

**ARCHAEOLOGICAL IMPACT  
ASSESSMENT  
Tijcho All-Weather Road**

Government of the Northwest Territories

Permit Number: 2014-009

Final Report



Prepared for:  
Department of Transportation,  
Government of the Northwest Territories  
Yellowknife, NT

Prepared by:  
Stantec Consulting Ltd.  
Calgary, AB



Project Number: 124910445

August 2014





**Stantec Consulting Ltd.**  
200, 1719 – 10th Avenue SW  
Calgary AB T3C 0K1  
Tel: (403) 245-5661  
Fax: (403) 244-4701

August 25, 2014  
File: 124910445

**Attention: Katie Rozestraten**  
Department of Transportation  
Government of Northwest Territories  
Lahm Ridge Tower 2<sup>nd</sup> Floor  
4501 – 50<sup>th</sup> Ave Box 1320  
Yellowknife, NT X1A 2L9

Dear Ms. Rozestraten,

I am pleased to submit to you this report entitled ***Archaeological Impact Assessment Tłı̨cho All-Weather Road, Permit 2014-009 Final Report***. Should you have any questions regarding this project, please do not hesitate to contact me.

Regards,

**STANTEC CONSULTING LTD.**

Andrea DeGagne, M.A.  
Senior Archaeologist  
Phone: 403-476-1068  
Email: Andrea.DeGagne@Stantec.com



## Table of Contents

<b>EXECUTIVE SUMMARY .....</b>	<b>V</b>
<b>STUDY LIMITATIONS.....</b>	<b>VII</b>
<b>PROJECT PERSONNEL .....</b>	<b>IX</b>
<b>1.0 INTRODUCTION .....</b>	<b>1</b>
1.1 Objectives.....	1
1.2 Scope of Work.....	1
<b>2.0 ENVIRONMENTAL SETTING .....</b>	<b>5</b>
2.1 Introduction .....	5
2.2 Regional Environment.....	5
2.3 Project Environment .....	5
<b>3.0 HISTORICAL RESOURCES .....</b>	<b>21</b>
3.1 Definition .....	21
3.2 Potential Impacts.....	21
3.3 Mitigative Options .....	21
3.4 Archaeological Overview .....	22
<b>4.0 METHODS.....</b>	<b>23</b>
4.1 Record Review.....	23
4.2 Ground Reconnaissance .....	23
4.3 Site Evaluation.....	23
4.4 Site Designation .....	24
4.5 Site Documentation .....	24
4.6 Site Classification .....	24
4.7 Evaluation of Heritage Values .....	24
4.8 Formulation of Recommendations .....	26
<b>5.0 RESULTS .....</b>	<b>27</b>
5.1 Record Review.....	27
5.2 Ground Reconnaissance .....	27
5.3 Identified Sites .....	27
Site KgPo-3.....	28
<b>6.0 SUMMARY AND RECOMMENDATIONS.....</b>	<b>33</b>
<b>7.0 REFERENCES CITED .....</b>	<b>35</b>

# ARCHAEOLOGICAL IMPACT ASSESSMENT

## Tijicho All-Weather Road

### LIST OF FIGURES

Figure 1-1	Location of Project .....	2
Figure 2-1	Natural Regions of the Northwest Territories .....	6
Figure 4-1	Northwest Territories Borden Blocks .....	25
Figure 5-1	Site sketch map, KgPo-3 .....	29

### LIST OF PLATES

Plate 2-1	View west along the northern portion of the Project, east of Whatì (Map 1), showing an existing upgraded road in this location.....	7
Plate 2-2	View west along the northern portion of the Project (Map 1) note existing high grade road, associated disturbance, and modern use of the area. ....	7
Plate 2-3	View north to the La Martre River crossing (Map 1, 2); the existing cut is the old winter road, which will be used for the Project right-of-way.....	9
Plate 2-4	View south to the La Martre River crossing (Map 1, 2); the proposed Project right-of-way will follow the existing disturbed alignment.....	9
Plate 2-5	James Creek (Map 3), view northwest; the potential Project right-of-way will follow the existing old winter road cut.....	10
Plate 2-6	High landform to the east of the James Creek (Map 3) crossing; note excellent exposures. ....	10
Plate 2-7	Wetland crossing (Map 3) south of James Creek, view west; right-of-way extends through foreground. ....	11
Plate 2-8	Elevated rocky terrain along old winter road/Project right-of-way on the north side of the wetland crossing south of James Creek (Map 3).....	11
Plate 2-9	View south showing the south esker (top of Map 4) running east-west along the north side of the lake; the Project right-of-way will follow existing disturbed alignment. ....	12
Plate 2-10	Low esker running along the north side of the lake; Project right-of-way crosses the esker at the bottom right (top of Map 4). ....	13
Plate 2-11	View north at the current winter road river crossing (karst lake; area tested on Map 4) the Project will be located west (left) on a land bridge. ....	13
Plate 2-12	View north at the river crossing (area tested on Map 4); the Project will extends across the land bridge (right).....	14
Plate 2-13	View north showing an example of the overall poorly drained terrain observed (e.g. Maps 4, 5 and 6).....	14
Plate 2-14	View north showing the old winter road and proposed Project crossing of the Duport River (Map 6). ....	15
Plate 2-15	View west at the Project crossing location of the Duport River (Map 6). ....	15

# ARCHAEOLOGICAL IMPACT ASSESSMENT

## Tijcho All-Weather Road

Plate 2-16	View northwest at a level bench on the north side of the Duport River (Map 6).....	16
Plate 2-17	View south at the lowest terrace on the north side of the Duport River (Map 6); note excellent surface visibility. ....	16
Plate 2-18	View south along west side of small lake (top of Map 7); the Project right-of-way may extend further west (right) than the old winter road. ....	17
Plate 2-19	View northwest along the old winter road/ Project at a southern drainage channel (southern channel on Map 8).....	19
Plate 2-20	View west near the southern extent of the road showing sandy, level terrain and logging roads (Maps 8 and 9). ....	19
Plate 2-21	Example of shovel test revealing shallow deposits on the north side of the southern unnamed drainage (southern channel on Map 8).....	20
Plate 5-1	Older looking hearth observed at KgPo-3.....	30
Plate 5-2	Recent hearth observed at KgPo-3.....	30
Plate 5-3	Recent scaffolding observed at KgPo-3.....	31
Plate 5-4	Oil drum observed at KgPo-3.....	31
Plate 5-5	Clearing observed at KgPo-3.....	32
Plate 5-6	View east across the rapids on the La Martre River near KgPo-3.....	32

## LIST OF APPENDICES

<b>APPENDIX A</b>	<b>GROUND RECONNAISSANCE MAPS.....</b>	<b>A.1</b>
-------------------	--	------------



## **Executive Summary**

At the request of the Department of Transportation, Government of the Northwest Territories, Stantec Consulting Ltd. conducted an Archaeological Impact Assessment (AIA) for the proposed Tłı̄cho all-weather road (Tłı̄cho Road; the Project) between Highway 3 and the settlement of Whatı̄. The Project extends from Highway 3 (at approximately km 196) to Whatı̄ generally along an old winter road (Old Airport Road).

