SECTION 15.0 – HISTORICAL RESOURCES
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15.0 HISTORICAL RESOURCES

15.1 Introduction

Historical resources, as defined in the *Historical Resources Act (*HRA), consist of the sites and objects included therein of any property of interest for its architectural, historical, cultural, environmental, archaeological, palaeontological, aesthetic or scientific value. Historical resource studies are conducted within the guidelines defined by the regulator, the Historical Resources Management Branch of the Ministry of Alberta Culture and Community Spirit (ACCS).

A Historical Resources Impact Assessment (HRIA) was conducted in support of the project. In an effort to create a baseline for historical resources and to determine any potential conflicts between the development and this resource, an HRIA was conducted in the project area.

15.2 Study Area

The entire lease area, including the proposed development area was surveyed through the course of this HRIA. The lands include:

- Sections 1 through 3, 10 through 18, and 22 through 24, Twp 76, Rge 7. W4M.

Though the recorded historical resource sites in the general vicinity are sparse, the study area overlies two landscape features which were deemed to have a high potential of housing historical resource sites. These include a portion of the southern shore of Christina Lake and a stretch of Sunday Creek. Due to the presence of these features an HRIA was conducted.

The proposed project area includes a temporary construction laydown area, and a series of well pads connected with pipelines. Additionally, various access roads and utility corridors were examined. The project area is situated in a largely low and undifferentiated wetland. The location of the CPF is on a slightly elevated, aspen covered landform north of a muskeg lake. A large portion of the project area had been previously cleared and disrupted and the remaining area is relatively flat. A traverse of the project area confirmed the undifferentiated nature of the terrain, that being a gentle slope to the south, towards the muskeg lake. The muskeg lake itself has no landforms bordering it and is surrounded by open marshlands that grade into black spruce swamps in all directions. The remaining proposed project area consists primarily of black spruce low lands, open marshland, with the occasional slight rise allowing for aspen growth.

15.3 Issues and Assessment Criteria

Historical resource sites are non renewable and are of cultural, historical, legislative and scientific importance. The primary goals of the HRIA are to develop baseline conditions and mitigate impacts on this resource. This is done through:

- detection of previously unrecorded historical resource sites within the development area;
- relocation, definition and recording boundaries of known historical resource sites within and immediately adjacent to the proposed footprint;

- assessment of the potential for historical resource sites to contribute to the understanding of the precontact and historic past and past people's use of the area (i.e., the historical resource's significance); and
- preparation of a management program which will mitigate the impacts that the proposed development may have on the historical resource record.

Shovel testing focused on areas known to have been attractive to precontact settlers such as river terraces and lake edges (modern and ancient), high land features, along bluff edges and at the toes of slopes.

Historical resource studies are designed to assess historical resource sites in terms of site type, size, age, condition and archaeological/historical value, with respect to the proposed development. Site type refers to the function a site played in past human settlement systems. Site size is based on the horizontal spread of artifacts. Site condition refers to the baseline condition of the site as it is encountered, either disturbed in an exposure or undisturbed in buried context. The determination of the interpretive potential is a complex appraisal in the assessment process. This assessment is based on the site location, size, age, internal structure and relative frequency in the larger archaeological record. All of these characteristics are assessed with respect to what can be learned about past human occupations within a particular region. Based on this assessment, a Historical Resource Value (HRV) is assigned by ACCS.

15.4 Methods

Three tasks are required to successfully conduct an HRIA. These are detailed below.

15.4.1 Prefield Investigations

Prefield investigations were conducted to gather information which was already known about the study area. A significant site search was conducted and past HRIA and archaeological studies were collected and reviewed. Aerial photographs and archival sources were consulted to gain insight to more recent developments in and around the study area, and to identify target areas which were more likely to house historical resource sites. All of this information was compiled and had an influence on how the HRIA was conducted. The location of previously recorded sites and the interpretation of aerial photographs has bearing on where the potential for finding previously unrecorded sites as well as aiding in relocating and rerecording known sites during the field investigations.

