APPENDIX F

DRAFT ENVIRONMENTAL PROTECTION PLAN

Manitoba Hydro

Keeyask Transmission Project
Draft Environmental Protection Plan

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1.0 INTRODUCTION

1.1 KEEYASK TRANSMISSION PROJECT

Manitoba Hydro is proposing to construct several new 138 kV transmission lines, and stations to support the construction and operation of the Keeyask Generating Station (Map 1). The proposed Keeyask Transmission Project (the Project) will consist of four 138 kV Unit Transmission Lines originating at the Keeyask Generating Station and terminating at the Keeyask Switching Station. Three 138 kV Generation Outlet Transmission Lines will originate at the Keeyask Switching Station and terminate at the Radisson Converter Station connecting the Keeyask Generating Station with the northern ac collector system. A new 138 kV Construction Power Transmission Line and associated station will be built to support the construction of the Keeyask Generating Station.

Construction is planned to commence in 2014 with a projected in-service date of November 2019. The Environmental Assessment Report for the Project (EA Report) describes the Project, provides detailed technical information and outlines the project schedule.

1.2 MANITOBA HYDRO ENVIRONMENTAL POLICIES

Manitoba Hydro's Corporate Vision (Manitoba Hydro 2010) is:

> *"To be the best utility in North America with respect to safety, rates, reliability, customer satisfaction, and environmental leadership, and to always be considerate of the needs of customers, employees, and stakeholders".*

One of the corporation's goals is "*To protect the environment in everything we do*". This goal can only be achieved with the full commitment of Manitoba Hydro management, employees, consultants and contractors at all project stages from planning and design through the construction and operational phases.

Manitoba Hydro is ISO 14001 certified and has a corporate Environmental Management System (EMS) consistent with that standard. The certificate scope of registration for the corporate EMS is the provision of environmental management guidance and direction from Manitoba Hydro's corporate office for the construction, generation, transmission and distribution of electricity and the distribution and retail sale of natural gas in Manitoba. The corporation's Environmental Management Policy (Manitoba Hydro 2012) states that:

> *"Manitoba Hydro is committed to protecting the environment by:*

- *preventing or minimizing any adverse impacts, on the environment, and enhancing positive impacts;*
- *continually improving our Environmental Management System;*
- *meeting or surpassing regulatory, contractual and voluntary requirements ;*
- *considering the interests and utilizing the knowledge of our customers, employees, communities, and stakeholders who may be affected by our actions;*
- *reviewing our environmental objectives and targets annually to ensure improvement in our environmental performance; and*
- *documenting and reporting our activities and environmental performance."*

Manitoba Hydro's strategic objectives and goals, and environmental management policy have been incorporated into this Draft Environmental Protection Plan for the Project.

1.3 ENVIRONMENTAL ASSESSMENT REPORT

The Keeyask Transmission Project Environmental Assessment Report (EA Report) provides information on the Project's main components and activities, the environmental effects of the Project including accidents and malfunctions, measures to mitigate adverse effects, and follow-up requirements. The EA Report also provides information on regulatory requirements, environmental guidelines and best practices, and documents the results from stakeholder and Aboriginal consultations. Chapter 8 of the EA Report describes how mitigation measures and follow-up will be implemented through an Environmental Protection Program. The Keeyask Transmission EA Report is a major source of input to environmental protection measures for this Draft Environmental Protection Plan.

1.4 ENVIRONMENTAL PROTECTION PROGRAM

Manitoba Hydro's Environmental Protection Program (Manitoba Hydro 2012) is based on Manitoba Hydro's corporate commitments and policies, regulatory requirements, best practice guidance and stakeholder input. The Environmental Protection Program provides the framework for implementation, management, monitoring and evaluation of environmental protection activities in keeping with environmental effects identified in environmental assessments, regulatory requirements and public expectations. The Program outlines how Manitoba Hydro is organized and functions to deliver timely, effective, and comprehensive solutions and mitigations to predicted environmental issues and effects. The Program consists of an implementation framework outlining how environmental protection is delivered and managed,

and environmental protection plans that prescribe measures and practices to avoid and minimize adverse environmental effects and evaluate the effectiveness of mitigation strategies.

1.5 ENVIRONMENTAL PROTECTION PLANS

Environmental protection plans document environmental protection measures as part of the overall Environmental Protection Program to ensure compliance with regulatory and other requirements, and to achieve environmental protection goals consistent with corporate environmental policies. Environmental protection measures supplement project specifications to avoid or minimize potential adverse environmental effects arising during the construction and operation phases of the project. Environmental protection plans are designed as “user-friendly” reference documents that provide Manitoba Hydro construction supervisors and site managers as well as contractors with detailed environmental protection measures. Environmental protection measures are organized by project component and activity, in addition to environmental component and issue. This is to assist project personnel in implementing mitigation measures for a variety of project components and activities, and ensuring the protection of environmentally sensitive sites. Environmental protection plans include monitoring programs and updating schedules to ensure that the environmental protection measures remain current and effective, and to enable continual improvement of environmental performance.

1.6 PURPOSE

The purpose of this Draft Environmental Protection Plan is to provide for the effective implementation of mitigation measures and follow-up actions as well as regulatory requirements, environmental guidelines and best practices identified in the Keeyask Transmission Project EA Report. The draft plan is also intended to provide assurance to regulatory reviewers, environmental organizations, Aboriginal communities and the general public that commitments made in the EA Report will be implemented, monitored, evaluated and reported on in a responsible and accountable manner. A Final Environmental Protection Plan will be prepared upon receipt of Environment Act Licence and other regulatory approvals for the Keeyask Transmission Project. It is anticipated that the final Plan, incorporating approval terms and conditions, will be completed in summer 2013.

2.0 ENVIRONMENTAL PROTECTION PROGRAM

2.1 OVERVIEW

This section outlines Manitoba Hydro's Environmental Protection Program for the Project. The Program provides a framework for the delivery, management and monitoring of environmental protection measures that satisfy corporate policies and commitments, regulatory requirements, environmental protection guidelines and best practices, and inputs from stakeholders, the Aboriginal community and the public. The Program describes how Manitoba Hydro is organized and functions to deliver timely, effective, and comprehensive solutions and mitigation measures to address potential environmental effects. Roles and responsibilities for Manitoba Hydro employees and contractors are defined, along with management, communication and reporting structures for implementation of the Program. The Environmental Protection Program includes the what, where and how aspects of protecting the environment during the pre-construction, construction, operation and decommissioning of the Project.

2.2 ORGANIZATION

The organizational structure of the Environmental Protection Program includes senior Manitoba Hydro management, project management and implementation teams that work together to ensure timely and effective implementation of environmental protection measures identified in environmental protection plans and is broadly depicted in Figure 1.

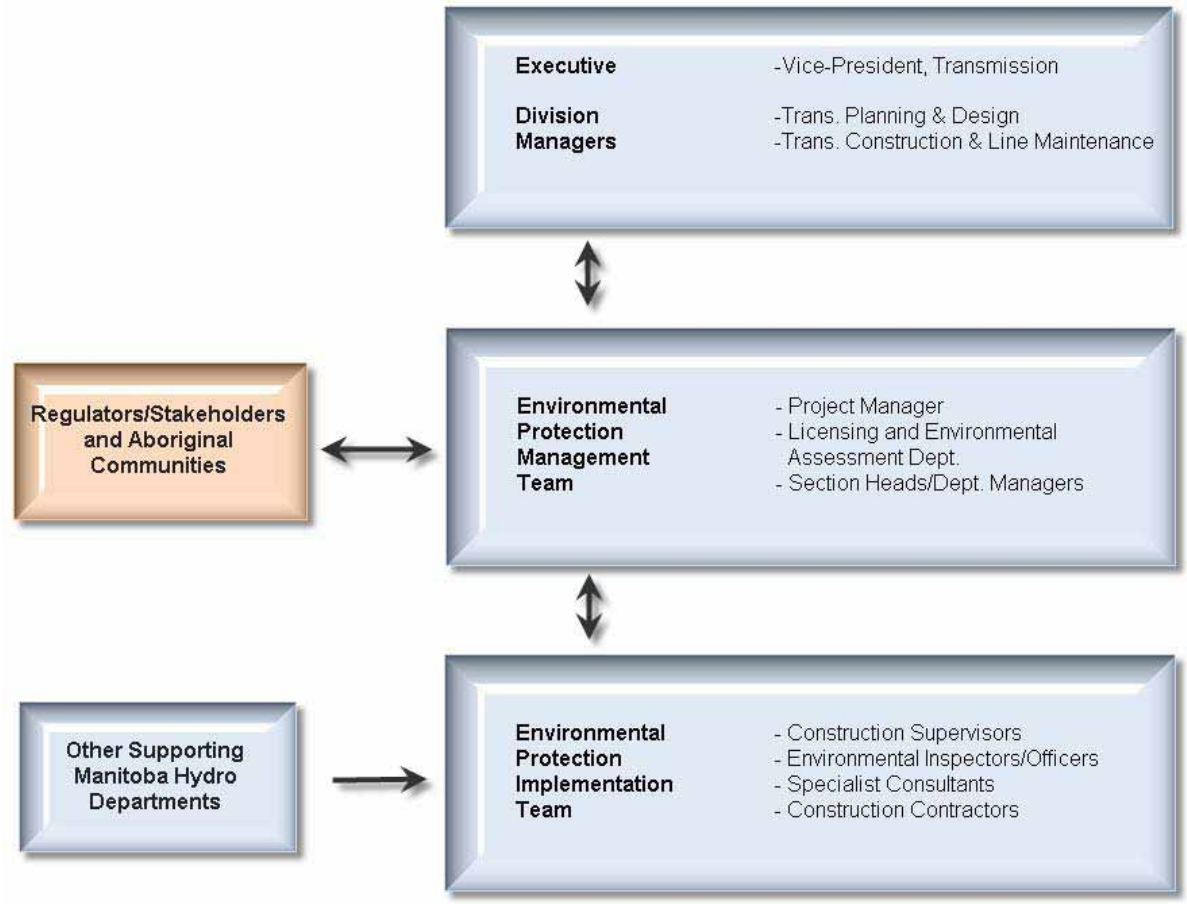

Figure 1: Environmental Protection Program Organizational Structure

2.2.1 Executive and Division Managers

Executive and Division Managers are responsible for the overall Environmental Protection Program including resourcing, management and performance, and are accountable for regulatory compliance, policy adherence and stakeholder satisfaction.

2.2.2 Environmental Protection Management Team

The Environmental Protection Management Team is composed of senior Manitoba Hydro staff and is responsible for the management of environmental protection plans including regulatory compliance, quality assurance and control, as well as consultation with regulators, stakeholders and aboriginal communities.

2.2.3 Environmental Protection Implementation Team

The Environmental Protection Implementation Team is composed of Manitoba Hydro operational field and office staff, and is responsible for the day-to-day implementation of environmental protection plans including monitoring, inspecting and reporting. The implementation team works closely with other Manitoba Hydro staff on an as required basis.

2.3 ROLES AND RESPONSIBILITIES

Roles and reporting structure for implementation of environmental protection measures for the Keeyask Transmission Project are illustrated in general terms in Figure 2.

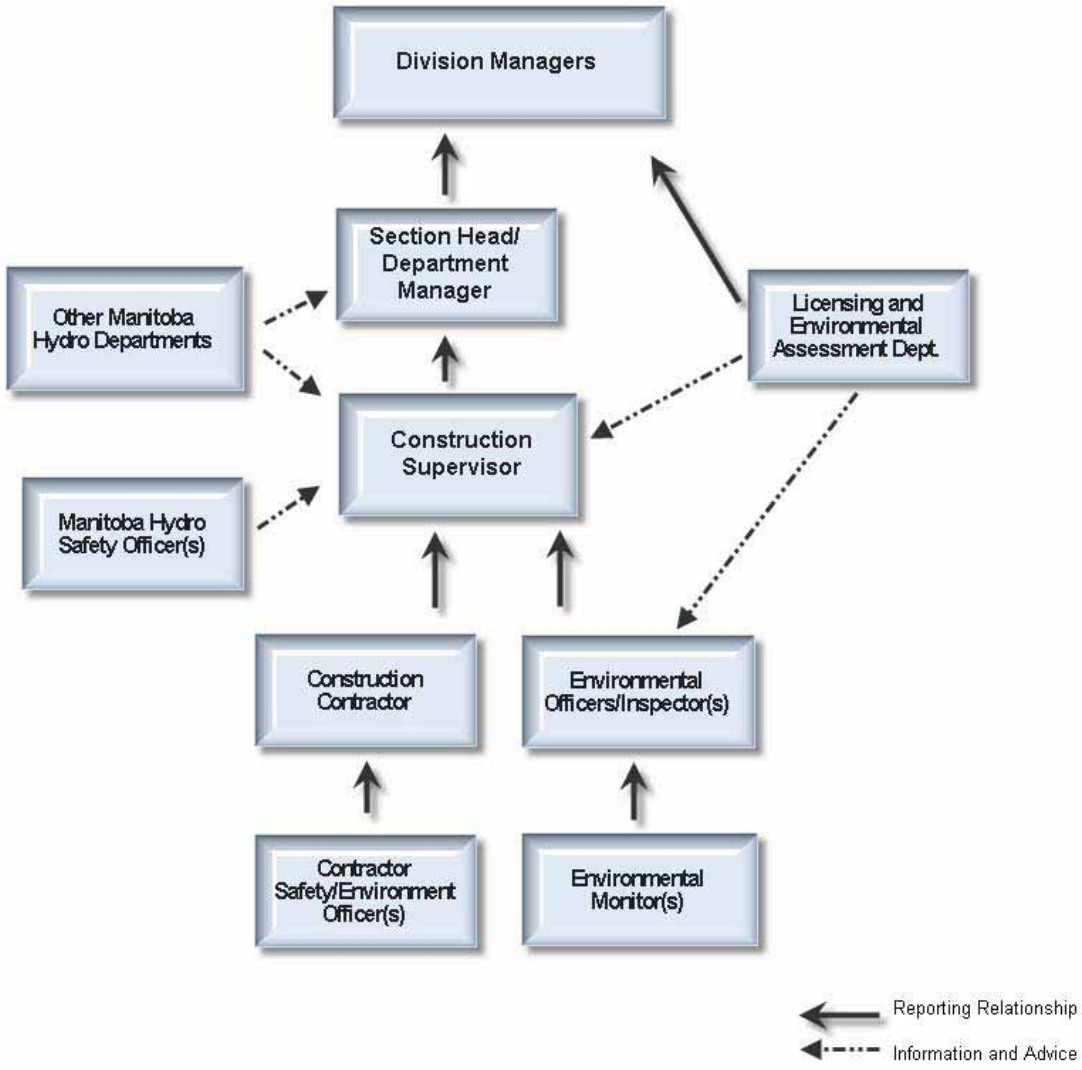

Figure 2: Typical Organizational Lines of Reporting and Communication

The responsibilities for key positions are described below:

2.3.1 Project Manager

Reports to the Transmission Projects Department Manager and is accountable for all aspects of the Transmission components of the Keeyask Transmission Project including regulatory compliance and environmental performance. They depend on each Section Head/Department Manager and Licensing and Environmental Assessment Department, to implement environmental protection measures and provide information and advice on environmental matters.

2.3.2 Section Head/Department Manager(s)

Reports to the Transmission Construction & Line Maintenance Division Manager or Transmission Planning & Design Division Manager.

Key Responsibilities:

- Accountable for all aspects of their applicable component of the Keeyask Transmission Project including regulatory compliance and environmental performance.
- Oversees Construction Supervisors who are responsible for implementing environmental protection measures and ensuring regulatory compliance.

2.3.3 Licensing and Environmental Assessment Department

Reports to the Transmission Planning and Design Division Manager

Key Responsibilities:

- Responsible for preparation of the Project EA Report, obtaining an Environment Act Licence (Manitoba) and overall implementation of licence terms and conditions.
- Provides advice and guidance to the Transmission/Converter Station Project Managers, Construction Supervisors, and Environmental Officers on environmental protection matters.
- Provides training support for Environmental Officers/Inspectors and Environmental Monitors, develops field methods, and designs inspection and reporting systems for implementation.
- Reviews inspection reports and monitoring information, and prepares monitoring and other reports to satisfy regulatory requirements.

- Liaises with senior regulatory authorities, and provides advice and guidance to the Environmental Inspectors for non-compliance situations, environmental incidents and emergencies.

2.3.4 Construction Supervisor(s)

Reporting to the Section Head/Department Manager the Construction Supervisor works with the Construction Contractor to implement environmental protection measures and ensure regulatory compliance.

Key Responsibilities:

- Reviews inspection reports with the Construction Contractor, and remedial actions or responses to non-compliance situations or incidents are implemented as required.
- Works with the Environmental Officer and Inspectors to ensure implementation of environmental protection, management, monitoring and other plans, and ensures that appropriate authorities are notified in emergency or incident situations.
- Issues stop work orders.
- There may be several Construction Supervisors reporting to the Section Head/Department Manager due to the large size and complex nature of the Project.

2.3.5 Environmental Officer(s)/Inspectors

The Transmission Environment Officer, reports to the Transmission Line Construction Section Head and due to the multiple construction sites supervises a team of Environmental Inspectors.

Key Responsibilities:

- Reviews inspection reports.
- Investigates incidents.
- Provides orientation training to MB Hydro staff and Contractors.
- Liaises with regulators and Aboriginal Communities.

The Environmental Inspectors report to the Transmission Environment Officer and provide advice and guidance to the Construction Supervisor.

Key Responsibilities:

- Conducts site inspections regularly and reports are submitted electronically to the Construction Supervisor.
- Weekly and monthly reports containing information on activities carried out, effectiveness of actions and outstanding issues are also submitted.
- Has the authority to resolve environmental issues on-site with the Construction Supervisor.
- Non-compliance situations and incidents are reported to the Construction Supervisor immediately.
- Due to the large size and complex nature of the Project there will a number of Environmental Inspectors.

2.3.6 Environmental Monitor(s)

The Environmental Monitor will report to an Environmental Inspector/Officer and receive training from the Licensing and Environmental Assessment Department.

Key Responsibilities:

- Environmental Monitors conduct field monitoring activities as outlined in the monitoring plans (access, wildlife, vegetation monitoring).
- Perform liaison duties with local communities on construction and environmental activities,
- Assists in the locating and delineating of environmentally sensitive sites.

2.3.7 Construction Contractor(s)

Reports to the Construction Supervisor and is responsible for conducting work in accordance with the construction contract, complying with all regulatory requirements, following best practice guidelines, and adhering to requirements in environmental protection plans.

