REPORT

Tazi Twé
Hydroelectric Project

October 2013

ANNEX V - HERITAGE RESOURCES BASELINE REPORT

Tazi Twé Hydroelectric Project

Submitted to:
SaskPower
4W, 2025 Victoria Ave
Regina, Saskatchewan
S4P 0S1

Report Number: 10-1365-0004/DCN-072

Golder Associates

List of Acronyms

Term	Definition
ASTt	Arctic Small Tool Tradition
BLFN	Black Lake First Nation
BP	Before Present
CEAA	*Canadian Environmental Assessment Act*
HBC	Hudson's Bay Company
HRIA	Heritage Resources Impact Assessment
GPS	global positioning system
Project	Tazi Twé Hydroelectric Project
RSA	regional study area
LSA	local study area
UTM	Universal Transverse Mercator

List of Units

Term	Definition
MW	megawatt
°	degree
cm	centimetre
ha	hectare
km	kilometre
m	metre
m^3/s	cubic metres per second

Table of Contents

Table of Contents (continued)

TABLES

FIGURES

1.0 INTRODUCTION

1.1 Project Proponent

In response to an increasing demand for energy in northern Saskatchewan, Black Lake First Nation (BLFN) together with Saskatchewan Power Corporation (SaskPower) are the Proponents of the Tazi Twé Hydroelectric Project (Project). Black Lake First Nation's interest in the Project is held through the Elizabeth Falls Hydro Limited Partnership (EFHLP).

1.2 Project Overview

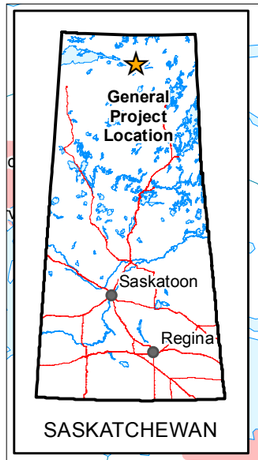
The proposed Project will be a 50 megawatt (MW) water diversion type electrical generating station. The Project is located on the Chicken Indian Reserve 224, approximately 7 kilometres (km) from the community of Black Lake adjacent to the Fond du Lac River between Black Lake and Middle Lake (Figure 1.2-1). Black Lake has an approximate area of 418 square kilometres (km^2) and discharges an average flow of 305 cubic metres per second (m^3/s) into the Fond du Lac River. The Fond du Lac River traverses Elizabeth Falls on its way to Middle Lake. Water from Black Lake will be diverted through an intake and power tunnel to the powerhouse before being released through a tailrace channel into the Fond du Lac River, which ultimately discharges into Middle Lake.

The principal components of the Project consist of the following:

- gravel, all-season access road to the Project site from the all-season road between the communities of Stony Rapids and Black Lake;
- bridge over the Fond du Lac River;
- powerhouse and associated infrastructure;
- water intake and power tunnel to convey flow from Black Lake to the powerhouse;
- tailrace channel from the powerhouse to the Fond du Lac River just upstream of Middle Lake;
- submerged weir located in the Fond du Lac River at the outlet of Black Lake at Grayling Island;
- transmission lines and switching stations to connect to the northern Saskatchewan electrical grid; and
- all related physical works and physical activities required to carry out these works, including the associated coffer dams, access roads, laydown areas, construction camp, borrow areas, waste rock piles, concrete batch plant, fuel storage facility and fueling areas, explosives storage, construction camp, and sewage treatment and potable water facilities.

1.3 Objective of the Baseline Report

The objective of baseline reporting is to provide information on the current environmental conditions related to the Cultural Environment. This information will be used to support assessment of the effects of the proposed Project on biophysical and socio-economic environments in the area.



Fond Du Lac Indian Reserve
Fond du Lac
Lake Athabasca
Ice Road
Fond Du Lac Indian Reserve
Fond du Lac River
Athabasca Winter Road
Stony Rapids
Indian Reserve 225
Stony Lake
Indian Reserve 224
Middle Lake
Indian Reserve 224
905
Black Lake
Fond du Lac River
Fir Island
Black Lake
Paisley Lake
Indian Reserve 226
Burr Falls
Eisenhauer Lake
Fond du Lac River
Hawkrock River
Athabasca Seasonal Road
Fond Du Lac Indian Reserve
Richards Lake
Engler Lake
Riou Lake
Hocking Lake

6600000
6575000
6550000

350000 375000 400000 425000 450000 475000 500000

10 0 10
SCALE 1:400,000 KILOMETRES

LEGEND

- VILLAGE
- RUNWAY
- HIGHWAY
- ROAD
- RIVER
- WATERBODY
- INDIAN RESERVE
- ELIZABETH FALLS
- CAMP GRAYLING
- PERMANENT RESIDENT'S CABIN
- GENERAL PROJECT LOCATION

REFERENCE

DMTI HIGHWAYS AND ROADS
NTS MAPSHEET 74I, 74J, 74O, 74P
DATUM: NAD 83 PROJECTION: UTM ZONE 13

PROJECT

TAZI TWÉ HYDROELECTRIC PROJECT

TITLE

GENERAL PROJECT LOCATION

Golder Associates
Saskatoon, Saskatchewan

PROJECT		10-1365-0004	FILE No.	
DESIGN			SCALE AS SHOWN	REV. 1
GIS	LMR/SM	27/06/13	FIGURE: 1.2-1	
CHECK	KZ	03/07/13		
REVIEW	PY	03/07/13		

2.0 STUDY AREAS

To quantify baseline conditions and assess Project-related effects on heritage resources, a regional study area (RSA) and a local study area (LSA) were considered for Heritage Resources. The study areas vary depending on the scale and scope of baseline study objectives.

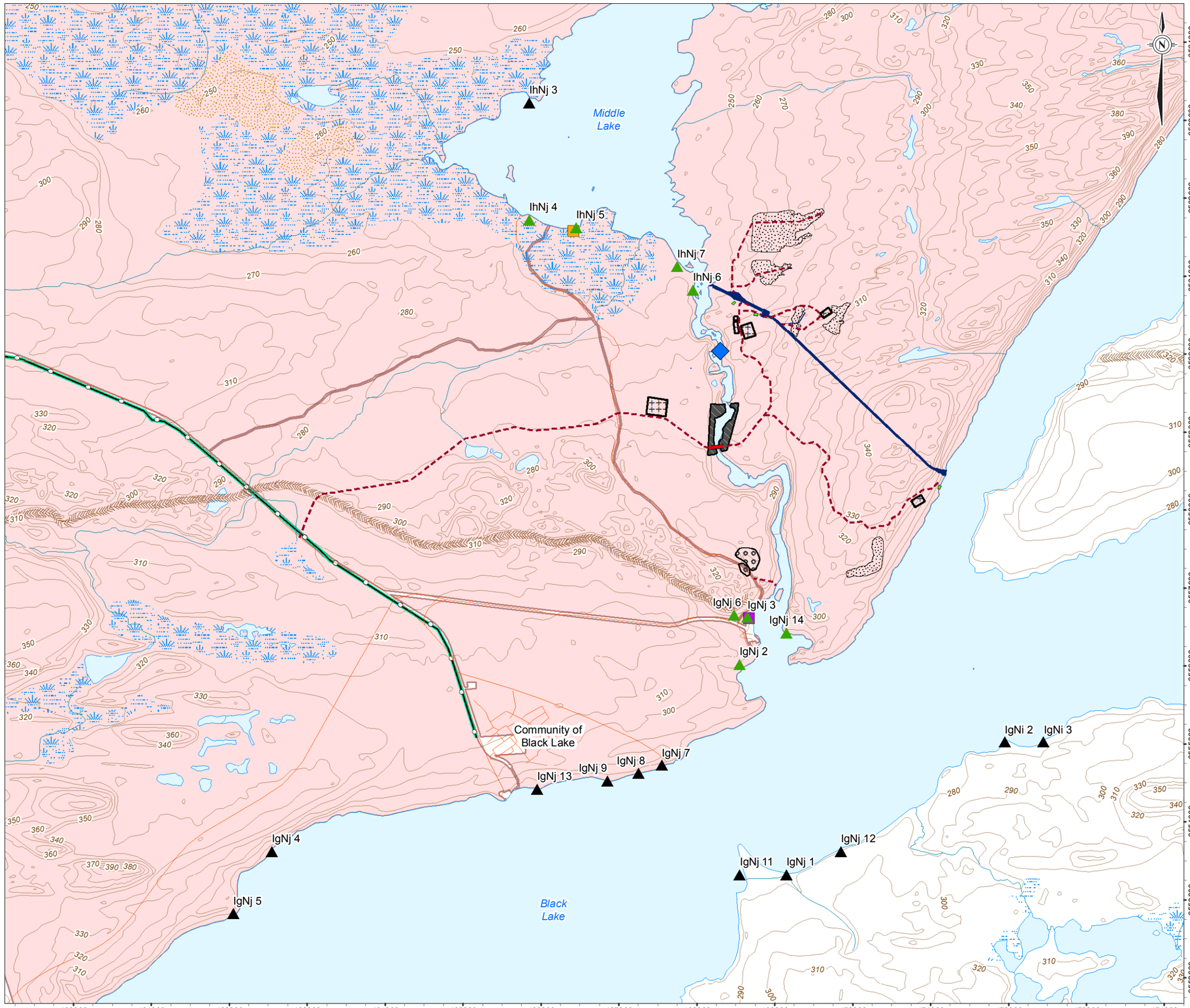
2.1 Regional

The RSA for Heritage Resources was identified to provide archaeological and cultural historical context for heritage resources identified in the Project area. The RSA encompasses major lakes and drainages in the north-central and northwest corner of Saskatchewan where relevant archaeological studies have been carried out, including Lake Athabasca, Black Lake, and Cree Lake, as well as portions of the Fond du Lac and Cree Rivers.

The RSA was identified to provide context only, and no effects assessment for Heritage Resources will be carried out for the RSA. Potential environmental effects to Heritage Resources are limited to direct disturbance and loss of archaeological sites during Project construction activities. There are no expected environmental effects to Heritage Resources outside the Project components.