The fieldwork was completed between June 25 and 28, 2014 by a crew of two archaeologists under the direction of Andrea DeGagne, M.A. The studies were conducted in conjunction with other discipline studies, and a representative of the Department of Transportation was also on site to participate in the studies. The AIA was conducted under Northwest Territories Class 2 Archaeologist Permit 14-009 and will support the Project Description Report in application for a Land Use Permit and Water Licence with the Wek'èezhı̄ Land and Water Board.

Prior to the AIA field studies, target areas that were predicted to have high potential to contain archaeological sites were selected, including the Duport River and a tributary, an esker and drainage crossing at approximately 63 degrees latitude, the La Martre River, and various watercourses and lake north of the La Martre River. During the AIA field studies, the entire route was assessed by helicopter overflight to confirm target areas with archaeological potential, and to assess the degree of existing disturbance. Ground truthing of areas with high archaeological potential was conducted through visual assessment and shovel testing. Overall the degree of existing disturbance along the right-of-way was relatively high. No archaeological sites were identified. One indigenous historic site, previously recorded in 1986, was revisited; the site will not be impacted by the Project.

Any additional project components (eg. borrow sources) or changes to the Project (re-routes) will be assessed through a desktop review to determine if additional field studies are required.



## **Study Limitations**

This document was prepared by Stantec Consulting Ltd. at the request of the proponent relative to their obligations under the *Archaeological Sites Act S.N.W.T. 2014, c.9*. The material in it reflects Stantec's best judgment in light of the information available at the time of preparation. Any use that a third party makes of this report, or any reliance on or decisions made based on it, are the responsibility of such third parties. Stantec is not responsible for any unauthorized use or modification of this document.

The findings of this study pertain only to the Project as outlined within this report. Any changes or additions to the Project must be reviewed in terms of archaeological concerns and the potential need for further assessment.



## **Project Personnel**

Permit Holder

Andrea DeGagne, M.A.

Archaeologist

Dominica Lesniewicz, B.A.

GIS Analyst

Keith Wilford, B.A.

Report Author

Andrea DeGagne, M.A.

Jennifer Tischer, M.A.



# ARCHAEOLOGICAL IMPACT ASSESSMENT

## Tłjcho All-Weather Road

Introduction  
August 2014

## 1.0 Introduction

At the request of the Department of Transportation, Government of the Northwest Territories, Stantec Consulting Ltd. conducted an Archaeological Impact Assessment (AIA) for the proposed Tłjcho all-weather road (Tłjcho Road; the Project) between Highway 3 and the settlement of Whatì (Figure 1-1). The Project extends from Highway 3 (at approximately km 196) to Whatì generally along an old winter road (Old Airport Road; Appendix A). The northern extent of the Project lies along an existing high grade gravel road running east from Whatì. This existing gravel road extends to the La Martre Falls; however, west of the falls, the proposed Project will extend south along the winter road right-of-way. Although the route south to Highway 3 generally follows the existing alignment, the new proposed route will deviate from the alignment in some areas, including possible new crossing locations of the La Martre River and unnamed tributaries. The new proposed crossings and routing deviations were assessed during the archaeological study.

The fieldwork was completed between June 25 and 28, 2014 by a crew of two archaeologists under the direction of Andrea DeGagne, M.A. The studies were conducted in conjunction with other discipline studies, and a representative of the Department of Transportation was also on site to participate in the studies. The AIA was conducted under Northwest Territories Class 2 Archaeologist Permit 14-009 and will support the Project Description Report in application for a Land Use Permit and Water Licence with the Wek'èezhìi Land and Water Board.

### 1.1 Objectives

The primary objectives of an AIA are to:

1. identify archaeological sites within the Project footprint
2. assess the nature of Project impacts on identified sites relative to site heritage value and to potential impacts
3. formulate recommendations for further site management

### 1.2 Scope of Work

The scope of work for an AIA consists of the following components:

1. **Record Review** - to identify previously recorded sites that could be affected by the Project and to determine the nature of the database in the area.
2. **Ground Reconnaissance** - to relocate, in the field, archaeological sites that may have been previously recorded, as well as to identify and record any new sites within the Project footprint.
3. **Site Evaluation** - to evaluate the nature of the existing resource database, the quantity and quality of observable remains (e.g. site condition, content, uniqueness, and complexity) and the potential of the site to contribute to the regional database.

# ARCHAEOLOGICAL IMPACT ASSESSMENT Tijcho All-Weather Road

Introduction  
August 2014

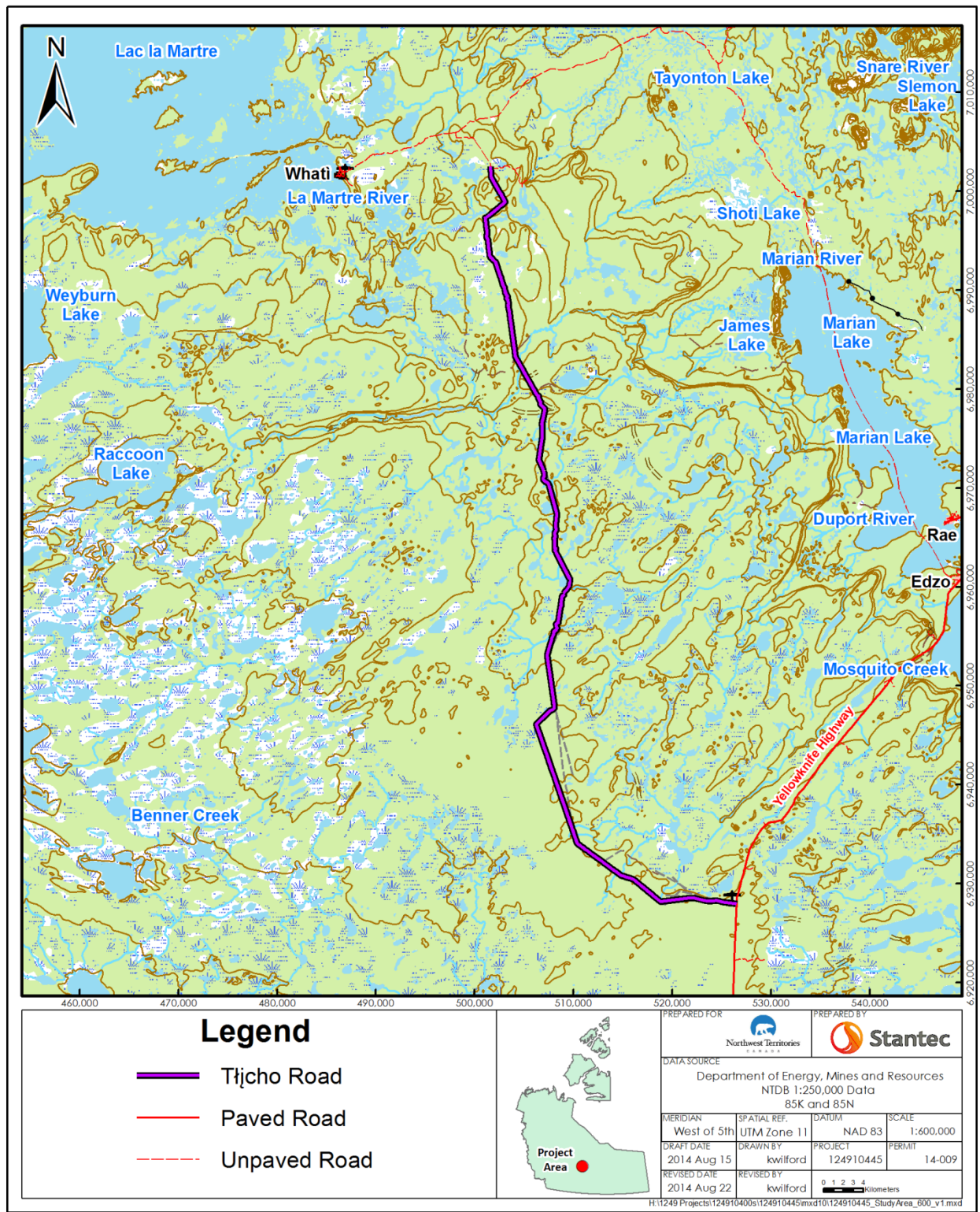


Figure 1-1 Location of Project

# ARCHAEOLOGICAL IMPACT ASSESSMENT

## Tijcho All-Weather Road

Introduction  
August 2014

4. **Impact Assessment** - to assess the potential for impacts to the identified archaeological sites, as well as the local and regional database, and to recommend site specific mitigative measures commensurate with the assigned value of the site.



