

APPENDIX R
ARCHAEOLOGY TECHNICAL SUPPORT DOCUMENT



**CÔTÉ GOLD PROJECT
TECHNICAL SUPPORT DOCUMENT:
ARCHAEOLOGY**

FINAL

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GLOSSARY AND ABBREVIATIONS

Aboriginal	In the context of the Côté Gold Project, includes both First Nation and Métis people
CH	Cultural Heritage (refers only to archaeological value)
EA	Environmental Assessment
km	Kilometre
m	Metre
mm	Millimetre
MTCS	Ministry of Tourism, Culture and Sport
OHA	Ontario Heritage Act
TSD	Technical Support Document

EXECUTIVE SUMMARY

The archaeological resource assessment field work was required by the Ministry of Tourism, Culture and Sport (MTCS) in advance of the future ongoing development of IAMGOLD's Côté Gold Project. Stage 1 and 2 Archaeological Resource Assessments were undertaken for Trelawney Mining and Exploration (now IAMGOLD) on the lands associated with the Côté Gold Project (the Project) in Chester Township (see Figures 1 to 3).

In 2011 and early 2012 Stage 1 archaeological overview projects were completed to determine and confirm areas of archaeological potential. Specific areas were targeted for follow-up Stage 2 work later in 2012. An archaeological predictive model was created for the Project area and combined with the MTCS checklist indicated archaeological potential existed near portions of various shorelines. Subsequently during the summer and fall of 2012, a Stage 2 archaeological survey using sub-surface testing methods was undertaken on site locations where there was high archaeological potential for pre-contact First Nations and early historic mining archaeological sites. The Stage 1 work that indicated specific areas with high potential for archaeological sites was confirmed as 18 pre-contact archaeological sites, 10 historic archaeological sites and 9 ancient trails and portages were located and recorded for a total of 37 archaeological sites and cultural features located (see Figures 4 to 90).

Some of the prime areas of potential tested in the spring of 2012 included areas near the shorelines of the Mollie River, Côté Lake, Clam Lake, Little Clam Lake, Weeduck Lake, Three Duck Lakes, Chester Lake and Bagsverd Lake. Parts of these shorelines exhibited both pre-contact and historic archaeological potential.

In the final report to MTCS, it will be recommended that Stage 3/4 archaeological fieldwork be completed at the following sites:

1. Two Pike Point – CjHI-11
2. Côté Lake 1 Site – CjHI-12
3. Flat Rock Site – CjHI-2
4. Rocky Narrows 2 – CjHI-15
5. Chester 1 Site – CjHI-4
6. Chester 3 Site – CjHI-5
7. Chester 5 Site – CjHI-7



It is additionally recommended that Stage 3 fieldwork be completed at the following three historical archaeological (1930's early mining exploration) sites that may be impacted by project activities and are of further archaeological value or interest.

1. Chester 2 – CjHI-19
2. Sheppard Mining Site – CjHI-21
3. Shannon Cabin – CjHI-25

Should the Stage 3 work produce results that require Stage 4 work under the 2011 MTCS S&G's, it is recommended that these additional Stage 4 undertakings follow the Stage 3 excavations.

Implementation of the above assessments in association with the ongoing investigations is expected to offset any potential adverse effects to archaeological heritage resources.

1.0 INTRODUCTION AND PROJECT OVERVIEW

The Côté Gold Project (the Project) is an advanced stage gold exploration project located in the Chester and Neville Townships, District of Sudbury, in northeastern Ontario, approximately 20 kilometres (km) southwest of Gogama, 130 km southwest of Timmins, and 200 km northwest of Sudbury (see Figures 1 to 3). IAMGOLD proposes to construct, operate and eventually rehabilitate a new open pit gold mine on the property.

This technical support document (TSD) has been prepared by Woodland Heritage Services and is one in a series of technical reports to support the environmental assessment (EA) for the Project.

1.1 Stage 1 and 2 Archaeological Assessments

Archaeological field work was part of the overall Environmental Assessment process, prior to the development of the Côté Gold Project advanced mineral exploration project (see Figures 1 and 2) and associated proposed infrastructure (see Figure 3). The archaeological field work, to MTCS standards, was performed in advance of any new ground-disturbing activities. The archaeological assessment described in this report was completed as part of the baseline data collections required under the terms of the Environmental Assessment for the proposed undertaking. The Environmental Assessment Act describes the environment as including Section 1(1) (d) "any building, structure, machine or other device or thing made by humans". This includes artefacts and archaeological sites. Archaeological assessment constitutes archaeological fieldwork as defined in regulations to the Ontario Heritage Act (OHA; O. Reg. 170/04), and as such, the archaeological assessment and this report is required to comply the terms of the Ontario Heritage Act.

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

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

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

- have a licence from the Ministry of Tourism, Culture and Sport;

- file a report with the Ministry of Tourism, Culture and Sport containing details of the fieldwork that has been done for each project;
- file information about all newly discovered or revisited archaeological sites with the Ministry of Tourism, Culture and Sport for each project; and
- under Ontario Regulation 8/06 of the OHA, “consultant archaeologist” means “an archaeologist who enters into an agreement with a client to carry out or supervise archaeological fieldwork on behalf of the client, produce reports for or on behalf of the client and provide technical advice to the client”.

2.0 STAGE 1 AND 2 ASSESSMENT BACKGROUND

Several commonalities exist between the Stage 1 and 2 reporting. These will be covered in this section together. Section 3 deals specifically with the results and analysis from the Stage 1 work, section 4 reports on the Stage 2 work.

2.1 OASD Search

Before initiation of fieldwork, the site files and catalogued reports at Woodland Heritage Services Ltd. and the Ontario Archaeological Site Database at the Ministry of Tourism, Culture & Sport were checked to determine if any pre contact or historic archaeological sites had been previously recorded either in or near the study area.

One previously registered archaeological site is located within 20 kilometres of the study area, CkHk-2 in the vicinity of Gogama.

2.2 Current Land Use(s), Field Conditions and Topography

The lands directly associated with the Project area do not appear to be currently used for a particular purpose other than as a resource extraction area and recreation area.

The soils in this area are varied ranging from organic deposits through to sand and many areas have shallow soils over bedrock. The topography is bedrock controlled and has varied relief, from large hills and rugged areas to flat or slightly rolling terrain.

The vegetation of the Project study area is typical of the Great Lakes – St. Lawrence transition forest with an emphasis on more Boreal species (Jack Pine, Spruce, Birch) than Carolinian species (Beech, Oak, Maple).