2.2 Local

The LSA identified for heritage resources includes the Project components located on lands adjacent to the Fond du Lac River between Black Lake and Middle Lake, and the north shore of Black Lake. This includes preferred and alternative locations for Project components and infrastructure (Figure 2.2-1). The LSA was based on the predicted direct and indirect effects from Project components on heritage resources. Project components include the water intake, tailrace channel, bridge, spoil disposal areas, construction camp, construction facilities, and associated access roads. Potential direct effects to heritage resources arise from the removal of soil, vegetation and bedrock during the construction phase. Heritage resources are non-renewable and they can be damaged or completely destroyed during these activities. Potential indirect effects include new or enhanced access to areas that could result in unintentional disturbance to archaeological sites outside the project footprint as a result of land use activities. Baseline information is provided to give specific information on all known heritage resources potentially affected by the Project.



LEGEND

- ELIZABETH FALLS
- SWITCHING STATION
- CAMP GREYLING
- PERMANENT RESIDENT'S CABIN
- TRANSMISSION LINE
- ROAD
- RIVER
- WETLAND
- WATERBODY
- INDIAN RESERVE
- KNOWN HERITAGE RESOURCES
- REVISITED HERITAGE RESOURCES

SPECIFIC CONSTRUCTION SITES

- POTENTIAL BRIDGE ALIGNMENT
- PERMANENT ROAD
- CONTRACTOR CAMP / LAYDOWN AREA
- BORROW AREA
- SPOIL DISPOSAL AREA
- POTENTIAL BRIDGE ALIGNMENT AREA
- TUNNEL AND TAILRACE ALIGNMENT
- SETTLING POND

NOTE

LOCATIONS OF PREFERRED, ALTERNATE OR OPTIONAL FACILITIES ARE SHOWN FOR ILLUSTRATIVE PURPOSES ONLY. FINAL LOCATIONS WILL BE DETERMINED DURING FINAL ENGINEERING AND DESIGN, TAKING INTO CONSIDERATION STAKEHOLDER INPUT.

REFERENCE

DATUM: NAD83 PROJECTION: UTM ZONE 13
SITE PLAN PROVIDED BY HATCH ENGINEERING
HERITAGE CONSERVATION BRANCH,
MINISTRY OF TOURISM, PARKS, CULTURE AND SPORT, 2011
NTS MAPSHEET: 74P/03, 04

1 0 1
SCALE 1:50,000 KILOMETRES

PROJECT
TAZI TWÉ HYDROELECTRIC PROJECT

TITLE
PROPOSED PROJECT COMPONENTS, AND KNOWN HERITAGE RESOURCES

Golder Associates
Saskatoon, Saskatchewan

PROJECT	10-1365-0004		FILE No.		
DESIGN			SCALE AS SHOWN	REV.	2
GIS	LMR/SM	27/06/13	**FIGURE: 2.2-1**		
CHECK	KZ	05/07/13			
REVIEW	PY	05/07/13			

3.0 HERITAGE RESOURCES

3.1 Introduction

Under the *Canadian Environmental Assessment Act* 2012 (*CEAA 2012)*, any changes to the environment that may affect the physical and cultural heritage with respect to aboriginal peoples must be taken into account (Section 5.1.c.ii). This includes effects to heritage or archaeological resources. As there is no specific Federal legislation that defines or addresses heritage resource protection, the Saskatchewan *Heritage Property Act* and the requirements established by the Saskatchewan Heritage Conservation Branch were followed to direct the Heritage Resources baseline studies. In Saskatchewan, heritage resources include all archaeological, historical and paleontological objects and sites, as well as any property deemed to be of interest for its architectural, historical, cultural, environmental, aesthetic, and scientific value.

Because of public and First Nations and Metis interest in heritage resources, there are linkages to traditional land use, non-traditional land use, and socio-economics. Baseline studies for heritage resources included the collection of historical information and a field survey of heritage sensitive areas within the LSA. The objectives of the heritage resources baseline studies are:

- to describe the heritage resources that exist within and adjacent to the Project LSA; and
- to use the information to determine impacts to heritage resources from the Project, and provide appropriate mitigation if required.

3.2 Methods

3.2.1 Existing Literature and Databases

In order to understand the cultural setting and existing heritage resources documented in the LSA, several data sources were consulted. These included:

- Provincial databases maintained by the Heritage Conservation Branch (Saskatchewan Ministry of Parks, Culture, and Sport) including:
  - Survey Area Plot of previously assessed areas;
  - Archaeological Site Inventory Database;
- Heritage Resources Impact Assessment (HRIA) reports housed at the Heritage Conservation Branch, Regina;
- Archaeological Survey of Canada Mercury Series publications;
- University of Saskatchewan Masters theses;
- Champlain Society Digital Collection (University of Toronto);
- the Barrenlands Digital Collection (University of Toronto);
- articles from various peer reviewed journals; and
- other relevant publications, online resources and government reports.

Information from these sources was used to identify previous archaeological research carried out in the region, as well as the types of heritage resources known to occur or that could potentially occur in the LSA. These data

were augmented by a literature review of pertinent publications, archival material, and articles from academic journals to summarize the Precontact Culture History and early European exploration of the region. This information was also used to help direct the field component of the baseline studies.

3.2.2 Field Assessment

Prior to carrying out the archaeological field assessment, the Project was reviewed for heritage sensitivity using criteria established by the Heritage Conservation Branch. For northern Saskatchewan, lands are considered to be archaeologically sensitive, or have a high to moderate potential to contain archaeological resources, if they are:

- within 500 m of a Site of Special Nature or other significant heritage resource;
- within 250 m of permanent watercourses;
- along dry, upland margins of a major bog or fen;
- within 50 m of historic trails;
- within 250 m of strandlines; or
- on prominent uplands, escarpments and hills/ridges within 500 m of a water source.

A preliminary site plan prepared by HATCH and dated May 25, 2012 was submitted to the Heritage Conservation Branch for review. In a letter dated July 10, 2012 (File No. 12-1445) the Heritage Conservation Branch acknowledged that the Project will impact areas of forest within 250 m of the Fond du Lac River, Black Lake and Middle Lake, and one previously recorded heritage resource (IhNj 6) was identified in potential conflict. The review indicated that proposed project components that may impact heritage sensitive areas include the water intake and road along the north shore of Black Lake, the two potential bridge locations on the Fond du Lac River, and the tailrace channel on the east side of the river. The Heritage Conservation Branch also indicated that the area west of the Fond du Lac River exhibited greater heritage potential and was of greater heritage concern than the more rugged eastern side. This review of the project was used to help direct the archaeology field program.

Field assessments were carried out under an Archaeological Investigation Permit issued by the Heritage Conservation Branch using standard investigation methods. This included systematic pedestrian reconnaissance and subsurface test exploration to identify heritage resources in heritage sensitive areas within the LSA. Pedestrian surface reconnaissance is the most common method used by archaeologists to identify archaeological sites within a project area (Ruppé 1966). Visual inspection of the ground is particularly effective in areas with good surface visibility, such as regions of limited soil development and sparse vegetation (Schiffer et al. 1978). Shovel probes are used by archaeologists to locate and identify subsurface archaeological deposits, and are useful in areas of poor surface visibility (Krakker et al. 1983; Nance and Ball 1986; Kintigh 1988). Beyond a tool of discovery, shovel probes can also provide important information on the integrity, dimensions, and density of cultural materials found at archaeological sites (Kintigh 1988). Shovel probes excavated during the assessment measured approximately 40 centimetre (cm) by 40 cm and were excavated to sterile sand and gravels (approximately 35 cm deep), or to underlying bedrock. Matrix from each probe was carefully examined with a trowel for artifacts, and wall profiles were examined for evidence of buried palaeosols (see Glossary) or cultural features.

Shovel probes and pedestrian transects were recorded with a hand held Global Positioning System (GPS) unit, as were any observed heritage features and artifacts. Archaeological site characteristics were documented including location in the general landscape, site dimensions, artifact density and diversity, and current condition. Digital photographs were taken of the site environment and any associated cultural features or artifacts. Upon completion of the fieldwork, a Saskatchewan Archaeological Resource Record form with the necessary site information was submitted to the Heritage Conservation Branch to be included in, or update, the Provincial database. In order to fulfill the requirements of the Archaeological Investigation Permit, a stand-alone HRIA report detailing assessment methods and results will be submitted to the Heritage Conservation Branch and SaskPower.

3.2.3 Elder Interviews

Elder interviews were carried out as part of the field assessments in an effort to gain additional local and historic knowledge of the LSA. The objective was to identify potential heritage sensitive areas or archaeological sites based on oral history and traditional land use information provided by the Elders. The interviews were carried out over the course of two evenings (July 16 and 17, 2012) at Camp Grayling. Translation was provided by William Disain of Black Lake, who also worked as a guide and labourer at Camp Grayling.

3.3 Results

3.3.1 Previous Archaeological Research

A summary of archaeological work carried out previously in the Project region is summarized in Table 3.3-1. The earliest archaeological research was initiated by R.S. MacNeish in 1949 (MacNeish 1951). MacNeish was carrying out an archaeological reconnaissance on behalf of the National Museum of Canada to define the culture history of areas northwest of, and including, Lake Athabasca. During this study he touched down at the community of Stony Rapids and briefly at Black Lake. He recorded one surface scatter site on the west shore of Stony Lake (IhNk 1) and one on the south shore of Black Lake at Sandy Point (IgNj 1).

The next archaeological related work in the region was associated with a canoe expedition led by Arthur Moffat in 1955 (Harp 1959). Moffat's party followed a route originally mapped by J.B. Tyrrell that began in Black Lake and followed the Chipman River north to the Dubawnt River and then on to the Thelon River and eventually east to Baker Lake. Although the purpose of the expedition was to film a documentary of canoe travel through the northern Canadian forest and tundra, they also collected archaeological artifacts along the way. These materials were later analyzed and published by Elmer Harp (1959). Although several sites were located along their journey, the nearest recorded site to Black Lake was several kilometres north along the Chipman River, and south of Bompas Lake.

