

PROVINCE OF BRITISH COLUMBIA

ORDER OF THE MINISTER OF
FORESTS, LANDS AND NATURAL RESOURCE OPERATIONS

Ministerial Order No. _____ M 165

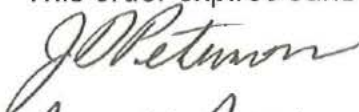
Under section 14 (4) (a) of the *Heritage Conservation Act*, I order Tolko Industries Ltd. to conduct a heritage inspection of its proposed forestry activities on land that may contain heritage sites protected under section 13, and described as:

within the Central Cariboo, Chilcotin, 100 Mile House, and Quesnel Forest Districts.

Further, under section 14 (7) of the *Heritage Conservation Act*, as this order relates to the extraction or harvesting of resources from land, I order Tolko Industries Ltd. to pay for the heritage inspection.

The purpose of the heritage inspection is to identify archaeological sites protected in accordance with section 13 (2) of the *Heritage Conservation Act*, assess their heritage value, determine the magnitude of development related impacts and formulate archaeological resource management options. The heritage inspection must be carried out in an expeditious manner by a professional archaeologist eligible to hold a heritage permit under section 14 of the *Heritage Conservation Act*. All work must conform to the "Application for Permit" dated March 01, 2013, (Archaeology Branch file number 11200-30/13A0060) and attached to this order.

This order expires June 30, 2014.



ACTING DEPUTY MINISTER

for Minister of Forests, Lands and Natural
Resource Operations

July 18, 2013

Date



The Best Place on Earth

HERITAGE CONSERVATION ACT

APPLICATION FOR PERMIT

The undersignedBall, Bruce F.....
(Surname) (Given names)

of #211 - 10544 - 106 Street, Edmonton, Alberta, T5H 2X6.
(Address)

hereby applies for a permit, under section 14 of the *Heritage Conservation Act*, to carry out:

A Heritage Inspection ☒
A Heritage Investigation ☐

in accordance with the information requested on the reverse of this form.

GENERAL TERMS AND CONDITIONS OF PERMIT

1. Permits shall be valid for the term stipulated on the front of the permit unless otherwise suspended or cancelled. Extensions to the term of the permit, or other amendments, will be considered upon submission of an application to the Archaeology Branch at least 30 days prior to the expiry date of the permit.
2. For projects other than oil and gas projects in northeastern BC, the permit-holder shall provide the Archaeology Branch with one (1) bound copy and one (1) electronic copy in PDF format of a written report, in accordance with the standards required by the Minister, outlining the work carried out under the terms of the permit. For oil and gas projects in northeastern BC, the permit-holder shall provide the Oil and Gas Commission with one (1) electronic copy in PDF format for review and acceptance prior to submitting one (1) bound copy and one (1) electronic copy in PDF format to the Archaeology Branch.
3. The title page of all reports must indicate the name(s) of the copyright owner(s) and, where agreed to, a Grant of License statement completed and signed by the copyright owner(s).
4. A person appointed by the branch may at any time inspect any aspect of a project conducted under the terms of this permit. To further their inspection, the appointee may conduct excavations within the study area. Notwithstanding the expiration or earlier termination of the term of the permit this provision will remain and continue in full force and effect.
5. Upon completion of any inspection or investigation involving excavations, the permit-holder shall make reasonable efforts to ensure all sites are restored as nearly as possible to their former condition.
6. The permit-holder shall arrange for a secure repository to curate any materials recovered under authority of the permit.
7. Heritage objects and associated materials recovered under authority of the permit may not be sold or exchanged for financial gain. Any other transfer of heritage objects, materials and records, or changes to the conditions identified under the "Disposition of materials collected..." section of the permit, may only be carried out with prior consent of the Minister.
8. The permit-holder shall conform to all requirements that may be imposed by the institution or organization named in the "Disposition of materials collected..." section of the permit.

9. Notwithstanding expiration or earlier termination of the term of the permit, provisions with respect to the "Disposition of materials collected ..." section shall remain and continue in full force and effect.
10. The permit-holder shall utilize any site recording forms, formats or systems required by the Minister. All sites must be recorded on a BC Archaeological Site Inventory Form and submitted to the Archaeology Branch.
11. A permit issued under section 14(2) does not authorize entry onto land or into a building without the permission of the owner or occupier.
12. For heritage inspection permits, the permit-holder shall submit spatial information (as a shape file in accordance with the standards required by the Minister) of all study areas that were the subject of in-field inspections.
13. Any other conditions that may be specified in the permit.

