APPENDIX M-2

STAGE 2 ARCHAEOLOGY

WOODLAND HERITAGE SERVICES LIMITED

PUBLIC ARCHAEOLOGICAL REPORT

STAGE 2 ARCHAEOLOGICAL RESOURCE ASSESSMENT OF RAINY RIVER RESOURCES' PROPOSED MINING SITE, IN LOTS 2-12, CONCESSIONS 1 AND 2 / LOTS 4-12, CONCESSION 3 / SEC 32-36 RICHARDSON TOWNSHIP, IN THE CHAPPLE TOWNSHIP MUNICIPALITY, RAINY RIVER DISTRICT, ONTARIO.

Prepared for

Rainy River Resources Limited
1111 Victoria Avenue East
Thunder Bay, Ontario
P7C 1B7

Attention: Kyle Stanfield
Vice President, Environment & Sustainability

Submitted by

WOODLAND HERITAGE SERVICES LIMITED
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Some information in this report has been redacted as being confidential and may have been classified as sensitive information such as the location of registered archaeological sites including photos and maps and information concerning First Nation communities and / or private informants. The Freedom of Information and Protection of Privacy Act and the Ontario Heritage Act require that this information be kept secure and not be distributed to unauthorized parties. Under 2012 regulations there is a requirement to remove all sensitive / confidential information so it does not enter the Provincial Report Registry (public accessible). In addition it is a requirement of the Ontario Heritage Act, Section 65.1(2) that information related to site locations is not released to the public.

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It should be noted that this report and the information presented is in a format prescribed by the MTCS 2011 Standards and Guidelines for consulting archaeologists.

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Archaeology through the consulting archaeologist licence system involves the study of artifacts and features. Under the Standards and Guidelines archaeologists are not directly involved in documenting native values, traditional land use, traditional ecological knowledge or traditional territories. This information rests solely with the First Nations, MNO and other Peoples and is not a required part of an archaeological licence report.

Executive Summary

A Stage 2 Archaeological Resource Assessment was undertaken for Rainy River Resources on a property approximately 26 km northwest of Emo, Ontario, as part of the Environmental Assessment process prior to the proposed mine development (Figure 1). This property is located principally in the southern half of Richardson Township in the Chapple Township Municipality of the Rainy River District.

In October 2011, a Stage 1 inspection was completed to determine the overall archaeological potential, and specific areas were targeted for the follow-up 2012 Stage 2 work. During July to October 2012 and in the spring of 2013, Stage 2 sub-surface archaeological field work and test pitting was undertaken on site locations where there was high archaeological potential for pre-contact First Nations and early historic archaeological sites. The high potential of the area for pre-contact archaeological sites was confirmed in that eight pre-contact archaeological sites with a preliminary determination of age dating from 10,500 to 13,000 years ago, five historic farmstead foundation ruins (archaeological sites) from initial (circa1920's) pioneer settlement, and a early logging camp were located and recorded in the Provincial site data base for a total of fourteen archaeological sites and features located.

In the final report to MTCS, it will be recommended that Stage 3 archaeological fieldwork be completed at the following sites.

Pre-contact archaeological sites:

1. Campbell 1 – DfKm-4
2. Campbell 2 – DfKm-5
3. Campbell 3 – DfKm-6
4. Tintah 4 – DfKl-1

Historic Archaeological Sites:

1. Homestead – DfKm-7
2. Homestead – DfKm-9

1.0 PROJECT BACKGROUND

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

1.1 Development context

Archaeological field work was part of the overall Environmental Assessment process, prior to the development of the Rainy River Gold Project advanced mineral exploration project (Figures 1 to 3) and associated proposed infrastructure (Figure 4). The archaeological field work, to MTCS standards, was performed in advance of any new ground-disturbing activities.

The archaeological assessment described in this report was completed as part of the baseline data collections required under the terms of the Environmental Assessment for the proposed undertaking. The Environmental Assessment Act describes the environment as including Section 1(1) (d) any building, structure, machine or other device or thing made by humans. This would include artifacts and archaeological sites. Archaeological assessment constitutes archaeological fieldwork as defined in regulations to the Ontario Heritage Act (O. Reg. 170/04), and as such, the archaeological assessment and this report is required to comply the terms of the OHA.

1.1.1 Description of the Development Project

The following company information is based on and drawn from online sources at: http://www.rainyriverresources.com, accessed in May 2013.

> Rainy River Resources Ltd. is a Canadian precious metals exploration company whose key asset is the Rainy River Gold Project (RRGP), a large gold system centred in the southern half of Richardson Township, approximately 65 kilometres northwest of Fort Frances, Ontario (Figure 1).

It hosts a NI 43-101 compliant gold reserve of 4 million ounces as of April 10, 2013.

The general area has attracted some degree of exploration interest for many years, however, deep surface cover hampered exploration efforts. Exploration at the RRGP started as early as 1967, with Noranda, International Nickel Corporation of Canada, Hudson's Bay Exploration and Development and Mingold Resources having operations in the area until 1989. On two occasions, in 1971 and 1987-88, the Ontario Geological Survey conducted geological mapping in conjunction with a rotasonic overburden drilling program. Nuinsco engaged in exploration from 1990 until 2004. Rainy River Resources Ltd. acquired a 100% interest in the project from Nuinsco in June 2005.

The Rainy River Gold Project falls within the 2.7 billion year Rainy River Greenstone Belt that forms part of the Wabigoon Geological Subprovince. At least two stages of gold mineralization exist:

- Early (low to moderate grade) gold mineralization associated with sulphide (pyrite-sphaleritechalcopyrite-galena) stringers and veins and disseminated pyrite in quartz-phyric volcaniclastic rocks and conglomerate; and late (high-grade) gold mineralization associated with quartz-pyrite-chalcopyrite-gold veins and veinlets.
- Both styles of gold mineralization have been progressively overprinted by deformation. The gold mineralization is interpreted as a hybrid deposit type consisting of an early gold-rich volcanogenic sulphide mineralization overprinted by shear-hosted mesothermal gold mineralization.
- In addition to the gold mineralization, the project also contains nickel, copper and platinum group metals sulphide mineralization.

Woodland Heritage Services Limited received permission from Rainy River Resources and landowners to enter the relevant properties in the study area in order to perform all activities related to a Stage 2 Archaeological Resource Assessment. While the proponent owns or

controls property within a large area, this archaeological assessment was focussed on areas within the zone of impact for the development of the mine (Figure 4).

1.1.2 Regulatory Context

This Stage 2 Archaeological Resource Assessment was undertaken within the context of the Environmental Assessment process, under the Environmental Assessment Act, R.S.O. 1990, CHAPTER E.18. The role of cultural heritage and archaeology within this Act is indicated through the definition of "Environment" in Section 1(c) and (d):

- (c) the social, economic and cultural conditions that influence the life of humans or a community,
- (d) any building, structure, machine or other device or thing made by humans,

Given this inclusion of cultural heritage and archaeology within the definition of "Environment," it follows that Archaeological Assessments are part of a suite of studies that must be carried out to fulfil the conditions of the Environment Assessment.

Archaeological Resource Assessment studies are classified as Stage 1 through Stage 4, as follows:

- **Stage 1**: Preliminary assessment to determine if there are any known significant archaeological resources in the immediate vicinity of or on the subject property and the potential of the site to have heritage resources.
- **Stage 2**: Completion of a property inspection by a licensed archaeologist if the Stage 1 assessment identified known resources or the presence of archaeological potential areas, if recommended.
- **Stages 3 and 4**: Advanced site-specific archaeological mitigation through excavation, documentation or avoidance, if recommended.

Under the Ontario Heritage Act, R.S.O. 1990, anyone wishing to carry out archaeological fieldwork in Ontario must meet the following criteria:

- Have a licence from the Ministry of Tourism, Culture and Sport.

- → File a report with the Ministry of Tourism, Culture and Sport containing details of the fieldwork that has been done for each project.
- → File information about all newly discovered or revisited archaeological sites with the Ministry of Tourism, Culture and Sport for each project.

Under Ontario Regulation 8/06 of the Ontario Heritage Act, "consultant archaeologist" means "an archaeologist who enters into an agreement with a client to carry out or supervise archaeological fieldwork on behalf of the client, produce reports for or on behalf of the client and provide technical advice to the client."

Refer to Sub-section 2.4 of this report titled "Advice on compliance with legislation" for more information.

1.2 Historical context

In pre-contact and early historic times prior to the arrival of Europeans, First Nations Peoples were active in the study area. Evidence of human activity can be traced back to the retreat of the last series of glaciers.