Further to the west on Lake Athabasca, a number of early archaeological surveys were carried out in the 1960's and 1970's. R.W. Nero from the Saskatchewan Museum of Natural History (now the Royal Saskatchewan Museum) identified a number of archaeological sites on the south shore of Lake Athabasca and along the Crackingstone Peninsula while carrying out ornithological field studies between 1960 and 1963 (Wright 1975). Between 1971 and 1972 J.V. Wright (Wright 1975) examined the north shore of Lake Athabasca from Fort Chipewyan in the west to Macintosh Bay in the east, as well as Beaver Lodge and Martin Lakes immediately to the north. Wright (1975) incorporated Nero's findings along with his own research in his subsequent publication on the Prehistory of Lake Athabasca. A total of 30 sites were documented, with major excavations carried out at 3 sites.

Table 3.3-1: Archaeological Studies Conducted in Northwest Saskatchewan

Year/Permit Number	Investigator	Project
1949	R.S. MacNeish (Archaeological Survey of Canada)	National Museum of Canada Research
1955	A. Moffat	Moffat Canoe Expedition - Black Lake, SK to Baker Lake, NU
1960-1963	R.W. Nero (Saskatchewan Museum of Man and Nature)	Lake Athabasca Ornithological Study
1971-1972	J.V. Wright (Archaeological Survey of Canada)	Lake Athabasca Archaeological Survey
1972-1973	S.J. Minnie (University of Saskatchewan)	Archaeological Survey of Black Lake (M.A. Thesis)
1974	S.J. Minnie (Envirocon Ltd.)	Elizabeth Falls Archaeological Study
1977	B.C. Gordon (Archaeological Survey of Canada)	Archaeological Survey of Cree Lake and Cree River north to Black Lake
1978	B.C. Gordon (Archaeological Survey of Canada)	Archaeological Survey of the South Shore of Lake Athabasca from William River east to the community of Fond-du-Lac
1982-20	D. Meyer (Saskatchewan Research Council)	HRIA for Stony Rapids Community and Resource Access Road, Stage II
1987-023	S. Saylor (SaskPower)	HRIA of Uranium City - Rabbit Lake - Wollaston Lake Electrical Transmission Line
1996-023	L.J. Amundson (Sentar Consultants Ltd.)	HRIA of a Proposed Seasonal Road from Points North Landing to Black Lake, Saskatchewan
1996-041	J. Finnigan (Western Heritage Services Inc.)	HRIA of a Proposed Quarry Pit 74P-08 Near Stony Rapids, Saskatchewan
2002-054	E. Stoddart (Jacques Whitford Environment Ltd.)	HRIA of Proposed ISSR and Access Road; Stony Rapids, Saskatchewan
2007-217	D. Norris (Western Heritage Services Inc.)	Proposed Upgrade of the Athabasca All weather Road from Points North to Stony Rapids
2012-162	P. Young (Golder Associates Ltd.)	Elizabeth Falls Hydroelectric Project

HRIA = Heritage Resources Impact Assessment; ISSR = Independent Secondary Surveillance Radar

The most relevant archaeological work in relation to the current Project was that carried out by Sheila Minni (1972, 1975, 1976) between 1972 and 1974. As part of her Master's Thesis research to define the Precontact culture history of Black Lake, Minni carried out surveys by canoe along the entire shoreline of Black Lake south to Cree Bay, as well as portions of Middle Lake, Stony Lake, and the interconnecting portions of the Fond du Lac River. A total of 68 heritage resources were identified. Excavations were subsequently carried out at two of these sites, IhNh 1 and IhNh 2, located near the mouth of the Chipman River on the north shore of Black Lake. In 1973 excavations continued at IhNh 2, and additional surveys along the Chipman River resulted in further excavations at a third site, IhNh 10. In 1974 Minni returned to conduct a week long survey along the portion of the Fond du Lac River between Black Lake and Middle Lake. This was part of an environmental impact assessment requested by the Provincial Government for the proposed Elizabeth Falls Hydroelectric Project (Envirocon Ltd. 1974; Minni 1976). Both shores of the river were systematically surveyed, with additional inland surveys extending approximately one mile further inland on the west side of the river. A total of seven heritage resources were recorded or revisited along this portion of the Fond du Lac River including IgNj 2, 3, 6, 14, near the mouth at Black Lake, and IhNj 5, 6, 7 near the south shore of Middle Lake. The combined results of Minni's

three years of field investigations produced a number of diagnostic projectile points and pottery that demonstrated occupation of Black Lake beginning approximately 8,000 years ago through to European contact.

In 1977, Bryan Gordon from the Archaeological Survey of Canada examined portions of Cree Lake and the Cree River north to Black Lake (Gordon 1996). The following year in 1978 he surveyed the sand dunes along the south shore of Lake Athabasca from William River east to the community of Fond du Lac (Gordon 1996). It was this work combined with that of Wright (1975) and Minni (1976) that formed much of the basis for the cultural history of northern Saskatchewan.

Into the 1980's academic research gave way to various HRIAs with increasing development of the north. In 1982 David Meyer from the Saskatchewan Research Council (1982) carried out an HRIA for the Stony Rapids Community and Resource Access Road, Stage II. Assessments were conducted on proposed north and south winter road options between what was then the northern extent of Highway 105 and the communities of Stony Rapids and Black Lake. The north option crossed the southern arm of Black Lake at Cree Bay, while the south option crossed further south at Giles Lake. Both followed along the west shore of Black Lake and eventually on to Stony Rapids. A total of 14 heritage resources were recorded during this assessment. In 1987 SaskPower conducted an assessment of their Uranium City - Rabbit Lake - Wollaston Lake Electrical Transmission Line (SaskPower 1987). Approximately 40.7 km of the 415 km long transmission line were examined, portions of which crossed the south arm of Black Lake at Cree Bay and followed a route similar to the winter road option examined by Meyer (1982).

Almost a decade later, Sentar Consultants Ltd. (1996) carried out a second HRIA of proposed north and south seasonal road options extending from Points North Landing to Black Lake. A helicopter and pedestrian survey was carried out along approximately 2.5 km of right-of-way identified as heritage sensitive. Three new sites were recorded and three sites previously recorded by Meyer (1982) and Saylor (1987) were revisited. That same year an HRIA was conducted for a proposed quarry and haul road located upstream of the community of Stony Rapids (Western Heritage Services Ltd. 1996). In 2002 Jacques Whitford carried out an HRIA for a proposed Independent Secondary Surveillance Radar (ISSR) and access road located approximately 12 km northwest of the community of Black Lake. No heritage resources were recorded in association with either of these latter two projects. More recently Western Heritage Services (2007) conducted an HRIA for proposed upgrades to the Athabasca All Weather Road extending from Points North Landing to Stony Rapids. This included the portion located west of the south arm of Black Lake. Two new heritage resources were recorded and one site recorded by Meyer (1982) was revisited during this assessment.

In 2012, Golder carried out archaeological baseline work in relation to the currently proposed Project. Assessments were carried out along the Fond du Lac River, the west shore of Black Lake and the south shore of Middle Lake. The results are detailed in Section 3.3.4.

3.3.2 Cultural Setting

3.3.2.1 Precontact Period

The Precontact history of northern Saskatchewan can be divided into two cultural regions with distinct archaeological records that closely align with adaptations to the local environment (Meyer 1999). The southern zone consists of the southern boreal forest and is associated with regions that include the Saskatchewan, Beaver, Sturgeon-Weir, Churchill and Reindeer River systems. The northern zone consists of the northern boreal forest and transitional subarctic woodlands, and is associated with regions surrounding Athabasca, Black, Cree, Wollaston and Reindeer Lakes. It is the culture history of the latter zone which is pertinent to this study.

Throughout Precontact and Historic times, the lives of the people who have occupied far northern Saskatchewan have centred on hunting Barren-ground caribou. Families followed the migrating herds north to their calving grounds in the Barrenlands of Nunavut during the summer, and south into the forests of Saskatchewan during the winter. This appears to be the basic subsistence and settlement strategy that has existed since the first inhabitants arrived to this region (Gordon 1996; Meyer 1983). The Precontact Culture History of the Athabasca Transition Zone is summarized in Table 3.3-2 and discussed further below.

Table 3.3-2: Precontact Culture History of Far Northern Saskatchewan

Years Ago	Period	Archaeological Cultures
1,000	Late Precontact	Late Taltheilei
2,000		Middle Taltheilei Early Taltheilei
3,000	Middle Precontact	ASTt (Pre-Dorset)
4,000		
5,000		
6,000		Shield Archaic?
7,000		
8,000	Early Precontact	Northern Plano

ASTt = Arctic Small Tool Tradition

Occupation of far northern Saskatchewan began shortly after the recession of the glaciers approximately 8,000 years Before Present [BP] (Meyer 1983, 1999). The earliest recognized archaeological tradition is Northern Plano, which is characterized by projectile points similar in form to Agate Basin points found in the plains of North America and date from approximately 10,500 to 9,500 years ago (Meyer 1999; Gordon 1996). Although previously believed to be the result of northern migration of plains adapted people from the south, early Agate Basin sites have recently been found in Alaska, which may suggest a migration of peoples from the northwest into northern Saskatchewan (Meyer 1999). The projectile points are characterized by long lanceolate spear heads with tapered and ground bases that were commonly manufactured from quartzite. Northern Plano points have been recovered from two sites on the south shore of Lake Athabasca (Meyer 1983; Wright 1975) and one site (IhNh 10) on the north shore of Black Lake (Minni 1976). The oldest radiocarbon dates from Northern Plano occupations in adjacent Nunavut come from the Migod site (KkLn-4) on Grant Lake, which produced a date of 7,930+/-500 BP, and the nearby KkLn-2, which produced a date of 7,220+/-850 BP (Wright 1976; Gordon 1975). Northern Plano sites in northern Saskatchewan are suggested to date from approximately 8,000 to 7,000 BP (Meyer 1999; Gordon 1996).