# ARCHAEOLOGICAL IMPACT ASSESSMENT

## Tijcho All-Weather Road

Environmental Setting  
August 2014

## 2.0 Environmental Setting

### 2.1 Introduction

Environment has always provided the parameters within which human cultures may develop by providing both opportunities and limitations. As a result, elements of the regional environment are important considerations in the understanding of cultural development, as they influenced not only the types of activities that could be conducted, but the ways in which they could be accomplished. In the archaeological record, this pattern is observed in the type and location of archaeological sites found in specific environments. In western Canada, archaeological sites are found associated with a specific set of landforms (including valley edges, river margins, lakeshores, ridges, knolls and eskers) which would direct travel, bias routes of communication and enhance or restrict resource procurement and occupation. Due to this close relationship of human settlement and the environment, a brief overview of the regional and local environments is presented.

### 2.2 Regional Environment

The Project is located within Taiga Plains Ecological Region and within the Great Slave Lake Plain HB ecoregion (south portion of road) and the Lac Grandin Plain LS ecoregion (north part of road) (Figure 2-1). The Great Slave Lake Plain HB ecoregion is characterized by karst topography, coarse beach ridges and extensive jackpine and white spruce forests. Mixedwood forests are more common to the south, and permafrost features occur along the western boundary of the ecoregion. There are no major rivers through this ecoregion, but wetlands are extensive and include karst lakes and ponds and fens [Ecosystem Classification Group 2007 (rev. 2009)].

The Lac Grandin Plain LS ecoregion is characterized by calcareous bedrock overlain by hummocky and ridged till; stands of mixed black and white spruce are the dominant vegetation, with white spruce and mixedwood forests more common in the south. Lac la Martre is the largest lake in the ecoregion, although numerous other named lakes as well as smaller karst lakes are also present. Two major rivers are present, including the La Martre River and the Grandin River [Ecosystem Classification Group 2007 (rev. 2009)].

### 2.3 Project Environment

The Project extends from Highway 3 to Whati, and largely follows existing disturbance along a winter road, although some deviation from this existing disturbance may be needed. The northern portion of the Project largely lies in existing disturbance. At the north end of the right-of-way, an existing upgraded road bed will be used for the Project (Plates 2-1, 2-2; Appendix A Map 1). The road is high grade and exhibits significant associated disturbance adjacent to the road. South of this, the terrain is generally dry, rocky uplands with an existing road bed and abundant evidence of modern use of the area for hunting and camping.

# ARCHAEOLOGICAL IMPACT ASSESSMENT

## Tijcho All-Weather Road

Environmental Setting  
August 2014

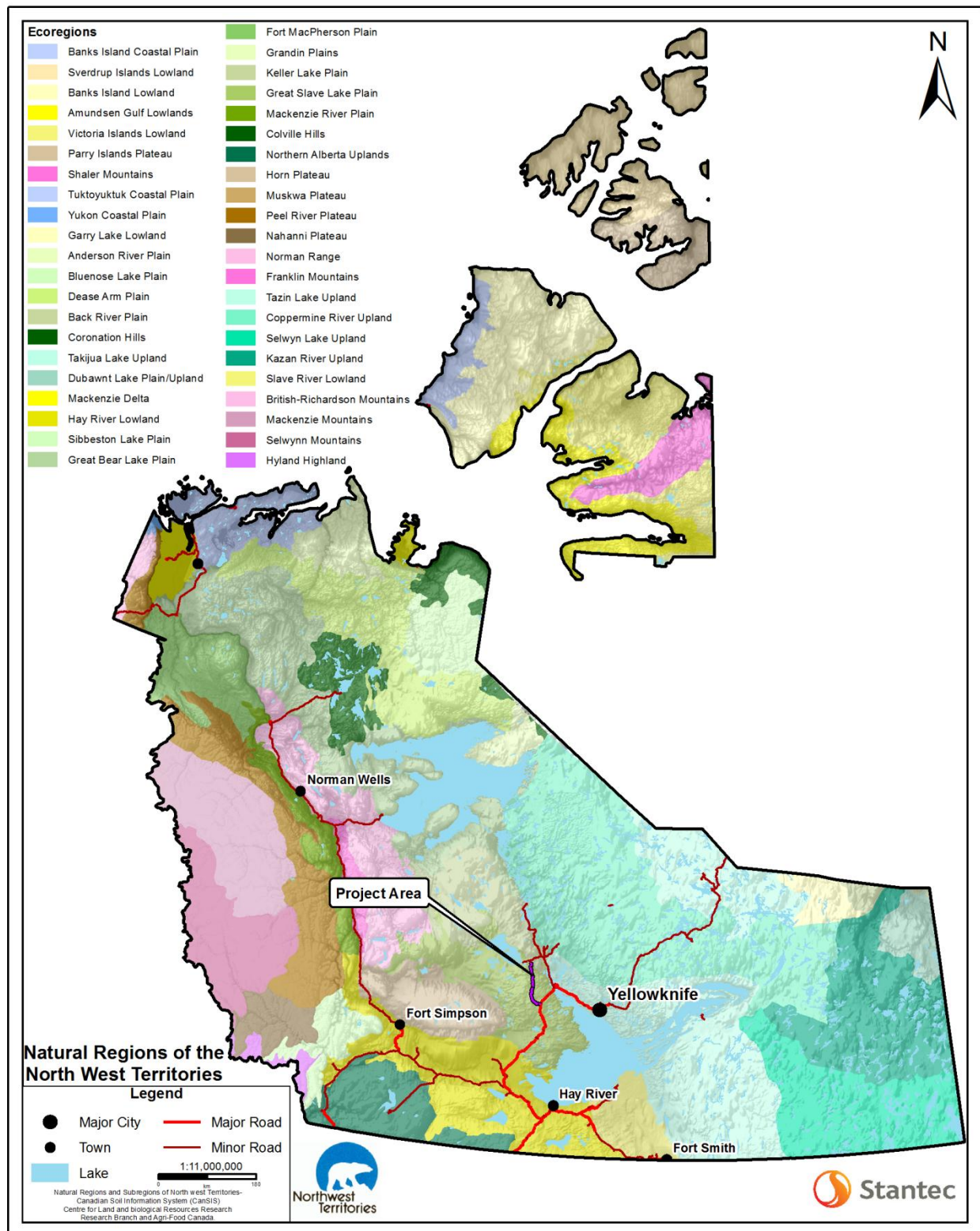


Figure 2-1 Natural Regions of the Northwest Territories

# ARCHAEOLOGICAL IMPACT ASSESSMENT

## Tijcho All-Weather Road

Environmental Setting  
August 2014



**Plate 2-1** View west along the northern portion of the Project, east of Whatì (Map 1), showing an existing upgraded road in this location.