2.3 Fieldwork Schedule

Stage 1 Fieldwork was undertaken during October 2011 and June 2012. However, the proposed tailings management area was inspected during September and October 2012. Stage 2 fieldwork was undertaken in June and July 2012. All field work was conducted in optimal weather conditions for archaeological assessment. Fieldwork was suspended when weather and lighting conditions prevented a clear view of the landscape, ground or soil conditions.

During the fieldwork component of the archaeological resource assessment, no physical features affecting fieldwork strategy, decisions or the identification of artefacts or cultural features were encountered. Additionally, during the fieldwork component permission was granted to pass onto and carry out all activities related to archaeological assessments.

2.4 Spatial Boundaries

The study boundaries for the Stage 1 and 2 archaeological resource assessments were generally limited to the Project footprint and those areas that are proposed to be affected by the Project's development. These latter areas include Chester Lake where the proposed inundation may have affected unknown archaeological resources (see Figure 3).

2.4.1 Regional Study Area

The regional study area for archaeology is defined as an approximately circular 30 km buffer around the Project site footprint. The 30 km buffer is anticipated to be an appropriate spatial boundary for a desktop assessment of archaeological resources and assessing Project-specific effects on archaeology.

The study regional study area also includes a 2 km buffer on either side of the transmission line alignment alternatives.

2.4.2 Local Study Area

The local study area is defined by potential effects of the Project on nearby archaeological resources. The proposed local study area is defined as a 2 km buffer around the Project site footprint.

The study area also includes a 1 km buffer on either side of the preferred transmission line alignments.

2.5 Past Archaeological Field Work

Previous Stage 1 fieldwork was undertaken by Woodland Heritage Services within the current study area in the summer of 2011 (WHS 2011a, b, c, d). The archaeological work examined three proposed aggregate extraction sites and a general overview of the Project at that time (WHS 2011a, b, c). Additional work has also been carried out by Settlement Surveys Ltd. /Woodland Heritage Services in the region (i.e. Hwy. 144 area and the Mattagami Lake area (WHS 2012b).

3.0 STAGE 1 ARCHAEOLOGICAL RESOURCE ASSESSMENT

The Stage 1 Archaeological resource assessment was carried out as a two-fold process. The first part of the assessment involved background research and predictive modelling of the Project area. Sources used for the background research include Annual Report Volumes (from the then Ontario Department of Mines), historic and current air photography, a review of any related information available online or in online journal servers, and a review of related histories found in our office library and digital reference collection.

The predictive modelling of the Project study area was carried out using landscape variables to preferentially select those areas with low sloping, well-drained terrain located nearby to modern waters. These variables were applied across the referent landscape to find all of those areas that meet the weighted variables. The final map was used to guide fieldwork activities. The MTCS checklist for archaeological potential was consulted, and returned positive results for archaeological potential within the Project area.

The fieldwork component of the Stage 1 was carried out to follow-up on the earlier background information research and the predictive modelling. This fieldwork served to locate several of the historic mining camps / prospects and to confirm areas of archaeological potential.

3.1 Stage 1 Property Inspection.

The proposed Project area in Chester and Neville Townships (see Figure 3) contains numerous lakes and several streams. The varied terrain is typical of the Canadian Shield with some steep and rugged areas and other areas of slightly rolling sand plains to permanently saturated wetlands.

The study area was visually inspected for archaeological potential, as well as, to note any features that may affect determination of potential. Photographs and GPS points were collected in addition to field notes to document the overall conditions and specific testing areas. Due to the time constraints during the Stage 1 fieldwork component, the model of archaeological potential was further refined during Stage 2 of the fieldwork component.

3.2 Stage 1 Analysis and Conclusions

Although many areas that contained permanently saturated soils or steep and rugged terrain were not considered to meet the minimum conditions of archaeological potential, areas of level well-drained terrain did have confirmed archaeological potential. These areas were the focus of the later Stage 2 archaeological resource assessment work.

The locations of these areas of archaeological potential were mapped and photographed so that they could be easily located during the Stage 2 property inspection. The areas of rugged terrain



and otherwise unsuitable areas of the landscape served to focus the areas of archaeological potential. This was due to the sporadic nature of areas suitable for past human settlement.

4.0 STAGE 2 ARCHAEOLOGICAL RESOURCE ASSESSMENT

The Stage 2 archaeological resource assessment involved sub-surface testing using shovels, screens and trowels to expose and investigate the soils for artefacts in areas of archaeological potential. This work involved digging pits on a 5 metre grid, to a depth sufficient to expose and confirm sterile mineral soils, and then screening all soil through a 6 mm hardware mesh in an effort to find artefacts. Once artefacts are identified the grid interval of pits is intensified to determine the nature of the archaeological deposit.

If it is established that an archaeological site exists in a particular area, the location and information must be filed with the Archaeological Data Coordinator at MTCS so that the archaeological site can be registered with the Province. Stage 3 and 4 site specific assessments are carried out to establish the maximum areal limits of the site and to either excavate or protect the archaeological site.

4.1 Methods

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

As a result of the field inspection, the archaeological potential was refined by eliminating steep slopes and wet lands with organic soils generally unsuitable for habitation as well as open bedrock and steep areas.

Although most of the shorelines were rocky and steeply sloped (between 25 and 45 degrees), several small areas of archaeological potential were identified in level, well-drained areas on or near the various shorelines. Areas of permanently saturated soils and extensive wetlands are found throughout the Project study area. It is common in Northern Ontario to have complex conditions of archaeological potential due to the varied topographic, surficial and hydrologic conditions that exist in the northern forests. This serves to create a mosaic of areas ranging from areas of confirmed archaeological potential to those that were unsuitable for past human occupation.

Additional areas of archaeological potential were also identified as a result of the background research in areas where ruins of early 1930's "prospecting" or mining camps or habitations were present. However, due to the age of the initial Euro-Canadian settlements, these habitations only remain as ruins.

Stage 2 assessment work between spring and fall of 2012 included the shorelines of the Mollie River and Coté Lake, Clam Lake, Little Clam Lake, Weeduck Lake, Three Duck Lakes, Chester Lake and Bagsverd Lake, including Bagsverd Creek. Parts of these shorelines exhibited both pre-contact and historic archaeological potential.

The test-pit survey was carried out in 100% of all high potential areas facing proposed disturbances in both the mine site as well as the tailings management area and rock pile and overburden storage areas. No areas that were previously ploughed existed and as such pedestrian survey was limited to those areas of exposed soils and open bedrock. All of the fieldwork was carried out under MTCS Standards and Guidelines, 2011.