Key Responsibilities:

- Maintains detailed records of environmental approvals and inventories of accidents, incidents, alterations, wastes, equipment maintenance, public complaints and other matters.
- Reports any discoveries of non-compliance, accidents or incidents to the Construction Supervisor.

- Discoveries of heritage resources, human remains, paleontological finds, environmentally sensitive sites, etc are reported to the Construction Supervisor.

- Responsible for preparing and implementing contract-specific hazardous materials management and emergency response plans in accordance with Manitoba Hydro plans and specifications.

- Contaminated site identification, assessment and remediation are also a responsibility of the Construction Contractor.

- There will be a number of Construction Contractors retained for major components of the Project, each reporting to a Construction Supervisor.

2.3.8 Construction Contractor's Safety and Environmental Officers

The Construction Contractors Safety Officer provides information and advice to the Construction Contractor employees on safety matters and is responsible for implementation of the emergency response and hazardous substances plans, and other related topics. The Construction Contractor's Environmental Officer provides information and advice to the Construction Contractor's employees on environmental protection matters and is responsible for the construction contractor's implementation of environmental protection and related topics.

The number of Safety and/or Environment officers required is based on project component, size, environmental issues and other factors. The Environmental Officer and Safety Officer must be deemed as qualified environmental professional and/or qualified occupational safety and health professional.

2.3.9 Manitoba Hydro Safety, Health, Emergency Response Officers

Manitoba Hydro Field Safety, Health and Emergency Response Officers are responsible for the development and execution of the safety program and Occupational Health and Safety practices at the various construction sites. The officers provide information and advice to the Construction Supervisor.

2.3.10 Other Manitoba Hydro Departments

Other Manitoba Hydro groups including Engineers, Property Agents and technicians provide functional advice to the Construction Supervisors on an as required basis.

2.4 RESOURCES

Ensuring that adequate resources are allocated to the environmental aspects of project planning, development, implementation and operation is key to successful implementation of environmental protection measures and follow-up including monitoring and other requirements. Manitoba Hydro commits resources early in the planning cycle to ensure effective environmental assessment, mitigation and monitoring. A Team of engineers and environmental professionals develop preventative or avoidance mitigation measures that include design, routing and siting alternatives. In addition, there are resource allocations for the delivery and implementation of specific environmental protection measures to meet corporate policy and government regulatory requirements. Manitoba Hydro is committed to staffing the Environmental Protection Program with sufficient Environmental Inspectors and providing required support including training, financial resources and equipment.

2.5 ENVIRONMENTAL MANAGEMENT

Manitoba Hydro is certified under the ISO 14001 Environmental Management System standard and is subject to requirements of the standard including annual audits to verify its conformance to the standard. An Environmental Management System is a framework for developing and applying its environmental policy and includes articulation of organizational structure, responsibilities, practices, processes and resources at all levels of the corporation. The Environmental Management System includes commitments to comply with legislation, licenses, permits and guidelines, conduct inspections and monitoring, and review the results for adherence to requirements. The ISO standard ensures quality, performance and continual improvement in the delivery of Manitoba Hydro's Environmental Protection Program.

2.6 ENVIRONMENTAL PROTECTION DOCUMENTS

Several environmental protection planning documents are developed for different project phases, components and activities. The documents include environmental protection, management and monitoring plans. The level of detail captured in the various plans increases as the project advances through planning, design, construction and operation phases, and the environmental assessment and licensing process (Figure 3).

This Draft Environmental Protection Plan covers the period from submission of the Environment Act Proposal to receipt of an Environment Act Licence and other approvals for the Keeyask Transmission Project. At that time the Draft Environmental Protection Plan will be updated in "Final" form to include licence terms and conditions, and other regulatory requirements. Prior to the commencement of construction activities Construction Environmental Protection Plans will be prepared. It is anticipated that several environmental protection plans will be prepared, each

addressing separate project components or construction contracts. The Construction Environmental Protection Plans will cover the construction period from beginning to end.

Operation Environmental Protection Plans will be prepared prior to the project In-Service Date. One or more environmental protection plans will be prepared for this phase of the Project, each addressing separate project components. Operation Environmental Protection Plans will cover the period post commissioning to the eventual decommissioning of the Project. A Decommissioning Environmental Protection Plan would be prepared prior to the eventual decommissioning of the Project.

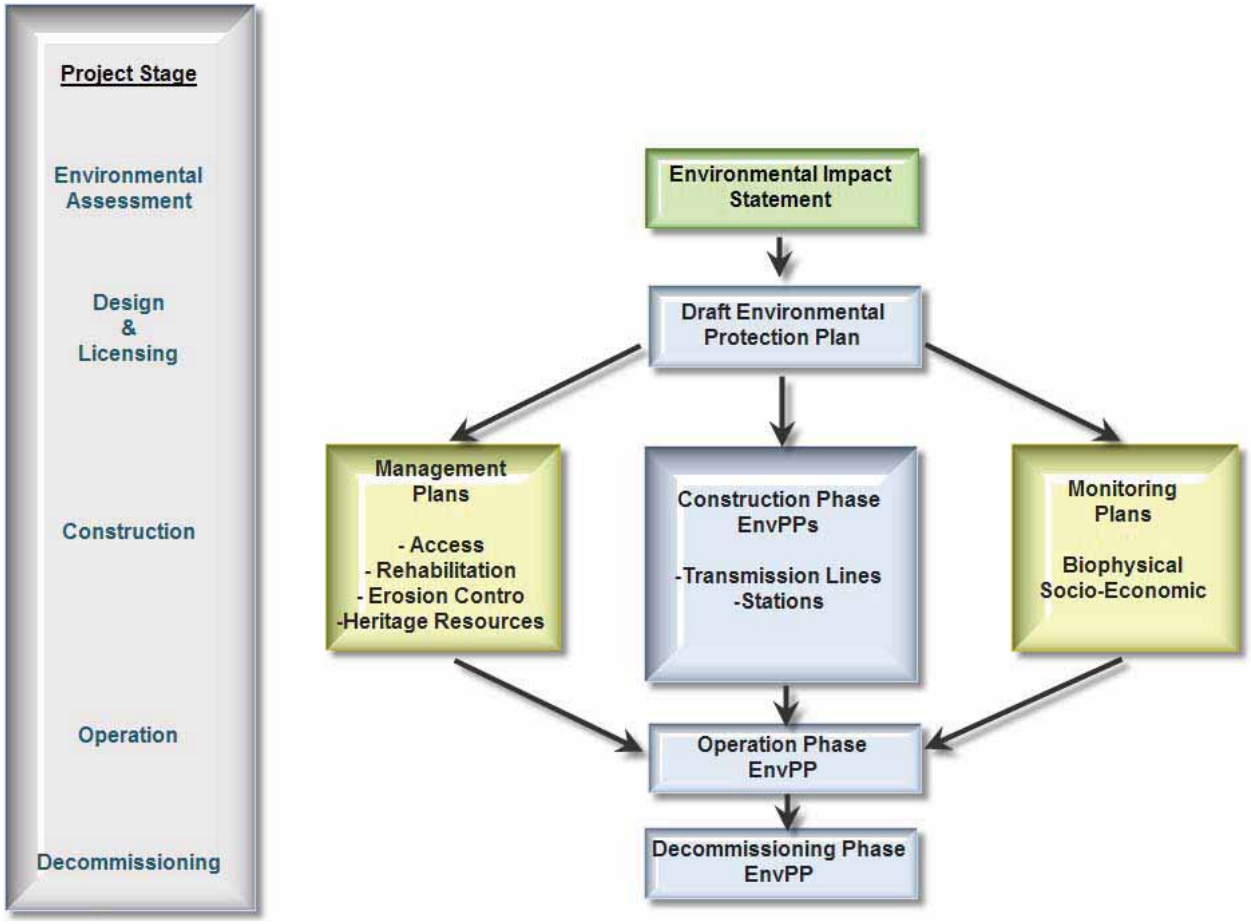

Figure 3: Typical Environmental Protection Documents

Management plans are prepared in response to specific environmental issues identified during the environmental assessment of the Project. Typical environmental issues include access, environmental protection and resource use. Management plans are structured documents that provide reasoned courses of action to address environmental issues and concerns.

Management plans are also prepared in response to regulatory requirements and responsible management practices.

Monitoring plans are prepared in response to specific follow-up requirements identified during the environmental assessment of the Project. Follow-up requirements include those actions implemented to confirm compliance with regulatory requirements and to assess the effectiveness of the environmental assessment. Example follow-up actions include water quality, abundance monitoring, wildlife mortality and resource use.

2.7 PRE-CONSTRUCTION ACTIVITIES

Manitoba Hydro will undertake a number of activities prior to commencing construction of the Project to set the direction for environmental protection and compliance with legislated requirements.

Manitoba Hydro will obtain all licenses, permits, authorizations and other approvals in writing including property agreements, rights-of-way easements and water crossings prior to commencement of construction. Terms and conditions of these approvals will be incorporated into the Construction Environmental Protection Plan. Additional approvals to be obtained by the Contractors will be identified and communicated to the successful bidders. Pre-construction contracts will be established with provincial and federal regulatory authorities including Manitoba Conservation and Water Stewardship, Department of Fisheries and Oceans, Transport Canada and others, and formal points of contract will be identified.

Licensing and Environmental Assessment Department will typically participate in the tender/direct negotiated contract development process to ensure environmental requirements will be included as contract specifications. Potential bidders on work tenders may be required to attend a mandatory pre-bid meeting where environmental requirements are explained. All bidders are required to list and defend their environmental record and must have an environmental policy including a commitment to environmental protection.

Meetings will be held with the successful contractors to review environmental protection requirements, establish roles and responsibilities, management, monitoring and other plans, inspection and reporting requirements, and specified submittals. Prior to the start of construction, contractor employees will be trained and/or oriented on environmental protection requirements. Construction Supervisors, Manitoba Hydro employees, consultants and others working on the project will be required to attend orientation sessions.

The Licensing and Environmental Assessment Department will coordinate the training of environmental officers/inspectors for the Project. Training will be comprehensive and focused on

environmental protection measures, inspection protocols, monitoring programs, computer systems, record keeping and emergency response procedures.

2.8 CONSTRUCTION ACTIVITIES

A number of activities occur during construction of the Project to implement environmental protection measures and ensure compliance with regulatory requirements. Such activities include meetings with contractors, working with regulators and aboriginal communities, inspection and compliance, works stoppage, emergency response, and heritage resource discovery.

2.8.1 Liaison with Regulators and Aboriginal Communities

The Construction Supervisor and Licensing and Environmental Assessment staff will meet with regulatory and aboriginal community points of contract at the beginning of the Project to outline construction plans and schedules, and will request regular meetings to provide updates on project progress, environmental protection measure implementation and regulatory compliance. Manitoba Hydro will fulfill all regulatory requirements for submission of inspection, monitoring and other reports. Regulators will be notified immediately in case of emergency situations, environmental accidents or other incidents in accordance with regulatory requirements. Any proposed changes or alterations to the construction project environmental protection measures or monitoring activities will be reviewed in consultation with the appropriate regulatory authorities.

2.8.2 Inspection and Compliance

Manitoba Hydro will establish a comprehensive integrated environmental inspection program to comply with regulatory requirements, implement environmental protection measures and meet corporate environmental objectives. The inspection program involves hiring and training of environmental inspectors/officers, daily inspection of construction activities and regular reporting to Construction Supervisors and senior management as required.

Trained inspectors will visit active construction sites daily and inspect for compliance with regulatory requirements, license terms and conditions, contract specifications, and environmental protection measures. Specific mitigation measures will be inspected for adherence to specifications and effectiveness of operation. Environmental monitoring sites will be inspected routinely where information or data will be recorded and observations or photographs will be taken. Any situations where unforeseen environmental effects are evident will be reported and mitigation measures will be identified for implementation in a timely manner.

Inspection activities will be recorded on a daily report form. Any non-compliance matters, emergency conditions or environmental accidents will be recorded on an incident report form

and submitted immediately to the Licensing and Environmental Assessment Department and Construction Supervisor for follow-up action. Responses to enforcement actions will be in accordance with Manitoba Hydro's policy for processing legal documents (Appendix D). The Transmission Project Manager and senior management will be kept informed on any incidents and remedial actions taken. Weekly and monthly summary reports will document responses to incidents and their effectiveness.

Typical daily, weekly and monthly inspection report forms, as well as a detailed inspection report checklist and an incident report form are provided in Appendix G.

2.8.3 Work Stoppage

The duty to stop work rests with everyone encountering situations where the environment including biophysical, socio-economic, and heritage resources are threatened by an activity or occurrence that has not been previously identified, assessed and mitigated. Work stoppage is also to occur in the event of an environmental accident, extreme weather event (i.e. ice storm, wind sheer, tornado, heavy rainfall) or the exposure of human remains. Individuals discovering such situations are to inform their supervisor who will report the matter to the Construction Supervisor immediately who will issue a stop work order. The Contractor is also required to stop work voluntarily where construction activities are adversely affecting the environment or where mitigation measures are not effective in controlling environmental effects. Remedial action plans or other environmental protection measures will be developed and implemented immediately after discussion and prior to resumption of work if previously halted. Work is not to resume until the situation has been assessed and responded to and the Construction Supervisor approves the resumption of work. All stop work orders will be documented, reported to regulatory authorities (if applicable) and reviewed at construction meetings.

2.8.4 Emergency Preparedness and Response

Spills of hazardous substances, fires and explosions, environmental accidents, heritage resource discoveries and other emergency or contingency situations require immediate action and response in accordance with established response plans. Provincial, federal, First Nations and municipal authorities, and Manitoba Hydro personnel are to be notified in accordance with regulations and emergency preparedness and response plans. These plans provide names of emergency responders, up to date contract information and notification procedures. Contractors are required to have contract-specific emergency preparedness and response plans outlining contracts and response measures to emergency situations including hazardous materials spills, environmental accidents, fires or explosions, and heritage resource discoveries. These plans will be prepared in accordance with Manitoba Hydro plans and specifications. Manitoba Hydro also has emergency response coordinators to deal with spills of hazardous materials and other substances.

2.8.5 Heritage Resources

Heritage resources may be found in many different locations, and all workers on the Project will be aware of the protocols regarding the removal and handling of artifacts. Protection measures for heritage resources have been incorporated into this EnvPP as general and specific mitigation measures. Detailed actions and procedures for heritage discoveries will be developed into the CEnvPPs. All information regarding heritage resources and/or found human remains will be submitted to the Historic Resources Branch as per the terms of the Heritage Resources Act (1986) and heritage permit and to the local Aboriginal Communities. Ownership of all heritage objects found within Manitoba rests with the Province of Manitoba.

2.9 TOOLS AND RESOURCES

The environmental inspection program will employ modern electronic recording, reporting and communication systems using field computers, geographic positioning systems and digital cameras Field computers will have project and other reference information needed for effective implementation of environmental protection measures including regulations, guidelines, licences, permits, engineering drawings, specifications, maps, reports and data. An Environmental Protection Information Management System (EPIMS) will monitor and report on environmental protection implementation, regulatory compliance and incident reporting. The EPIMS will be fully integrated with field inspection, monitoring and data collection

2.10 COMMUNICATIONS

Manitoba Hydro personnel will maintain ongoing communications with Manitoba Conservation and Water Stewardship, other provincial and federal departments, and First Nations and Métis as necessary regarding implementation of the Project environmental protection plans. The Construction Supervisor and Environmental Inspectors will maintain ongoing communications with the Contractor and contract staff through daily tailboard meetings and weekly or otherwise scheduled construction meetings at the worksite. Daily, weekly and monthly inspection reports as well as incident, monitoring and other reports will be prepared and available on site thru EPIMS for the regulators, contractors and Manitoba Hydro staff. In addition, Manitoba Hydro will prepare summary information and activity reports related to environmental protection for the Project on an annual basis. These reports will be designed for a general readership and will provide opportunities for interested parties to provide feedback on the Project as it is constructed and eventually operated.

Manitoba Hydro will develop a communications strategy to ensure that all communication requirements are addressed in a timely and effective manner. Licensing and Environmental Assessment will provide the public with on-going opportunities to review and comment on the project as it is being developed. A dedicated Project website fed with information from the

EPIMS will be developed to facilitate communication with the public. An environmental protection hotline (e-mail) will be established to facilitate reporting and response to environmental issues. All enquiries, reports or complaints received will be recorded and reviewed by the Environmental Protection Management Team for response or action.

2.11 SUMMARY

This section outlined Manitoba Hydro's Environmental Protection Program for the Project. The Program provides a framework for the delivery, management and monitoring of environmental protection measures consistent with corporate policies and commitments, regulatory requirements, environmental guidelines and best practices. The Program describes how Manitoba Hydro is organized and functions to deliver timely, effective, and comprehensive solutions and mitigation measures to address potential environmental effects. Roles and responsibilities for Manitoba Hydro employees and contractors are defined, and management, communication and reporting structures are outlined for implementation of the Program.

3.0 SUMMARY

3.1 OVERVIEW

This section of the Draft Environmental Protection Plan provides general environmental protection measures that address potential environmental issues and effects for the Project. Environmental protection measures are provided in tabular form for major Project components and activities, environmental components, and environmental issues or topics.

3.2 GENERAL ENVIRONMENTAL PROTECTION MEASURES

General environmental protection measures include: 1) mitigation measures identified in the EA Report; 2) regulatory requirements, environmental guidelines and best practices; 3) Manitoba Hydro policies and commitments; and 4) results from stakeholder and Aboriginal consultations that mitigate potential adverse effects on sensitive sites. The protection measures have wide-ranging application to the Project including the various project components and activities as well as important environmental components and issues. Specific environmental protection measures provided in the following section of the Draft Environmental Protection Plan relate to particular environmentally sensitive sites.

The general environmental protection measures are preliminary in nature and will be augmented as the Project moves through the regulatory process, *Environment Act* and other environmental approvals are obtained, and construction environmental protection plans are prepared. Application of the environmental protection measures will be reflected in contract specifications.

Each environmental protection measure is numbered for future reference. Wording of the protection measures is affirmative with the view of avoiding or minimizing adverse environmental effects, following an environmental guideline or complying with a regulatory requirement. References are provided to source legislation, environmental guidelines or best practices, or appendix information for buffer zones, setback distances or timing windows.

The environmental protection measures are provided under the following five categories: 1) Management; 2) Project Activity; 3) Project Component; 4) Environment Component; and 5) Environmental Topic/Issue, as follows:

1. **Management environmental protection measures** (MM) (Table 1) include management, contractual, administrative and other measures that are common to all environmental protection categories and topics.