1.2.1 First Nation Historical Overview

Archaeologists generally divide northwestern Ontario's cultural prehistory into the following generalized temporal/cultural sequences;

Early Paleo (circa 11,500-9,000 BCE*)
Late Paleo (circa 9,000 – 6,000 BCE)
Shield Archaic (circa 6,000 - 500 BCE)
Middle Woodland (circa 500 BCE – CE 1,200)
Late Woodland (circa CE 1,200 – 1,600)
Historic (circa CE 1,600 - present)

*BCE means 'Before Common Era', i.e., "9,000 BCE" corresponds to "9,000 BC"

First Nation Ancestors

The first people in the Rainy River District are known to archaeologists as the Paleoindian people. The earliest periods between 13,500 years ago and 11,000 years ago were characterised by fluted projectile points and distinct beaked gravers. Palynological research

demonstrates that areas proximal to the ice sheets were likely similar to a sub-arctic tundra environment that was quickly succeeded by a spruce forest as soon as environmental conditions permitted. Evidence from the United States suggests that the megafauna were hunted, including mammoth, mastodon (Clovis) and ancient bison (Fulsom). Later period paleoindian tools are characterised by what archaeologists' term ribbon flaking. This technique produced a regular banded appearance on the tool. Lanceolate points were being made during this period. It is supposed that the hunting trended towards smaller game, with caribou being exploited during this later paleo times. It should be noted that this trend toward smaller game is likely an oversimplification that is based on a few "type" sites.

Approximately six thousand years ago, following the last glaciation, the climate changed drastically from a colder temperature to one warmer than present temperature. This allowed the Great Lakes-St. Lawrence hardwood forest to cover all of the Rainy River area. During these changing times, the ancestors of the various present day First Nation peoples were living throughout the region. These early Aboriginal peoples are called Archaic Cultures by archaeologists. They were big game hunters who used large spear points, and also mined deposits for flint, chert, quartzite and copper in order to make stone and metal tools. Some of these were traded as part of an extensive trade network already developed 6,000 years ago throughout North America.

Aboriginal cultures (like all cultures worldwide) were continually changing and evolving. In the Rainy River area, the development of new technology such as the spear thrower (atlatl), bow and arrow, fired clay pots and new stone-working techniques resulted in a change in material culture and lifestyles. In this era, Middle and Late Woodland peoples utilized smaller stone tools and may have had a more diversified economy based on a broader range of plant and animal resources. Contact between groups and a sophisticated trade network were well established.

Middle Woodland cultures were the predecessors of the Late Woodland cultures, who are the direct ancestors of the current First Nation peoples. These ancestors had a complex and well-organized society. Archaeological evidence indicates they had invented superior ways of making both fired clay pots with their own distinctive designs and smaller more powerful weapons. Anthropologists and tribal Elders indicate that semi-autonomous bands shared a common community for the summer, gathering in the spring for ceremonies and fish spawning runs, then dispersing into smaller units for the winter.

Land use patterns were based on an economy of fishing, hunting, gathering, trapping, harvesting of wild rice and some horticulture. During the summer, fishing was supplemented by a simple form of agriculture. In southern Ontario, fields were cleared by burning, then corn, beans, squash, and later European-introduced peas, were grown.

In the eighteenth century, French Canadian traders moved west, trading with the Aboriginal hunters and trappers in the vicinity of Lake Superior. Following the War of 1812, Fort Frances—named after Lady Frances Simpson, wife of then Hudson's Bay Company Governor George Simpson—was established as an important HBC trading post (c. 1817).

Ethnographers have documented agricultural production among the Ojibway for the purpose of selling produce to fur traders. The signing of Treaty No. 3 included a promise of federal farming assistance for First Nations; however, Canada prohibited unregulated sales of Aboriginal produce in 1881 and agricultural production had ceased throughout the area by the early twentieth century (Waisberg & Holzkamm 1993).

Researchers have also indicated the significance of sturgeon fisheries to Ojibway subsistence and commerce during the fur trade era. In particular, a product called isinglass made from the air bladder of sturgeon fish was highly prized in European markets, though overfishing by non-Native commercial fisheries in the twentieth century depleted this resource (Holzkamm, Lytwyn & Waisberg 2008).

The Saulteaux Ojibway people spoke a dialect of the wider "Algonkian" language shared by other Ojibway peoples, such as the Cree, Montagnais and Algonquins. Twentieth-century studies show the Saulteaux Ojibway shared a belief system common to other Ojibway peoples including belief in a supreme being, shamanism, the shaking tent ceremony and the dream vision quest. In short, the beliefs reflected “the world view of a hunting-fishing people” (Day 1978:796). According to the nineteenth-century Ojibway historian, Peter Jones, there was no supreme chief over the Ojibway and Algonquin; each band had its own chiefs and retained possession of its own territories (Jones 1861:39, 106-114).

Brief History of the First Nations and Métis in the Rainy River Study Area

The Saulteaux Ojibway people inhabited an area located between the former Minnesota territory, Fort Garry (Winnipeg) and Fort William (Thunder Bay). In 1859-1869, the Ojibway inhabitants of the area negotiated with surveyors to allow British passage through the region as part of the “Dawson route” (referring to surveyor Simon James Dawson) connecting Lake Superior to Red River. The Ontario portion of this region was subsequently covered by Treaty No. 3.

Some of the First Nation communities associated with the study area belong to a tribal council comprised of seven member nations called the Pwi-Di-Goo-Zing Ne-Yaa-Zhing Advisory Services. The PDGZNYZ was established in April 1998. The First Nations are: Naicatchewenin First Nation, Rainy River First Nations, Couchiching First Nation, Lac La Croix, Nicickousemenecaning First Nation (now called Nigigoonsiminikaaning First Nation), Seine River First Nation, and Stanjikoming First Nation (now called Mitaanjigamiing First Nation). One representative from each of the member Nations forms the Board of Directors that governs this Council.

The same seven nations also comprise the Fort Frances Chiefs Secretariat, which works as a collective authority to represent the member First Nations of the region (Fort Frances Chiefs Secretariat 2011). Some of its specific areas of focus are policing, education, and health services.

Four additional First Nation communities associated with the study area are the Anishnaabeg of Naongashiing First Nation, Big Grassy River First Nation, Naotkamegwanning First Nation, and Ojibways of Onigaming First Nation. The tribal council in which these communities are members is called the Anishinaabeg of Kabapikotawangag Resource Council Inc.

Founded in the early 1990's, by the will of Ontario Métis, the Métis Nation of Ontario (MNO) represents the collective aspirations, rights and interests of Métis people and communities throughout Ontario. Region 1 of the MNO is in the study area.

The following subsections provide a brief account for each of the project area First Nation and Métis communities.

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As provided for in the S&G Section 1.1, guideline1 " a background study may include Aboriginal community information " However, issues of traditional use and the spiritual value of a place, as well as matters regarding traditional land use, graves, spiritual sites etc., are not within the required scope of an archaeological licence or a Stage 1 to 4 technical report undertaken under that licence. The purpose of the historical overviews in the following section is not to provide a comprehensive or a definitive history of the study area or of any particular First Nation, MNO or other people's land use and occupancy as such scope is beyond the means or intent of this archaeological technical paper. Such background information is not intended to be definitive and is included only to provide a broad and general context and supporting documentation for the archaeological project.

Information below was taken from the Aboriginal Affairs and Northern Development Canada website (http://www.aadnc-aandc.gc.ca) and the Métis Nation of Ontario website (http://metisnation.org).

OJIBWAYS OF ONIGAMING FIRST NATION
Official Name: Ojibways of Onigaming First Nation
Number: 131
Address: PO BOX 160, NESTOR FALLS, ON

Postal code: P0X 1K0
Phone: (807) 484-2162
Fax: (807) 484-2737

Geography
Region: ONTARIO
Geographic Zone: Zone 2 : First Nation is located between 50 and 350 Km from the nearest service centre to which it has year-round road access.
Sub-zone: Not applicable for this zone
Environmental Index: Index B : Geographic location between 45 and 50 degrees latitude.
City: Thunder Bay
Service Center: Fort Frances
Most Populated Site: SABASKONG BAY 35D

RAINY RIVER FIRST NATIONS
Official Name: Rainy River First Nations
Number: 130
Address: PO BOX 450, EMO, ON
Postal code: P0W 1E0
Phone: (807) 482-2479
Fax: (807) 482-2603

For more information about this First Nation, please contact them directly.

NAICATCHEWENIN
Official Name: Naicatchewenin
Number: 128
Address: PO BOX 15, RR 1, DEVLIN, ON
Postal code: P0W 1C0
Phone: (807) 486-3407
Fax: (807) 486-3704

Geography
Region: ONTARIO
Geographic Zone: Zone 2 : First Nation is located between 50 and 350 Km from the nearest service centre to which it has year-round road access.
Sub-zone: Not applicable for this zone
Environmental Index: Index B : Geographic location between 45 and 50 degrees latitude.
City: Thunder Bay
Service Center: Fort Frances
Most Populated Site: RAINY LAKE 17A

COUCHICHING FIRST NATION
Official Name: Couchiching First Nation
Number: 126

Address: RR 2 RMB 2027, FORT FRANCES, ON
Postal code: P9A 3M3
Phone: (807) 274-3228
Fax: (807) 274-6458

Geography
Region: ONTARIO
Geographic Zone: Zone 1 : First Nation is located within 50 Km of the nearest service centre to which it has year-round road access.
Sub-zone: Not applicable for this zone
Environmental Index: Index B : Geographic location between 45 and 50 degrees latitude.
City: Thunder Bay
Service Center: Fort Frances
Most Populated Site: COUCHICHING 16A

LAC LA CROIX
Official Name: Lac La Croix
Number: 127
Address: PO BOX 640, FORT FRANCES, ON
Postal code: P9A 3M9
Phone: (807) 485-2431
Fax: (807) 485-2583

Geography
Region: ONTARIO
Geographic Zone: Zone 2 : First Nation is located between 50 and 350 Km from the nearest service centre to which it has year-round road access.
Sub-zone: Not applicable for this zone
Environmental Index: Index B : Geographic location between 45 and 50 degrees latitude.
City: Thunder Bay
Service Center: Fort Frances
Most Populated Site: NEGUAGUON LAKE 25D

NIGIGOONSIMINIKAANING FIRST NATION
Official Name: Nigigoonsiminikaaning First Nation
Number: 129
Address: PO BOX 68, FORT FRANCES, ON
Postal code: P9A 3M5
Phone: (807) 481-2536
Fax: (807) 481-2511

Geography
Region:ONTARIO
Geographic Zone: Zone 2 : First Nation is located between 50 and 350 Km from the nearest service centre to which it has year-round road access.

