APPENDIX S

ARCHAEOLOGY AND CULTURAL HERITAGE TECHNICAL SUPPORT DOCUMENTS

S-1 Stage 1 Archaeological Assessment (Mine Site)
S-2 Stage 2 Archaeological Assessment (Mine Site)
S-3 Stage 1 Archaeological Assessment (Transmission)
S-4 Stage 1 Archaeological Assessment (Pipeline/Road)
S-5 Archaeology Chance Find Procedure
S-6 Cultural Heritage Research Report: Built Heritage and Cultural Heritage Landscapes
S-7 Cultural Heritage Evaluation Report Baseline
S-8 Cultural Heritage Evaluation Report CHR1 Travel Route
S-9 Cultural Heritage Evaluation Report CHR3 Cabin
S-10 Cultural Heritage Evaluation Report CHR4 Cabin
S-11 Cultural Heritage Evaluation Report CHR5 Cabin

Original Report:
Stage 1 Archaeological Assessment, Springpole Gold Project

Unorganized Territory, Kenora District, Ontario

First Mining Gold Corp.

ONS2104

Prepared by:
WSP E&I Canada Limited

22 September 2023

Original Report:
Stage 1 Archaeological Assessment, Springpole Gold Project

Unorganized Territory, Kenora District, Ontario
Project #ONS2104
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EXECUTIVE SUMMARY

WSP E&I Canada Limited (WSP; formerly Wood Environment & Infrastructure Solutions Canada Limited) was retained by First Mining Gold Corp. (FMG) to complete studies for the Springpole Gold Project (the Project), a proposed gold and silver mine located approximately 110 km northeast of the Municipality of Red Lake in unorganized territory of the Kenora District, Ontario (Appendix A: Figure A-1 to Figure A-3). Archaeological assessments for the Project were triggered by an Environmental Impact Statement (EIS) for the Project under the *Canadian Environmental Assessment Act* (CEAA) and an individual environmental assessment (EA) under the *Ontario Environmental Assessment Act* (EAA). A proposed mine site development plan is provided in Appendix A: Figure A-4.

The study area for this Stage 1 archaeological assessment covers portions of the Project footprint that extend outside the lands assessed by two previous studies (Northwest Archaeological Assessments 2022, 2023). The study area is approximately 158 hectares (ha), and corresponds to the following project elements:

- two aggregate source pits;
- effluent discharge pipeline plus a 20 m buffer from the centreline; and
- portions of alternative access road routes No. 1 and No. 5, plus a 20 or 50m buffer from the centreline.

The Stage 1 archaeological assessment was conducted according to the Ontario Ministry of Citizenship and Multiculturalism (MCM*) Standards and Guidelines for Consultant Archaeologists* (MCM 2011) under Project Information Form (PIF) number P327-0043-2022. Although most of the study area is inaccessible given its thick forest cover and distance from the nearest roads, trails, or navigable waterways per Section 1.3.4 Standard 1 of the *Standards and Guidelines for Consultant Archaeologists* (MCM 2011), a property inspection was completed on 21 August 2023 for the portion of the study area accessible by boat.

The Stage 1 background study indicated the study area had general archaeological potential for the following reasons: 1) one archaeological site is within 300 m of the study area; 2) the study area is within 300 m of a primary water source (Springpole Lake); 3) the study area is within 300 m of an area of early post-contact settlement (pre-1936 cabin); and 4) the study area is within 100 m of an early historic transportation route (Springpole Lake, part a late 18th to early 19th-century fur trade route).

Despite this general archaeological potential, 157.77 ha (99.8%) of the study area is remote and difficult to access, Section 1.3.4 Standard 1 of the *Standards and Guidelines for Consultant Archaeologists* (MCM 2011), given its thick forest cover and distance from the nearest air strip (Springpole Mine camp site, over 3 km west of the west portion of the study area), all-weather sections of the Wenesaga Forestry Road (over 1 km southeast of the east extent of the study area), or navigable waterbody (Springpole Lake, at the southwest extent of the study area) (Appendix A: Figure A-2). However, review of recent aerial imagery and mapping data (including 1-m resolution lidar) determined that approximately 40 ha (25%) of the study area is permanently wet marsh, swamp, or bog with no or low archaeological potential, and 1 ha (0.7%) of the study area has steeply sloping topography with no or low archaeological potential. A further 117 ha (74%) of the study area is over 50 m from a modern water source and not associated with a historic water source such as a glacial shoreline or any other feature of archaeological potential; therefore, per Section 2.15 of the *Standards and Guidelines for Consultant Archaeologists* (MCM 2011), Stage 2 test pit survey of this land is not required (Appendix A: Figure A-9). The remaining 0.2 ha (0.02%) that was visually assessed was determined to have no archaeological potential.

Based on these results, detailed recommendations are provided in Section 6.0 of this report and illustrated in Appendix A: Figure A-9.

The recommendations presented in Section 6.0 of this report are subject to review by the MCM. No grading or other activities that may result in the destruction or disturbance of the study area are permitted until the MCM has issued a letter indicating that this archaeological assessment is deemed compliant, and this report has been accepted into the *Ontario Public Register of Archaeological Reports*.

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1.0 PROJECT CONTEXT

1.1 Development Context

WSP E&I Canada Limited (WSP; formerly Wood Environment & Infrastructure Solutions Canada Limited) was retained by First Mining Gold Corp. (FMG) to complete studies for the Springpole Gold Project (the Project), a proposed gold and silver mine located approximately 110 km northeast of the Municipality of Red Lake in unorganized territory of the Kenora District, Ontario (Appendix A: Figure A-1 to Figure A-3). Archaeological assessments for the Project were triggered by an Environmental Impact Statement (EIS) for the Project under the Canadian Environmental Assessment Act (CEAA) and an individual environmental assessment (EA) under the Ontario Environmental Assessment Act (EAA). A proposed mine site development plan is provided in Appendix A: Figure A-4.

The study area for this Stage 1 archaeological assessment covers portions of the Project footprint that extend outside the lands assessed by two previous studies (Northwest Archaeological Assessments 2022, 2023). The study area is approximately 158 hectares (ha), and corresponds to the following project elements:

- two aggregate source pits;
- effluent discharge pipeline plus a 20 m buffer from the centreline; and
- portions of alternative access road routes No. 1 and No. 5, plus a 20 or 50m buffer from the centreline.

The Stage 1 archaeological assessment was conducted according to the Ontario Ministry of Citizenship and Multiculturalism (MCM) *Standards and Guidelines for Consultant Archaeologists* (MCM 2011) under Project Information Form (PIF) number P327-0043-2022.

This report presents the results of the Stage 1 background study and analysis of archaeological potential in the study area, and recommendations for further assessment, where appropriate.

1.2 Purpose and Scope of Work

A Stage 1 archaeological assessment is a qualitative study that systematically assesses the archaeological potential of a study area based on its land use and evidence of possible Indigenous and early post-contact (settler) occupation. Following the *Standards and Guidelines for Consultant Archaeologists* (MCM 2011:13), the objectives of a Stage 1 archaeological assessment are to: 1) provide information about the study area's geography, history, previous archaeological fieldwork and current land conditions; 2) evaluate in detail the study area's archaeological potential to support recommendations for Stage 2 archaeological assessment for all or parts of the study area, if required; and, 3) recommend appropriate strategies for Stage 2 archaeological assessment, where required.

For this Stage 1 archaeological assessment, WSP:

- Contacted the MCM to query the Ontario Archaeological Sites Database for all registered archaeological sites within a 1-kilometre (km) radius of the study area;
- Searched the Ontario Public Register of Archaeological Reports for reports that detail archaeological assessments conducted within a 50-metre (m) radius of the study area;
- Analyze the study area's physical characteristics, principally its proximity to water sources, elevated topography, well-drained soils and sediments, distinctive land formations and resource areas to determine its potential for pre-contact period archaeological resources;
- Reviewed historical maps and other archival sources to determine the study area's potential for post-contact period archaeological resources;

- Conducted a property inspection of the accessible portion of the study area (southwest extent) to document existing conditions and identify areas of archaeological potential;
- Recommended appropriate field-testing strategies for portions of the study area identified to have archaeological potential, where applicable; and,
- Prepared a Stage 1 archaeological assessment report describing the results of the Stage 1 archaeological assessment and providing recommendations for further archaeological work, where required.
- The qualifications of the assessors involved in the preparation of this report are provided in Appendix C.

2.0 BACKGROUND STUDY

2.1 Archaeological Context

2.1.1 A Cultural History for Northern Ontario

In early archaeological syntheses, the Indigenous cultures of northern Ontario were often described as isolated and conservative, a response to the harsh environment and limited resources. Today, however, archaeologists recognize northern Ontario's cultural history as dynamic, influenced by and influencing developments to the south and west (Hamilton 2013:81; Fagan 2019:193). The following provides a brief overview of the Indigenous heritage in the boreal forests of the Canadian Shield from those following the receding glaciers to the fur trade at contact with Europeans. In this summary, the "periods" that archaeologists have defined from material culture found in a specific time or place are substituted with "way of life" to reflect the direct Indigenous lineage from those living in the earliest periods to the present day (Julien et al. 2010).

Around 10,000 years ago, hunter-gatherers following the Plano way of life (Table 2-1) began moving into northern Ontario, following the foraging herds of bison, muskox, moose, elk, caribou, and deer as well as smaller mammals such as muskrat and beaver attracted to the freshwater lakes and tundra grasses left in the wake of the receding Laurentide Ice Sheet (Brose et al. 2021:24; Hamilton 2013:84). To hunt these animals the Plano used lance-shaped stone projectile points hafted to wood spears, then used large stone scrapers and knives to cut the meat and bone and clean hides (Hamilton 2013:84). Plano-type tools are remarkably similar across large areas, although local variations identified in northern Ontario are called the Lakehead and Interlakes Composite complexes (Hamilton 2013:85; Langford 2018:28-29). The few known Plano sites suggest these people were highly mobile and favoured lakeshores or the high ground near rivers (Hamilton 2013:85).

As Plano interaction with their surroundings and neighbours increased around 8,000 years ago, they developed local traditions and practices referred to as the Archaic or Pre-ceramic way of life (Table 2-1) (Sassaman 2010). In northern Ontario, the Pre-ceramic toolkit is thought by some to represent a unique "Shield Archaic" culture descended from Plano people moving south from present-day Nunavut, but today the Pre-ceramic way of life on the Canadian Shield is understood to have been influenced by developments to the south and may not be that different from other Archaic lifeways (Wright 1972a; Hamilton 2013:87, Langford 2018; Fagan 2019:195). However, Shield Archaic remains a useful label because it typifies the larger developments in the Pre-ceramic way of life. Like their Plano ancestors, Shield Archaic people lived in widely dispersed bands of foragers, but their local knowledge meant they could restrict their annual round to a smaller area and both their economy and material culture were more diverse (Fagan 2019:182). Projectile points became shorter through time and made with distinctive side-notches, and there were a range of single- and double-bladed stone knives, endscrapers, and sidescrapers (Clark 1991:99). Whetstones and adzes suggest Pre-ceramic people were shaping bone and wood, respectively, and the presence of archaeological sites on islands and along waterways suggests people were using snowshoes and watercraft (McMillan & Yellowhorn 2004:104).

Another key development of the Pre-ceramic way of life was copper mining and manufacture. As early as 6,000 years ago people had found copper sources in the upper Great Lakes and used it to create implements such as socketed lance heads and knives, adzes and fishhooks, as well as decorative items such as bracelets and disc pendants (Hamilton 2013:88; Langford 2018:25; Wright 1972b: 20, 34). Copper was also widely exchanged, with some pieces found as far away as the Indian Knoll Archaic site in Kentucky (Fagan 2019:187).

People living north of Lake Huron and Lake Superior adopted ceramics around 2,200 years ago, during what is known in southern Ontario as the Middle Woodland Period (Table 2-1) (Hamilton 2013:89). Despite this marked shift in material culture, known as the Laurel tradition, archaeologists have not found evidence that pottery made a major impact to those continuing a Pre-ceramic way of life across most of the region (McMillan & Yellowhorn 2004:104). The same is true of the bow and arrow, which first appear on Laurel tradition sites. It is unclear whether archery was a distinctly Laurel hunting adaptation or practiced much earlier since the bone and wood used to make bows and arrows generally do not survive in boreal forest conditions (Clark 1991:102- 102,133). However, for those following a Laurel way of life west of Lake Superior, adopting pottery does appear to have caused a significant shift in their economic and spiritual existence. In addition to greater reliance on foraging plants such as wild rice, the Laurel way of life as it developed into the Late Woodland Period west of Lake Superior included farming maize, establishing extensive trade networks, and building large ceremonial burial mounds that may have been influenced by the Hopewell culture far to the south (Hamilton 2013:92). Although farming and mound building was not pursued north and northeast of Lake Superior and Lake Huron, there is evidence in the form of copper, obsidian, exotic cherts and other goods found on northern sites —as well as northern minerals and metals uncovered at southern Middle Woodland sites— that Laurel people living across the northern boreal forest were active participants in the Hopewell sphere (Brose et al. 2021:28).

The Late Woodland way of life (Table 2-1) in the western Canadian Shield is defined by changes in pottery types, which are assumed to correspond to the linguistic and cultural diversity seen in the contact and post-contact periods (McMillan & Yellowhorn 2004:106; Hamilton 2013:94). Found across the Shield in Ontario and into Manitoba and Québec are Blackduck ceramics, thought to have developed from the Laurel way of life and used by the ancestors of the Anishinaabeg (Coté and Inksetter 2009). Further north is Selkirk-type pottery, used by people who would become known as Cree (McMillan & Yellowhorn 2004:106-107). However, these direct lineages are complicated by Sandy Lake pottery found overlapping the Blackduck area, which may have been made by Siouan-speaking people, and sites in northern Ontario that have both Blackduck and Selkirk wares; elsewhere, some ancestral Cree sites lack pottery altogether (Hamilton 2013:94; McMillan & Yellowhorn 2004:107).

In contrast to earlier ways of life, far more material evidence survives from the Late Woodland and includes not only hunting tools such as barbed bone harpoons, but also stone pipes and amulets with imagery linked to religion (McMillan & Yellowhorn 2004:106). In the Blackduck (known at contact as Anishinaabe) way of life, religious beliefs are also reflected in the low burial mounds found west of Lake Superior and the pictographs created in red ochre on numerous rock outcrops across northern Ontario (McMillan & Yellowhorn 2004:106- 107; MCR 1980; Conway 1981).

At contact with Europeans in the 17th century, Anishinaabeg groups had a varied diet of moose, deer, and bear, numerous fish species, and plant foods such as maple sap, berries, and wild rice (McMillan & Yellowhorn 2004:110-111). To access these resources, Anishinaabe had to be seasonally mobile, which determined the form and materials of their lightweight wigwam housing and development of birchbark canoes (McMillan & Yellowhorn 2004:112). As European commercial interests in northern Ontario expanded into the 18th century, the Anishinaabe way of life pivoted to trapping, visiting fur trade posts, and adopting European material culture. Despite government efforts at assimilation and settlement through the 19th and 20th centuries, many Anishinaabeg communities in northwestern Ontario continue their traditional land use, cultural and belief systems, artistic expression, and other ways of life.

Table 2-1: Simplified cultural chronology of northern Ontario (based on Munson 2013:13)

Period	Complexes/Cultures & Diagnostic Artifacts
Plano (c. 9,500–8,000 Years B.P.)	Big game hunting over large areas Lakehead and Interlakes Composite complexes (c. 8,500-8,000 B.P) in upper Great Lakes
Pre-ceramic/ Shield Archaic (c. 8,000-2,200 B.P.)	Greater knowledge of local resources allows for smaller area covered during seasonal round. Diverse hunted and foraged diet. Watercraft and snowshoes introduced. Old Copper Complex (6,000 – 3,000 B.P.) in upper Great Lakes that included long distance trade.
Middle Woodland (c. 2,200–1,300 B.P.)	Laurel based on introduction of pottery, but Archaic hunter-gatherer lifeway continues. Develops to include maize agriculture and mound building in the Late Woodland.
Late Woodland (A.D. 700-1650)	Laurel in the south portion of northwestern Ontario develops to include maize agriculture and mound building. Transitions to Sandy Lake (A.D. 1200-1750) in upper Great Lakes. Ancestral Anishinaabeg. Blackduck (A.D. 700-1100) generally north of Sandy Lake area. Ancestral Anishinaabeg. Burial mounds and pictographs. Selkirk (A.D. 700-1750) generally north of Blackduck area. Ancestral Cree.