2. **Project Activity environmental protection measures** (PA) (Tables 2 to 11) include construction activities that are likely to cause direct environmental effects. Project activities are action words or phrases, that that are carried out during construction of the Keeyask Transmission Project. Some project activities include related actions (e.g., drilling includes boring and pile driving) while others are unique (e.g., burning) and are often regulated or managed by one set of regulation or guidelines.

3. **Project Component environmental protection measures** (PC) (Tables 12 to 21) relate to major components of the Project. The Project is consists of several major components including transmission lines, construction power station, and switching station, and involves access trails, stream crossings, construction camps, marshalling yards, etc. Each project component has the potential to result in a variety of direct and indirect environmental effects which are managed by various means including regulations, guidelines, best practices and project-specific mitigation. Project component environmental protection measures address these situations, and also include protection measures from related project activities.

4. **Environmental Component protection measures** (EC) (Tables 22 to 29) include important or vulnerable components of the environment that are subject to environmental effects of the Project. Some environmental components are particularly vulnerable to construction of transmission lines and stations, and other project components and activities, and warrant separate consideration. Example environmental components include, fish habitat, heritage sites and wetlands. Each environmental component is managed by a variety of different regulations, guidelines, best practices, etc. Environmental component environmental protection measures address these situations, and also include protection measures from related project components and activities.

5. **Environmental Issue and Topic protection measures** (EI) (Tables 30 to 40) include important issues and topics identified for the Project. Environmental issues and topics include emergency response, erosion protection/sediment control, hazardous substances, petroleum products and soil contamination. These issues and topics can cause substantial public concern and result in potentially significant adverse environmental effects. Each environmental issue and topic is managed by a variety of a set of particular regulations, guidelines, best practices, etc. Environmental issue and topic protection measures address these situations, and also include protection measures from related project and environmental components.

3.3 MANAGEMENT MEASURES (MM)

General management-related environmental protection measures are listed in Table 1.

Table 1. Management Environmental Protection Measures (MM)	
No.	**Environmental Protection Measures**
MM-1	The Contractor will obtain all licenses, permits, contracts and approvals other than those that are Manitoba Hydro's responsibility prior to project start-up.
MM-2	All licenses, permits, contracts, project specifications, guidelines and other applicable documents will be in the possession of both the Contractor and Manitoba Hydro prior to commencement of work.
MM-3	All project participants will ensure that project activities are carried out in compliance with applicable legislation (Appendix B), guidelines (Appendix C) contractual obligations and environmental protection plan provisions.
MM-4	The Contractor will review terms and conditions of all authorizations, contract specifications, agreements, etc prior to project start-up and will discuss any questions or concerns with Manitoba Hydro.
MM-5	Relevant documents including licenses, permits, approvals, legislation, guidelines, environmental protection plans, orthophotos maps, etc., will be made available to all project participants.
MM-6	Manitoba Hydro will meet the Contractor at the beginning of each new contract to review environmental protection requirements including mitigation measures, inspections and reporting.
MM-7	Manitoba Hydro will provide the contractor with a stakeholders list with names, organizations and contract information for the purpose of contracting stakeholders as necessary.
MM-8	Manitoba Hydro will contract local municipal authorities prior to project start-up to ensure that all environmental concerns are identified and addressed by the Contractor.
MM-9	Manitoba Hydro will contract First Nation and Metis representatives prior to project start-up.
MM-10	Manitoba Hydro will contract local resource users, lodge operators, outfitters and recreational resource users and associations prior to project start-up.
MM-11	Manitoba Hydro will contract Manitoba Conservation and Water Stewardship and Forest Management Licence Holders prior to clearing regarding timber use opportunities.
MM-13	Manitoba Hydro will contract mining companies, and mineral claim and licence holders prior to project start-up.
MM-14	Manitoba Hydro Property Department will meet with landowners whose operations, facilities, woodlots, shelterbelts, etc may be directly or indirectly affected by clearing to discuss mitigation measures and residual effect concerns.
MM-15	Manitoba Hydro will notify trappers in advance of clearing and construction schedules in their trapline areas.
MM-16	A pre-project meeting will be held with all construction participants to review environmental issues, environmental protection measures, orthophoto maps, environmentally sensitive sites, safety protocols, reporting relationships, emergency procedures and other guidance materials.
MM-17	Project construction update meetings will be held weekly for the ongoing review of environmental and safety issues.
MM-18	Environmental concerns will be identified and discussed at planning meetings on an as required basis.
MM-19	Response to enforcement actions by regulatory authorities will be in accordance with Manitoba Hydro policy P602 (Appendix D).

3.4 PROJECT ACTIVITY MEASURES

General environmental protection measures relating to project activities are listed in Tables 2 to 11.

3.4.1 Blasting and Exploding (PA-1)

General environmental protection measures related to blasting, exploding and related project activities are listed in Table 2. Also see Borrow Pits and Quarries (Table 13) and Transmission Lines and Conductors (Table 21).

Table 2. Blasting and Exploding Environmental Protection Measures

No.	Environmental Protection Measures
PA-1.1	The Blasting Contractor will be in possession of valid licenses, permits and certificates required for blasting.
PA-1.2	The Blasting Contractor will submit all copies of all approval documents to the Construction Supervisor.
PA-1.3	The Blasting Contractor will transport, store, handle and use explosives in accordance with provincial and federal legislation (Appendix B) and guidelines (Appendix C), and Manitoba Hydro guidelines (Appendix D).
PA-1.4	The Blasting Contractor will submit a Blasting Plan to the Construction Supervisor for review and approval prior to commencement of blasting operations.
PA-1.5	The Blasting Contractor will submit a Blasting Plan to the Department of Fisheries and Oceans for approval prior to blasting near waterbodies.
PA-1.6	Blasting in the vicinity of fish-bearing waters will be in accordance with Department of Fisheries and Oceans guidelines (Appendix C).
PA-1.7	Drillhole sites will be clearly marked with flagging tape and signs.
PA-1.8	Large explosive charges will be divided into smaller multiple time-delay charges, where practical
PA-1.9	Use of ammonium nitrate and fuel oil will not be permitted in or near waterways.
PA-1.10	Quarry blasting operations and conductor splicing will be scheduled to minimize disturbance to wildlife and area residents, and to ensure the safety of workers.
PA-1.11	Advance notice will be given to Manitoba Conservation and Water Stewardship, RCMP, municipalities, landowners, resource users and others prior to any blasting activities.
PA-1.12	Implode Compression conductor splicing will be minimized to extent possible on weekends and after normal working hours in residential areas
PA-1.13	Blasting will not be permitted in no blasting zones identified to prevent damage to infrastructure, minimize effects on natural resources and limit disturbance to communities or residences.
PA-1.14	Blasting in northern Manitoba will be carried out under frozen ground conditions to the extent possible to minimize surface disturbance and permafrost degradation.

Table 2. Blasting and Exploding Environmental Protection Measures	
No.	**Environmental Protection Measures**
PA-1.15	Blasting will not be permitted around caribou calving habitats during timing windows (Appendix E).
PA-1.16	Blasting will not be permitted during timing windows established for sensitive bird breeding, nesting and brood rearing months (Appendix E).
PA-1.17	Written and/or oral notification will be given to affected parties including project personnel and the general public prior to each blasting period.
PA-1.18	Signs will be posted around blasting sites to warn all project personnel and the public of safety hazards associated with blasting.
PA-1.19	Blast rock will be collected and stockpiled as soon as possible for either subsequent use or disposal off site.
PA-1.20	Blasting materials and debris that enter waterbodies will be removed immediately with minimum disruption to riparian zones and fish habitat.
PA-1.21	Site restoration will be completed as soon as possible after blasting in accordance with the Blasting Plan.

3.4.2 Burning (PA-2)

General environmental protection measures related to burning and related activities are listed in Table 3. Also see Clearing (Table 4), Rights-of-Way (Table 19) and Emergency Response (Table 31).

Table 3. Burning Environmental Protection Measures	
No.	**Environmental Protection Measures**
PA-2.1	Burning will only be carried out in accordance with contract specifications.
PA-2.2	Burning will not be carried out within riparian buffer zones or setbacks for stream crossings or waterbodies (Appendix F).
PA-2.4	Slash will be piled in a manner that allows for clean, efficient burning of all material. Mixing soil into the slash is to be avoided.
PA-2.5	Debris piles scheduled for burning will be piled on mineral soils or on areas having an average maximum depth of less than 15 cm of duff, where possible.
PA-2.6	Debris and wood chip piles located near habitation or highways will only be burned when weather conditions are favourable to ensure the safe dispersal of smoke.
PA-2.7	Burning slash in northern Manitoba will be carried out under frozen ground conditions during timing windows to minimize potential for wildfires (Appendix E).
PA-2.9	Any residue or unburned materials remaining post-burn is not to encumber operations or re-vegetating activities.

Table 3. Burning Environmental Protection Measures	
No.	**Environmental Protection Measures**
PA-2.10	Firefighting equipment required by legislation, guidelines and contract specifications will be kept on site and maintained in serviceable condition during burning.
PA-2.11	Burning will be monitored to ensure that fires are contained and subsequent fire hazards are not present. e.g. all burn piles will be scanned for hot spots using infrared scanning technology
PA-2.12	All occurrences of fire spreading beyond the debris pile will be reported immediately in accordance with fire protection procedures.
PA-2.13	Burning of solid wastes including kitchen wastes and treated wood will not be permitted.
PA2-14	Burning of slash on permafrost soils should be avoided. If it is unavoidable, the number and extent of debris piles scheduled to be burned on permafrost soils should be minimized.

3.4.3 Clearing (PA-3)

General environmental protection measures related to clearing and related activities are listed in Table 4. Also see Access Roads and Trails (Table 12) and Rights-of-Way (Table 19).

Table 4. Clearing Environmental Protection Measures	
No.	**Environmental Protection Measures**
PA-3.1	Where clearing is carried out on Crown land, timber salvaging will be conducted in accordance with provincial legislation (Appendix B) and guidelines (Appendix C) where practical and economically feasible.
PA-3.2	Clearing activities will be carried out in accordance with contract specifications.
PA-3.3	Prior to clearing, communities will be contracted to determine the demand for fuel wood and endeavour to make timber resources available locally.
PA-3.4	Access to clearing areas will utilize existing roads and trails to the extent possible.
PA-3.5	Existing low growth vegetation such as grasses, forbs and shrubs will be maintained to the extent possible. Disturbance to roots and adjacent soils will be minimized.
PA-3.6	Right-of-way boundaries, centrelines, buffers and sensitive areas (where applicable) will be clearly marked with stakes and flagging tape prior to clearing.
PA-3.7	Clearing and disturbance will be limited to infrastructure sites, borrow pits, marshalling yards, transmission line rights-of-way and associated access routes.
PA-3.8	Requests for additional clearing outside original infrastructure sites and rights-of-way will be approved in writing by the Construction Supervisor. Additional clearing may require an amendment to the work permit and/or contract specifications.
PA-3.9	Clearing and construction equipment will remain within designated infrastructure sites, rights-of-way and associated access routes.

Table 4. Clearing Environmental Protection Measures	
No.	**Environmental Protection Measures**
PA-3.10	Where practical, merchantable timber will be salvaged and brought to market. Timber that is not salvaged will be piled and burned during frozen conditions in accordance with timing windows (Appendix E).
PA-3.11	Clearing around environmentally sensitive sites, features and areas will be in accordance with established buffer zones and setbacks (Appendix F).
PA-3.12	All environmentally sensitive sites will be identified on maps and specific environmental protection measures will be provided. Environmentally sensitive sites, along the right-of-way will be clearly identified by signage as practical. Point sites along the right-of-way will be flagged.
PA-3.13	Areas identified for selective clearing (e.g., buffer zones, sensitive sites) will be flagged prior to clearing.
PA-3.14	Selective clearing will be carried out in erosion prone areas. Hand clearing or other low disturbance methods may be employed to minimize soil disturbance.
PA-3.15	Environmentally sensitive areas located adjacent to watercourses or located on rugged terrain will be cleared by approved methods according to the contract specifications.
PA-3.16	Trees within established buffer zones will be selectively cleared using methods that cause the least impact. Low growth vegetation such as grasses and shrubs within buffer zones will not be cleared.
PA-3.17	Clearing will occur in accordance with established timing windows to minimize rutting and erosion (Appendix E).
PA-3.18	Construction vehicles where possible will be wide-tracked or equipped with high floatation tires to minimize rutting and limit damage and compaction to surface soils.
PA-3.19	The Construction Supervisor will issue a stop work order if extreme wet weather or insufficient frost conditions results in soil damage from rutting, and soil erosion is resulting in sedimentation of adjacent waterbodies.
PA-3.20	Modifications to buffer zones will require prior approval and may require an amendment to the work permit and/or contract specifications.
PA-3.21	Construction vehicles, machinery and heavy equipment will not be permitted in designated machine-free zones except at designated crossings (Appendix F).
PA-3.22	Trees containing active nests and areas where active animal dens or burrows are encountered will be left undisturbed until unoccupied.
PA-3.23	Clearing will not be permitted within critical caribou and other large mammal habitats including associated buffer areas during established timing windows (Appendix E).
PA-3.24	Clearing will not be permitted within established setbacks (Appendix F) for bird nesting and rearing during established timing windows (Appendix E).
PA-3.25	Vegetated buffers in riparian areas will be maintained in accordance with riparian buffer zones and setbacks (Appendix F)
PA-3.26	Vegetation will be removed by mechanical means except where other selective clearing methods are stipulated.
PA-3.27	Specified clearing methods will be carried out in a manner that minimizes disturbance to existing organic soil layer.

Table 4. Clearing Environmental Protection Measures	
No.	**Environmental Protection Measures**
PA-3.28	Machine clearing will remove trees and brush with minimal disturbance to existing organic soil layer using only “V” or “K-G” type blades, feller-bunchers and other means approved by the Construction Supervisor.
PA-3.30	Trees will be felled toward the middle of rights-of-way or cleared area to avoid damage to standing trees. Trees will not be felled into waterbodies.
PA-3.31	Chemical control of vegetation is not permitted during clearing.
PA-3.32	Danger trees will be identified and removed by hand or other methods that do not damage soils and adjacent vegetation.
PA-3.33	Cleared trees and woody debris will not be pushed into or adjacent to standing timber, wetlands or waterbodies.
PA-3.34	Slash will be cut, chipped, piled, burned or disposed of as specified in contract specifications.
PA-3.35	Slash piles will not be placed on the surface of frozen waterbodies and will not be located within established setbacks from waterbodies or within the ordinary high water mark.
PA-3.36	Slash piles will be placed at least 15 m from forest stands.
PA-3.37	Chipped or mulched material may be collected for use in construction areas and sediment/erosion control.
PA-3.38	A 15 m (minimum) break will be provided along debris windrows every 100 m. Alternately, windrows may be varied from side to side along rights-of-way.

3.4.4 Demobilizing and Cleaning-up (PA-4)

General environmental protection measures pertaining to demobilizing, cleaning-up and related activities are listed in Table 5. Also see Rehabilitating and Re-vegetating (Table 10).

Table 5. Demobilizing and Cleaning-up Environmental Protection Measures	
No.	**Environmental Protection Measures**
PA-4.1	Construction areas and sites no longer required will be demobilized and cleaned up and rehabilitated in accordance with contract specifications and restored to near natural conditions.
PA-4.2	Buildings, structures, trailers, equipment, utilities, waste materials, etc. will be removed from construction areas and sites when work is completed.
PA-4.3	Construction access roads/trails that are no longer required will be decommissioned and rehabilitated to prevent access.
PA-4.4	Access to roads/trails required for ongoing operations and maintenance will be managed in accordance with an Access Management Plan.

Table 5. Demobilizing and Cleaning-up Environmental Protection Measures	
No.	**Environmental Protection Measures**
PA-4.5	Demobilized construction areas and sites will be decommissioned and aggregate will be removed. Sites will be graded and contoured to original profile as required, and provided with drainage, erosion and sediment control measures as required.
PA-4.6	Stream crossings and drainages will be left free of obstructions so as not to impede natural runoff.
PA-4.7	Petroleum product and other hazardous substances storage areas will be cleaned up, assessed and, if necessary, remediated in accordance with provincial guidelines (Appendix C) and Manitoba Hydro guidelines (Appendix D).
PA-4.8	The Environmental Inspector will inspect demobilized construction areas and sites after demobilization and clean-up for adherence to environmental protection measures and effectiveness.
PA-4.9	Construction areas and sites will be rehabilitated and re-vegetated as appropriate immediately after demobilizing and clean-up.

3.4.5 Draining (PA-5)

General environmental protection measures related to draining, dewatering and related project activities are listed in Table 6. Also see Stream Crossings (Table 20), Waterbodies (Table 27) and Wetlands (Table 28).

Table 6. Draining Environmental Protection Measures	
No.	**Environmental Protection Measures**
PA-5.1	Drainage at construction sites will be maintained, managed or controlled in accordance with contract specifications.
PA-5.2	Existing, natural drainage patterns and flows will be maintained to the extent possible.
PA-5.3	Drainage channels and ditches will be identified and flagged prior to construction.
PA-5.4	Disturbance of natural drainages including seepage areas, discharge and recharge areas, wetlands, and ephemeral and permanent watercourses will be avoided.
PA-5.5	Where construction must be carried out within a drainage channel, water will be diverted around the work until completed in accordance with the contract specifications.
PA-5.6	Drainage water from construction areas will be diverted through vegetated areas prior to entering a waterbody.
PA-5.7	Dewatering discharges will be directed into vegetated areas at such a rate and have adequate flow dissipation at the outlet to ensure it does not cause erosion at the discharge point or at any point downstream.
PA-5.8	Dewatering of excavations or alterations to drainage will be done so that it avoids entering natural water systems unless sediment is controlled.

Table 6. Draining Environmental Protection Measures	
No.	**Environmental Protection Measures**
PA-5.9	Blockage of natural drainage patterns by construction activities will be avoided.
PA-5.10	Drainage ditches will be provided with elevation controls to prevent water ponding.
PA-5.11	Drainage channels will be kept free of slash and debris
PA-5.12	Erosion protection and sediment control will be provided in accordance with the Erosion Protection and Sediment Control Plan.
PA-5.13	Culverts will be installed and maintained in accordance with Manitoba Stream Crossing Guidelines and DFO Operation Statement on Culvert Maintenance (Appendix C).
PA-5.14	Drainage ditches and culverts will be installed during periods with minimal or no stream flows.

3.4.6 Drilling (PA-6)

General environmental protection measures related to drilling and related activities are listed in Table 7. Also see Groundwater (Table 24).