**Plate 2-2** View west along the northern portion of the Project (Map 1) note existing high grade road, associated disturbance, and modern use of the area.

## ARCHAEOLOGICAL IMPACT ASSESSMENT

### Tłjcho All-Weather Road

Environmental Setting  
August 2014

The largest river crossing is at the La Martre River (Plates 2-3, 2-4; Appendix A Maps 1 and 2). The currently proposed La Martre River crossing will generally follow the existing disturbed alignment to the river. Prior to fieldwork, the proposed Tłjcho Road crossing was to be located further to the west (past a Water Survey of Canada hydrometric station) at another narrow area of the river that is not characterized by the same extensive rapids. Since hydrologic fieldwork has been completed, a back channel has been identified at the proposed crossing, making it unsuitable for bridge construction; therefore the proposed road will likely cross at the original narrows. If this routing is finalized, additional archaeological investigation may be required at this crossing.

To the south of the La Martre River, the Project will cross James Creek (Plates 2-5, 2-6; Appendix A Map 3), following the old winter road route. The south side of the creek crossing is relatively low, with better archaeological potential noted on the north side of the creek. Elevated landforms with erosional exposures are present on the north side, although the best archaeological potential is to the east of the crossing.

To the south of James Creek, a well-defined drainage is present (Plated 2-7, 2-8; Appendix A Map 3). The drainage is wide, but high terrain is crossed on both sides of the drainage; the north side exhibits an elevated ridge that is dominated by rocky terrain and boulders. The south side also exhibits rocky terrain, with the Project right-of-way largely running across a side slope on the elevated terrain.

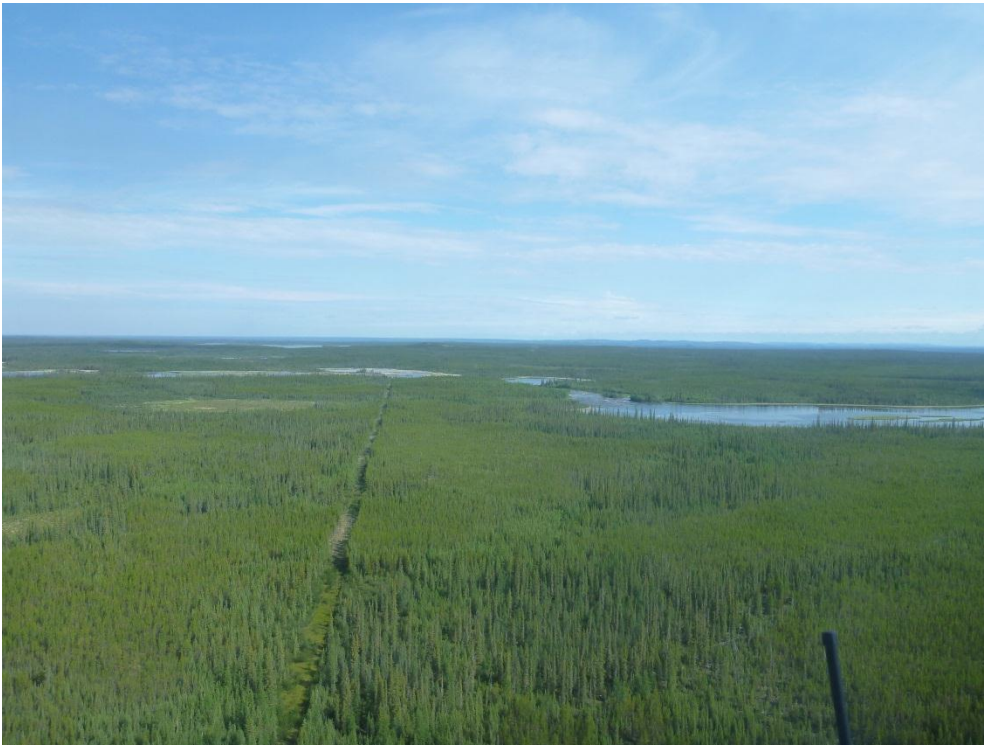
South of this, the proposed Project right-of-way crosses two eskers (Appendix A Maps 3 and 4; Plates 2-9, 2-10). The eskers are vegetated with spruce forest and exhibit steep slopes, but do not represent well-defined, high potential landforms. Approximately 1 km south of the eskers, a drainage crossing (area shovel tested on Map 4; Plates 2-11, 2-12) exhibits deeply incised deposits along the existing winter road right-of-way, allowing for significant inspection of exposures. The old winter road crosses a karst lake associated with the drainage; however, the proposed Project right-of-way will be located approximately 200 m to the west to take advantage of a land bridge. Small lakes and poorly drained terrain are overall very common through this portion of the Project (Plate 2-13; Appendix A Maps 4, 5 and 6). However, the terrain around these lakes is generally poorly drained with limited relief and thus of low archaeological potential.

The Duport River (Appendix A Map 6; Plates 2-14 to 2-17) exhibits poorly drained terrain at the crossing itself, but elevated terrain is present on both sides of the crossing, and a series of level benches are present on the north side of the river, providing excellent exposures and good archaeological potential. Numerous small lakes and wetlands are present south of the Duport River; however, major lakes and wetlands will be avoided by the Project (eg. Plate 2-18; Appendix A Maps 6 and 7).

# ARCHAEOLOGICAL IMPACT ASSESSMENT

## Tijcho All-Weather Road

Environmental Setting  
August 2014



**Plate 2-3** View north to the La Martre River crossing (Map 1, 2); the existing cut is the old winter road, which will be used for the Project right-of-way.



**Plate 2-4** View south to the La Martre River crossing (Map 1, 2); the proposed Project right-of-way will follow the existing disturbed alignment.

# ARCHAEOLOGICAL IMPACT ASSESSMENT

## Tijcho All-Weather Road

Environmental Setting  
August 2014



**Plate 2-5** James Creek (Map 3), view northwest; the potential Project right-of-way will follow the existing old winter road cut.



**Plate 2-6** High landform to the east of the James Creek (Map 3) crossing; note excellent exposures.

# ARCHAEOLOGICAL IMPACT ASSESSMENT

## Tijcho All-Weather Road

Environmental Setting  
August 2014



**Plate 2-7** Wetland crossing (Map 3) south of James Creek, view west; right-of-way extends through foreground.



**Plate 2-8** Elevated rocky terrain along old winter road/Project right-of-way on the north side of the wetland crossing south of James Creek (Map 3).

# ARCHAEOLOGICAL IMPACT ASSESSMENT

## Tijcho All-Weather Road

Environmental Setting  
August 2014



**Plate 2-9** View south showing the south esker (top of Map 4) running east-west along the north side of the lake; the Project right-of-way will follow existing disturbed alignment.

# ARCHAEOLOGICAL IMPACT ASSESSMENT

## Tijcho All-Weather Road

Environmental Setting  
August 2014



**Plate 2-10** Low esker running along the north side of the lake; Project right-of-way crosses the esker at the bottom right (top of Map 4).