In adjacent Nunavut, Northern Plano evolved into the Shield Archaic Tradition approximately 6,500 BP and lasted until 3,500 BP (Gordon 1996; Wright 1972). This cultural development coincided with a warming period that resulted in the expansion of the boreal forest as far north as Dubawnt Lake. The archaeological culture is characterized by projectile points manufactured primarily out of quartzite, but differ from the preceding Northern Plano Tradition in that they are "*side-notched lanceheads with ground, rocker [convex] bases*" (Gordon 1996). To date, no Shield Archaic sites have been identified in northern Saskatchewan. It is possible that with the tree line extending further north than present day, caribou herds (and thus people) may have only rarely migrated as far south as northern Saskatchewan during this time period (Meyer 1983).

The Shield Archaic Tradition is followed by the Pre-Dorset Tradition, which lasted from approximately 3,500 to 2,600 BP (Gordon 1996). Pre-Dorset is part of the Arctic Small Tool Tradition (ASTt) well known in the high Arctic (Irving 1970; Maxwell 1984). The migration of these early Pre-Inuit groups corresponded with a cooling trend that adversely affected maritime hunting. As a result, these Arctic-adapted people were forced further south in their search for food. They were able to exploit migrating caribou herds on the Barrenlands as a result of the southward retreating forest edge. The Pre-Dorset Tradition is characterized archaeologically by very small, finely retouched tools manufactured from fine grained, banded chert. Distinct tools include end and side blades used for harpoons and arrows, burins, and micro-cores. Pre-Dorset occupations have been identified at four sites on the north shore and one site on the south shore of Lake Athabasca (Wright 1975). Minni (1976) also identified two sites on Black Lake, one at the outlet of the Chipman River (IhNh 2) and one on the Fond du Lac River (IhNj 6).

The Taltheilei Tradition is the latest Precontact archaeological culture identified in the study area, and dates from approximately 2,600 to 200 BP (Gordon 1996). People representing this tradition moved into the region from the west (eastern Mackenzie District) after the preceding cooling period ended, and are generally regarded as ancestral Dené (Clark 1987). The material culture of the Taltheilei Tradition is characterized by a continuum of lancelate and notched points, distinct discoidal hide-working tools known as chithos, and a variety of scraping tools. This archaeological culture has been divided into three Periods based on projectile point style. The Early Period (2,600 to 1,800 BP) is characterized by long stemmed points; the Middle Period (1,800 to 1,300 BP) by unshouldered lanceolate points; and the Late Period (1,300 to 200 BP) by small side and corner-notched points (Gordon 1996). The Taltheilei Tradition is the most common archaeological culture identified in far northern Saskatchewan, and also has a wider distribution southwest into the upper Churchill River Basin (Meyer 1999). The majority of diagnostic materials from Black Lake belong to the Taltheilei Tradition (Minni 1976). Both Gordon in 1978 and Wright (1975) identified Taltheilei sites along the north and south shore of Lake Athabasca, while Gordon also identified Taltheilei sites along Cree Lake and Cree River further to the south (Gordon 1996).

It should also be noted that there is some evidence for the limited incursion of southern archaeological cultures into this region of Saskatchewan. This is represented by Pelican Lake points identified from two sites on the south shore of Black Lake (lgNj 11 and lgNi 6) (Minni 1976). The Pelican Lake culture dates from approximately 3,300 to 1,850 years ago and is best known for representing bison hunters from the prairies to the south. Late Woodland incursions from the adjacent boreal forest of Saskatchewan have also been identified. Portions of a Clearwater Lake Punctate Vessel were recovered from one site (lgNj 4) on the north shore of Black Lake (Minni 1975). This type of pottery is representative of ancestral Cree groups who lived in the forests of Saskatchewan from approximately 600 to 300 years ago (Meyer 1999).

3.3.2.2 Historic Period

The Historic Period in northern Saskatchewan begins with the arrival of European fur traders and explorers. It is from these explorers that some of the earliest accounts of the inhabitants and environment of the region are recorded. Peter Pond was the first European to reach Lake Athabasca in 1778. He reached the west end of the lake by crossing the Methy Portage from the Churchill River and ascending the Athabasca River. Pond established a post on the Athabasca River approximately 40 miles south of Lake Athabasca. The post was eventually replaced in 1788 by Fort Chipewyan I on the southwest shore of Lake Athabasca, which was established by Alexander Mackenzie of the Northwest Company (Lamb 2000). As a result of competition, the Hudson's Bay Company (HBC) sent surveyors Phillip Turnor and Peter Fidler to Lake Athabasca in 1791 with the goal to map it and find a better connecting route to the Churchill River (Rich 2000). The party spent the summer surveying the shores of Lake Athabasca through to its eastern arm.

Beginning in 1794 David Thompson (1962) was commissioned by the HBC to find a new and direct route to the rich fur bearing grounds of the Athabasca country by way of an eastern route. After a number of unsuccessful attempts and delays, Thompson was finally successful in the spring of 1796. He ascended the Churchill and Reindeer Rivers to Reindeer Lake, then northeast across to Wollaston Lake and down the Fond du Lac River to the east arm of Lake Athabasca (Innis 1999; Nicks 2000). However, this route proved to be very difficult and barely passable. It wasn't until a decade later in 1807 that Peter Fidler would travel this same route to the eastern arm of Lake Athabasca (Allen 2000; Tyrrell 1913). This route was eventually abandoned altogether by the HBC and never established as a trade route.

Although the west end of Lake Athabasca near Fort Chipewyan continued to generate the bulk of fur trade activity in the region, posts were established on the east arm of the lake near the present day community of Fond du Lac. This included the short lived North West Company post of Fond du Lac I (ca 1805); the HBC posts of Harrison's House (ca 1819 to 1821) and Fond du Lac (ca 1851 to 1930's); and the HBC post of Black River (ca 1922 to 1930's) located near present day Stony Rapids (Russell and Meyer 1999). No posts were established on Black Lake.

Dené groups of northern Saskatchewan were involved only peripherally during the early years of the fur trade. The scarcity of fur bearing animals in the Transitional Tundra zone combined with the time investment involved with skinning and tanning hides and then travelling sometimes great distances to fur trade posts was of little appeal when their subsistence was largely provided for by the migrating caribou herds. Eventually, the Dené were encouraged to move further south into the boreal forest to more actively participate in the fur trade. This began to alter their traditional subsistence and settlement patterns. In 1870 the Hudson's Bay Company sold their vast fur trading territories known as Rupert's Land to the Dominion of Canada. Within another 20 years this would further alter the relationship the Dené would have with the land, Canadian Government, and the social environment (Mooney 2007).

In the meantime, agencies of the Canadian Government would continue to explore and map far northern Saskatchewan into the late 19th Century. A.S. Cochrane of the Geological Survey of Canada travelled to the east arm of Lake Athabasca following Thompson's route of 1796. He continued on along the north shore of Lake Athabasca and southward to the Athabasca River, eventually returning down the Churchill River to Frog Portage on the Saskatchewan River. No report of this expedition was prepared or published, but his note books were used for subsequent expeditions by the Geological Survey (Tyrrell 1896).

In 1892 Joseph Burr Tyrrell of the Geological Survey of Canada was charged with exploring the area southeast of Lake Athabasca and north of the Churchill River (Tyrrell 1896). From Lac-Ile-a-la-Crosse on the Churchill River Tyrrell's party, which included two Dené guides, descended the Mudjatik River north to Cree Lake, and onward via Cree River to Black Lake. Tyrrell (1896) observed in his report of the expedition that Black Lake received its name from David Thompson; however, "By the Chipewyan Indians of Lake Athabasca it is called Dess-da-tara-tua, or, "The Mouths of Three Rivers Lake", alluding to the mouths of Cree, Stone [Fond du Lac], and Chipman rivers, which empty into it." From Black Lake the party entered the east arm of Lake Athabasca by descending the Fond du Lac River; which included portages around Elizabeth Falls and Woodcock Rapids. Here, Tyrrell's party obtained supplies from the Black River HBC post for their return trip. They then returned south via the Fond du Lac River to Wollaston Lake, then the Geickie River, to the Foster River, portaging many falls and rapids until eventually returning back to the Churchill River. It was during this trip that Tyrrell learned from one of his Dené guides of a northern route exiting Black Lake to the Barrenlands of northern Canada.

Upon his return, Tyrrell (1897) offered to conduct another expedition, this time through the Canadian Barrenlands based on the information provided by his Dené guide. In the spring of 1893, Tyrrell's brother James joined his party and they departed from Fort Chipewyan on June 22. The party followed along the north shore of Lake Athabasca and continued eastward along Fond du Lac, following their track from the previous year by portaging the Woodcock and Elizabeth Falls to the north shore of Black Lake. Once on Black Lake the party ascended the Chipman River, eventually following the Dubawnt River to the Thelon River, then eastward through Aberdeen and Baker Lakes to Chesterfield Inlet. From here the party canoed along the west shore of Hudson Bay to Fort Churchill, then turned inland eventually reaching Winnipeg on January 1, 1894.

By 1899 the local Dené of the Fond du Lac region under Chief Maurice Piche signed on to Treaty No. 8 (Thompson 2007). After signing the treaty, band members still continued to live their traditional nomadic lifestyle of hunting, fishing, and trapping, spending extended periods in adjacent Northwest Territories. However, communities were starting to form around trading posts at Fond du Lac and Stony Rapids. These communities were becoming more solidified with the arrival of missionaries who established churches and schools. By 1949 the band officially split into the Fond du Lac and Black Lake (Stony Rapids) Bands. With the growth of the communities and resulting pressure on local resources around Stony Rapids, a new settlement was soon established on the north shore of Black Lake in 1952 led by the local Catholic missionary. Now recognized as the Black Lake Denésuline Nation, the band has three reserves located on the east and west shore of Black Lake (Chicken Indian Reserve No. 224, 225 and 226).