PROJECT DESCRIPTION

(Provide full information under appropriate headings)

1. Type of project:

Research (See 3.A below)	Resource Management (See 3.B below)
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2. Location of project:
3. Scope:
 - A. Research (either inspection or investigation permits)
 - i. Goals and objectives (explain why these objectives cannot be achieved using existing collections).
 - ii. Significance of proposed project.
 - iii. Proposed research plan and methodology.
 - iv. Relation of project to previous work or other work in progress.
 - B. Resource Management (refer to impact assessment guide)
 - i. Development type, facilities, and schedule.
 - ii. Type of program and methodology:
 - a) Inventory (inspection permits only)
 - survey sampling design and methodology
 - methods and techniques for data analysis
 - b) Assessment (inspection permits only)
 - systematic surface collection design and methodology
 - evaluative testing design and methodology
 - significance evaluation scheme
 - impact assessment scheme
 - methods and techniques for data analysis
 - c) Systematic Data Recovery (investigation permits only)
 - research design and methodology
 - methods and techniques for data analysis
 - d) Emergency Impact Management (investigation permits only)
 - impact management measure
 - data recovery methodology
 - methods and techniques for data analysis
 - iii. Relation of project to previous work or other work in progress.
4. Disposition of materials collected:

Repository and contact person
5. Financial support
6. Schedule of fieldwork and analysis

7. Field personnel
8. Previous permits held by applicant
9. Applicant's resume

CONSENT TO THE USE OF PERSONAL INFORMATION

Permit applicants and their clients must consent to the use of personal information such as names, addresses, and telephone numbers that is included in permit applications, site inventory forms or permit reports. However, consent is not required from representatives of corporate clients. Property owners must also consent to the use of this information if the application applies to private property. This consent is necessary as the Archaeology Branch collects and distributes personal information that is subject to the *Freedom of Information and Protection of Privacy Act*.

I consent to the use of personal information contained in this application, as well as the personal information contained in the resulting site inventory form and permit report, for contact and verification purposes. I understand this information will be retained in the provincial archaeological site database and permit report. I also understand this information may be disclosed to researchers, consulting archaeologists and other users of the database and permit report. Database users must identify themselves and the purpose of their information request, and are precluded from further distribution of the information they obtain. The permit report will be publicly available once it has been accepted as meeting permit terms and conditions.

Date March 1 / 2013
Place Edmonton, AB

[Signature]
(Permit Applicant Signature)

Date March 18, 2013
Place Williams Lake, BC

[Signature]
(Client Signature)

Date

Place

.....
(Property Owner Signature)

PERMIT APPLICANT'S CERTIFICATION

I certify that I am familiar with the provisions of the *Heritage Conservation Act* of British Columbia, and that I will abide by the terms and conditions listed on the front hereof, or any other conditions the Minister may impose, as empowered by said *Act*.

Date March 1 / 2013
Place Edmonton, Alberta

[Signature]
(Permit Applicant Signature)

CLIENT'S CERTIFICATION

I certify that I have read and concur with the content of this permit application.

Date.....March 18, 2013.....

Place.....Wilhoag Lake, B.C......

.....Torco Ind. Ltd......

Client Name (please print):

.....
(Client Affiliation)

.....[Signature].....

(Client Signature)

NOTICE REGARDING COPYRIGHT

At the time of report production, the owner(s) of the report copyright will be asked to grant a non-exclusive license to the Province of British Columbia for the purpose of copying and distributing the report. The granting of this license will facilitate access to the archaeological data contained within the report and will therefore contribute to the protection of heritage resources throughout the Province. Copyright owners who refuse to grant a license to the Province, and anyone carrying out research on behalf of those copyright owners, will not be granted access to the Archaeology Branch's online library and will not be permitted to photocopy reports within the Branch office.

NOTICE REGARDING OTHER PERMITS

No permits or approvals, other than a *Heritage Conservation Act* permit, are required to carry out the inspections or investigations described in the permit application. However, licensees and property owners or developers may also require other approvals such as forestry cutting permits and municipal development permits.