Table 7. Drilling Environmental Protection Measures	
No.	**Environmental Protection Measures**
PA-6.1	Drilling at construction sites will be carried out in accordance with contract specifications.
PA-6.3	Drilling activities in northern Manitoba will be carried out under frozen ground conditions to minimize damage to surface vegetation, soils and permafrost to the extent possible.
PA-6.4	Drilling in environmentally sensitive sites, features and areas will not be permitted unless approved in advance by Environmental Inspector and mitigation measures are implemented.
PA-6.5	Drilling will not be permitted during established timing windows (Appendix E) for caribou calving areas.
PA-6.6	Drilling will not be permitted within established buffer zones and setback distances from waterbodies (Appendix F).
PA-6.7	Drilling fluids and waste materials will not be allowed to drain into waterbodies, riparian areas or wetlands.
PA-6.8	Where there is potential for mixing of surface and ground water, precautions will be taken to prevent the interconnection of these waters.
PA-6.9	The drilling contractor will ensure that equipment and materials are available on site for sealing drill holes.
PA-6.10	Abandoned drill holes will be sealed with bentonite or other effective sealers to prevent interconnection and cross-contamination of ground and surface waters.

Table 7. Drilling Environmental Protection Measures	
No.	**Environmental Protection Measures**
PA-6.11	The drilling contractor will inspect drilling equipment and machinery for fuel and oil leaks prior to arrival at the project site, and will inspect for fuel and oil leaks and spills regularly.
PA-6.12	Drilling equipment and machinery will not be serviced within 100 m of waterbodies or riparian areas.
PA-6.13	An Emergency Preparedness and Response Plan, and spill control and clean-up equipment will be provided at all drilling locations.
PA-6.14	Drilling sites will be demobilized and rehabilitated including the replacement of drill cuttings in the borehole, upon completion of work in accordance with contract specifications.

3.4.7 Grading (PA-7)

General environmental protection measures related to grading and related activities are listed in Table 8.

Table 8. Grading Environmental Protection Measures	
No.	**Environmental Protection Measures**
PA-7.1	Grading at construction sites will be in accordance with contract specifications.
PA-7.2	Grading will only be permitted within rights-of-ways and construction areas.
PA-7.3	Grading for gravel pads for construction areas and access roads will be limited to areas where it is needed for the safe and efficient operation of vehicles, machinery and construction equipment.
PA-7.4	Gravel pads will be graded so the surface runoff is directed away from waterbodies, riparian areas and wetlands.
PA-7.5	Required erosion protection and sediment control measures will be put in place prior to grading in accordance with the Erosion Protection and Sediment Control Plan.
PA-7.6	Grading will not be permitted within established buffer zones and setback distances from waterbodies (Appendix F).
PA-7.7	In northern Manitoba, grading of soils will not be permitted in organic areas where removal or disturbance of surface materials would damage permafrost.
PA-7.8	A thick gravel layer (1.2 m) or compacted snow layer (0.6 m) will be used in temporary workspaces or marshalling yards located in permafrost areas where required to prevent damage to surface materials.
PA-7.9	Grading for site rehabilitation and restoration will be in accordance with a site Rehabilitation Plan.

3.4.8 Grubbing (PA-8)

General environmental protection measures related to grubbing and related activities are listed in Table 9.

Table 9. Grubbing Environmental Protection Measures	
No.	**Environmental Protection Measures**
PA-8.1	Grubbing at construction sites will be in accordance with contract specifications.
PA-8.2	The extent of grubbing will be minimized to the extent possible.
PA-8.3	Grubbing will not be permitted within established buffer zones and setback distances from waterbodies (Appendix F).
PA-8.4	Grubbing will not be permitted within 2 m of standing timber to prevent damage to root systems and to limit the occurrence of blow down.
PA-8.5	Construction areas containing soil with high silt content, artesian springs or areas of previous erosion will receive special erosion protection and sediment control techniques.
PA-8.6	Grubbing will be halted during heavy precipitation events when working in areas of finely textured soils.
PA-8.7	Erosion protection and sediment control measures will be put in place prior to grubbing in accordance with the Erosion Protection and Sediment Control Plan.
PA-8.8	Stockpiled materials from grubbing will not block natural drainage patterns.
PA-8.9	Construction areas requiring extensive grubbing will be stabilized as soon as possible to minimize erosion.
PA-8.10	Windrows of grubbed materials will be piled at least 15 m from standing timber.

3.4.9 Rehabilitating and Re-vegetating (PA-9)

General environmental protection measures pertaining to rehabilitation, re-vegetation and related activities are listed in Table 10. Also see Demobilizing and Cleaning-up (Table 5) and Erosion Protection and Sediment Control (Table 32).

Table 10. Rehabilitating and Re-vegetating Environmental Protection Measures	
No.	**Environmental Protection Measures**
PA-9.1	Rehabilitation and re-vegetation of construction areas will be in accordance with contract specifications.
PA-9.2	Project-specific Rehabilitation Plans will be prepared by the Contractor, approved by the Construction Supervisor prior to construction and updated annually.

Table 10. Rehabilitating and Re-vegetating Environmental Protection Measures	
No.	**Environmental Protection Measures**
PA-9.3	Rehabilitation Plans will include objectives for restoration of natural conditions, erosion protection, sediment control, non-native and invasive plant species management, wildlife habitat restoration and restoration of aesthetic values as required.
PA-9.4	Natural re-vegetation will be allowed to occur although active rehabilitation programs may be required at specific sites where erosion warrants seeding or planting
PA-9.5	Where appropriate, regional native grass mixtures identified in Rehabilitation Plans will be used to assist re-vegetation of disturbed areas to control erosion or prevent invasion of non-native species. The mixtures will not contain non-native or invasive species.
PA-9.6	A terrestrial ecologist will provide rehabilitation and re-vegetation requirements, specifications and advice as required during rehabilitation.
PA-9.7	Rehabilitation Plans for borrow pits and quarries will also be provided to Manitoba Industry, Economic Development and Mines.
PA-9.8	Construction areas no longer required will be re-contoured, stabilized, re-vegetated and restored to near natural conditions in accordance with Rehabilitation Plans.
PA-9.9	Organic material, topsoil and subsoil stripped from construction areas will be stockpiled separately for future site rehabilitation.
PA-9.10	Stockpiled organic materials, topsoil and subsoil will be spread over restored construction areas to encourage re-vegetation.
PA-9.11	Stockpiled soils will be protected from wind erosion by location, wetting and, if necessary, by covering.
PA-9.12	Soil/site preparation consisting of scarification, grading and fertilizing will be conducted if necessary to re-establish vegetation.
PA-9.13	Highly erodible eolian (wind-blown) deposits will be stabilized immediately after disturbance by the addition of surface cover.
PA-9.14	Rehabilitation of construction areas will incorporate erosion protection and sediment control measures in accordance with the Erosion Protection and Sediment Control Plan as required.
PA-9.15	Rehabilitation measures for temporary stream crossings will be implemented as soon as possible after crossings are removed.
PA-9.16	Excavations will be left at a maximum slope of 4:1 (horizontal: vertical) for erosion and sediment control purposes.
PA-9.17	Compensatory measures such as tree planting and habitat enhancement will be considered for construction areas and sites where important habitat is removed.
PA-9.18	Compacted soil on agricultural lands will be tilled prior as part of demobilization activities in accordance with the Rehabilitation Plan.
PA-9.19	The Environmental Inspector will inspect rehabilitated construction areas in accordance with the site Reclamation Plan to assess effectiveness and determine if additional restoration activities are required.

3.4.10 Stripping (PA-10)

General environmental protection measures related to stripping and related activities are listed in Table 11.

Table 11. Stripping Environmental Protection Measures

No.	Environmental Protection Measures
PA-10.1	Stripping at construction areas will be in accordance with contract specifications.
PA-10.2	Stripping in northern Manitoba will normally be carried out under frozen ground conditions during established timing windows to minimize rutting and erosion (Appendix E).
PA-10.3	The extent of stripping will be minimized to the extent possible.
PA-10.5	Mineral topsoils and surficial organic materials should be stripped separately from subsoils, segregated, and stockpiled for later use in backfilling, contouring and rehabilitation. Soils should be replaced in the reverse order to which they were removed. Where problem subsoils (e.g., saline, gravelly, stony) are encountered in agricultural landscapes, three-lift soil handling will be used to segregate the problem subsoils from higher quality subsoils. Once replaced, soils will be compacted similar to pre-disturbed condition.
PA-10.6	Construction areas containing soil with high silt content, artesian springs or areas of previous erosion will receive special erosion protection and sediment control techniques.
PA-10.7	Stripping will not be permitted within established buffer zones and setback distances from waterbodies except where approved in work permits, authorizations or contract specifications (Appendix F).
PA-10.8	Erosion protection and sediment control measures will put be in place prior to stripping in accordance with the Erosion Protection and Sediment Control Plan as required.
PA-10.9	In areas of known salinity, excavated or stripped soil will be stored on liners or in designated areas were possible.
PA-10.10	The Contractor will stabilize construction areas requiring extensive stripping as soon as possible to minimize erosion.
PA-10.11	Stockpiled materials from stripping will not block natural drainage patterns.

3.5 PROJECT COMPONENT MEASURES

General environmental protection measures relating to project components are listed in Tables 12 to 21.

3.5.1 Access Roads and Trails (PC-1)

General environmental protection measures for access roads, trails and related project activities are listed in Table 12. Also see Clearing (Table 4), Grading (Table 8), Rights-of-Way (Table 19) and Stream Crossings (Table 20).

Table 12. Access Roads and Trails Environmental Protection Measures

No.	Environmental Protection Measures
PC-1.1	Access roads and trails will be located, constructed, operated and decommissioned in accordance with contract specifications.
PC-1.2	Public use of access roads and trails during construction will be controlled through the Access Management Plan.
PC-1.3	Permission for access to Crown Land will be obtained from provincial regulatory authorities prior to the commencement of the project.
PC-1.4	Existing access roads, trails or cut lines will be used to the extent possible. Permission to use existing roads will be obtained by Construction Supervisor prior to construction.
PC-1.5	Access roads and trails will be kept as short and narrow as possible.
PC-1.7	Access roads and trails will not be permitted within established buffer zones and setback distances from waterbodies, wetlands, riparian areas and water bird habitats except for watercourse crossings (Appendix F).
PC-1.6	Access roads and trails, sensitive sites and buffer areas will be clearly marked prior to clearing.
PC-1.7	Vehicle, machinery and pedestrian traffic will be restricted to established roads and trails, and cleared construction areas in accordance with the Access Management Plan.
PC-1.8	Access roads and trails will be provided with erosion protection and sediment control measures along shoulders, ditches and at stream crossings in accordance with the Erosion Protection and Sediment Control Plan.
PC-1.9	Construction vehicles will be wide-tracked or equipped with high flotation tires to minimize rutting and limit damage and compaction to surface soils.
PC-1.10	Grades for access roads and trails should follow natural terrain contours to the extent possible and should be minimized adjacent to and approaching waterbodies.
PC-1.11	Approach grades to waterbodies will be minimized to limit disturbance to riparian areas.
PC-1.12	Surface water runoff will be directed away from disturbed and erosion sensitive areas but not directly into waterbodies.
PC-1.13	Equipment, machinery and vehicles will only travel on cleared access roads and trails, and will cross waterways at established temporary and permanent crossings.
PC-1.14	Only water and approved dust suppression products will be used to control dust on access roads where required. Oil or petroleum products will not be used.
PC-1.15	Clean abrasives may be used as alternatives to chemical melting agents.

Table 12. Access Roads and Trails Environmental Protection Measures	
No.	**Environmental Protection Measures**
PC-1.16	The Environmental Inspector will inspect access roads and trails regularly for adherence with environmental protection measures and unforeseen effects.
PC-1.17	Access roads and trails no longer required will be decommissioned and rehabilitated in accordance with the site Rehabilitation Plan.
PC-1.18	The Environmental Inspector will inspect access roads and trails prior to decommissioning to evaluate adherence to environmental protection measures and to document areas of potential contamination
PC-1.19	Access roads and trails required for future monitoring, inspection or maintenance will be maintained in accordance with the Access Management Plan.
PC-1.20	Public use of decommissioned access routes will be controlled through the Access Management Plan.
PC-1.21	Vegetation control along access roads and trails will be in accordance with contract specifications and Manitoba Hydro guidelines (Appendix D).
PC-1.22	The Environmental Inspector will inspect rehabilitated access roads and trails in accordance with the site Rehabilitation Plan to assess the success of re-vegetation and to determine if additional rehabilitation is required.

3.5.2 Borrow Pits and Quarries (PC-2)

General environmental protection measures pertaining to borrow pits and quarries are listed in Table 13. Also see Blasting and Exploding (Table 2), Clearing (Table 4), Grubbing (Table 9), Stripping (Table 11), Grubbing, Soil Contamination (Table 36) and Rehabilitating and Re-vegetating (Table 10).

Table 13. Borrow Pits and Quarries Environmental Protection Measures	
No.	**Environmental Protection Measures**
PC-2.1	Borrow pits and quarries will be located, constructed, operated and decommissioned in accordance with contract specifications.
PC-2.2	Borrow pits and quarries will be designed, constructed and operated in compliance with provincial legislation (Appendix B) and guidelines (Appendix D).
PC-2.3	A Rehabilitation Plan will be approved prior to borrow pit development and will be provided to Manitoba Industry, Economic Development and Mines and Manitoba Conservation and Water Stewardship.
PC-2.4	Previously developed borrow sites and quarries will be used before new sites are developed if suitable materials are available.
PC-2.5	Borrow pits will be located in areas where a minimum amount of overburden will need to be removed to the extent possible.
PC-2.7	Borrow pits will be located close to existing access routes and rights-of-way to the extent possible.

Table 13. Borrow Pits and Quarries Environmental Protection Measures	
No.	**Environmental Protection Measures**
PC-2.8	Vegetated buffer areas will be left in place when borrow pits are cleared in accordance with provincial guidelines (Appendix C).
PC-2.9	Borrow pits located outside rights-of-way will be clearly flagged before clearing takes place.
PC-2.10	The work face of active quarries will be oriented away from wildlife areas, recreation areas and settlements.
PC-2.11	Borrow pits and quarries will not be located within established buffer zones and setback distances from sensitive sites including important wildlife habitats, salt flats, heritage resources (Appendix F).
PC-2.12	Borrow pits and quarries will not be permitted within established buffer zones and setback distances from waterbodies, wetlands, and riparian areas (Appendix F).
PC-2.13	Borrow pits and quarries will not be located within 150 m of a provincial trunk highway or provincial road unless an effective vegetated berm is provided to shield the area from view.
PC-2.14	Existing borrow pits and quarries will be inspected and certified weed free by Environmental Inspector prior to use.
PC-2.15	Vegetation in borrow pits and quarries will be maintained as per the Vegetation Management Plan
PC-2.15	Dust control at borrow pits and quarries will be by approved dust control methods only in accordance with contract specifications.
PC-2.17	Erosion protection and sediment controls will be put in place before borrow pit excavation commences.
PC-2.18	Surface drainage will be redirected away from the borrow pits and quarries before excavation commences.
PC-2.19	Discharges from dewatering operations will be carried out so that it avoids entering natural water systems unless sediment is controlled.
PC-2.20	Drainage water from borrow pits and quarries will be diverted through vegetated areas prior to entering a waterbody.
PC-2.21	Organic material, topsoil and subsoil will be stripped and stockpiled for use in future site rehabilitation.
PC-2.22	Fuel storage will not be permitted in borrow pits and quarries.
PC-2.23	Garbage, debris or refuse will not be discarded into borrow pits and quarries.
PC-2.24	Signs will be posted at borrow pits and quarries to warn all persons of safety hazards.
PC-2.25	The Environmental Inspector will inspect active borrow pits and quarries regularly for adherence with environmental protection measures and unforeseen effects.
PC-2.26	All waste materials, equipment and structures will be removed from borrow pits prior to abandonment.
PC-2.27	Worked out borrow pits and quarries will be left with maximum 4:1 (horizontal to vertical) side slopes.

Table 13. Borrow Pits and Quarries Environmental Protection Measures	
No.	**Environmental Protection Measures**
PC-2.28	Organic layer will be replaced on pit slopes and bottoms once the sites are ready to be decommissioned
PC-2.29	Access to abandoned borrow pits and quarries will be managed in accordance with the Access Management Plan.
PC-2.30	Vegetation control at borrow pits and quarries will be in accordance with the Vegetation Management Plan.
PC-2.31	The Environmental Inspector will inspect borrow pits and quarries prior to decommissioning to evaluate adherence to environmental protection measures and to document areas of potential contamination.
PC-2.32	The Environmental Inspector will inspect rehabilitated borrow pits and quarries in accordance with the site Reclamation Plan to assess the success of re-vegetation and to determine if additional rehabilitation is required.

3.5.3 Construction Camps (PC-3)

General environmental protection measures pertaining to construction camps (start-up, main and mobile bush camps) and related activities are listed in Table 14. Also see Clearing (Table 4), Demobilizing and Cleaning-up (Table 5), Wildlife Protection (Table 29), Safety and Health (Table 35) and Waste Management (Table 39).

Table 14. Construction Camps Environmental Protection Measures	
No.	**Environmental Protection Measures**
All Construction Camps	
PC-3.1	Construction camps will be located, constructed, operated and decommissioned in accordance with contract specifications.
PC-3.2	Crown land permits will be obtained for construction camps as required.
PC-3.3	Construction camps will be located based on criteria that consider soils, topography, land form type, permafrost, wildlife habitat and other environmental factors.
PC-3.4	Previously developed construction camp locations will be used before new camps are developed where possible.
PC-3.5	Where previous construction camp locations are used the area will be assessed for potential contamination before the camp is developed.
PC-3.6	Construction camps will be located in existing clearings or natural openings to the extent possible.
PC-3.7	Construction camps will not be located within established buffer zones and setback distances from sensitive sites including important wildlife habitats and heritage resources (Appendix F).