**Plate 2-11** View north at the current winter road river crossing (karst lake; area tested on Map 4) the Project will be located west (left) on a land bridge.

# ARCHAEOLOGICAL IMPACT ASSESSMENT

## Tijcho All-Weather Road

Environmental Setting  
August 2014



**Plate 2-12** View north at the river crossing (area tested on Map 4); the Project will extend across the land bridge (right).



**Plate 2-13** View north showing an example of the overall poorly drained terrain observed (e.g. Maps 4, 5 and 6).

# ARCHAEOLOGICAL IMPACT ASSESSMENT

## Tijcho All-Weather Road

Environmental Setting  
August 2014



**Plate 2-14** View north showing the old winter road and proposed Project crossing of the Duport River (Map 6).



**Plate 2-15** View west at the Project crossing location of the Duport River (Map 6).

# ARCHAEOLOGICAL IMPACT ASSESSMENT

## Tijcho All-Weather Road

Environmental Setting  
August 2014



**Plate 2-16** View northwest at a level bench on the north side of the Duport River (Map 6).



**Plate 2-17** View south at the lowest terrace on the north side of the Duport River (Map 6); note excellent surface visibility.

# ARCHAEOLOGICAL IMPACT ASSESSMENT

## Tijcho All-Weather Road

Environmental Setting  
August 2014



**Plate 2-18** View south along west side of small lake (top of Map 7); the Project right-of-way may extend further west (right) than the old winter road.

## **ARCHAEOLOGICAL IMPACT ASSESSMENT**

### **Tijcho All-Weather Road**

Environmental Setting  
August 2014

The southern portion of the Project area is characterized by land that is relatively level and featureless. Several drainages are crossed by the Project along the southern part of the Project, including one drainage inspected near the south end of the road (Appendix A Map 8; Plate 2-19). This drainage was dry during the current field visit (due to the low water table in 2014); the north side of the drainage exhibited some potential for the identification of archaeological sites.

Logging activity has impacted much of the terrain in this area; overall, the subsurface deposits are sandy and shallow along the southern portion of the Project (Appendix A Maps 8 and 9; Plates 2-20, 2-21).

# ARCHAEOLOGICAL IMPACT ASSESSMENT

## Tijcho All-Weather Road

Environmental Setting  
August 2014



**Plate 2-19** View northwest along the old winter road/ Project at a southern drainage channel (southern channel on Map 8).



**Plate 2-20** View west near the southern extent of the road showing sandy, level terrain and logging roads (Maps 8 and 9).

# ARCHAEOLOGICAL IMPACT ASSESSMENT

## Tijcho All-Weather Road

Environmental Setting  
August 2014



**Plate 2-21** Example of shovel test revealing shallow deposits on the north side of the southern unnamed drainage (southern channel on Map 8).

# ARCHAEOLOGICAL IMPACT ASSESSMENT

## Tijicho All-Weather Road

Historical Resources  
August 2014

### 3.0 Historical Resources

#### 3.1 Definition

In the Northwest Territories, archaeological resources are protected as per the Archaeological Sites Regulations under the *Archaeological Sites Act S.N.W.T. 2014*, c.9. Archaeological sites can include precontact, historic, and palaeontological sites and their contents. Certain types of Aboriginal traditional use sites may also be considered to be archaeological resources.

Precontact archaeological sites include remains (e.g., stone tools, butchered bones, fire-broken rock and features such as hearths) resulting from the traditional occupation of the Northwest Territories by Aboriginal people before contact with European traders. Historic archaeological sites can be Aboriginal and non-Aboriginal, and date from the time of European contact until approximately 1960. Historic period sites can include structures (e.g. cabins, forts, industrial sites), artifacts (e.g. industrial and folk-manufactured items made of metal, glass, ceramic, stone and other materials) or features (e.g. trails, foundations, depressions and campsites). Traditional use sites are identified in consultation with members of Aboriginal communities and may include camping or hunting locales, ceremonial gathering areas, or areas related to spiritual matters. Palaeontological sites are areas where fossils of ancient animals or plants have been preserved.

#### 3.2 Potential Impacts

Due to the fact that precontact archaeological, historical, palaeontological and traditional use sites represent discrete episodes of past activities, they are non-renewable and, therefore, are susceptible to alteration or removal by development. Precontact and historical archaeological resources are comprised of residues of past cultures. Although the cultural entities responsible for deposition of the archaeological material are unavailable for observation, the preserved context and associations in which the remains functioned can reveal many clues about past human behaviour, adaptations and relationships to the natural world. The key to the interpretation of these resources, however, is in their pattern of cultural deposition, which is extremely fragile, ephemeral and the product of unique processes and conditions of preservation. Consequently, once they are disturbed, they cannot be replaced, recreated or restored. Due to the nature of their origin and preservation, archaeological resources are finite in quantity. As a result, archaeological resources are increasingly susceptible to destruction and depletion through natural and cultural disturbances.

#### 3.3 Mitigative Options

Adverse primary impacts to historical resource sites, identified prior to the construction stage of development, can be significantly reduced or eliminated by avoidance or adequate study. Site avoidance can be achieved through alteration of the Project footprint. If avoidance is not feasible, adequate study of archaeological sites generally involves scientific investigations that are designed to systematically explore and reconstruct the activities that are represented at the site. These investigations may involve the systematic collection of surface site materials, detailed

# ARCHAEOLOGICAL IMPACT ASSESSMENT

## Tijicho All-Weather Road

Historical Resources  
August 2014

mapping, photographic documentation of sites, or the excavation of buried sites. In cases where the heritage value of an archaeological site is considered to be low, photographic documentation, recording, and collection of surface specimens may represent sufficient mitigative measures. In cases where the heritage value of an historical resource site is identified as high, however, more detailed investigative measures, such as controlled excavation, may be necessary.

### 3.4 Archaeological Overview

The earliest evidence for human occupation in the region dates from about 11,000 years before present (B.P.) The earliest evidence comes from what is now interior Alaska-Yukon, including the well known Old Crow and Bluefish Cave sites in the Yukon. Evidence for human occupation prior to this period may have been obliterated or obscured by the major glacial advances and the advance-retreat cycles of the two major ice masses that occupied the region.

The Early Precontact Period (11,500 to 7,500 years B.P.) is represented by the occurrence of large fluted lanceolate points belonging to the Clovis Complex. These points, which would have been used on a heavy stabbing spear, are interpreted as representing the activities of generalized hunters. As the lakes drained during the post-glacial period, the former lakebeds became available to open tundra-like pioneering plant communities, which supported now extinct megafaunal species such as mammoth, horse and giant bison (Churcher and Wilson 1979; Kooyman et al. 2001). These animals provided the basis for the subsistence of early people.

Following the Clovis Complex, between 10,500 and 9,500 years B.P., fluctuation in subsistence lifestyles is apparent in the archaeological record. A shift from the generalized hunting characteristic of the Clovis period to more specialized hunting is evident in the southern forests and is represented by the presence of Agate Basin occupations. Further north, this culture moved into the barrenlands to become the Agate Basin Northern Plano. A cooling trend around 4,000 years B.P. resulted in the treeline receding to the south, and with it the Indian occupants. However, at the same time, around 3,500 years B.P., the pre-Dorset Inuit populations also expanded south, including some evidence of occupation of sites along the Mackenzie Valley (Clark 1991).