Sub-zone: Not applicable for this zone
Environmental Index: Index B : Geographic location between 45 and 50 degrees latitude.
City: Thunder Bay
Service Center: Fort Frances
Most Populated Site: RAINY LAKE 26A

SEINE RIVER FIRST NATION
Official Name: Seine River First Nation
Number: 132
Address: PO BOX 124, MINE CENTRE, ON
Postal code: P0W 1H0
Phone: (807) 599-2224
Fax: (807) 599-2865

Geography
Region: ONTARIO
Geographic Zone: Zone 2 : First Nation is located between 50 and 350 Km from the nearest service centre to which it has year-round road access.
Sub-zone: Not applicable for this zone
Environmental Index: Index B : Geographic location between 45 and 50 degrees latitude.
City: Thunder Bay
Service Center: Fort Frances
Most Populated Site: SEINE RIVER 23A

MITAANJIGAMIING FIRST NATION
Official Name: Mitaanjigamiing First Nation
Number: 133
Address: PO BOX 609, FORT FRANCES, ON
Postal code: P9A 3M9
Phone: (807) 274-2188
Fax: (807) 274-4774

Geography
Region: ONTARIO
Geographic Zone: Zone 2 : First Nation is located between 50 and 350 Km from the nearest service centre to which it has year-round road access.
Sub-zone: Not applicable for this zone
Environmental Index: Index B : Geographic location between 45 and 50 degrees latitude.
City: Thunder Bay
Service Center: Fort Frances
Most Populated Site: RAINY LAKE 18C

BIG GRASSY FIRST NATION
Official Name: Big Grassy River First Nation
Number: 124

Address: PO BOX 414, MORSON, ON
Postal code: P0W 1J0
Phone: (807) 488-5614
Fax: (807) 488-5533

Geography
Region: ONTARIO
Geographic Zone: Zone 2 : First Nation is located between 50 and 350 Km from the nearest service centre to which it has year-round road access.

Sub-zone: Not applicable for this zone
Environmental Index: Index B : Geographic location between 45 and 50 degrees latitude.
City: Thunder Bay
Service Center: Fort Frances
Most Populated Site: BIG GRASSY RIVER 35G

ANISHNAABEG OF NAONGASHIING FIRST NATION
Official Name: Anishnaabeg of Naongashiing First Nation
Number: 125
Address: PO BOX 335, MORSON, ON
Postal code: P0W 1J0
Phone: (807) 488-5602
Fax: (807) 488-5942

Geography
Region: ONTARIO
Geographic Zone: Zone 2 : First Nation is located between 50 and 350 Km from the nearest service centre to which it has year-round road access.
Sub-zone: Not applicable for this zone
Environmental Index: Index B : Geographic location between 45 and 50 degrees latitude.
City: Thunder Bay
Service Center: Fort Frances
Most Populated Site: SAUG-A-GAW-SING 1

NAOTKAMEGWANNING FIRST NATION
Official Name: Naotkamegwanning First Nation
Number: 158
Address: 1800 PAWITIK STREET, PAWITIK, ON
Postal code: P0X 1L0
Phone: (807) 226-5411
Fax: (807) 226-5389

Geography

Region: ONTARIO
Geographic Zone: Zone 2 : First Nation is located between 50 and 350 Km from the nearest service centre to which it has year-round road access.
Sub-zone: Not applicable for this zone
Environmental Index: Index B : Geographic location between 45 and 50 degrees latitude.
City: Winnipeg
Service Center: Kenora
Most Populated Site: WHITEFISH BAY 32A

THE MÉTIS NATION OF ONTARIO – REGION 1
500 Old St. Patrick Street, Unit D
Ottawa, ON K1N 9G4
Phone: 613-798-1488
Toll Free: 1-800-263-4889
Fax: 613-722-4225

The MNO has a democratic, province-wide governance structure. Every four years Métis citizens have the opportunity to choose their provincial and regional leadership, by voting in province-wide ballot box elections.

In addition, Community Councils have been established throughout the province. They get their mandate to support local governance from the MNO through signed Community Charter agreements, and work collaboratively with the MNO and other Community Councils to represent the rights and interests of regional rights-bearing Métis communities throughout the province.

PRESIDENT: Gary Lipinski – Contact: garyl@metisnation.org

REGION 1 COUNCILLOR: Theresa Stenlund – Contact: theresas@kmts.ca

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1.2.2 Land Use and Settlement History - Emo and Rainy River, Ontario

According to G.L. Nute's history of Rainy River country and the "boundary waters" that form the Minnesota-Ontario border country, the French fur trader Jacques de Noyons was reportedly the first European to traverse the area in 1688. Only a century later, in the 1770s, did the Hudson's Bay Company send traders inland to compete with the North West Company for the rich stores of furs northwest of Lake Superior.

In 1731, Pierre Gaultier, sieur de la Vérendrye, in search of a northwest passage, applied to the governor of New France to explore the region between Lake Superior and Lake of the Woods

and be given a monopoly on the furs traded in that region. La Vérendrye's expedition in search of the "Sea of the West" relied on information and a map provided by a First Nation trader name Auchagah. In 1731, Charles Dufrost, the nephew of La Vérendrye, proceeded to Lac La Pluie or Rainy Lake and established Fort St. Pierre (later the HBC post Fort Frances), while La Vérendrye established Fort St. Charles on Lake of the Woods in 1732. Nute (1950:10) mentions the existence of minor posts - one on Crane Lake and another on Ball Lake near present day Kenora - located along a "back" route north of the Rainy River.

Following the French defeat in the Seven Years' War (1756-1763), British traders and surveyors advanced up Lake Superior to Lake of the Woods. Alexander MacKenzie surveyed the Rainy River in 1801 and commented, "This is one of the finest rivers in the North-West" (*The Rainy River* Record, July 6, 1994: http://www.fftimes.com/100-years-100-stories/rrhistory.html).

Throughout the 1800s, the British government granted land for settlers to establish homesteads along the length of the Rainy River. Prior to the building of the rail lines, the river was the main transportation route.

The Municipality of Chapple is comprised of nine townships (including Richardson Township, where the project development will be located) and the villages of Barwick and Black Hawk. Named after Thomas William Chapple, a former Ontario MPP and judge in Rainy River District, the Township was incorporated in 1899 and reported a population of 856 individuals in 2006. The Chapple Museum is located in Barwick and contains old municipal records, pictures of original homesteaders and artifacts relevant to local history.

The Township of Emo was incorporated on July 1, 1899, named after a village in Ireland close to where the first reeve, Alexander Luttrell, was born. Emo was settled by pioneers who were granted free homesteads. Emo today is located a 20-minute drive west of Fort Frances and a 30-minute drive east of Rainy River. Its population in 2006 was 1,305. (http://www.twspemo.on.ca/history.html)

The Town of Rainy River was incorporated on December 9, 1903. It was originally developed on the site of a lumber mill established in 1895 (purchased by the Beaver Mills Lumber Company in 1898). The growing community and lumber industry were further supported by the Ontario and Rainy River Railway built through the town in 1901 (later absorbed by the Canadian Northern Railway and then the CNR). In 1910, a forest fire originating in northern Minnesota burned most of the town. The mill relocated, and the local population decreased from 4500 to its current level of approximately 1000 inhabitants. In 1960, a bridge between the Baudette, Minnesota and Rainy River, Ontario was opened. As with Emo, the local economy is today primarily supported by farming, forestry and hunting and fishing tourism. (http://www.rainyriver.ca).

Among the first land grants in the development footprint area were the 1907 Boer War Vet Lots and the "Free Grants," many dating to the time of first settlement between 1910-1921 (source: Land Titles records).

The typical pattern of early homestead buildings and land clearing is as follows: the land grant system allowed for parcels of land to be had in exchange for clearing a set number of acres and erecting a dwelling within the first year. As such, commonly the first structure would be inhabited for a period until time and money were sufficient to put up improved structure. The first structures were commonly round or roughly hewn logs jointed with dovetails or saddle notches, and chinked. The roofs were most commonly clapboard with various finishing materials. Cedar shakes were commonly used to decorate the gable ends often covering 1 x 8 (2.54 x 20.32 cm) plank butted together or ship-lapped. The subsequent houses were often clapboard, occasionally with additional siding such as cedar shakes or beveled wood siding. These later buildings were often termed stick framed, which means they were constructed using dimensional lumber with either a balloon or platform type construction.