As the Project is located in the Canadian Shield area of Northern Ontario, Standard §2.1.5 of the MTCS 2011 Standards and Guidelines was employed to restrict sub-surface testing to the first 50 metres from shore in areas of archaeological potential.

A GPS was used according to the requirements set out in section 5 of the above mentioned standards and guidelines, to record the locations of the following:

- all diagnostic artefacts;
- sufficient artefacts to provide an estimate of the limits of the archaeological site; and
- all fixed reference landmarks.

All field activities were mapped (e.g., extent and location of survey methods, survey intervals) in reference to fixed landmarks, survey stakes and development markers. Mapping is accurate to the best scale available. GPS positional accuracy using the Garmin 62 CSX and 60 CSX with WAAS enabled is between three and six metres on average.

All field conditions encountered were photo-documented.

4.2 Record of Finds

Sixteen pre-contact archaeological sites, nine historic archaeological sites and six ancient trails and portages were located and recorded. As required by regulations, the 28 archaeological sites (18 pre-contact and 10 historic), have been registered with Province of Ontario and each has been assigned a Borden Number in the provincial database. Borden numbers are listed in Table 4-1. As registered sites, they are now afforded protection under the OHA and must not be disturbed until clearance is obtained from the MTCS. No sub-surface disturbance, or artefact removal is permitted on or within 20 metres of a registered site, plus there is an additional 50m monitoring zone (S&G, 2011: §7.8.5). These conditions can be removed for sites that will be

impacted pending completion and acceptance of a Stage 3 or Stage 4 technical report for each affected site.

Listed below is a preliminary determination of the age and cultural affiliations of each archaeological site for which assessment was carried out.

Table 4-1: Archaeological Sites and Features Located within the Project Study Area

Site Name	Borden Number	Age and Cultural Determination (Preliminary Determination)	Figure Reference
Flat Rock Site	CjHI-2	Pre-contact	58
Makwa Point	CjHI-3	Pre-contact	38
Chester 1	CjHI-4	Pre-contact	19 to 21
Chester 3	CjHI-5	Pre-contact	31
Chester 4	CjHI-6	Pre-contact	n/a
Chester 5	CjHI-7	Pre-contact	23 to 30
Chester 6	CjHI-8	Pre-contact	n/a
Lookout Site	CjHI-9	Pre-contact	22
Upper Duck Pine Point	CjHI-10	Pre-contact	n/a
Two Pike Point	CjHI-11	Pre-contact	41 to 43
Côté Lake 1	CjHI-12	Pre-contact	47, to 49
Côté Lake 2	CjHI-13	Pre-contact	50 to 52
Rocky Narrows 1	CjHI-14	Pre-contact	53, 54
Rocky Narrows 2	CjHI-15	Pre-contact	55 to 57
Rocky Island Campsite	CjHI-16	Pre-contact	11, 12
Table Point Site	CjHI-17	Pre-contact	13
Clam Lake Gold Mining	CjHI-18	Historic	34, 35

Site Name	Borden Number	Age and Cultural Determination (Preliminary Determination)	Figure Reference
Company			
Chester 2	CjHI-19	Historic	15 to 18
Gosselin Mining Site	CjHI-20	Historic	59 to 62
Shepherd Mining Site	CjHI-21	Historic	66 to 76
Headframe Point	CjHI-22	Historic	37
Large Pit Mine Site	CjHI-23	Historic	39, 40
Weeduck Cabin Site	CjHI-24	Historic	n/a
Shannon Cabin	CjHI-25	Historic	32 to 33
Cryderman Site	CjHI-26	Historic	80 to 83
Upper Duck to Middle Duck Portage (2 portages)	n/a	Portage/Ancient Trail	63, to 65
Bagsverd to Wee Duck Portage	n/a	Portage/Ancient Trail	88 to 90
Middle Duck East Portage	n/a	Portage/Ancient Trail	77 to 79
Lower Duck Portage	n/a	Portage/Ancient Trail	84 to 87
Mollie River to Chester Lake Portage	n/a	Portage/Ancient Trail	n/a
The Northern Bagsverd Portage	n/a	Portage/Ancient Trail	n/a
The Southern Bagsverd Portage	n/a	Portage/Ancient Trail	14
Bagsverd Creek 1	CjHI-27	Pre-contact	4 to 7
Bagsverd Creek 2	CjHI-28	Historic	8, 9
Bagsverd Creek 3	CjHI-29	Historic	10

Site Name	Borden Number	Age and Cultural Determination (Preliminary Determination)	Figure Reference
Somme River Portage	CkHI-3	Portage	n/a

4.3 Cataloguing and Artefact Analysis

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

For the identification an analysis of the artefacts, various sources were consulted. For lithics, *Lithics: Macroscopic Approaches to Analysis*, Second Edition, by William Andrefsky Jr. was mainly used (Andrefsky, 2005); however, *Understanding Stone Tools: A Cognitive Approach*, by David E. Young and Robson Bonnicksen was also consulted (Young and Robson, 1984). For some of the more general Post-European artefacts, a resource published by the London Chapter of the Ontario Archaeology Society, *Kewa – 19th Century Notes*, by T. Kenyon et al. was used (Kenyon and Kenyon, 1980-1988). The website (www.ssc.uwo.ca/assoc/oas/pubs/kewa19th.html) was accessed between May and August of 2011. For bottles and makers marks on glassware, the Society of Historical Archaeology website was used frequently between the months of May and August of 2011 (<http://www.sha.org/>). Other resources that were used included: *The Bottle Collector* by Azor Vienneau (1971); *Machine-Made Glass containers and the End of Production for Mouth-Blown Bottles*, by George L. Miller and Catherine Sullivan (1984); *Bottle Makers and their Marks*, by Julian Harrison Toulouse (1972); *Unitt's Bottles and Values and More: Special Collectors Reprint*, by Peter Unitt and Anne Worral (1990); and *Bottles in Canada*, by Doris and Peter Unitt (1972). *Clay Pipes for the Archaeologist*, by Adrian Oswald was consulted when identifying clay pipes and their maker's marks (Oswald, 1975). For historic pottery and porcelain, *Encyclopaedia of British Pottery and Porcelain Marks*, by Geoffrey A. Godden (1970) and *Nineteenth Century Pottery and Porcelain in Canada*, by Elizabeth Collard (1967) were consulted. These resources aided in identifying decoration patterns and makers marks. Lastly, *A Guide to Marks on Early Canadian Silver: 18th and 19th Centuries*, by John E. Langdon (1968) were used for makers marks as well. References for the above mentioned texts are included in the Reference section of this report.