Table 14. Construction Camps Environmental Protection Measures	
No.	**Environmental Protection Measures**
PC-3.8	Construction camps will not be located within established buffer zones and setback distances from waterbodies, wetlands, riparian areas and water bird habitats (Appendix F).
PC-3.9	Erosion protection, sediment control and drainage management measures will be put in place prior to construction.
PC-3.10	Construction camp boundaries will be clearly marked prior to clearing.
PC-3.11	Firebreaks will be constructed around camp locations where there is a risk of fire.
PC-3.12	Feeding or harassment of any wildlife will be prohibited.
PC-3.13	Problem wildlife will be reported immediately to Manitoba Conservation and Water Stewardship.
PC-3.14	Construction camp sites will be kept tidy at all times. Waste materials including litter will be collected for disposal.
PC-3.15	Propane tanks for camp use will be stored in dedicated, secure areas at a safe distance from kitchen and sleeping quarters in accordance with provincial legislation (Appendix B) and national codes (Appendix C).
PC-3.16	Bear-proof garbage containers will be used to store garbage and other solid waste materials in northern and rural areas.
PC-3.17	Food, greases and wastes will be stored in sealed, air-tight containers.
PC-3.18	All outdoor food storage lockers, containers and freezers will be locked.
PC-3.19	Garbage, recyclables and other waste materials will be removed in accordance with the solid waste management plan to a licensed or approved waste disposal site and/or recycling facility.
PC-3.20	The Environmental Inspector will inspect construction camps regularly for adherence with environmental protection measures and unforeseen effects
PC-3.21	Construction camps no longer required will be decommissioned and rehabilitated in accordance with the site Reclamation Plan.
PC-3.22	The Environmental Inspector will inspect rehabilitated construction camps in accordance with the site Reclamation Plan to assess the success of re-vegetation and to determine if additional rehabilitation is required.
Mobile Construction Camps	
PC-3.23	Sewage and grey water will be collected in holding tanks, sullage pits, chemical toilets or pit privies.
PC-3.34	Sewage and grey water holding tanks will be registered with Manitoba Conservation and Water Stewardship and will comply with provincial legislation (Appendix B) and national standards (Appendix C).
PC-3.35	Sewage and grey water holding tanks will be sited in accordance with provincial legislation (AppendixC), and federal and provincial guidelines (Appendix C), and a minimum of 100 m from the ordinary high water mark of any waterbody.

Table 14. Construction Camps Environmental Protection Measures	
No.	**Environmental Protection Measures**
PC-3.36	Liquid and solid sewage wastes held in tanks will be removed in accordance with the solid waste management plan by a licensed contractor and taken to licensed or approved disposal areas.

3.5.4 Facilities and Buildings (PC-4)

General environmental protection measures pertaining to facilities and buildings are listed in Table 15.

Table 15. Facilities and Buildings Environmental Protection Measures	
No.	**Environmental Protection Measures**
All Facilities/Buildings	
PC-4.1	Facilities, buildings and other structures built in construction areas will be located, constructed, operated and decommissioned in accordance with contract specifications.
PC-4.2	All required licences, permits and approvals will be obtained prior to construction of facilities and buildings.
PC-4.3	Facilities and buildings will be designed and constructed in accordance with national and provincial building, electrical and fire codes (Appendix C).
PC-4.4	Facilities and buildings will not be located within established buffer zones and setback distances from sensitive sites including important wildlife habitats, heritage resources (Appendix F).
PC-4.5	Facilities and buildings will not be located within established buffer zones and setback distances from waterbodies, wetlands, riparian areas and water bird habitats (Appendix F).
PC-4.6	In northern Manitoba, facilities and buildings in permafrost areas will employ insulation techniques to protect frozen ground from damage and subsequent melting.
PC-4.7	Construction materials for facilities and buildings will conform to Manitoba Hydro's sustainable development principles (Appendix D).
PC-4.8	Erosion protection, sediment control and drainage management will be put in place prior to construction.
PC-4.9	Construction waste will be managed and disposed of in accordance with provincial legislation (Appendix C), provincial guidelines (Appendix C), and Manitoba Hydro guidelines (Appendix D) (See Waste Management – Table 39).
PC-4.10	Solid and hazardous wastes will be collected in approved containers and disposed of at licensed or approved facilities that have sufficient capacity.
PC-4.11	Solid, liquid and gaseous wastes and emissions from facilities and buildings will conform to provincial and national guidelines (Appendix C).
PC-4.12	Sewage and grey water disposal for facilities and buildings will be in accordance with provincial legislation (Appendix C) and national guidelines (Appendix C).
PC-4.13	Fuel and hazardous substance storage and handling will be in accordance with provincial legislation and guidelines.

Table 15. Facilities and Buildings Environmental Protection Measures	
No.	**Environmental Protection Measures**
PC-4.14	Emergency Preparedness and Response Plans and procedures for facilities and buildings will be put in place prior to commissioning.
PC-4.15	Vegetation control at facilities and buildings will be in accordance with the Vegetation Management Plan.
PC-4.16	The Environmental Inspector will inspect facilities and buildings regularly for adherence with environmental protection measures and unforeseen environmental effects.
PC-4.17	Facilities and buildings will be decommissioned when no longer required in accordance with a Decommissioning Plan. Decommissioned sites will be cleaned up and restored to near natural conditions.

3.5.5 Marshalling Yards (PC-5)

General environmental protection measures pertaining to marshalling yards are listed in Table 16. Also see Emergency Response (Table 31), Hazardous Substances (Table 33), Petroleum Products (Table 34), Soil Contamination (Table 36), and Safety and Health (Table 35).

Table 16. Marshalling Yards Environmental Protection Measures	
No.	**Environmental Protection Measures**
PC-5.1	Marshalling yards will be located, constructed, operated and decommissioned in accordance with contract specifications.
PC-5.2	Marshalling yards will be located in existing clearings or natural openings.
PC-5.3	Marshalling yards will be located based on criteria that consider soils, topography, land form type, permafrost, wildlife habitat and other environmental factors.
PC-5.4	Marshalling yards will not be located within established buffer zones and setback distances from sensitive sites including important wildlife habitats, heritage resources (Appendix F).
PC-5.5	Marshalling yards will not be located within established buffer zones and setback distances from waterbodies, wetlands, riparian areas and water bird habitats (Appendix F).
PC-5.6	Fire breaks will be established around marshalling yards in areas where there is a risk of fire.
PC-5.7	Erosion protection, sediment control and drainage management measures will be put in place prior to construction.
PC-5.8	Organic material, topsoil and sub-soil stripped during site preparation will be stockpiled separately for later use in site rehabilitation.
PC-5.9	Hazardous substances entering and leaving the marshalling yards will be inventoried and accounted for.
PC-5.10	Contractor employees responsible for receipt and distribution of hazardous substances will be trained in handling and transportation of dangerous goods, and WHMIS.

Table 16. Marshalling Yards Environmental Protection Measures	
No.	**Environmental Protection Measures**
PC-5.11	Hazardous substances will be stored in accordance with provincial legislation (Appendix B), and provincial and national codes and standards (Appendix C).
PC-5.12	Petroleum products will only be stored, handled and dispensed in designated areas within marshalling yards in accordance with provincial legislation (Appendix B) and guidelines (Appendix C).
PC-5.13	Vehicle, machinery and equipment maintenance and repairs will be carried out in designated areas within marshalling yards.
PC-5.14	Welding mats will be used to minimize the risk of fire.
PC-5.15	Emergency Preparedness and Response Plan and procedures for marshalling yards will be developed.
PC-5.16	Spill control and clean-up equipment to be located at designated areas within marshalling yards.
PC-5.17	Garbage and debris will be stored in approved containers, sorted for recycling and disposed of at a licensed or approved waste disposal site.
PC-5.18	Waste hazardous substances, fuel containers and other materials will be stored in approved containers and transported to licensed or approved waste disposal facilities by a licensed carrier.
PC-5.19	Vegetation control at marshalling yards will be in accordance with contract specifications and Manitoba Hydro guidelines (Appendix D).
PC-5.20	The Environmental Inspector will inspect marshalling yards regularly for adherence with environmental protection measures during construction and operation.
PC-5.21	Once marshalling yards are no longer required, structures, equipment, materials, fences, etc. will be dismantled and moved to storage or a new location.
PC-5.22	Marshalling yards no longer required will be decommissioned and rehabilitated in accordance with the site Reclamation Plan.
PC-5.23	The Environmental Inspector will inspect rehabilitated construction camps in accordance with the site Reclamation Plan to assess the success of re-vegetation and to determine if additional rehabilitation is required.

3.5.6 Potable Water and Wells (PC-6)

General environmental protection measures pertaining to potable water and wells are listed in Table 17. Also see Drilling (Table 7), Groundwater (Table 24) and Safety and Health (Table 35).

Table 17. Potable Water and Wells Environmental Protection Measures	
No.	**Environmental Protection Measures**
PC-6.1	Potable water wells will be located, drilled, operated and decommissioned in accordance with contract specifications.

Table 17. Potable Water and Wells Environmental Protection Measures	
No.	**Environmental Protection Measures**
PC-6.2	Potable water wells will not be located within established buffer zones and setback distances from sensitive sites including important wildlife habitats, heritage resources (Appendix F).
PC-6.3	Potable water wells will not be located within established buffer zones and setback distances from waterbodies, wetlands, riparian areas and water bird habitats (Appendix F).
PC-6.4	The drilling contractor will ensure that equipment and materials are available on site for sealing drill holes.
PC-6.5	Water wells will be marked, provided with signage and protected with bollards from damage by vehicles or equipment.
PC-6.6	Water well heads will be a minimum of 30 cm above ground and above the 100-year flood level, and be mounded to direct water away from the well.
PC-6.7	Surface water will be prevented from draining into the well by grouting the annulus of the well casing to the surface.
PC-6.8	Water wells will be capped, secured and either sealed or vented.
PC-6.9	Potable well water will be in compliance with the requirements outlined in Canadian Drinking Water Standards (Appendix C).
PC-6.10	Potable well water treatment/storage facilities/tanks will comply with provincial legislation (Appendix B) and guidelines (Appendix C).
PC-6.11	Potable well water holding tanks will be cleaned and disinfected with approved disinfectants prior to use.
PC-6.12	Super-chlorinated water used for disinfection of storage tanks and equipment will not be released into the environment without de-chlorination.
PC-6.13	The treatment of potable well water will be in compliance with provincial legislation (Appendix B) and guidelines (Appendix C).
PC-6.14	Well water samples will be collected every two weeks and submitted for analysis according to provincial sampling and analysis protocols (Appendix C).
PC-6.15	Potable water samples will be taken from the holding tank and from two different faucets at the end of the distribution piping.
PC-6.16	Potable water samples will be analyzed for total coliforms, metals, hydro carbons , *Escherichia coli* and free chlorine, twice per year.

3.5.7 Power Supply Stations (PC-7)

General environmental protection measures pertaining to the supply of power for project activities (e.g. generators) are listed in Table 18. Also see Emergency Response (Table 31).

Table 18. Power Supply Environmental Protection Measures	
No.	**Environmental Protection Measures**
PC-7.1	Power supply facilities for construction purposes will be located, constructed, operated and decommissioned in accordance with contract specifications.
PC-7.2	Power supply facilities will be designed and constructed in accordance with national and provincial building, electrical and fire codes (Appendix C).
PC-7.3	All required licences, permits and approvals will be obtained prior to construction of power supply facilities.
PC-7.4	Land owners, occupiers and users within 5 km of proposed power supply facilities will be consulted prior to construction.
PC-7.5	Power supply facilities will not be located within established buffer zones and setback distances from sensitive sites including important wildlife habitats, heritage resources (Appendix F).
PC-7.6	Power supply facilities will not be located within established buffer zones and setback distances from waterbodies, wetlands, riparian areas and water bird habitats (Appendix F).
PC-7.7	Erosion protection, sediment control and drainage management measures will be put in place prior to construction.
PC-7.8	Construction materials for power supply facilities will conform to Manitoba Hydro's sustainable development principles (Appendix D).
PC-7.9	Construction waste will be managed and disposed of in accordance with the Solid Waste Management Plan and in conformance with provincial legislation (Appendix B), provincial guidelines (Appendix C), and Manitoba Hydro guidelines (Appendix D).
PC-7.10	Solid and hazardous wastes will be collected in approved containers and transported to licensed or approved facilities by a licensed carrier.
PC-7.11	Solid, liquid and gaseous wastes and emissions from power supply facilities will conform to provincial and national guidelines (Appendix C).
PC-7.12	Sewage and grey water disposal for power supply facilities will be in accordance with provincial legislation (Appendix B) and guidelines (Appendix C).
PC-7.13	Fuel and hazardous substance storage and handling will be in accordance with provincial legislation (Appendix B) and guidelines (Appendix C).
PC-7.14	Emergency Preparedness and Response Plans and procedures will be put in place for power supply facilities prior to commissioning.
PC-7.15	The Environmental Inspector will inspect power supply facilities regularly for adherence with environmental protection measures and unforeseen effects.
PC-7.16	Power supply facilities will be decommissioned when no longer required in accordance with a Decommissioning Plan.

3.5.8 Rights-of-Way (PC-8)

General environmental protection measures pertaining to rights-of-way are listed in Table 19. Also see Clearing (Table 4), Access Roads and Trails (Table 12), Stream Crossings (Table 20) and Transmission Towers and Conductors (Table 21).

Table 19. Rights-of-Way Environmental Protection Measures

No.	Environmental Protection Measures
PC-8.1	Rights-of-way for transmission and distribution lines, access roads and other purposes will be located, cleared, maintained and decommissioned in accordance with contract specifications.
PC-8.2	Access to transmission line rights-of-way for clearing and construction will utilize existing roads and trails to the extent possible.
PC-8.3	Clearing of rights-of-way will occur under frozen or dry ground conditions during established timing windows to minimize rutting and erosion where applicable (Appendix E).
PC-8.4	Geotextile fabric and aggregate material or construction mats will be utilized along portions of the right-of-way that are unable to be targeted during frozen or dry ground conditions.
PC-8.5	Clearing and disturbance will be limited to defined rights-of-way and associated access routes to the extent possible.
PC-8.6	Additional clearing outside established rights-of-way will be approved by the Construction Supervisor prior to clearing and may require an amendment to contract specifications.
PC-8.7	Environmentally sensitive sites, features and areas will be identified and mapped prior to clearing.
PC-8.8	Access to transmission line rights-of-way will be closed, signed and/or controlled in accordance with an Access Management Plan.
PC-8.9	Construction vehicles will be wide-tracked or equipped with high floatation tires to minimize rutting and limit damage and compaction to surface soils.
PC-8.10	Vegetation control along rights-of-way during construction will be in accordance with the Vegetation Management Plan.
PC-8.11	The Environmental Inspector will inspect rights-of-way regularly for adherence with environmental protection measures and unforeseen environmental effects.
PC-8.12	Disturbed areas along transmission line rights-of-way will be rehabilitated in accordance with site Rehabilitation Plan.
PC-8.13	The Environmental Inspector will inspect rehabilitated areas along rights-of-way in accordance with the Site Rehabilitation Plan to assess the success of any re-vegetation and to determine if additional rehabilitation is required.

3.5.9 Stream Crossings (PC-9)

General environmental protection measures pertaining to stream crossings are listed in Table 20. Also see Access Roads and Trails (Table 12), Fish Protection (Table 23), Waterbodies (Table 27) and Erosion Protection and Sediment Control (Table 32).

Table 20. Stream Crossings Environmental Protection Measures	
No.	**Environmental Protection Measures**
PC-9.1	Watercourse crossings will be located, constructed, operated and decommissioned in accordance with contract specifications.
PC-9.2	Right-of-way and access road planning will minimize the number of watercourse crossings.
PC-9.3	Existing trails, roads or cut lines will be used to the extent possible
PC-9.4	Watercourse crossings will be made in accordance with federal legislation (Appendix B) and federal, provincial guidelines (Appendix C).
PC-9.5	Construction of transmission line stream crossings will follow the DFO Operational Statement for Overhead Line Construction (Appendix C) and will be constructed under frozen conditions whenever possible.
PC-9.6	Where crossing a stream is necessary, fording or construction of temporary stream crossings will follow the DFO Operational Statement for Temporary Stream Crossings, and if appropriate conditions exist for Ice Bridges and Snow Fills (Appendix C).
PC-9.7	Where applicable, the DFO Operational Statement for Isolated or Dry Open Cut Stream Crossings and/or High-pressure Directional Drilling will be adhered to (Appendix C). The crossing site must be less than 5 m wide (between high water marks) and construction must be conducted in isolation of flowing water if not constructed during dry or frozen conditions.
PC-9.8	Saturated marshy floodplains of streams will be avoided as watercourse crossings to the extent possible. Where marshy floodplain areas must be crossed, the work will be carried out under frozen conditions.
PC-9.9	No in-stream work will be undertaken during timing windows prescribed by federal guidelines for spring, summer and fall spawners by DFO Operation Statement for Timing Windows (Appendix F).
PC-9.10	Rights-of-way and access road crossings will be at right angles to waterbodies to the extent possible.
PC-9.11	Approach gradients to waterbodies will not exceed 5% to control erosion and minimize sedimentation. This gradient may be achieved using log ramps or other methods, but will not include grading
PC-9.12	Vehicles, machinery and equipment working on watercourse crossings will be kept in good working condition and free of fluid leaks.
PC-9.13	Clearing for stream crossings will follow riparian buffers and setbacks for the Protection of Fish and Fish Habitat (Appendix F).
PC-9.14	Clearing for stream crossings will only remove tree species by hand or other low impact methods in accordance with contract specifications. Shrub understory will be retained and soils will not be disturbed in riparian areas.
PC-9.15	Trees will be felled away from waterbodies. Trees and debris that fall into waterbodies will be removed immediately.
PC-9.16	Cleared debris will be piled above the ordinary high water mark except as required for temporary erosion control in accordance with federal guidelines (Appendix C).
PC-9.17	Existing woody debris will not be removed from stream beds unless required for the stream crossing and approved by the Construction Supervisor.

Table 20. Stream Crossings Environmental Protection Measures	
No.	**Environmental Protection Measures**
PC-9.18	Aggregate materials will not be removed from the bed or bank of any stream or waterway.
PC-9.19	Branches, sawdust, soil or organic materials will not to be used as bank or bridge fill. Only approved materials including bundled logs will be used at stream crossings.
PC-9.20	Only clean, well-graded aggregate fill be used to backfill excavations adjacent to watercourse crossings.
PC-9.21	Erosion protection and sediment control measures will be put in place prior to the commencement of construction activities.
PC-9.22	The bed or banks of watercourses will not be disturbed during removal of snow fills.
PC-9.23	A deep V-shaped notch will be cut at the centre of ice bridges prior to the start of the spring thaw. The notch will be deep enough to permit the ice to melt from the centre and also to prevent blocking fish passage, channel erosion and flooding.
PC-9.24	After removal of temporary watercourse crossings, banks will be restored to near natural conditions and protected from erosion, and flows will be returned to pre-construction conditions.
PC-9.25	Riparian vegetation along rights-of-way will be maintained in accordance with the DFO Operational Statement Maintenance of Riparian Vegetation in Existing Rights-of-Way (Appendix C).
PC-9.26	Disturbed stream banks will be stabilized and re-vegetated with low growth vegetation as soon as practical.
PC-9.27	Abandoned stream crossings will be clearly marked to prevent vehicle access and subsequent environmental damage in accordance with the Access Management Plan.
PC-9.28	The Environmental Inspector will inspect watercourse crossings in accordance with approval terms and conditions to ensure that environmental protection measures are implemented and effective, and unforeseen effects are addressed.
PC-9.29	The Environmental Inspector will be present when winter stream crossings are being pulled out prior to breakup.
PC-9.30	The Environmental Inspector will inspect rehabilitated watercourse crossings in accordance with the site Rehabilitation Plan to assess the success of re-vegetation and to determine if additional rehabilitation is required.
PC-9.31	Stream crossing environmental protection measures identified by aquatic specialists will be adhered to.