15.4.2 Field Investigations

Field investigations had the goal of testing for previously unrecorded historical resource sites. The nature of the previously recorded historical resources in the region primarily consists of historic finds associated with trapping activities as well as a portion of the Kirby Lake Trail. Within the study area, the Kirby Lake Trail has been destroyed through the process of upgrading the trail for vehicular use.

From air photo interpretation and a helicopter reconnaissance of the lease area conducted in the fall of 2007, a number of areas were identified as having the potential to house historical resource sites.

A foot traverse of areas deemed to have elevated potential to house historic and precontact historical resource sites was conducted. Through the course of the survey, two methods were used to locate historical resource sites.

Disturbance exposures were examined for cultural material. These included numerous cut lines, well pads, roads and other clearings as well as natural disturbances such as erosion exposures and tree throws. In the case of artifacts being present, shovel testing followed to judge the extent of the subsurface disturbance and the possibility for intact subsurface material.

Shovel testing was conducted in order to locate subsurface cultural material. Shovel testing consisted of the hand excavations of small (50 x 50 cm) shovel tests at regular intervals along linear features and in cluster testing locations on more amorphous landforms. For the most part, sites in the boreal forest are close to the surface (usually within the top 50 cm of the soil column).

15.4.3 Postfield Investigations

Postfield investigations include cataloguing and compiling the data recovered from field investigations and the presentation of the data in this report. Cataloguing was done using standard techniques. The final HRIA report has been submitted to ACCS, who have reviewed and accepted the report (Somer 2008).

15.5 Existing Conditions

The area south of Christina Lake has received some attention in the past regarding historical resource surveys for various development projects detailed in Section 15.5.1. To date, a series of historic period sites have been recorded attesting to land use patterns in the more recent past. While no precontact sites had been recorded in the study area, the potential for finding such sites was considered to be high in areas around waterbodies, such as Christina Lake, and along watercourses, such as Sunday Creek.

The study area falls in the mid boreal mixed wood ecoregion, which covers a large portion of northern Alberta (Strong and Leggat 1992). This ecoregion primarily supports forests of aspen poplar/balsam poplar, jack pine, white spruce/balsam fir, with black spruce in lower, more poorly drained areas. Murphy (2005) proposed a distinction when discussing the archaeology of the boreal regions of Alberta proves useful in this report. He proposes the Boreal Archaeological Province be subdivided into the Northeastern District and the Upper Peace River/Grande Prairie district and notes the archaeology of the former is relatively poorly understood.

The Northeastern District's physical landscape has undergone many changes over the last 15 000 years, and is largely the result of glacially induced shaping. It would have mostly been covered by ice sheets until approximately 14 000 years ago. Ice sheets alternately advanced and retreated, scraped to bedrock and, laden with loads of glacial gravels, deposited thick layers of till and sandy outwash features. Different lobes of the ice margin were dammed which altered major drainages. When ice dams melted, torrents of water carved out various spillways and meltwater channels across the landscape.

The culture history of Aboriginal peoples who traditionally frequented the areas around Christina Lake does not yet appear extensive, which is a representation of the limited amount of research in the area. Precontact occupation in the Northeastern District reaches back at least 13 000 years, at which time the area was free of glacial ice. Within this time span, three general precontact time periods have been identified: the Early Precontact Period (13 000 to 7 500 years ago), the Middle Precontact Period (7 500 to 2 000 years ago), and the Late Precontact Period (2 000 to 250 years ago). The Protohistoric Period follows and refers to a brief episode in time during which Aboriginal contact with Europeans was limited to material trade items and precludes the European, or Historic, Period.