1.3 Archaeological context

1.3.1 Before initiation of fieldwork, the site files and catalogued reports at the office of the Archaeological Data Coordinator, Ministry of Tourism, Culture and Sport were checked to determine if any pre-contact or historic archaeological sites had been previously recorded either in or near the study area. Two previously registered sites are located within 15 kilometres of the study area.

To date, very little archaeological research has been undertaken near the specific study area and the majority of the broader region has never been field checked by archaeologists.

The Manitou Mounds National Historic Site, established in 1970, is a significant interactive facility consisting of multiple archaeological sites and one historic site. The Facility, Kay-Nah-Chi-Wah-Nung Historical Centre, is located approximately 50-60 km distant from the project study area on the banks of the Rainy River (which was a major ancient travel route). Archaeological excavations of burial mounds along the Rainy River were undertaken in 1957-61 by W.A. Kenyon, who identified the sites with the Laurel/Blackduck peoples, circa 1200 AD (Kenyon, 1959), as well as investigations in 1986 by D. Arthurs (Arthurs, 1986).The largest group of burial mounds is located at the Long Sault Rapids site and now forms part of the Kay-Nah-Chi-Wah-Nung Historical Centre. The site will not be impacted in any way by the RRR project development but has been mentioned as part of the overall archaeological context of the Rainy River District.

Through the previous work of A.F. Bajc of the Ontario Geological Survey, a sequence of water levels, and an initial mapping of glacial lake shorelines was undertaken. This proved to be most useful in guiding the 2012 modelling of the ancient shorelines. Crucial elements to Bajc's work were the direction and extent of maximal uplift (0.68 m/ km @30°E of north for the Tintah shoreline), as well as the location and elevation of a variety of beach ridges and wave cut notches found in the broad study area. This information was used in the LiDar modelling of the past shorelines. To accomplish this, a surface was created that conformed to the direction and

degree of maximal uplift. This was subtracted from the elevations of the existing LiDar point cloud. With the elevation values adjusted, contours were extrapolated from the point cloud and those that conformed to the mapped shoreline features were selected and labelled accordingly. Subsequent field work allowed for the field verification of the shoreline features and early on resulted in the location of Tintah 1. The model was then calibrated using the observed field data. The refined model was then applied to the autumn 2012 and spring 2013 fieldwork which resulted in the location of eight pre-contact archaeological sites on the ancient shorelines.

1.3.2 Current Land Use(s), Field Conditions, Soils and Topography

The lands directly associated with the property in question have been used for limited farming and forestry. The principal area of mining exploration is patent land and was previously farmed. The soils in the area range from medium/fine sand/silt to bedrock knobs and clay (Northern Ontario Engineering Geology Terrain Study). The Pinewood River, a small tributary of the Rainy River, traverses the study area.

1.3.3 Field Work Schedule

Fieldwork was undertaken in July, August and October of 2012. Further work, including ploughing, is planned for 2013.

1.3.4 Past Fieldwork

Ross Archaeological Research Associates undertook fieldwork on the then proposed Rainy River Resources advanced exploration during 2010 (Ross, 2011). They carried out a Stage 1 assessment, which was accepted by MTCS, into the public registry of archaeological reports. Woodland Heritage Services Limited carried out additional Stage 1 work in 2011 for the surrounding study area (Woodland, 2012). There is no known record of other archaeological fieldwork being carried out for the current study area.

1.3.5 Physical features affecting fieldwork strategy, decisions or the identification of artifacts or cultural features.

The subject property is primarily lacustrine plain, broken by bedrock outcrops, or relict shoreline features associated with glacial Lake Agassiz. The silty loam soils in better drained locations are in use for agriculture, while marginal areas are in use as pasture. Woodlots are scattered throughout the area, and these include former pasture lands that have naturally regenerated to forest. The low topographic relief of the area also gives rise to extensive marsh or permanently wet areas. The Pinewood River, in the south of the subject property, is a low energy, meandering stream running through a wide valley flanked by marsh land.

The subject property is extensive, and the zone of impact more limited. The area is low, wet lacustrine plain, and this makes it clear that the property has areas of low and high potential intermixed. Within this area, the relatively featureless terrain of relict lake bottom, with heavy silt and clay soils and pockets of standing water is of low archaeological potential. Relict beach features related to glacial Lake Agassiz, especially where these features show higher levels of sand (and are therefore better drained) in the soil have been evaluated as being of high archaeological potential. In a similar manner, habitable areas suited to agriculture, and where historic homesteads are recorded also hold archaeological potential.

Two prominent lake phase shorelines are preserved within the study area (the Tintah and the Upper Campbell). An additional two, the Norcross (above the Tintah) and Lower Campbell (below the Upper Campbell), are present but are somewhat more ephemeral.

Substantial erosion appears to have occurred on parts of the former shorelines. The current landscape of the study area has a marked effect on the Stage 2 field strategy: it is a flat lacustrine plain, mainly clay that has had low energy drainage since glaciation. It was an area of extensive wetlands, and the area has historically had low populations. Fieldwork efforts were able to locate some sections of shorelines with ease, but most areas would not have been located without the aid of the shoreline modelling.

Field strategy was also affected by seasonal constraints imposed under the Endangered Species Act (ESA, 2007 – in effect June 30^{th,} 2008) citing concerns with the presence of Bobolink and

Whip-poor-will, as well as, ground that was too saturated to plough for pedestrian survey, and landowner permissions. Due to these constraints, some fieldwork was deferred until the spring 2013 field season.

2.0 Stage 2 Field method

Woodland Heritage Services Limited's Stage 1 report contained the following recommendations:

> "As recommended in the Ross report, it is also recommended in this report that those development areas (such as a new road, bridge or crossing) within 50 metres of any primary water sources i.e., waters passable by canoe such as the Pinewood River be subject to a Stage 2 Archaeological and Cultural Heritage Resource Assessment.
>
> Also, as first recommended in the Ross report, it is further recommended that where future development is planned for areas within 150 metres of identifiable high potential sections of former Lake Agassiz shorelines, then those areas should also be subject to Stage 2 archaeological field assessment work consisting first of a visual inspection to confirm the shoreline and followed where warranted by subsurface testing. These ancient shoreline areas have been mapped from LIDAR and some examples are given in this report (see Figure 4).
>
> Finally, it is recommended that the early pioneer homestead /former farmhouse foundations or ruins and former infrastructure areas (see Table 2 for a preliminary list) be subject where possible to a Stage 2 Archaeological and Cultural Heritage Resource Assessment."

2.0.1 Field Methods

The property shows high potential generally due to present and past water sources. However, local conditions of relatively flat lacustrine clay soils have created extensive areas of marsh or sparse forest with wet soils. These areas are not suited to habitation. Therefore, initial Stage 2 fieldwork included property inspection to refine these areas. For this work the entire property was inspected visually and documented with photographs, GPS coordinates and field notes. The shorelines (modern and ancient) were examined for landing / access points and then in archaeological potential areas, transects were walked through the subject property from the near-shore areas.

As a result of the field inspection, the archaeological potential was refined by eliminating steep slopes and wet lands with organic soils generally unsuitable for habitation. As stated earlier, steep slopes are prohibitive to settlement, but it could be that the very shallow slopes could have also impeded settlement as they may have been extensive marshes in the past. Archaeological potential was also identified in areas where early "pioneer" settlements or habitations were present. The recent age of the initial Euro-Canadian settlement means that these habitations are still standing or are, at the very least, intact as ruins.

Areas that exhibited archaeological potential were subject to a test pit program where all pits were dug to a minimum of 30cm wide and to a sufficient depth to expose and investigate sterile mineral soils. All soil was screened through 6mm. hardware mesh (Figure 117).

Certain agricultural areas known to have been cultivated and are presently not overgrown were scheduled for cultivation and pedestrian survey. Due to environmental constraints related to species at risk, scheduling the ploughing had to be coordinated with seasonal restrictions and avoidance of certain areas.

2.0.2 Alternative methods or special conditions used during the fieldwork

The project area is in northern Ontario. As such, standard 2.1.5 was followed to restrict Stage 2 fieldwork to areas of potential close to relict shoreline elevations and pioneer homesteads.

2.0.3 Estimates for each of the following survey strategies:

2.0.3a the property surveyed, by coverage (e.g. pedestrian survey, test pit survey) and survey interval

Test-pit survey has been carried out on a five metre grid for 100% of ancient and modern shorelines which had confirmed archaeological potential, within the areas where infrastructural development is planned. As well, sub-surface test pitting was undertaken in the vicinity of the pioneer homesteads on a 5 metre grid to within 1 metre of the former structures (Figure 117).

2.0.3b the property not surveyed because there were areas of no or low archaeological potential

Some areas of the property were not subject to Stage 2 test pit survey due to extensive and intensive disturbance in the area of the proposed development and where previous infrastructural developments had occurred. Other areas with permanently saturated soils or wetlands and areas of open bedrock or steep slopes were not tested (Figure 117).