2.1.2 Registered Archaeological Sites

To register archaeological sites in the *Ontario Archaeological Sites Database*, the MCM uses the "Borden system" developed in 1952 by University of British Columbia archaeologist Charles Borden (Borden 1952). The Borden system divides Canada into grid blocks based on longitude and latitude, with each Borden block measuring approximately 13 km east-west by approximately 18.5 km north-south. Each Borden block is referenced with a four-letter designation, with sites found within each block numbered sequentially as they are registered. The study area is located within the EiKb Borden block.

A search of the *Ontario Archaeological Sites Database* on 15 August 2023, identified one site registered within a 1-km radius of the study area (MCM 2022). Two pictograph sites were identified during a 2012 survey (Horizon Archaeology Inc. 2016) are also within 1 km of the study area but have only been partially recorded within the *Ontario Archaeological Sites Database* (MCM 2022). It is important to note that an absence of registered sites near a study area does not necessarily imply the area was not occupied in the past, but instead may indicate that previous archaeological surveys of the area have been limited.

Table 2-2 summarizes the archaeological sites registered within 1-km of the study area.

Table 2-2: Registered archaeological sites within a 1-km radius of the study area

Borden Number	Site Name	Cultural Affiliation	Site Type	Distance from Study Area	Development Review Status
EiKb-2	Lower Springpole 1	Not listed	Unknown	<1 km	Unknown
EiKb-4	-	Not listed	Pictograph	<1 km	In Database – Pending Completion
EiKb-6	-	Not listed	Pictograph	<300 m	In Database – Pending Completion

2.1.3 Previous Archaeological Investigations

WSP's search of the *Ontario Public Register of Archaeological Reports* administered by the MCM determined that no archaeological assessments have been conducted within the study area and two archaeological assessments have been conducted within 50 m of the study area (MCM 2022b). These are previous studies completed associated with the Springpole Gold Project, and are listed in Table 2-3 and their location illustrated in Appendix A: Figure A-5. A description of each report and its conclusions and recommendations are provided below. A Stage 1 archaeological assessment was also conducted as part of the Springpole Gold Project for the proposed mine site area (Northwest Archaeological Assessments 2020a) and summarized five previous assessments (Northwest Archaeological Assessments 2020b; Western Heritage Services 2011; Horizon Archaeology Ltd. 2011, 2012, 2016). None of these assessments are within 50 m of the study area.

Table 2-3: Archaeological assessments detailing work conducted within 50 m of the study area

Year	Title	Author	PIF No.
2021	Stage 1 archaeological assessment and cultural heritage resource evaluation, Four Alternate Transmission Line Corridors and Parts of the Proposed Mine Access Road, Springpole Gold Project, District of Kenora, Ontario.	Northwest Archaeological Assessments	P236-0163-2020
2023	Stage 2 Archaeological Assessment of the Mine Site Development Area, First Mining Gold, Ltd. Springpole Gold Project, Unorganized Territory, District of Kenora, Ontario.	Northwest Archaeological Assessments	P236-0170-2021

- *Stage 1 Archaeological Assessment and Cultural Heritage Resource Evaluation, Four Alternate Transmission Line Corridors and Parts of the Proposed Mine Access Road, Springpole Gold Project, District of Kenora, Ontario.* Prepared by Northwest Archaeological Assessments for First Mining Gold Corp., 21 December 2021 (PIF P236-0163-2020).

In 2021, Northwest Archaeological Assessments conducted a Stage 1 archaeological assessment for the Project's proposed mine access road and four transmission line alternatives east of the Springpole Lake and Birch Lake crossing and south of the Project Area. The assessment, which included a helicopter fly-over (but no landings) identified multiple areas along the proposed transmission line alternative routes that require Stage 2 archaeological assessment, all associated with major water crossings or lakes. Of these identified areas, six were located along Alternative 1, ten along Alternative 2, seven along Alternative 3, and 20 along Alternative 4 (Northwest Archaeological Assessments 2021:34-38; Appendix A: Figure A-5).

- *Stage 2 Archaeological Assessment of the Mine Site Development Area, First Mining Gold, Ltd. Springpole Gold Project, Unorganized Territory, District of Kenora, Ontario.* Prepared by Northwest Archaeological Assessments for First Mining Gold Corp., 16 January 2023 (PIF P236-0170-2021).

Following the recommendations of the Stage 1 archaeological assessment (Northwest Archaeological Assessments 2021), Northwest Archaeological Assessments conducted a Stage 2 archaeological assessment in 2021 of the areas identified as having archaeological potential. This included survey of the shoreline areas within the Project's development area and areas of archaeological or cultural heritage interest in the general vicinity. No archaeological resources were identified, and no further work was recommended for the assessment's study area. Northwest Archaeological Assessments also relocated two archaeological sites outside the study area (EiKb-4 and EiKb-6, near the Birch and Dole Lakes). These sites have been registered with the MCM with recommendations for protective buffers.

2.1.4 Environmental Context

The study area (Appendix A: Figure A-1 to Figure A-3) is situated in the southwest extent of the Canadian Shield, in the Severn Upland subregion of the James physiographic region (Dyke et al. 1989). On the north and west, the Severn Upland extends into Manitoba while on the east it meets the Abitibi Upland subregion north of Lake Superior. The Severn Upland includes large areas of exposed Precambrian Shield, marine and glacial lake deposits that are mainly clay and sandy till, as well as surface features such as eskers, moraines and ice flow lineations (Dyke et al. 1989:217). These were formed as the glaciers and associated Glacial Lake Agassiz advanced and retreated, with ice-free areas appearing in the study area by around 9,000 years ago (Sims & Baldwin 1991:8). The study area's topography is characterized as a succession of low hills composed of rock or glacial debris separated by shallow depressions containing swamps and lakes (Harding 1936:5). The majority of the study area remains unclassified, but the westernmost portion was identified containing Precambrian Keewatin rock formations while in the Birch-Springpole area are recent stream sediments above Quaternary unconsolidated glacial gravels, sands, clays and lake deposits (Harding 1936:9-10).

One of the most important factors influencing human land use is proximity to water. The *Standards and Guidelines for Consultant Archaeologists* (MCM 2011) lists the presence of water sources as a key indicator of archaeological potential since potable water is critical to human and animal life, and because lakes and waterways have enabled movement of people and goods in the pre-and post-contact periods. In the *Standards and Guidelines for Consultant Archaeologists* (MCM 2011), potential for Indigenous and post-contact archaeological sites is considered high for lands within 300 m of an extant or historical primary or secondary water source. Primary water sources are defined as lakes, rivers, streams or creeks, while secondary sources include intermittent streams and creeks, springs, marshes, and swamps.

The study area is surrounded by primary water sources, of which the most prominent are Birch Lake and Springpole Lake. These are adjacent to the study area and will not be impacted by the project. Secondary water sources in the study area are shallow, low-flow creeks surrounded by swamp or bog with no or low archaeological potential.

2.2 Historical Context

2.2.1 Review of Historical Records

2.2.1.1 17th to 19th Century Land Use

At contact with Europeans in the early 17th century, northwestern Ontario was home to a diverse number of Anishinaabeg Ojibwe, Salteaux and Odawa groups as well as Cree and Cheyenne, and people who spoke a mix of Cree and Anishinaabemowin (Dawson 1987). To French traders it was part of the vast pays d'en haut (the "Upper Country") with the region encompassing the fur trade routes to the north and west of Lake Superior referred to as Le Petit Nord ("the Little North") (Lytwyn 1981:18). From the mid-to-late 17th century, French commercial expansion into northwestern Ontario was limited and unsupported by the colonial government but was more successful than English efforts on Hudson's Bay as it was based on knowledge of Indigenous languages and kin networks (Berthelette 2022:66). To counter the English claim in 1670 that the Hudson Bay watershed was "Rupert's Land" and territory of the monopoly Hudson Bay Company (HBC), the French launched official expeditions and garrisoned forts northwest of Lake Superior. Through the first half of the 18th century, competition between French and English for fur trading hegemony often escalated to open warfare, although the sustained French presence in the northwest also led to métissage, Indigenous-French exchanges in material culture, beliefs, lifeways, kinship, and partnerships that by the fall of New France in 1763 had resulted in a distinct cultural identity later known as Métis (Berthelette 2022:223).

Competition for the fur trade emerged again from the 1770s to early 19th century, this time between the HBC and rival companies such as the North West Company (NWC), XY Company (XYC), and independent

Canadian and American traders (Nassaney 2015:57-58). By the early 1800s the HBC and other companies and traders had established an extensive network of posts and travel routes along the Albany and Severn Rivers as well as west and northward flowing rivers of east of Winnipeg (Lytwyn 1981: 8-9; Appendix B: Plate 1).

This network may have included the study area. A 1786 map from the HBC Gloucester House Post Journal (Appendix B: Plate 2) depicts a trade route between Lake St. Joseph to Lac Seul and notes the mouth of a watercourse called Crow Nest River. The Crow Nest River appears again in subsequent mapping in 1792 and 1816 (Appendix B: Plate 2 and Plate 3), and on the 1792 map "Draught between Osnaburg to Red Lake" is illustrated routes from Lake St. Joseph to Red Lake and Cat Lake, which passed through Crow Nest Lake from Gull Lake (Appendix B: Plate 3). Additionally, a map from 1816 indicates a "Canadian House" (independent trader post) on Crow Nest Lake between Birchrind Lake and Gull Lake (Appendix B: Plate 4). Using these maps Lytwyn (1981) conjectured that Crow Nest Lake is today's Springpole Lake, which borders the study area. If correct, Springpole Lake was the site of three intermittently occupied posts: Canadian House, the 1783 HBC Crow Nest Lake post, and the 1785 NWC Crow Nest Lake post (Natural Resources Canada 1974:79-80).

Harding (1936:1) also suggests that Springpole Lake may have been traversed by the early Canadian explorers and notes that Birch Lake has long been recognized as a travel route between Cat Lake and the English River. According to Andrew Hinshelwood of Northwest Archaeological Assessments (pers. Comm. 2022), these travel routes are still used today (WSP 2022).

2.2.1.2 20th-century Land Use

In the 20th century, Treaties were established between the Crown and Indigenous communities for lands across northern Ontario. It is now recognized that the Canadian government and Indigenous communities had different understandings of these Treaties, but they remain legally binding agreements that "form the basis of the relationship between Indigenous and non-Indigenous people" (Government of Ontario 2023). The study area is within the traditional territories of Cat Lake First Nation, Slate Falls Nation, Mishkeegogamang Ojibway Nation and Lac Seul First Nation, within the Treaty No. 9 area. Other Indigenous communities that may hold historical connections to the area include the Ojibway Nation of Saugeen, Pikangikum First Nation, Wabauskang First Nation and members of the Northwestern Ontario Métis Community (Métis Nation of Ontario Region 1; MNO).

Treaty No. 9, also known as the James Bay Treaty, was an agreement signed in 1905 and 1906 by Osnaburgh Post (Mishkeegogamang Ojibway Nation), Fort Hope Post (Eabemetoong First Nation), Marten Falls Post (Ogoki First Nation), Fort Albany Post (Kashechewan First Nation), Moose Factory Post (Moose Cree First Nation), New Post (Taykwa Tagamou First Nation), Abitibi Post (Abitiwinni First Nation, Wahgoshig First Nation), Matachewan Post (Matachewan First Nation), Mattagami Post (Mattagami First Nation), Flying Post (Flying Post First Nation), New Brunswick House Post (New Brunswick House First Nation) and Long Lake Post (Ginoogaming First Nation). The Treaty commissioners Duncan Campbell Scott, Samuel Stewart and Daniel G. MacMartin spent only a few days in the region before asking community representatives to sign the treaty, which was written in English and explained to the representatives via interpreters. No negotiations took place, and no copies of the document were left with the communities to review. Treaty No. 9 covers most of present-day Ontario north of the height of land dividing the Great Lakes watershed from the Hudson and James Bay drainage basins (Long 2010; Ministry of Government and Consumer Services 2022).

In the 1920s, mineral exploration began in the Birch-Springpole area and by 1926 was focussed on areas near Woman Lake, Narrow Lake, and Birch Lake (Harding 1936: 3). In May 1935 the Dole brothers explored the north shore of the Springpole Lake's east arm, within the study area, and made nine claims (Harding

1936; 21). Historical mapping from 1936 shows a cabin on the southern edge of these holdings, approximately 200 m south of the study area (Appendix A: Figure A-8). Records from the Abandoned Mine Information System (AMIS) indicate that further trenching and prospecting were completed within the study area, first by Windigokan Sturgeon Mining Syndicate between 1933 to 1936 and later in 1945 by Springpole Mines Limited. Mining work in the Birch-Springpole area appears to have ceased until the 1980s, when the area was surveyed through airborne geophysics, mapping, geochemistry, and ground geophysics. Between 1995 and 2013 diamond drilling commenced at the Springpole Lake property (Ontario Mineral Inventory 2022) and in 2015 FMG acquired the property from Gold Canyon and continued mineral exploration activities at the property.

A summary of the 20th-century historical mapping available for the study area is presented below in Table 2-4.

Table 2-4: Review of 20th-century historical mapping

Year	Title
1902 (Figure A-6)	• No features are depicted within the study area • The Study Area is surrounded by large lake bodies
1906 (Figure A-7)	Neither the Springpole nor Birch Lake areas are depicted on this map however illustrated nearby portage routes and fur trade sites in relative proximity to the study area (i.e., Lac Seul, Lake St. Joseph) suggest that the Study Area may have been utilized as a trade / travel route
1908 (Figure A-7)	
1911 (Figure A-7)	
1924 (Figure A-7)	
1933 (Figure A-7)	
1936 (Figure A-8)	• One cabin depicted approximately 200 m southeast of the study area • Dole survey area depicted within the study area

2.2.2 Commemorative Plaques and Heritage Properties

Section 1.3.1 of the *Standards and Guidelines for Consultant Archaeologists* (MCM 2011) notes that features or characteristics of archaeological potential can be identified through the presence of: commemorative markers, monuments, or heritage parks; properties listed on a municipal register or designated under the Ontario Heritage Act; federal, provincial, or municipal historic landmarks or sites; and properties that local histories or informants have identified with possible archaeological sites, historical events, activities, or occupations.

A search of the Ontario Heritage Trust Plaque Database and *Ontario Heritage Act* Register indicates there are no historical plaques or heritage properties located within a 1-km radius of the study area (OHT 2023).

2.3 Potential for Archaeological Resources

Archaeological potential is defined in the *Standards and Guidelines for Consultant Archaeologists* (MCM 2011:163) as the likelihood a study area contains archaeological resources. In land use planning, identifying archaeological potential is used to determine where sites may be found within a study area, and indicate whether time and resources will need to be allocated for archaeological survey and mitigation.

The features and characteristics indicating archaeological potential are listed in Section 1.3.1 of the *Standards and Guidelines for Consultant Archaeologists* (MCM 2011):

- previously identified archaeological sites.
- water sources (it is important to distinguish types of water and shoreline, and to distinguish natural from artificial water sources, as these features affect site locations and types to varying degrees):
  - primary water sources (e.g., lakes, rivers, streams, creeks).
  - secondary water sources (e.g., intermittent streams and creeks, springs, marshes, swamps).

  - features indicating past water sources (e.g., glacial lake shorelines indicated by the presence of raised sand or gravel beach ridges, relic river or stream channels indicated by clear dip or swale in the topography, shorelines of drained lakes or marshes, cobble beaches).
  - accessible or inaccessible shoreline (e.g., high bluffs, swamp or marsh fields by the edge of a lake, sandbars stretching into marsh).
- elevated topography (e.g., eskers, drumlins, large knolls, plateaus).
- pockets of well-drained sandy soil, especially near areas of heavy soil or rocky ground.
- distinctive land formations that might have been special or spiritual places, such as waterfalls, rock outcrops, caverns, mounds, and promontories and their bases. There may be physical indicators of their use, such as burials, structures, offerings, rock paintings or carvings;
- resource areas, including:
  - food or medicinal plants (e.g., migratory routes, spawning areas, prairie).
  - scarce raw materials (e.g., quartz, copper, ochre or outcrops of chert).
  - early Euro-Canadian industry (e.g., fur trade, logging, prospecting, mining).
- areas of early Euro-Canadian settlement. These include places of early military or pioneer settlement (e.g., pioneer homesteads, isolated cabins, farmstead complexes), early wharf or dock complexes, pioneer churches and cemeteries. There may be commemorative markers of their history, such as local provincial, or federal monuments or heritage parks.
- early transportation routes (e.g., trails, passes, roads, railways, portages).
- property listed on a municipal register or designated under the Ontario Heritage Act or that is a federal, provincial or municipal historic landmark or property that local histories or informants have identified with possible archaeological sites, historical events, activities or occupations.

