

Heritage Resources Management Plan

Site C Clean Energy Project

Revision 3: November 19, 2018

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Revision History

Version	Date	Comments
Draft	10-17-2014	Draft
Rev 0	05-19-2015	Final Plan
Rev 1	06-05-2015	Final Plan, Revision 1
Rev 2	07-25-2017	Final Plan, Revision 2
Rev 3	11-19-2018	Final Plan, Revision 3

1.0 Background

1.1 The Site C Clean Energy Project

The Site C Clean Energy Project (the Project) will be the third dam and generating station on the Peace River in northeast B.C. The Project will provide 1,100 megawatts of capacity and about 5,100 gigawatt hours of energy each year to the province's integrated electricity system. The Project will be a source of clean, reliable and cost-effective electricity for BC Hydro's customers for more than 100 years.

The key components of the Project are:

- an earthfill dam, approximately 1,050 metres long and 60 metres high above the riverbed;
- an 83 kilometre long reservoir that will be, on average, two to three times the width of the current river;
- a generating station with six 183 MW generating units;
- two new 500 kilovolt AC transmission lines that will connect the Project facilities to the Peace Canyon Substation, along an existing right-of-way;
- realignment of six segments of Highway 29 over a total distance of approximately 30 kilometers; and
- construction of a berm at Hudson's Hope.

The Project will also include the construction of temporary access roads, a temporary bridge across the Peace River, and worker accommodation at the dam site.

1.2 Project Benefits

The Project will provide important benefits to British Columbia and Canada. It will serve the public interest by delivering long term, reliable electricity to meet growing demand; contribute to employment, economic development, ratepayer, taxpayer and community benefits; meet the need for electricity with lower GHG impact than other resource options; contribute to sustainability by optimizing the use of existing hydroelectric facilities, delivering approximately 35 per cent of the energy produced at the W.A.C. Bennett Dam, with only five per cent of the reservoir area; and include an honourable process of engagement with First Nations and the potential for accommodation of their interests.

1.3 Environmental Assessment Process

The environmental assessment of the Project has been carried out in accordance with the *Canadian Environmental Assessment Act, 2012* (CEAA 2012), the *BC Environmental Assessment Act* (BCEAA), and the *Federal-Provincial Agreement to Conduct a Cooperative Environmental Assessment, Including the Establishment of a Joint Review Panel of the Site C Clean Energy Project*. The assessment considered the environmental, economic, social, heritage and health effects and benefits of the Project, and included the engagement of Aboriginal groups, the public, all levels of government, and other stakeholders in the assessment process.

Detailed findings of the environmental assessment are documented in the Site C Clean Energy Project Environmental Impact Statement (EIS), which was completed in accordance with the Environmental Impact Statement Guidelines (EIS Guidelines) issued by the Minister of Environment of Canada and the Executive Director of the Environmental Assessment Office of British Columbia. The EIS was submitted to regulatory agencies in January 2013, and amended in August 2013 following a 60 day public comment period on the assessment, including open house sessions in Fort St. John, Hudson's Hope, Dawson Creek, Chetwynd, town of Peace River (Alberta) and Prince George.

In August 2013, an independent Joint Review Panel (JRP) commenced its evaluation of the EIS, and in December 2013 and January 2014 undertook five weeks of public hearings on the Project in 11 communities in the Peace region, including six Aboriginal communities. In May 2014, the JRP provided the provincial and federal governments with a report summarizing the Panel's rationale, conclusions and recommendations relating to the environmental assessment of the Project. On completion of the JRP stage of the environmental assessment, the CEA Agency and BCEAO consulted with Aboriginal groups on the JRP report, and finalized key documents of the environmental assessment for inclusion in a Referral Package for the Provincial Ministers of Environment and Forests, Lands and Natural Resource Operations.

Construction of the Project is also subject to regulatory permits and authorizations, and other approvals. In addition, the Crown has a duty to consult and, where appropriate, accommodate Aboriginal groups.

1.4 Environmental Assessment Findings

The environmental assessment of the Project focused on 22 valued components (VCs), or aspects of the biophysical and human setting that are considered important by Aboriginal groups, the public, the scientific community, and government agencies. In the EIS, valued components were categorized under five pillars: environmental, economic, social, heritage and health. For each VC, the assessment of the potential effects of the Project components and activities during construction and operations was based on a comparison of the biophysical and human environments between the predicted future conditions with the Project, and the predicted future conditions without the Project.

Potential adverse effects on each VC are described in the EIS along with technically and economically feasible mitigation measures, their potential effectiveness, as well as specific follow-up and related commitments for implementation. If a residual effect was found on a VC, the effect was evaluated for significance. Residual effects were categorized using criteria related to direction, magnitude, geographic extent, context, level of confidence and probability, in accordance with the EIS Guidelines.

The assessment found that the effects of the Project will largely be mitigated through careful, comprehensive mitigation programs and ongoing monitoring during construction and operations. The EIS indicates that the Project is unlikely to result in a significant adverse effect for most of the valued components. However, a determination of a significant effect of the Project was found on four VCs: Fish and Fish Habitat, Wildlife Resources, Vegetation and Ecological Communities, and Current Use of Lands and Resources for Traditional Purposes.

1.5 Environmental Assessment Conclusion

On October 14, 2014, the Provincial Ministers of Environment and of Forests, Lands and Natural Resource Operation decided that the Project is in the public interest and that the benefits provided by the Project outweigh the risks of significant adverse environmental, social and heritage effects (<http://www.newsroom.gov.bc.ca/2014/10/site-c-project-granted-environmental-assessment-approval.html>). The Ministers have issued an Environmental Assessment Certificate setting conditions under which the Project can proceed.

Further, on November 25, 2014, The Minister of Environment of Canada issued a Decision Statement confirming that, while the Project has the potential to result in some significant adverse effects, the Federal Cabinet has concluded that those effects are justified in the circumstances. The Decision Statement sets out the conditions under which the Project can proceed.

Further, on November 25, 2014, The Minister of Environment of Canada issued a Decision Statement confirming that, while the Project has the potential to result in some significant adverse effects, the Federal Cabinet has concluded that those effects are justified in the circumstances. The Decision Statement sets out the conditions under which the Project can proceed.

1.6 Development of Mitigation, Management and Monitoring Plans

Mitigation, management and monitoring plans for the Project have been developed taking into account the measures proposed in the EIS, information received during the Joint Review Panel hearing process, and the Report of the Joint Review Panel on the Project. Those plans are consistent with, and meet requirements set out in, the conditions of the Environmental Assessment Certificate and of the Decision Statement issued on October 14, 2014 and November 25, 2014 respectively.

In addition, in accordance with environmental best practices (Condition 3.1), these plans were informed by the best available information and knowledge, based on validated methods and models, undertaken by qualified individuals and apply the best available economically and technologically feasible mitigation strategies. These plans contain provisions for review and update as new information on the effects of the Project and on the efficacy of the mitigation measures become available.

2.0 Heritage Resources Management Plan

2.1 Purpose and Objectives

The purpose of the Heritage Resources Management Plan (“the Plan”) is to describe the measures that will be used to mitigate the adverse effects of the Project on heritage resources. The objectives of the Plan are to:

- Protect and preserve heritage resources per condition 62 of the Environmental Assessment Certificate (EAC), and
- Ensure the Project is constructed and operated in a manner that avoids, minimizes or manages impacts to heritage resources per condition 15 of the Federal Decision Statement (FDS).

The Plan has been developed in accordance with the conditions of the EAC and FDS, as indicated in the table below.

Condition	Requirement	Plan Reference
EAC Condition 62	The EAC Holder must protect and preserve heritage resources by implementing measures as detailed in a Heritage Resources Management Plan.	Heritage Resources Management Plan
	The Heritage Resources Management Plan must be developed by a QEP.	Section 10.0 Qualified Professionals
	The Heritage Resources Management Plan must specify a process for the engagement of Aboriginal Groups in planning and follow-up/monitoring activities related to heritage resources as the Project proceeds. In particular, the Plan must incorporate a process for continued collaboration with Aboriginal Groups on ground-truthing for the identification of any burial sites that the Project may disturb.	Section 4.0 Engagement with Aboriginal Groups
	The Heritage Resources Management Plan must include Archaeological Impact Management and Heritage Resources Monitoring and Follow-Up Programs. The field and reporting portions of each program will be of a scope, duration and frequency prescribed by the BC Heritage Conservation Act permits. The Archaeology Impact Management Program must be developed by a QEP qualified to hold Section 14 Heritage Inspection and Investigation Permits.	Section 6.0 Heritage Resources Impact Management Section 8.0 Heritage Monitoring and Follow-Up Program Section 10.0 Qualified Professionals
	The Heritage Resources Monitoring and Follow-Up Program must include at least the following:	
	<ul style="list-style-type: none"> Monitor reservoir erosion during occurrences of exposure to assess the impacts on existing or newly identified protected archaeological sites and other heritage resources 	Section 8.0 Heritage Monitoring and Follow-Up Program
	<ul style="list-style-type: none"> Implement mitigation measures, systematic data recovery or emergency salvage operations in accordance with the Heritage Resources Management Plan. 	Section 6.0 Heritage Resources Impact Management
	<ul style="list-style-type: none"> Conduct the monitoring of shoreline erosion downstream (for approximately 2 km) as part of chance-find procedures to determine if physical heritage resources are affected by the Project. The EAC Holder must undertake this monitoring for any spills from the 	Section 8.0 Heritage Monitoring and Follow-Up Program

Condition	Requirement	Plan Reference
	Project reservoir for a period of two years following the commencement of reservoir filling and commissioning.	
	<ul style="list-style-type: none"> Establish a reporting structure for reporting to Aboriginal Groups and the Archaeology Branch beginning 180 days following the commencement of operations. 	Section 9.0 Reporting
	<ul style="list-style-type: none"> The EAC Holder must file the final Heritage Resources Management Plan with EAO, Archaeology Branch and Aboriginal Groups a minimum of 30 days prior to commencement of construction. 	Section 2.4 Consultation
	<ul style="list-style-type: none"> The EAC Holder must develop, implement and adhere to the final Heritage Resources Management Plan, and any amendments, to the satisfaction of EAO. 	Section 2.4 Consultation
EAC Condition 64	The EAC Holder must provide a total of \$100,000 to local accredited facilities in close proximity to the Project, prior to the start of operations, to curate and display the recovered resources and the funding is not to be used for buildings to house them. These funds must be provided only to facilities that agree to work with interested Aboriginal Groups on the display and curation of those artefacts.	Section 7.0 Compensation-in-Kind
FDS Condition 15.1	The Proponent shall ensure that the Designated Project is constructed and operated in a manner that avoids, minimizes or manages impacts to local archaeological and heritage resources.	Section 6.0 Heritage Resources Impact Management
FDS Condition 15.2	The Proponent shall develop, in consultation with Reservoir Area Aboriginal groups and the Métis Nation British Columbia, a plan to avoid, minimize or manage impacts to local archaeological and heritage resources.	Section 2.4 Consultation Section 4.0 Engagement with Aboriginal Groups
FDS Condition 15.3	The plan shall include:	
FDS Condition 15.3.1	<ul style="list-style-type: none"> procedures to continue inventories and ground truthing of potential physical and cultural heritage resources to determine the need and applicability of mitigation measures; 	Section 4.0 Engagement with Aboriginal Groups Section 5.2 Additional Heritage Inspection and Investigation
FDS Condition	<ul style="list-style-type: none"> measures to address the effects of the Designated 	Section 6.0 Heritage Resources Impact

Condition	Requirement	Plan Reference
15.3.2	Project on the physical and cultural heritage and to structures, sites or things that that have been identified as being of historical, archaeological, paleontological or architectural significance by local stakeholders, relevant organizations, Reservoir Area Aboriginal groups and the Métis Nation British Columbia;	Management
FDS Condition 15.3.3	<ul style="list-style-type: none"> procedures to monitor reservoir erosion during occurrences of low reservoir levels, to investigate any potentially new-found sites and to carry out emergency salvage procedures during construction and operation; and 	Section 8.0 Heritage Monitoring and Follow-Up Program
FDS Condition 15.3.4	<ul style="list-style-type: none"> procedures to monitor shoreline erosion downstream of the Site C dam for up to 2.5 kilometres during the first two years of operation to determine if physical heritage resources are affected. 	Section 8.0 Heritage Monitoring and Follow-Up Program
FDS Condition 15.4	The Proponent shall submit to the Agency, Reservoir Area Aboriginal groups and the Métis Nation British Columbia a draft copy of the plan for review 90 days prior to initiating construction.	Section 2.4 Consultation
FDS Condition 15.5	The Proponent shall submit to the Agency the final plan a minimum of 30 days prior to initiating construction. When submitting the final plan, the Proponent shall provide to the Agency, an analysis that demonstrates how it has appropriately considered the input, views or information received from Reservoir Area Aboriginal groups and the Métis Nation British Columbia.	Section 2.4 Consultation
FDS Condition 15.6	The Proponent shall implement the plan and provide to the Agency an analysis and summary of the implementation of the plan, as well as any amendments made to the plan in response to the results, on an annual basis during construction and for the first five years of operation, unless otherwise indicated.	Section 9.0 Reporting

Note that cultural resources, defined as a location or feature of cultural significance to an Aboriginal Group that is not a protected heritage resource, are addressed in the Cultural Resources Mitigation Plan.