3.3.3 Elder Interviews

Interviews were carried out with two Dené elders from the Community of Black Lake over the course of two evenings (July 16 and July 17, 2012) during the archaeological field program. Individuals (who will remain anonymous) included an elderly woman 86 years of age and an elderly man 82 years of age. The objective was to identify potential heritage sensitive areas or archaeological sites within the LSA based on oral history and Traditional Land Use information provided by the Elders. The majority of their stories involved living, trapping and hunting on lakes in their traditional lands in the Northwest Territories to the northeast. Their stories are summarized below.

The elder woman was born in 1926 at Fond du Lac and was married in Black Lake. She indicated that everyone born in Black Lake travelled great distances to hunt and fish. Most of her stories related to journeying and living along Selwyn Lake, located approximately 85 km northeast of Black Lake. Her family would depart in the fall by the Chipman River to Selwyn Lake where her grandfather trapped furs. Wherever they found caribou they would hunt and stay for months preparing clothes and food before freeze up. Her mother used to make all clothes from caribou hide – winter pants, mittens and moccasins. The elder's mother told her stories of using caribou hides for tents, but she lived mostly in log cabins and canvas tents. She helped prepare hides using caribou and moose bone to scrape the hides. A lot of women would work together because it was a lot of work to make hides soft and remove the hair. She related that she used to find stone tools like arrow heads "everywhere", but never saw anyone make them.

Her family would catch large trout and white fish on Selwyn Lake using a net. When they could not catch fish they would hunt "chickens" (grouse, ptarmigan) and rabbits. Dogs were very important in their lives. They were used to travel by sled in the winter, hunt, and get fire wood. Dogs would help carry supplies over portages and when travelling in the canoes they were well behaved and did not jump around. Her family would stay in the north all winter and in the spring and summer they would return to Black Lake "to go to church". The priest and the mission was the reason that Black Lake was established, there was no community before then. People

would travel back and forth from Wollaston and Fond du Lac and gather at Black Lake. People lived all over Black Lake drying fish.

Information relating to the specific project area was more limited. She related a story about Elizabeth Falls that involved a group of Cree chasing a Dené Medicine Man. The Medicine Man made it through the falls safely; however, the Cree following behind did not survive. Only their birch canoe came through in pieces. She also related stories about visiting families near Permanent Resident's Cabin on the south shore of Middle Lake, as well as the Elizabeth Falls portage. Her comments relating to these areas are discussed further in Sections 3.3.4.6 and 3.3.4.9.

The elder man was born in 1930. He lived most of his youth with his family on Wholdaia and Snowbird Lake, Northwest Territories, located approximately 200 km northeast of Black Lake. He married at 26 and raised his family on Snowbird Lake where he had a trapline. He moved to the community of Black Lake after they built houses there in 1954. He worked hauling logs to build cabins at Camp Grayling and later worked as a guide for the camp. He continued to trap, leaving Black Lake in July and returning just before Christmas. It would take approximately one week to return by dog and sled in the winter, which was much faster than canoe. He recalled hunting caribou on Snowbird Lake, and when there were no fish he would live off "chickens" and rabbits. He recalled seeing stone and bone tools in his travels but never collected or kept any. They were similar to tools carried by his parents. His dad used a caribou rib for a tool even after he had metal. His mother used leg bones of moose and caribou to scrape hides, and the teeth of beaver as a chisel. The tools were important to make hides, because caribou hides were used to make tents. He related how the people use to hunt caribou with bow and arrow before guns. The birch tree was used to build the bow because it was strong. They would hunt caribou while they were swimming by getting close to them in a canoe. In winter they would hunt using snow shoes.

Information regarding the project area was limited. He indicated that people "did not bother" with Elizabeth Falls. The missionary told the people to stay away from them because it was "strange" and dangerous below the falls. He indicated that families use to camp on the south shore of Middle lake near Permanent Resident's Cabin. He last camped there and made the portage to Black Lake in 1956. His comments are discussed further in Sections 3.3.4.6 and 3.3.4.9.

3.3.4 Field Assessment

Field assessments were completed between July 13 and July 18, 2012 under Archaeological Resource Investigation Permit No. 12-162. The field crew consisted of Patrick Young and Steve Killick of Golder, and William Toutsaint of Black Lake. The assessment included examination of portions of the Fond du Lac River shoreline and the west shore of Black Lake focussing on the proposed locations of the water intake, two bridge options, associated roads and the tailrace channel. Other areas included proposed construction camp options, construction facilities and borrow area on the west side of the Fond du Lac River. The access road to the proposed Project site was not yet defined at the time of assessment and was not examined. An attempt was also made to revisit eight previously recorded heritage resources in the LSA along the Fond du Lac River.

The assessment consisted of pedestrian reconnaissance and subsurface testing to determine the presence of Heritage Resources. Approximately 35 hectares (ha) and 8 linear km were examined, including the excavation of 342 shovel tests. No new Heritage Resources were identified during the assessment; however, four of the eight previously recorded heritage resources were successfully identified (Table 3.3-3). These heritage resources, originally recorded by Sheila Minni as part of her 1972 and 1974 studies, are described in more detail below, and their locations are presented in Figure 2.2-1.

Table 3.3-3: Previously Recorded Heritage Resources within the Proposed Local Study Area

Borden No.	Site Type	Year Recorded/Revisited	Cultural Affiliation
IgNj 2	Artifact scatter	1972/1974/2012	Late Taltheilei
IgNj 3	Artifact scatter	1972/1974/2012	Unknown Precontact
IgNj 6	Cemetery	1972/1974/2012	Historic Dené
IgNj 14	Artifact find	1974/2012	Unknown Precontact
IhNj 4	Unknown	1972/2012	Unknown Precontact
IhNj 5	Single Grave/artifact find	1972/1974/2012	Historic/Dené
IhNj 6	Artifact scatter	1974/2012	ASTt
IhNj 7	Artifact find	1974/2012	Unknown Precontact

LSA = local study area; ASTt = Arctic Small Tool Tradition

3.3.4.1 IgNj 2

IgNj 2 is an artifact scatter site located near the mouth of the Fond du Lac River on the north side of Black Lake. Although limited in detail, the original description of the site places it on a sloping sand beach on the west side of the river within Camp Grayling (Minni 1972). The site consisted of the base of one Early Taltheilei projectile point, two projectile point fragments, one wedge, four unifacial tools, two cores, two bifaces and 60 quartz and quartzite debitage. Minni (1972; Envirocon 1974) indicated that the site was extensively disturbed through construction of Camp Grayling, and exhibited low potential for further archaeological investigation.

An attempt was made to revisit IgNj 2 during the 2012 baseline survey based on information provided by the site form. The Universal Transverse Mercator (UTM) coordinate for the site obtained from the provincial database erroneously placed IgNj 2 approximately 400 m south of Camp Grayling in a low, boggy, forested area. Camp Grayling itself is a fully developed outfitting camp located on an elevated shore line (Photos 3.3-1 and 3.3-2). It includes a large kitchen and dining cabin, an office, several log cabins, a shop, storage buildings, a boat launch, dock, and manicured lawn.

A pedestrian reconnaissance was carried out along exposures within the camp including vehicle and walking trails, a boat launch/beach area, and bulldozer pushes resulting from forest clearing activities. No shovel tests were excavated. Visibility was good within the exposures; however, no artifacts were observed and the site could not be positively identified. As noted by Minni (1972), the site area has been disturbed through several decades of camp construction and maintenance.

3.3.4.2 IgNj 3

IgNj 3 is an artifact scatter site located near the mouth of the Fond du Lac River on the north side of Black Lake. The original description of the site places it on a sloping beach located within Morberg's former outfitting camp located directly north of Camp Grayling (Minni 1972). The site consisted of 5 end scrapers, 1 core, 1 steel file modified into a harpoon, two wedges and 22 pieces of quartz debitage observed on the surface. According to Minni (1974) the site had been extensively disturbed by construction of the camp, and exhibited low potential for further archaeological interpretation.

Photo 3.3-1: View looking east towards Camp Grayling.

Photo 3.3-2: View looking east along boat launch at Camp Grayling

IgNj 3 was revisited during the 2012 baseline survey based on information provided by the site form. Morberg's camp was the original outfitting camp built by Arnold and Gail Morberg, the founders of Calm Air (Calm Air 2012). The camp served as their base of operations providing flight service primarily to their camp and nearby local communities until 1970, when they relocated to Lynn Lake, Manitoba. The camp was eventually incorporated into Camp Grayling. The original Morberg cabins, trails and boat launch still exist, but are secondary to the main Camp Grayling area and are used mainly as a storage and maintenance area.

A pedestrian reconnaissance was carried out along exposures within the camp including vehicle and walking trails and a boat launch area. No shovel probes were excavated. Evidence of the site was observed in the disturbed areas, with twelve quartz debitage noted along the trail leading down to the boat launch (Photo 3.3-3). One quartzite endscraper (Photos 3.3-4 and 3.3-5; Table 3.3-4) was also collected from the edge of a walking trail approximately 150 m south of the scatter. Decades of camp construction and maintenance appear to have disturbed most of the site area.

Table 3.3-4: Metric Attributes of Endscraper Recovered from IgNj 3

Artifact type	Material	Length (mm)	Width (mm)	Thickness (mm)	Weight (g)
endscraper	white quartzite	33.29	18.34	7.21	4.9

mm = millimetre; g = grams

Photo 3.3-3: View looking east at lithic scatter observed along boat launch trail (IgNj 3)

Photo 3.3-4: View looking northeast towards endscraper find (IgNj 3)

Photo 3.3-5: Endscraper recovered from IgNj 3

3.3.4.3 IgNj 6

IgNj 6 is a late historic Dené cemetery located northwest of Camp Grayling. The site is situated near the base of the eastern terminus of a significant esker feature, and west of the Fond du Lac River in an open jack pine forest. Minni (1972) described the site as a "Graveyard containing 11 picket fences (8 still standing), 1 wooden house and 4 crosses." IgNj 6 was one of six grave or burial sites recorded by Minni (1976) on Black Lake. She noted that according to local residents of Black Lake, all of the burials were recent: "Some structures were erected as late as 20 years ago while others were thought to be 80 or, at the earliest, 100 years old' (Minni 1976). As of 1974 that would place the age of the graves somewhere between the 1870's and 1950's. She noted that all the picket fences and wooden structures had been constructed using round headed, wire nails, with remnants of blue or green canoe paint present on almost all of the structures.