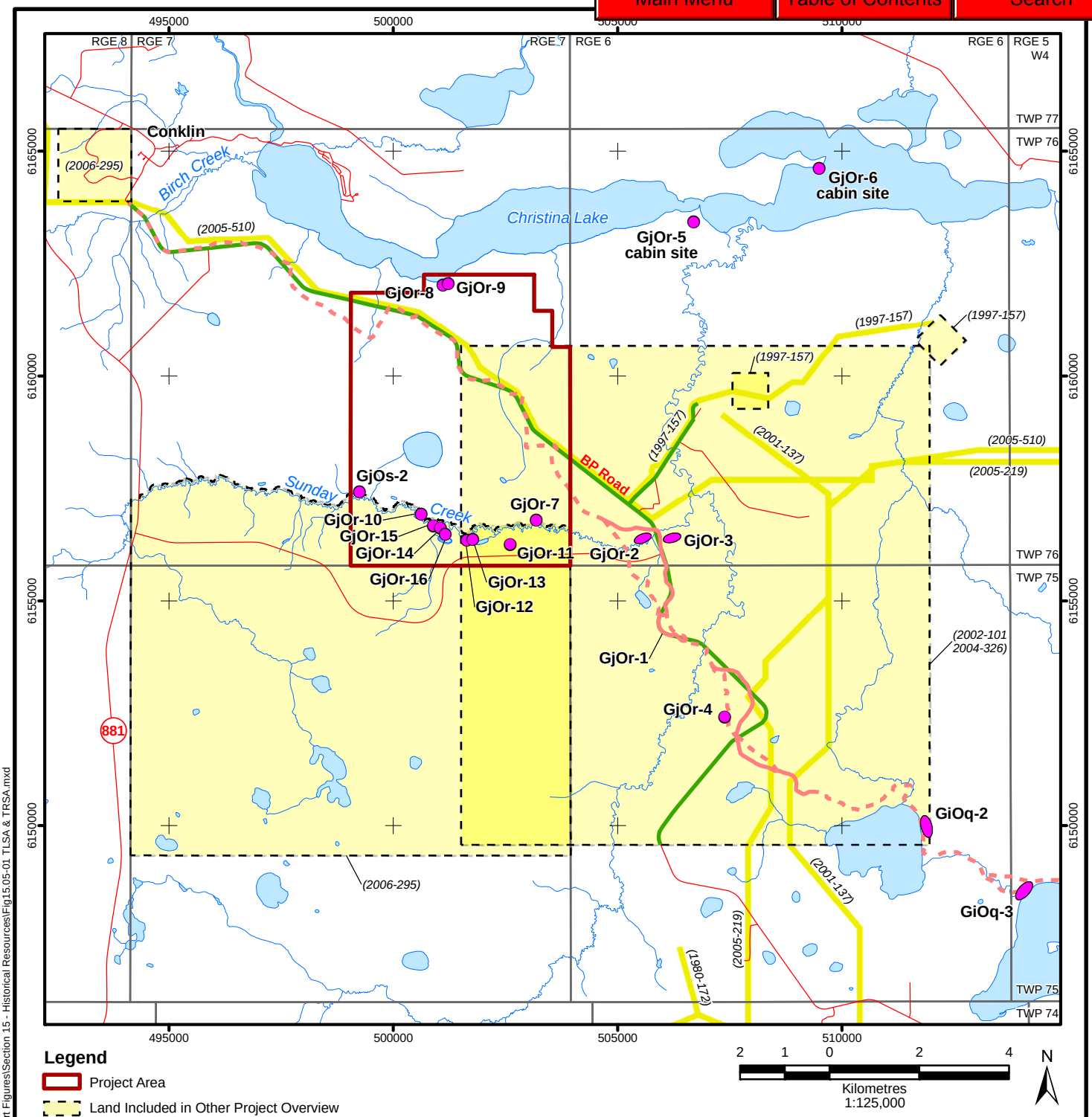
15.5.1 Previously Recorded Historical Resources in the Local Study Area

A historical resource file search was conducted in order to determine if any previously known sites were located in the study area. Additional lands in the area immediately surrounding the study area were included, as this gives an idea of the type of work which has been conducted previously and can help clarify what is already known with regards to regional historical resource sites.

A review of the literature was conducted of the HRIA final reports of the Expansion Project area for the following legal land descriptions:

- Twp 75, Rge 6, W4M;
- Twp 76, Rge 6, W4M;
- Twp 75, Rge 7, W4M;
- Twp 76, Rge 7, W4M; and
- Twp 76, Rge 8, W4M.