3.5.10 Transmission Towers and Conductors (PC-10)

General environmental protection measures pertaining to transmission towers, guy wires and conductors are listed in Table 21. Also see Rights-of-Way (Table 19).

Table 21. Transmission Towers and Conductors Environmental Protection Measures	
No.	**Environmental Protection Measures**
PC-10.1	Transmission towers will be constructed in accordance with contract specifications.
PC-10.2	Transmission tower locations will avoid riparian areas, floodplains, wetlands, permafrost and unstable soil conditions to the extent possible.
PC-10.3	Transmission towers will be located above the ordinary high water mark and outside the riparian zone to the extent possible, wherever feasible
PC-10.4	Transmission towers will not be located on steep slopes near watercourses to the extent possible.
PC-10.5	Transmission towers will not be located within municipal drains or other drainage structures.
PC-10.6	Transport of equipment and materials for tower construction will be along pre-defined access corridors
PC-10.7	Transmission tower construction will normally occur under frozen or dry ground conditions.
PC-10.8	Where thawing occurs, construction equipment, tires and loadings, and access routes will be reviewed to ensure that there will be minimum damage to the soils.
PC-10.9	Transmission towers will not be located within established buffer zones and setback distances from sensitive sites including, protected areas and heritage resources whenever feasible (Appendix F).
PC-10.10	Transmission towers will not be located within established buffer zones and setback distances from waterbodies, wetlands and riparian areas (Appendix F).
PC-10.11	Transmission tower construction will not be permitted within established buffer zones (Appendix F) for bird nesting and rearing during established timing windows (Appendix E).
PC-10.12	Construction of transmission line stream crossings will follow the DFO Operational Statement for Overhead Line Construction (Appendix D) and will be constructed under frozen conditions whenever possible.
PC-10.13	Overhead lines across watercourses will not be installed during wet, rainy conditions in accordance with the DFO Operational Statement for Overhead Line Construction (Appendix C).
PC-10.14	The Construction Supervisor will issue a stop work order if extreme wet weather conditions result in soil damage from rutting and erosion is resulting in sedimentation of adjacent waterbodies.
PC-10.15	Excavations required for tower installations will be restricted to the minimum required footprint.
PC-10.16	During tower foundation excavation the duff layer and A horizon soils shall be stripped and stored separately from other soils. When back filling, these soils are to be replaced as the surface soils to encourage site re-vegetation.
PC-10.17	Areas where soil was disturbed will be stabilized and re-vegetated with low growth vegetation as soon as practical.
PC-10.18	The Environmental Inspector will inspect tower locations regularly to ensure that environmental protection measures are implemented and effective, and unforeseen effects are addressed.

Table 21. Transmission Towers and Conductors Environmental Protection Measures	
No.	**Environmental Protection Measures**
PC-10.19	The Environmental Inspector will inspect rehabilitated tower locations in accordance with the site Rehabilitation Plan to assess the success of re-vegetation and to determine if additional rehabilitation is required.
PC-10.20	Vegetation control around transmission towers will be in accordance with contract specifications and Manitoba Hydro guidelines (Appendix D).

3.6 ENVIRONMENTAL COMPONENT MEASURES

General environmental protection measures relating to environmental components are listed in Tables 22 to 29.

3.6.1 Built-up and Populated Areas (EC-2)

General environmental protection measures related to working in built-up or populated areas are listed in Table 22 Also see Blasting and Exploding (Table 2), Facilities and Buildings (Table 15) and Transmission Towers and Conductors (Table 21).

Table 22. Built-up and Populated Areas Environmental Protection Measures	
No.	**Environmental Protection Measures**
EC-2.1	Contractor and Manitoba Hydro employees will respect municipal and local by-laws in built-up areas.
EC-2.2	Orientation for project staff working in construction areas will include awareness of environmental protection measures for built-up areas.
EC-2.3	Proposed project activities will be reviewed with local city, town and municipal authorities to identify issues and mitigate concerns.
EC-2.4	Construction schedules, equipment and methods will be adapted to comply with municipal and local requirements.
EC-2.5	Noisy construction activities where noise and vibration may cause disturbance and stress in built-up areas will be limited to daylight hours.
EC-2.6	Construction methods and timing will be designed to minimize local traffic disruption and adhere to municipal by-laws.
EC-2.7	Construction traffic and activities will be limited to daylight hours or as provided by municipal by-laws
EC-2.8	Construction site lighting will be directed onto the site and will minimize light and glare on surrounding areas.
EC-2.9	Linear access and sight lines will be taken into account when crossing public roads and traffic lanes.

Table 22. Built-up and Populated Areas Environmental Protection Measures	
No.	**Environmental Protection Measures**
EC-2.10	Construction activities and equipment will be managed to avoid damage and disturbance to adjacent properties, structures and operations.
EC-2.11	Mud, dust and vehicle emissions will be managed in a manner that ensures safe and continuous public activities near construction sites where applicable.
EC-2.12	Natural landscape features located adjacent to construction sites will be protected from disturbance and damage.
EC-2.13	Vegetation screens and buffers using natural or planted vegetation will be incorporated into the design of facilities in built-up areas to the extent possible.
EC-2.14	Disturbance to adjacent cultural areas, heritage resources and green spaces will be avoided.
EC-2.15	The Environmental Inspector will inspect construction work in built-up areas to ensure that environmental protection measures are implemented and effective, and unforeseen effects are addressed.

3.6.2 Fish Protection (EC-3)

General environmental protection measures related to fish and fish habitat are listed in Table 23. Also see Stream Crossings (Table 20), Waterbodies (27) and Erosion Protection and Sediment Control (Table 32).

Table 23. Fish Protection Environmental Protection Measures	
No.	**Environmental Protection Measures**
EC-3.1	Construction activities in or near to fish bearing waters will be conducted in accordance with contract specifications.
EC-3.2	Fish and fish habitat will be protected in accordance with federal legislation (Appendix B) and federal and provincial guidelines (Appendix C).
EC-3.3	Construction activities will not be carried out within established buffer zones and setback distances from waterbodies, wetlands and riparian areas (Appendix G) without prior written notification of Department of Fisheries and Oceans.
EC-3.4	Construction activities will not be carried out within established buffer zones (Appendix F) for fish spawning during established timing windows (Appendix E).
EC-3.5	No work will carried out in watercourses during timing windows prescribed by provincial and federal guidelines for spring, summer and fall spawners (Appendix E).
EC-3.6	Erosion protection and sediment control measures will be put in place at all project locations where surface drainage is likely to flow into fish bearing waters.
EC-3.7	Manitoba Conservation and Water Stewardship and Department of Fisheries and Oceans will be notified if beaver dams must be cleared along rights-of-ways and along access roads and trails. Clearing of dams will be carried out in accordance of the DFO Operational Statement on Beaver Dam Removal (Appendix C).

Table 23. Fish Protection Environmental Protection Measures	
No.	**Environmental Protection Measures**
EC-3.8	Disturbances to waterbodies, shorelines, riparian areas, etc. will be rehabilitated immediately upon completion of construction activities.
EC-3.9	Project personnel will be prohibited from fishing at project locations or along rights-of-way
EC-3.10	The Contractor will submit Blasting Plans to the Department of Fisheries and Oceans for approval prior to blasting near waterbodies.
EC-3.11	Blasting near fish-bearing waters will be in accordance with Department of Fisheries and Oceans guidelines (Appendix C).
EC-3.12	The Environmental Inspector will inspect construction in or adjacent to waterbodies regularly to ensure that environmental protection measures are implemented and effective, and unforeseen effects are addressed.
EC-3.13	The Environmental Inspector will inspect rehabilitated riparian areas in accordance with the site Reclamation Plan to assess the success of re-vegetation and to determine if additional rehabilitation is required.

3.6.3 Groundwater (EC-4)

General environmental protection measures related to groundwater are listed in Table 24. Also see Draining (Table 6), Drilling (Table 7), Borrow Pits and Quarries (Table 13), Potable Water and Wells (Table 17), Soil Contamination (Table 36) and Safety and Health (Table 35).

Table 24. Groundwater Environmental Protection Measures	
No.	**Environmental Protection Measures**
EC-4.1	Well location will be marked with flagging tape prior to construction.
EC-4.2	The risk of accidental releases of petroleum products and other hazardous substances will be minimized by compliance with provincial and federal legislation (Appendix B) and guidelines (Appendix C).
EC-4.3	Where there is potential for mixing of surface and ground water, precautions will be taken to prevent the interconnection of these waters.
EC-4.4	Where groundwater is used for project purposes groundwater usage, quality and levels will be monitored.
EC-4.5	Where groundwater is used for potable water samples will be collected every two weeks and submitted for analysis according to provincial guidelines (Appendix C).
EC-4.6	Potable water samples will be analyzed for total coliforms, heavy metals, hydrocarbons, *Escherichia coli* and free chlorine.

3.6.4 Heritage Resources (EC-5)

General environmental protection measures related to heritage resources are listed in Table 25. Also see Clearing (Table 4), Stripping (Table 11), Access Roads and Trails (Table 12) and Borrow Pits and Quarries (Table 13).

Table 25. Heritage Resources Environmental Protection Measures

No.	Environmental Protection Measures
EC-5.1	Environmental protection measures for heritage resources will be reviewed with the Contractor and employees prior to commencement of any construction activities.
EC-5.2	Provincial legislation (Appendix B) and guidelines (Appendix C) protecting heritage resources will be adhered to during pre-construction and construction activities.
EC-5.3	Orientation for project staff working in construction areas will include heritage resource awareness and training including the nature of heritage resources and the management of any resources encountered.
EC-5.4	Orientation information will include typical heritage resource materials and reporting procedures.
EC-5.5	Construction activities will not be carried out within established buffer zones for heritage resources except as approved by Project Archaeologist.
EC-5.6	The Environmental Inspector will inspect borrow pits and other excavations regularly for the presence of heritage resource materials.
EC-5.7	The Environmental Inspector will inspect routine stream crossings for the presence of heritage resource materials and will report any findings immediately to the Project Archaeologist.
EC-5.8	The Project Archaeologist will inspect major stream and large river crossings for the presence of heritage resource materials.
EC-5.9	All archaeological finds discovered during site preparation and construction will be left in their original position until the Project Archaeologist is contracted and provides instruction.
EC-5.10	The Contractor will report heritage resource materials immediately to the Construction Supervisor and will cease construction activities in the immediate vicinity until the Project Archaeologist is contracted and prescribes instruction.
EC-5.11	Project Archaeologist will report heritage resource discoveries to the appropriate First Nation or Aboriginal community.
EC-5.12	The Project Archaeologist will visit the site, confirm the presence of heritage resources, establish a buffer zone, conduct an evaluation and determine protection/salvage requirements.
EC-5.13	Any culturally significant heritage resource materials discovered during construction will be inventoried and/or salvaged by the Project Archaeologist as per standard archaeological best practices
EC-5.14	The Contractor will stop work immediately in the immediate vicinity if human remains are discovered during construction activities. The finding will be reported to the Construction Supervisor who will contract the Project Archaeologist. The project archaeologist will report immediately to the Historic Resources Branch (HRB) who will, in turn, contract the RCMP and Medical Officer. The closest First Nation community will also be notified by the Project Archaeologist. . A site visit will take place immediately along with the RCMP and Medical Officer

Table 25. Heritage Resources Environmental Protection Measures	
No.	**Environmental Protection Measures**
	to confirm the presence of human remains and determine the forensic/non-forensic nature of the human remains. The Project Archaeologist will work closely with the HRB once the status of the human remains is determined.
EC-5.15	Major heritage resource sites including burial sites discovered during construction will be protected by erecting a snow fence around the site, designating the site off-limits, posting signage, directing water away from the site and placing barricades on access routes, until a permanent solution is agreed upon..

3.6.5 Permafrost (EC-6)

General environmental protection measures related to permafrost in northern Manitoba are listed in Table 26. Also see Clearing (Table 5), Access Roads and Trails (Table 12), and Erosion Protection and Sediment Control (Table 32).

Table 26. Permafrost Environmental Protection Measures	
No.	**Environmental Protection Measures**
EC-6.1	Environmental protection measures for permafrost areas in northern Manitoba will be reviewed with the Contractor and employees prior to commencement of any construction activities.
EC-6.2	Permafrost areas in northern Manitoba will be identified and mapped in advance of project construction activities.
EC-6.3	Construction activities in northern Manitoba will normally occur under frozen ground conditions during established timing windows to minimize disturbance and rutting (Appendix E).
EC-6.4	Disturbance to ground cover vegetation and organic soils in permafrost areas will be minimized.
EC-6.5	The top layer of vegetation and organic materials will be retained as an insulating layer in permafrost areas.
EC-6.6	Excavations of permafrost areas in northern Manitoba will be minimized to the extent possible.
EC-6.7	Alterations to natural drainage patterns by rutting and scouring of surface materials in permafrost areas will be avoided to the extent possible.
EC-6.8	Damage to permafrost areas at watercourse crossings will be minimized by conducting work under frozen conditions.
EC-6.9	Construction projects in permafrost areas of northern Manitoba will employ insulation techniques to protect frozen ground from melting.
EC-6.10	The Environmental Inspector will inspect work regularly in permafrost areas to ensure that environmental protection measures are implemented and effective, and unforeseen effects are addressed.
EC-6.11	Following construction, the Environmental Inspector will inspect permafrost areas to assess effectiveness of environmental protection measures and to determine if additional measures are required.

3.6.6 Waterbodies (EC-7)

General environmental protection measures related to waterbodies (lakes, ponds, rivers, streams, etc.) are listed in Table 27. Also see Draining (Table 6), Stream Crossings (Table 20), Fish Protection (Table 23), Wetlands (Table 28) and Erosion Protection and Sediment Control (Table 32).

Table 27. Waterbodies Environmental Protection Measures

No.	Environmental Protection Measures
EC-7.1	Construction activities in or near to waterbodies will be conducted in accordance with work permits and/or contract specifications.
EC-7.2	Waterbodies will be identified and mapped in advance of project construction activities.
EC-7.3	Environmental protection measures for working around waterbodies will be reviewed with the Contractor and employees prior to commencement of any construction activities.
EC-7.4	Orientation for Contractor and Manitoba Hydro employees will include awareness of environmental protection measures for working around waterbodies.
EC-7.5	Construction activities will not be carried out within established buffer zones and setback distances from waterbodies, wetlands and riparian areas (Appendix F) except at waterbody crossings.
EC-7.6	No work will be carried out in watercourses during timing windows prescribed by provincial and federal guidelines for spring, summer and fall spawners (Appendix E).
EC-7.7	Erosion protection and sediment control measures will be put in place at all project locations where surface drainage is likely to flow into waterbodies.
EC-7.8	Construction in and around waterbodies will be designed and conducted to protect shorelines, minimize clearing of riparian vegetation, prevent disruption to natural drainage and flow patterns, and avoid disturbance and destruction of fish habitat, and interference to fish passage.
EC-7.9	Drainage at construction sites will be directed away from waterbodies.
EC-7.10	Direct discharge of waste waters from construction activities into waterbodies is prohibited
EC-7.11	Erosion protection and sediment control measures will be put in place prior to working in and adjacent to waterbodies.
EC-7.12	Surface and groundwater quality will not be degraded whether or not they contain fish or other aquatic biota.
EC-7.13	Construction activities will not be carried out within established setback distances from waterbodies, wetlands and riparian areas, except at stream crossings (Appendix F).
EC-7.14	Manitoba Conservation and Water Stewardship and Department of Fisheries and Oceans will be notified if beaver dams must be cleared along rights-of-way and access roads and trails. Clearing of dams will be carried out in accordance of the DFO Operational Statement on Beaver Dam Removal (Appendix C).

Table 27. Waterbodies Environmental Protection Measures	
No.	**Environmental Protection Measures**
EC-7.15	The Environmental Inspector will inspect construction work in and around waterbodies regularly to ensure that environmental protection measures are implemented and effective, and unforeseen effects are addressed.
EC-7.16	The Environmental Inspector will inspect sites in and around waterbodies post construction in accordance with the site Reclamation Plan and approval terms and conditions to assess effectiveness of environmental protection measures and to determine if additional measures are required.

3.6.7 Wetlands (EC-8)

General environmental protection measures pertaining to wetlands including bogs, fens, peatlands and marshes are listed in Table 28. Also see Draining (Table 6), Stream Crossings (Table 20), Fish Protection (Table 23), Wildlife Protection (Table 29), and Erosion Protection and Sediment Control (Table 32).

Table 28. Wetlands Environmental Protection Measures	
No.	**Environmental Protection Measures**
EC-8.1	Construction activities in or near to wetlands will be conducted in accordance with contract specifications.
EC-8.2	Orientation for Contractor and Manitoba Hydro employees will include awareness of environmental protection measures for working around wetlands.
EC-8.3	Wetlands will be identified and mapped in advance of project construction activities.
EC-8.4	Project activities will avoid wetland areas to the extent possible. If avoidance is not practical, the extent of disturbance will be minimized. Disturbance of wetlands will only be carried out under frozen ground conditions.
EC-8.5	Clearing wastes and other construction debris or waste will not be placed in wetland areas. Existing logs, snags and wood debris will be left in place.
EC-8.6	Environmental protection measures for working in and around wetlands will be reviewed with the Contractor and employees prior to commencement of any construction activities.
EC-8.7	Construction of buildings, facilities and other structures in wetland areas will be avoided. If avoidance of wetlands is not practical, steel or concrete structures or CCA treated poles/timbers will be used.
EC-8.8	Natural vegetated buffer areas around wetlands and riparian zones will be maintained to the extent possible.
EC-8.9	Manitoba Conservation and Water Stewardship and Department of Fisheries and Oceans will be notified if beaver dams must be cleared along rights-of-way and access roads and trails. Clearing of dams will be carried out in accordance of the DFO Operational Statement on Beaver Dam Removal (Appendix C).

3.6.8 Wildlife Protection (EC-9)

General environmental protection measures related to wildlife (mammals, birds, amphibians, reptiles) and wildlife habitat are listed in Table 29. Also see Blasting and Exploding (Table 2), Clearing (Table 4), Access Roads and Trails (Table 12), Construction Camps (Table 14), Transmission Towers and Conductors (Table 21), Wetlands (Table 28), Vehicles and Equipment (Table 38), and Waste Management (Table 39).