2.0.3c the property where standard survey intervals could not be maintained due to pockets of exposed bedrock or other physical constraints

Fieldwork was affected by local topographic and environmental conditions. In the case of exposed bedrock, systematic surface examination led to the identification of two sites associated with small lithic (quartz) collecting areas. No testing was conducted or possible, but surface mapping and a representative broken quartz collection was undertaken (Tintah 2, 3).

2.1 Record of finds

2.1.1 Inventory of field documentation.

- Photographs were taken of the study area landforms and vegetation.

- Photographs were taken of the areas to be impacted.
- Areas were noted on maps of all the areas to be impacted.
- GPS coordinates were taken using a Garmin 60 CSX with an error rated (with WAAS) to +/- 5 metres on average. All coordinates are in UTM 17T NAD 83.
- Artifacts were collected and processed at Woodland Heritage Services facilities.

2.1.2 Analysis and Cataloguing Methods

Working with one test pit at a time, artifacts were washed and left for at least 12 hours to dry. Labels were created for each test pit to ensure provenience was maintained. Washing involved placing artifacts in buckets of warm water and using toothbrushes to remove any dirt. Bone, pottery, leather and cloth were not washed in water, however a dry brush was used to remove any loose dirt. From here, the artifacts were identified, grouped, counted and entered into a database created using the program Filemaker Pro 10. The provenience of the artifacts was written on the bags they were stored in, along with an assigned artifact number. Important or diagnostic artifacts were labelled, measured, and photographed.

2.1.3 Summary of finds.

For each site:

a. *A general description of the types of artifacts and features that were identified*
   Please see Table 2 and text that follows.

b. *A general description of the area which artifacts and features were identified, including the spatial extent of the area and any relative variations in artifact density*
   Please see the text following Table 2 and the figures in Section 3.0.

c. *A catalogue and description of all artifacts retained*
   Please see text and Appendix 2 - the standalone runtime artifact database contained on the compact disk on the back cover of this report.

d. A description of the artifacts and features left in the field (nature of material, frequency, other notable traits)

Large pioneer artifacts such as old washing machines, farming equipment and abandoned vehicles related to early farming were photographed and left in place.

Table 2: List of Sites Recorded as a Result of the Stage 2 Fieldwork (2012)

Pre-contact (First Nation) Archaeological Sites (8)

Table 2 removed due to sensitive information

Tintah 1.

This archaeological site is associated with a shoreline which has been geologically age dated to 13,000 calendar years before present (Bajc: 1992, 2001; Lepper et al: 2011), which could place this site in Ontario's earliest Paleoindian period. Of all archaeological sites located through the Stage 2 work, this one appears to be the most significant (see Figures 5-24). Its extent is a minimum of 50 metres, and likely has an area of ¼ of a hectare located on the south side of what would have been an island off a sheltered bay in Lake Agassiz. This of course cannot be confirmed until formal work is carried out to establish the true limits. Interestingly, this site hosts both quartz and chert based assemblages with other contributions from metasedimentary and altered volcanic rocks that fracture chonchoidally. Worthy of mention are the quartz gouge (Figure 16, 17) recovered from the sloping bedrock area which exhibits fine and careful workmanship, as well as a potential channel flake to establish the working bit end of the tool. Additionally, it is noteworthy to mention the single test pit into a former beach area that yielded a collection of tools including a biface fragment, an adze, as well as large flakes and a utilized wedge (Figures 8-13). A total of approximately 3 kgs. of tools and workable stone were recovered from a single test pit. This pit was located on a former beach approximately 50 metres from the discovery area on the shallowly sloping bedrock. The true extent of this site has not yet been determined as only limited work was done here to confirm

the shoreline model. Due to changes in the project footprint, this site is located outside of the impact areas and will not be disturbed by Rainy River's gold project development.

Tintah 2 and Tintah 3.

The pre-contact archaeological sites, Tintah 2 and 3 are both related to small lithic (quartz) collecting areas (Figures 25-46). They are located on what was a former island. This location was likely visited as a result of its quartz found in several small zones in the bedrock. It seems that although quartz was liberated from the veins mainly by natural and perhaps assisted by minor human breaking, only the highly vitreous raw quartz material was selected to be taken to another nearby campsite location for further reduction and tool manufacture (Figure 33). The opaque and sugary looking quartz appears to have been left at the source as unsuitable for finer work / manufacture. The quartz was observed in varying degrees of breakage with some fine flakes of "ice quartz" located in scatters. Recent and historic prospectors as well as pre-contact paleoindian peoples were likely sourcing the same quartz areas. Whereas the aboriginal peoples were seeking high vitreous quartz for tools, the prospectors were looking for mineralized samples that might contain gold. This makes the identification of any lithic removal activities by early peoples problematic. There is no evidence of working quarry faces or reduction activities present and the total amount of quartz material involved is small.

Tintah 4.

This early pre-contact site was located on an elevated terrace edge (former shoreline) overlooking what is now a small stream (nearby to a former MTO aggregate pit), and featured a significant chert bifacial cutting tool (Figures 47-57) and associated chert flakes. Other quartz detritus was collected in the same general area. Further work is needed to fully establish the extent and significance of this archaeological site.

Discussion: The Tintah shoreline sites

Three of the five Tintah shoreline sites are found on what were islands in the former glacial lake Agassiz. This is of particular interest to Ontario archaeology as a whole. It is generally accepted

that the use of boats or rafts occurred by the Archaic period in Ontario's cultural past. It would seem that here we have established inferential evidence exists for the use of watercraft in the earliest of cultural periods in the Province of Ontario. This is potentially significant as is modifies a dominant perception that the paleo people were dominantly using overland travel. Much of this is drawn from sites excavated in the United States, but it could be that in the north where glacial lakes dominated the landscape a changing pattern of land use was emerging. Additionally, the typical paleoindian site is characterized by its tool's source stone, usually "exotic" cherts. Strong evidence exists that this idea requires modification as we have established the extensive use of quartz and locally derived (high silica) altered volcanics as stone tool sources. It has generally been accepted that quartz was gaining popularity in the archaic period due to a lack of access to "good quality" tool stone.

With more research it may be possible to infer that during the early paleo period distinct land use patterns emerged suggesting that some groups focused on the exploitation of the continental plains, and others who exploited the shorelines and islands of the glacial lakes.

Campbell 1.

The first site located along the upper Campbell shoreline north of the Pinewood River proved to be the most productive regarding artifact recoveries (Figures 59, 60; 65-68; and 77-86). The first test pit into former beach sands yielded several hundred fine thinning flakes all of quartz. This shoreline is the most well-developed of the four shorelines reported by Bajc in the study area. A clear wave cut notch is present in sections that mark the upper Campbell water plane. It was a transgressional event after the low-water Moorehead phase.
Alternatively, the lower Campbell shoreline is not well represented and definitive vestiges could not be located on ground.

Campbell 2 – 4. Three additional upper Campbell, later pre-contact sites have been located. Campbell 2 and 3 are found close by to Campbell 1. Campbell 4 is found to the south of the Pinewood River on the former Teeple lands (Figures 87-91). All exhibited quartz dominated

assemblages with a variety of flakes and some simple tools (see Figures 61-64, 69-73).

Additional work is planned for the 2013 spring-summer field season. This includes ploughing and pedestrian surveys of the high potential previously ploughed farmlands in the vicinity of ancient shorelines. The purpose of the ploughing work is to locate paleoindian sites.

Timing was also affected by seasonal constraints imposed under the Species at Risk Act. These constraints were put in place to protect the bobolink and whippoorwill breeding habitat. Due to these constraints, some fieldwork was deferred for the survey of both pre-contact and historic sites.

Historic Archaeological Sites (6)

Table removed due to sensitive information

The historic (pioneer) homesteads in the study area represent the earliest or first Euro-Canadian occupation of the subject area. Standard 2.2(1)(c) and Standard 3.4.2(1)(b) require that these initial occupations be subject to Stage 3 assessment. The historic homesteads identified during Stage 2 were considered archaeological sites in the area surrounding the surviving built structures. The built heritage structures and the cultural landscapes they are set in were referred to a specialist (Unterman McPhail Associates) for assessment. Stage 2 and recommended Stage 3 applies only to areas outside of these structures, most of which still stand.

Homestead (HS 11) – This homestead is an example of multiple generations of buildings being located on a property (see Figures 92-102). All buildings erected on the farm remain standing, but the first residence built on the property is in a state of ruin and conforms to the general type of construction for the first structures as mentioned previously. The roof once had a strip asphalt with coloured sand (red) pressed into it. These were laid in the conventional pattern of

our modern shingles, except the strips were fastened from the eave to peak. Subsurface test pits were dug within 50 metres of the structures, on a 5 metre grid or less. Outbuildings, pastures not cultivated, not previously cultivated or overgrown/inaccessible or more than 50m from the homestead, were not tested.

Homestead (HS 8) – The former structural complex of this farm is now in a state of ruin with only small sections of wall still standing, and no roof structure intact (Figures 103-111). A total of two sheds, one of which may have been a small barn stood on either side of the residence. It appears as though there may have been a sauna and porch build into the front of the residence. Nearby one of the sheds was once a chicken coop. Additionally, a privy was located in an area that would have been located behind the house. Test pits were undertaken on a 5m grid or less around all buildings within 50 metres of the buildings.