The *Standards and Guidelines for Consultant Archaeologists* (MCM 2011) also outline indicators for low or no archaeological potential. These can include areas that are permanently wet or have exposed bedrock or steep slopes, as well as where an area that has undergone extensive and deep land alterations that may have severely damaged the integrity of any archaeological resources (Section 1.3.2, MCM 2011:18, 28). These latter areas have often been "disturbed" through:

- quarrying;
- major landscaping involving grading below topsoil;
- building footprints; and
- sewage and infrastructure development.

However, activities such as agricultural cultivation, gardening, minor grading, and landscaping do not necessarily affect archaeological potential.

2.3.1 Archaeological Master Plans

The Ministry of Natural Resources and Forestry (MNRF) developed the Heritage Assessment Tool (HAT) to model archaeological potential for forestry management units across northern Ontario. The study area is contained wholly within the Trout Lake Forest management plan unit. A key variable in the modelling is proximity to water, with archaeological potential identified for a 50-m wide zone associated with major rivers and ponds in the study area. However, this modelling is often based on recent raster imagery or other contemporary hydrographic conditions, not those documented in earlier mapping and satellite and aerial imagery.

The HAT modelling plots areas of archaeological potential within the study area yet in some cases omit potential in areas surrounding named lakes, and sections along major watercourses such as the lower Jocko Creek. Since the Project is unrelated to forest management, the HAT archaeological predictive modelling was considered but not reproduced for this report.

2.3.2 Archaeological Potential Modelling

Although proximity to primary and secondary water sources is listed as an indicator of archaeological potential in the *Standards and Guidelines for Consultant Archaeologists* (MCM 2011), for northern Ontario this presents a challenge due to the abundance and broad range of water sources, from intermittent brooks and swampland to large lakes and wide, fast flowing rivers. Small watercourses and inundated areas are known to be used by Indigenous groups to gather animal and plant resources that favour wetlands, such as waterfowl and wild rice, but archaeological research in the region has assumed —despite the risks of overemphasizing certain site locations— that human groups preferred the larger and permanent waterbodies and fast flowing watercourses since they tend to attract game species, support fish populations, provide higher quality and consistent potable water, and in winter offer flat and treeless corridors to traverse the landscape (Julig and Long 2021: 20-21; Hamilton 2000:45).

To identify zones within the study area with a higher probability of being associated with human land use and corresponding archaeological resources, a basic GIS archaeological potential model was generated based on stream order. Stream order developed in hydrology to create a hierarchy of tributaries within a river system, from low concentration and largely overland flow in an outer tributary, to the high volume and high-velocity flow within a main channel. A number of ways to define stream orders have been proposed. One is the Strahler method, which assigns a relative numerical value to each branch of a river system: the smallest and outermost tributaries are called "first order" while the higher-flow channel where the first order tributaries merge is referred to as "second order". This relative index increases as the channels reach the main path of a river from third order to globally as high as 12th order. Stream order classification using the Strahler method is available in the data provided by the Land Information Ontario (LIO) data.

The model was limited to Strahler third order or higher watercourses, as commonly applied to archaeological potential modelling (e.g., Golder 2018) and, following parameters used for the HAT, identified only those lands within 50 m of third order or higher watercourses as having archaeological potential. This 50-m buffer also captures the confluence of second and third-order streams. Archaeological potential was also identified for within 50 m of lakes (primary water sources) in the LIO dataset.

Permanently wet areas of marsh, swamp, or bog with low to no potential for archaeological resources were identified through the 2022 LIO wetland mapping while areas with slopes greater than 20-degrees were identified using a LiDAR derived digital elevation model (DEM) collected at 1-m resolution.

2.3.3 Results

Table 2-5 summarizes the potential for archaeological resources in the study area based on the results of the background study and the criteria listed above.

Table 2-5: Summary of archaeological potential for the study area

Indicators of Archaeological Potential	Yes/No	Description
1. Are archaeological sites located within, or within 300 m, of the study area?	**Yes**	• One pictograph archaeological site is assumed to be located within a 300 m radius of the study area.
2. Is there an extant or formerly mapped primary or secondary water source within the study area or within 300 m of the study area?	**Yes**	• Primary water sources: Springpole Lake is located within 300 m of the study area. • Secondary water sources: Numerous shallow, low-flow watercourses surrounded by swamp or bog are located throughout the study area. Note, however, that these areas are permanently wet and not associated with archaeological potential (see Question 11).
3. Are there areas of elevated natural topography within the study area?	No	• There are no areas of elevated natural topography within the study area.
4. Are there pockets of well-drained sandy soil in the study area?	No	• There are no pockets of well-drained sandy soil in the study area. The general soil typology of the Birch Springpole area is classified as recent stream sediments above unconsolidated glacial gravels, sands, clays and lake deposits.
5. Are there distinctive land formations in the study area that might have been special or spiritual places, such as waterfalls, rock outcrops, caverns, mounds, and promontories and their bases?	No	• There are no distinctive land formations that might have been a special or spiritual place known to be within the study area.
6. Are there resource areas in the study area?	No	• There are no resource areas in the study area.
7. Are there areas of early post-contact settlement in the study area or within 300 m of the study area?	**Yes**	• The 1936 Map No. 45c entitled "Birch Springpole Lakes Area" (Appendix A: Figure A-8), depicts one cabin within 300 m of the study area.
8. Are there early historic transportation routes in the study area or within 100 m of the study area?	**Yes**	• Early mapping suggests that Springpole Lake was a significant trade route. The study area is within 100 m of Springpole Lake
9. Is there municipally, provincially, or federally listed or designated heritage property or landmarks in the study area?	No	• No municipally, provincially, or federally listed or designated heritage property or landmarks are within the study area.
10. Is the study area identified on the MNRF Heritage Assessment Tool (HAT) as having general archaeological potential?	**Yes**	• The HAT indicates areas of archaeological potential associated with Springpole Lake within the study area. As the Project is unrelated to forest management, the HAT archaeological predictive modelling was considered but not reproduced in this report.
11. Are there areas within the study area that are permanently wet, have exposed bedrock, or steep slopes?	**Yes**	• LIO wetland mapping indicates that extensive areas within the study area are permanently wet marsh, swamp, or bog. • The lidar-generated DEM (1-m resolution) identified several small areas within the study area where slopes are greater than 20°.

Indicators of Archaeological Potential	Yes/No	Description
12. Are there areas in the study area that have undergone extensive and deep land alterations that may have severely damaged the integrity of any archaeological resources?	No	• While mineral exploration occurred within the study area between 1935 and 2015 there is no evidence to suggest that this has severely damaged the integrity of any archaeological resources.
13. Has the study area, or portions of the study area, been previously assessed?	No	• The study area has not been previously assessed.
14. Has previous assessment of the study area fully mitigated archaeological resources within the study area?	N/A	• The study area has not been previously assessed.
15. Does the study area require additional archaeological assessment?	No	• Although portions of the study area exhibit general archaeological potential, none require Stage 2 archaeological assessment (see Sections 3,2, 5.0 and 6.0).

3.0 PROPERTY INSPECTION

3.1 Methods

Following Sections 1.2 of the *Standards and Guidelines for Consultant Archaeologists* (MCM 2011), a Stage 1 property inspection was conducted to gain first-hand knowledge of the study area's geography, topography, and current conditions, and to evaluate and map archaeological potential. The objectives of the inspection were to confirm previously identified features of archaeological potential or areas of disturbance, identify and document additional features of archaeological potential or areas of disturbance, and identify and document features, structures, or built features that will affect future assessment strategies.

Although most of the study area is inaccessible given its thick forest cover and distance from the nearest roads or trails, per Section 1.3.4 Standard 1 of the *Standards and Guidelines for Consultant Archaeologists* (MCM 2011), a property inspection was completed for the southwest extent of the study area, which is accessible by boat from Springpole Lake. After receiving FMG's permission to enter the study area, WSP Field Director Chelsea Dickinson (R1194) conducted fieldwork on 21 August 2023 under weather conditions (sunny and periodically overcast with a maximum temperature of 19°C) that permitted good visibility of land features per Section 1.2 Standard 2 of the *Standards and Guidelines for Consultant Archaeologists* (MCM 2011). Field observations were recorded on mapping and through written notes, and the study area was extensively photo-documented (Appendix A: Figure A-9; and Appendix C: PHOTOGRAPH 1 to PHOTOGRAPH 4).

3.2 Results

The southernmost portion of the study area, associated with the effluent pipeline, was accessed by boat. The 0.03-ha portion of the study area directly adjacent to Springpole Lake is permanently low and wet marsh (Appendix C: PHOTOGRAPH 1) while the remaining 0.2 ha area identified to have archaeological potential has a steeply sloping topography that descends south to Springpole Lake with an uneven surface (Appendix C: PHOTOGRAPH 2 to PHOTOGRAPH 4). Vegetation over this portion of the study area is very dense and consists predominately of coniferous trees (Appendix C: PHOTOGRAPH 1 to PHOTOGRAPH 4). No features of archaeological potential were found in the study area.

The steeply sloped and permanently low and wet portions of the study area were photo-documented and mapped per Section 7.8.a Standard 1.a. of the *Standards and Guidelines for Consultant Archaeologists* (MCM 2011).

4.0 DOCUMENTARY RECORD

Table 4-1 provides an inventory of documentary records compiled as part of this assessment.

Table 4-1: Inventory of documentary record

Archive Location	Maps and Photographs	Field Notes
WSP E&I Canada Limited 3450 Harvester Road, Suite 100 Burlington, Ontario, L7N 3W5	Copies of seven historical maps, four Hudson Bay Company mapping records, and 15 Stage 1 property inspection photographs	One page of written notes, one photo log, and one field map

Documentation related to this archaeological assessment will be curated by WSP until such time that arrangements for their ultimate transfer to His Majesty the King in right of Ontario, or other public institution, can be made to the satisfaction of the project owner, the MCM and any other legitimate interest groups.

5.0 ANALYSIS

Background study as part of Stage 1 archaeological assessment indicated that portions of the study area have general archaeological potential for the following reasons:

- one archaeological site is within 300 m of the study area
- the study area is within 300 m of a primary water source (Springpole Lake)
- the study area is within 300 m of an area of early post-contact settlement (pre-1936 cabin) and
- the study area is within 100 m of an early historic transportation route (Springpole Lake, part of a late 18th to early 19th-century fur trade route).

Despite this general archaeological potential, 157.77 ha (99.8%) of the study area is remote and difficult to access, Section 1.3.4 Standard 1 of the *Standards and Guidelines for Consultant Archaeologists* (MCM 2011), given its thick forest cover and distance from the nearest air strip (Springpole Mine camp site, over 3 km west of the west portion of the study area), all-weather sections of the Wenesaga Forestry Road (over 1 km southeast of the east extent of the study area), or navigable waterbody (Springpole Lake, at the southwest extent of the study area) (Appendix A: Figure A-2).

However, per Section 1.3.4 Standard 2 of the *Standards and Guidelines for Consultant Archaeologists* (MCM 2011), analysis of recent aerial imagery (2021), high resolution (1-m) lidar, the MNRF HAT, wetland mapping, and stream ordering determined that approximately 40 ha (25%) of the study area is permanently wet marsh, swamp, or bog with no or low archaeological potential. It further determined that 1 ha (0.7%) of the study area has steeply sloping topography with no or low archaeological potential, and 117 ha (74%) of the study area is over 50 m from a modern water source and not associated with a historic water source such as a glacial shoreline or any other feature of archaeological potential. Per Section 2.15 of the *Standards and Guidelines for Consultant Archaeologists* (MCM 2011), Stage 2 test pit survey is not required for the portion of the study area over 50 m from a modern water source and not associated with a historic water source (Appendix A: Figure A-9).

For the southwest extent of the study area, which was accessible by boat from Springpole Lake, a Stage 1 property inspection was conducted on 21 August 2023. This determined that the approximately 0.03 ha (0.02%) of the study area associated with the Springpole Lake shoreline is permanently low and wet marsh, swamp, or bog with low or no archaeological potential. The remaining 0.2 ha (0.1%) portion of the study area associated with the Springpole Lake shoreline is steeply sloped with uneven terrain that also has low or no archaeological potential (Appendix A: Figure A-9).

Based on these results, WSP concludes that no further archaeological assessment of the study area is required (see Section 6.0).

6.0 RECOMMENDATIONS

Based on the findings of the Stage 1 archaeological assessment of the study area, no further archaeological assessment of the study area is required.

The following recommendations are made, subject to the conditions outlined below and in Section 7.0:

1 Per Section 1.3.4 Standard 1 of the *Standards and Guidelines for Consultant Archaeologists* (MCM 2011), approximately 40 ha (25%) of the study area is remote and difficult to access, given its thick forest cover and distance from the nearest air strip, road, or navigable waterbody. However, review of recent aerial imagery and mapping data (including 1-m resolution lidar) determined that this portion of the study area is permanently wet marsh, swamp, or bog with no or low archaeological potential and requires no further archaeological assessment, per Section 1.3.4 Standard 2 of the *Standards and Guidelines for Consultant Archaeologists* (MCM 2011) (Appendix A: Figure A-9).

2 Per Section 1.3.4 Standard 1 of the *Standards and Guidelines for Consultant Archaeologists* (MCM 2011), approximately 1 ha (0.7%) of the study area is remote and difficult to access, given its thick forest cover and distance from the nearest air strip, road, or navigable waterbody. However, review of recent aerial imagery and mapping data (including 1-m resolution lidar) determined that this portion of the study area is steeply sloped with no or low archaeological potential and requires no further archaeological assessment, per Section 1.3.4 Standard 2 of the *Standards and Guidelines for Consultant Archaeologists* (MCM 2011) (Appendix A: Figure A-9).

3 Per Section 1.3.4 Standard 1 of the *Standards and Guidelines for Consultant Archaeologists* (MCM 2011), approximately 117 ha (74%) of the study area is remote and difficult to access, given its thick forest cover and distance from the nearest air strip, road, or navigable waterbody. However, review of recent aerial imagery and mapping data (including 1-m resolution lidar) determined that this portion of the study area is over 50 m from a modern water source and not associated with a historic water source such as a glacial shoreline or any other feature of archaeological potential and therefore requires no further archaeological assessment, per Section 1.3.4 Standard 2 of the *Standards and Guidelines for Consultant Archaeologists* (MCM 2011) (Appendix A: Figure A-9).

4 Approximately 0.03 ha (0.02%) of the study area was visually assessed and evaluated to be permanently wet marsh, swamp, or bog with no or low archaeological potential and requires no further archaeological assessment (Appendix A: Figure A-9).

5 Approximately 0.2 ha (0.1%) of the study area was visually assessed and evaluated to be steeply sloping and uneven terrain with no or low archaeological potential and requires no further archaeological assessment (Appendix A: Figure A-9).

The recommendations presented above are subject to review by the MCM. No grading or other activities that may result in the destruction or disturbance of the study area are permitted until the MCM has issued a letter indicating that this archaeological assessment is deemed compliant, and this report has been accepted into the *Ontario Public Register of Archaeological Reports*.

7.0 ADVICE ON COMPLIANCE WITH LEGISLATION

1 This report is submitted to the Ontario Ministry of Citizenship and Multiculturalism as a condition of licensing in accordance with Part IV of the *Ontario Heritage Act*, R.S.O. 1990, c O.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 Ontario Ministry of Citizenship and Multiculturalism a letter will be issued by the ministry stating that there are no further concerns with regard to alterations to archaeological sites by the proposed development.

2 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 a time as a licensed archaeologist has completed archaeological fieldwork on the site, submitted a report to the Minister stating that the site has no further cultural heritage value or interest, and the report has been filed in the *Ontario Public Register of Archaeological Reports* referred to in Section 65.1 of the *Ontario Heritage Act*.

3 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*.

4 The *Funeral, Burial and Cremation Services Act*, 2002, S.O. 2002, c.33 requires that any person discovering human remains must notify the local police or coroner and the Registrar, *Funeral, Burial and Cremation Services Act* at the Ministry of Public and Business Service Delivery.

8.0 CLOSURE

We trust that the information presented in this report meets your current requirements. Should you have any questions, or concerns, please do not hesitate to contact the undersigned.