Subsequent to this, the palaeo-eskimos retreated further north and the Indians returned to the region; this is the appearance of the Taltheilei people. The Taltheilei tradition was originally defined for the Barrenlands of the MacKenzie District and extends from 2,650 years B.P. to historic times (Gordon 1975). The Taltheilei tradition may represent the material culture remains of caribou hunters who followed the herds in the Barrenlands in the spring and summer, and wintered in the forests (Gordon 1996). The Taltheilei tradition may also represent Athapaskan speakers ancestral to the historic Dene occupants of the region.

# ARCHAEOLOGICAL IMPACT ASSESSMENT

## Tijcho All-Weather Road

Methods  
August 2014

### 4.0 Methods

The archaeological assessment was initiated with a desktop review in order to scope the planned field studies. Field studies were subsequently conducted using both the results of the desktop studies as well as in-field observations.

#### 4.1 Record Review

The record review consisted of obtaining a site file search of known archaeological sites on record with the Prince of Wales Northern Heritage Centre; a data licence was submitted in order to acquire this site data. Relevant maps (topographic) and air photos were reviewed to assess the archaeological potential of the Project area. Target areas with high archaeological potential were selected based on the results of the desktop review.

#### 4.2 Ground Reconnaissance

During the AIA field studies, the entire route was assessed by helicopter overflight to confirm target areas with archaeological potential, and to assess the degree of existing disturbance. Ground truthing of areas with high archaeological potential was conducted through visual assessment (inspection of the ground surface) and shovel testing. All fortuitous exposures such as cut banks, deflated areas, vehicle track surfaces, and areas of previous construction disturbance were examined for evidence of cultural material. Visual inspection of these areas was considered to be adequate for assessing the presence of near surface cultural remains. Excavation of shovel tests (approximately 40 cm x 40 cm) was conducted in areas of limited exposure or in areas deemed to have potential for buried cultural deposits. The depth of each shovel test varied according to local soil conditions.

#### 4.3 Site Evaluation

The nature of evaluation completed at an identified site is partially contingent on the type of the site identified. At superficially exposed sites, a subsurface testing program, consisting of a minimum of four shovel tests (each approximately 40 cm x 40 cm in size) is implemented to determine whether undisturbed cultural deposits occur. Cultural specimens are collected from the surface if they are temporally diagnostic, finished tools, or are representative of the observed cultural materials. All artifacts encountered in shovel tests are collected. The locations of shovel tests are mapped relative to the site and site features.

Sites with remains in buried contexts generally require a more intensive evaluation program in order to define site parameters. Generally, a larger number of shovel tests are excavated to obtain the required data. In addition, deep testing may also be implemented to adequately evaluate site potential. The specific program is contingent on the perceived nature of the site.

# ARCHAEOLOGICAL IMPACT ASSESSMENT

## Tijicho All-Weather Road

Methods  
August 2014

### 4.4 Site Designation

Archaeological sites are referred to by a Borden Number which consists of a four letter symbol accompanied by a number (i.e., LdNs-11). This uniform site designation scheme for archaeological sites in Canada was developed by archaeologist Charles Borden (1954). Within this system and north of latitude 62° (Figure 4-1), the upper case letters represent major blocks 2° by 4° in size (i.e., L = 64° to 66° latitude; N = 104° to 112° longitude) and the lower case letters denote 10' and 20' units within the major block (i.e. d = 30' to 40' latitude; s = 0' to 20' longitude). The numbers are assigned sequentially by the Archaeological Survey of Canada, Canadian Museum of Civilization and refer to specific sites within each unit.

### 4.5 Site Documentation

Hand-held GPS units are used to record the location of sites encountered during ground reconnaissance; site locales are recorded using the Universal Transverse Mercator (UTM) Grid Reference (NAD 83). The relationship of each site to the proposed Project is denoted. The condition of each site and site characteristics are documented and include apparent site integrity, estimated site dimensions, content, setting, and complexity. Each site is photographed and documented relative to the Project in a sketch map prepared to illustrate the site setting, shovel test locations, and the relationship to the Project.

### 4.6 Site Classification

Each site identified is classified on the basis of its primary physical attributes and/or predicted primary function. Precontact and historic site types include isolated finds, artifact scatters, campsites, quarries and stone features. Stone feature sites are stone alignments or configurations resulting from past human activity. Depending on the configuration of these features, function may be ascribed to these sites, for example campsites, drive lanes or caches.

### 4.7 Evaluation of Heritage Values

Site values are determined on the basis of the results of the field program as well as the regional archaeological context and indigenous perspective. Generally, relative site value is based on the data obtained to date. Factors considered include site type, size, and complexity, presence or absence of subsurface materials and features, and number of artifacts observed. The scientific value of a specific site is deemed to be low if substantial disturbance or exposure has occurred or at sites with single artifacts or single features of limited antiquity. Sites at which large quantities of artifacts or diagnostic artifacts are present, or at which cultural stratification, or a large number of stone features, occur (particularly if they contain rare or unusual features), are classified as having high scientific value.

In addition to these tangible variables, each site is viewed from the perspective of the regional data base. Public, including First Nation and Inuit, perspective of site value is also an important criterion in evaluating identified sites.