Table 29. Wildlife Protection Environmental Protection Measures

No.	Environmental Protection Measures
EC-9.1	Construction activities in or near to wildlife and wildlife habitat will be conducted in accordance with contract specifications.
EC-9.2	Wildlife and wildlife habitat will be protected in accordance with provincial and federal legislation (Appendix B) and provincial and federal guidelines (Appendix C),
EC-9.3	Orientation for Contractor and Manitoba Hydro employees will include awareness of environmental protection measures for wildlife and wildlife habitat.
EC-9.4	Clearing will occur during late fall and winter to the extent possible to avoid the spring/summer nesting season for birds and parturition times for mammal species and breeding windows for frog species
EC-9.5	Construction activities will not be carried out within established buffer zones and setback distances for wildlife species (Appendix F).
EC-9.6	Long-term storage of cleared vegetation will be avoided to allow for unrestricted wildlife movements
EC-9.7	Construction activities will not be carried out during prescribed timing windows for wildlife species (Appendix E).
EC-9.8	Boundaries of important wildlife habitats will be flagged by prior to commencement of construction.
EC-9.9	Bird Diverters or aerial markers may be installed in high bird traffic areas.
EC-9.10	Where buffer zones or setbacks are not feasible for colonial waterbirds, bird deflectors will be placed on sky wires to improve visibility of the wires to birds and to minimize potential bird-wire collisions.
EC-9.11	Trails through or near important habitat types will be managed in accordance with the Access Management Plan.
EC-9.12	Low, non-danger trees will be maintained in high quality lichen production areas within caribou ranges.
EC-9.13	Trees containing large nests of sticks and areas where active animal dens or burrows are encountered will be left undisturbed until unoccupied. Artificial structures for nesting may be provided if unoccupied nests must be removed.

Table 29. Wildlife Protection Environmental Protection Measures	
No.	**Environmental Protection Measures**
EC-9.14	Manitoba Conservation and Water Stewardship and Department of Fisheries and Oceans will be contracted if beaver dams must be cleared along rights-of-ways or access roads and trails. Clearing of dams will be carried out in accordance of the DFO Operational Statement on Beaver Dam Removal (Appendix C).
EC-9.15	Manitoba Conservation and Water Stewardship will be notified if animal traps are encountered and must be removed for project activities.
EC-9.16	Wildlife will not be fed, befriended or harassed at construction areas.
EC-9.17	Construction camps will be kept clean, food will be kept in sealed storage areas, and kitchen wastes will be stored in bear-proof containers in northern and rural areas.
EC-9.18	Problem wildlife will be reported immediately to Manitoba Conservation and Water Stewardship.
EC-9.19	Hunting and harvesting of wildlife by project staff will not be permitted while working on the project sites.
EC-9.20	No firearms will be permitted at construction sites.
EC-9.21	Vehicles will not exceed posted speed limits and wildlife warning signs will be installed in high density areas and at known crossings locations.
EC-9.22	Any wildlife killed or injured by vehicles will be reported to Manitoba Conservation and Water Stewardship.
EC-9.23	The Environmental Inspector will inspect important wildlife habitats and environmentally sensitive sites regularly to ensure that environmental protection measures are implemented and effective, and unforeseen effects are addressed.

3.7 ENVIRONMENTAL ISSUE/TOPIC MEASURES

General environmental protection measures relating to environmental issues and topics are listed in Tables 30 to 39.

3.7.1 Aircraft Use (EI-1)

General environmental protection measures related to aircraft use are listed in Table 30. Also see Wildlife Protection (Table 29) and Safety and Health (Table 35).

Table 30. Aircraft Use Environmental Protection Measures	
No.	**Environmental Protection Measures**
EI-1.1	Pre-defined aircraft landing locations will include construction camps, marshalling yards, borrow pits, right-of-way corridor and designated landing sites.
EI-1.2	Temporary aircraft landing sites for operational purposes along the right-of-way will be approved by the Construction Supervisor prior to use.
EI-1.3	Fuel storage, handling and dispensing at aircraft landing areas will conform to provincial legislation (Appendix B) and guidelines (Appendix C).
EI-1.4	Contractors and researchers using aircraft will submit flight plans in advance of flying to the Construction Supervisor.
EI-1.5	Aircraft movements as part of ongoing research associated with the project will require prior review by the Construction Supervisor.

3.7.2 Emergency Response (EI-2)

General environmental protection measures pertaining to emergency response are listed in Table 31. Also see Blasting and Exploding (Table 2), Burning (Table 3), Construction Camps (Table 14), Marshalling Yards (Table 16), Hazardous Substances (Table 33), Petroleum Products (Table 34) and Safety and Health (Table 35).

Table 31. Emergency Response Environmental Protection Measures	
No.	**Environmental Protection Measures**
EI-2.1	A project-specific Emergency Preparedness and Response Plan will be prepared in accordance with provincial and federal legislation (Appendix B) and guidelines (Appendix C), and Manitoba Hydro guidelines (Appendix D).
EI-2.2	The Emergency Preparedness and Response Plan will be prepared by the Contractor, approved by the Construction Supervisor prior to construction and updated annually.
EI-2.3	Emergency Preparedness and Response Plans and procedures will be communicated to all project staff and a copy will be made available at the project site.
EI-2.4	Orientation for Contractor and Manitoba Hydro employees working in construction areas will include emergency response awareness.
EI-2.5	Contractors will take reasonable precautions to prevent fuel, lubricant, fluids or other products from being spilled during equipment operation, fuelling and servicing.
EI-2.6	Emergency spill response and clean-up materials and equipment will be available at construction sites, marshalling yards, fuel storage facilities and standby locations.
EI-2.7	All vehicles hauling petroleum products will carry spill containment and clean-up equipment.
EI-2.8	Spill response and clean-up equipment will be capable of containing and recovering the largest release possible and be suitable for the site location.

Table 31. Emergency Response Environmental Protection Measures	
No.	**Environmental Protection Measures**
EI-2.9	All spills at construction sites will be reported in accordance with provincial legislation (Appendix B) and guidelines (Appendix C), and Manitoba Hydro Guidelines (Appendix C).
EI-2.10	The on-site Emergency Spill Response Coordinator will be notified of hazardous substance releases immediately in accordance with the Emergency Preparedness and Response Plan.
EI-2.11	The Manitoba Hydro hazardous materials incident report form will be completed when reporting a spill.
EI-2.12	Clean-up and the disposal of contaminated materials will be managed in accordance with provincial guidelines (Appendix C) and Manitoba Hydro guidelines (Appendix D).
EI-2.13	Start-up and main construction camps will have a fire brigade designated in accordance with the Emergency Preparedness and Response Plan.
EI-2.14	Fire extinguishers will be mounted on buildings at locations where they will be most readily accessible. Safety Officers will conduct annual inspections of fire extinguishers.
EI-2.15	Project emergency response and evacuation procedures in the Emergency Preparedness and Response Plan will be adhered to in the event of forest fires.
EI-2.16	All fires will be reported in accordance with fire reporting procedures in the Emergency Preparedness and Response Plan.
EI-2.17	Safety Officers will make regular inspections of emergency responses procedures and equipment and stores of materials and supplies to ensure that they are current and readily available.
EI-2.18	Post audit assessments will be carried out for all major spills and fires reported to ensure that procedures are followed and plans remain effective.

3.7.3 Erosion Protection and Sediment Control (EI-3)

General environmental protection measures pertaining to erosion protection and sediment control are listed in Table 32. See Clearing (Table 4), Rehabilitating and Re-vegetating (Table10), Access Roads and Trails (Table 12), Stream Crossings (Table 20), Fish Protection (Table 23) and Waterbodies (Table 27).

Table 32. Erosion Protection and Sediment Control Environmental Protection Measures	
No.	**Environmental Protection Measures**
EI-3.1	A project-specific Erosion Protection and Sediment Control Plan will be prepared prior to starting construction. The Plan will be prepared or approved by a Certified Professional in Erosion and Sediment Control (CPESC)
EI-3.2	Contractor specific Erosion Protection and Sediment Control Plans will be prepared by the Contractor, approved by the Construction Supervisor prior to construction and updated annually.
EI-3.3	The Contractor will communicate erosion protection and sediment control information to all project staff and a copy will be made available at the project site.

Table 32. Erosion Protection and Sediment Control Environmental Protection Measures	
No.	**Environmental Protection Measures**
EI-3.4	Orientation for Contractor and Manitoba Hydro employees working in construction areas will include erosion protection and sediment control techniques and procedures.
EI-3.5	The Contractor will be responsible for implementing and maintaining Erosion Protection and Sediment Control Plans and procedures.
EI-3.6	Erosion protection and sediment control measures will be put in place prior to commencement of construction activities and will remain intact for the duration of the project.
EI-3.7	Construction activities will be suspended during extreme wet weather events where erosion protection and sediment control measures are compromised.
EI-3.8	The Contractor will be responsible for modifying erosion protection and sediment control installations to ensure continued effectiveness.
EI-3.9	Accumulated sediment will be removed from silt fences and other barriers in accordance with the Erosion Protection and Sediment Control Plan to ensure proper functioning.
EI-3.10	The Environmental Inspector will make regular inspections of erosion protection and sediment control measures to confirm implementation and continued effectiveness.
EI-3.11	Erosion protection and sediment control installations will only be removed after disturbed areas are protected and sediments are disposed of in accordance with Erosion Protection and Sediment Control Plan.
EI-3.12	Erosion protection and sediment control measures will be left in place and maintained until either natural vegetation or permanent measures are established.
EI-3.13	Erosion protection and sediment control measures will be established for all decommissioned project areas and sites where necessary in accordance with the Decommissioning Plan.
EI-3.14	The Environmental Inspector will make inspections of decommissioned project areas and sites in accordance with the site Reclamation Plan to ensure that environmental protection measures are effective and that any deficiencies are addressed.

3.7.4 Hazardous Substances (EI-4)

General environmental protection measures pertaining to the management of hazardous substances are listed in Table 33. Also see Blasting and Exploding (Table 2), Marshalling Yards (Table 16), Emergency Response (Table 31), Petroleum Products (Table 34), Safety and Health (Table 35), Soil Contamination (Table 36) and Treated Wood (Table 37).

Table 33. Hazardous Substances Environmental Protection Measures	
No.	**Environmental Protection Measures**
EI-4.1	Hazardous substances will be managed in accordance with contract specifications.
EI-4.2	A project-specific Hazardous Substances Management Plan will be prepared in accordance with provincial and federal legislation (Appendix B) and guidelines (Appendix C), and Manitoba Hydro Guidelines (Appendix D).

Table 33. Hazardous Substances Environmental Protection Measures	
No.	**Environmental Protection Measures**
EI-4.3	A Contractor specific Hazardous Substances Management Plan will be prepared by the Contractor, approved by the Construction Supervisor prior to construction and updated annually.
EI-4.4	Hazardous substances management procedures will be communicated to all project staff and a copy will be made available at the project site.
EI-4.5	Orientation for Contractor and Manitoba Hydro employees working in construction areas will include hazardous substance awareness.
EI-4.6	The Contractor will be responsible for the safe use, handling, storage and disposal of hazardous substances including waste as well as procedures for emergency conditions in accordance with provincial and federal legislation (Appendix B) and standards (Appendix C).
EI-4.7	Hazardous substances will be transported, stored and handled according to the procedures prescribed by provincial legislation (Appendix B) and Manitoba Hydro policies (Appendix D).
EI-4.8	Contractor personnel will be trained and certified in the handling of hazardous substances including emergency response procedures in accordance with provincial legislation (Appendix B) and Manitoba Hydro policies (Appendix D).
EI-4.9	Contractor personnel will receive WHMIS training in accordance with provincial legislation (Appendix B) and Manitoba Hydro policy requirements (Appendix D).
EI-4.10	An inventory of hazardous substances including wastes will be prepared by the Contractor and maintained at each project site and updated as required by provincial legislation (Appendix B) and guidelines (Appendix C), and Manitoba Hydro guidelines (Appendix D).
EI-4.11	An inventory of WHMIS controlled substances will be prepared by the Contractor and maintained at each project site and updated as required by provincial legislation (Appendix B) and guidelines (Appendix C), and Manitoba Hydro guidelines (Appendix D).
EI-4.12	Controlled substances will be labelled in accordance with WHMIS requirements, required documentation will be displayed and current Materials Safety Data Sheets will be available at each project site in accordance with the Hazardous Substances Management Plan.
EI-4.13	Hazardous substance and WHMIS inventories will be stored with the substances at each location and with the Contractor's file of controlled substances in accordance with the Hazardous Substances Management Plan.
EI-4.14	Hazardous substance and WHMIS inventories will be completed prior to construction. Inventories will be updated in accordance with regulatory requirements (Appendix B) and Manitoba Hydro policies (Appendix C).
EI-4.15	Manitoba Hydro will approve all chemical products that are used on the project prior to their arrival on-site.
EI-4.16	Non-hazardous products will be used in place of hazardous substances to the extent possible.
EI-4.17	Hazardous substances storage areas will be located a minimum of 100 m from the ordinary high water mark of a waterway and above the 100-year flood level.
EI-4.18	Hazardous materials will be adequately contained and will be protected from wind and rain to prevent entry of fine particles into streams through runoff of dust deposition.
EI-4.19	Access to hazardous materials storage areas will be restricted to authorized and trained Contractor and Manitoba Hydro personnel.

Table 33. Hazardous Substances Environmental Protection Measures	
No.	**Environmental Protection Measures**
EI-4.20	Hazardous materials storage sites will be secured, and signs will be posted that include hazard warnings, contracts in case of a release, access restrictions and under whose authority the access is restricted.
EI-4.21	Containers of hazardous substances stored outside will be labelled, weatherproof, placed on spill containment pallets and covered by a weatherproof tarp.
EI-4.22	Indoor storage of flammable and combustible substances will be in fire resistant and vented enclosed storage area or building in accordance with national codes and standards (Appendix C).
EI-4.23	Pesticide storage will be in accordance with provincial legislation (Appendix B) and Manitoba Hydro guidelines (Appendix D).
EI-4.24	Wet batteries will be stored and transported to licensed or approved waste recycling facilities.
EI-4.25	Hazardous waste substances will be segregated and stored by type.
EI-4.26	The Contractor will monitor containers of hazardous substance containers regularly for leaks and to ensure that labels are displayed.
EI-4.27	The Contractor will ensure that hazardous substance inspections are conducted and reported in accordance with Hazardous Substances Management Plan.
EI-4.28	Bulk waste oil will be stored in approved aboveground tanks provided with secondary containment in accordance with provincial legislation (Appendix B) and guidelines (Appendix C).
EI-4.29	Waste oil will be transported by licensed carriers to licensed or approved waste oil recycling facilities.
EI-4.30	Empty hazardous waste containers will be removed to a licensed or approved disposal site.
EI-4.31	The Environmental Inspector will make routine inspections of hazardous substance storage sites to ensure that environmental protection measures are implemented and effective.

3.7.5 Petroleum Products (EI-5)

General environmental protection measures pertaining to the management of petroleum products are listed in Table 34. Also see Marshalling Yards (Table 16),

Emergency Response (Table 31), Hazardous Substances (Table 33), Safety and Health (Table 35), Soil Contamination (Table 36) and Vehicles and Equipment (Table 38).

Table 34. Petroleum Products Environmental Protection Measures	
No.	**Environmental Protection Measures**
EI-5.1	The Contractor will be responsible for the safe use, handling, storage and disposal of petroleum products including waste as well as procedures for emergency conditions in accordance with provincial and federal legislation (Appendix B) and standards (Appendix C).
EI-5.2	Petroleum products will be transported and handled according to the procedures prescribed by provincial legislation (Appendix B) and Manitoba Hydro policies (Appendix D).
EI-5.3	Orientation for Contractor and Manitoba Hydro employees working in construction areas will include petroleum product storage and handling awareness.
EI-5.4	Contractor personnel will be trained and certified in the handling of petroleum products including emergency response procedures.
EI-5.5	Contractor personnel will receive WHMIS training in accordance with provincial legislation (Appendix B) and Manitoba Hydro policies (Appendix C).
EI-5.6	The Contractor will be responsible for obtaining any required permits from Manitoba Conservation and Water Stewardship for the storage and handling of petroleum products.
EI-5.7	Petroleum product storage will be located a minimum of 100 m from the ordinary high water mark of waterbodies, riparian areas or wetlands (Appendix F).
EI-5.8	Petroleum product storage areas will be located in areas of low environmental sensitivity and will be approved by the Construction Supervisor prior to construction.
EI-5.9	Only approved aboveground petroleum product storage tanks will be used during the construction phase of the project. No underground tanks will be permitted.
EI-5.10	Construction, installation or removal of petroleum product storage tank systems will only occur under the supervision of a registered licensed petroleum technician.
EI-5.11	All aboveground petroleum product storage tanks with a capacity greater than 5,000 L will be registered with Manitoba Conservation and Water Stewardship and have a valid operating permit.
EI-5.12	Petroleum product inventories will be taken weekly by the owner/operator on all aboveground tanks greater than 5,000 L and retained for inspection by Manitoba Hydro or Manitoba Conservation and Water Stewardship upon request.
EI-5.13	Petroleum product storage containers in excess of 230 L will be located on level ground and will incorporate secondary containment with a capacity of 110% of the largest container volume.
EI-5.14	Transfer of petroleum products between storage areas and work sites not exceed daily requirements and will be in accordance with provincial legislation and guidelines.
EI-5.15	Aboveground tanks will be equipped with overfill protection and spill containment consisting of perimeter dykes or secondary containment in the tank design.
EI-5.16	Petroleum product storage tanks will be protected from vehicle collisions by concrete filled bollards.
EI-5.17	Petroleum products will only be stored and handled within designated areas at construction camps and marshalling yards.
EI-5.18	Petroleum products stored outside will be in waterproof and labelled containers, placed on spill containment pallets.