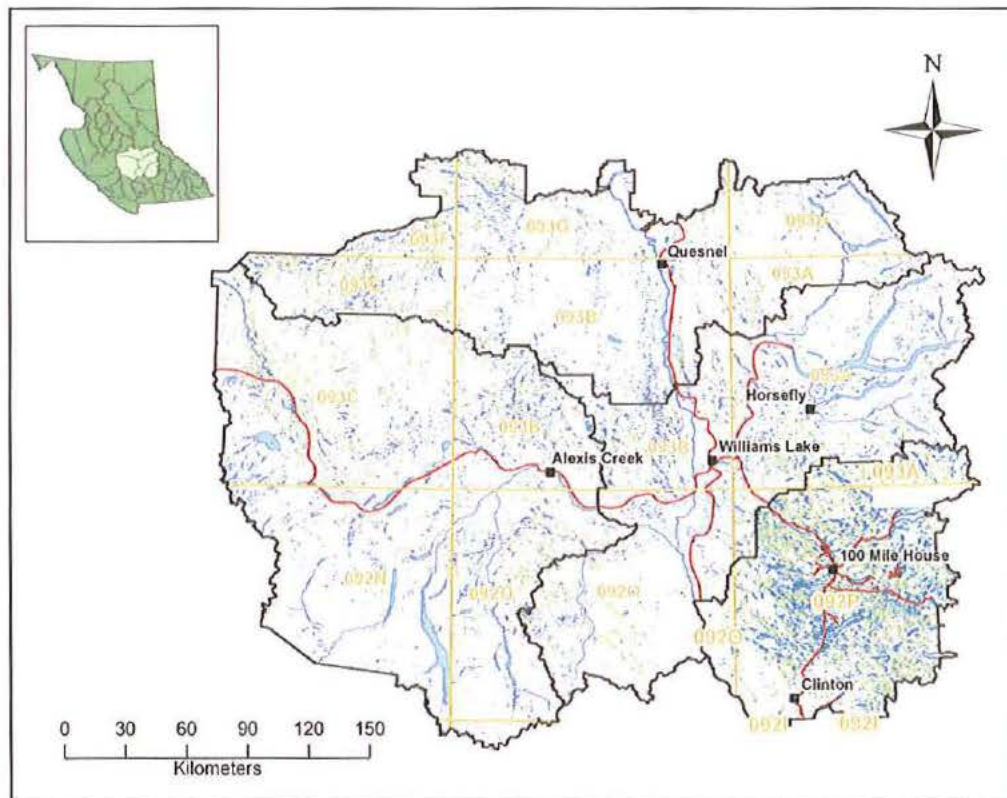
**BC
HERITAGE CONSERVATION ACT
PERMIT APPLICATION**

**ARCHAEOLOGICAL IMPACT ASSESSMENT
TOLKO INDUSTRIES LTD., WILLIAMS LAKE B.C.
2013 FORESTRY OPERATIONS**

March 18, 2013

INTRODUCTION

I am hereby applying for a “**Heritage Inspection Permit**” to conduct archaeological impact assessment studies in the Central Cariboo, Quesnel and Chilcotin Forest Districts on behalf of Tolko Industries Ltd., Williams Lake, BC. The area for which a permit is requested is shown in Figure 1. John Liscomb, Tolko Industries Ltd., Williams Lake, is the contact person for this project.



available through the 'RAAD' system or the Archaeological Potential district model accessible through the *Ministry of Forests, Lands, and Natural Resource Operation*.

The *Archaeology Branch, Permitting and Assessment Section, BC Ministry of Forests, Lands, and Natural Resource Operation* and the respective, affected First Nations will be notified in writing when these areas become known. Such notifications may include a written location, description and sufficient mapped information to be able to reasonably identify the project area and include general, midrange and/or detailed maps unless the situation exists wherein the affected First Nations have received, during previous formal discussions, reasonable notification, as described above (in the penultimate paragraph). In which case, such notification will be at the discretion of the client.

Areas of potential selected for field assessment will be surveyed as described below. This permit is requested for the period April 1, 2013 to June 30, 2014. A comprehensive final project report will be prepared and submitted on or before June 30, 2014.

PROJECT DESCRIPTION

A Permit to conduct Archaeological Impact Assessments on proposed forestry developments is required. The proposed developments may involve more than one harvest operation and will include different development areas of varying sizes. These proposed forestry developments are located within the Central Cariboo, Chilcotin and Quesnel Forest Districts (see Figure 1).