4.4 Recommendations and Conclusions

The MTCS Standards and Guidelines for Consultant Archaeologists (2011 § 7.8.3) requires that the archaeologist compare findings against criteria in §2, Stage 2 Property Assessment to determine whether further archaeological assessment is required.

All of the sites located with the exception of Rocky Narrow 1 and Chester 6 display significance as they are the first such sites of this antiquity located in the local area. Given the paucity of comparative information, all sites must be considered worthy of additional assessment work (Stage 3 and 4).

Furthermore, MTCS Standards and Guidelines for Consultant Archaeologists (2011) § 7.8.4): state that: Recommendations should only be made for archaeological components (built heritage or cultural heritage landscapes values or sites should not be included). If Stage 2 work did not identify any archaeological sites requiring further assessment or mitigation of impacts, it is recommended that no further archaeological assessment of the property be required.

As the sites are considered significant in both regional and local archaeological contexts, and several of the sites will be impacted by the proposed Project development, additional archaeological resource assessment work is required. All sites listed below exhibited evidence of significant cultural heritage value or interest making all of them candidates for Stage 3 work. The two exceptions were Rocky Narrows 1 and Chester 6 for which no further work is recommended.

It is recommended that a Stage 3 assessment be completed at the following eight pre-contact sites that are of further cultural heritage value or interest and will be impacted by the proposed Project design. These excavations must proceed with the engagement of First Nations.

1. Two Pike Point – CjHI-11
2. Côté Lake 1 Site – CjHI-12
3. Flat Rock Site – CjHI-2
4. Rocky Narrows 2 – CjHI-15
5. Chester 1 Site – CjHI-4
6. Chester 3 Site – CjHI-5
7. Chester 5 Site – CjHI-7
8. Bagsverd Creek 1 - CjHI-27

It is additionally recommended that Stage 3 fieldwork be completed at the following three historical archaeological sites that may be impacted by project activities and are of further cultural heritage value or interest.

1. Chester 2 – CjHI-19
2. Sheppard Mining Site – CjHI-21
3. Shannon Cabin – CjHI-25

Other historical or pre-contact sites do not appear to be impacted by the project developments and can be protected by the Stage 2 partial clearance involving a 20m no impact zone and a 50m monitoring buffer area (S&G 2011: §7.8.5).

4.5 Conclusion

All archaeological sites are required to be protected by no work buffers and monitoring buffers. This is sufficient mitigation for sites that will not be disturbed. If they are to be impacted by project activities, then Stage 3 and Stage 4 archaeological assessments are required. Once the Stage 2, 3 and 4 technical reports are approved by the Ministry of Tourism, Culture and Sport, the development can proceed.

5.0 PREDICTION OF EFFECTS

The assessment of archaeological resources is regulated by the Province of Ontario under the *Ontario Heritage Act* under license from the MCTS. Archaeological assessments of the property components have been completed to Stage 2. Stage 2 requires that inspection by a licensed archaeologist be completed for all known resources and areas of potential be completed. The full results of the inspection are detailed in a report that will be submitted to the MTCS, as required.

5.1 Effects Summary – Archaeological and Heritage Resources

Construction of the Côté Gold Project may affect archaeological sites through the disturbance and/or removal of soils during construction and/or operation which potentially contain the remains of pre-contact archaeological sites. The Project may also affect early 20th century archaeological heritage features. The activities that could have the greatest affect on archaeological resources include: clearing, grubbing, stripping, excavation and blasting primarily during construction as well as the expansion of stockpiles and the TMA during operations which will permanently cover the ground surface.

Depending on the final site design some of the proposed Project facilities are expected to overprint some of the archaeological sites identified in this document.

The archaeological significance of the areas potentially affected by the proposed Project was determined through Stage 2 archaeological assessments undertaken by Woodland Heritage Services Limited (Woodland Heritage Services Limited, 2013). Stage 2 archaeological assessments within the Project and the local study area, located eighteen pre-contact archaeological sites, ten historic archaeological sites and nine ancient trails and portages were located and recorded for a total of 37 archaeological sites and heritage features located.

The *Ontario Heritage Act* and *MCTS Standards and Guidelines for Consultant Archaeologists* (2011) prohibit displaying specific locations of archaeological sites on maps that the public may access. This assists to deter the unauthorized collection of artefacts and damage to archaeological sites enhancing protection and preservation.

Cultural heritage value is established in Ontario based on a number of indicators identified in the Standards and Guidelines. Broadly these are defined as:

- cultural historical value;
- historical value;
- scientific value;
- rarity or frequency;
- productivity; and

- integrity.

Further to these indicators, archaeological cultural heritage value is established by its value to a community. This indicator considers the value that an archaeological site has to a particular Aboriginal community or group and also considers the contribution of the archaeological sites to the understanding and appreciation of Ontario's past.

Pre-contact archaeological sites are an important cultural and community resource for Aboriginal people as they represent a connection to ancestors, provide evidence of prior land use and occupation, and can assist in the understanding of past land and resource use, and way of life. Aboriginal people have expressed interest in the archaeological work that has been undertaken in the Project area. These sites have been registered under the *Ontario Heritage Act* as significant due to their antiquity and rarity. They will also make a significant contribution in terms of their scientific value.

A number of historic mining exploration archaeological sites have been identified which provide evidence of early mineral exploration in northeastern Ontario, which began around 1900. The Project area mining sites are dated to the early 1930's, the earliest substantial prospecting period in this historic mining camp area. Sites that date to the first European settlement are considered to have cultural heritage value and interest according to the Ontario Standards and Guidelines.

5.2 Mitigation

Avoidance has been possible for several of the sites identified but is not expected to be practical for the remainder.

According to the Ontario Standards and Guidelines, all archaeological sites are considered to have heritage value or interest, regardless of size or artefact yield, and the more productive sites must be mitigated to Stage 4 requirements. According to MTCS (2012):

Conserving archaeological sites that have cultural heritage value or interest does not mean stopping development. Conservation can involve putting long-term protection measures in place around an archaeological site to protect it intact. The site is then avoided while development proceeds around it. This is called protection 'in situ' and is always the preferred option for mitigation of development impacts to a site. If protection is not viable, mitigation can involve documenting and removing an archaeological site, through excavation, before development takes place.