While there were no previous sites found in the KNOC lease area, a number of HRIAs had been conducted in the surrounding lands. Some of these have overlapped portions of the KNOC lease area. Previous HRIAs had recorded several historic sites, mostly related to early trapping and hunting in the area. For an overview of the physical areas covered in previous studies, please refer to Figure 15.5-1. Below is a summary of the previous studies and their findings.



Legend

- Project Area
- Land Included in Other Project Overview (Permit Number Appears in Brackets)
- Kirby Lake Trail - GjOr-1 (Relatively Unmodified)
- Kirby Lake Trail - Gravel Covered Portion (Modified)
- Gravel Road
- Known Archaeological Site Location

Sources: GeoBase®, KNOC, Spatial Data Warehouse Ltd.

Korea National Oil Corporation

BlackGold Expansion Project

Previous Archaeological Resource Studies

DATE: December 2009		**Figure 15.5-1**
PROJECT: CE03745/700		Fig15.05-01 TLSA & TRSA 09-11-14
ANALYST: CF	QA/QC: KW BS DR	DRAWN BY: AMEC
PROJECTION/DATUM: UTM Zone 12 NAD83		PREPARED BY: AMEC

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A search of ACCS' 'Significant Sites Listing and archives identified the following HRIA final reports, listed below in Table 15.5-1, as previous studies in the project area. Figure 15.5-1 depicts the geographic locations of these studies. The available reports were acquired and reviewed.

Permit 80-172 was one of the first HRIAs to be conducted in the area. Intended as a HRIA of Dome Petroleum Limited's natural gas development program in the Kirby Lake area, it covered the footprint for a gas gathering system of pipelines tying in over 30 wells across Twps 73, 74 and 75 of Rges 4, 5, 6, and 7, W4M. The study paid particular attention to elevated areas (e.g., knolls and ridges) up to and within one kilometre of Winefred Lake. No archaeological sites had been found in the area prior to 1980. The shovel testing program initiated under Permit 80-172 did not uncover any historic resource sites (Wilson 1980).

Permit 97-157 included work undertaken for PanCanadian Resources Ltd. for their Christina Lake Thermal Project (SAGD) (Clarke 1998). The project scope included assessing an access road right-of-way and associated plant facilities within Sections 6, 7, 8, 15, 16, 17, 22, 23, and 24 of Twp 76, Rge 6, W4M. Areas of higher elevation, as well as proposed crossings of Sunday Creek, were the primary focus of the archaeological shovel testing program. No evidence of buried historical resource sites was found.

Further historical resource surveys were conducted in the Christina Lake region in 2001 under Permit 2001-137, within Twps 74 to 76, Rges 5 and 6, W4M (Goldsmith and Head 2001). This work was associated with the Christina Lake Pipeline and the Kirby Lake Batch Accumulation facility for Enbridge Pipelines. The field survey paid particular attention to areas where the proposed pipeline crossed existing drainages and areas of higher elevation. One historic site, a recently abandoned rough lodgepole structure with associated hearth and dump features was observed in Legal Subdivision 6, Section 24, Twp 74, Rge 6, W4M. It was not regarded to be of historical resource significance and represents one of many similar sites found in the area. Such sites are believed to be relatively modern campsites representing brief stays associated with hunting or trapping activities by local populations. No other historical resource sites were located.

Devon Canada Corporation's Jackfish SAGD project area was subject to a HRIA (Permit 2002-101) as part of its EIA approval process (Ramsay *et al*. 2003). The overall project study area included sections of Twps 75 and 76, Rges 6 and 7, W4M as well as an overlap of areas included within KNOC's lease area (specifically Sections 1, 2, 11, 12, 13, and 14).

Field testing and observations resulted in the recording of four sites within the Jackfish study area, including portions of the Kirby Lake Trail (GjOr-1) that had been unmodified by modern roadwork, and cabin campsites near Sunday Creek (GjOr-2, GjOr-3). No subsurface archaeological resources were observed during the course of the study. Additional investigations conducted for the same development under Permit 2004-326 focused primarily on testing expanded drill pad dimensions and resulted in the recording of an additional cabin campsite (GjOr-4) (Ramsay *et. al.* 2004).