The Central Cariboo, Quesnel and Chilcotin Forest Districts are generally considered to fall within the confines of the northern portion of the Plateau Culture Area (Walker 1998)¹. Within this northern section of the Plateau Culture Area can be found a wide variety of archaeological site types and manifestations, a full description of which is beyond the scope of this document. The range of sites include surface features such as house pits, isolated finds and surface scatters; subsurface deposits include burials, single and multi-component deposits. Sites include whole villages including a variety of features and used over many thousands of years, or single use sites such as lithic deposits; sites may be found to be extremely old or relatively recent in the case of CMT's. The range and nature of sites expected may be gleaned from a review of the following authors: Chatters and Pokotylo 1998, in *Handbook of North American Indians*, Vol. 12; Stryd and Rousseau 1996, in *Early Human Occupation in British Columbia*, edited by Roy L. Carlson and Luke Dalla Bona.; Matson and Magne (2008) in *Athapaskan Migrations: The Archaeology of Eagle Lake, British Columbia*, Chatters and Pokotylo (1998) in *Handbook of North American Indians*, Vol. 12; Fladmark (1982) in *CJA* 6:95; Pokotylo and Mitchell (1998) in *Handbook of North American Indians*, Vol. 12, Richards and Rousseau (1987) in *Late Prehistoric Cultural Horizons of the Canadian Plateau*, Rousseau (2008) in *Projectile Point Sequences in Northwestern North America* edited by Carlson & Magne; Sanger (1970) in *The Archaeology of the Lochnore-Nesikep Locality, British Columbia*, Syesis 3, Supplement 1; Stryd and Rousseau (1996) in *Early Human Occupation in British Columbia*, edited by Roy L. Carlson and Luke Dalla Bona; and Wright (1995 & 1999) in *A History of the Native People of Canada* Volumes I & II.

In terms of Culture History, it is expected that sites will be encountered from each of the following Time Periods (as outlined by Chatters and Pokotylo 1998) the Early Period (11,000 – 8,000 years B.P.), the Middle Period (8,000 – 4,000 years B.P.), and the Late Period (4,000 years B.P. – AD 1720), albeit the Middle Period is further subdivided into Early (8,000-5,500 years B.P.) and Late (5,500 – 4,000 years B.P.) sub-periods, and the Late Period is subdivided into three sub-periods, the Early (4,000 – 2,500 years B.P.), the Middle (2,500 – A.D. 500 – 1,000) and the Late (A.D. 500 – 1,000 – 1720).

¹ Handbook of North American Indians, Vol. 12. Smithsonian Institution, Washington 1998.

DEVELOPMENT TYPE, FACILITIES AND SCHEDULE

Harvesting operations and related activities are scheduled for initiation in 2013. The nature of the impact will vary according to the specific needs of the respective proposed development.

Proposed development may include the following:

- 1) construction or upgrading of access roads leading to, and within, the cut-block;
- 2) clear cut timber harvesting;
- 3) skidder traffic, processors and tree dragging;
- 4) preparation (clearing and leveling) of landings;
- 5) associated construction, such as drainage ditching, bridges, fences and/or culverts; and,
- 6) indirect impacts, which may or may not occur afterwards, include such things as erosion, increased recreational access traffic, and unrelated future developments.

PROJECT OBJECTIVES AND METHODOLOGY

The archaeological work will be conducted as outlined in the British Columbia Archaeological Impact Assessment Guidelines (Apland and Kenny 1996)² and as outlined under the *Heritage Conservation Act* (1997) and the Archaeology Branch's *Culturally Modified Trees of British Columbia*.³

The objectives of the archaeological impact assessment may be summarized as follows:

- 1) to perform an archaeological inventory of the proposed development area (i.e., identify, locate and map all archaeological sites in those portions of the proposed impact zones that display reasonable potential for archaeological sites);
- 2) to evaluate and assess the nature and significance of all identified archaeological concerns vis-à-vis the proposed development and impact; and,
- 3) based on the results of the study, to provide recommendations for appropriate subsequent management actions.

Project methodology will generally follow methods as outlined in the Archaeology Branch's Guidelines and various other Bulletin's and recommended techniques and processes. A brief description of the expected procedures follows.

The forestry developments are selected by the proponent (using their process of selection, as outlined above). Each proposed development requested is further screened. Each specified area is evaluated using a combination of the information available from the "RAAD" system, information gained from informed individuals, information gained about the area from our past experience, and an evaluation of the areas under consideration using specific criteria such as slope, proximity to water, proximity to known sites, association with ecozone, aspect, proximity to historic settlement, and association with specific land features. Any reasonable combination of these criteria or information that indicates archaeological potential exists is flagged as having potential and the proponent is apprised of the need for further work. If there is no potential noted, it is concluded that further work is not justified.

² Apland, Brian and Ray Kenny (editors) 1996 *British Columbia Archaeological Impact Assessment Guidelines*. Province of British Columbia, Ministry of Small Business, Tourism and Culture, Archaeology Branch, Victoria, B.C. Third Revised Edition.