A Stage 3 archaeological investigation is considered for all archaeological sites that may be of cultural heritage value or interest. The consultant archaeologist accurately determines the size of the archaeological site, evaluates its cultural heritage value or interest, and where necessary

makes recommendations for Stage 4 mitigation strategies (see Table 5-1). Monitoring measures are presented in Table 5-2.

5.3 Residual Environmental Effects

Implementation of the mitigation measures described above in association with the ongoing investigations is expected to gather information and otherwise offset any potential adverse effects to heritage resources.

5.4 Significance Determination

In regards to pre-contact sites, the proposed Stage 3 and 4 investigations will better define these values. Activities such as land clearing, excavation, and road construction have the potential to affect archaeological sites to the extent that there is substantial data loss or destruction, but the proposed Stage 3 and 4 archaeological resource work will serve to mitigate any loss of information prior to effects occurring. Unless mitigation measures such as site avoidance or protective measures not currently expected are possible, effects will be permanent. As there is a range of mitigation measures available to mitigate archaeological sites, the overall significance of the effects is considered low.

Historic sites provide evidence of the early settlement and land use in northern Ontario and are most likely of interest to the public.

Table 5-1: Mitigation Measures for Archaeology – Stage 3 and 4

Site Name and Location	MTCS Registered Borden Number	Stage Required by MTCS Regulations	Mitigation Measure and Status	Description of Protection
Flat Rock Site Mollie River	CjHI-2	Stage 1-4	Stage 1-3/4 completed in 2012	None - site has been excavated
Chester 1 Chester Lake	CjHI-4	Stage 4	Stage 1-3/4 completed in July 2013	None - site has been excavated
Chester 2 Chester Lake	CjHI-19	Stage 3-4	Stage 1-3 completed in 2012 –no further work	None - site has been excavated
Chester 3 Chester Lake	CjHI-5	Stage 3	Stage 4 completed September 2013	None - site has been excavated

Site Name and Location	MTCS Registered Borden Number	Stage Required by MTCS Regulations	Mitigation Measure and Status	Description of Protection
Chester 4 Chester Lake	CjHI-6	Stage 2	Stage 1-2 completed – 2012 no further work	None – site has no ongoing significance
Chester 5 Chester Lake	CjHI-7	Stage 4	Stage 4 completed – no further work	None – site has been excavated
Chester 6 Chester Lake	CjHI-8	Stage 2	Stage 1-2 completed – no further work	None – site has no ongoing significance
Lookout Location Chester Lake	CjHI-9	Stage 2	Stage 1-2 completed – 2012 no further work	None
Upper Duck Pine Point	CjHI-10	Stage 2	Stage 1-2 completed – 2012 no further work	None – site has no ongoing significance
Two Pike Point (Niishin Kinooshek Point) Three Duck Lake	CjHI-11	Stage 4	Stage 1-4 completed in July 2013	None – site has been excavated
Cote Lake 1 Cote Lake	CjHI-12	Stage 3	Stage 1-4 completed in 2012	None – site has been excavated
Cote Lake 2 Cote Lake	CjHI-13	Stage 2	Stage 1-2 completed – 2012 no further work	None – site has no ongoing significance
Rocky Narrows 1 Mollie River	CjHI-14	Stage 2	Stage 1-2 completed – 2012 no further work	None – site has no ongoing significance
Rocky Narrows 2 Mollie River	CjHI-15	Stage 3	Stage 1-4 completed in 2012	None – site has been excavated
Rocky Island Campsite	CjHI-16	Stage 2	Stage 1-2 completed – 2012 no further work	None – site has no ongoing significance

Site Name and Location	MTCS Registered Borden Number	Stage Required by MTCS Regulations	Mitigation Measure and Status	Description of Protection
Bagsverd Lake				
Headframe Point Clam Lake	CjHI-22	Stage 2	Stage 1-2 completed – 2012 no further work	None – site has no ongoing significance
Large Pit Mine Site Clam Lake	CjHI-23	Stage 2	Stage 1-2 completed – 2012 no further work	None – site has no ongoing significance
Shannon Site Little Clam Lake	CjHI-25	Stage 4	Stage 1-4 completed in July 2013	None – site has been excavated
Rock Island Site Bagsverd Creek	CjHI-28	Stage 2	Stage 1-2 completed – 2012 no further work	None – site has no ongoing significance
Somme River Portage Somme river	CkHI-3	Stage 2	Stage 1-2 completed – 2012 no further work	None – site has no ongoing significance

Table 5-2: Monitoring Measures for Archaeology – Stage 2

Parameter	Monitoring Method	Standard	MTCS Registered Borden Number	Site Name and Location
Stage 1-2 completed in 2012– no further work	20 meter no work and 50 meter monitoring buffer	Stage 2	CjHI-3	Makwa Point Clam Lake
Stage 1-2 completed –2012 no further work	20 meter no work and 50 meter monitoring buffer	Stage 3	CjHI-17	Table Point Site Bagsverd Lake
Stage 1-2 completed – 2012 no further work	20 meter no work and 50 meter monitoring buffer	Stage 2	CjHI-18	Clam Lake Gold Mining Company Clam Lake
Stage 1-2 completed –no further work	20 meter no work and 50 meter monitoring buffer	Stage 2	CjHI-20	Gosselin Mining Site Three Duck Lake
Stage 1-3 completed – 2012 no further work	20 meter no work and 50 meter monitoring buffer	Stage 3	CjHI-21	Sheppard Mining Site Three Duck Lake
Stage 1-2 completed – 2012 no further work	20 meter no work and 50 meter monitoring buffer	Stage 3	CjHI-24	Weeduck Cabin Site Weeduck Lake
Stage 1-2 completed –2012 no further work	20 meter no work and 50 meter monitoring buffer	Stage 2	CjHI-26	Cryderman Site Three Duck Lake
Stage 1-2 completed –2012	20 meter no work and 50 meter monitoring buffer	Stage 3	CjHI-27	Bagsverd Creek 1 Unnamed lake
Stage 1-2 completed – 2012 no further work	20 meter no work and 50 meter monitoring buffer	Stage 2	CjHI-29	West Portage Landing Site Bagsverd Creek

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FIGURES

Figure 1: Project Location Map (Southern Part)