Homestead (HS 4) – HS4, is also another example of the earliest settlement of the area (Figures 58, 74-76). The residential structure is mostly in ruin, and is part of the focus of the recommended Stage 3 work. Additional outbuildings (i.e. privy etc.) were not located during the Stage 2 survey. This could be the result of land disturbing activities or an unexpected location of the building remains. Currently, the Stage 3 work will focus on the land surrounding and within the existing structure. Future efforts will be made to locate the primary residence and associated outbuildings. This homestead was originally built with logs, but appears to have been parged with a concrete or stucco finish. Test pits were undertaken on a 5m grid or less around all buildings within a 50 metre radius.

Homestead (HS 14)

This homestead was located approximately 12 metres outside of the northwest portion of the tailings management area. The complex was composed of a residence, barn and a pit feature currently containing water. The residence was a fine example of dovetail joinery and the first construction phase of the residence had a pyramid hip roof with a later, larger addition built

with a slight 1 metre offset to the original building and a gable roof. All of the logs of the residence were hewn with a broad axe. Sub-surface testing was carried out at a 5 metre grid from within 1 metre of the buildings to a distance of 50 metres. No artifacts were recovered from around the barn, but several pieces of pane glass and nails, as well as an artifact that appears to be part of a tie-down assembly were located around the residence.

Logging Camp 1

This logging camp is found to the west of Marrs Road approximately 1.2 km north of the intersection between Marrs and Roen Roads. The site itself flanks an old road, with two buildings to the north and one to the east and south. The most westerly building is currently being interpreted as a bunk house, and the central building a kitchen. An elongated trench was found to the immediate south of the kitchen and has dimensions of about 2.5 metres by .5 - .75 metres with a maximum depth of 50 centimetres. To the northwest of the kitchen a roughly square pit was dug and is associated with the logging camp. Both of these former structures are oriented to the road, while the last structure located south of the road is not. Its orientation appears to be 30 – 45 degrees off of the axis of the road. It is unknown at this time if the most easterly structure is associated with the other two. Currently it is assumed that it is, and likely may have been a stable, or an additional residence.

2.1.4 Provide an inventory of documentary records generated in the field (e.g., photographs, maps, field notes)

During Stage 2 field work, photographs were taken to document the ground conditions, test pitting and the overall context. Photographs were collected and maintained in a database housed at our facilities. Field maps were drawn on-site and subsequently digitized. Field notes were collected to record the survey progress and photographic information. Artifacts found in each test pit were kept separate, and then stored in bags and brought back to Woodland Heritage Services for analysis.

2.1.5 Sources used for Artifact Documentation and Analysis

For the identification an analysis of the artifacts, various sources were consulted. For lithics, Lithics: Macroscopic Approaches to Analysis, Second Edition, by William Andrefsky Jr. was mainly used, however Understanding Stone Tools: A Cognitive Approach, by David E. Young and Robson Bonnichsen was also consulted. For some of the more general Post-European artifacts, a resource published by the London Chapter of the Ontario Archaeology Society, Kewa – 19th Century Notes, by T. Kenyon, et al. was used. The website (www.ssc.uwo.ca/assoc/oas/pubs/kewa19th.html) was accessed between May and August of 2012. For bottles and makers marks on glassware, the Society of Historical Archaeology website was used quite frequently. This was between the months of May and August of 2011.

Other resources that were used included: The Bottle Collector by Azor Vienneau; Machine-Made Glass containers and the End of Production for Mouth-Blown Bottles, by George L. Miller and Catherine Sullivan; Bottle Makers and their Marks, by Julian Harrison Toulouse; Unitt's Bottles and Values and More: Special Collectors Reprint, by Peter Unitt and Anne Worral; and Bottles in Canada, by Doris and Peter Unitt. Clay Pipes for the Archaeologist, by Adrian Oswald was consulted when identifying clay pipes and their maker's marks. For historic pottery and porcelain, Encyclopedia of British Pottery and Porcelain Marks, by Geoffrey A. Godden and Nineteenth Century Pottery and Porcelain in Canada, by Elizabeth Collard were consulted. These resources aided in identifying decoration patters and makers marks. Lastly, A Guide to Marks on Early Canadian Silver: 18th and 19th Centuries, by John E. Langdon was used for maker's marks as well.

2.1.6 Size of Collection and Long-Term curation plans

The collection is approximately .25 cubic metres (approx. 2.5 banker's boxes). The collection is stored in trust in our laboratory facilities. Long term curation plans are to transfer the collections to local First Nations for curation at a facility such as the Kay-Nah-Chi-Wah-Nung National Historical Centre.

2.2 Stage 2 Analysis and Conclusions of the survey, recoveries and sites.

2.2.1 Summary of findings from the Stage 2 survey, or state that no archaeological sites were identified.

A total of fourteen sites were located during the Stage 2 fieldwork. As required by regulations, the 8 pre-contact archaeological sites, 5 homesteads, and 1 logging camp have been registered with the Province of Ontario and each has been assigned a Borden Number in the provincial database as per the following table. As such these sites are now afforded protection under the Ontario Heritage Act and must not be disturbed until clearance is obtained by the Ministry. Other homestead sites are all considered to be built heritage resources and cultural heritage landscapes (above-ground cultural heritage resources). They will be reported on in a separate study by Unterman McPhail Associates.

2.2.2 Provide a preliminary determination of the age and cultural affiliations of each archaeological site for which Stage 3 assessment was carried out.

Geochronological dating in combination with radiocarbon samples collected during Bajc's work in the area provide dates for the Norcross, Tintah, Upper Campbell, and Lower Campbell shorelines. The Norcross shoreline is dated to 11,500 RCYBP or 13,500 calendar years ago. The Tintah shoreline is dated to 11,000 RCYBP or 13,000 calendar years ago. The Campbell shoreline was established by 9,500 – 10,000 RCYBP or 10,500 to 11,200 calendar years ago. No sites have yet been identified on the Norcross or Lower Campbell shores, and of the 9 pre-contact sites identified they are nearly equally divided between the Tintah and Campbell levels. These correspond to Early Paleoindian and Late Paleoindian cultural periods in the Province of Ontario respectively.

Site Name	Potential Age and Cultural

	Determination (Preliminary Determination)
Tintah 4 – DfKl-1	Early Paleoindian
Tintah 1 – DfKm-1	Early Paleoindian
Tintah 2 – DfKm-2	Early Paleoindian
Tintah 3 – DfKm-3	Early Paleoindian
Campbell 1 – DfKm-4	Late Paleoindian
Campbell 2 – DfKm-5	Late Paleoindian
Campbell 3 – DfKm-6	Late Paleoindian
Campbell 4 – DeKm-4	Late Paleoindian
Homestead – DeKm-3	Historic – first pioneers/earliest Euro-Canadian settlements in study area
Homestead – DfKm-7	Historic – first pioneers/earliest Euro-Canadian settlements in study area
Homestead – DfKm-8	Historic – first pioneers/earliest Euro-Canadian settlements in study area
Homestead – DfKm-9	Historic – first pioneers/earliest Euro-Canadian settlements in study area
Homestead – DfKm-11	Historic – first pioneers/earliest Euro-Canadian settlements in study area
Logging Camp 1 – DfKm-12	Historic – first pioneers/earliest Euro-Canadian settlements in study area

2.2.3 Compare findings against criteria in § 2, Stage 2 Property Assessment to determine whether further assessment is required

Of the 8 pre-contact sites located through the Stage 2 work, Tintah 1 and Campbell 1-3 appear, at this time, to be the most well–preserved and productive pre-contact sites, therefore significant. These sites produced at least 5 non-diagnostic artifacts from within a 10m by 10m test pit survey area. Tintah 4 produced one diagnostic artifact from test pits within a 10m by 10m test pit and surface collection area. The artifact recoveries from these sites is significantly greater than the other sites so far, with roughly the same amount of work done.

Tintah 1 is outside of the mine footprint area, but Campbell 1-3 are within.

Of the 6 historic sites located through the Stage 2 work, Homestead DfKm-7 and 9 require mitigation of development impacts. They are associated with the first generation of settlement of a pioneer group, even though the settlement was after 1870 [S&G *§* 3.4.2(1)(b)].

2.2.4 A preliminary determination regarding whether any archaeological sites identified in Stage 2 show evidence of a high level of cultural heritage value or interest and thus require Stage 4 mitigation

To be determined by Stage 3 investigations.

2.3 Stage 2 Recommendations

In summary, the Standards and Guidelines require a statement of the following:

2.3.1 Fourteen archaeological sites were located and registered with the Ministry of Tourism, Culture and Sport. Of the fourteen sites, eight (4 pre-contact and 4 historic) are either located outside of the project development area or do not meet the standards required for Stage 3 assessment (S&G *§* 2.2). Six sites do meet the standards and require additional assessment work, as required by the *MTCS 2011 Standards and Guidelines.* It is recommended that Stage 3 work at these sites be undertaken in 2013. This work should be completed in advance of any ground disturbances.