³ Archaeology Branch 2001 *Culturally Modified Trees of British Columbia: A Handbook For The Identification And Recording Of Culturally Modified Trees*. B.C. Ministry of Small Business & Culture for the Resources Inventory Committee.

Based on the recommendations made as a result this review along with other possible considerations, a decision is made by the proponent as to whether or not to proceed with more detailed assessment. In the event more detailed assessment is requested, plans are initiated for field survey. Letters are sent to the Archaeology Branch and interested FN groups, that identify the development and request an addition of the specific development to the permit. The following description outlines the approach taken in the field survey.

The methods apply to all of the selected development areas. This includes Block areas as well as associated roads and trails; all areas receive the same survey and assessment coverage as the actual cut block developments. Assessments will take into account and be conducted as is appropriate for the disturbance proposed. Maps showing the specific development area are included in Interim and Final reports.

Culturally Modified Trees (CMTs)⁴ will be included and addressed as outlined in the CMT Handbook (Archaeology Branch 2001; see below as well). All CMTs found within the proposed development area which pre-date 1846 will be recorded as an archaeological site, with a site form being submitted to the *Archaeology Branch*.

The survey work is designed to ensure that all heritage resource concerns existing within the specific development area will be identified, recorded, assessed, and recommendations made directed towards the proper management of all affected resources prior to the initiation of all land-altering development activities. Background studies normally include: a review of available ethnographic, historic, and archaeological documentation; personal interviews with local residents (if pertinent); an evaluation of the total project area to determine areas of potential interest; selection of areas of potential for detailed assessment including shovel testing; judgmental shovel testing; an evaluative testing program (if warranted); and, the recording and assessment of all identified sites. The results of the assessments are reported in an Interim Report if requested by the proponent. The nature and stage of any assessment will depend on the level of impact expected and the wishes of the client.

Field Survey

Field Survey will take place under snow free conditions. The development area will be assessed using the following approach. The proposed developments are first evaluated for areas displaying potential using information from the client, existing mapping and finally visual survey of the landscape. Locations within development areas that display potential for archaeological sites (such as areas that display features normally found in association with archaeological sites) are chosen and detailed survey of such areas is carried out. Areas such as these may include existing and extinct shorelines, relatively flat or raised terraces, or areas adjacent to well-drained or elevated areas, south facing aspects, and hills or high promontories.

Survey areas and chosen areas of potential will be surveyed on foot. Initial survey will entail visual assessment whereby survey crew members will walk random transects in parallel at an approximate 5–20 m interval. Survey areas will be visually examined and existing natural exposures such as animal trails or manmade trails, roads, excavations, and areas of natural erosion are used to enhance the evaluation of the area under consideration. If locations are identified that display specific characteristics commonly found in association with archaeological sites and the ground surface is hidden or obstructed by ground cover, shovel testing of this area will be undertaken.

Shovel Testing

There are three levels of testing that may occur within any area chosen for survey. The first is random testing and is carried out for various reasons such as to test the nature of the surface, ground, or soil depth. The second level is systematic testing, which may occur over a larger area, and may be undertaken at various levels of

⁴ A Culturally Modified Tree is defined as “a tree or a remnant of a tree with evidence of traditional aboriginal use”.

intensity, dependent on the nature of the land, the size of the area, and the perceived potential, for example. The third level is random/systematic testing within a known site area or a found site area.

Each shovel test location is recorded in terms of its dimensions, defining soil, and terrain characteristics, and the results.

Areas selected for shovel testing and detailed surface inspection (e.g., where sites are identified or in areas considered to have high potential) will be tested at a higher frequency, compared to other locations or areas where testing is taken to discover more general characteristics or natural qualities. Shovel test locations are generally selected based on the specific physiography or the lay of the land. Test locations are placed at a five meter interval or as close as is possible given specific location idiosyncrasies. Occasionally, shovel testing will not be conducted at five meter intervals. Limitations to shovel testing at a five meter interval include the occurrence of bedrock close to or at the surface, tree roots, deadfall, or other subsurface barriers.

For areas selected for shovel testing at a higher frequency and where a positive test has occurred, testing will proceed from the positive location, outward, first in the four cardinal directions and using a five meter interval. Tests will be placed and proceed out from the positive locations until a negative result is achieved or when the nature of the ground surface or landscape precludes further testing. Once two negative tests are recorded consecutively, the testing interval is extended to 10 m or discontinued if further testing is impossible or not warranted. Once two more additional negative tests are identified or the nature of the landform changes, testing in this direction is terminated. Additional testing may be undertaken back towards the original positive test between the positive locations until it is possible to produce a rudimentary map showing the site boundaries. A sketch map of the development area and the found site will be prepared.