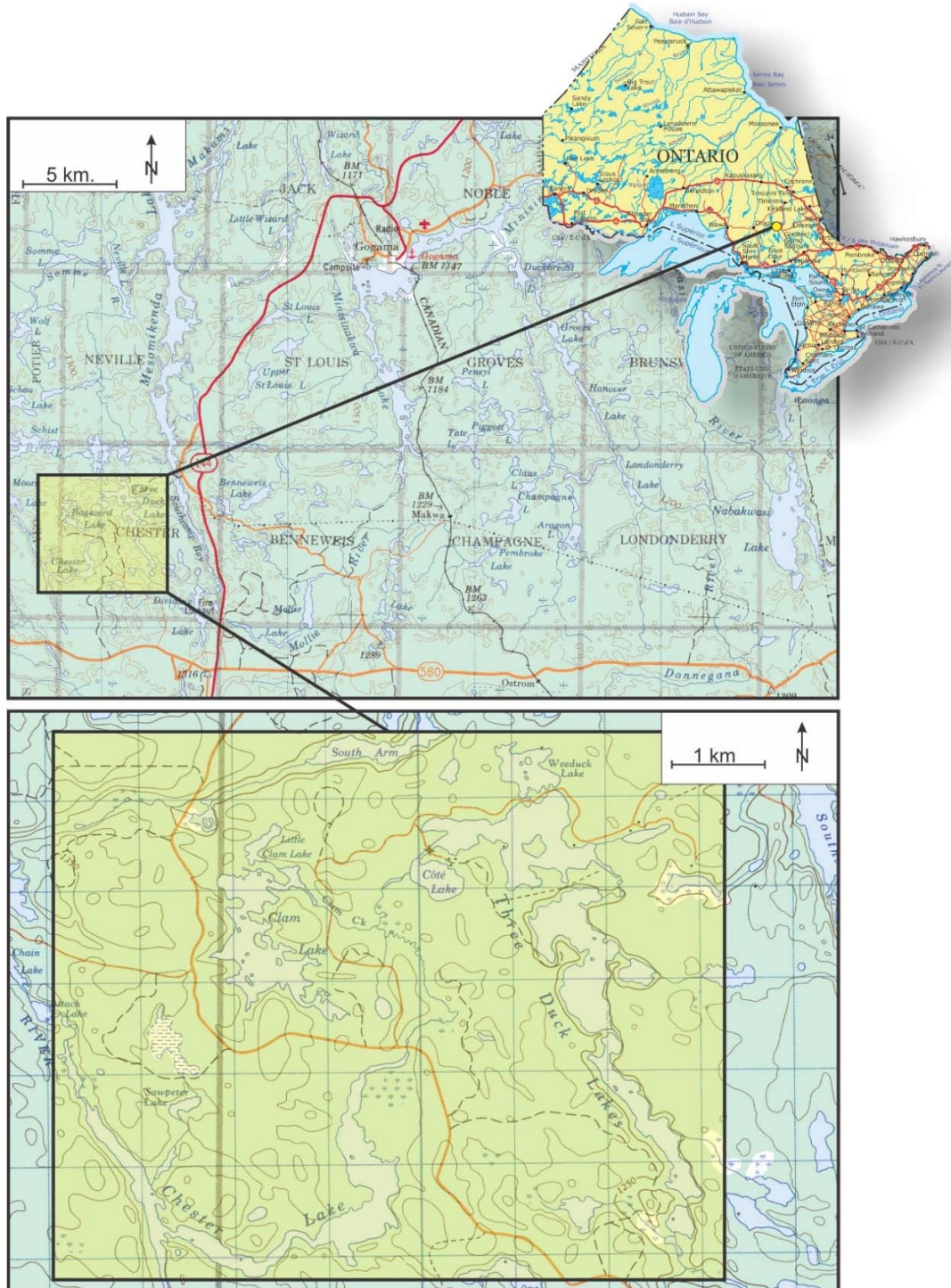
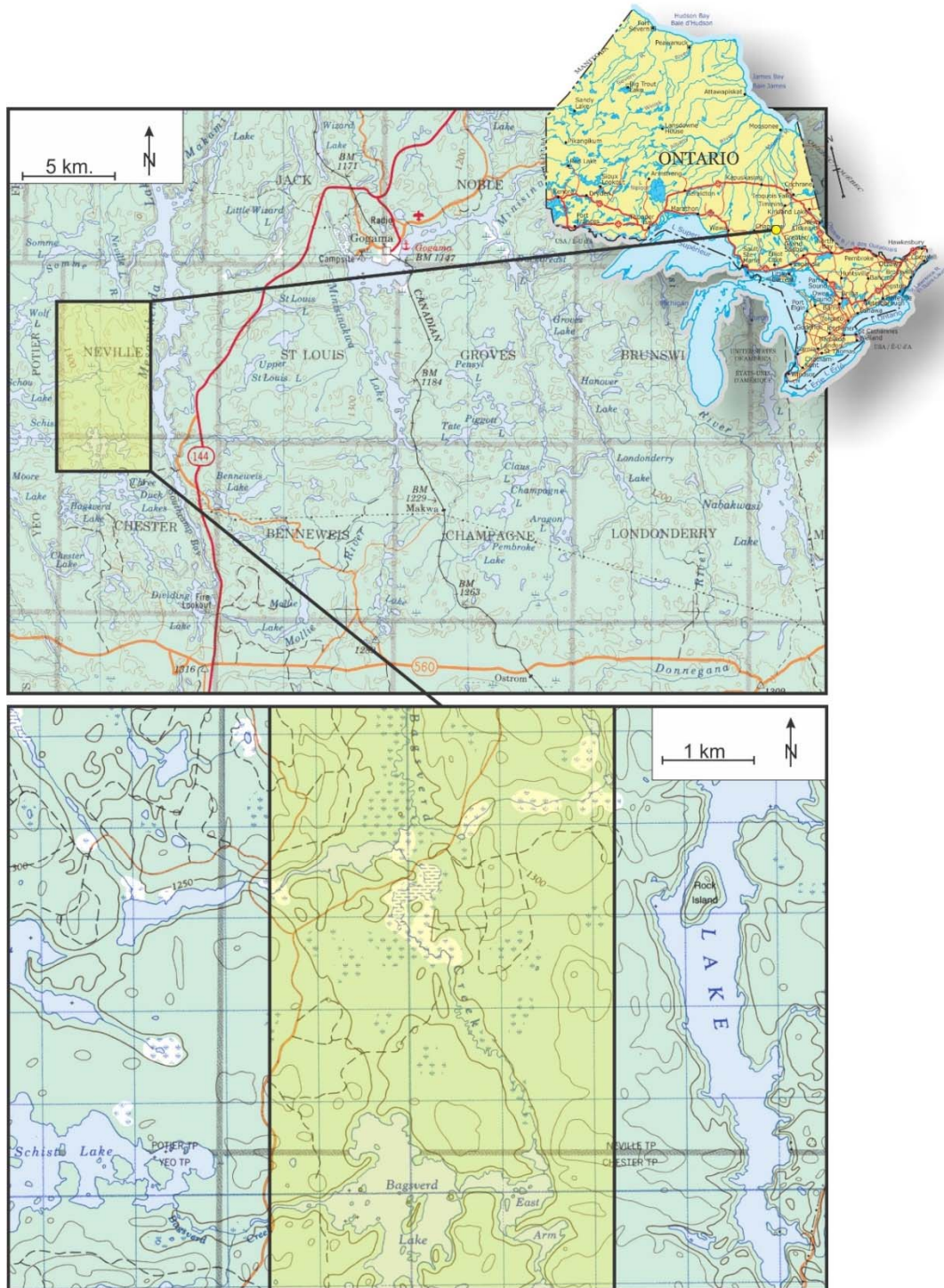