The Plan has also been developed in accordance with Section 4.9 of the CEMP (Heritage Resources Management), as described below.

The EAC and FDS conditions identified in the Plan will be met per the schedule that is shown in Appendix D: HRMP Condition Compliance Summary.

2.2 Definitions

For the purpose of the Plan, “heritage resources” means palaeontological sites, archaeological sites and historic sites, as defined below.

Palaeontological sites and sensitivity areas:

Locations where ancient organisms, or traces of their existence, have been preserved in the geological record as fossils (Fossil Management Review Technical Working Group 2004). Fossils usually comprise the remnants of more resilient structural elements such as bones, teeth, shells, and woody parts, but can also be expressed as imprints of soft body parts, tracks, and traces of an organism’s interaction with the environment. In northeastern British Columbia, a wide variety of fossils occur in bedrock associated with Palaeozoic, Mesozoic, and Cenozoic times, and in unconsolidated Quaternary sediments. Known fossils from the region consist of mammals, birds, dinosaurs, reptiles, fish, shellfish, sea jellies (jellyfish), insects, worms, trees, ferns, flowering plants, mosses, algae, and microorganisms, along with traces of their locomotion, feeding, and lodging.

Analogous to the concept of “site” in archaeological or historical studies, palaeontological sensitivity areas (PSAs) are the basic recording unit for fossil management. Given the nature of geological formations, PSAs are not rigidly defined as “sites”, rather as the name suggests they delineate an area with palaeontological sensitivity (or potential).

Archaeological sites:

Locations that contain physical evidence of past human activities for which scientific methods of inquiry (i.e., survey, excavation, data analysis) provide the main sources of information. Archaeological sites can be associated with pre-contact (commonly referred to as prehistoric) and post-contact periods, that is, the time before or after the arrival of Europeans. The most common prehistoric site type is a scatter of stone artifacts found on the surface or buried. Rocky Mountain Fort, an early European site for which little surficial evidence exists, is an example of a post-contact archaeological site.

Archaeological sites can include pre-contact and post-contact burials. Burials are locations where people have interred their dead, including but not limited to subsurface graves. Burials may occur near villages and seasonal gathering locations but may also be found throughout the landscape.

Historical sites:

Any structure, site, or thing that is of historical or architectural significance as defined by the *British Columbia Archaeological Impact Assessment Guidelines* (BC Archaeology Branch 1998) and heritage values as identified in interviews with local and regional historical societies, museums, and other organizations as well as local residents. Historical sites and locations in British Columbia are primarily attributable to post-contact

Euro-Canadian settlement and land use, but also include habitations and other evidence left by Aboriginal peoples in that time period.

Confirmed heritage resources:

Palaeontological, archaeological and historical sites which are a) listed in the database maintained by the Heritage Specialist (as described in Section 5.1 Record of Confirmed Heritage Resources) or b) confirmed by a Heritage Specialist or the Archaeology Branch through the processes described in Section 5.2 Additional Heritage Inspection and Investigation.

Confirmed heritage resources are managed in accordance with Section 6.0 (Heritage Resources Impact Management) and Appendix B (Description of Heritage Mitigation Measures) of this document.

Reported but unconfirmed heritage resources are:

Specific locations reported to BC Hydro by a third party as potentially containing a previously unknown palaeontological site, archaeological site (including a burial) or historical site.

Reported but unconfirmed burial sites are managed in accordance with Section 5.2 Additional Heritage Inspection and Investigation and Section 6.2.7 Burial Sites.

2.3 Roles and Responsibilities

This section provides a general overview of the roles and responsibilities of BC Hydro, the Heritage Specialist and Contractors in respect of the Plan. Note that roles and responsibilities are described in greater detail in the subsequent sections of the Plan.

BC Hydro is responsible for:

- The overall implementation of the Plan;
- Retaining a Heritage Specialist and overseeing the work of the Heritage Specialist;
- Providing information to Contractors regarding heritage requirements and coordinating with Contractors in the preparation of the heritage requirements of Environmental Protection Plans.

The Heritage Specialist is a consultant retained by BC Hydro who a) employs Qualified Professionals in the fields of archaeology and palaeontology and b) is pre-qualified to hold Heritage Conservation Act permits in British Columbia. The Heritage Specialist is responsible for:

- Applying for and holding the heritage permits necessary to undertake heritage inspections and investigations;
- Carrying out heritage inspections and investigations and completing the work required to comply with the conditions of heritage permits;
- Maintaining a database of confirmed heritage resources within the Project Activity Zone;

- Reviewing reports of unconfirmed heritage resources, as directed by BC Hydro;
- Carrying out inspections and investigations of the locations of reported but unconfirmed heritage resources and determining whether a heritage resource is present, as directed by BC Hydro.

Contractors are responsible for:

- Preparing Environmental Protection Plans which describe the heritage requirements applicable to their scope of work and work areas;
- Complying with heritage obligations applicable to their scope of work and work areas.

The role of Qualified Professionals in relation to the preparation and amendment of the Plan is described in Section 10.0 Qualified Professionals.

2.4 Consultation

Many of the conditions require BC Hydro to consult or collaborate with certain government agencies and Aboriginal groups in respect of measures and plans required by the conditions.

BC Hydro began consultation on the Project in late 2007, before any decision to advance the Project to an environmental assessment. BC Hydro's consultation with the public, stakeholders, regional and local governments, regulatory agencies, and Aboriginal groups is described in EIS Section 9, Information Distribution and Consultation.

Additional information on the consultation process and a summary of issues and concerns raised during consultation are provided in:

- Volume 1 Appendix G, Public Information Distribution and Consulting Supporting Documentation
- Volume 1 Appendix H, Aboriginal Information Distribution and Consultation Supporting Documentation
- Volume 1 Appendix I, Government Agency Information Distribution and Consultation Supporting Documentation
- Volume 5, Appendix A01 to A29, Parts 2 and 2A, Aboriginal Consultation Summaries
- Technical Memo: Aboriginal Consultation

Draft versions of a number of the mitigation, management and monitoring plans required by the conditions were submitted to applicable government agencies and Aboriginal groups for comment on October 17, 2014.

Comments on these draft plans were received from various government agencies and Aboriginal groups during November and December 2014, and were considered in the revisions to these plans. BC Hydro's consideration of these comments is provided in the consideration tracking tables that accompany each plan.

On December 15, 2014, Treaty 8 Tribal Association (T8TA), on behalf of West Moberly, Saulneau and Prophet River First Nations, submitted to BC Hydro a letter in response to BC Hydro's request for comment on the Plans sent on October 17, 2014. The letter included several appendices, including the Joint Review Panel (JRP) Report and transcripts from the JRP hearings in December 2013 and January 2014. BC Hydro responded to the three First Nations on January 21, 2015 noting that the October 17 2014 request for comments on the plans was to provide an opportunity to the First Nations to submit to BC Hydro any information they wanted to provide in relation to the Plans. BC Hydro advised that it was aware of the information referred to in T8TA's letter when the plans were prepared, and advised that it was preparing a table setting out where any mitigation measures identified by representatives of the three First Nations during the hearings are considered in the draft plans and would provide that to the First Nations once complete. Accordingly BC Hydro's responses to those mitigation measures identified by the representatives of the three First Nations during the JRP hearings were provided to the EAO in a separate table by letter dated May 19, 2015. Aside from the December 15, 2014 letter, BC Hydro has not received further comments from these First Nations. A letter of understanding dated April 30, 2015 respecting provision of capacity funding to support review of the plans was entered into by BC Hydro and Sauleau First Nations (on behalf of Sauleau, West Moberly and Prophet River First Nations).

New draft plans (i.e., Housing Plan and Housing Monitoring and Follow-Up Program, and the quarry/pit development plans) were provided to the entities identified in the EAC conditions on April 7, 2015. The Vegetation and Wildlife Mitigation and Monitoring Plan was revised based on comments received on the October 17, 2014 version and based on discussions with Environment Canada and the BC Ministry of Environment, and was re-submitted to applicable entities on April 7, 2015.

Comments on the revised plans were requested by May 11, 2015 to allow for review, consideration of comments and finalization of the plans 30 days prior to the commencement of construction.

Comments were received by this requested date from:

- Fort Nelson First Nation
- Ministry of Forests, Lands and Natural Resource Operations (FLNRO), and
- Métis Nation British Columbia.

The Peace River Regional District submitted their comments on the plan on May 14, 2015. FLNRO submitted additional comments on May 15, 2015, including comments from the BC Ministry of Environment.

BC Hydro considered the comments provided and prepared final plans. On May 19, 2015, BC Hydro submitted the following mitigation, management and monitoring plans to the BC Environmental Assessment Office (BC EAO) for review:

- Construction Environmental Management Plan
- Construction Safety Management Plan

- Fisheries and Aquatic Habitat Management Plan
- Vegetation and Wildlife Mitigation and Monitoring Plan
- Vegetation Clearing and Debris Management Plan
- Aboriginal Plant Use Mitigation Plan
- Aboriginal Training and Inclusion Plan
- Business Participation Plan
- Emergency Services Plan
- Healthcare Services Plan
- Labour and Training Plan
- Cultural Resources Mitigation Plan
- Heritage Resources Management Plan
- Housing Plan and Housing Monitoring and Follow-Up Program
- Wuthrich Quarry Development Plan
- West Pine Quarry Development Plan; and
- Del Rio Pit Development Plan.

The CEA Agency and Environment Canada submitted comments on the revised plan on May 22, 2015. These comments were considered and the final plans were revised accordingly and submitted on June 5, 2015 to the entities identified in the EAC conditions.

On August 30, 2017, the BC EAO wrote to BC Hydro advising that revisions to the Heritage Resources Management Plan and Cultural Resources Mitigation Plan were required in order to improve clarity and measurability and directed BC Hydro to undertake those revisions. This updated plan (Revision 3) incorporates these revisions.

2.5 Review and Revision

During construction of the Project, at least once every 24 months, and more often as may be required, BC Hydro will review this Plan.

If BC Hydro proposes to make a material revision of this Plan, to the extent practical in the circumstances, BC Hydro will provide draft text of the proposed material revision for review and comment to the BCEAO, the CEA Agency, the Archaeology Branch, and Aboriginal Groups who would potentially be affected by the proposed revision.

A material revision of this Plan includes:

- Revisions that are relevant to the question of whether an adverse effect on heritage resources is more likely to occur, or become more adverse, and be significant;
- Revisions that are made in response to input or directions from the BC EAO or the CEA Agency.

The period of time provided for review and comment on a proposed material revision will depend on the nature or urgency of the revision and the relative interests or jurisdiction of

government agencies and of the rights and relative interests of potentially affected Aboriginal Groups, and any legal requirement to consult.