The cemetery was revisited during the 2012 baseline survey. A trail to the cemetery extends northwest off the main road that accesses Camp Grayling. The trail also leads to an old refuse dump located in a natural depression approximately 25 m northeast of the cemetery. The refuse appears to be related to the early functioning of the outfitting camps and includes two abandoned vehicles dating to the 1950's and 1960's, old appliances, floats from a plane, tires, cans and building materials.

Although weathered and dilapidated, the graves were still visible within an approximately 20 m by 15 m area. A total of 13 burial features were observed arranged in roughly three rows oriented east to west. This included eight features demarcated by a wooden fence (five of which were still standing or partially standing), four depression features (three with markers) and one small wooden house structure (representing an infant burial) (Table 3.3-5).

While recording the cemetery William Toutsaint indicated that his Great Grandmother, Hellamon Solomon, was buried there. He was not sure which grave, but he remembered visiting one of the graves with a fence when he was younger. He indicated people would throw sand on the graves as an offering or sign of respect while visiting. When asked about the cemetery during the elder interviews, the elder woman (2012, pers. comm.) indicated only that "old people" were buried there. The elder man (2012, pers. comm.) had no information regarding the age or who might be buried at the cemetery.

Table 3.3-5: IgNj 6 Burial Features

Feature No.	Type	Dimensions (m)	Description
G01	Picket Fence	1.7 x 0.83	Vertical picket fence, diamond shape picket top, remnant green canoe paint, wire nails.
G02	Picket Fence (dilapidated)	-	Collapsed pickets, wood cross with heart-shaped top.
G03	Fence	1.78 x 0.83	Horizontal 2 x 4 board fence structure, 4 corner posts with geometric shapes cut into tops, wire nails, remnant blue paint.
G04	Depression with marker	-	Depression with a single, narrow, diamond head picket at south end.
G05	Depression with marker	-	Depression with a single wooden cross and rock at south end.
G06	Picket Fence	1.6 x 0.6	Wooden picket fence, with diamond shape picket top, wire nails.
G07	Depression with marker	-	Depression (shallow), long picket on ground at south end, picket post on north end.
G08	Picket Fence	1.85 x 0.86	Picket fence with square corner posts (4 x 4) carved with diamond tops, pickets with round tops, light blue paint remnants.
G09	Picket Fence	2.05 x 0.9	Immediately south of G08, blue paint remnants, diamond cut corner posts (4 x 4) and diamond pickets, stylized cross at south end, all four corner posts sitting on top of rocks on ground.
G10	Wooden House	0.84 x 0.38, 0.44 tall	Small wooden house built of planks on stilts (infant burial), remnant green paint, saw tooth cut trim on peak (rounded) and along roof edges (sharp)
G11	Depression	1.8 x 0.7	Shallow depression with wood fragments on surface.
G12	Picket Fence	1.73 x 0.57	Dilapidated picket fence with rounded tops, stylized diamond cross at south end with cobbles at base.
G13	Picket Fence (dilapidated)	-	Collapsed picket fence, with diamond shaped tops and a stylized cross with round ends.

m = metres

3.3.4.4 IgNj 14

IgNj 14 is an artifact scatter site located on a point of land on the east side of the mouth of the Fond du Lac River, across from Camp Grayling. Although information recorded on the site form is limited, the description indicates that “5 pieces of cultural detritus” were observed eroding out of the shore line approximately 2 m above lake level (Minni 1972).

IgNj 14 was revisited during the 2012 baseline survey. Eight quartzite and quartz debitage were observed eroding out of a sandy bank overlooking Black Lake to the south (Photo 3.3-6). The stone flakes produced as a result of tool production occurred along approximately 25 m of shoreline. To determine the presence of an intact archaeological component, six shovel probes were excavated near the edge of the bank in 5 m intervals (Photo 3.3-7). The stratigraphy of the shovel tests can be summarized as follows:

- 0 to 5 cm organic humus;
- 5 to 10 cm dark brown sand;
- 10 to 23 cm grey sand; and
- 23 to 35 cm coarse sand and gravel.

Photo 3.3-6: View of lgNj 14 looking north

Photo 3.3-7: View looking west across lgNh 14 (note recent hearth in foreground)

Matrix from the shovel probes was carefully examined with a trowel for artifacts. All probes were negative for cultural materials and buried palaeosols. IgNj 14 is a sparse artifact scatter eroding out of an elevated shoreline. The negative shovel probes indicate there is not a significant intact component immediately north of the bank edge.

Contemporary use of the site area was also evident. A dilapidated cabin (Photo 3.3-8) is located approximately 50 m north of IgNj 14, with associated outhouse, smoking frame, multiple stone hearth/fire pits, refuse including tin cans, weathered tarps and an old nylon tent. A snowmobile/trapline extends north from the cabin paralleling the Fond du Lac River. William Toutsaint (2012, pers. comm.) indicated that the cabin belonged to Danny Alphonse of Black Lake, who stopped using the cabin around 1996 or 1997. The recent fire hearths and other debris indicate the location is still in use as a campsite.

3.3.4.5 IhNj 4

Little information is available for heritage resource IhNj 4. The only information contained on the site form is that IhNj 4 was identified on a sand beach picnic area along the south shore of Middle Lake. This was the location of a campsite belonging to the Department of Natural Resources. Minni (1972) indicates the site was destroyed through construction.

Photo 3.3-8: Cabin remains north of IgNj 14

An attempt was made to revisit IhNj 4 during the 2012 baseline survey based on information provided by the site form. The UTM coordinates provided by the government database placed the site approximately 70 m south of the shore of Middle Lake, and approximately 1.5 km west of the mouth of the Fond du Lac River. The shoreline and inland areas in the general vicinity of the UTM coordinates were examined; however, the terrain was low-lying and well vegetated. The sandy beach as described in the site form could not be located. No shovel testing

was carried out. IhNj 4 was not successfully located during the baseline studies; however, the reported site location is well off the Fond du Lac River.

3.3.4.6 IhNj 5

IhNj 5 is a large historic site located on the south shore of Middle Lake, approximately 1 km west of the mouth of the Fond du lac River. According to the site form, two musket balls were recovered from IhNj 5 and one burial was observed. The burial was described by Minni (1976) as follows:

- IhNj 5 [grave] consists of a rectangular hole (32 cm long, 10.5 to 12.5 cm wide; and 7.5 to 9.5 cm deep) which has been cut into the side of a large jack pine. Residents from the Black Lake community said that this had once been the grave of an infant. The body was placed in the hole, vertical sticks were laid over the opening, and then bound to the tree trunk. Although no dates for this site were mentioned the tree did not appear to be older than 60 to 70 years.

The grave was almost completely destroyed during a forest fire in 1973 (Envirocon 1974).

Testing and systematic surface collection during the original assessment at the site did not reveal any Precontact artifacts. IhNj 5 was interpreted as a camp occupied on a seasonal basis beginning in the middle of the 19th century (Envirocon 1974). In 1974 the site area was used by local residents of Black Lake as a temporary campground during the Spring fishing season. As a result of this activity, much of the site area was disturbed by bush clearing and cabin construction.

IhNj 5 was revisited during the 2012 baseline studies. The site area occurs in a clearing approximately 140 m by 120 m along the south shore of Middle Lake (Photo 3.3-9). The terrain is flat and leads to a shallow, vegetated shoreline. A permanent resident has a cabin in the clearing (Photo 3.3-10), and has lived on the south shore of Middle Lake year round for several decades (William Toutsaint, (2012, pers. comm.). She is currently the only resident in the area.

A pedestrian reconnaissance was carried out along trails, shoreline and exposures within the clearing. No Precontact or historic artifacts or features were observed on the surface, nor was there evidence of a grave. No shovel probes were excavated. The remains of one recent cabin consisting of a remnant plywood floor and modern refuse (Photo 3.3-11), as well as one possible depression were noted near the south boundary of the clearing. William Toutsaint (2012, pers. comm.) indicated that community members stopped coming to the area to camp on a regular basis in the early 1990's. Both elders (2012, pers. comm.) interviewed during the field assessment recalled camping and spending time visiting with families at this location when they were younger; however, neither had any knowledge of a grave.

3.3.4.7 IhNj 6

IhNj 6 is an artifact scatter located on the west side of the Fond du Lac River, approximately 600 m south of where it enters Middle Lake. The site is described as a large scatter situated on the valley crest approximately 12 m above river level, and across from two small islands (Minni 1972). As a result of recent forest fires, the visibility in the site area in 1974 was excellent. Artifacts were observed on the surface in a linear distribution, with clusters of artifacts occurring over approximately 100 m. Cultural material consisted of 1 microblade, 2 scrapers, 5 bifaces, 15 unifacial tools, 15 wedges and 3 cores. The presence of the mircroblade led Minni (1976) to interpret the site as representing an ASTt (Pre-Dorset) occupation.

Photo 3.3-9: View looking west across clearing at IhNj 5

Photo 3.3-10: Looking southeast towards a Permanent Resident's Cabin at IhNj 5

Photo 3.3-11: Cabin remains at IhNj 5

An attempt was made to revisit the site during the 2012 baseline studies. The forest had long since recovered consisting of jack pine and birch trees. Surface visibility was restricted to a pedestrian/game trail along the valley crest (Photo 3.3-12). One quartz flake was observed along the trail near the UTM coordinates recorded for the site (Photo 3.3-13). Fourteen shovel probes were excavated in vegetated areas extending for approximately 150 m along the trail. The probes were placed north and south of the artifact find, spaced at 10 m intervals. The stratigraphy of the shovel probes can be described as follows:

- 0 to 6 cm moss;
- 6 to 10 cm grey sand; and
- 10 to 37 cm golden sand.