Figure 2: Project Location Map (Northern Part)



(Under the OHA, identification of specific site locations is not permitted)

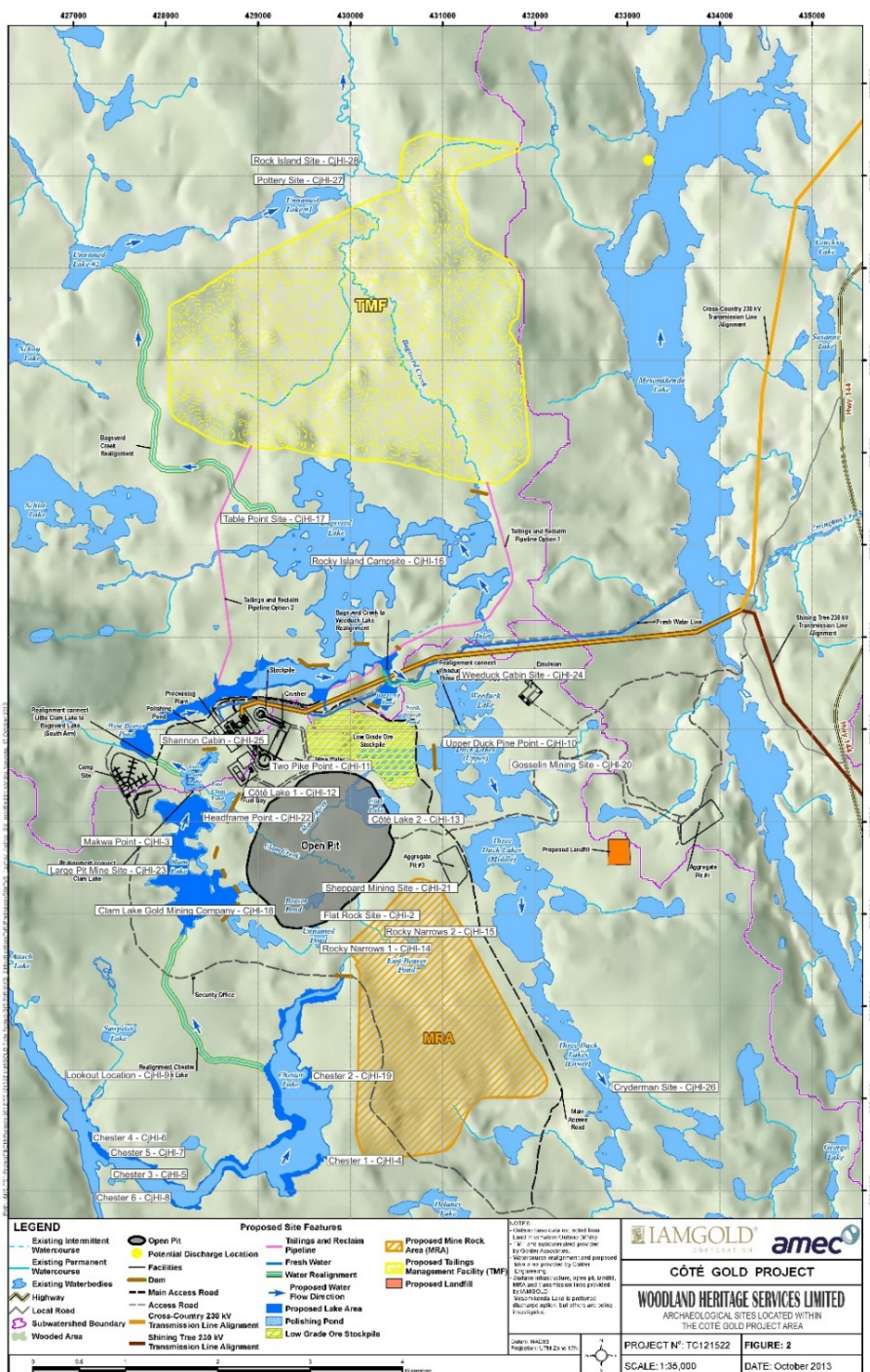


Figure 4: Photograph 039 at the Bagsverd Creek 1 (Un-named Lake 1 Site)



Figure 5: Photograph 041 of Pre-Contact Ceramic in Test Pit at the Bagsverd Creek 1



Figure 6: Un-named Lake Site artefact CjHI-27:5 Obverse – Pre-Contact Ceramic
(Note the cord impressed decoration)



Figure 7: Un-named Lake Site Artefact CjHI-27:6 Reverse – Pre-Contact Ceramic



Figure 8: Photograph 124 of Bagsverd Creek 2 – CjHI-28, the Rock Island Site



Figure 9: Photograph 123 of Bagsverd Creek 2 Testing



Figure 10: Photograph 169 testing of Bagsverd Creek 3 – CjHI-29, the West Portage



Figure 11: Photograph 465 of Subsurface Testing in Soil Pockets at CjHI-16, the Rock Island Campsite



Figure 12: Photograph 459 of Testing a Soil Pocket at CjHI-16, the Rock Island Campsite



Figure 13: Table Point Site, CjHI-17:29 Obverse of a Unifacial Flake Tool



Figure 14: Photograph 000 of the North Landing Portage Entrance from Weeduck Lake



Figure 15: Photograph 992 of Chester 2 – CjHI-19, of the Corner of the Former Cabin