Testing is ended when the area under consideration is reasonably covered, a found archaeological site has been effectively documented, or it is reasonably obvious that the area is devoid of archaeological concerns or issues. Shovel testing will not be carried out in areas that do not display archaeological potential. In the event that a site area is large and testing continues atypical beyond expectations, testing will be suspended and the status of the development will be discussed with the proponent.

Shovel tests will measure at least 30 cm by 30 cm and will be excavated to the parent materials or the physical limit of shovel testing. All material from the shovel tests will be screened using six millimeter wire mesh. All materials recovered from shovel testing will be collected, recorded, catalogued, and reported as outlined below.

Surface Collection

Surface collections of artifacts from sites recorded will be made in most situations; the exception will be where more than 50 artifacts are found on the surface or where artifact content of shovel tests or evaluative excavation units produces extremely high numbers of debitage. In situations where high numbers of artifacts are found, the assemblage will be sampled. In such situations, a collection will be made consisting of the formed tools and a sample of the debitage. In such situations, whereby the assemblage is deemed to be massive or uncommonly large, a specific sampling design may be developed and used following consultation with the *Archaeology Branch*.

Recording

Maps showing survey transects and areas of archaeological potential within the development areas will be provided in the final report. Shapefiles will be submitted for the AIA surveyed areas. Details on the depth of discovery, the surroundings and soil characteristics for each of the positive tests will be recorded. Mapping of the shovel test locations will be undertaken and presented in the final report as positive and negative tests. If no archaeological materials are noted, no additional information will be recorded beyond noting the test location. If materials are found, all necessary and associated provenience information, as noted above, will be recorded. The dimensions and nature of the discovered site will be described from the results of the visual examination of the site surface and shovel testing. Shovel tests will be excavated in transects radiating out from any surface

find locations or positive shovel tests, initially five meter intervals until successive absences of cultural material are recorded. In this fashion a reasonably accurate map of the site dimensions may be constructed. In the event that biogeophysical conditions exist at the site that precludes testing in any of the specified directions, shovel tests will not be carried out.

The extent of associated landforms and areas of archaeological potential, as well as the distribution of identified archaeological materials, shall be explicitly considered in defining sites containing discontinuous, buried archaeological deposits. Site boundaries may be defined on the basis of observed, natural and/or arbitrary limits. These include:

- Natural boundaries are those defined by the extent of associated landforms (e.g., terrace or ridge) or a limiting natural feature (e.g., stream), as appropriate;
- Observed boundaries are those determined on the basis of observed archaeological potential as assessed in the field and/or identified archaeological materials or features, as observed in surface exposures, or through subsurface testing.
- Arbitrary limits are those which reflect artificial and/or administrative boundaries, such as property lines or cut block boundaries, or the presence of existing impacts or developments.

As indicated above, the material from each shovel test will be screened using a 6 mm wire mesh, and the relative provenience of any materials discovered will be recorded. All materials recovered from the tests will be collected and catalogued. Fire Broken Rock (FBR) will be noted but not collected. All features, sediments and stratigraphic components will be recorded and mapped as is appropriate to the testing undertaken.

The site will be mapped using an accurate GPS or chain and compass and any readily available, easily-identified, permanent reference points. The site map will show the location of all shovel tests excavated at the site, natural (landforms, watercourses, etc) and man-made (roads, harvest block, etc.) boundaries in relation to the permanent and easily identifiable reference points.

Evaluative Tests

Evaluative testing may be undertaken if warranted. Such testing would occur in order to gather additional information or further assess the significance of existing sites. A minimum of one square meter of evaluative test excavation (in a single unit or multiple units no smaller than 50 X 50 cm) may be undertaken. Evaluative testing will not be undertaken at sites where the client has agreed to exclude the entire site area from the development area. The evaluative test locations will be selected based on the results of the positive shovel tests. The evaluative tests will be excavated in five centimeter or 10 cm arbitrary levels and all materials from the units will be screened using six mm wire mesh. Any items or features observed within the evaluative test units will be scrutinized, and if identified as possibly cultural in origin, its provenience recorded. Photographs will be taken of notable features and scaled sketch maps drawn for each level. As well, profiles of one or more of the walls will be drawn to scale if warranted. If it is deemed necessary (and this will be a judgmentally based decision based on the observations of the Field Director), floral, soil, or C-14 samples be collected. The evaluative tests will be excavated down to sterile substrate as determined by the excavator. All archaeological materials recovered from evaluative tests will be recorded, catalogued, and reported as outlined below.