Matrix from the shovel probes was carefully examined with a trowel for artifacts. All probes were negative for cultural materials and buried palaeosols. Although limited evidence of the site was identified as indicated by the lone quartz flake, there does not appear to be a dense occupation in the area tested. Although the Heritage Conservation Branch identified IhNj 6 in potential conflict with the Project because it is located across from the proposed tailrace channel, the site is situated high above the river on the valley crest and will not be impacted by any discharge of water.

3.3.4.8 IhNj 7

IhNj 7 is an artifact find site located on the west shore of the Fond du Lac River where it enters Middle Lake. The site lies approximately 400 m northwest of IhNj 6. Limited information is provided on the site form, only that "a few pieces of quartz detritus" were observed on the surface as a result of recent forest fire burns (Minni 1972).

Photo 3.3-12: View looking south along trail at lhNj 6. Shovel indicates location of quartz debitage find.

Photo 3.3-13: Quartz debitage from lhNj 6

An attempt was made to revisit IhNj 7 during the 2012 baseline survey. The forest had recovered from the previous fires and a thick stand of immature jack pine and spruce had grown over. The shoreline near the UTM coordinates recorded for the site consisted of hanging vegetation of Labrador tea and willow, with no exposed beaches. No Precontact artifacts or features were observed during the pedestrian survey. A total of 12 shovel probes were excavated in the vicinity of the reported site location along an approximate 60 m line. The stratigraphy of the shovel probes can be described as follows:

- 0 to 5 cm moss;
- 5 to 10 cm brown sand;
- 10 to 33 cm grey sand; and
- 33 to 40 cm golden sand.

Matrix from the shovel probes was carefully examined with a trowel for artifacts. All probes were negative for cultural materials and buried palaeosols. The shovel tests did not intercept IhNj 7 where tested, and the site was not successfully located.

Evidence of recent land use was observed. The remains of a stove pipe and two tin cans from a former camp were noted approximately 40 m southwest of the shoreline in the reported site area (Photo 3.3-14). The remains of a cabin and debris were noted in a clearing approximately 55 m further southeast (Photo 3.3-15). This consisted of cut log remains, a tin basin, a barrel, and mattress. A trail led down to the lake from the clearing.

3.3.4.9 Elizabeth Falls Portage

First Nations and early Europeans have travelled between Lake Athabasca and Black Lake via the Fond du Lac River (referred to as the Black or Stony River historically) for millennia. A necessary part of this route was a portage around the treacherous and unnavigable Elizabeth Falls. Although the exact location of this portage is not known and it has not been recorded as a heritage resource, it warrants discussion.

David Thompson was the first European to describe the falls and portage during his 1796 expedition to Lake Athabasca: “On the North side, the Black River rushes through a low mountain in a long cataract, on the south side is a carrying place of 5,560 yards of open woods, the ground level and sandy” (Thompson 1962).

Nearly 100 years later Tyrrell (1896) provided the following description of the Elizabeth Falls and portage during his 1892 expedition while travelling west to Lake Athabasca: “…below Black Lake it [Fond du Lac River] tumbles in two wild cascades with a combined height of 300 feet to the level of Lake Athabasca. Past these two falls the Indians from time immemorial have had well beaten paths or portages, respectively two and three and a half miles in length.”

The following year, Tyrrell (1896) this time travelling east from Lake Athabasca noted: “To reach Black Lake from the west, we had been obliged to portage or carry our canoes and all our goods across two stretches of land with a total length of six miles and a half….” According to his field notes, it took Tyrrell’s party a total of three days and multiple trips between July 5 and July 7 to complete the Elizabeth Falls portion of the portage.

Photo 3.3-14: View of stove pipe near reported location of IhNj 7

Photo 3.3-15: View of cabin remains and clearing southeast of reported IhNj 7 site location

Although the exact location of the portage trail is not known today, it likely closely followed the existing bladed trail/road that extends between Camp Grayling and the south shore of Middle Lake. The elder man (2012, pers. comm.) indicated in the interview that this road was cleared in the 1950's, before that it was only a narrow walking trail. He noted that many people used to camp on the south side of Middle Lake near Permanent Resident's Cabin in the summer and portage to Black Lake. He related that it was hard work and took about 1.5 hours to make the portage from Middle Lake to Black Lake.

The elder woman (2012, pers. comm.) also indicated that the existing road on the west side of Elizabeth Falls was a former dog team and walking trail before it was bladed. She noted this was the path used to travel between Stony Rapids and Black Lake. She indicated that families would start the portage from Middle Lake early in the morning and walk and carry supplies to Black Lake. Everyone would help, including children and dogs. She further related that when the road was being built in the 1950's with a dozer, many people watched because they had never seen anything like it before, the machine was so "strong". It was such an event that the kids and old people followed behind to watch.

During the baseline studies the road between Black Lake and Middle Lake was driven multiple times. Once past the eastern terminus of the esker near Camp Grayling, the terrain north to Middle Lake is relatively flat to gently undulating, with a forest cover consisting largely of open jack pine (Photo 3.3-16). Although the portage is over 5 km in length, it would have been a relatively easy route to traverse without any significant landforms or thick vegetation to navigate through. When compared to the east side of the Fond du Lac River, which has more rugged topography and dense forest, the west side of the river would have provided the most efficient portage route.

The current road consists of a bladed trail with varying degrees of associated disturbance. The southern portion near Camp Grayling is bladed deep into the slope near the esker and is gravelled to the borrow pit (Photo 3.3-17); however, the remainder of the route is a lightly bladed sand trail through the forest. Two portions of this road were assessed during the baseline study. This included an approximately 600 m segment near the middle portion of the road where potential construction facilities could be located (Photo 3.3-18). A pedestrian reconnaissance was carried out along road exposures and shovel testing was carried out on either side of the road. No artifacts were noted on the surface and all twenty-seven shovel probes were negative for cultural materials. Exposures along 200 m of the road extending south from Middle Lake were examined (Photo 3.3-19), as well as 200 m of trail extending east towards Permanent Resident's Cabin. No artifacts were observed on the surface, and no shovel tests were excavated. It is likely that much of the original portage trail was disturbed by road construction in the 1950's.

Photo 3.3-16: View of general landscape on the west side of the Fond du Lac River

Photo 3.3-17: Looking north along road near Camp Grayling

Photo 3.3-18: Assessed portion of road approximately 2.5 km south of Middle Lake

Photo 3.3-19: Looking south along northern terminus of road towards Middle Lake

4.0 CONCLUSION & SUMMARY

In Saskatchewan, heritage resources include all archaeological and paleontological objects and sites, as well as any property deemed to be of interest for its architectural, historical, cultural, environmental, aesthetic and scientific value. Heritage resources are linked with other disciplines including traditional land use, non-traditional land use and socio-economics.

A review of existing literature and databases, as well as data collected during baseline studies were used to describe the cultural setting of the LSA. A total of eight heritage resources are located in the Project area. All were previously recorded as part of academic research or in relation to the original Elizabeth Falls environmental assessment program carried out between 1972 and 1974. No new heritage resources were recorded during the 2012 baseline studies.

Six of the known heritage resources consisted of small Precontact lithic find and scatters, two of which contained diagnostic tools. IhNj 6 contained a distinct microblade typical of the ASTt that dates from approximately 3,500 to 2,600 BP, and IgNj 2 contained a diagnostic Early Taltheilei point suggested to date from 2,600 to 1,800 BP. The remaining two heritage resources were historic Dené sites that included a cemetery (IgNj 6) immediately northwest of Camp Grayling dating from the late 19th to mid-20th centuries, and a campsite and single grave (IhNj 5) located on Middle Lake also suggested to date from the late 19th century, through to contemporary times.

As part of the 2012 baseline studies, attempts were made to revisit the known heritage resources recorded along the Fond du Lac River and Middle Lake. Four of these heritage resources were successfully identified (IgNj 3, IgNj 6, IgNj 14, and IhNj 6), the remaining four sites could not be positively identified. None of the known heritage resources are in conflict with the LSA as defined by the preferred and alternate Project components as currently proposed. The cemetery (IgNj 6) is the nearest heritage resource to a Project component. It is located within 60 m of an existing road extending north from Camp Grayling that may be upgraded.

In the event that there are changes or additions to the proposed project footprint as assessed in 2012, additional HRIA may be required if these areas occur within heritage sensitive areas as identified in Section 3.2.2, and upon review by the Heritage Conservation Branch.