Table 15.5-1: KNOC BlackGold Project Previous HRIA Final Reports

Permit No.	Project Name	Consultant	Development Company	Location	Sites
80-172	Kirby Lake Gas Gathering System	ARESCO	Dome Petroleum Ltd.	Twp 73-75, Rge 4-7, W4M	None
97-157	Christina Lake Thermal Project (SAGD)	Golder Associates	PanCanadian Resources Ltd.	Twp 76, Rge 6, W4M	None
01-137	Christina Lake Pipeline and the Kirby Lake Batch Accumulation Facility	Bison Historical Services	Upside Engineering & Enbridge Pipeline	Twp 74-76, Rge 5-6, W4M	GiOq-1
02-101	Jackfish SAGD	Stantec Consulting	Devon Canada Corporation	Twp 74, Rge. 4 & 5; Twp 75, Rge 5, 6; Twp 76, Rge 6, 7, 8, W4M	GjOr-1, 2, & 3; GiOq-2 & 3
05-219	Access Pipeline Project	Bison Historical Services	TERA Environmental Consultants & ACCESS Pipeline Inc.		None
05-510	AltaLink 240 kV Transmission Lines	Bison Historical Services	EBA Engineering Consultants & AltaLink Management	Twp 76, 77, Rge 5-8, W4M	None
06-295	Jackfish 2 SAGD	Stantec Consulting	Devon Canada Corporation	Twp 75, 76, Rge 7, W4M	None
06-296	Jackfish SAGD	Stantec Consulting	Devon Canada Corporation	Twp 75, Rge 6, W4M	Post-impact assessment of GjOr-1

Archaeological work conducted under Permit 2005-219 was intended to assess the potential for historical resources within the right-of-way for the Access Pipeline project from Lac La Biche to Christina Lake (Goldsmith and Head 2005). This pipeline lies to the southeast of the KNOC lease area, close to portions of the Kirby Lake Trail (GjOr-1) in Twp 75, Rge 6, W4M. Shovel tests revealed no other historical resource sites.

Permit 2005-510 was issued to cover historical resources work for the 240kV AltaLink transmission line and associated substation locations on the south side of Christina Lake (running parallel with the BP road) from the Leismer substation to the Christina Lake substation (in Section 6, Twp 76, Rge 6, W4M) (Murphy 2005). Another line, running to the east to the MEG substation northeast of Christina Lake, was also surveyed. Subsurface testing along the Leismer line was focused on areas near the Birch Creek Crossing in Section 30, Twp 76, Rge 7, W4M, the Sunday Creek Crossing in Section 8, Twp 76, Rge 6, W4M, an unnamed drainage crossing in Section 28, Twp 76, Rge 5, W4M, and areas near the GjOr-2 and GjOr-3 sites, south of the Christina Lake substation by Sunday Creek. The 240 kV line right-of-way overlaps with the KNOC lease area in Sections 22, 23, 14, 13, and 12 of Twp 75, Rge 7, W4M.

Permit 2006-188 was issued for work as part of the 2006 forest harvest operations report for Alberta Pacific Forest Industries. At the time of this writing, the final report has not yet been released. No sites within the GjOr/GjOs Borden block were revisited or and no new sites were recorded.

Permit 2006-251 study area included a small portion of land around the hamlet of Conklin (Section 31, Twp 76, Rge 7, W4M) but the greater study area for North American Oil Sands Corporation was north of the KNOC lease area. At the time of this writing, the report had not yet been released.

Permits 2006-295 and 2006-296 cover those areas of Twps 75 and 76, Rge 7, W4M to be included in Devon Canada Corporation's Jackfish 2 SAGD project (Malasiuk and Ramsay 2008). Initial plans for the plant, well pad locations and connecting pipelines placed the primary footprint on the upper lands immediately south of Sunday Creek and the KNOC leases. The southern banks of Sunday Creek and the KNOC leases were determined through this study to be of moderate to high potential though no testing program was implemented in this area. Instead, studies focused along the ridge the stretches northwest to southeast across the main Jackfish 2 lease area, where initial development was slated to commence. No historical resource sites were located.