CMTs

Trees with marks or features, determined to be cultural rather than natural in origin, commonly known as CMTs, will be assessed and recorded according to the categories and guidelines provided in the *Culturally Modified Trees* handbook (Archaeology Branch 2001) and Forestry Canada and B.C. Ministry of Forest's *Field*

Guide to Pests of Managed Forests in British Columbia (1989)⁵. Of particular concern will be the determination of nature of origin and age. All archaeologically significant CMTs (pre-dating 1846) will be mapped and recorded using BC Archaeological Site Inventory Forms. Increment cores will be obtained where age determinations appear necessary.

Faunal Remains

Faunal remains will be recovered, analyzed, and described similar to that of lithic artifacts. The intent will be to identify site use, seasonality, and time(s) of occupation from data recovered. All collected faunal remains will be analyzed by a qualified professional with access to a comparative collection and/or appropriate reference collection.

Fire Broken Rock

Fire Broken Rock will be noted by giving frequencies and relative sizes. Fire Broken Rock will not be collected unless pertinent to the assessment.

Features

All archaeological features, sediments, and stratigraphic components determined to be of some importance will be recorded and mapped.

Data Analysis

Site recording and the classification and analysis of all materials collected will be undertaken in accordance with the standards and accepted procedures of the Province of British Columbia. All sites found within the study area will be recorded on British Columbia Site Inventory Forms.

Analysis and classification of all artifacts and materials collected will be undertaken as follows:

All artifacts are washed with water, air-dried, sorted and then divided into classes. Lithic artifacts are sorted based on Andrefsky (1998)⁶. Bone artifacts are sorted by bone type and species type if identifiable.

Analysis of any given lithic artifact follows conventional rules of observation in lithic analysis. That is:

- The uppermost surface, which faces the observer, is dorsal, while the opposing face is the ventral surface.
- The artifacts right and left margins equate to the observers right and left (these assignments being retained when the ventral surface is uppermost (Le Blanc 1994)⁷.
- In the analysis of flakes and flake tools the original exterior surface of the flake is dorsal while the interior is the ventral face. In addition the platform end of a flake is proximal, the opposite end being distal (Le Blanc 1994).
- As for any tool produced from a flake on which modifications have obscured the original flake characteristics, the functional end of the tool is distal while the presumed hafting end is proximal (Le Blanc 1994).

⁵ Finck, Kelly E., Patricia Humphreys and Graham V. Hawkins. 1989 *Field Guide To Pests of Managed Forests in British Columbia Joint Publication Number 16*. Forestry Canada and B.C. Ministry of Forests Field Guide to Pests of Managed Forests in British Columbia. Victoria, B.C.

⁶ Andrefsky, William. 1998 *Lithics: Macroscopic Approaches to Analysis*. Cambridge.

⁷ Le Blanc, Raymond. 1994 *The Crane Site and the Palaeoeskimo Period in the Western Canadian Arctic. Archaeological Survey of Canada Mercury Series Paper 148*. Canadian Museum of Civilization. Hull, Quebec.

All temporally diagnostic artifacts will be assigned to either a known or a newly defined archaeological culture type.

Classification of the site types will follow existing site typologies as outlined in existing Culture History (see above) and will deviate only where it is dictated by the classification and analysis of the artifacts recovered.

Burials

In the event that human skeletal material is encountered, survey, testing, or further assessment will cease and the *Archaeology Branch* will be contacted. If it is apparent the remains are not archaeological or there is doubt, the RCMP will be contacted as per the Archaeology Branch's Found Human Remains Policy.

If the human skeletal material is obviously archaeological in nature then the *Archaeology Branch* will be notified immediately, and the RCMP will not be contacted.

Decisions regarding the removal and disposition of archaeological human skeletal material will be made through consultation with the *Archaeology Branch* in accordance with the *Archaeology Branch's* policy regarding found Human Remains.

Significance Assessment

Site significance will be determined using the *BC Archaeological Impact Assessment Guidelines, Appendix D* (see also Apland and Kenny 1995: 13-14, 52 and Schiffer and Gumerman 1977: 241-248).

IMPACT ASSESSMENT SCHEME

Site impact will be determined in relation to the expected effects of the proposed development. The expected effects are deemed to be both direct and indirect and will be adverse in nature. Direct impact will occur as a result of disturbance to the land surface within the specified development area. Indirect impact can be expected with increased access to the area, which results from road, trail, and staging area construction. Management decisions often lead to excluding identified archaeology sites out of the proposed development.