The following list includes sites that are recommended for Stage 3 work.

Stage 3 Pre-contact archaeological sites:

- Tintah 4 – DfKl-1
- Campbell 1 – DfKm-4
- Campbell 2 – DfKm-5
- Campbell 3 – DfKm-6

Stage 3 Historic Archaeological Sites:

- – DfKm-7
- – DfKm-9

Other sites not currently within the current project development area may be subject to future development disturbances due to modifications of the infrastructure, as such they may require future Stage 3 assessment work.

2.4 Advice on compliance with legislation

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

a. This report is submitted to the Minister of Tourism and 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 it complies with the standards and guidelines that are issued by the Minister, and that the archaeological fieldwork and report recommendations ensure the conservation, protection and preservation of the cultural heritage of Ontario. When all matters relating to archaeological sites within the project area of a development proposal have been addressed to the satisfaction of the Ministry of Tourism and Culture, a letter will be issued by the Ministry accepting the report into the Provincial Report Registry indicating that there are no further concerns with regards to alterations to archaeological sites by the proposed development.

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

c. Should previously undocumented archaeological resources be discovered, they may be a new archaeological site and therefore subject to section 48(1) of the *Ontario Heritage Act.* The proponent or person discovering the archaeological resources must cease alteration of the site

immediately and engage a licensed consultant archaeologist to carry out archaeological fieldwork in compliance with Section 48(1) of the *Ontario Heritage Act*.

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

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

3.0 Figures (Maps and Images) On following pages.

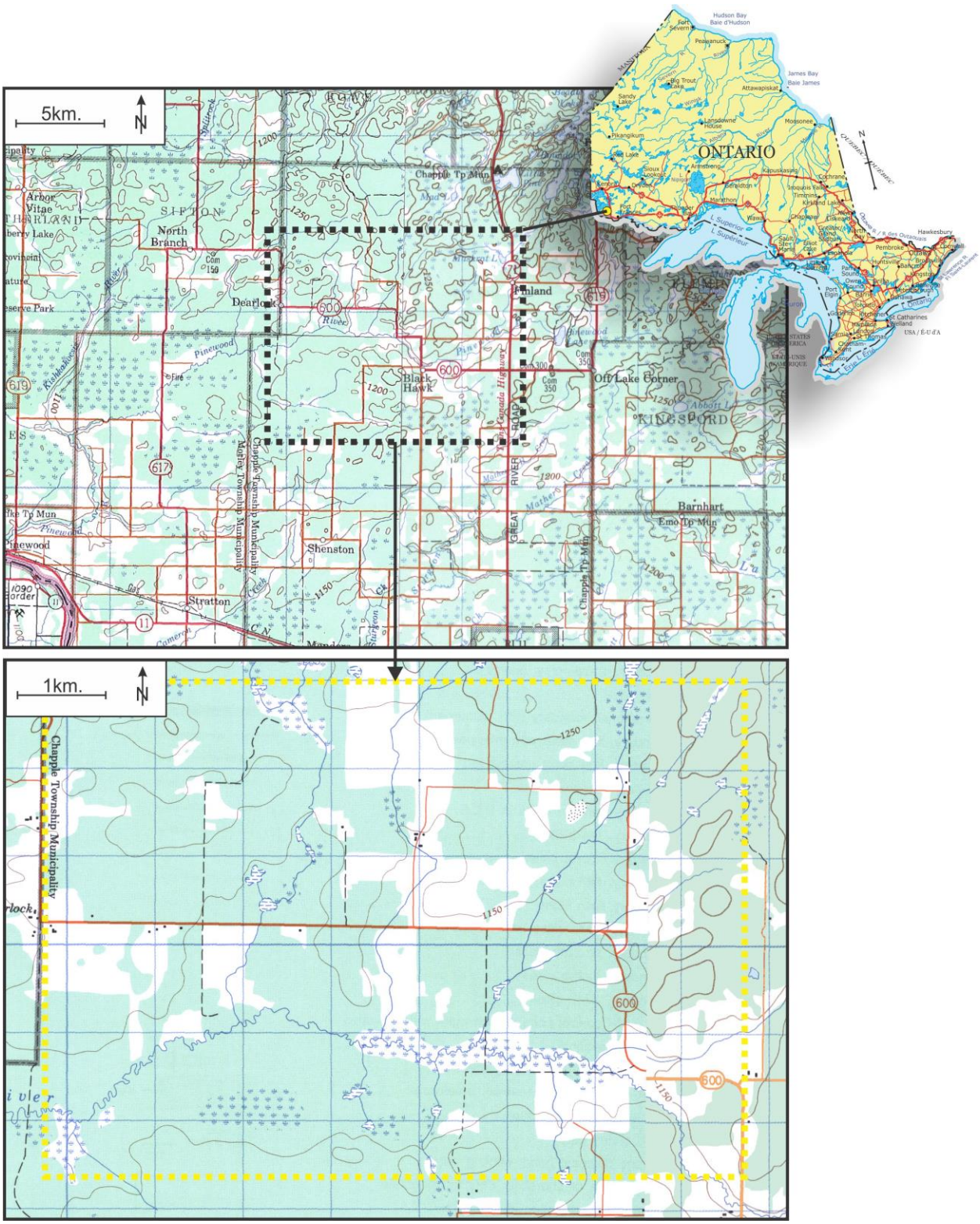

Figure 1. Project Location map.

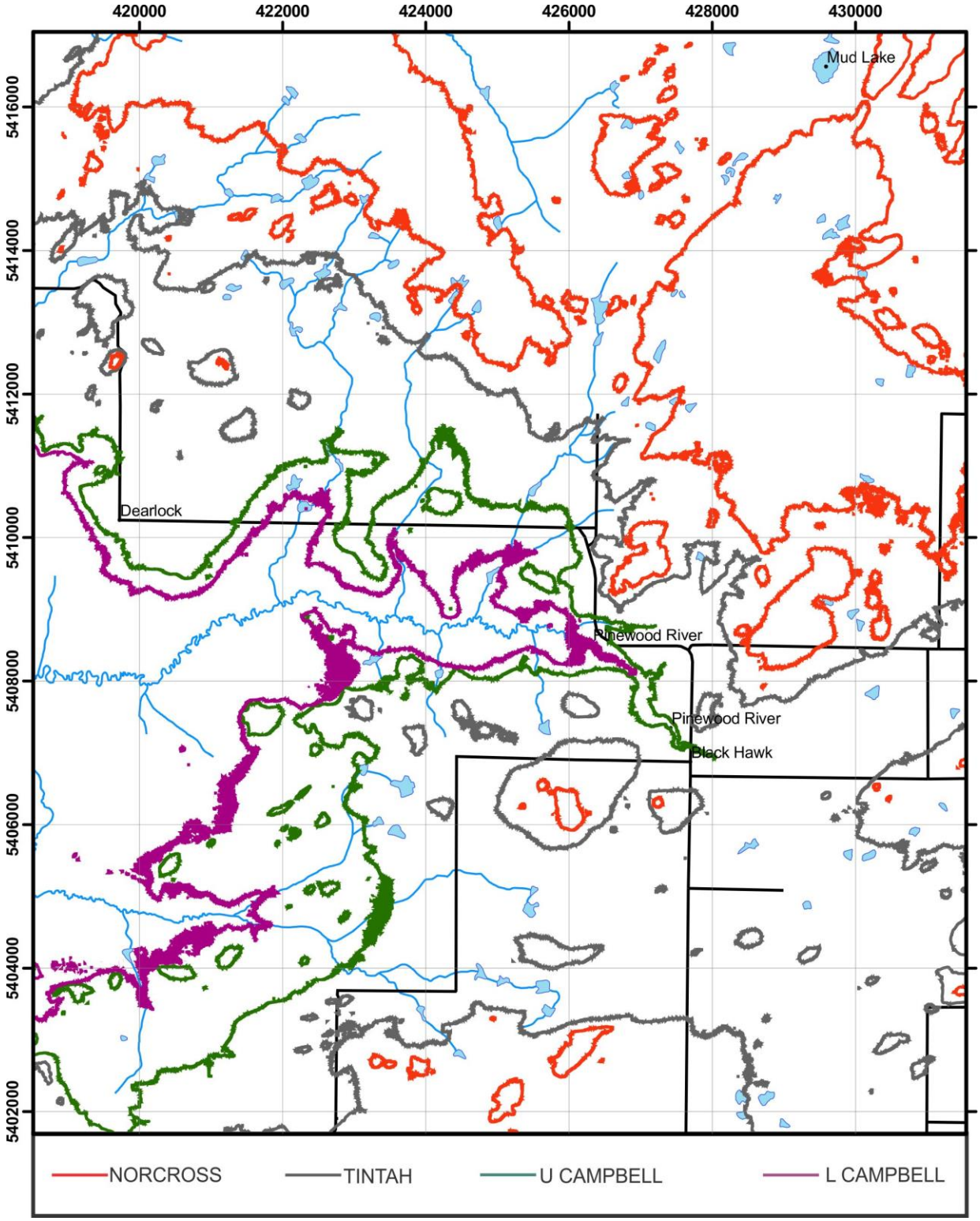

Figure 3. Map of the Lake Agassiz shorelines found within the study area.