Later in 2006, archaeological investigations for the Whitesands winter oil sands exploration permit were conducted under Permit 06-620. The majority of the study area is northwest of the KNOC lease area with the nearest portion of that study areas being within Sections 30, 31 and 32 of Twp 76, Rge 8, W4M. No historical resource sites were noted.

Archaeological work for EnCana's Christina Lake thermal SAGD expansion project was conducted under Permit 07-186. Based on available information, the permit included areas immediately east of the KNOC leases, including the southern shore of Christina Lake (near the second narrows) and where Sunday Creek enters the lake. Based on the permit table, one site was recorded, a modern cabin/campsite (GjOr-5) by the narrows on the south shore Christina Lake.

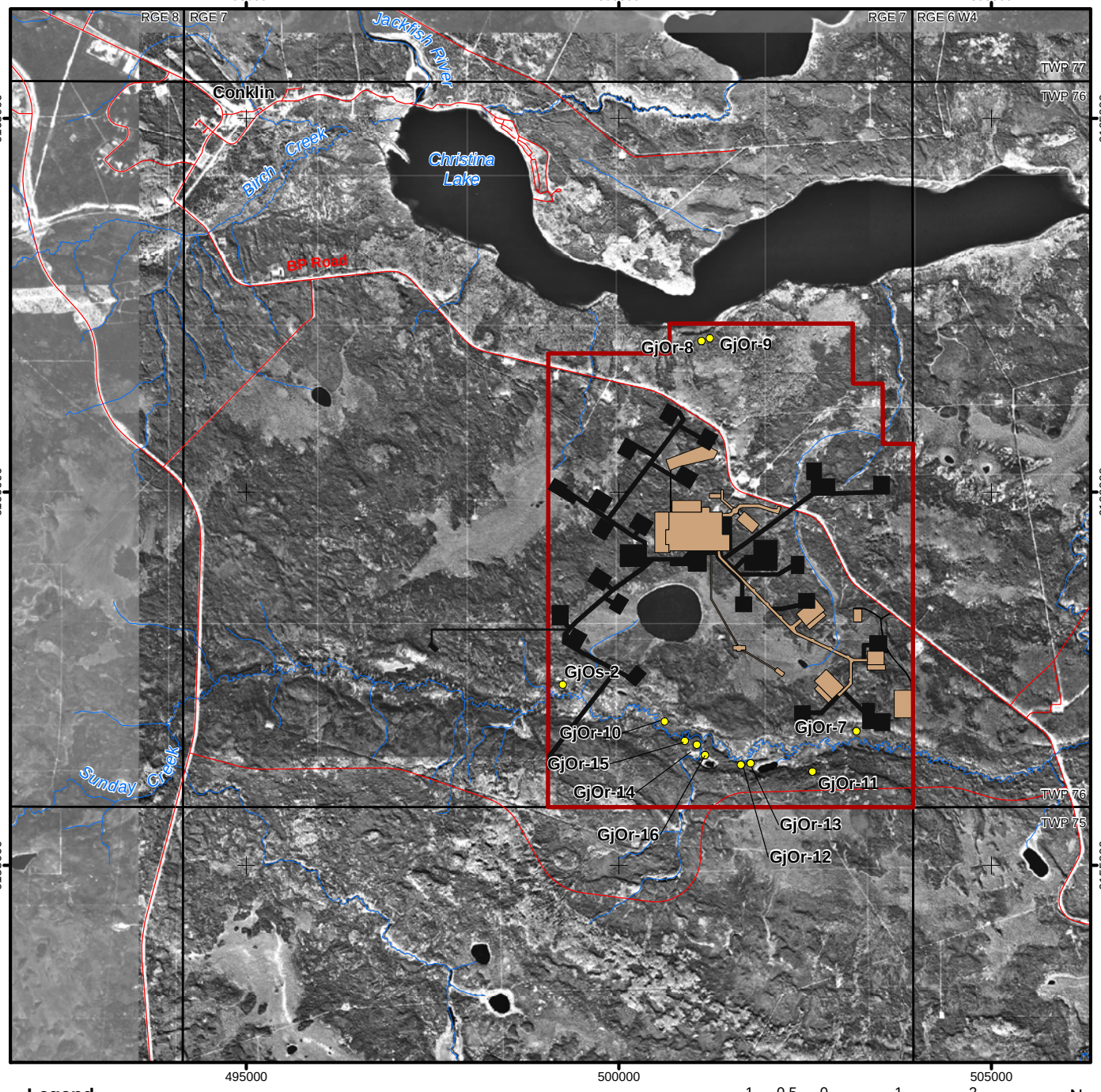
Work undertaken under Permit 07-250 for MEG Energy Corporation occurred to the northeast of the KNOC leases. At the time of this writing, the final report has not yet been received into the public record at the Archaeological Survey of Alberta.

