. Typical stretch of tertiary logging road proposed for upgrade.

Photo 5. Typical stretch of tertiary logging road proposed for upgrade.

Photo 6. Typical stretch of existing roads/transmission line proposed for use.

Photo 7. Typical stretch of existing roads/transmission line proposed for use.

Photo 8. Typical stretch of existing roads/transmission line proposed for use.

Photo 9. Darkie Creek crossing looking southwest.

Photo 10. Darkie Creek crossing looking northeast.

Photo 11. Darkie Creek looking northwest.

Photo 12. Darkie Creek looking southeast.

Photo 13. Looking easterly across Tulloch Lake.

Photo 14. Looking northerly across Tulloch Lake.

Photo 15. Typical stretch of existing roads proposed for use.

Photo 16. Typical stretch of existing roads proposed for use.

Photo 17. Typical stretch of existing roads proposed for use.

Photo 18. Typical stretch of existing roads proposed for use.

Photo 19. Typical wetland along a stretch of existing roads proposed for use.

Photo 20. Typical wetland along a stretch of existing roads proposed for use.

Photo 21. Typical terrain along a stretch of existing roads proposed for use.

Photo 22. Typical stretch of existing roads proposed for use.

Photo 23. Typical terrain along a stretch of roads proposed for use into Elizabeth Lake.

Photo 24. Typical terrain along a stretch of roads proposed for use into Elizabeth Lake.

Photo 25. Typical terrain along a stretch of roads proposed for use into Elizabeth Lake.

Photo 26. Typical terrain along a stretch of roads proposed for use into Elizabeth Lake.

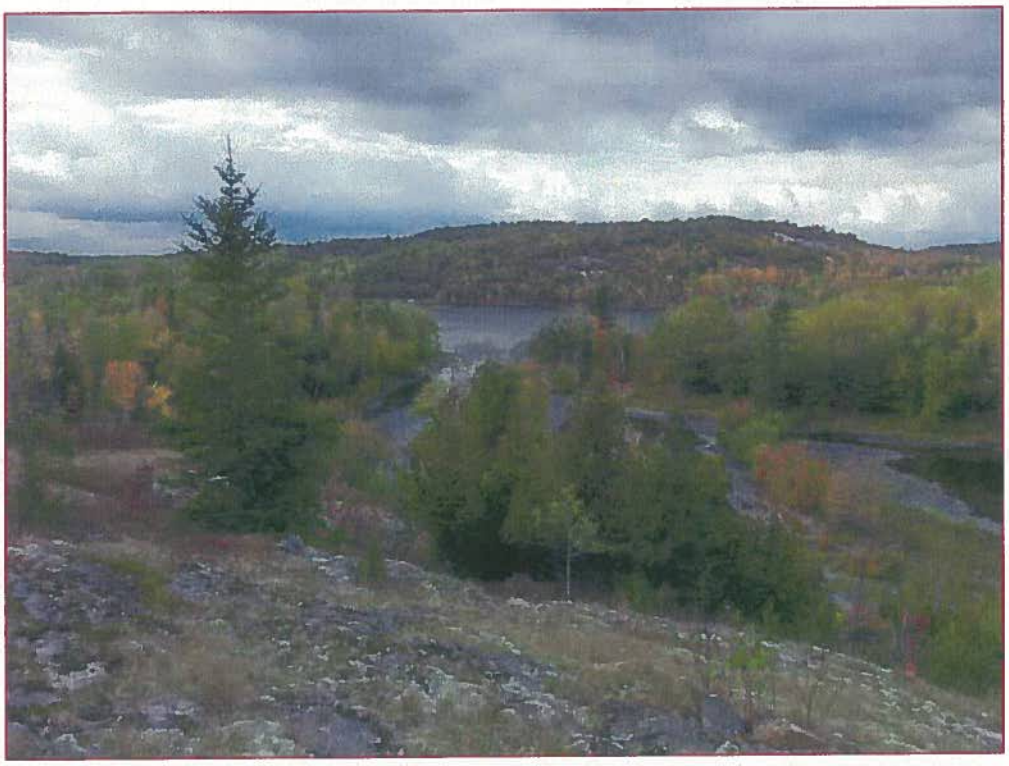

Photo 27. Typical terrain in the construction laydown areas, south of Vermilion River.