Respectfully Submitted,

WSP E&I Canada Limited

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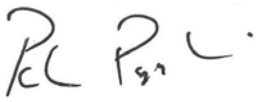

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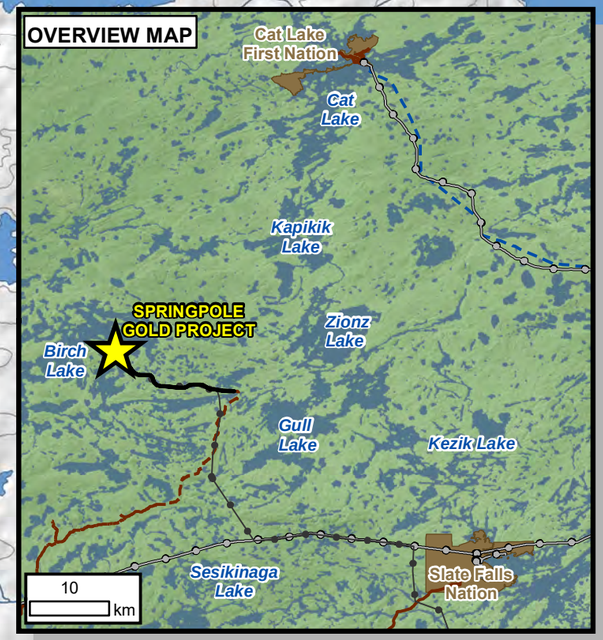
Appendix A
Figures

547500 550000 552500 555000 557500 560000 562500 565000

5695000 5692500 5690000 5687500 5685000

Birch Lake
L-1
L-19
Dole Lake
L-20
Birch Lake
L-16
L-10
L-12
L-11
L-13
L-14
Springpole Lake (L-15)
Birch Lake
Springpole Lake (L-15)
Birch River
Wenesaga Forestry Road
Cromarty Lake
Satterly Lake
Seagrave Lake
Seagrave Lake

OVERVIEW MAP



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LEGEND

- Study Area
- Project Location
- Proposed Mine Feature
- Alternative Mind Access Road No. 5
- Proposed 230 kV Transmission Line
- Wenesaga Forestry Road
- Existing Road
- Existing Winter Road
- Alternative Mine Access Road No. 1
- Existing Transmission Line
- First Nation Reserve
- Watercourse
- Waterbody
- Contour (10 m intervals)

0 1 2 4 6 8 10 Kilometres

NOTES:
- Topographic information extracted from LIO, MNRF.
- Proposed site plan provided by Ausenco, drawing number 105877-0000-G-001, Rev C. 29 July 2021.
- Co-Disposal Facility provided by Knight Piésold Ltd., 27 September 2021.

FIRST MINING GOLD

WSP

SPRINGPOLE GOLD PROJECT

Location of the Study Area

Datum: NAD83
Projection: UTM Zone 15N

N W E S

PROJECT N°: ONS2104 | **A-1**

SCALE: 1:52,000 | DATE: August 2023

552000
552500
553000
553500
5688500
5688000

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LEGEND

Study Area

NOTES:
- Topographic information extracted from LIO, NDMNRF.
- Proposed site plan provided by Ausenco, drawing number 105877-0000-G-001, Rev C. 29 July 2021.

Datum: NAD83
Projection: UTM Zone 15N

0 125 250 500 750 1,000 Meters

N W E S

FIRST MINING GOLD

WSP

SPRINGPOLE GOLD PROJECT

Aerial Photograph Showing the Location of the Study Area

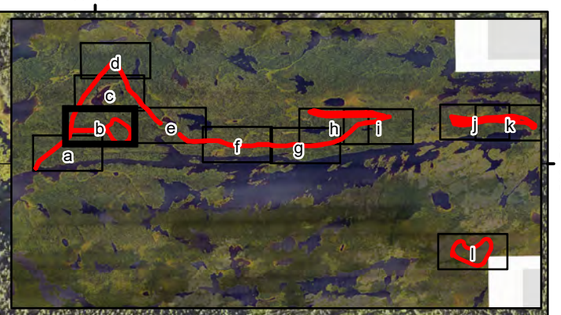
PROJECT N°: ONS2104

FIGURE: A-2a

SCALE: 1:5,000

DATE: August 2023

553000
553500
554000
554500
5689500
5689000



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LEGEND

Study Area

NOTES:
- Topographic information extracted from LIO, NDMNRF.
- Proposed site plan provided by Ausenco, drawing number 105877-0000-G-001, Rev C. 29 July 2021.

0 125 250 500 750 1,000 Meters

Datum: NAD83
Projection: UTM Zone 15N

N W E S

FIRST MINING GOLD

WSP

SPRINGPOLE GOLD PROJECT

Aerial Photograph Showing the Location of the Study Area

PROJECT N°: ONS2104

FIGURE: A-2b

SCALE: 1:5,000

DATE: August 2023

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554000
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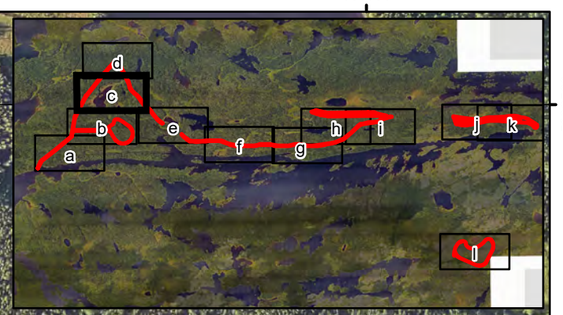
5690000



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LEGEND

Study Area

NOTES:
- Topographic information extracted from LIO, NDMNRF.
- Proposed site plan provided by Ausenco, drawing number 105877-0000-G-001, Rev C. 29 July 2021.

FIRST MINING GOLD

WSP

SPRINGPOLE GOLD PROJECT

Aerial Photograph Showing the Location of the Study Area

Datum: NAD83
Projection: UTM Zone 15N

N
W E
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0 125 250 500 750 1,000 Meters

PROJECT N°: ONS2104

FIGURE: A-2c

SCALE: 1:5,000

DATE: August 2023

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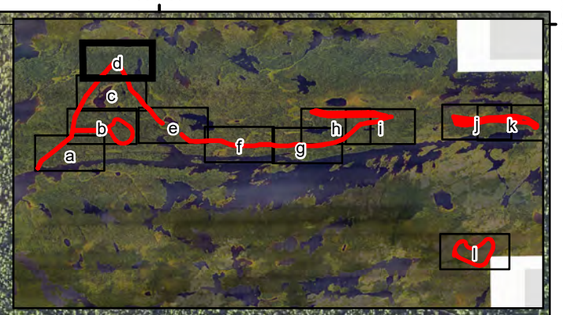
554000
554500
555000
5691500
5691000
5690500



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LEGEND

Study Area

NOTES:
- Topographic information extracted from LIO, NDMNRF.
- Proposed site plan provided by Ausenco, drawing number 105877-0000-G-001, Rev C. 29 July 2021.

0 125 250 500 750 1,000 Meters

Datum: NAD83
Projection: UTM Zone 15N

N W E S

FIRST MINING GOLD

WSP

SPRINGPOLE GOLD PROJECT

Aerial Photograph Showing the Location of the Study Area

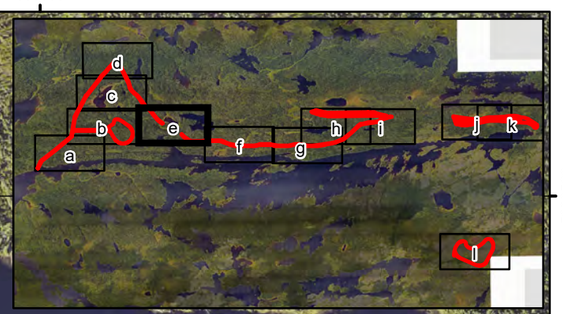
PROJECT N°: ONS2104

FIGURE: A-2d

SCALE: 1:5,000

DATE: August 2023

555000
555500
556000
556500
5689500
5689000



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LEGEND

Study Area

NOTES:
- Topographic information extracted from LIO, NDMNRF.
- Proposed site plan provided by Ausenco, drawing number 105877-0000-G-001, Rev C. 29 July 2021.

Datum: NAD83
Projection: UTM Zone 15N

0 125 250 500 750 1,000 Meters

N
W E
S

FIRST MINING GOLD

WSP

SPRINGPOLE GOLD PROJECT

Aerial Photograph Showing the Location of the Study Area

PROJECT N°: ONS2104

FIGURE: A-2e

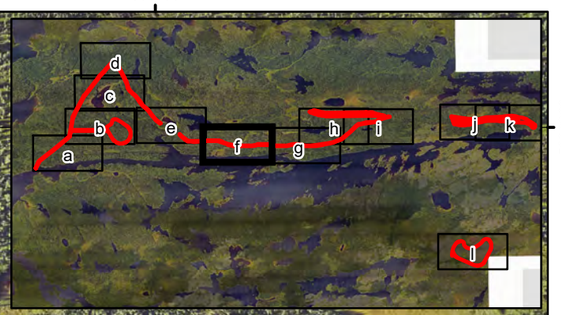
SCALE: 1:5,000

DATE: August 2023

557000 557500 558000 558500

5689000

5688500



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LEGEND

Study Area

NOTES:
- Topographic information extracted from LIO, NDMNRF.
- Proposed site plan provided by Ausenco, drawing number 105877-0000-G-001, Rev C. 29 July 2021.

FIRST MINING GOLD

WSP

SPRINGPOLE GOLD PROJECT

Aerial Photograph Showing the Location of the Study Area

Datum: NAD83
Projection: UTM Zone 15N

N W E S

0 125 250 500 750 1,000 Meters

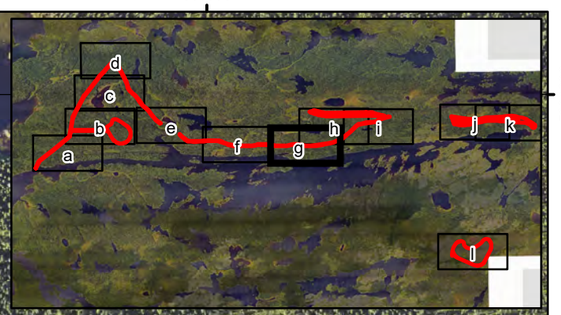
PROJECT N°: ONS2104 | **FIGURE: A-2f**

SCALE: 1:5,000 | DATE: August 2023

559000 559500 560000 560500

5689000

5688500



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LEGEND

Study Area

NOTES:
- Topographic information extracted from LIO, NDMNRF.
- Proposed site plan provided by Ausenco, drawing number 105877-0000-G-001, Rev C. 29 July 2021.

FIRST MINING GOLD

WSP

SPRINGPOLE GOLD PROJECT

Aerial Photograph Showing the Location of the Study Area

Datum: NAD83
Projection: UTM Zone 15N

N W E S

0 125 250 500 750 1,000 Meters

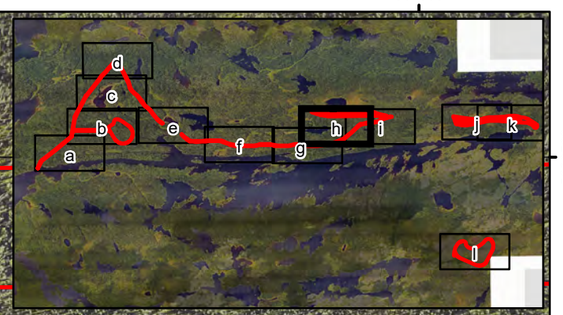
PROJECT N°: ONS2104

FIGURE: A-2g

SCALE: 1:5,000

DATE: August 2023

560000
560500
561000
561500
5689500
5689000



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LEGEND

Study Area

NOTES:
- Topographic information extracted from LIO, NDMNRF.
- Proposed site plan provided by Ausenco, drawing number 105877-0000-G-001, Rev C. 29 July 2021.

0 125 250 500 750 1,000 Meters

Datum: NAD83
Projection: UTM Zone 15N

N W E S

First Mining Gold

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SPRINGPOLE GOLD PROJECT

Aerial Photograph Showing the Location of the Study Area

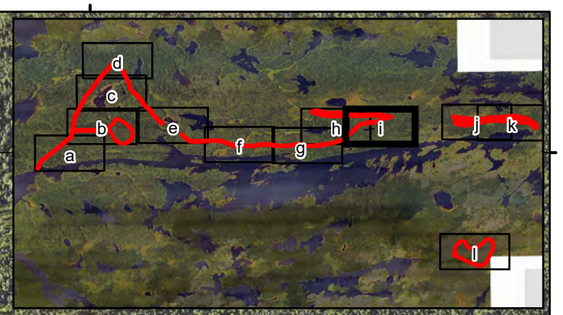
PROJECT N°: ONS2104

FIGURE: A-2h

SCALE: 1:5,000

DATE: August 2023

561000
561500
562000
562500
5689500
5689000



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LEGEND

Study Area

NOTES:
- Topographic information extracted from LIO, NDMNRF.
- Proposed site plan provided by Ausenco, drawing number 105877-0000-G-001, Rev C. 29 July 2021.

0 125 250 500 750 1,000 Meters

Datum: NAD83
Projection: UTM Zone 15N

N W E S

First Mining Gold

wsp

SPRINGPOLE GOLD PROJECT

Aerial Photograph Showing the Location of the Study Area

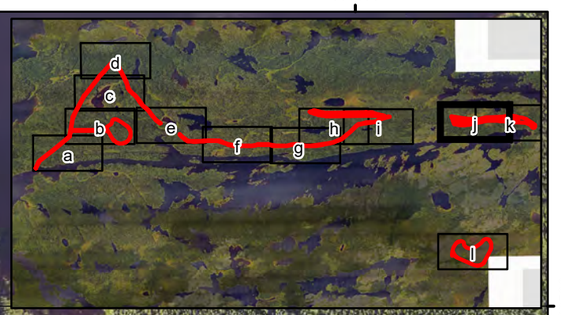
PROJECT N°: ONS2104 | **FIGURE: A-2i**

SCALE: 1:5,000 | DATE: August 2023

564000 564500 565000 565500

5689500

5689000



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LEGEND

Study Area

NOTES:
- Topographic information extracted from LIO, NDMNRF.
- Proposed site plan provided by Ausenco, drawing number 105877-0000-G-001, Rev C. 29 July 2021.

Datum: NAD83
Projection: UTM Zone 15N

0 125 250 500 750 1,000 Meters

N W E S

FIRST MINING GOLD

WSP

SPRINGPOLE GOLD PROJECT

Aerial Photograph Showing the Location of the Study Area

PROJECT N°: ONS2104

FIGURE: A-2j

SCALE: 1:5,000

DATE: August 2023

565000 565500 566000 566500

5689500

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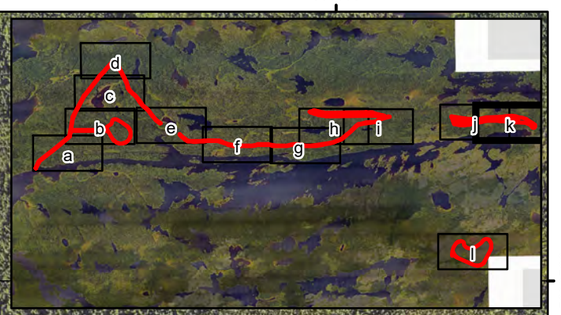

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LEGEND

- Study Area
- Wenesaga Forestry Road

0 125 250 500 750 1,000 Meters

NOTES:
- Topographic information extracted from LIO, NDMNRF.
- Proposed site plan provided by Ausenco, drawing number 105877-0000-G-001, Rev C. 29 July 2021.

Datum: NAD83
Projection: UTM Zone 15N

N W E S

FIRST MINING GOLD

wsp

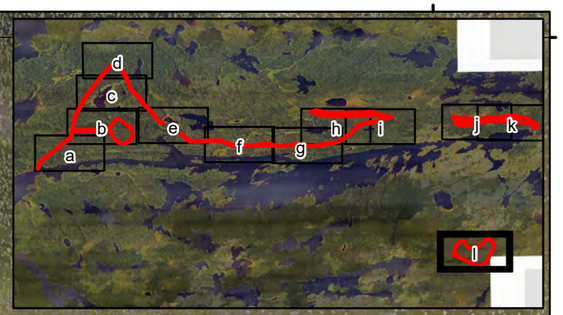
SPRINGPOLE GOLD PROJECT

Aerial Photograph Showing the Location of the Study Area

PROJECT N°: ONS2104 | **FIGURE: A-2k**

SCALE: 1:5,000 | DATE: August 2023

564000
564500
565000
565500
5686000
5685500
5685000



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LEGEND

- Study Area
- Wenesaga Forestry Road

NOTES:
- Topographic information extracted from LIO, NDMNRF.
- Proposed site plan provided by Ausenco, drawing number 105877-0000-G-001, Rev C. 29 July 2021.