Archaeological work under Permit 07-282 was undertaken as part of post impact audit studies for Alberta Pacific Forest Industries and focused on the northern half of Twp 76, Rge 8, W4M, immediately northwest of the KNOC leases. No additional historical resource sites were observed in that study area.

Additional HRIAs have been undertaken in 2007 as part of the Devon Jackfish 08-100 3D Seismic Program, to avoid one of the cabin/campsites in the region (GjOr-4) (Permit 07-472). No additional sites were revisited or located during this study.

HRIAs were also conducted for Devon Jackfish Sunday Creek Road in early 2008 (Permit 08-001) and for Devon Canada Corporation's Jackfish 2 CPF developments later the same year (Permit 08-183). At the time of this writing, these reports have yet to be received into the public record at the Archaeological Survey of Alberta.

The historical resource assessment work conducted for the Initial Project (KNOC 2008) uncovered eleven sites (Somer 2008) (Figure 15.5-2). All landforms deemed to be of moderate and high potential were traversed and tested. Two sites, GjOr-8 (precontact campsite) and GjOr-9 (precontact workshop) were located on a low terrace on the southern shore of Christina Lake. The remaining sites were found on the banks of Sunday Creek in the southern portion of the study area. These include one historic campsite (GjOr-7, one precontact campsite (GjOr-15), three precontact artifact scatters (GjOr-10, GjOr-11, GjOr-13) and four precontact isolated finds (GjOr-12, GjOr-14, GjOr-16, GjOs-2). Three of these sites (GjOr-8, GjOr-9 and GjOr-15) were deemed to be of moderate historical resource potential in that the findings suggest these sites could afford the opportunity to gain insight into how past peoples lived and used this geographic area. Any future development in the lease area will require project specific historical resources consideration and be granted clearance through ACCS under the *Historic Resources Act*.



Legend

- Project Area
- BlackGold Expansion Project
- BlackGold Initial Project
- Historical Resource Site Location

1 0.5 0 1 2
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Sources: GeoBase®, KNOC, Spatial Data Warehouse Ltd.

Korea National Oil Corporation

BlackGold Expansion Project

Historical Resource Site Locations

DATE: December 2009	**Figure 15.5-2**
PROJECT: CE03745/700	Fig15.05-02 HR Site Locations 09-11-14
ANALYST: CF / QA/QC: KW BS DR	DRAWN BY: AMEC
PROJECTION/DATUM: UTM Zone 12 NAD83	PREPARED BY: AMEC

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15.6 Summary

Background research indicates intensive postcontact period use of the lands surrounding the study area. A portion of one previously recorded site, GjOr-1 (the Kirby Lake Trail), passes through the KNOC study area. Within the KNOC leases, no intact portion of the trail exists. Segments have been incorporated and upgraded in the past into roads and, most recently, the BP Road. No previously recorded precontact historical resource sites were located in the study area. In the larger area, outside the area of the KNOC leases, several historic structures associated with trapping have been recorded.

A total of eleven sites were recorded through the course of this HRIA. This includes one historic site and ten precontact sites (Somer 2008). Any future development in the lease area will require project specific historical resources consideration and be granted clearance through ACCS under the *Historic Resources Act*.

15.7 Literature Cited

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