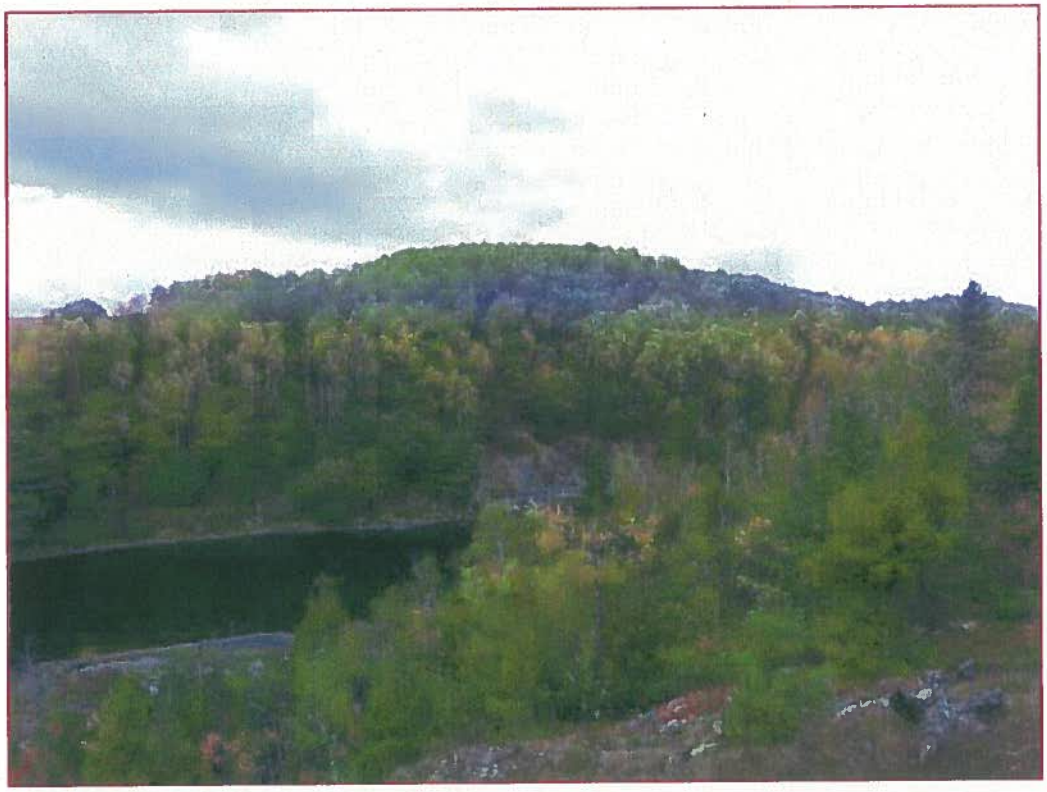

Photo 28. Typical terrain in the construction laydown areas, south of Vermilion River.

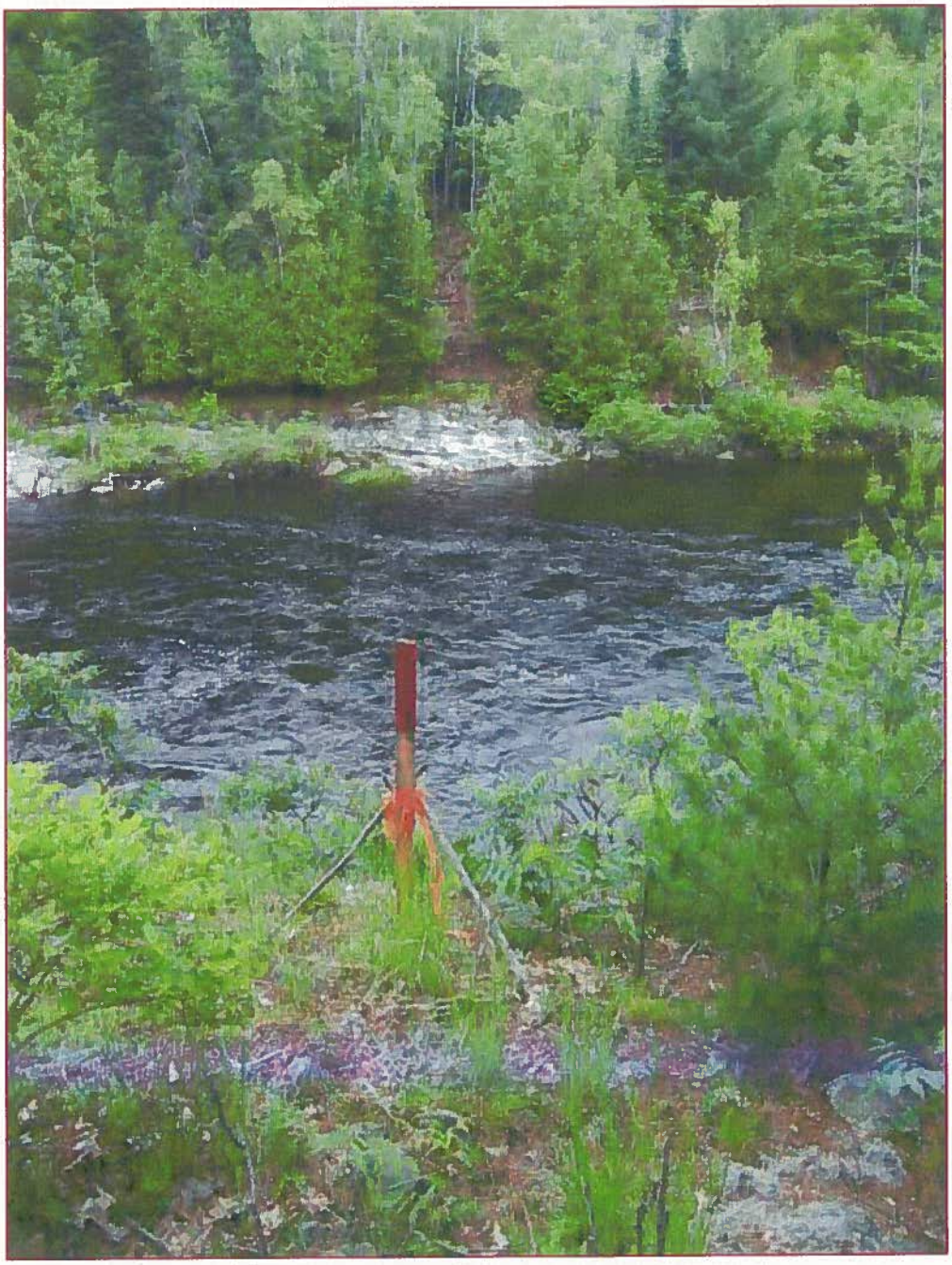

Photo 29. Photo looking south across the proposed location of the proposed dam.