0 125 250 500 750 1,000 Meters

Datum: NAD83
Projection: UTM Zone 15N

N W E S

First Mining Gold

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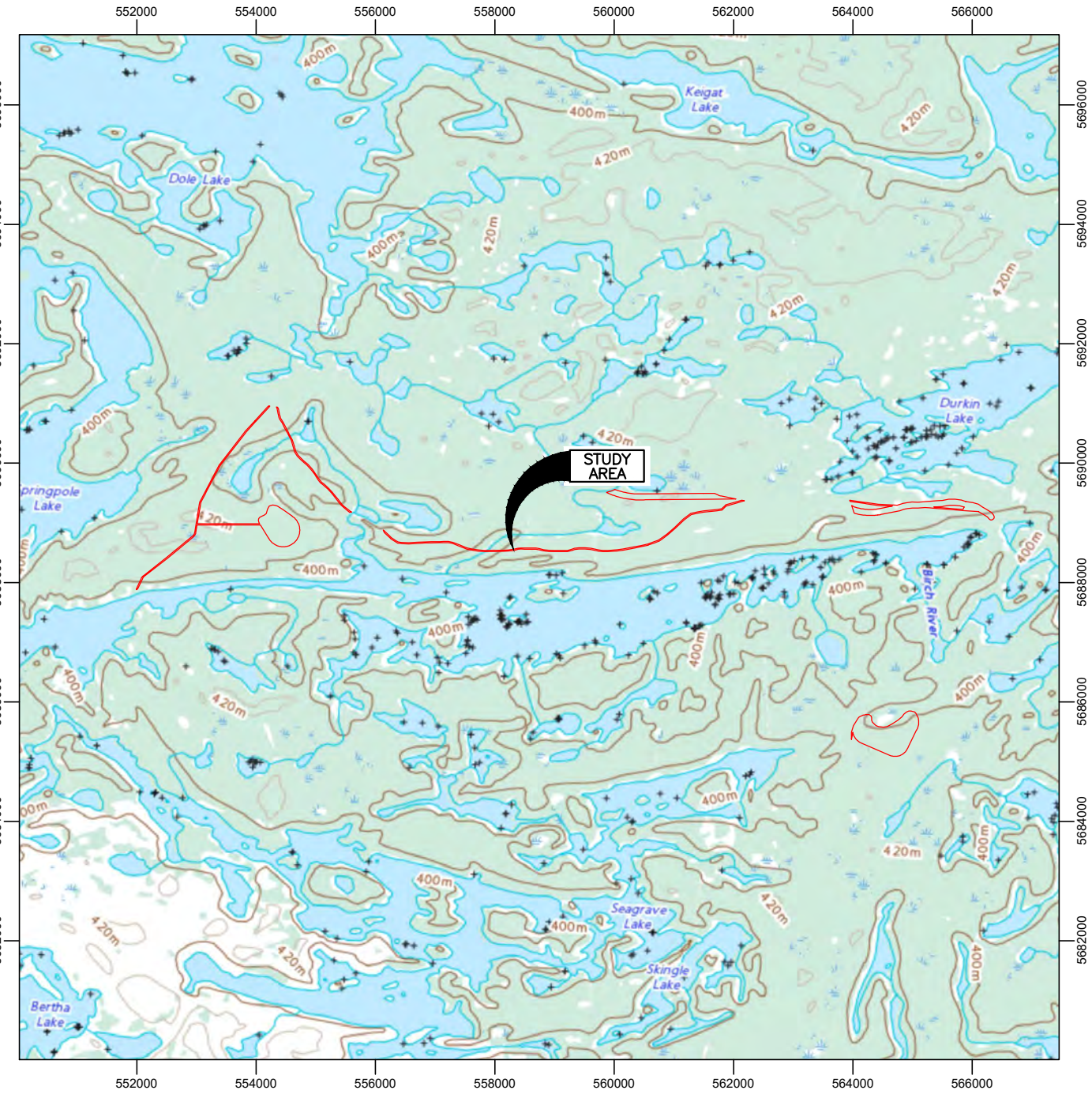
SPRINGPOLE GOLD PROJECT

Aerial Photograph Showing the Location of the Study Area

PROJECT N°: ONS2104 | **FIGURE: A-2l**

SCALE: 1:5,000 | DATE: August 2023



0 1000 3000 5000m

SCALE 1:100000

LEGEND: Study Area

- This drawing should be read in conjunction with the WSP E&I Canada Limited report no. ONS2104.2022B.11.
- All locations are approximate.
- Original paper size: 8-1/2 x 11.
- Natural Resources Canada, "The Atlas of Canada - Toporama"; Canmap Streetfiles V2008.4.

Datum: NAD83
Projection: UTM Zone 15N

N W E S

FIRST MINING GOLD

WSP

SPRINGPOLE GOLD PROJECT

Topographic Map Showing the Location of the Study Area

PROJECT No: ONS2104.2022B.11	FIGURE: A-3
SCALE: 1:100000	DATE: AUGUST 2023

DATE PLOTTED: 8/23/2023 3:44:24 PM
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547500 550000 552500 555000 557500 560000 562500 565000

5695000 5692500 5690000 5687500 5685000

Birch Lake
Water Storage Pond (WSP)
Ore Stockpiles
Process Plant Area
L-1
L-19
Dole Lake
Birch Lake
North Cell
Co-Disposed Filtered Tailings and Mine Rock
Open Pit
L-20
Surficial Soil Stockpile
Co-Disposal Facility
South Cell
CDF Internal Pond Over Slurry Tailings
L-16
Springpole Lake (L-15)
L-10
L-12
L-11
L-13
L-14
Effluent Pipeline
Aggregate Source
Effluent Discharge Location
Durkin Lake
230 kV Transmission Line
Springpole Lake (L-15)
Birch River
Wenesaga Forestry Road
Birch Lake
Cromarty Lake
Satterly Lake
Seagrave Lake
Aggregate Source
Seagrave Lake

TRANSMISSION LINE EXTENT OVERVIEW MAP

Project Site
Gull Lake
Kezik Lake
Sesikinaga Lake
Slate Falls Nation
Bamaji Lake
10 km

P:\2021\Projects\ONS2104_FMG_Springpole_EIS\11_GIS\EISMXD\September2023\Extended_Site_Plan.mxd

LEGEND

- Aggregate Source
- Wenesaga Forestry Road
- Watercourse
- Waterbody
- Existing Transmission Line
- Alternative Mine Access Road No. 1
- Contour (10 m intervals)

Proposed Mine Feature

- Open Pit
- Ore Stockpile
- Surficial Soil Stockpile
- Co-Disposal Facility
- Co-Disposed Filtered Tailings and Mine Rock
- Process Plant Area
- Cofferdam
- Pond
- Explosives Storage
- Haul Road
- Alternative Mind Access Road No. 5
- Distribution Line
- 230 kV Transmission Line
- Fresh Water Intake Pipeline
- Tailings Pipeline
- Effluent Discharge Pipeline
- Fish Habitat Development Area
- Effluent Discharge Location

0 1 2 4 6 8 10 Kilometres

NOTES:
- Topographic information extracted from LIO, MNRF.
- Proposed site plan provided by Ausenco, drawing number 105877-0000-G-001, Rev C. 29 July 2021.
- Co-Disposal Facility provided by Knight Piésold Ltd., 27 September 2021.

First Mining Gold

wsp

SPRINGPOLE GOLD PROJECT

Extended Site Plan

Datum: NAD83
Projection: UTM Zone 15N

N W E S

PROJECT N°: ONS2104 | **FIGURE: A-4**

SCALE: 1:52,000 | DATE: August 2023

547500 550000 552500 555000 557500 560000 562500 565000

5695000 5692500 5690000 5687500 5685000

Stage 1 AA Study Area
(Northwest Archaeological
Assessments, PIF P236-0141-2020)

L-10 L-11 L-12 L-13 L-14

Durkin Lake

Springpole
Lake
(L-15)

Seagrave Lake

Birch River

Wenesaga
Forestry Road

P:\2021\Projects\ONS2104_FMG_Springpole_EIS\11_GIS\EIS\MXD\August2023_Updates\Previous_Archaeological_Investigations.mxd

LEGEND

- Wenesaga Forestry Road
- Existing Road
- Watercourse
- Waterbody
- Contour (10 m intervals)

Previous Work

- Stage 2 AA Study Area (Northwest Archaeological Assessments 2021, PIF P236-0170-2021)
- Portion of Stage 1 AA Study Area (Northwest Archaeological Assessments 2021, PIF P236-0163-2021)
- Stage 1 AA Study Area (Northwest Archaeological Assessments, PIF P236-0141-2020)

- Study Area

NOTES:
- Topographic information extracted from LIO, MNRF.

0 1 2 4 6 8 10 Kilometres

Datum: NAD83
Projection: UTM Zone 15N

N W E S

FIRST MINING GOLD

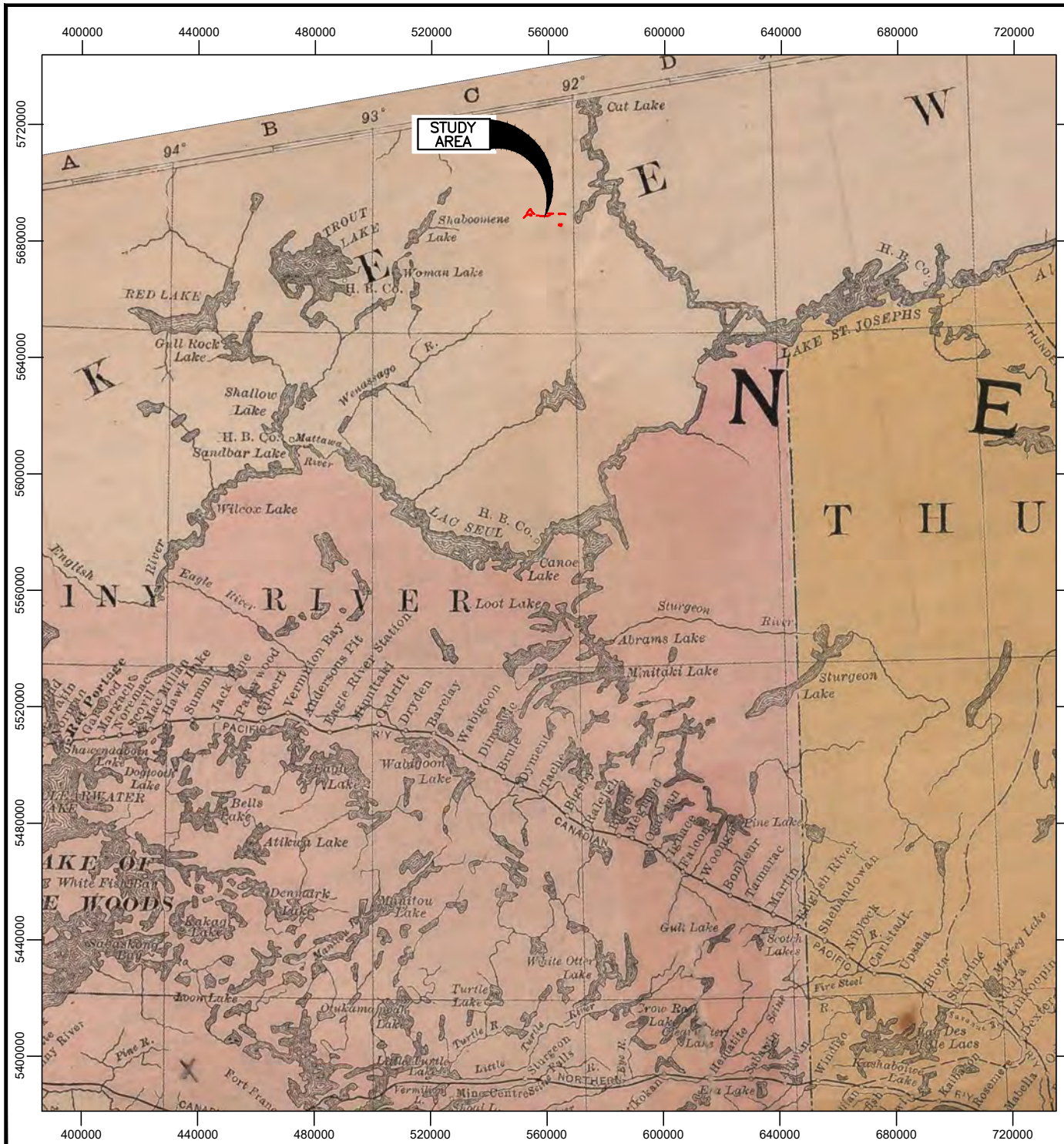
WSP

SPRINGPOLE GOLD PROJECT

Previous Archaeological Investigations within the Study Area and within 50 m of the Study Area

PROJECT N°: ONS2104 | **FIGURE: A-5**

SCALE: 1:52,000 | DATE: August 2023



LEGEND: Study Area

- This drawing should be read in conjunction with the WSP E&I Canada Limited report no. ONS2104.2022B.11.
- All locations are approximate.
- Original paper size: 8-1/2 x 11.
- Rand, McNally & Co., 1902; Canmap Streetfiles V2008.4.