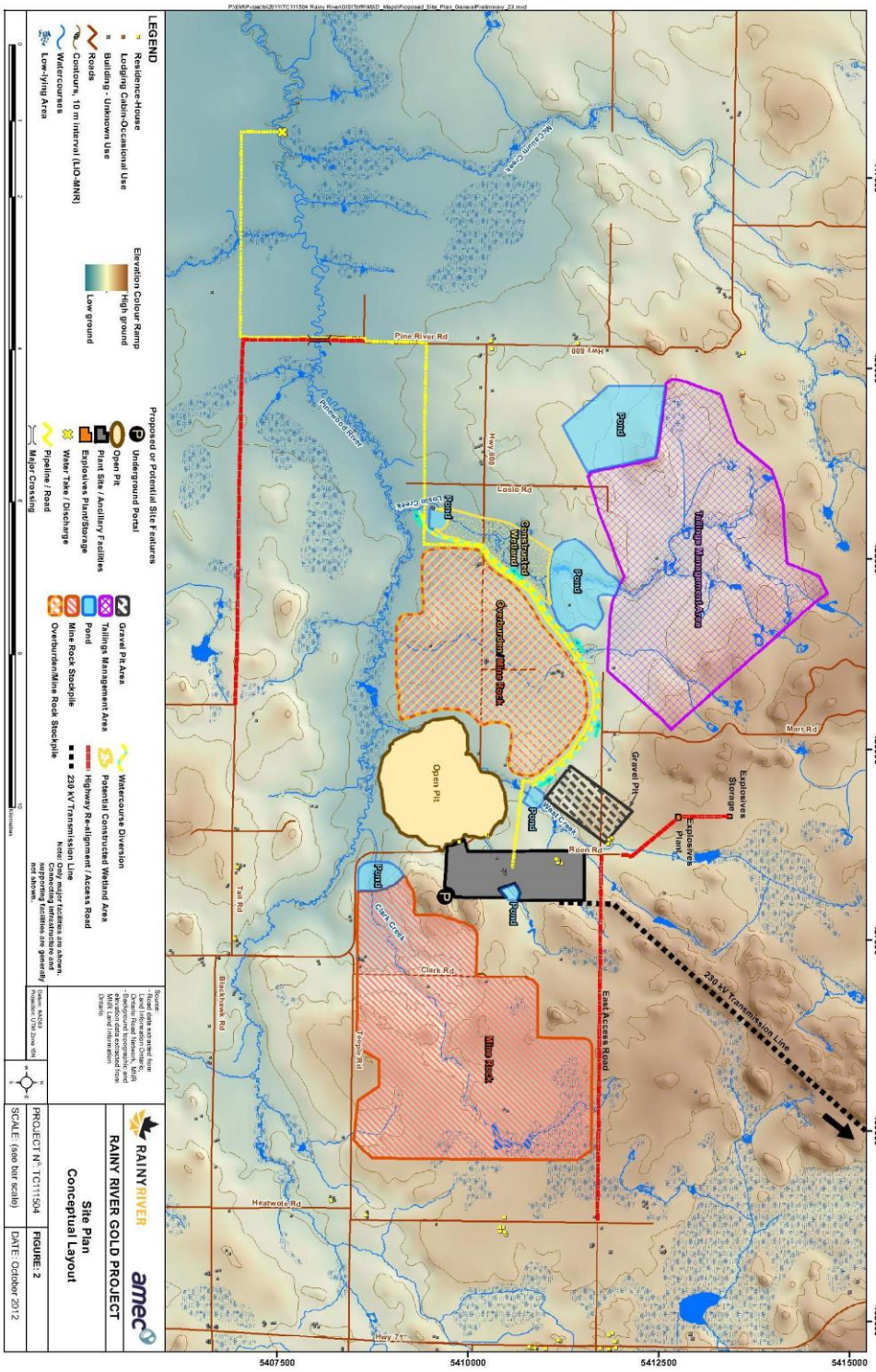

Figure 4. An unmodified development map (Courtesy of Rainy River Resources).

Figure 8. Biface fragment – obverse.

Figure 9. Biface fragment – reverse.

Figure 10. Adze – obverse.

Figure 11. Adze – reverse.

Figure 12. Utilised wedge – obverse.

Figure 13. Utilised wedge – reverse.

Figure 14. Biface fragment – obverse.

Figure 15. Biface fragment – reverse.

Figure 16. Gouge – reverse.

Figure 17. Gouge – obverse.

Figure 18. Flake of “ice quartz”.

Figure 19. Flake of “ice quartz”.

Figure 24. Photograph 116 looking south at what was once Lake Agassiz.

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Figure 27. Secondary flake.

Figure 29. flake– obverse.

Figure 31. A collection of flakes.

Figure 30. flake – reverse.

Figure 28. Secondary flake.

Figure 32. Photograph 494 showing the upper part of the site.

Figure 33. Photograph 485 of one of the flake scatters.

Figure 37. Flakes recovered at Tintah 3.

Figure 38. Flakes recovered at Tintah 3.

Figure 39. Tintah 3 flakes – obverse.

Figure 40. Tintah 3 flakes – reverse.

Figure 41. Possible core – obverse.

Figure 42. Possible core – reverse.

Figure 49. Biface fragment – obverse.

Figure 53. Quartz flake – obverse.

Figure 50. Biface fragment – reverse.

Figure 51. Proximal fragment of a flake - O

Figure 52. Proximal fragment of a flake – R.

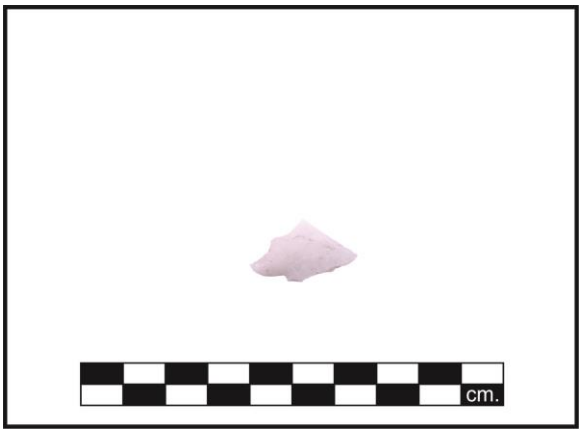

Figure 54. Quartz flake – reverse.

Figure 56. Photograph 854 of the exposed coarse aggregate.

Figure 57. Photograph 857 of the biface *in situ.*

Figure 66. Photograph 681 showing the discovery test pit at Campbell 1.

Figure 67. Photograph 685 showing the pit being excavated at Campbell 1.

Figure 70. Photograph 714 showing the forest setting of Campbell 2.

Figure 71. Photograph 720 showing a flake embedded into the sand.

Figure 72. Photograph 727 showing the soils of Campbell 3.

Figure 77. Unifacial tool – obverse.

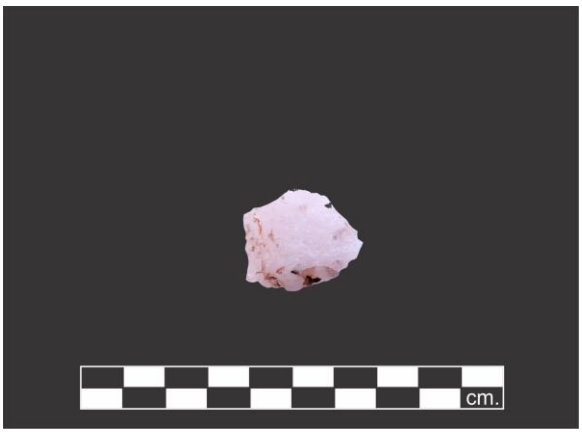

Figure 78. Unifacial tool – reverse.

Figure 79. Graver – obverse.

Figure 80. Graver – reverse.

Figure 81. Typical shatter – obverse.

Figure 82. Typical shatter – reverse.

Figure 83. Potential knife fragment. – O.

Figure 84. Potential knife fragment – R.

Figure 85. Possible graver - obverse

Figure 86. Possible graver - -reverse.

Figure 90. Photograph 745 of the discovery pit at Campbell 4.

Figure 94. Photograph 717 of the privy.

Figure 95. Photograph 716 of the shed converted to an apartment.

Figure 96. Photograph 715 of a freighter canoe.

Figure 97. Photograph 232 of the later house.

Figure 98. Photograph 238 of the earlier house.

Figure 99. Photograph 694 of the former house.

Figure 100. Photograph 267 of the early woodshed.

Figure 101. Photograph 769 of the pumphouse by the creek.

Figure 106. Photograph 130 of the privy.

Figure 107. Photograph 441 of the house.

Figure 108. Photograph 107 of the contents of the house.

Figure 109. Photograph 100 of the second shed.

Figure 110. Photograph 240 of the detail of the log construction.

Figure 114. Photograph 958 detail of the log construction.

Figure 115. Photograph 948 of the ruins of the homestead.

Figure 116. Photograph 945 of the ruins of Homestead 12.

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APPENDIX 1:
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