3.0 Regulatory Context

The following are relevant to heritage resource management:

- Provincial and Federal Project conditions stemming from their decisions under the *Canadian Environmental Assessment Act* (CEAA) 2012, and the *British Columbia Environmental Assessment Act*
- *British Columbia Heritage Conservation Act*
- *British Columbia Fossil Management Framework*
- *British Columbia Cremation, Interment and Funeral Services Act* and *British Columbia Coroners Act*
- Heritage Conservation Memorandum of Understanding between British Columbia and three Treaty 8 First Nations

3.1 Provincial and Federal Environmental Assessment

The Province of British Columbia and the Government of Canada issued, respectively, an Environmental Assessment Certificate and a Decision Statement for the Project on October 14, 2014.

3.2 British Columbia Heritage Conservation Act

Heritage sites on non-federal lands in British Columbia are administered by the BC Archaeology Branch and the BC Heritage Branch, in accordance with the *BC Heritage Conservation Act* (HCA). The BC Archaeology Branch is the agency responsible for administering the HCA and for maintaining the Provincial Heritage Register. The BC Heritage Branch exercises regulatory authority under the HCA regarding the protection and alteration of designated (i.e., protected) heritage sites. Section 13 of the HCA specifies that an individual (or corporation) must not “damage, excavate, dig in or alter, or remove any heritage object” from a heritage site, except in accordance with a permit issued by the Minister pursuant to Sections 12 and 14.

3.2.1 Resources Protected under the Heritage Conservation Act

The HCA confers automatic protection upon heritage sites that pre-date 1846, or undated sites that could pre-date 1846, regardless of whether they are recorded in the Provincial Heritage Register, whether they are located on Crown Land or private property, and whether they are in a disturbed or intact context. Section 9 (2)(c) of the HCA allows protection of historical heritage sites under the *BC Local Government Act* or the Vancouver Charter. Post-1846 historical heritage sites can be protected by Ministerial Order, Designation by an Order-in-Council, or a municipal by-law, but most historical sites are not protected in British Columbia.

The requirements and procedures for heritage resource studies undertaken for development projects are described in the *British Columbia Archaeological Impact Assessment Guidelines* (BC Archaeology Branch 1998), and procedures for respectful handling of found human remains that are protected under the HCA are provided in the *Policy on Found Human Remains* (BC Archaeology Branch 1999).

3.2.2 Reporting for Archaeological Assessments

The Heritage Specialist is responsible for complying with the reporting requirements of Heritage Conservation Act permits.

Work completed under a Heritage Conservation Act permit must be described in reports provided to the Archaeology Branch and Aboriginal Groups, in accordance with the intervals and requirements stated in each permit application. While each permit application has slight variations, the outline below describes the general approach for the Site C Clean Energy Project.

3.2.3 Interim Reporting

Interim heritage impact assessment reports will be prepared at the end of the field season or on an as needed basis for the purpose of obtaining management direction from the Archaeology Branch. The reports will minimally conform to the applicable standards for interim permit reporting procedures issued by the Archaeology Branch. Electronic copies will be prepared in accordance with the applicable standards for electronic submission of permit reports. A copy of the interim report will be sent to Treaty 8 First Nations as per section 8.1 of the Heritage Conservation Memorandum of Understanding between British Columbia and the Treaty 8 First Nations (dated April 15, 2010). A copy of the interim report will be sent to all other First Nations identified by the Archaeology Branch.

3.2.4 Annual Reporting

An annual report will be written upon completion of each field season during which archaeological assessment takes place. The reports will describe the scope, methodology, and results of the all archaeological assessments completed. One bound hardcopy and one electronic copy in PDF format prepared in accordance with the Standards for Electronic Submission of Permit Reports (Bulletin 7, June 29, 2004) will be submitted to the Archaeology Branch. Electronic copies will be submitted to First Nations identified by the Archaeology Branch.

3.2.5 Permit Reporting

A permit report will be prepared upon completion of the heritage studies included under the Heritage Conservation Act permit. The report will describe the results of all work carried out under the permit, including recommendations for addressing potential impacts by the Site C project on archaeological and other heritage resources.

One bound hardcopy and one electronic copy in PDF format prepared in accordance with the Standards for Electronic Submission of Permit Reports (Bulletin 7, November 25, 2009) will be

submitted to the Archaeology Branch. One bound and/or electronic copy will be provided to each First Nation identified by the Archaeology Branch.

3.2.6 Site Forms and Study Areas

Site forms and site form updates will be submitted to the Archaeology Branch using, where possible, the Archaeological Data Import Facility. Site forms will be completed in accordance with applicable Archaeology Branch standards at the time of submission.

Spatial information concerning the areas surveyed during the AIA will be submitted to the Branch in accordance with Branch requirements (Bulletin 23, Recording Archaeological Study Areas, June, 2009).

3.3 British Columbia Fossil Management Framework

The Province of British Columbia recognizes that palaeontological resources have heritage, scientific, and educational value as “fossils represent the historical record of the evolution and development of life on Earth.” As such, the Province recognizes the need to protect important fossil finds and the interests of stakeholders. Currently, fossil collecting in British Columbia is unregulated and there is no clear policy for fossil management (Fossil Management Review Technical Working Group 2004). There are no explicit administrative controls or legal instruments that provide automatic protection and management of such resources, although protection can be provided under certain conditions, as explained below.

Regulatory protection for palaeontological sites was limited until 1997, when they were included under the BC *Mineral Tenure Act*. In 2005, a new regulation took effect that identifies fossils as “not a mineral” under the BC *Mineral Tenure Act*, effectively preventing the rights to mine, extract, and sell fossils being obtained through new mineral claims.

Although palaeontological sites are not currently protected by explicit provincial legislation, the Lieutenant Governor in Council has the ability to protect specific palaeontological finds through designation as a provincial heritage site or heritage object by issuing an Order-in-Council under Section 9 of the BC *Heritage Conservation Act*. In addition, the BC Land Tenures Branch (formerly the BC Strategic Land Policy and Legislation Branch) has established a set of guidelines for fossil management and is currently working with a Fossil Management Review Technical Working Group to establish operational and administrative processes for fossil management in British Columbia. The BC Land Tenures Branch (2012) guidelines state:

- Fossils and fossil sites are important to British Columbia as heritage resources.
- The order of priority for fossil management is science, natural heritage, education and, where appropriate, commercial use.
- The order of priority for extraction or excavation of fossils is science, natural heritage, education and, where appropriate, commercial use. Non-extractive commercial use has precedent over extractive commercial use.

- A fossil management framework that recognizes the heritage value of fossils, the need to protect significant fossil sites, and the interests of stakeholders is necessary.

In the absence of clear legislative protection and resource management guidelines, ethical guidelines found in Ludvigsen and Beard's (1994) *West Coast Fossils: A Guide to the Ancient Life of Vancouver Island* and the British Columbia Palaeontological Alliance's (2012) Policy on Fossil Collecting and Regulation have been adopted for fossil collection activities undertaken for purposes of the Project.

3.4 British Columbia Cremation, Interment and Funeral Services Act and British Columbia Coroners Act

In the event that interred human remains are encountered in a context that is not addressed by the BC *Heritage Conservation Act*, the BC *Cremation, Interment and Funeral Services Act* (CIFSA) or the BC *Coroners Act* may apply. An example of such a context might be a historical grave site that is not archaeological, but which is not located in a registered cemetery.

Section 19(2) of the CIFSA outlines the specific circumstances under which human remains can be moved, specifically:

A person must not disinter or remove human remains, or any part of human remains, from the place they are interred unless the disinterment or removal is in accordance with

- (a) this Act, the *Coroners Act* and the regulations under those Acts, or
- (b) a permit or an order under the *Heritage Conservation Act*.

3.5 Heritage Conservation Memorandum of Understanding between British Columbia and three Treaty 8 First Nations

There is a Memorandum of Understanding (MOU) signed by three Treaty 8 First Nations and the Province of British Columbia for heritage conservation (BC Ministry of Tourism, Culture, and the Arts 2010). The MOU was signed on May 20, 2010, between the Province and the Doig River First Nation, Prophet River First Nation, and West Moberly First Nations.

The MOU identifies a number of measures the parties to the MOU will take with respect to heritage resources. The key aspects of this MOU as they relate to this Plan are those sections related to Heritage Conservation Act Permit Applications and to associated Permit Reports.

4.0 Engagement with Aboriginal Groups

This section has been developed in accordance with Environmental Assessment Certificate Condition 62 and Condition 15.2 of the Federal Decision Statement:

Specific section within CEA Condition 62: The Heritage Resources Management Plan must specify a process for the engagement of Aboriginal Groups in planning and follow-up/monitoring activities related to heritage resources as the Project proceeds. In

particular, the Plan must incorporate a process for continued collaboration with Aboriginal Groups on ground-truthing for the identification of any burial sites that the Project may disturb.

15.2: The Proponent shall develop, in consultation with Reservoir Area Aboriginal groups and the Métis Nation British Columbia, a plan to avoid, minimize or manage impacts to local archaeological and heritage resources.

15.3.1: The plan shall include: procedures to continue inventories and ground truthing of potential physical and cultural heritage resources to determine the need and applicability of mitigation measures

There are a number of ways that BC Hydro will engage Aboriginal Groups with respect to the implementation of this Plan:

- In accordance with the Heritage Conservation Act, Aboriginal Groups that may be affected by a permitting decision will be provided an opportunity lasting 15 to 30 days to have their comments considered. As described above in Section 3.5, interim reports will be provided to the First Nations who are party to that MOU, and in accordance with Heritage Conservation Act permits all Aboriginal Groups specified in permits receive copies of permit reports.
- BC Hydro will work with Aboriginal Groups to a) identify burial locations which may be impacted by the Project, and b) develop measures to avoid and mitigate effects to burial sites identified as Aboriginal as described in Section 6.2.3 below.
- As described in the Cultural Resources Mitigation Plan, BC Hydro will invite Aboriginal Groups to identify to BC Hydro any locations of cultural resources and heritage resources within planned construction areas (primarily through the implementation of a ground truthing program). Through the processes under the Cultural Resources Mitigation Plan, the location of previously unknown heritage resources, including burial sites, may be reported to BC Hydro. Where additional heritage work may be required in relation to a reported but unconfirmed heritage resource identified by an Aboriginal group, the process described in Section 5.2 Additional Heritage Inspection and Investigation will be followed.
- BC Hydro and its consultants will continue to make appropriate personnel available to discuss the heritage program.
- To date the heritage field program has had a high rate of employment of Aboriginal field assistants from the Peace region, and future field programs will continue to provide field assistant employment opportunities to Aboriginal people.
- Any additional terms for engagement related to heritage resources that may exist, or may be reached in the future, in agreements between the province and Aboriginal Groups (as described above), or in agreements between BC Hydro and Aboriginal Groups will also be taken into account.

5.0 Heritage Inventory

5.1 Record of Confirmed Heritage Resources

The Provincial Heritage Register includes detailed information on known heritage resources protected under the Heritage Conservation Act that are located in the Project Activity Zone (PAZ). Within the PAZ many of the known sites were found during inventories conducted during the environmental assessment (EA) for the Project. Information collected up to and including 2012 is included in the Heritage Resources Section 32, Volume 4 of the Site C Clean Energy Project, Environmental Impact Statement and Volume 4 Technical Appendix: Heritage Resource Assessment Report, Volume 1-4 Appendix C (BC Hydro, 2012).

The Heritage Specialist will maintain a current database of confirmed heritage resources including BC Heritage Conservation Act protected heritage sites, and other historical and palaeontological sites confirmed through the process described in section 5.2 below. Locations of heritage sites identified by Aboriginal Groups will be included in the database subject to the terms of agreements and the input of the reporting Aboriginal group. The Heritage Specialist is able to provide Contractors with detailed information on confirmed heritage resources in the PAZ on an as-needed basis.

5.2 Additional Heritage Inspection and Investigation

This section has been developed in accordance with Condition 15.3.1 of the Decision Statement.

The plan shall include: procedures to continue inventories and ground truthing of potential physical and cultural heritage resources to determine the need and applicability of mitigation measures.¹

For clarity, where this section provides that the Heritage Specialist is responsible for making a determination, that determination will be made by a Qualified Professional.