Datum: NAD83
Projection: UTM Zone 15N

FIRST MINING GOLD

WSP

SPRINGPOLE GOLD PROJECT

1902 New Ontario Map Showing the Location of the Study Area

PROJECT No: ONS2104.2022B.11	FIGURE: A-6
SCALE: 1:2000000	DATE: AUGUST 2023

DATE PLOTTED: 8/23/2023 3:55:30 PM
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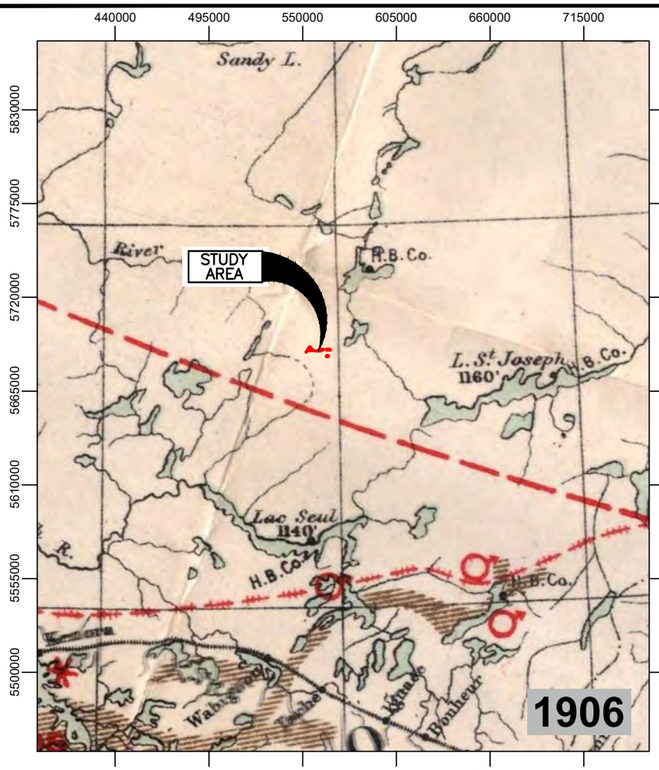
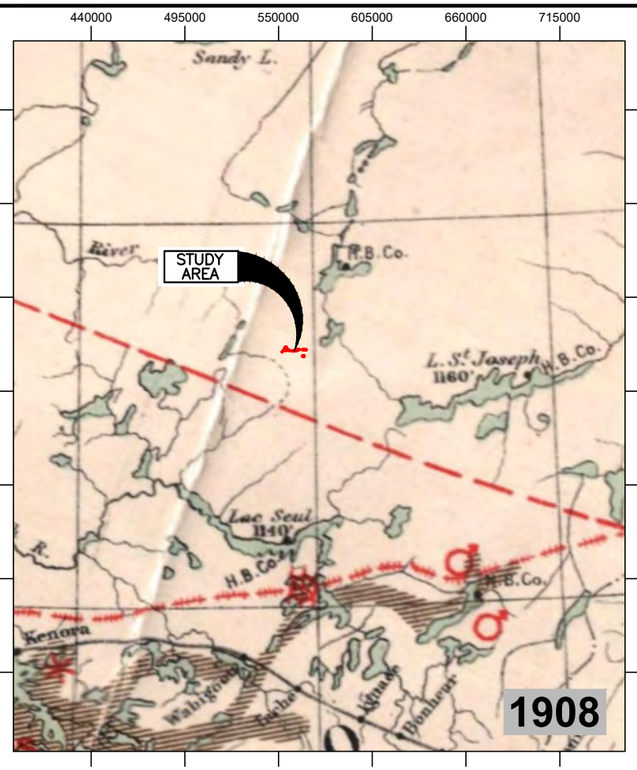
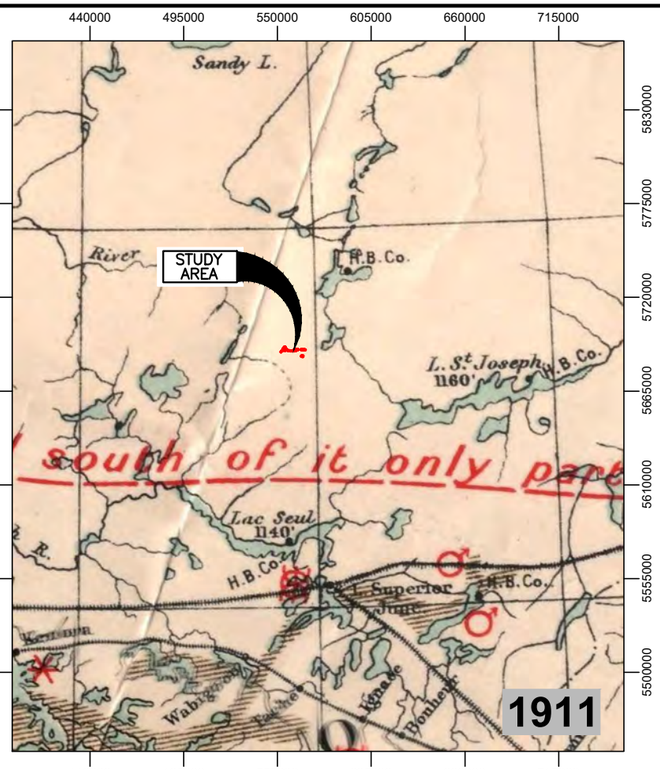
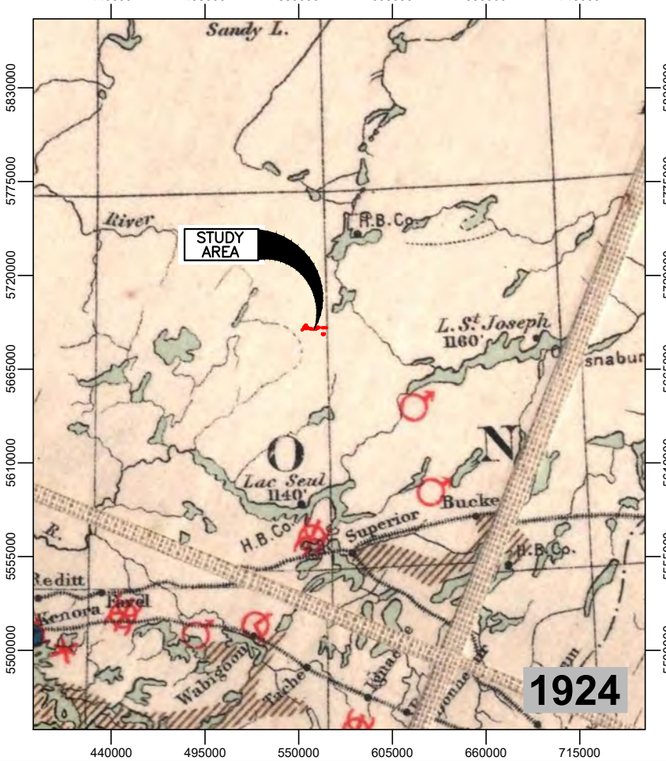
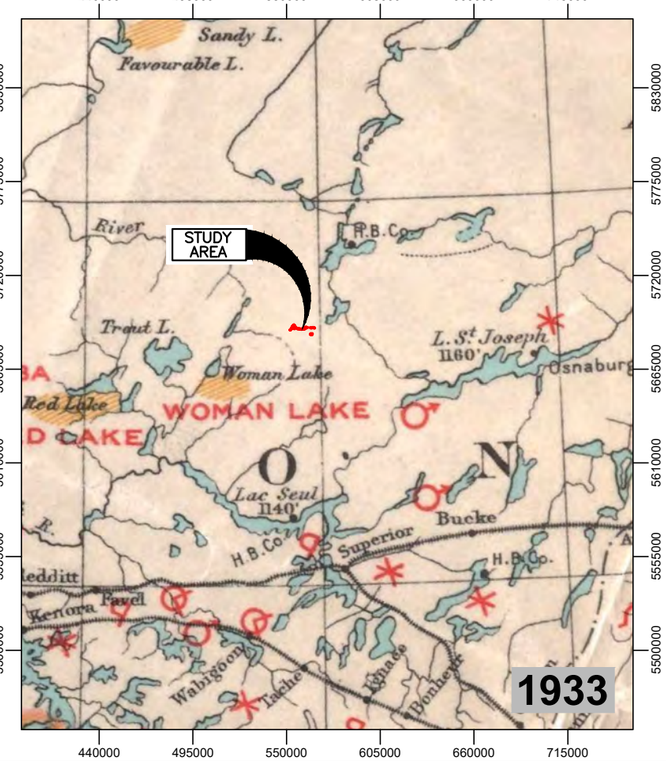










0 35 105 175km

SCALE 1:3500000

NOTES:
- This drawing should be read in conjunction with the WSP E&I Canada Limited report no. ONS2104.2022B.11.
- All locations are approximate.
- Original paper size: 11 x 17.
- Department of the Interior, Railway Lands Branch, "Atlas of Canada, no. 7, Minerals", 1906; Department of Mines, Geological Survey Branch, "Minerals", 1908; Department of the Interior, "Mineral Map", 1911; Department of Mines, Mines Branch, "Mineral Map of the Dominion of Canada", 1924; Department of Mines, Mines Branch, "Mineral Map of the Dominion of Canada", 1933; Canmap Streetfiles v2008.4.

LEGEND:

Study Area

Datum: NAD83
Projection: UTM Zone 15N

FIRST MINING GOLD

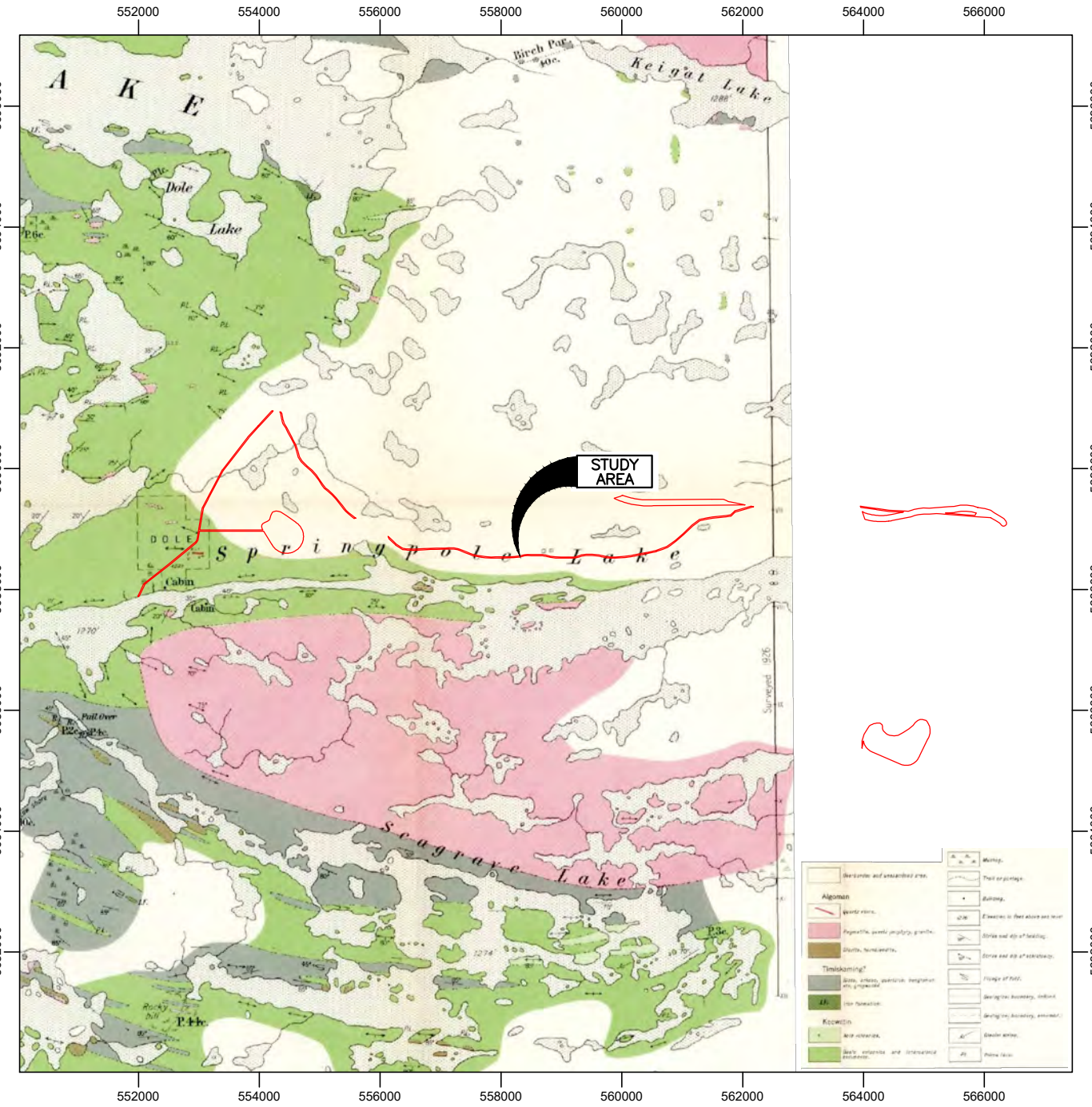
WSP

SPRINGPOLE GOLD PROJECT

Historic Mineral Maps Showing the Location of the Study Area

PROJECT No: ONS2104.2022B.11	FIGURE: A-7
SCALE: 1:3500000	DATE: AUGUST 2023

DATE PLOTTED: 8/23/2023 4:01:21 PM
FILE LOCATION: X:\CA\CATEC100-WSR\Project\2021\Archaeology\Projects\Other Offices\ONS2104.2022B.11 – First Mining Gold – St 1 AA, Springpole Gold Project, Kenora\Drafting\AutoCAD files\ONS2104.2022B.11-R0100A-7.dwg



0 1000 3000 5000m

SCALE 1:100000

LEGEND: Study Area

- This drawing should be read in conjunction with the WSP E&I Canada Limited report no. ONS2104.2022B.11.
- All locations are approximate.
- Original paper size: 8-1/2 x 11.
- Department of Mines, "Birch-Springpole Lakes Area", Map no. 45c, 1936; Canmap Streetfiles V2008.4.

Datum: NAD83
Projection: UTM Zone 15N

N W E S

FIRST MINING GOLD

WSP

SPRINGPOLE GOLD PROJECT

1936 Birch-Springpole Lake Area Map Showing the Location of the Study Area

PROJECT No: ONS2104.2022B.11	FIGURE: A-8
SCALE: 1:100000	DATE: AUGUST 2023

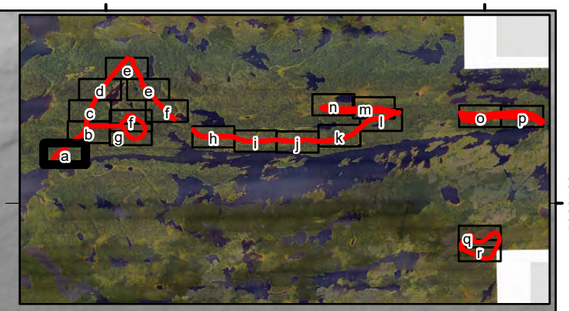
DATE PLOTTED: 8/23/2023 4:10:43 PM
FILE LOCATION: X:\CA\CATEC100-WSR\Project\2021\Archaeology\Projects\Other Offices\ONS2104.2022B.11 - First Mining Gold - St 1 AA, Springpole Gold Project, Kenora\Drafting\AutoCAD files\ONS2104.2022B.11-R0100A-8.dwg

551800 552000 552200 552400 552600 552800 553000

5688400

5688200

5688000



1 2 3 4

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LEGEND

- Study Area
- No Further Assessment Required – Steeply Sloped
- No Further Assessment Required – Permanently Low and Wet
- No Further Assessment Required – Over 50 m from Modern Water Sources
- Visually Assessed – Permanently Low and Wet
- Visually Assessed – No Further Archaeological Assessment Recommended
- Photo Location and Direction (labelled with ID)
- Wenesaga Forestry Road
- Waterbody
- Shallow, Low-Flow Watercourse Surrounded by Swamp/Bog

NOTES:
- Topographic information extracted from LIO, NDMNRF.
- Proposed site plan provided by Ausenco, drawing number 105877-0000-G-001, Rev C. 29 July 2021.

Datum: NAD83
Projection: UTM Zone 15N

0 100 200 400 600 800 Metres

N W E S

FIRST MINING GOLD

WSP

SPRINGPOLE GOLD PROJECT

Stage 1 Archaeological Assessment Results with LiDAR Analysis

PROJECT N°: ONS2104	**FIGURE: A-9a**
SCALE: 1:3,150	DATE: September 2023

552600
552800
553000
553200
553400
553600
5689000
5688800
5688600

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LEGEND

- Study Area
- No Further Assessment Required – Steeply Sloped
- No Further Assessment Required – Permanently Low and Wet
- No Further Assessment Required – Over 50 m from Modern Water Sources
- Photo Location and Direction (labelled with ID)
- Wenesaga Forestry Road
- Waterbody
- Shallow, Low-Flow Watercourse Surrounded by Swamp/Bog

NOTES:
- Topographic information extracted from LIO, NDMNRF.
- Proposed site plan provided by Ausenco, drawing number 105877-0000-G-001, Rev C. 29 July 2021.

0 100 200 400 600 800 Metres

Datum: NAD83
Projection: UTM Zone 15N

N W E S

First Mining Gold

WSP

SPRINGPOLE GOLD PROJECT

Stage 1 Archaeological Assessment Results with LiDAR Analysis

PROJECT N^{o}: ONS2104	**FIGURE: A-9b**
SCALE: 1:3,150	DATE: September 2023

552600
552800
553000
553200
553400
553600
5689600
5689400
5689200
S-26
a
b
c
d
e
f
g
h
i
j
k
l
m
n
o
p
q
r
s

LEGEND

- Study Area
- No Further Assessment Required – Steeply Sloped
- No Further Assessment Required – Permanently Low and Wet
- No Further Assessment Required – Over 50 m from Modern Water Sources
- Photo Location and Direction (labelled with ID)
- Wenesaga Forestry Road
- Waterbody
- Shallow, Low-Flow Watercourse Surrounded by Swamp/Bog

NOTES:
- Topographic information extracted from LIO, NDMNRF.
- Proposed site plan provided by Ausenco, drawing number 105877-0000-G-001, Rev C. 29 July 2021.

0 100 200 400 600 800 Metres

Datum: NAD83
Projection: UTM Zone 15N

N W E S

First Mining Gold

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SPRINGPOLE GOLD PROJECT

Stage 1 Archaeological Assessment Results with LiDAR Analysis

PROJECT N°: ONS2104

FIGURE: A-9c

SCALE: 1:3,150

DATE: September 2023

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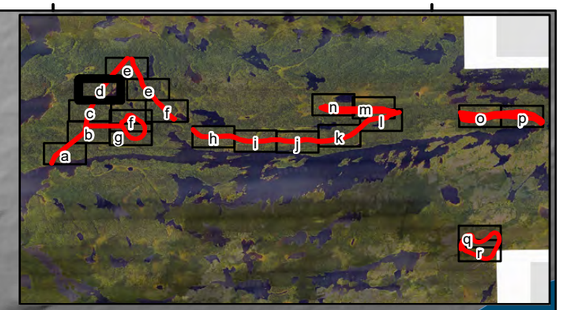
552800 553000 553200 553400 553600 553800 554000

5690200

5690000

5689800



S-26

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LEGEND

- Study Area
- No Further Assessment Required – Steeply Sloped
- No Further Assessment Required – Permanently Low and Wet
- No Further Assessment Required – Over 50 m from Modern Water Sources
- Photo Location and Direction (labelled with ID)
- Wenesaga Forestry Road
- Waterbody
- Shallow, Low-Flow Watercourse Surrounded by Swamp/Bog

NOTES:
- Topographic information extracted from LIO, NDMNRF.
- Proposed site plan provided by Ausenco, drawing number 105877-0000-G-001, Rev C. 29 July 2021.

