ANNEX V

STAGE 1 SUMMARY ARCHAEOLOGY ASSESSMENT REPORT

SUMMARY REPORT
Stage 1 Archaeological Impact Assessment of Proposed Chute Dam, Ivanhoe River Hydroelectric Project, FIT-N89BM, Township of Oates, District of Timmins

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

Project Information:
Chute, Ivanhoe River
Township of Oates
District of Timmins

Proponent Information:
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December 31, 2010

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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 Chute Rapids on the Ivanhoe River in Oates 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

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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 Chute Rapids on the Ivanhoe River in Oates 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 Ivanhoe River at the project location is undeveloped and in its relatively natural state. The Ivanhoe River flows north from the height of land between the Great Lakes/ Hudson Bay watershed into Hudson Bay. The primary development activities in the area are forestry with extensive access roads on the east and west sides of the Ivanhoe River. A bridge serving a primary forest access road crosses the Ivanhoe River upstream from the proposed dam site.

The overstory in the general project area is typical boreal forest spruce, pines and poplars. Soils are glaciolacustrine sands and gravels. The Ivanhoe River flows through a steeply-banked valley. At the location of the proposed dam, the valley rises approximately 15m from the river's edge over a horizontal distance of less than 50m.

The dam proposes to raise the level of the river approximately 10m creating a headpond approximately 5.4km upstream from the dam.

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 1-4. 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 to construct an spillway dam, and a powerhouse. A headpond of approximately 5.4km in length will be created. An existing access road exists within a few hundred metres of the proposed damsite. Additional access roads and construction roads will be required to be built.

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 Chute has high archaeological potential due to its proximity to a major water source (Ivanhoe 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. The two pools located above the proposed damsite also present an excellent fishing location and as such contribute to the determination of potential.

The steepness of the river valley at this location does not lend itself to high potential along the shorelines upstream from the dam location. However, there are localized areas of high potential that should be subjected to Stage 2 assessment. An island also exists upstream from the proposed dam that is a high potential area.

An embankment dam is proposed to be built at the second major bend in the river south of the proposed dam site. This embankment dam will prevent water from filling a topographically low valley further to the north of the embankment location.

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 Chute hydropower development on the Ivanhoe River.

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

It is recommended that Stage 2 field surveys be undertaken on the island in the river and in areas of high potential. It is also recommended that the area atop the river valley edge be examined for the existence of a portage trail.

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 Chute Hydropower Development on the Ivanhoe River, Ontario.

Figure 2. Satellite image illustrating the location of the Chute Hydropower Development on the Ivanhoe River, in the Township of Oates.

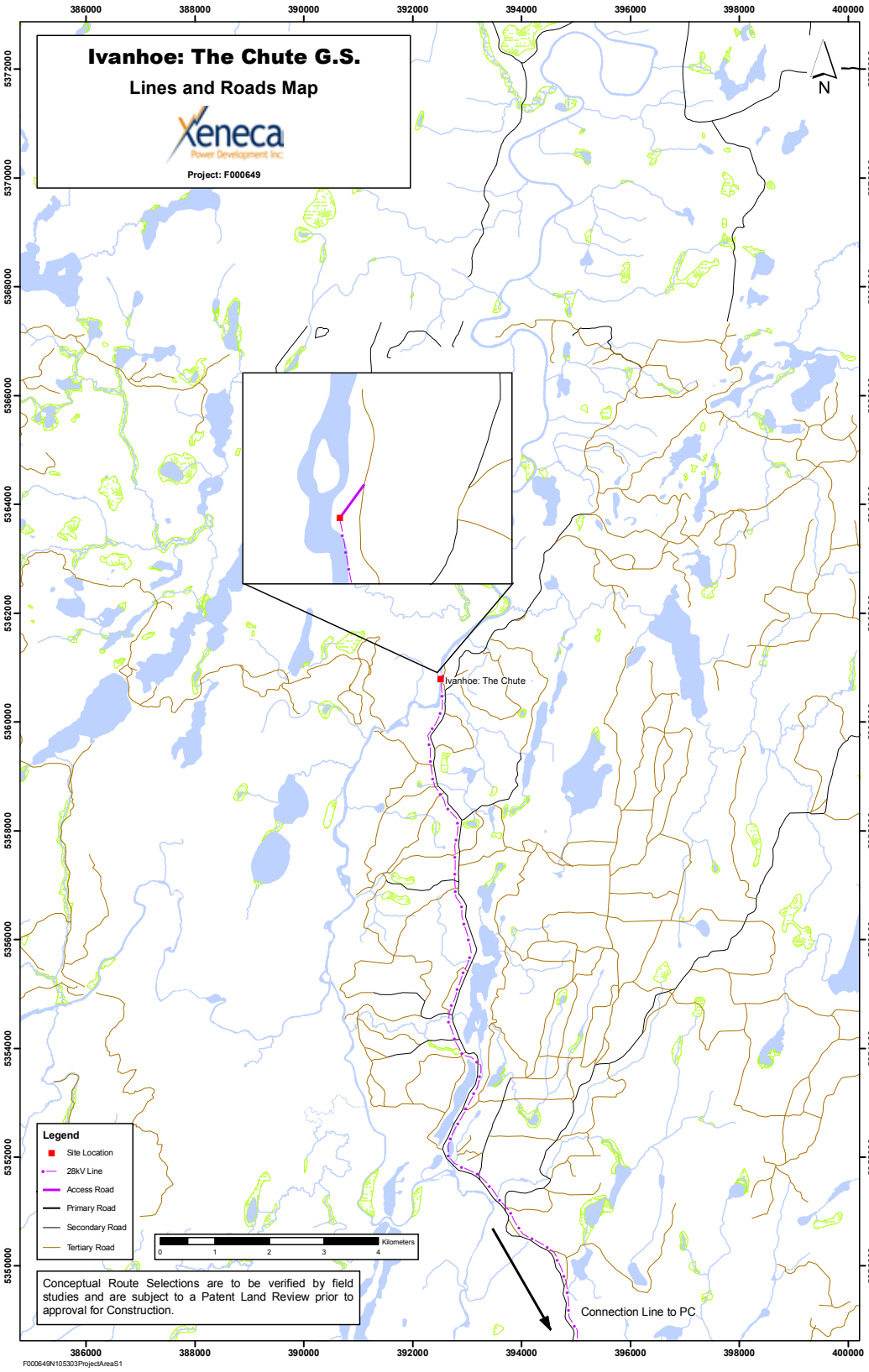

Figure 3. Location of the Chute Hydropower Development on the Ivanhoe River, in the Township of Oates, and proposed lines and roads.

Figure 4. Development map of the proposed hydropower facility at Chute on the Ivanhoe River, in the Township of Oates. Contour intervals are 50cm.