5.2.1 Remaining areas requiring heritage inventory

While the vast majority of areas requiring a heritage inventory within the PAZ were inspected prior to Project construction, there are, for example, some private land parcels for which permission to enter was not granted, and therefore may require an assessment prior to construction activities. As outlined in the Heritage Conservation Act (HCA) permit, areas requiring inventory are determined based on the Millennia archaeological potential model (Millennia Research Ltd 2010). As part of the BC Archaeology Branch's prerequisites for continued use of the Millennia model, the Model was developed and field-tested in 2010 then subsequently revised prior to launching the full archaeological program in 2011. The HCA permits allow judgmental testing of areas modelled as low or moderate potential as part of the archaeological methods to help compensate for small irregularities with the model. Further,

¹ Note that the management of cultural resources is addressed in the Cultural Resources Mitigation Plan.

areas of low and moderate potential may be tested as part of investigations of a known site or as part of management of a chance find. Upon completion of the project, the final permit report will include a detailed review of the effectiveness of the model as part of the research methodology evaluation required for the permit.

All additional heritage inventory will be completed in a manner consistent with the heritage assessment and following the methodologies and conditions described in the applicable HCA permit. The work will be completed prior to the start of construction in these areas.

Upon completion of additional heritage inventory, interim reports will be submitted to the BC Archaeology Branch and provided to Aboriginal Groups in accordance with HCA permit requirements as listed in section 3.2 British Columbia Heritage Conservation Act above and the MOU.

5.2.2 Reported but unconfirmed heritage resources

Prior to or during the construction phase, the locations of unconfirmed heritage resources may be reported to BC Hydro by third parties, including Aboriginal Groups. As described in the Cultural Resources Mitigation Plan, and Section 4.0 above, BC Hydro is working with Aboriginal Groups to identify locations of cultural resources and heritage resources within planned construction areas (primarily through the implementation of a ground truthing program). Through the processes under the Cultural Resources Mitigation Plan, the location of previously unknown heritage resources, including potential burial sites, may be reported to BC Hydro.

The Heritage Specialist is responsible for reviewing reports of unconfirmed heritage resources, in consultation with the Archaeology Branch and BC Hydro. Where directed by BC Hydro, locations of unconfirmed heritage resources will be investigated under the terms and conditions of the HCA Permits or in a manner consistent with the palaeontological inventory and mitigation program. Additionally, as a condition of Heritage Inspection Permit 2014-0274, BC Hydro has allotted 25 person/days to conduct inspections of areas selected by Treaty 8 First Nations, including inspection of areas containing unconfirmed heritage resources. For inspection of areas reported by Aboriginal Groups, Aboriginal field assistants will be included as part of the standard field crew complement wherever possible.

Further inspection beyond the 25 person/days allocated to the Treaty 8 First Nations may occur at the discretion of the Heritage Specialist in consultation with BC Hydro. The Heritage Specialist in communication with BC Hydro may consider the following factors, among others, in deciding whether to conduct an inspection of a location reported to contain unconfirmed heritage resources, and in determining the extent and nature of any inspection:

- The strength and specificity of the information reported to BC Hydro;
- Whether the location has been the subject of a previous heritage inspection or investigation;

Where possible and culturally appropriate, reports of unconfirmed heritage resources provided to BC Hydro should include:

- Information on the specific location of the unconfirmed heritage resource;
- Evidence of the existence of a heritage resource at that specific location including, for example:
 - first person observation of features;
 - artifacts, typically observed in existing exposures or through subsurface testing;
 - oral history;
 - archival records; and
 - remote sensing results (magnetometer or ground penetrating radar).

In order to provide time for the development and implementation of management recommendations, reports of unconfirmed heritage resources should be made to BC Hydro at the earliest opportunity when the information becomes available.

Depending on the results of the inspection, the Heritage Specialist will recommend whether or not further investigation of the site is required.

With respect to locations reported to contain burials, upon request of one or more Aboriginal Groups, BC Hydro will coordinate a site visit with representatives of the Aboriginal group(s) and direct the Heritage Specialist or a heritage consultant to participate in the site visit, as appropriate. Site visits to reported burial places do not count against the aforementioned 25 person/days.

5.2.3 Process for confirming archaeological and historical sites, including burials

The Archaeology Branch is ultimately responsible for confirming the protection status of archaeological and historical sites, including burials. With respect to newly found archaeological and historical sites, a site will be classified as a confirmed heritage resource for the purpose of the Plan if:

- (a) the Heritage Specialist has sufficient information to determine that the location is an archaeological or historical site which meets the criteria for protection under the Heritage Conservation Act and will be included in the Provincial Heritage Register in the future,
- (b) it is recorded in the Provincial Heritage Register maintained by the Archaeology Branch pursuant to s. 3 of the *Heritage Conservation Act*, or
- (c) the Archaeology Branch notifies BC Hydro of the location of a new archaeological site that will be recorded in the Provincial Heritage Register in future.

With respect to burials, physical evidence, such as human remains, is generally required for the Archaeology Branch to confirm the protection status of the location and record it in the Provincial Heritage Register. However, a combination of other types of evidence can support a decision to confirm a burial site, including:

- visual evidence (e.g., depressions, grave markers, grave goods, grave houses or petroforms);
- oral history;

- archival records; and
- positive remote sensing results (magnetometer or ground penetrating radar).

The decision on what evidence is considered sufficient and whether or not to enact protection under the Heritage Conservation Act is made by the Archaeology Branch. For further information, please contact the Archaeology Branch.

5.2.4 Newly found sites

If the existence of a new palaeontological, archaeological and historical site is confirmed through the process described above, the Heritage Specialist will update the Site C database of confirmed heritage resources to include the newly found site and it will be managed in accordance with Section 6.0 (Heritage Resources Impact Management) and Appendix B (Description of Heritage Mitigation Measures) of this document. If the site meets the requirements for protection under the Heritage Conservation Act, the Heritage Specialist will submit information regarding the newly found site to the Archaeology Branch for inclusion in the Provincial Heritage Register.

5.3 Palaeontology

The significance of palaeontological resources was based on a checklist of scientific, heritage, educational, and commercial criteria (weighted toward scientific). Palaeontological sensitivity areas (PSAs) identified in the PAZ are subdivided into three classes, based on their relative significance:

- **Class I** represents PSAs exhibiting positive results for the presence of palaeontological specimens having the highest significance ranking. They may contain fossils with the following characteristics: *in situ*; unique; abundant and diverse specimens; good preservation; spanning a broad stratigraphic interval; with potential for educational or commercial opportunities.
- **Class II** represents PSAs that may contain commonly known fossils, *in situ*, moderate preservation, and moderate abundance and may sometimes coincide with areas where amateur fossil collection has taken place.
- **Class III** represents PSAs having the lowest significance ranking. These sites have characteristically low specimen abundance, poor preservation, and widely common specimens in *ex situ* context.

5.4 Archaeology

BC *Heritage Conservation Act*-protected heritage resources have been assigned to classes according to an assessment of their heritage significance, as determined using criteria set forth in the *British Columbia Archaeological Impact Assessment Guidelines*, Appendix D (BC Archaeology Branch 1998) and as specified in the Heritage Conservation Act S. 14 Permits, and through discussion with the BC Archaeology Branch, as follows:

- **Class I:** This class represents the most complex archaeological sites, rated as having high to moderate significance with high artifact counts (>20) and four or more formed tools (cores or retouched artifacts) and utilized flakes. These sites also include one or more of the following: a variety of artifact types, “exotic” raw materials, stratified cultural deposits denoting multiple occupations, or faunal remains.
- **Class II:** These sites have lower significance ratings than Class I sites for a variety of reasons. The BC Archaeology Branch has recommended subdivision of the Class II sites, with the goal of identifying those sites that may have less significance and correspondingly would receive a lower level of effort in terms of management activities. Class II sites are subdivided into four subclasses as follows:
 - ◆ **Class Ila** represents moderate to low significance archaeological sites, with 21 or more artifacts, three or fewer formed tools and utilized flakes, and one or more of the following attributes: exotic lithic raw materials, faunal remains, or evidence of multiple occupations.
 - ◆ **Class I Ib** represents low-to-moderate significance archaeological sites, composed of 20 or fewer artifacts with two or fewer formed or utilized tools, and the presence of exotic lithic raw materials, or faunal remains.
 - ◆ **Class I Ic** represents low significance archaeological sites, with two to 20 flakes. These sites do not contain any evidence of formed tools, utilized flakes, exotic lithic raw materials, or faunal remains.
 - ◆ **Class I Id** represents low significance archaeological sites that have either been destroyed (that is, a “legacy site”) or are composed of a single flake (isolated find). By definition, these sites do not contain any evidence for formed tools or utilized flakes, exotic raw materials, multiple occupations, or faunal remains.
 - ◆ **Class NA:** A number of previously recorded archaeological sites are located in areas where permission to enter was not granted, or have original descriptions that are poor and could not be relocated. These sites have been included in archaeological overview level assessments, but insufficient information is currently available to assign these locations to classes.

5.5 Historical

Both BC *Heritage Conservation Act*-protected historical sites and historical sites not automatically protected by the Heritage Conservation Act have been assigned to classes according to an assessment of their heritage significance, as determined using criteria set forth in the *British Columbia Archaeological Impact Assessment Guidelines*, Appendix E (BC Archaeology Branch 1998). These classes are defined as follows:

- **Class I** represents significant sites, with good integrity and condition.
- **Class II** represents sites with heritage significance, but poor integrity and condition.

- **Class III** represents sites with low heritage significance and poor integrity and condition.
- **Class NA:** A number of historical sites are located on properties where permission to enter has not been granted, or have original descriptions that are poor and could not be relocated. Therefore these sites could not be classified based on existing information.

6.0 Heritage Resources Impact Management

This section has been developed in accordance with Environmental Assessment Certificate Condition 62 and conditions 15.1, 15.3.2 of the Decision Statement:

Specific section within Condition 62: The Heritage Resources Management Plan must include Archaeological Impact Management and Heritage Resources Monitoring and Follow-Up Programs. The field and reporting portions of each program will be of a scope, duration and frequency prescribed by the BC Heritage Conservation Act permits. The Archaeology Impact Management Program must be developed by a QEP qualified to hold Section 14 Heritage Inspection and Investigation Permits

15.1: The Proponent shall ensure that the Designated Project is constructed and operated in a manner that avoids, minimizes or manages impacts to local archaeological and heritage resources.

15.3.2. The Plan shall include; measures to address the effects of the Designated Project on the physical and cultural heritage and to structures, sites or things that that have been identified as being of historical, archaeological, paleontological or architectural significance by local stakeholders, relevant organizations, Reservoir Area Aboriginal groups and the Métis Nation British Columbia;

6.1 Heritage Conservation Act Permits

The sections that follow summarize heritage resource permitting under the Heritage Conservation Act (HCA) for the Project. Palaeontological resources and non-HCA protected historical resources are not subject to permit requirements except in rare circumstances as outlined in Section 2 and below. The remainder of this summary focuses on permitting associated with archaeological resources and HCA-protected historical resources. HCA Permits that are no longer active are still included but indicated as (closed).

Archaeological work for the Heritage Resource Impact Assessment was conducted in accordance with the terms and conditions of HCA Section 14 (Heritage Inspection) permits 2010-0378 (closed) and 2014-0274. The Plan also incorporates information gathered during concurrent archaeological field work undertaken by Golder Associates Ltd. (Golder) under HCA (Heritage Inspection) permit 2009-0262 (closed) on an as-and-when basis in support of engineering, geotechnical and environmental investigations associated with the Project, as well as information gathered from field programs in earlier periods. Concurrent monitoring of geotechnical studies has also been conducted by Ecofor Consulting Ltd. (Ecofor) under HCA blanket inspection permit 2014-0087.

Through its Heritage Specialist, BC Hydro will obtain permits under the BC *Heritage Conservation Act* that are required for the construction of the Project, which are anticipated to include requirements with respect to the assessment, mitigation and management of heritage resources and any requirements associated with undertaking construction activities within protected heritage sites.