0 100 200 400 600 800 Metres

Datum: NAD83
Projection: UTM Zone 15N

N W E S

FIRST MINING GOLD

WSP

SPRINGPOLE GOLD PROJECT

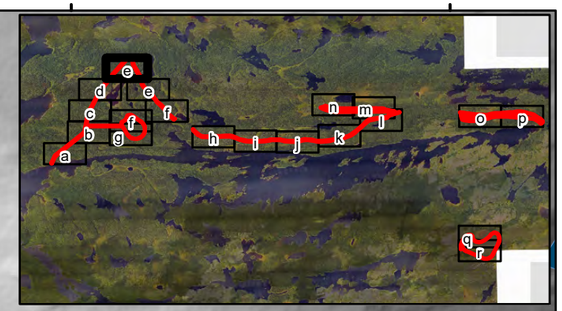
Stage 1 Archaeological Assessment Results with LiDAR Analysis

PROJECT Nº: ONS2104	**FIGURE: A-9d**
SCALE: 1:3,150	DATE: September 2023

553600 553800 554000 554200 554400 554600 554800

5690800 5690600 5690400

S-9 S-27



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LEGEND

- Study Area
- No Further Assessment Required – Steeply Sloped
- No Further Assessment Required – Permanently Low and Wet
- No Further Assessment Required – Over 50 m from Modern Water Sources
- Photo Location and Direction (labelled with ID)
- Wenesaga Forestry Road
- Waterbody
- Shallow, Low-Flow Watercourse Surrounded by Swamp/Bog

NOTES:
- Topographic information extracted from LIO, NDMNRF.
- Proposed site plan provided by Ausenco, drawing number 105877-0000-G-001, Rev C. 29 July 2021.

0 100 200 400 600 800 Metres

Datum: NAD83
Projection: UTM Zone 15N

N W E S

FIRST MINING GOLD

WSP

SPRINGPOLE GOLD PROJECT

Stage 1 Archaeological Assessment Results with LiDAR Analysis

PROJECT Nº: ONS2104 | **FIGURE: A-9e**

SCALE: 1:3,150 | DATE: September 2023

554200
554400
554600
554800
555000
555200
555400
5690200
5690000
5689800
S-27
S-23
a
b
c
d
e
e
f
f
g
h
i
j
k
l
m
n
o
p
q
r
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LEGEND

- Study Area
- No Further Assessment Required – Steeply Sloped
- No Further Assessment Required – Permanently Low and Wet
- No Further Assessment Required – Over 50 m from Modern Water Sources
- Photo Location and Direction (labelled with ID)
- Wenesaga Forestry Road
- Waterbody
- Shallow, Low-Flow Watercourse Surrounded by Swamp/Bog

0 100 200 400 600 800 Metres

NOTES:
- Topographic information extracted from LIO, NDMNRF.
- Proposed site plan provided by Ausenco, drawing number 105877-0000-G-001, Rev C. 29 July 2021.

Datum: NAD83
Projection: UTM Zone 15N

N W E S

FIRST MINING GOLD

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SPRINGPOLE GOLD PROJECT

Stage 1 Archaeological Assessment Results with LiDAR Analysis

PROJECT N^{o}: ONS2104 | **FIGURE: A-9e**

SCALE: 1:3,150 | DATE: September 2023

553800
554000
554200
554400
554600
554800
5689400
5689200
5689000
5688800
S-29
a
b
c
d
e
f
g
h
i
j
k
l
m
n
o
p
q
r
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LEGEND

- Study Area
- No Further Assessment Required – Steeply Sloped
- No Further Assessment Required – Permanently Low and Wet
- No Further Assessment Required – Over 50 m from Modern Water Sources
- Photo Location and Direction (labelled with ID)
- Wenesaga Forestry Road
- Waterbody
- Shallow, Low-Flow Watercourse Surrounded by Swamp/Bog

NOTES:
- Topographic information extracted from LIO, NDMNRF.
- Proposed site plan provided by Ausenco, drawing number 105877-0000-G-001, Rev C. 29 July 2021.

0 100 200 400 600 800 Metres

Datum: NAD83
Projection: UTM Zone 15N

N W E S

FIRST MINING GOLD

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SPRINGPOLE GOLD PROJECT

Stage 1 Archaeological Assessment Results with LiDAR Analysis

PROJECT N^{o}: ONS2104	**FIGURE: A-9f**
SCALE: 1:3,150	DATE: September 2023

554800 555000 555200 555400 555600 555800 556000

5689600

5689400

5689200

S-28

S-29

a b c d e f g h i j k l m n o p q r

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LEGEND

- Study Area
- No Further Assessment Required – Steeply Sloped
- No Further Assessment Required – Permanently Low and Wet
- No Further Assessment Required – Over 50 m from Modern Water Sources
- Photo Location and Direction (labelled with ID)
- Wenesaga Forestry Road
- Waterbody
- Shallow, Low-Flow Watercourse Surrounded by Swamp/Bog

NOTES:
- Topographic information extracted from LIO, NDMNRF.
- Proposed site plan provided by Ausenco, drawing number 105877-0000-G-001, Rev C. 29 July 2021.

0 100 200 400 600 800 Metres

Datum: NAD83
Projection: UTM Zone 15N

N W E S

First Mining Gold

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SPRINGPOLE GOLD PROJECT

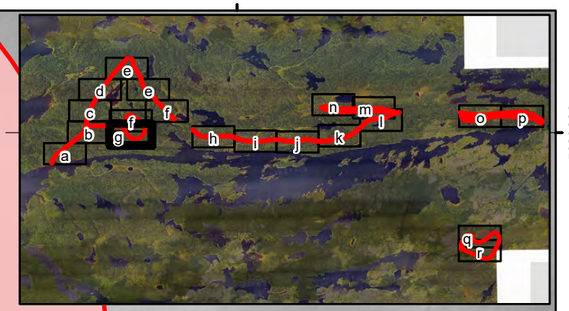
Stage 1 Archaeological Assessment Results with LiDAR Analysis

PROJECT Nº: ONS2104 | **FIGURE: A-9f**

SCALE: 1:3,150 | DATE: September 2023

553800 554000 554200 554400 554600 554800

5689000 5688800 5688600 5688400



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LEGEND

- Study Area
- No Further Assessment Required – Steeply Sloped
- No Further Assessment Required – Permanently Low and Wet
- No Further Assessment Required – Over 50 m from Modern Water Sources
- Photo Location and Direction (labelled with ID)
- Wenesaga Forestry Road
- Waterbody
- Shallow, Low-Flow Watercourse Surrounded by Swamp/Bog

NOTES:
- Topographic information extracted from LIO, NDMNRF.
- Proposed site plan provided by Ausenco, drawing number 105877-0000-G-001, Rev C. 29 July 2021.

0 100 200 400 600 800 Metres

Datum: NAD83
Projection: UTM Zone 15N

N W E S

First Mining Gold

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SPRINGPOLE GOLD PROJECT

Stage 1 Archaeological Assessment Results with LiDAR Analysis

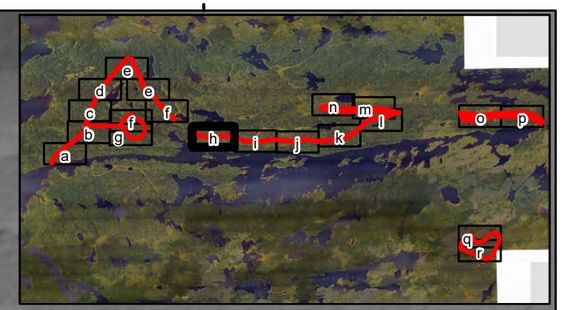
PROJECT N°: ONS2104	**FIGURE: A-9g**
SCALE: 1:3,150	DATE: September 2023

556200 556400 556600 556800 557000 557200

5688800

5688600

5688400



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LEGEND

- Study Area
- No Further Assessment Required – Steeply Sloped
- No Further Assessment Required – Permanently Low and Wet
- No Further Assessment Required – Over 50 m from Modern Water Sources
- Photo Location and Direction (labelled with ID)
- Wenesaga Forestry Road
- Waterbody
- Shallow, Low-Flow Watercourse Surrounded by Swamp/Bog

NOTES:
- Topographic information extracted from LIO, NDMNRF.
- Proposed site plan provided by Ausenco, drawing number 105877-0000-G-001, Rev C. 29 July 2021.

0 100 200 400 600 800 Metres

Datum: NAD83
Projection: UTM Zone 15N

N W E S

First Mining Gold

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SPRINGPOLE GOLD PROJECT

Stage 1 Archaeological Assessment Results with LiDAR Analysis

PROJECT Nº: ONS2104	**FIGURE: A-9h**
SCALE: 1:3,150	DATE: September 2023

557400 557600 557800 558000 558200 558400 558600

5688800

5688600

5688400

5688200

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LEGEND

- Study Area
- No Further Assessment Required – Steeply Sloped
- No Further Assessment Required – Permanently Low and Wet
- No Further Assessment Required – Over 50 m from Modern Water Sources
- Photo Location and Direction (labelled with ID)
- Wenesaga Forestry Road
- Waterbody
- Shallow, Low-Flow Watercourse Surrounded by Swamp/Bog

NOTES:
- Topographic information extracted from LIO, NDMNRF.
- Proposed site plan provided by Ausenco, drawing number 105877-0000-G-001, Rev C. 29 July 2021.

0 100 200 400 600 800 Metres

Datum: NAD83
Projection: UTM Zone 15N

N W E S

First Mining Gold

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SPRINGPOLE GOLD PROJECT

Stage 1 Archaeological Assessment Results with LiDAR Analysis

PROJECT Nº: ONS2104	**FIGURE: A-9i**
SCALE: 1:3,150	DATE: September 2023

558600 558800 559000 559200 559400 559600 559800

5688800 5688600 5688400 5688200

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LEGEND

- Study Area
- No Further Assessment Required – Steeply Sloped
- No Further Assessment Required – Permanently Low and Wet
- No Further Assessment Required – Over 50 m from Modern Water Sources
- Photo Location and Direction (labelled with ID)
- Wenesaga Forestry Road
- Waterbody
- Shallow, Low-Flow Watercourse Surrounded by Swamp/Bog

NOTES:
- Topographic information extracted from LIO, NDMNRF.
- Proposed site plan provided by Ausenco, drawing number 105877-0000-G-001, Rev C. 29 July 2021.

0 100 200 400 600 800 Metres

Datum: NAD83
Projection: UTM Zone 15N

N W E S

First Mining Gold

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SPRINGPOLE GOLD PROJECT

Stage 1 Archaeological Assessment Results with LiDAR Analysis

PROJECT Nº: ONS2104 | **FIGURE: A-9j**

SCALE: 1:3,150 | DATE: September 2023

559800 560000 560200 560400 560600 560800 561000

5689000 5688800 5688600 5688400

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LEGEND

- Study Area
- No Further Assessment Required – Steeply Sloped
- No Further Assessment Required – Permanently Low and Wet
- No Further Assessment Required – Over 50 m from Modern Water Sources
- Photo Location and Direction (labelled with ID)
- Wenesaga Forestry Road
- Waterbody
- Shallow, Low-Flow Watercourse Surrounded by Swamp/Bog

NOTES:
- Topographic information extracted from LIO, NDMNRF.
- Proposed site plan provided by Ausenco, drawing number 105877-0000-G-001, Rev C. 29 July 2021.

0 100 200 400 600 800 Metres

Datum: NAD83
Projection: UTM Zone 15N

N W E S

First Mining Gold

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SPRINGPOLE GOLD PROJECT

Stage 1 Archaeological Assessment Results with LiDAR Analysis

PROJECT Nº: ONS2104 | **FIGURE: A-9k**

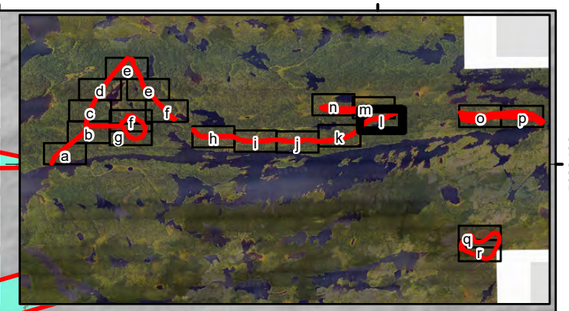
SCALE: 1:3,150 | DATE: September 2023

561000 561200 561400 561600 561800 562000 562200

5689400

5689200

5689000



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LEGEND

- Study Area
- No Further Assessment Required – Steeply Sloped
- No Further Assessment Required – Permanently Low and Wet
- No Further Assessment Required – Over 50 m from Modern Water Sources
- Photo Location and Direction (labelled with ID)
- Wenesaga Forestry Road
- Waterbody
- Shallow, Low-Flow Watercourse Surrounded by Swamp/Bog

NOTES:
- Topographic information extracted from LIO, NDMNRF.
- Proposed site plan provided by Ausenco, drawing number 105877-0000-G-001, Rev C. 29 July 2021.

0 100 200 400 600 800 Metres

Datum: NAD83
Projection: UTM Zone 15N

N W E S

FIRST MINING GOLD

WSP

SPRINGPOLE GOLD PROJECT

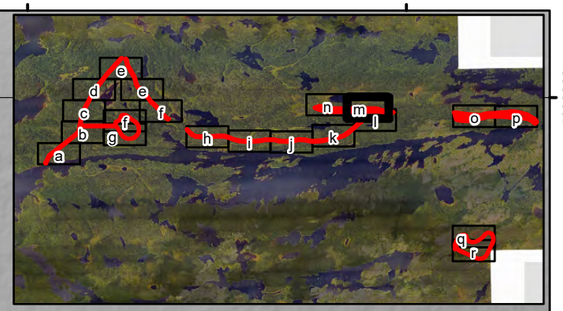
Stage 1 Archaeological Assessment Results with LiDAR Analysis

PROJECT N^{O}: ONS2104 | **FIGURE: A-9l**

SCALE: 1:3,150 | DATE: September 2023

560800 561000 561200 561400 561600 561800 562000

5689800 5689600 5689400 5689200



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LEGEND

- Study Area
- No Further Assessment Required – Steeply Sloped
- No Further Assessment Required – Permanently Low and Wet
- No Further Assessment Required – Over 50 m from Modern Water Sources
- Photo Location and Direction (labelled with ID)
- Wenesaga Forestry Road
- Waterbody

NOTES:
- Topographic information extracted from LIO, NDMNRF.
- Proposed site plan provided by Ausenco, drawing number 105877-0000-G-001, Rev C. 29 July 2021.

0 100 200 400 600 800 Metres

Datum: NAD83
Projection: UTM Zone 15N

N W E S

First Mining Gold

WSP

SPRINGPOLE GOLD PROJECT

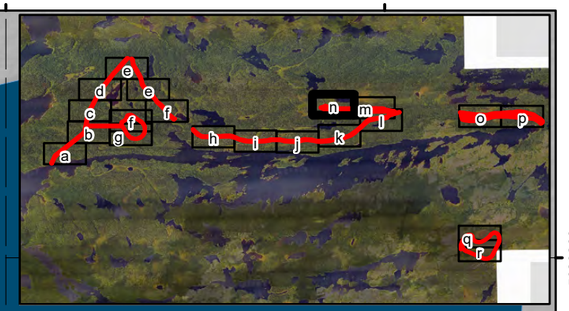
Stage 1 Archaeological Assessment Results with LiDAR Analysis

PROJECT N°: ONS2104 | **FIGURE: A-9m**

SCALE: 1:3,150 | DATE: September 2023

559600 559800 560000 560200 560400 560600 560800

5689800 5689600 5689400



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LEGEND

- Study Area
- No Further Assessment Required – Steeply Sloped
- No Further Assessment Required – Permanently Low and Wet
- No Further Assessment Required – Over 50 m from Modern Water Sources
- Photo Location and Direction (labelled with ID)
- Wenesaga Forestry Road
- Waterbody Shallow, Low-Flow Watercourse
- Surrounded by Swamp/Bog

NOTES:
- Topographic information extracted from LIO, NDMNRF.
- Proposed site plan provided by Ausenco, drawing number 105877-0000-G-001, Rev C. 29 July 2021.