# ARCHAEOLOGICAL IMPACT ASSESSMENT Tijcho All-Weather Road

Methods  
August 2014

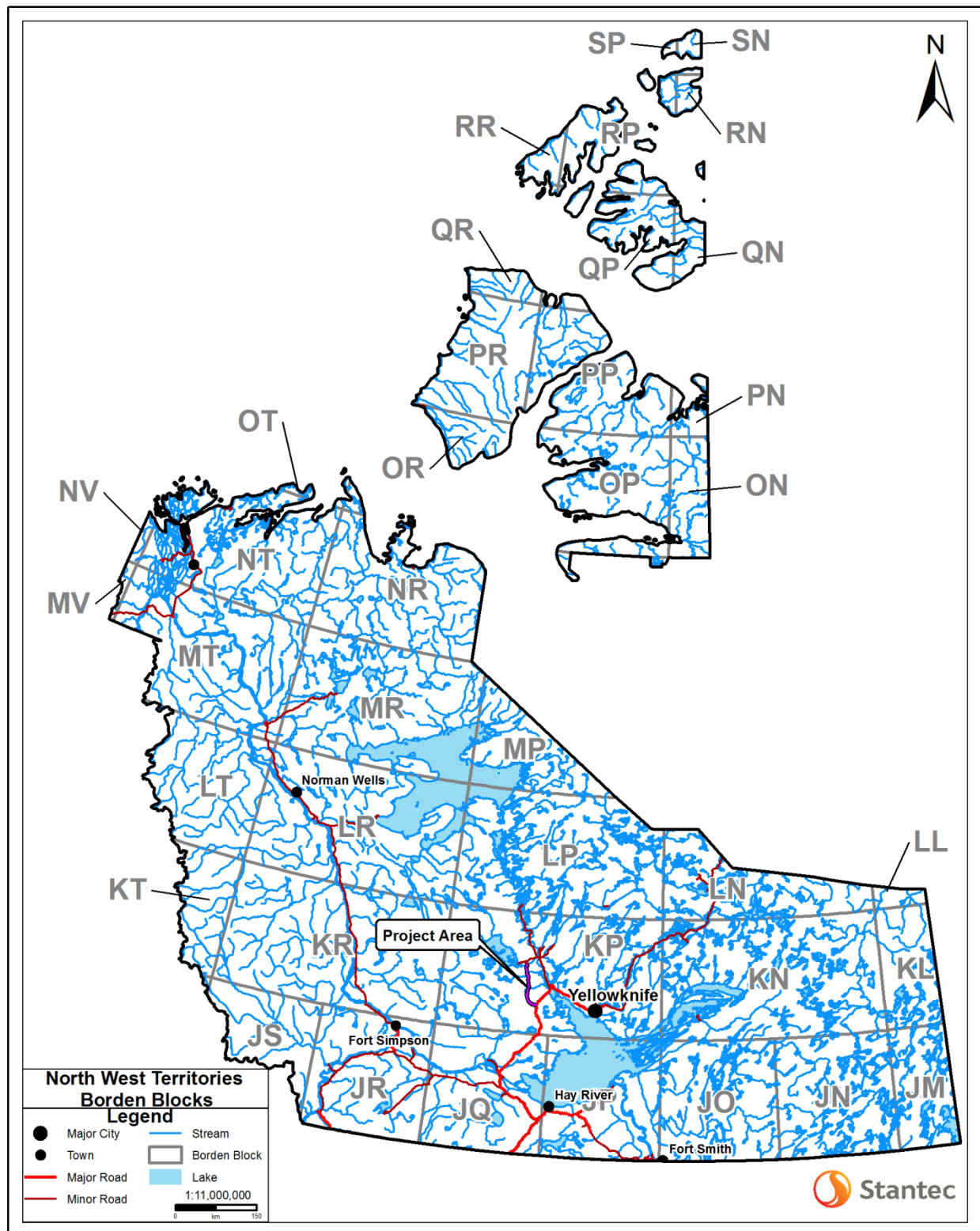


Figure 4-1 Northwest Territories Borden Blocks

# ARCHAEOLOGICAL IMPACT ASSESSMENT

## Tijcho All-Weather Road

Methods  
August 2014

### 4.8 Formulation of Recommendations

Site specific recommendations are formulated primarily on the basis of the level of available information, data collected and perceived site value within the context of the predicted impact. Because historical resources are non-renewable and damage to their contents and contexts is irreversible, avoidance is recommended as the preferred option at sites of moderate to high archaeological value. Sites of limited heritage value (for example, isolated finds) are generally recommended for no further study and are not considered for avoidance or additional study, as the data collected at the AIA stage effectively reduce or eliminate impact from the proposed development. Further study is recommended at sites with moderate to high heritage value that cannot be avoided and at which the data collected during the AIA are considered to be insufficient to mitigate effects from the proposed development.

In general, recommendations for further work are made if sites are to be impacted by the Project and if the site is of moderate to high heritage value. Adequate additional study generally involves scientific investigations that are designed to systematically explore and reconstruct the activities that were carried out at the sites. Investigations may involve excavation of buried sites, controlled collection of surface sites, detailed mapping and photographic documentation. At sites containing surficial features (for example, stone features or historic structures) that may be impacted by the proposed development, individual feature and site mapping are consistently recommended, regardless of whether or not additional subsurface mitigation is recommended. These mitigative measures are recommended as a means of providing a permanent record of the individual features.

# ARCHAEOLOGICAL IMPACT ASSESSMENT

## Tijicho All-Weather Road

Results  
August 2014

### 5.0 Results

#### 5.1 Record Review

The Archaeological Overview conducted for the Project indicated that just one previously recorded archaeological site is located within proximity of the proposed right-of-way. Archaeological site KgPo-3 is an indigenous historic site that was recorded in 1986 as a portage/campsite. A hearth and path were observed when the site was recorded. The site is located on the south side of the La Martre River within proximity of the Project, and was revisited during the current study.

A pre-field review of topographic maps resulted in the identification of four main areas that were perceived to contain landforms or terrain features with moderate to high potential to contain archaeological sites. These include:

- the Duport River and an associated tributary (Map 6)
- an esker and drainage crossing at approximately 63 degrees latitude (Map 3)
- the La Martre River crossing and associated landforms (Maps 1 and 2)
- various watercourses and lakes north of the La Martre River (Map 1)

These target areas were assessed during the helicopter overflight and were revised. Target areas that were assessed are described in the ground reconnaissance section below.

#### 5.2 Ground Reconnaissance

At the start of AIA field studies, the entire right-of-way was assessed through a helicopter overflight. Target areas were refined during this overflight, based on disturbance factors and observed archaeological potential, and the revised target area landforms and terrain features were then ground truthed. During the ground truthing of areas deemed to have moderate to high potential to contain archaeological sites, surficial inspection was conducted at a number of areas of varying size along the right-of-way; overall, the exposures available were excellent due to the near surface disturbance caused by use of the old winter road. Inspection of exposures was determined to be sufficient for identifying archaeological materials along most of the route. However, in areas that were determined to have limited disturbance and the potential for buried archaeological sites to be present, shovel tests were excavated. A total of 37 shovel tests were excavated at these locations, as illustrated in Appendix A.

All shovel tests excavated during the AIA were negative for cultural materials, and no archaeological materials were observed in the exposures examined along the proposed route.

#### 5.3 Identified Sites

No precontact archaeological sites or historic period sites were newly recorded during the current study. One historic indigenous site, KgPo-3, was revisited during the study.