In 2014, the Heritage Specialist obtained S.14 Heritage Investigation Permit 2014-203 (closed) for the mitigation Pilot Program implementing impact mitigation methodology (systematic data recovery). To allow for archaeological inventory work, assessments and impact mitigation, and to undertake appropriate actions in response to a chance find during construction, an amendment to HCA S.14 (Heritage Inspection) permit 2014-0274 has been obtained. HCA S.14 (Heritage Investigation) permit 2016-235 was obtained by Ecofor to facilitate additional systematic data recovery. The Heritage Specialist has obtained HCA S. 12 Alteration Permit 2015-0193 to allow for site alteration, and has updated the permit as required during Project construction and operations. These permits will be amended as needed to address any new heritage requirements during construction. See below for further information.

6.1.1 Inventory, Assessment and Impact Mitigation

Archaeological inventory work and assessments will be undertaken under an HCA S.14 Heritage Inspection Permit. An HCA S.14 Heritage Inspection Permit will be maintained for the Project Activity Zone during Project construction.

Systematic data recovery (SDR) under an HCA S.14 permit will be undertaken as a mitigation measure for all Class I archaeological sites and for a sample of Class II sites (based on the classification of sites recorded during the inventory) (see Section 4.3 and Appendices A and B).

S. 14 Heritage permits may be for single sites or for multiple sites.

6.1.2 Site Alteration

Prior to the commencement of site preparation activities, the Heritage Specialist will submit a S. 12 HCA Permit application to allow for site alteration, and will update the permit as required during Project construction and operations. These permits will be amended as needed to address any new heritage requirements during construction.

An HCA S.12 Alteration Permit must be in place prior to undertaking land-altering work within an identified archaeological site. Approval to proceed with site alteration within each site with planned SDR or other mitigation work is contingent on Archaeology Branch approval of the submitted interim report that summarises the results of the planned mitigation work for each site (see Section 6.2.1). Alteration permits may include general or site-specific conditions for the management of sites covered by the Alteration Permit.

Within archaeological sites for which mitigation (SDR) is planned, winter clearing prior to completion of the SDR would be allowable under the conditions of the HCA S. 12 Alteration Permit. As winter clearing occurs on frozen ground with little or no effect on the site deposits below the surface, SDR can occur after clearing activities. Further ground altering effects from

project construction activities will be allowed only after SDR is complete, and after Archaeology Branch approval of interim reports that summarise the results of SDR at each site.

6.2 Management Options

6.2.1 Avoidance

Partial or complete avoidance through changes to the design or placement of project components, or to the locations of construction activities, will be considered for heritage resources where feasible under existing project constraints. Additionally, certain construction activities can be scheduled under specific conditions to avoid ground disturbance (e.g. winter clearing; machine free clearing). Factors to consider in determining whether avoidance is feasible under existing project constraints include:

- Technical and engineering risks and challenges;
- Requirements of Project approvals and permits;
- Construction scheduling and overall project schedule; and
- Cost.

The Project components that may offer some opportunity for some level of avoidance of heritage sites include:

- the final alignment or placement of temporary work areas within Highway 29 realignments;
- placement of temporary work areas within Highway 29 realignments,
- the final alignment of temporary or permanent access roads; and
- quarries and construction material areas outside the dam site area.

For other Project components, while it is unlikely that avoidance will be feasible under existing project constraints, opportunities for avoidance will be explored as appropriate. Please see Section 6.2.3 below for a specific discussion of avoidance and mitigation in relation to burial sites.

The Contractor, by following the Work Planning steps described in Section 6.3, will work with BC Hydro to identify any measures that will be taken to avoid heritage sites, and will outline any required avoidance measures in EPPs. Where sites are to be avoided, the EPP would describe the site protection measures (e.g. fencing or barriers) that would be employed so that the site is not affected by construction activities.

6.2.2 Mitigation Measures

For heritage sites (excluding burials) that will be impacted and not avoided, the mitigation measures described below will be used.

Palaeontological Sensitive Areas

Palaeontological mitigation measures concentrate on fourteen palaeontological site complexes, thirteen of which are composed of concentrations of fossil sites in geographically constrained

bedrock exposures that span geologically distinctive stratigraphic intervals. One palaeontological site complex includes widely distributed fossil sites dating from the Quaternary.

Mitigation measures for palaeontological resources include:

- Systematic data recovery (documentation and representative sample collection) from within new geological exposures within the 14 identified PSAs; and
- Chance find procedures during construction.

Archaeological and Historic Sites

Consistent with the *British Columbia Archaeological Impact Assessment Guidelines* (BC Archaeology Branch 1998), management of archaeological and historical sites are addressed at the site level.

Mitigation measures for archaeological and historic sites include:

- Systematic data recovery;
- Post ground disturbance inspection and monitoring;
- Altered work practices; and
- Chance find procedures during construction.

6.2.3 Systematic Data Recovery

Systematic data recovery which involves field work is intended to find, document and recover (collect) artifacts and associated information from heritage sites. Systematic data recovery will be undertaken within selected archaeological and historic sites prior to disturbance by Project activities, as follows:

- Systematic data recovery for all Class I archaeological sites and historical sites protected under the Heritage Conservation Act that will be affected by construction activities prior to ground altering activities in those locations.
- Systematic data recovery for a sample of Class II subclasses IIa, IIb, and IIc. These sites were divided into four strata according to side of the river, and valley versus plateau (i.e., North Valley, South Valley, North Plateau, and South Plateau), and using a table of random numbers, a random sample of sites were selected for systematic data recovery. The sample size was approximately 40% of Class IIa sites, 20% of Class IIb sites, and 15% of Class IIc sites.
- Class II d archaeological sites do not require further work given their low significance (either previously destroyed or consisting of a single stone flake).
- For newly identified sites subsequent to the sample selection
 - Class I sites that are found during the impact assessment, chance find procedures or post impact assessment will be subjected to systematic data recovery.
 - A sample of newly discovered Class IIa, IIb and IIc site will be selected for systematic data recovery (SDR) maintaining a similar sampling ratio to that used in the stratified random sampling procedures described above.

Further detail on systematic data recovery is provided in Appendices A and B.

6.2.4 Post ground disturbance inspection and monitoring

Post-ground disturbance inspection (PGDI) involves surface inspection and collection of heritage resources from known sites after initial ground-disturbance. This includes:

- stripping the archaeological site to a depth specified by the Heritage Specialist;
- raking and inspection at high density find locations to determine if construction activities have penetrated to artifact-bearing depths; and
- raking of push-piles to determine if significant artifacts, or high numbers of artifacts, have been displaced by construction activities.

PGDI will be completed prior to construction for known Class I, IIa, IIb, and IIc archaeological sites as described in the HCA S.12 (Alteration) Permit 2015-0193. No PGDI is planned at sites subject to only winter clearing prior to inundation.

Where PGDI is not feasible due to safety or logistical reasons, construction monitoring by the Heritage Specialist during initial ground disturbing activities may be undertaken subject to site safety considerations. This will include monitoring any protective measures implemented within known archaeological sites (e.g., capping, fencing, etc.).

No surface inspection or monitoring will be conducted at Class IIc sites impacted by Project construction nor at previously recorded sites that could not be relocated during the heritage resource impact assessment for the Project.

If significant archaeological materials are identified during the PGDI activities or construction monitoring, the Heritage Specialist may implement additional heritage management strategies, such as screening, raking, and salvage excavation (systematic data recovery) prior to continuation of construction. Summary assessments of PGDI are submitted to the Archaeology Branch prior to continuation of ground altering activities.

6.2.5 Altered Work Practices

Altered work practices such as clearing during frozen winter conditions, placement of rig matting, hand falling within heritage sites or leaving high stumps to discourage vehicle access, may be implemented by the contractors to reduce effects on heritage sites. Where an appropriate altered practice is to be implemented, the approach will be detailed in the contractors EPP's and should be discussed in the tailboard meeting.

6.2.6 Chance Find Procedures

The Heritage Specialist is responsible for developing a Chance Find Procedure which outlines the actions to be taken by Contractors if previously unknown heritage resources are encountered during construction.

The EPP for each work area will include the Chance Find Procedure. Each Contractor is responsible for complying with the Chance Find Procedure.

The Chance Find Procedure applies to chance finds of suspected heritage remains that are inadvertently uncovered during construction activities. This applies to heritage resources outside of the boundaries of confirmed heritage sites, including:

- Significant Palaeontological remains;
- Archaeological remains;
- Human remains; and,
- Historical sites.

In the event of a chance find, the contractor must follow the Stop Work Procedures outlined in the Chance Find Procedure, which generally include the following steps:

1. Stop work in the immediate vicinity;
2. Secure the area;
3. Notify a Supervisor, BC Hydro's Heritage Representative and Heritage Specialist; and
4. If required, the Heritage Specialist will conduct an inspection.

In February 2018, a draft addendum to the Chance Find Procedure was developed outlining a revised procedure to be followed in the event of a chance find of human remains. The purpose of the addendum is to seek input from First Nations on the procedures in place for responding to a chance find of human remains and ensure the procedures are culturally appropriate and sensitive.

6.2.7 Burial Sites

The preferred management option for burial sites protected under the Heritage Conservation Act (HCA) is avoidance. Where avoidance is not feasible under existing project constraints, other mitigation measures will be explored. The two primary mitigation measures are:

1. **In Situ Protection:** it may be possible to redesign certain project components to reduce adverse effects to interments (e.g. building on grade instead of sub-grade). In circumstances where detailed project design is ongoing, an opportunity exists to incorporate heritage considerations into this process through *in situ* protection measures employed to limit impacts and disturbance, such as:
 - a) Capping;
 - b) Bridge structures; and,
 - c) Open box culverts.
2. **Relocation:** consideration may be given to relocating the burial to a new location outside of areas to be impacted by project construction activities. Subject to environmental and geological limitations, cultural considerations, and regulatory approvals to ensure respectful relocation, it may be possible to:
 - a. disinter through systematic data recovery and relocate human skeletal remains and grave goods; or
 - b. to remove and relocate the intact burial feature through block removal.

Other options include commemoration of the location, leaving the site in its current state, or other options that may be suggested by affected parties.

The Archaeology Branch is the regulatory decision maker in relation to the management of archaeological resources, including protected burial sites. Protected burial sites cannot be disturbed without an HCA permit that enables burial management. Typically burial management either follows the *Policy on Found Human Remains* (BC Archaeology Branch 1999) or an approved site-specific methodology for managing the burial site. Determination of the preferred approach will be made with input from affected parties, including:

- Descendants of the deceased individuals, if they can be identified and contacted; and,
- Affected Aboriginal Groups.

For each protected burial site, a site-specific burial management plan will be developed in consultation with Aboriginal Groups in advance of impacts by the Project. Where a number of protected burial sites are located in the same vicinity, a single document may be prepared outlining the management approach for the area, with specific details as required for each site.

Where avoidance of the location of a confirmed burial site is proposed by an Aboriginal group, but avoidance measures are determined not to be feasible, BC Hydro will provide an explanation in writing to the Aboriginal group outlining why avoidance is not feasible under existing project constraints and a site-specific burial management plan will be developed prior to impacting the site.

Where the location of a potential burial site is reported to BC Hydro, but insufficient evidence exists for confirmation and HCA protection as determined by the Archaeology Branch, there is no requirement under the HCA to implement mitigation. However, it is understood that reported but unconfirmed burial sites can be locations of cultural importance to Aboriginal Groups. As such, mitigation measures for reported but unconfirmed burial sites, as appropriate, will be developed in accordance with Section 5.3 (Development of Mitigation Measures in Collaboration with Individual Aboriginal Groups), which contemplates the preparation of Site Specific Mitigation Plans.

6.2.8 Summary of Mitigation Measures by Activity

The Project's major construction activities and the approaches to mitigate project effects on palaeontological (**P**), archaeological (**A**), and historical (**H**) resources are summarized in Table 1. Table 2 in the following section summarises the monitoring approaches during Project operations. The approaches listed in Tables 1 and 2 and further described in Appendix B are those planned to be implemented in the PAZ based on the nature of the heritage resources that are present and the nature of project activities.