0 100 200 400 600 800 Metres

Datum: NAD83
Projection: UTM Zone 15N

N W E S

FIRST MINING GOLD

WSP

SPRINGPOLE GOLD PROJECT

Stage 1 Archaeological Assessment Results with LiDAR Analysis

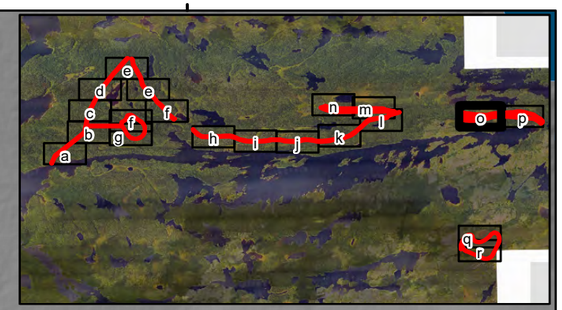
PROJECT Nº: ONS2104	**FIGURE: A-9n**
SCALE: 1:3,150	DATE: September 2023

564000 564200 564400 564600 564800 565000

5689400

5689200

5689000



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LEGEND

- Study Area
- No Further Assessment Required – Steeply Sloped
- No Further Assessment Required – Permanently Low and Wet
- No Further Assessment Required – Over 50 m from Modern Water Sources
- Photo Location and Direction (labelled with ID)
- Wenesaga Forestry Road
- Waterbody

NOTES:
- Topographic information extracted from LIO, NDMNRF.
- Proposed site plan provided by Ausenco, drawing number 105877-0000-G-001, Rev C. 29 July 2021.

0 100 200 400 600 800 Metres

Datum: NAD83
Projection: UTM Zone 15N

N W E S

First Mining Gold

wsp

SPRINGPOLE GOLD PROJECT

Stage 1 Archaeological Assessment Results with LiDAR Analysis

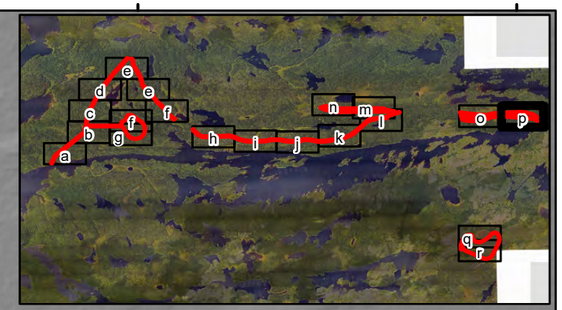
PROJECT N°: ONS2104	**FIGURE: A-9o**
SCALE: 1:3,150	DATE: September 2023

565200 565400 565600 565800 566000 566200 566400

5689400

5689200

5689000



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LEGEND

- Study Area
- No Further Assessment Required – Steeply Sloped
- No Further Assessment Required – Permanently Low and Wet
- No Further Assessment Required – Over 50 m from Modern Water Sources
- Photo Location and Direction (labelled with ID)
- Wenesaga Forestry Road
- Waterbody
- Watercourse

NOTES:
- Topographic information extracted from LIO, NDMNRF.
- Proposed site plan provided by Ausenco, drawing number 105877-0000-G-001, Rev C. 29 July 2021.

0 100 200 400 600 800 Metres

Datum: NAD83
Projection: UTM Zone 15N

N W E S

First Mining Gold

WSP

SPRINGPOLE GOLD PROJECT

Stage 1 Archaeological Assessment Results with LiDAR Analysis

PROJECT N°: ONS2104	**FIGURE: A-9p**
SCALE: 1:3,150	DATE: September 2023

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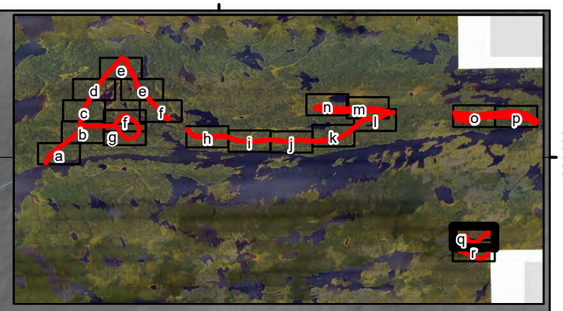
5686000 5685800 5685600



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LEGEND

- Study Area
- No Further Assessment Required – Steeply Sloped
- No Further Assessment Required – Permanently Low and Wet
- No Further Assessment Required – Over 50 m from Modern Water Sources
- Photo Location and Direction (labelled with ID)
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NOTES:
- Topographic information extracted from LIO, NDMNRF.
- Proposed site plan provided by Ausenco, drawing number 105877-0000-G-001, Rev C. 29 July 2021.

0 100 200 400 600 800 Metres

Datum: NAD83
Projection: UTM Zone 15N

N W E S

FIRST MINING GOLD

WSP

SPRINGPOLE GOLD PROJECT

Stage 1 Archaeological Assessment Results with LiDAR Analysis

PROJECT N^{O}: ONS2104	**FIGURE: A-9q**
SCALE: 1:3,150	DATE: September 2023

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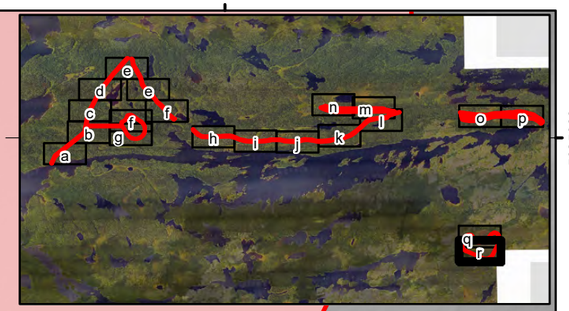
5685600 5685400 5685200 5685000



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LEGEND

- Study Area
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Datum: NAD83
Projection: UTM Zone 15N

0 100 200 400 600 800 Metres

N W E S

First Mining Gold

wsp

SPRINGPOLE GOLD PROJECT

Stage 1 Archaeological Assessment Results with LiDAR Analysis

PROJECT N°: ONS2104 | **FIGURE: A-9r**

SCALE: 1:3,150 | DATE: September 2023

Appendix B
Plates

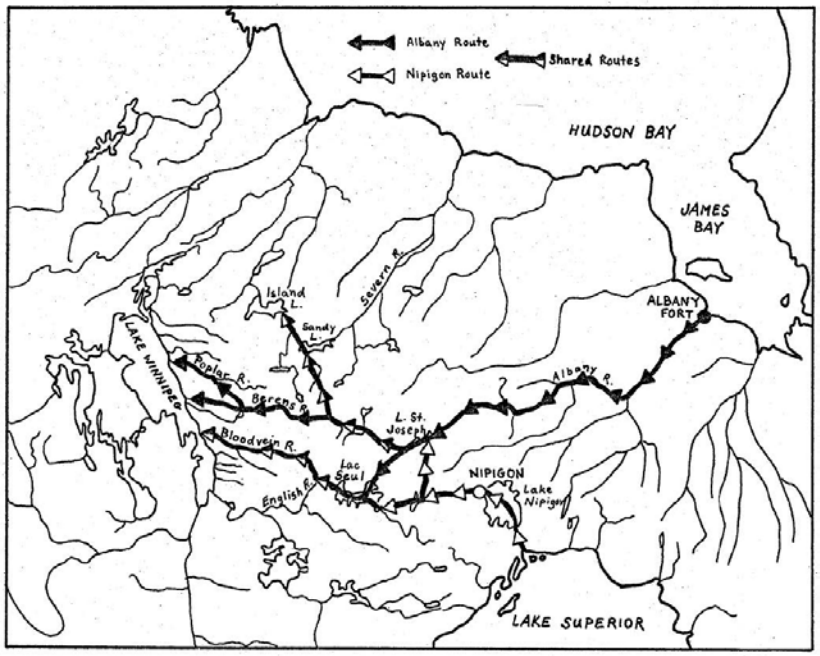

Plate 1: Albany and Nipigon trade routes to East Winnipeg (from Lytwyn 1981: 10)

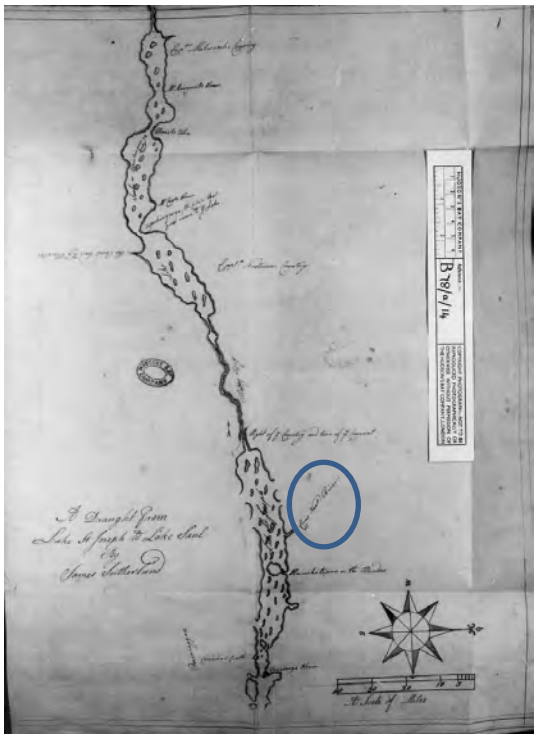

Plate 2: 1787 Map from the HBC Gloucester House Post Journal showing travel route between Lac Seul and Lake St. Joseph noting Crow Nest River (circled) (Hudson Bay Company 1786)

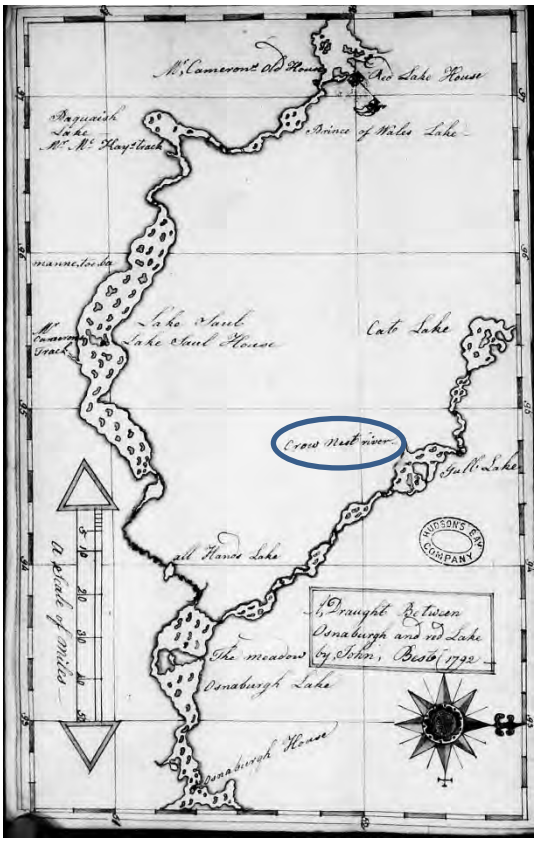

Plate 3: 1792 Map from the HBC Red Lake Post Journal showing Crow Nest River (circled), the modern Birch River, leading to Springpole Lake (Hudson Bay Company 1792)

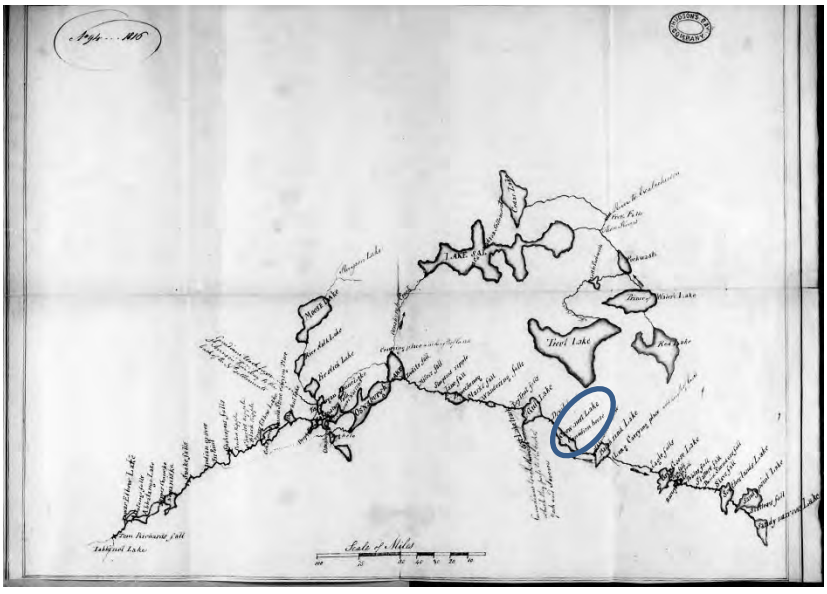

Plate 4: 1816 Map from HBC Osnaburg House report on the district showing "Canadian House" at Crow Nest Lake (circled) (Hudson Bay Company 1816)

Appendix C
Photographs

	**PHOTOGRAPH 1:** View facing northwest towards the southern portion of the study area showing the permanently wet lands on the shoreline of Springpole Lake.
	**PHOTOGRAPH 2:** View facing northeast within the study area of the undulating and steeply sloping topography.

	**PHOTOGRAPH 3:** View facing northeast within the study area of the undulating and steeply sloping topography.
	**PHOTOGRAPH 4:** View facing northwest within the study area of the steeply sloping topography.

Appendix D
Assessor Qualifications

Peter Popkin, Ph.D., CAHP, MCIfA, Associate Archaeologist & Team Lead – Dr. Popkin is an Associate Archaeologist at WSP. Peter has over 20 years of professional experience in both consulting and academic archaeology within Canada and internationally. In Ontario he has successfully undertaken consultant archaeology projects triggered by: the *Planning Act* (subdivisions, site plans, re-zoning, official plan amendments, consent), the *Environmental Assessment Act* (individual and Class EAs, provincial and federal EAs), the *Environmental Protection Act* (Renewable Energy Approvals O.Reg 359/09), as well as the *Aggregates Resources Act* (aggregate pit extensions), and has managed projects under the *National Energy Board Act* (now the *Canadian Energy Regulator Act*). Dr. Popkin has lectured in archaeology at York University, the University of Toronto and Wilfrid Laurier University in Ontario, as well as University College London, King's College London, and Birkbeck College, in the UK. Dr. Popkin holds a **Professional Archaeological Licence (P362)** from the Ontario MCM, is a Professional Member of the Canadian Association of Heritage Professionals (CAHP) and is a full Member of the Chartered Institute for Archaeologists (MCIfA). Dr. Popkin received his Ph.D. from the Institute of Archaeology, University College London, London, UK (2009).

Henry Cary, Ph.D., CAHP, RPA, Senior Archaeologist & Team Lead – Dr. Henry Cary has over 20 years of public and private-sector experience directing archaeological and cultural heritage projects in urban, rural, Arctic and Sub-Arctic environments in Canada as well as the Republic of South Africa, Italy, and France. His career has included positions as project archaeologist and cultural resource management specialist for Parks Canada's Fort Henry National Historic Site Conservation Program and Western Arctic Field Unit, Heritage Manager for the Town of Lunenburg UNESCO World Heritage Site, and senior-level archaeologist and cultural heritage specialist for CH2M and Golder Associates. He holds a **Professional Archaeology Licence (P327)** issued by the Ontario MCM, is Ministry of Transportation Ontario RAQs-approved in Archaeology/Heritage and is a member of the Canadian Association of Heritage Professionals (CAHP) and Register of Professional Archaeologists (RPA). Henry received a B.A. (with distinction) in Prehistoric Archaeology and Anthropology from Wilfrid Laurier University, an MA in Historical Archaeology from Memorial University, and a Ph.D. in War Studies from the Royal Military College of Canada. Currently, Henry also holds academic positions as Adjunct Professor in the Anthropology Department at Saint Mary's University and as lecturer of archaeology in the Classics and Visual & Material Culture departments at Mount Allison University.

Chelsea Dickinson, BA Hons. Cultural Heritage Specialist | Project Manager – Ms. Dickinson holds an Honours B.A. Degree in Near Eastern and Classical Archaeology from Wilfrid Laurier University, a Post-Graduate Certificate in Geographical Information Systems from Fanshawe College and is currently pursuing her Master of Arts (MA) in Planning at the University of Waterloo. She has worked in the field of cultural resource management since 2015 working on a wide variety of projects throughout Ontario including Cultural Heritage Reports: Existing Conditions and Preliminary Impact Assessments (Cultural Heritage Reports), Cultural Heritage Evaluation Reports (CHERs), Heritage Impact Assessments (HIAs), Strategic Conservation Plans (SCP), and documentation reports specializing in historical background research. Ms. Dickinson is a licensed archaeologist, currently holding an **Applied Research License (R1194)** issued by the Ontario MCM with experience conducting all aspects of Stage 1 to 4 Archaeological Assessments (AAs) and is a member of the Ontario Archaeological Society.