IMPACT MANAGEMENT RECOMMENDATIONS

Recommendations for the management of the potential impacts will be made following discussion with the proponent and the *Archaeology Branch*. Site conservation through avoidance by project redesign will be the management recommendation for most sites threatened with adverse impacts. If avoidance is not possible, additional testing, investigation, excavation, or other actions may be undertaken, discussed and/or recommended. All design changes are assumed to be part of the project and as such will be assessed prior to any reporting or recommendations.

REPORTING

Interim Reports will be submitted to the *Archaeology Branch* and project stakeholders upon conclusion of field assessments and prior to the commencement of the development. In particular, whenever archaeological sites are identified and are in conflict with proposed development. Interim Reports will be submitted to the *Archaeology Branch* in a timely fashion. All reporting will be consistent with the *Archaeology Branch 'Interim Reporting Procedures'* (1997).

A final report will be completed and submitted on or before April 30, 2014. The final report contents will follow the suggested format provided in the *British Columbia Archaeological Impact Assessment Guidelines* and in general will present:

- 1) the assessment of any located heritage resources within the development area;

- 2) the criteria used for determining archaeological potential;
- 3) an evaluation of the potential impact of the proposed development on any located heritage resources; and,
- 4) recommendations for the management of resources found to be in conflict with the proposed forestry project.

Final Report recommendations will include such mitigative options as avoidance, site monitoring and complete or partial site excavation as is appropriate or warranted for the project.

The final report will contain all information necessary and required as detailed in the *British Columbia Archaeological Impact Assessment Guidelines* and as required under the *Heritage Conservation Act* (1997 R.S.B.C., Chapter 187).

DISPOSITION OF MATERIALS COLLECTED

Repository: Royal British Columbia Museum (unless the *Archaeology Branch* indicates to us that the Minister has ordered alternate repository arrangements).

Contact Person: Grant Keddie

The RBCM has been contacted (Grant Keddie pers. com. February 5, 2012) and has indicated its willingness to curate all artifacts collected under this permit.

Analyzed dendrochronological samples are to be offered to the appropriate First Nations, and if declined will be destroyed after one year or more following expiry of the permit.

FINANCIAL SUPPORT

This project is being undertaken at the request of Tolko Industries Limited, Williams Lake, British Columbia.

The contact person is John Liscomb, Tolko Industries Ltd. at: Tel. 250-398-3600

Email: John.Liscomb@Tolko.com

Tolko Industries Limited
925 2nd Avenue North
Williams Lake, B.C.
V2G 4P7

APPLICANT

Bruce F. Ball

Altamira Consulting Ltd.
Suite 211, 10544-106 Street
Edmonton, Alberta T5H 2X6
780-423-5840 bruce@archaeology.ca

SCHEDULE OF FIELDWORK AND ANALYSIS

Work will begin after receipt of the Permit. The following schedule is based upon the permit review process and issuance taking a period of 45 days.

Project work will begin after receipt of Permit and once the ground is thawed and snow-free; this is anticipated approximately May 1, 2013. Fieldwork will be conducted after receipt of the permit and continue through to November 30, 2013, or as long as the ground within individual development areas remains thawed and snow-free. Interim reporting will be undertaken following completion of the fieldwork at the request of the proponent. Analysis and cataloguing of any found artifacts will be undertaken following field studies, in Vancouver BC,

Williams Lake BC, or Edmonton AB. A final report will be completed and submitted on or before June 30, 2014.

FIELD PERSONNEL

Project will be undertaken under the direction of Bruce F. Ball. The field work will be directed Kimberly Jankuta. Additional field directors may be added at a later date. Fieldwork supervision will be provided alternatively by Kimberly Jankuta, Jode MacKay, Margarita de Guzman, or Braedy Chapman. Field workers will be added to the project as required and when necessary.

RERCENT PERMITS HELD BY THE APPLICANT

2012

2012-0243, 2012-0241, 2012-0242, 2012-0250, 2012-0255, 2012-0235, 2012-0123, 2012-0251, 2012-0258, 2012-0144, 2012-0375

2011

2011-0138, 2011-0216, 2011-0217, 2011-0129, 2011-0137, 2011-0180, 2011-0148, 2011-0146, 2011-0218, 2011-0222, 2011-0226, 2011-0187

APPLICANT'S RESUME

Curriculum Vitae of applicant is on file with the Archaeology Branch.