Prescriptive Heritage Environmental Protection Plans will be developed that will include heritage-site specific management based on the Plan and Heritage Conservation Act permits.

Table 1: Project Construction Activities and Heritage Mitigation Approach

Activity	Mitigation Approaches
Site Preparation: Dam site clearing and grubbing	<ul style="list-style-type: none"> ■ Systematic data recovery (P, A) ■ Documentation (P) ■ Winter clearing if cleared in advance of planned SDR (P, A) ■ Post ground disturbance inspection or concurrent monitoring (P, A) ■ Chance find procedure (P, A, H)
Site Preparation: Dam site area (early excavations, soil stripping, roads, camp, bridge crossing)	<ul style="list-style-type: none"> ■ Record the start and end location of artifact-bearing soils (A, H) ■ Documentation (P) ■ Post ground disturbance inspection or concurrent monitoring (P, A) ■ Chance find procedure (P, A, H)
Dam site construction (foundation, roads, spillway, powerhouse, turbines, generators, ancillary infrastructure)	<ul style="list-style-type: none"> ■ Record the start and end location of artifact-bearing soils (A, H) ■ Documentation (P) ■ Chance find procedure (P, A, H)
Quarries and construction material source areas	<ul style="list-style-type: none"> ■ Systematic data recovery (P, A, H) ■ Post ground disturbance inspection or concurrent monitoring (P, A, H) ■ Documentation (P, H) ■ Chance find procedure (P, A, H)
Relocated surplus excavation materials (RSEM) and Hudson's Hope Shoreline Protection	<ul style="list-style-type: none"> ■ Record the start and end location of artifact-bearing soils (A, H) ■ Chance find procedure (P, A, H)
Reservoir clearing	<ul style="list-style-type: none"> ■ Systematic data recovery (P, A, H) ■ Winter clearing if cleared in advance of planned SDR (P, A, H) ■ Documentation (P, H) ■ Compensation-in-kind (H) ■ Grave sites (capping and relocation) (A, H) ■ Post-clearing site inspection or concurrent monitoring (P, A, H)

Activity	Mitigation Approaches
	<ul style="list-style-type: none"> ■ Chance find procedure (P, A, H)
Transmission line and substations (including site preparation, clearing and grubbing, construction)	<ul style="list-style-type: none"> ■ Site avoidance where the project design can feasibly be changed (e.g., tower placement) (A, H) ■ Systematic data recovery (P, A, H) ■ Documentation (P) ■ Winter clearing if cleared in advance of planned SDR (P, A, H) ■ Post ground disturbance inspection or concurrent monitoring (P, A, H) ■ Chance find procedure (P, A, H)
Highway 29 realignment and access roads (including site preparation, clearing and grubbing, construction)	<ul style="list-style-type: none"> ■ Site avoidance where the project design can feasibly be changed (e.g., road alignment) (A, H) ■ Documentation (P, H) ■ Compensation-in-kind (H) ■ Systematic data recovery (P, A, H) ■ Winter clearing if cleared in advance of planned SDR (P, A, H) ■ Post-grubbing site inspection or concurrent monitoring (P, A, H) ■ Chance find procedure (P, A, H)

6.3 Construction Work Planning and Compliance Verification

6.3.1 Work Planning

Contractors are responsible for complying with heritage obligations applicable to their scope of work and work areas, and must prepare an Environmental Protection Plan (EPP) that applies to their scope of work and work areas.

To assist the Contractor in developing the content of EPPs and meeting heritage obligations, the Contractor will be provided with a guidance document called “Site C EPP Heritage Content”.

EPPs will describe heritage requirements for protected heritage resources located within the work areas. EPPs will include, at a minimum, the following information as applicable:

- Maps of recorded heritage sites within work areas covered by the EPP.
- Descriptions of site specific management requirements for each recorded heritage site including, as applicable:
 - conditions of site alteration in accordance with *Heritage Conservation Act* permits,
 - identification of Restricted Activity and Work Avoidance Zones, and

- the recording and tracking of the movement and relocation of sediments associated with archaeological sites.
- Chance find procedures setting out the process to be followed if previously unrecorded heritage resources or human remains are discovered.
- Training on incident definition and reporting.

The Contractor will:

- Provide BC Hydro with maps of planned construction locations and activities in a timely manner.
- Cooperate with BC Hydro in developing the heritage requirements of an EPP.
- Provide BC Hydro with information about the scheduling of planned work in a timely manner.

BC Hydro will:

- Provide the Contractor with information regarding the requirements of *Heritage Conservation Act* permits, and the status and timing of planned work under *Heritage Conservation Act* permits.
- Provide the Contractor with access to spatial data identifying:
 - recorded heritage sites,
 - any Restricted Activity and Work Avoidance Zones, including any areas within planned construction locations where heritage assessments are not completed and still required.

The spatial data for heritage sites and Restricted Activity and Work Avoidance Zones will be uploaded to a secured BC Hydro website known as a virtual “data room”. Upon signing a License Agreement, the contractor will be granted access to the secured website to view the spatial data. Note that the spatial data does not include the cultural content of the site.

BC Hydro, and/or their delegate Heritage Specialist, will:

- Provide advice to the Contractor with respect to heritage requirements to be included in the EPP for each heritage site in the contractor’s work area.

Once satisfied, BC Hydro accepts the heritage requirements in the EPP and notifies the Contractor via the EPP review process.

Once the Contractor’s EPP has been accepted, in the event of a change to the classification of a heritage site, or a newly discovered heritage site, BC Hydro will update the spatial data in the Data Room and, if required, issue a Field Advice Memo (FAM). The Contractor (or delegate) must ensure they have updated spatial data and management requirements regarding heritage sites in their work area as the number of heritage sites or the status of the sites may change.

During Construction, BC Hydro and/or the Heritage Specialist will perform compliance verifications and manage chance find investigations and any heritage incidents as required.

See Appendix C for a chart of the heritage resources management process.

6.3.2 Compliance Verification

Contractor compliance with the heritage requirements described in EPPs or FAMs is verified by:

- Requiring Contractors to discuss at daily tailboard meetings the heritage requirements for the heritage sites located within their work area for that day. All tailboard meetings are documented.
- Conducting inspections of heritage sites during and/or upon completion of construction activities.
- Conducting year-end inspections of heritage sites for multi-year construction contracts.
- Conducting inspections during construction to verify that the contractor has available the written site-specific heritage management requirements and the heritage chance find procedures.
- Conducting investigations into heritage incidents to determine root causes and corrective and preventative actions.

7.0 Compensation-In-Kind

This section has been developed in accordance with Environmental Assessment Certificate Condition 64 which states:

The EAC Holder must provide a total of \$100,000 to local accredited facilities in close proximity to the Project, prior to the start of operations, to curate and display the recovered resources and the funding is not to be used for buildings to house them. These funds must be provided only to facilities that agree to work with interested Aboriginal Groups on the display and curation of those artefacts.

In accordance with the Project construction schedule, most of the systematic data recovery efforts will be completed within the first five years of the Project construction schedule. Recovered archaeological remains, in accordance with Heritage Conservation Act permits, will be documented according to provincial standards, and will be sent to the North Peace Regional Museum for curation. Recovered palaeontological remains will be stored securely until after compensation-in-kinds funds have been allocated, after which BC Hydro will seek a long-term repository for recovered palaeontological specimens, which could include a single or multiple natural history or educational facilities both within and outside of the Peace region.

In the fifth year of Project construction, BC Hydro will contact accredited museum facilities in the Peace region of British Columbia to discuss their interest in providing BC Hydro with a proposal for funds, in accordance with condition 64, for the curation and display of heritage resources recovered during the systematic data recovery efforts, and recovered as a result of surface inspection monitoring or chance find procedures. BC Hydro would support any discussions between facilities or with the Province, in the context of a specific proposal, which may be necessary with respect to the temporary or permanent curation or relocation of specific heritage remains.

8.0 Heritage Monitoring and Follow-Up Program

This section has been developed in accordance with Environmental Assessment Certificate Condition EAC 62 and Conditions 15.3.3 and 15.3.4 of the Federal Decision Statement.

Specific sections within Condition 62:

Monitor reservoir erosion during occurrences of exposure to assess the impacts on existing or newly identified protected archaeological sites and other heritage resources.

Conduct the monitoring of shoreline erosion downstream (for approximately 2 km) as part of chance-find procedures to determine if physical heritage resources are affected by the Project. The EAC Holder must undertake this monitoring for any spills from the Project reservoir for a period of two years following the commencement of reservoir filling and commissioning.

15.3.3: procedures to monitor reservoir erosion during occurrences of low reservoir levels, to investigate any potentially new-found sites and to carry out emergency salvage procedures during construction and operation; and

15.3.4: procedures to monitor shoreline erosion downstream of the Site C dam for up to 2.5 kilometres during the first two years of operation to determine if physical heritage resources are affected.

The Heritage Monitoring and Follow-Up program will commence prior to reservoir impoundment. Monitoring and follow-up work, as required, on archaeological sites that are affected by the Project, i.e., by reservoir inundation, would be guided by the conditions of the appropriate Heritage Conservation Act (HCA) Permit that will be obtained for the Project. The archaeological data compiled through the heritage inventory and mitigation stages will be utilized as the baseline data against which effects of the inundation and erosion will be monitored. This baseline data will include the locations of dense artifact concentrations, intra-site activity areas, and average depth below surface (DBS) of archaeological materials.

Consistent with BC Hydro's existing reservoir archaeology program, shoreline erosion of heritage resources within the reservoir will be monitored for a period of not less than the first five years of operations. As described in the Environmental Impact Statement (BC Hydro 2013, Volume 2, Section 11.2.3.7), approximately half of the predicted erosion over 100 years is expected to occur during the first five years of reservoir operation. The exact scope and schedule of the monitoring plan will be finalized prior to the planned occurrence of reservoir inundation. This program will be developed through discussions with Aboriginal Groups and the Archaeology Branch, and implemented under the appropriate HCA Permit. Reporting on the results will occur on an annual basis, with a final report prepared at the end of the 5 years summarizing the results of the monitoring plan, following HCA permit requirements.

In addition to the systematic reservoir monitoring program, a chance find procedure will be maintained during the operations phase within the reservoir and extending approximately 2.5 kilometres downstream of the dam, including monitoring for any effects of spills.

From time to time, other opportunities may arise for follow-up heritage work during Project operations, for example within the lower operating range of the reservoir during periods of maximum drawdown for scheduled and unscheduled maintenance. As part of BC Hydro's existing reservoir monitoring program, such opportunities would be considered as they arise, and may include access to exposed heritage site locations, emergency salvage or systematic data collection.

Table 2 summarizes the follow-up program for heritage resources.

Table 2: Project Operations - Heritage Monitoring and Follow Up Program

Activity	Approach
Reservoir Operations	<ul style="list-style-type: none"> ■ Chance find procedure (P, A, H) ■ Reservoir margin monitoring (P, A, H) ■ Downstream river monitoring through chance find procedure (2.5 km downstream) (P, A, H) ■ Additional mitigation measures may be applied based on the results of monitoring and any requirements of associated Heritage Conservation Act permits. (A, H)

8.1 Effectiveness of Mitigation Measures and Adaptive Management

Mitigation measures that apply to archaeological and historical sites include systematic data recovery (SDR) and post ground disturbance inspection (PGDI). Both of these mitigation strategies are scalable and the level of effort may be modified to ensure an effective approach.

During SDR, the effectiveness of the mitigation is assessed on an ongoing basis while work is underway. The inventory program obtained preliminary results for each archaeological site which was used to determine the level of SDR effort and where to focus that effort within each site (i.e. targeting artifact concentrations). If the results of the SDR are not representative of the inventory results, adaptive management strategies are implemented. If recovery rates are lower than anticipated, shovel testing methods can be implemented to relocate artifact concentrations and redefine evaluative unit placement prior to continuing with SDR. If results continue to show minimal returns, a reduction of effort can be proposed to the Archaeology Branch for approval. Alternatively, where SDR results indicate higher concentrations or evidence that can further enhance our understanding of the cultural history, prehistoric use of the area or answer the research questions, additional excavation units can be proposed to the Archaeology Branch for approval.