Figure 16: Photograph 994 - the Name Plate of the Cookstove at Chester 2 was Recovered



Figure 17: Photograph 006 of the Remains of the Cookstove at Chester 2



Figure 18: Photograph 015 of the Depression that once was a Cellar at Chester 2



Figure 19: Photograph 941 of the Stage 2 Subsurface Testing at Chester 1



Figure 20: Photograph of the Obverse of a Chert Flake Recovered at CjHI-4, Chester 1



Figure 21: Quartz Scraper Recovered from Chester 1 – CjHI-4:11 Obverse



Figure 22: Photograph 290 of a Quartz Flake Found between the Parallel Rocks at CjHI-9, the Lookout Site



Figure 23: Photograph 227 of Additional Testing at CjHI-5, Chester 3



Figure 24: Clock Movement Found at CjHI-5, Chester 3 - Reverse



Figure 25: Quartz Graver Recovered at Chester 3, CjHI-5 – Reverse



Figure 26: Photograph 907 of Chester 4 Artefacts on Surface



Figure 27: Photograph 392 of Subsurface Testing at Chester 5



Figure 28: Photograph 394 of Test Plots at Chester 5



Figure 29: Photograph 398 of Stage 2 Testing at Chester 5



Figure 30: Chester 5, CjHI-7:11 Tetouched Flake – Obverse



Figure 31: Photograph 382 of Testing at Chester 6



Figure 32: Photograph 814 of a Barrel Stove at the Shannon Cabin, CjHI-25



Figure 33: Photograph 823 of a Cross Cut Saw at the Shannon Cabin



Figure 34: Photograph 737 of a Shaft on an Island of the Clam Lake Mining Co., CjHI-18



Figure 35: Photograph 796 of the Cabin Ruins at the Clam Lake Mining Company, CjHI-18



Figure 36: Photograph 798 of the Cabin Ruins at CjHI-18, the Clam Lake Mining Company



Figure 37: Figure 37. Photograph 375 of the Hoist Room Foundation Remains at CjHI-22, Headframe Point



Figure 38: Photograph 780 at Makwa Point, CjHI-3



Figure 39: Photograph 592 of the Large Pit Mine Site, CjHI-23



Figure 40: Photograph 590 of the Large Pit Historic Exploration Trench



Figure 41: Photograph 478 of Stage 2 Subsurface Testing at Two Pike Point



Figure 42: Two Pike Point CjHI-11:5 Bifacially Worked Quartz, Possibly Abandoned during Manufacture - Obverse



Figure 43: Two Pike Point, CjHI-11:5 Bifacially Worked Quartz, Possibly Abandoned during Manufacture, Obverse



Figure 44: Photograph 017. Ruins of Former Building at the Young-Shannon Mine



Figure 45: Photograph 063 of the Corner of the Former Young-Shannon Mill Site



Figure 46: Photograph 079 of the Part of the Steam Engine that Powered the Mill



Figure 47: Photograph 896 of an Area Subsurface Tested at Cote Lake 1



Figure 48: Photograph 917 of Stage 2 Subsurface Test Pits at the Cote Lake 1 site



Figure 49: CjHI-12:18 Obverse – Quartz Perforator or Awl Found at Cote 1



Figure 50: Photograph 684 of the Quartz Mass at Cote Lake 2



Figure 51: Photograph 391 of a Level Area Tested at Cote Lake 2



Figure 52: Photograph 693 of some Angular Quartz



Figure 53: Photograph 598 of Stage 2 Subsurface Testing at Rocky Narrows 1



Figure 54: Photograph 601 of an Excavated Stage 2 Test Pit at Rocky Narrows 1



Figure 55: Photograph 848 of Stage 2 Testing at Rocky Narrows 2



Figure 56: Photograph 856 of Testing a Lower Terrace at Rocky Narrows 2



Figure 57: Photograph 878 of Rocky Narrows 2 Testing in Progress



Figure 58: Photograph 888 of Stage 2 Testing at the Flat Rock Site



Figure 59: Photograph 304 of a Row Boat, at the Gosselin Site



Figure 60: Photograph 309 of a Wagon Hub at the Gosselin Site



Figure 61: Photograph 310 of a Barrel Found at the Gosselin Site



Figure 62: Photograph 313 of one of the Decayed Walls of a Former Structure at the Gosselin Site



Figure 63: Photograph 447 of a Squared Stump that Served as a Marker of the Portage



Figure 64: Photograph 444 of a Blaze Marking the Portage from Middle to Upper Three Duck Lake



Figure 65: Photograph 445 of the Old Portage Landing between Upper and Middle Three Duck Lake



Figure 66: Photograph 172 of the Bunkhouse Ruins at the Sheppard Site



Figure 67: Photograph 184 of the Cookery Ruins at the Sheppard Site



Figure 68: Photograph 192 of the Cookery at the Sheppard Site



Figure 69: Photograph 202 of the Bunkhouse Ruins at the Sheppard Site



Figure 70: Photograph 218 of the Wall Ruins of the Bunkhouse at the Sheppard Site



Figure 71: Photograph 828 of the Bunkhouse at the Sheppard Site



Figure 72: Photograph 233 of the Bunkhouse Ruins at the Sheppard Site



Figure 73: Photograph 255 of the Remains of the Bunkhouse Door



Figure 74: Photograph 267 of a Former Window



Figure 75: Photograph 280 of the Former Privy at the Sheppard Site



Figure 76: Photograph 281 of the Former Privy



Figure 77: Photograph 694 of the Portage from Middle Three Duck Lake to the Pond to the East



Figure 78: Photograph 686 of the Portage



Figure 79: Photograph 709 of the Portage



Figure 80: Photograph 546 of the Cryderman Site



Figure 81: Photograph 510 of the Remains of the Structure Ruins at the Cryderman Site



Figure 82: Photograph 546 of some Bottles at the Cryderman Site



Figure 83: Photograph 549 of a Horizontal Log Structure at the Cryderman Site



Figure 84: **Photograph 529 of the Approach to the Lower Three Duck Lake Portage**



Figure 85: **Photograph 532 of a CMT (blaze), along the Portage**



Figure 86: Photograph 533 of the Landing



Figure 87: Photograph 535 of the Small Waterbody to the South



Figure 88: Photograph 567 of a Blaze at the Bagsverd Lake to Three Duck Lake Portage



Figure 89: Photograph 569 of a Blaze at the Bagsverd to Three Duck Portage



Figure 90: Photograph 572 of the Ancient Portage Path or Treadway