# ARCHAEOLOGICAL IMPACT ASSESSMENT

## Tijcho All-Weather Road

Results  
August 2014

### Site KgPo-3

*(Figure 5-1; Plates 5-1 to 5-6; Appendix A)*

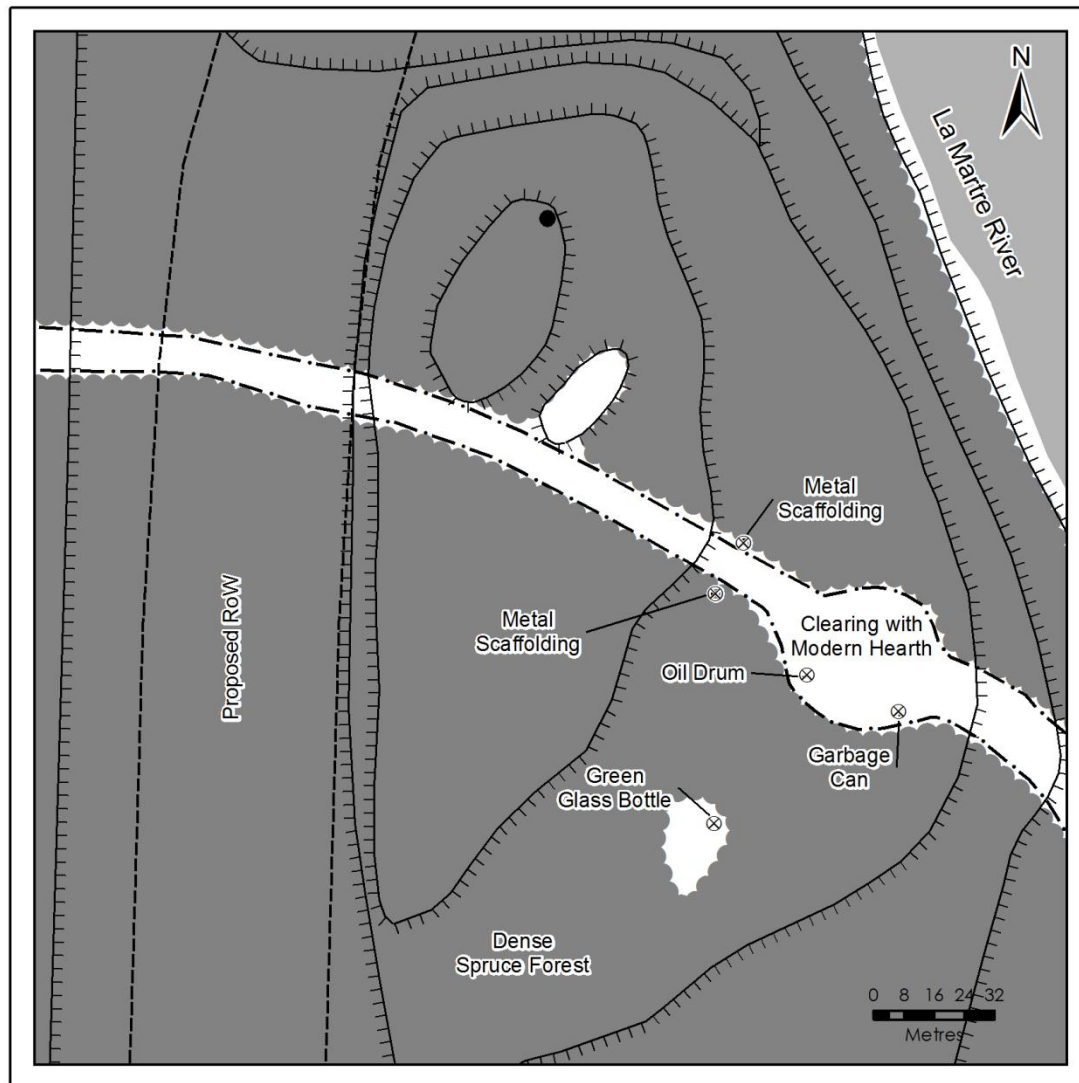
Site KgPo-3 is an indigenous historic site that was identified on the south side of the La Martre River to the east of the Old Airport Road. When identified in 1986, the site was called a portage/campsite (Fourth Portage), and features identified consisted of a path and hearth.

**Evaluation.** During the current study, the site location was revisited. Evidence of recent use was observed at the site, including several clearings, a survey marker, metal scaffolding, an oil drum and modern hearth, and various pieces of contemporary debris (green glass bottle). Two shovel tests were excavated within the proposed right-of-way adjacent to the location of site KgOp-3. No cultural materials were observed. Given the relatively recent nature of the materials identified, this site is perceived to have low heritage value, although should the road routing change and the site is proposed for impact, community consultation should be conducted to ensure that the community does not have concerns with the impact of this location.

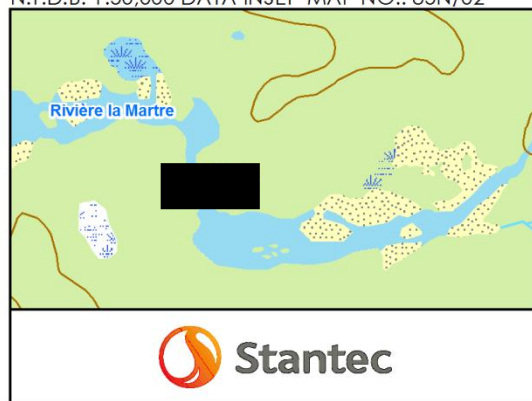
**Recommendations.** As the site will not be impacted by the Project, no further study is recommended relative to the Project.

# ARCHAEOLOGICAL IMPACT ASSESSMENT Tijcho All-Weather Road

Results  
August 2014



N.T.D.B. 1:50,000 DATA INSET MAP NO.: 85N/02



## LEGEND

- ⊗ Historic Surface Find
- Survey Marker
- ||||| Contour
- Proposed RoW Boundary
- River
- Vegetation

Figure 5-1 Site sketch map, KgPo-3

# ARCHAEOLOGICAL IMPACT ASSESSMENT

## Tijcho All-Weather Road

Results  
August 2014



**Plate 5-1** Older looking hearth observed at KgPo-3



**Plate 5-2** Recent hearth observed at KgPo-3

# ARCHAEOLOGICAL IMPACT ASSESSMENT

## Tijcho All-Weather Road

Results  
August 2014



**Plate 5-3** Recent scaffolding observed at KgPo-3



**Plate 5-4** Oil drum observed at KgPo-3

# ARCHAEOLOGICAL IMPACT ASSESSMENT

## Tijcho All-Weather Road

Results  
August 2014



**Plate 5-5** Clearing observed at KgPo-3



**Plate 5-6** View east across the rapids on the La Martre River near KgPo-3

# ARCHAEOLOGICAL IMPACT ASSESSMENT

## Tłjcho All-Weather Road

Summary and Recommendations  
August 2014

### 6.0 Summary and Recommendations

At the request of the Department of Transportation, Government of the Northwest Territories, Stantec Consulting Ltd. conducted an AIA for the proposed Tłjcho Road between Highway 3 and the settlement of Whatì.

During the AIA field studies, the entire route was assessed by helicopter overflight to confirm target areas with archaeological potential, and to assess the degree of existing disturbance. Ground truthing of areas with high archaeological potential was conducted through visual assessment and shovel testing. Overall the degree of existing disturbance along the right-of-way was relatively high. No new archaeological sites were identified. One indigenous historic site, previously recorded in 1986, was revisited; the site will not be impacted by the Project.

Any additional project components (eg. borrow sources) or changes to the Project (re-routes) will be assessed through a desktop review to determine if additional field studies are required.



# ARCHAEOLOGICAL IMPACT ASSESSMENT

## Tijcho All-Weather Road

References Cited  
August 2014

### 7.0 References Cited

- Borden, C. E. 1954. A uniform site designation scheme for Canada. *Anthropology in British Columbia*, Vol. 4: 44-48.
- Churcher, C. S. and M. Wilson. 1979. Quaternary mammals from the eastern Peace River district, Alberta. *Journal of Palaeontology* 53(1):71-76.
- Clark, D.W. 1991. *Western Subarctic Prehistory*. Canadian Museum of Civilization. Hull, QC.
- Ecosystem Classification Group. 2007 (rev. 2009). Ecological Regions of the Northwest Territories - Taiga Plains. Department of Environment and Natural Resources Government of the Northwest Territories, Yellowknife, NT.
- Gordon, B.C. 1975. *Of Men and Herds in Barrenland Prehistory*. Canadian Museum of Civilization. Mercury Series, Archaeological Survey of Canada, Paper 28. Ottawa, ON.
- Gordon, B.C. 1996. *People of Sunlight; People of Starlight: Barrenland Archaeology in the Northwest Territories of Canada*. Mercury Series No. 154, Canadian Museum of Civilization. Ottawa, ON.
- Kooyman, B., M.E. Newman, C. Cluney, M. Lobb, S. Tolman, P. McNeil and L.V. Hills. 2001. Identification of Horse Exploitation by Clovis Hunters Based on Protein Analysis. *American Antiquity* 64(4):686-691.



**ARCHAEOLOGICAL IMPACT ASSESSMENT**  
**Tijcho All-Weather Road**

Appendix A  
Ground Reconnaissance Maps  
August 2014

Appendix A  
**Ground Reconnaissance Maps**