During PGDI, salvage excavation may be used as an adaptive management strategy. Post ground disturbance inspections are conducted at all Class I, IIa, IIb, and IIc archaeological sites within the project area subject to construction impacts (other than just clearing). Post ground disturbance inspections are not required for Class IId archaeological sites, sites that could not be relocated, or sites with “legacy” status. Generally completed subsequent to initial ground disturbance and stripping, the archaeological crew uses the results of the inventory and SDR to recommend the appropriate depth for stripping the site that would expose the cultural deposits and have the highest likelihood of exposing additional archaeological material. Salvage excavation is an extension of the SDR mitigation that can be completed to further investigate any artifact concentration or features that have been identified or exposed by site stripping.

9.0 Reporting

This section has been developed in accordance with Environmental Assessment Certificate Condition EAC 62 and Condition 15.6 of the Decision Statement:

Specific section within EAC Condition 62: Establish a reporting structure for reporting to Aboriginal Groups and the Archaeology Branch beginning 180 days following the commencement of operations.

15.6: The Proponent shall implement the plan and provide to the Agency an analysis and summary of the implementation of the plan, as well as any amendments made to the plan in response to the results, on an annual basis during construction and for the first five years of operation, unless otherwise indicated.

A Heritage Resources Management Annual Report will be prepared and provided to the BC Archaeology Branch and Aboriginal Groups which will summarise the key activities undertaken in accordance with this Plan each year during Project construction.

The Heritage Resources Management Annual Report will be provided to the EAO, the Archaeology Branch (FLNR), Aboriginal Groups in accordance with those listed on page 1 of the EAC conditions, and the Metis Nation of British Columbia.

Reporting will also be undertaken in accordance with Heritage Conservation Act permit requirements.

10.0 Qualified Professionals

This section has been developed in accordance with Environmental Assessment Certificate Condition EAC 62:

Specific section within EAC Condition 62: “The Heritage Resources Management Plan must be developed by a QEP”

Table 3 lists the qualified individuals who prepared the Plan dated June 5, 2015 (Revision 1). Revision 1 of the Plan was reviewed by BC Hydro archaeologist Peter Vigneault, B.A., R.P.C.A.

Table 3: Qualified Professionals

Qualified Environmental Professional	Area of Qualification	BC HCA* Permit Holding Status
Diana Alexander, M.A., R.P.C.A.	Archaeology	YES
D’Arcy Green, M.A., R.P.A.	Archaeology	NO
Andrew (Andy) Mason, M.A., R.P.C.A.	Archaeology	YES
Adrian Myers, Ph.D., R.P.A.	Historical	NO

Qualified Environmental Professional	Area of Qualification	BC HCA* Permit Holding Status
(hired by BC Hydro in April, 2018)		
Doris Zibauer, M.A., R.P.C.A. (hired by BC Hydro in June, 2016)	Historical	YES
Edward Davies, Ph.D., P. Geol. (BC, Alberta)	Palaeontology	n/a

* HCA stands for Heritage Conservation Act.

The qualified individuals who are responsible for developing amendments to the Plan are:

- Peter Vigneault, B.A., R.P.C.A
- Doris Zibauer, M.A., R.P.C.A.

This list may be updated from time to time as personnel or service providers are changed or added to the program.

11.0 References

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British Columbia (BC) Ministry of Tourism, Culture and the Arts. 2010. *Heritage Conservation Memorandum of Understanding Between the Her Majesty the Queen in the Right of the Province of British Columbia (as represented by the Minister of Tourism, Culture and the Arts) and Doig River First Nation (as represented by its Chief), Prophet River First Nation (as represented by its Chief), and West Moberly First Nations (as represented by its Chief)*. Available at: http://www2.gov.bc.ca/assets/gov/topic/9EFBD86DA302A0712E6559BDB2C7F9DD/agreements/heritage_mou_doig_prophet_moberly.pdf. Accessed October 2014.

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Appendix A: Process for Selecting Archaeological Sites for Excavation

As noted in Section 5.4, archaeological sites have been assigned to classes according to an assessment of their heritage significance, as determined using criteria set forth in the *British Columbia Archaeological Impact Assessment Guidelines*, Appendices D and E (BC Archaeology Branch 1998). These classes are defined as follows:

- Class I: This class represents the most complex archaeological sites, rated as having high to moderate significance with high artifact counts (>20) and four or more formed tools (cores or retouched artifacts) and utilized flakes. These sites also include one or more of the following: a variety of artifact types, “exotic” raw materials, stratified cultural deposits denoting multiple occupations, or faunal remains.
- Class IIa represents moderate to low significance archaeological sites, with 21 or more artifacts, three or fewer formed tools and utilized flakes, and one or more of the following attributes: exotic lithic raw materials, faunal remains, or evidence of multiple occupations.
- Class IIb represents low-to-moderate significance archaeological sites, composed of 20 or fewer artifacts with two or fewer formed or utilized tools, and the presence of exotic lithic raw materials, or faunal remains.
- Class IIc represents low significance archaeological sites, with two to 20 flakes. These sites do not contain any evidence of formed tools, utilized flakes, exotic lithic raw materials, or faunal remains.
- Class IId represents low significance archaeological sites that have either been destroyed (that is, a “legacy site”) or are composed of a single flake (isolated find). By definition, these sites do not contain any evidence for formed tools or utilized flakes, exotic raw materials, multiple occupations, or faunal remains.
- Class NA: A number of previously recorded archaeological sites are located in areas where permission to enter was not granted, or have original descriptions that are poor and could not be relocated. These sites have been included in archaeological overview level assessments, but insufficient information is currently available to assign these locations to classes.

The site classification process identifies those sites that have the greatest potential to answer questions about the prehistory of the PAZ. Both Class I and Class II archaeological resources within the PAZ have been taken into account in the development of a systematic data recovery (excavation) program as follows:

- Class I sites have the greatest potential to provide more archaeological information and larger and more diverse artifact assemblages with time depth. Archaeological excavations will be undertaken at each of these sites.
- Class II sites collectively have the potential to provide important information about Aboriginal land use associated with the most common type of archaeological site in the

area, the low density lithic artifact scatter. Archaeological excavation will be undertaken for a sample of Class II subclasses IIa, IIb, and IIc. These sites were divided into four strata according to side of the river, and valley versus plateau (i.e., North Valley, South Valley, North Plateau, and South Plateau), and using a table of random numbers, a random sample of sites were selected for systematic data recovery. The sample size is approximately 40% of Class IIa sites, 20% of Class IIb sites, and 15% of Class IIc sites.

- Class IId archaeological sites will not be subject to archaeological excavation due to their low significance (e.g. site is either previously destroyed or is comprised of a single stone flake).
- Over time, additional sites may be identified, or Class NA sites may be able to be classified. Newly identified Class I sites would be excavated in accordance with the above rationale. Newly identified Class IIa, IIb, and IIc sites would be considered within the context of the four strata above, and through discussion with the BC Archaeology Branch a similarly sized sample of these sites be subject to archaeological excavations prior to disturbance.

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British Columbia Ministry of Forests, Lands and Natural Resource Operations, Archaeology Branch (BC Archaeology Branch). 1998. *British Columbia Archaeological Impact Assessment Guidelines*. Victoria, BC.

Appendix B: Description of Heritage Mitigation Measures

Further description of approaches to mitigation and manage the adverse effects of the Project on heritage resources is provided in the sections below.

Clearing during Winter Ground Conditions

Disturbance to heritage sites can be reduced by undertaking clearing activities on frozen and snow-covered surfaces. In areas where there are no other construction activities, such as the majority of the reservoir area, this approach would be effective at reducing disturbance prior to inundation (Hester 1992). In areas where clearing may precede planned systematic data recovery, clearing during winter conditions reduces ground disturbance prior to completion of planned SDR.

Relocation

For historical structures and features relocation is a mitigation option commonly requested by community members, yet it can significantly affect heritage values (Bradshaw et al. 2011). Relocating a heritage structure, for example, removes the building from its original context, reduces the potential for interpretation, and severs the connection to the wider social, cultural, historical, and natural settings. Heritage values of the historical structure or site are often strongly connected to the surrounding landscape, natural environment, and geographical setting. Relocation should only be considered an appropriate mitigative tool when it can be shown that heritage values will continue to be preserved after the relocation process has been completed. Consultation with descendants, the local community and appropriate regulatory bodies prior to relocation is important to address how the historical materials would be transported, who would be involved with the relocation process, what ceremonies (if any) should be performed and by whom, and where the heritage structure should be relocated.

Capping

Site capping consists of placing a protective cover (e.g., sand, gravel, or lightweight fills such as closed-cell extruded polystyrene foam) on top of a heritage site as a means of protecting the deposits from disturbance, including erosion (Ardito 1994) and compaction (Davis et al. 2004). In some instances (e.g., road building), the infrastructure may be built on top of the protective cap.

Capping of archaeological sites is considered by the BC Archaeology Branch to be an appropriate mitigative measure when it can be demonstrated that important data will not be irrevocably lost through compaction, accelerated decomposition, horizontal displacement, or subtle changes in soil chemistry (BC Archaeology Branch 1998). Prior to capping, the BC Archaeology Branch may require systematic data recovery as compensation due to the inaccessibility of future investigations at the site.

Systematic Data Recovery Measures

Systematic data recovery involves field work intended to find, document and recover (collect) artifacts and associated information from heritage sites. The scope of such a program is typically commensurate with the assessed importance of the resource and the magnitude of the effect. Some of the more common forms of systematic data recovery are described below.

Surface Inspection and Collection

The collection of palaeontological remains and artifacts observed on the ground surface or in natural or man-made exposures typically involves systematic ground surface inspection, mapping and documentation of surface finds, and collection of all, or a sample, of the materials observed.

Sub-surface Excavation and Collection

Heritage site excavation can take a variety of forms, including fossil extraction and excavation within recorded archaeological sites or historical sites that include buried objects or features.

With respect to archaeological sites and to historical sites protected by the Heritage Conservation Act, the BC Archaeology Branch is responsible, through permitting, for determining the scope of such investigations. All excavation within recorded archaeological sites would be done under an Heritage Conservation Act permit. Due to the destructive nature of excavation, a data recovery program using acceptable methods and techniques must be implemented in recognition of the loss of future opportunities for scientific research, preservation, or public appreciation after excavation.

Documentation

Documentation typically includes mapping and recording of heritage environments, structures or features. The goal is to create a record of the strata, feature, or structure.

The specific recording methods vary with the nature of the heritage resource, however commonly include the following:

- Production of maps or measured drawings at a precise scale from actual dimensions recorded in the field (e.g., plan and elevation drawings of historical structures);
- Detailed, high-resolution photographs and video;
- Discipline specific information
 - Written histories and oral histories to place archaeological or historical sites or structures within the appropriate context, addressing historical and architectural or engineering aspects; and
 - Paleo-ecological context or geological strata mapping of palaeontological sites.