5.0 GLOSSARY

Term	Description
Archaeology	The study of past cultures through the scientific investigation of their material remains.
Artifact	Any object created, used or modified by people.
Artifact Find	A category for archaeological sites consisting of five or fewer artifacts.
Artifact Scatter	A category for archaeological sites consisting of more than five artifacts.
B.P.	Archaeologists use this term to refer to dates that were obtained through the radiocarbon method and means “years Before the Present”. As the present year is a moving target, 1950 is considered the origin of the age scale and reflects the fact that radiocarbon dating became practicable in the 1950’s. For example, 1,000 B.P. = 1,000 years before 1950 A.D. or approximately 1,000 A.D.
Biface	A lithic tool manufactured by flaking on both major surfaces. Bifaces usually produce a cutting edge and can include tools such as knives.
Core	A stone from which flakes have been intentionally removed.
Debitage	Waste by-products from stone tool manufacture. This includes flakes and shatter.
Endscraper	A tool designed to scrape material such as hides, bone or wood. The main feature is a steep, unifacial working edge often ranging from 80 to 90 degrees. An endscraper refers to a flake where the working edge occurs on the proximal or distal end of the flake it was produced from.
Feature	The remains of any non-portable human activity that cannot be removed from a site without disturbing it (e.g., hearth, cabin remains, grave).
Flake	A stone fragment intentionally detached from a source rock during tool manufacture. Three flake types are generally recognized: primary flakes represent early stages of reduction where the original cortex is present on the dorsal surface; secondary flakes represent later stages of reduction where no cortex is present; and tertiary flakes represent the final stages of reduction where small pressure flakes are removed to produce the cutting or scraping edge of a tool.
Hearth	A feature containing ash, charcoal, burned rock, or other evidence of fire created by people.
Heritage Resource	Any human or natural artifact or feature that is of interest for its architectural, historical, cultural, environmental, archaeological, palaeontological, aesthetic or scientific value.
Lithics	A general term used to refer to stone artifacts such as tools, cores or debitage.
Microblade	A small blade, generally less than 5 cm long; also called a bladelet.
Palaeosol	A soil horizon that formed on the surface during the geologic past, that is, an ancient soil. Also known as buried soil; fossil soil. Palaeosols are indicators of past, stable ground surfaces that may contain archaeological materials.
Projectile Point	An inclusive term for a hafted arrow, spear or dart point.
Precontact	Refers to the period in North America prior to the arrival and contact with Europeans. In Saskatchewan this is generally considered the period prior to Henry Kelsey’s journey to the plains in 1690.
Shatter	A stone fragment unintentionally detached from a core during stone tool manufacture. Shatter is often less well defined than the more purposefully removed flakes.
Shovel Probe	A 40 cm by 40 cm subsurface test where the excavated soils and sediments are hand trowelled for cultural materials.
Site	Any location with detectable evidence of past human activity.
Uniface	A tool manufactured by flaking only on one of the two main faces of the tool. Scrapers are examples of a uniface where flaking on only one surface produces a scraping edge.
UTM	Universal Transverse Mercator. A geographic coordinate system that uses a 2 dimension Cartesian coordinate system to give location on the surface of the Earth.

6.0 REFERENCES

Allen, Robert S. 2000. Peter Fidler. Dictionary of Canadian Biography Online. University of Toronto. Available at: http://www.biographi.ca. Accessed: November 2012.

Calm Air. 2012. History. Available at: http://www.calmair.com/history.html. Accessed November 2012.

Clark, Donald W. 1987. Archaeological Reconnaissance at Great Bear Lake. Archaeological Survey of Canada Mercury Series 136. National Museum of Man. Ottawa, ON.

Elder Man. 2012. Personal Communication with Member of Black Lake First Nation.

Elder Woman. 2012. Personal Communication with Member of Black Lake First Nation.

Envirocon Ltd. 1974. Elizabeth Falls: Fisheries Resources and Environmental Overview.

Gordon, Bryan C. 1975. Of Men and Herds in Barrenland Prehistory. Mercury Series, Archaeological Survey of Canada Paper No. 28. Canadian Museum of Civilization. Ottawa, ON.

Gordon, Bryan C. 1996. People of the Sunlight, People of the Starlight: Barrenland Archaeology in the Northwest Territories of Canada. Mercury Series, Archaeological Survey of Canada Paper No. 154. Canadian Museum of Civilization. Ottawa, ON.

Harp, E. Jr. 1959. The Moffat Archaeological Collection from the Dubawnt Country, Canada. American Antiquity 24(4), pp. 412-422.

Innis, H.A. 1999. The Fur Trade in Canada: An Introduction to Canadian Economic History. University of Toronto Press. Toronto, ON.

Irving, W.N. 1970. The Arctic Small Tool Tradition. Eighth Congress of Anthropological and Ethnological Sciences, Vol. 3. Tokyo. pp. 340-342.

Jacques Whitford Environment Limited. 2002. Historical Resources Impact Assessment of Proposed Independent Secondary Surveillance Radar (ISSR) and Access Road Stony Rapids, Saskatchewan, Permit No. 02-054. Report on File with the Heritage Conservation Branch. Regina, SK.

Kintigh, K.W. 1988. The Effectiveness of Subsurface Testing: A Simulation Approach. American Antiquity 53:686-707.

Krakker, J.J., M.J. Shott, and P.D. Welch. 1983. Design and Evaluation of Shovel-Test Sampling in Regional Archaeological Survey. Journal of Field Archaeology 10:469-480.

Lamb, Kaye W. 2000. Alexander Mackenzie. Dictionary of Canadian Biography Online. University of Toronto. Available at: http://www.biographi.ca. Accessed: November 2012.

MacNeish, R.S. 1951. An Archaeological Reconnaissance in the North West Territories. Annual Report of the National Museum of Canada (1949-1950), Bulletin 123, pp 24-41. Ottawa, ON.

Maxwell, M.S. 1984. Pre-Dorset and Dorset Prehistory of Canada. In Handbook of North American Indians, Vol. V. Arctic, Smithsonian Institution, Washington, pp. 359-368.

Meyer, David. 1982. Heritage Resource Impact Assessment for Stony Rapids Community and Resources Access Road, Permit No. 82-020. Environment Sector, Saskatchewan Research Council. Saskatoon, SK.

Meyer, David. 1983. The Prehistory of Northern Saskatchewan, in Tracking Ancient Hunters: Prehistoric Archaeology in Saskatchewan. Saskatchewan Archaeological Society. Saskatoon, SK.

Meyer, David. 1999. Precontact Archaeology of Northern Saskatchewan. In Atlas of Saskatchewan, edited by Ka-iu Fung, pp. 22-24. Saskatoon, SK.

Minni, Sheila, J. 1972. Black Lake Survey 1972 Field Season. Report on File with Heritage Conservation Branch, Regina, SK.

Minni, Sheila, J. 1975. The Prehistoric Occupations of Black Lake, Northern Saskatchewan. MA Thesis. Department of Anthropology and Archaeology, University of Saskatchewan. Saskatoon, SK.

Minni, Sheila, J. 1976. The Prehistoric Occupation of Black Lake, Northern Saskatchewan. National Museum of Man Mercury Series. Archaeological Survey of Canada Paper No 53. National Museums of Canada. Ottawa, ON.

Mooney, Elizabeth. 2007. Rupert's Land Purchase. In Encyclopedia of Saskatchewan, pp. 787. University of Regina. Regina, SK

Nance, J.D. and B.F. Ball. 1986. No Surprises? The Reliability and Validity of Test Pit Sampling. American Antiquity 51:457-483.

Nicks, John. 2000. David Thompson. Dictionary of Canadian Biography Online. University of Toronto. Available at: http://www.biographi.ca. Accessed: November 2012.

Rich, E.E. 2000. Philip Turnor. Dictionary of Canadian Biography Online. University of Toronto. Available at: http://www.biographi.ca. Accessed: November 2012.

Russell, Dale and David Meyer. 1999. The History of the Fur Trade ca. 1682 – post 1821. In Atlas of Saskatchewan, Ka-iu Fung, editor, pp. 33-35. University of Saskatchewan. Saskatoon, SK.

Ruppé, R.J. 1966. The Archaeological Survey: A Defense. American Antiquity 31:13-333.

SaskPower Corporation. 1987. SaskPower's Uranium City - Rabbit Lake - Wollaston Lake Electrical Transmission Line Heritage Resource Impact Assessment, Permit No. 87-023. Report on file with the Heritage Conservation Branch. Regina, SK.

Sentar Consultants Ltd. 1996. Heritage Resource Impact Assessment of a Proposed Seasonal Road From Points North Landing to Black Lake, Saskatchewan, Permit No. 96-023. Report on File with the Heritage Conservation Branch. Regina, SK.

Schiffer, M.B., A.P. Sullivan, and T.C. Klinger. 1978. The Design of Archaeological Surveys. World Archaeology 10:1-28.

Thompson, Christian. 2007. Fond Du Lac Denesuline First Nation. In Encyclopedia of Saskatchewan. University of Regina. Regina, SK

Thompson, David. 1962. The Publications of the Champlain Society: David Thompson's Narrative 1784-1812. Toronto Champlain Society.

Toutsaint, William. 2012. Personal Communication with Member of Black Lake First Nation.

Tyrrell, J.B. 1896. Report on the Country Between Athabasca Lake and Churchill River with Notes on Two Routes Travelled Between the Churchill and Saskatchewan Rivers. Geological Survey of Canada. Ottawa, ON.

Tyrrell, J.B. 1897. Report on the Doobaunt, Kazan, and Ferguson Rivers, and the Northwest Coast of Hudson Bay and on Two Overland Routes From Hudson Bay to Lake Winnipeg. Geological Survey of Canada. Ottawa, ON.

Tyrrell, J.B. 1913. Peter Fidler, Trader and Surveyor 1796 to 1822. From the Transactions of the Royal Society of Canada. Third Series – 1913. Volume VII. Ottawa, ON.

Western Heritage Services Ltd. 1996. Heritage Resources Impact Assessment of a Proposed Quarry Pit 74P-08 near Stony Rapids, Saskatchewan, Permit No. 96-041. Report on File with the Heritage Conservation Branch. Regina, SK.

Western Heritage Services Ltd. 2007. Heritage Resource Impact Assessment of the Proposed Upgrade of the Athabasca All Weather Road from Points North to Stony Rapids, Permit No. 07-217. Report on File with the Heritage Conservation Branch. Regina, SK.

Wright, J.V. 1972. The Shield Archaic. Publications in Archaeology No. 3. National Museum of Canada. Ottawa, ON.

Wright, J.V. 1975. The Prehistory of Lake Athabasca: An Initial Statement. Archaeological Survey of Canada Series 29. National Museum of Canada. Ottawa, ON.

Wright, J.V. 1976. The Grant Lake Site, Keewatin District, N.W.T. Archaeological Survey of Canada Mercury Series 47. National Museum of Canada. Ottawa, ON.

Report Signature Page

GOLDER ASSOCIATES LTD.

Prepared by:

Patrick Young, M.A.
Archaeologist

Reviewed by:

ORIGINAL SIGNED BY

Brad Novecosky, M.A.
Associate, Senior Archaeologist

c:\users\jboehr\documents\sharepoint drafts\annex v_heritage resources baseline report.docx