Compensation-In-Kind

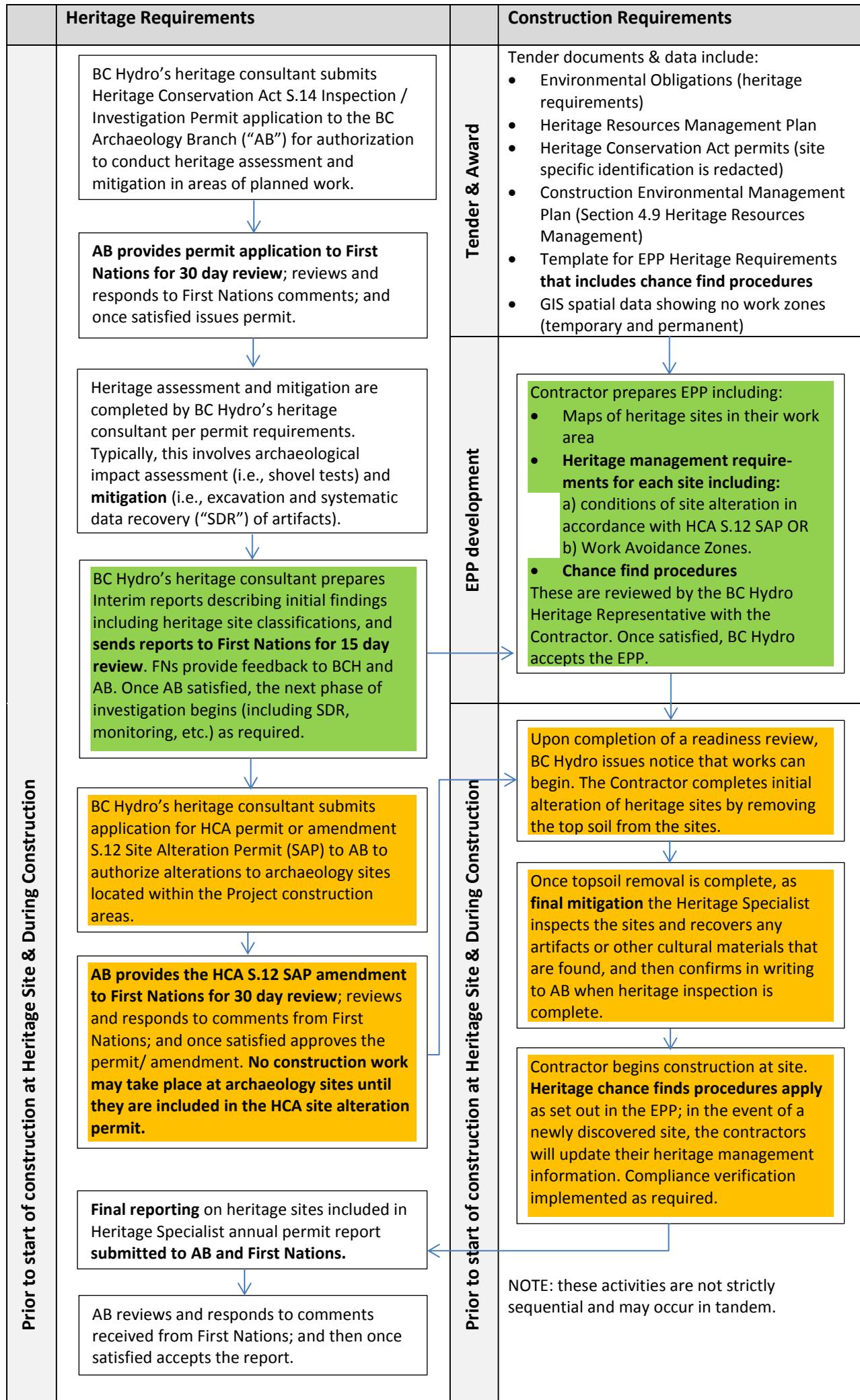
Compensation-in-kind can include, but is not limited to, replication (replacement) of a feature such as a historical trail segment, funding for museums (special exhibits, public displays, or volunteer programs), public education (such as school programs, school teaching kits,

publications, improved signage or adding new signage at unmarked sites, community lectures, web sites, documentary film, or video), or creating an interpretive site. A public-oriented archaeological program that includes a field school under the direction of a local college or university and provides opportunity for public involvement (through volunteer positions or hiring of interested local community members) is another example of how compensation-in-kind can be used as a form of mitigation.

References

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Appendix C: Heritage Resources Management Process Chart



Appendix D: HRMP Condition Compliance Summary

The purpose of the Heritage Resources Management Plan (“Plan”) is to describe the measures that will be used to mitigate the adverse effects of the Project on heritage resources. The Plan has been developed in accordance with the conditions of the Environmental Assessment Certificate (EAC) and federal Decision Statement (FDS), as indicated in the table below. The table below shows in which phase of the project the EAC and FDS conditions apply. Where an item is complete or not currently applicable, the table is greyed out.

Condition	Condition	Plan Reference	Project Phase	Status	Evidence / Deliverables
EAC Condition 62	The EAC Holder must protect and preserve heritage resources by implementing measures as detailed in a Heritage Resources Management Plan.	Heritage Resources Management Plan			
	The Heritage Resources Management Plan must be developed by a QEP.	Section 10.0 Qualified Professionals	Prior to start of construction	Complete June 5, 2015	Heritage Resources Management Plan
	The Heritage Resources Management Plan must specify a process for the engagement of Aboriginal Groups in planning and follow-up/monitoring activities related to heritage resources as the Project proceeds. In particular, the Plan must incorporate a process for continued collaboration with Aboriginal Groups on ground-truthing for the identification of any burial sites that the Project may disturb.	Section 4.0 Engagement with Aboriginal Groups	Prior to start of construction	Complete June 5, 2015	Heritage Resources Management Plan

Condition	Condition	Plan Reference	Project Phase	Status	Evidence / Deliverables
	The Heritage Resources Management Plan must include Archaeological Impact Management and Heritage Resources Monitoring and Follow-Up Programs.	Section 6.0 Heritage Resources Impact Management Section 8.0 Heritage Monitoring and Follow-Up Program	Prior to start of construction	Complete June 5, 2015	Heritage Resources Management Plan
	The field and reporting portions of each program will be of a scope, duration and frequency prescribed by the BC Heritage Conservation Act permits.	Section 6.0 Heritage Resources Impact Management	All	Ongoing	Heritage Conservation Act permit annual reports
	The Archaeology Impact Management Program must be developed by a QEP qualified to hold Section 14 Heritage Inspection and Investigation Permits.	Section 10.0 Qualified Professionals	Prior to start of construction	Complete June 5, 2015	Heritage Resources Management Plan
	The Heritage Resources Monitoring and Follow-Up Program must include at least the following:				
	<ul style="list-style-type: none"> Monitor reservoir erosion during occurrences of exposure to assess the impacts on existing or newly identified protected archaeological sites and other heritage resources 	Section 8.0 Heritage Monitoring and Follow-Up Program	Post-reservoir filling	Not started	Will commence upon occurrence of reservoir exposure

Condition	Condition	Plan Reference	Project Phase	Status	Evidence / Deliverables
	<ul style="list-style-type: none"> Implement mitigation measures, systematic data recovery or emergency salvage operations in accordance with the Heritage Resources Management Plan. 	Section 6.0 Heritage Resources Impact Management	Post-reservoir filling	Not started	Will commence upon occurrence of reservoir exposure
	<ul style="list-style-type: none"> Conduct the monitoring of shoreline erosion downstream (for approximately 2 km) as part of chance-find procedures to determine if physical heritage resources are affected by the Project. The EAC Holder must undertake this monitoring for any spills from the Project reservoir for a period of two years following the commencement of reservoir filling and commissioning. 	Section 8.0 Heritage Monitoring and Follow-Up Program	Post-reservoir filling	Not started	Will be conducted following commencement of reservoir filling and commissioning
	<ul style="list-style-type: none"> Establish a reporting structure for reporting to Aboriginal Groups and the Archaeology Branch beginning 180 days following the commencement of operations. 	Section 9.0 Reporting	Post-reservoir filling	Not started	Will begin 180 days following the commencement of operations
	<ul style="list-style-type: none"> The EAC Holder must file the final Heritage Resources Management Plan with EAO, Archaeology Branch and Aboriginal Groups a minimum of 30 days prior to commencement of construction. 	Section 2.4 Consultation	Prior to start of construction	Complete June 5, 2015	Heritage Resources Management Plan
	<ul style="list-style-type: none"> The EAC Holder must develop, implement and adhere to the final Heritage Resources Management Plan, and any amendments, to 	Section 2.4 Consultation	All	Ongoing	BC Hydro to EAO Annual Compliance Report for EAC

Condition	Condition	Plan Reference	Project Phase	Status	Evidence / Deliverables
	the satisfaction of EAO.				
EAC Condition 64	The EAC Holder must provide a total of \$100,000 to local accredited facilities in close proximity to the Project, prior to the start of operations, to curate and display the recovered resources and the funding is not to be used for buildings to house them. These funds must be provided only to facilities that agree to work with interested Aboriginal Groups on the display and curation of those artefacts.	Section 7.0 Compensation- in-Kind	During Construction	Not started	To take place in Year 5 of construction phase
FDS Condition 15.1	The Proponent shall ensure that the Designated Project is constructed and operated in a manner that avoids, minimizes or manages impacts to local archaeological and heritage resources.	Section 6.0 Heritage Resources Impact Management	All	Ongoing	Heritage Conservation Act permit Annual Reports (& Palaeontology annual report if any)
FDS Condition 15.2	The Proponent shall develop, in consultation with Reservoir Area Aboriginal groups and the Métis Nation British Columbia, a plan to avoid, minimize or manage impacts to local archaeological and heritage resources.	Section 2.4 Consultation Section 4.0 Engagement with Aboriginal Groups	Prior to start of construction	Complete June 5, 2015	Heritage Resources Management Plan
FDS Condition 15.3	The plan shall include:				

Condition	Condition	Plan Reference	Project Phase	Status	Evidence / Deliverables
FDS Condition 15.3.1	<ul style="list-style-type: none"> procedures to continue inventories and ground truthing of potential physical and cultural heritage resources to determine the need and applicability of mitigation measures; 	Section 4.0 Engagement with Aboriginal Groups Section 5.2 Additional Heritage Inspection and Investigation	Prior to start of construction	Complete June 5, 2015	See section 3. Ground Truthing, Aboriginal Plant Use Mitigation Plan & CRMP Any additional inventory work will be completed and reported per the applicable Heritage Conservation Act Inspection Permit.
FDS Condition 15.3.2	<ul style="list-style-type: none"> measures to address the effects of the Designated Project on the physical and cultural heritage and to structures, sites or things that that have been identified as being of historical, archaeological, paleontological or architectural significance by local stakeholders, relevant organizations, Reservoir Area Aboriginal groups and the Métis Nation British Columbia; 	Section 6.0 Heritage Resources Impact Management	Prior to start of construction	Complete June 5, 2015	Heritage Resources Management Plan
FDS Condition 15.3.3	<ul style="list-style-type: none"> procedures to monitor reservoir erosion during occurrences of low reservoir levels, to investigate any potentially new-found sites and to carry out emergency salvage procedures during construction and operation; and 	Section 8.0 Heritage Monitoring and Follow-Up Program	Post-reservoir filling and operations	Not started	Procedures to be in place prior to reservoir filling and operations
FDS Condition	<ul style="list-style-type: none"> procedures to monitor shoreline erosion downstream of the Site C dam for up to 2.5 kilometres during the first two years of 	Section 8.0 Heritage Monitoring	Post-reservoir	Not started	Procedures to be in place prior to reservoir filling and

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Condition	Condition	Plan Reference	Project Phase	Status	Evidence / Deliverables
15.3.4	operation to determine if physical heritage resources are affected.	and Follow-Up Program	filling and operations		operations
FDS Condition 15.4	The Proponent shall submit to the Agency, Reservoir Area Aboriginal groups and the Métis Nation British Columbia a draft copy of the plan for review 90 days prior to initiating construction.	Section 2.4 Consultation	Prior to start of construction	Complete June 5, 2015	Heritage Resources Management Plan
FDS Condition 15.5	The Proponent shall submit to the Agency the final plan a minimum of 30 days prior to initiating construction. When submitting the final plan, the Proponent shall provide to the Agency, an analysis that demonstrates how it has appropriately considered the input, views or information received from Reservoir Area Aboriginal groups and the Métis Nation British Columbia.	Section 2.4 Consultation	Prior to start of construction	Complete June 5, 2015	Heritage Resources Management Plan
FDS Condition 15.6	The Proponent shall implement the plan and provide to the Agency an analysis and summary of the implementation of the plan, as well as any amendments made to the plan in response to the results, on an annual basis during construction and for the first five years of operation, unless otherwise indicated.	Section 9.0 Reporting	All	Ongoing	Heritage Resources Management Plan Annual Report