Table 34. Petroleum Products Environmental Protection Measures	
No.	**Environmental Protection Measures**
EI-5.19	Indoor storage of petroleum products will be in fire-resistant, vented and enclosed storage areas or buildings in accordance with national standards (Appendix C).
EI-5.20	Petroleum products will display required signage, placards and labelling, and will be stored and handled in accordance with provincial legislation.
EI-5.21	Warning signs will be posted in visible locations around petroleum product storage areas. Signs will indicate hazard warning, contract in case of a spill, access restrictions and authority.
EI-5.22	Portable petroleum product storage containers will be placed on spill trays with a capacity of 110% of the largest container when not in use.
EI-5.23	If dykes are used, the containment areas will be dewatered after rainfall events and the containment water disposed of as specified in contract specifications.
EI-5.24	Containment measures, such as secondary containment (i.e., berms) will be used at all locations where stationary oil-filled equipment is used.
EI-5.25	Spill trays will remain impervious at very low temperatures (-45 °C) and have accumulated precipitation removed regularly.
EI-5.26	Fuelling of equipment or portable storage tanks will be a minimum of 100 m from the ordinary high water mark of any waterbody.
EI-5.27	Fuelling operations require the operator to be visually observing the process 100% of the time.
EI-5.28	Petroleum product dispensing systems will be secured and locked when not in use by authorized personnel.
EI-5.29	There will be no ignition sources in and adjacent to petroleum product storage areas.
EI-5.30	Slip tanks and barrels will be securely fastened to the vehicle during transport and fuelling operations.
EI-5.31	Vehicles hauling petroleum products will carry equipment and materials for emergency spill containment and clean-up.
EI-5.33	Used petroleum products (including empty containers) will be collected and transported to a licensed oil recycling facility in approved storage containers.
EI-5.34	Documentation describing Manitoba Hydro's process for recycling waste oils and other materials will be made available to the Contractor.
EI-5.35	The Contractor will inspect all petroleum product storage tanks and containers regularly for leaks, and product inventories will be recorded and retained for inspection by Manitoba Hydro and Manitoba Conservation and Water Stewardship.
EI-5.36	Contractors will inspect all mobile and stationary equipment using petroleum products on a regular basis to ensure that measures are taken immediately to stop any leakage discovered.
EI-5.37	Petroleum product storage and dispensing locations will have a current Emergency Preparedness and Response Plan and a designated emergency response coordinator.
EI-5.38	Petroleum product storage sites and mobile transportation units will be equipped with fire suppressant equipment and products.

Table 34. Petroleum Products Environmental Protection Measures	
No.	**Environmental Protection Measures**
EI-5.39	Spill control and clean-up equipment and materials will be available at all petroleum product storage and dispensing locations.
EI-5.40	Once petroleum product storage areas are no longer required, a Phase I and II Environmental Site Assessment will be carried out to determine if remediation is required in accordance with national standards (Appendix C) and Manitoba Hydro guidelines (Appendix D).
EI-5.41	The Environmental Inspector will make regular inspections of petroleum product storage and dispensing sites to ensure that environmental protection measures are implemented and effective.

3.7.6 Safety and Health (EI-6)

General environmental protection measures pertaining to safety and health are listed in Table 35. Also see Blasting and Exploding (Table 2), Access Roads and Trails (Table 12), Construction Camps (Table 14), Marshalling Yards (Table 16), Emergency Response (Table 31), Hazardous Substances (Table 33), Petroleum Products (Table 34), Soil Contamination (Table 36) and Vehicles and Equipment (Table 38).

Table 35. Safety and Health Environmental Protection Measures	
No.	**Environmental Protection Measures**
EI-6.1	A project-specific Workplace Safety and Health Plan will be prepared in accordance with provincial legislation (Appendix B) and guidelines (Appendix C), and Manitoba Hydro guidelines (Appendix D).
EI-6.2	A Contractor specific Workplace Safety and Health Plan will be prepared by the Contractor, approved by the Construction Supervisor prior to construction, and updated annually.
EI-6.3	Workplace safety and health committees will be established and safety meetings will be held as required by provincial legislation (Appendix B) and Manitoba Hydro guidelines (Appendix C) at all project locations.
EI-6.4	Orientation for Contractor and Manitoba Hydro employees working in construction areas will include safety and health awareness.
EI-6.5	Safety and health information will be posted at each project location and made available to all project personnel.
EI-6.6	Safety and health equipment and supplies will be available at all project locations.
EI-6.7	All accidents will be reported to the designated safety and health representative, required actions taken and accident reports prepared.
EI-6.8	Safety Officers will inspect project sites in accordance with provincial legislation (Appendix B) and Manitoba Hydro policies (Appendix D) to ensure that safety and health related measures are implemented and effective.
EI-6.9	Manitoba Hydro employees and contractors will adhere to Corporate Safety Procedures (Appendix D) at all times.

3.7.7 Soil Contamination (EI-7)

General environmental protection measures pertaining to soil contamination are listed in Table 36. Also see Drilling (Table 7), Marshalling Yards (Table 16), Groundwater (Table 24), Hazardous Substances (Table 33), Petroleum Products (Table 34), Treated Wood (Table 37) and Vehicles and Equipment (Table 38).

Table 36. Soil Contamination Environmental Protection Measures

No.	Environmental Protection Measures
EI-7.1	Contractor personnel will take all reasonable steps to prevent soil, groundwater and surface water contamination.
EI-7.2	All spills and releases reported will be responded to in accordance with provincial legislation (Appendix B) and guidelines (Appendix C) and Manitoba Hydro guidelines (Appendix D).
EI-7.3	The Contractor will assess previously used construction sites for potential contamination following Canadian Standards Association Environmental Site Assessment (CSA Z768- 01 and Z769-00) procedures (Appendix C).
EI-7.4	If contamination is suspected or evident, a Phase II Environmental Site Assessment will be carried out on previously used construction sites following Manitoba Hydro procedures (Appendix C).
EI-7.5	The Contractor will carry out a Canadian Standards Association Phase II Environmental Site Assessment (CSA Z769-00) at abandoned construction camps, marshalling yards, petroleum product storage and dispensing areas and hazardous substance storage areas if contamination is suspected.
EI-7.6	A Remediation Plan will be prepared by the Contractor for sites contaminated by project activities and will remediate soils according to provincial standards.
EI-7.7	Remediation Plans will be prepared by the Contractor and approved by the Construction Supervisor prior to implementation if remediation of contaminated soils is determined to be required.
EI-7.8	If laboratory results show that the soil is not contaminated then the soils may be used in accordance with contract specifications.
EI-7.9	If laboratory results show that the soil is contaminated the soil must be treated on-site or transported to an approved landfill or land farm for remediation in accordance with a Remediation Plan.
EI-7.10	Any contaminated soil treatment areas must be designed and constructed to contain surface runoff and prevent leaching to soil and groundwater.
EI-7.11	The Environmental Inspector will inspect contaminated site assessment and remediation work regularly to ensure that environmental protection measures are implemented and effective.
EI-7.12	A closure report will be prepared for completed remediation projects in accordance with provincial (Appendix C) and Manitoba Hydro guidelines (Appendix D).

3.7.8 Treated Wood (EI-8)

General environmental protection measures related to the use of treated wood are listed in Table 37. Also see Construction Camps (Table 14), Facilities and Buildings (Table 15), Marshalling Yards (Table 16), Transmission Towers and Conductors (Table 21), Groundwater (Table 24), Hazardous Substances (Table 33) and Soil Contamination (Table 36).

Table 37. Treated Wood Environmental Protection Measures

No.	Environmental Protection Measures
EI-8.1	Use of treated wood will be in accordance with provincial legislation (Appendix B) and guidelines (Appendix C), and Manitoba Hydro guidelines (Appendix D).
EI-8.2	Creosote-treated wood will not be used. If existing creosote-treated wood is encountered it will be disposed of as hazardous waste by a licensed contractor at an approved waste disposal site.
EI-8.3	Treated wood products will not be used where they may come into contract with potable water supplies including those for domestic and livestock animals.
EI-8.4	CCA or other approved treated wood products will be used if avoidance of construction in aquatic environments is not possible.
EI-8.5	Treated wood will be delivered to project locations or construction sites on an as required basis to reduce storage time in the field.
EI-8.6	Treated wood will be kept in use for as long as possible or reused for other projects.
EI-8.7	Small quantities of surplus or unwanted treated wood products may be disposed of as domestic waste products at licensed or approved waste disposal sites.
EI-8.8	Treated wood products will not be used indoors and will not be burned.
EI-8.9	Salvage and disposal of treated wood products will be in accordance with Manitoba Hydro guidelines (Appendix D).
EI-8.10	If treated wood products are sold the purchaser will be advised about potential adverse effects and will sign a release.
EI-8.11	The Environmental Inspector will inspect the use of treated wood to ensure that environmental protection measures are implemented and effective.

3.7.9 Vehicle and Equipment Maintenance (EI-9)

General environmental protection measures related to vehicle and machinery maintenance are listed in Table 38. Also see Marshalling Yards (Table 16), Groundwater (Table 24), Hazardous Substances (Table 33), Petroleum Products (Table 34), Safety and Health (Table 35) and Soil Contamination (Table 36).

Table 38. Vehicle and Equipment Maintenance Environmental Protection Measures	
No.	**Environmental Protection Measures**
EI-9.1	All vehicles, equipment and machinery will be licensed, insured and operated in compliance with provincial legislation (Appendix B) and guidelines (Appendix C), and Manitoba Hydro guidelines (Appendix C).
EI-9.2	Drivers of vehicles transporting dangerous goods or hazardous substances will be in possession of a valid transportation of dangerous goods certificate.
EI-9.3	Vehicles transporting dangerous goods or hazardous products will display required placards and labelling in accordance with provincial legislation (Appendix B) and Manitoba Hydro guidelines (Appendix D).
EI-9.4	Vehicles, equipment and machinery must arrive on site in clean condition free of fluid leaks and weed seeds.
EI-9.5	Vehicle, equipment and machinery operators will perform a daily inspection for fuel, oil and fluid leaks and will immediately shutdown and repair any leaks found. All machinery working near watercourses will be kept clean and free of leaks.
EI-9.6	Vehicle, equipment and machinery maintenance and repairs will be carried out in designated areas located at least 100 m from the ordinary high water mark of a waterbody, riparian area or wetland.
EI-9.7	Vehicles, equipment and machinery that carry fuel, hydraulic oil and other petroleum products will also carry spill control and clean-up equipment and materials.
EI-9.8	Emergency vehicle, equipment and machinery maintenance repairs will contain waste fluids and will use drip trays and tarps.
EI-9.9	An Emergency Preparedness and Response Plan and spill control and clean-up equipment will be provided at all designated vehicle, equipment and machinery maintenance areas.
EI-9.10	No vehicle, equipment and machinery washing will take place at construction sites.
EI-9.11	Unnecessary idling of vehicles, equipment and machinery will be avoided to the extent practical.
EI-9.12	The Environmental Inspector will inspect vehicles, equipment and machinery daily to ensure that environmental protection measures are implemented and effective.

3.7.10 Waste Management (EI-10)

General environmental protection measures related to non-hazardous solid waste management are listed in Table 39. Also see Clearing (Table 4), Demobilizing and Cleaning-up (Table 5), Construction Camps (Table 14), Facilities and Buildings (Table 15), Marshalling Yards (Table 16), Wildlife Protection (Table 29) and Hazardous Substances (Table 33).

Table 39. Waste Management Environmental Protection Measures	
No.	**Environmental Protection Measures**
EI-10.1	Waste collection, storage and disposal at construction sites will be in accordance with contract specifications.
EI-10.2	A project-specific Solid Waste/Recycling Management Plan that includes waste recycle, reuse and reduction provisions will be prepared in accordance with provincial legislation (Appendix B) and guidelines (Appendix C), and Manitoba Hydro guidelines (Appendix D).
EI-10.3	A Contract specific Solid Waste Management Plan will be prepared by the Contractor, approved by the Construction Supervisor prior to construction and updated annually.
EI-10.4	Construction sites will be kept tidy at all times and bins will be provided wherever solid wastes are generated.
EI-10.5	Indiscriminate burning, dumping, littering or abandonment will not be permitted.
EI-10.6	Construction and demolition wastes will be segregated into separate waste streams for reuse, recycling and landfill disposal.
EI-10.7	Non-reusable demolition and construction debris will be disposed of at a licensed or approved waste disposal facility.
EI-10.8	Solid waste materials will be collected and transported to a licensed or approved waste disposal facility in accordance with the Solid Waste/Recycling Management Plan.
EI-10.9	The Contractor must demonstrate that sufficient capacity exists at waste disposal grounds by obtaining approval from the operator prior to use of that facility.
EI-10.10	Bear-proof waste containers will be used in northern, remote and rural project locations.
EI-10.11	Kitchen wastes will be stored in closed containers to minimize wildlife interactions.
EI-10.12	Waste materials remaining at snow disposal sites after melting will be disposed of at a licensed or approved landfill.
EI-10.13	The Environmental Inspector will make regular inspections of waste collection, storage and handling at construction sites to ensure that environmental protection measures are implemented and effective.

3.8 SUMMARY

This section provided general environmental protection measures for the Project. The environmental protection measures are presented in tabular form broken down by management, project activity, project component, environmental component and environmental topic. The next section provides specific environmental protection measures for environmentally sensitive sites in map and text formats.

4.0 SPECIFIC ENVIRONMENTAL PROTECTION MEASURES

4.1 OVERVIEW

This section of the Draft Environmental Protection Plan presents how environmentally sensitive sites will be identified and specific environmental protection measures will be implemented for the project.

4.2 ENVIRONMENTAL PROTECTION MAPPING

The Construction Environmental Protection plans will provide Manitoba Hydro Construction Supervisors and employees, and contractors and contract employees with detailed site-specific environmental protection information that can be implemented, inspected, evaluated and reported on in the field. The map sheets will be produced in hard copy and electronic formats which will be used by Manitoba Hydro, contractor and regulatory staff on laptop computers in field offices, vehicles and aircraft.

4.3 ENVIRONMENTALLY SENSITIVE SITES

Environmentally sensitive sites are locations, features, areas, activities or facilities that are ecologically, socially, economically or culturally important or sensitive to disturbance and require protection and mitigation during construction and operation. The sites will be identified by discipline specialists based on desktop studies and field research, baseline investigations, and consultation programs, and included Aboriginal Traditional and Local Knowledge. Sensitive sites include unique terrain features, erosion prone soils, waterbodies, wetland areas, valued and protected species and habitats, protected areas, heritage, cultural and spiritual sites, and other important locations requiring specific protection.

Through Aboriginal Traditional Knowledge workshops and self-directed aboriginal community reports culturally, and environmentally sensitive sites were identified. Manitoba Hydro will be working with aboriginal communities prior to the start of construction to further identify and map these sites and develop mitigation measures to minimize the effects of the project on them.

4.4 SPECIFIC ENVIRONMENTAL PROTECTION MEASURES

Specific environmental protection measures will be provided for each environmentally sensitive site identified. The environmental protection measures will include project-specific mitigation

measures, regulatory requirements, best practice guidelines, environmental standards, Aboriginal Traditional Knowledge and other protection strategies. References are made to general environmental protection measures where applicable. Linkages are also provided to legislation, guidance documents, drawings, diagrams, maps, photos, videos and other reference materials relevant to the sites.

4.5 SUMMARY

This section of the Draft Environmental Protection Plan presented environmentally sensitive sites will be identified and specific environmental protection measures will be implemented for the project.

5.0 FOLLOW-UP ACTIONS

5.1 OVERVIEW

This section outlines inspecting, monitoring, managing and auditing requirements for the Draft Environmental Protection Plan.

5.2 INSPECTING

Inspection is the organized examination or evaluation involving observations, measurements and sometimes tests for a construction project or activity. The results of an inspection are typically compared to specified requirements, drawings and standards for determining whether the item or activity is in conformance with these requirements. Environmental inspection is an essential and key function in environmental protection and implementation of mitigation measures.

Manitoba Hydro has established a comprehensive integrated environmental inspection program to comply with regulatory approvals and meet corporate environmental objectives. The program includes hiring and training of Environmental Inspectors to be on-site during construction activities. Manitoba Hydro's approach to environmental inspection includes:

- Compliance with regulatory approvals;
- Adherence to environmental protection plans;
- On-site environmental inspectors;
- Training and education;
- Regular monitoring and inspection during construction;
- Interaction with contractors (e.g. pre- construction meeting, daily discussion);
- Regularly review of inspection and monitoring information;
- Quick response to incidents or changing conditions;
- Weekly and monthly summary reports;
- Regular reporting to regulators; and
- Notification of regulators of emergency or contingency situations.

Trained environmental inspectors will visit active work sites daily to inspect for compliance with licence, permit or other approval terms and conditions, and adherence to environmental protection plan general and specific measures. All inspection activities will be recorded in a daily journal and daily inspection forms will be completed. Daily inspection reports will be provided electronically to the Construction Supervisor and Contractor. Weekly and monthly inspection summary reports will be provided to Manitoba Hydro project supervisors and reports will be provided to senior management as required or requested. Sample Daily, weekly and monthly inspection report forms, as well as a detailed inspection report checklist and an incident report form are provided in Appendix G.

Project locations with environmental protection measures in place will be inspected routinely for continuing effectiveness. Particular attention will be paid to access roads and trails, rights-of-way, borrow pits and quarries, construction camps, marshalling areas, stream crossings, petroleum product and hazardous materials storage areas, rehabilitated sites and soil remediation locations.

All instances of non-compliance with legislated requirements or non-conformance with environmental protection measures will be recorded on daily inspection forms and reported to the Construction Supervisor, Contractor and Manitoba Hydro Licensing and Environmental Assessment Department. Instances of non-compliance and non-conformance will be responded to immediately. Non-compliance and non-conformance instances will be followed up in subsequent daily inspection reports and in weekly and monthly summary reports.

Incidents such as accidents, malfunctions, spills, fires, explosions, environmental damage, etc., will be reported immediately to the Construction Supervisor, Contractor and Environmental Inspector, and an incident report form will be completed. Incidents will be dealt with immediately and followed up in subsequent daily inspection reports and in weekly and monthly summary reports.

5.3 MONITORING

Monitoring is the continuing observation, measurement or assessment of environmental conditions according to a pre-defined sampling, analysis and reporting procedures. There are two main types of monitoring in the environmental field: Compliance Monitoring is a broad term for monitoring conducted to verify whether a practice or procedure meets the applicable requirements prescribed by legislation, guidelines, industry standards or specific terms and conditions (e.g., in an agreement, lease, permit, licence or authorization). Environmental Monitoring is periodic or continuous surveillance or testing, according to a predetermined schedule, of one or more environmental indicators to establish baseline conditions or to verify the accuracy of an environmental assessment and the effectiveness of mitigation measures.

Monitoring for the Project will be in accordance with pre-defined plans. These monitoring plans will verify changes to the environment predicted in the EA Report, facilitate compliance with regulatory limits, criteria or objectives, and identify any unforeseen environmental effects. Monitoring will be carried out by the Contractor or Manitoba Hydro and it may be contracted to environmental consultants that possess the necessary expertise, equipment and analytical facilities. Following is a list of monitoring plans to be prepared for the Project:

A Biophysical Monitoring Plan will be prepared to monitor effects of the Project on the environment. A Biophysical Monitoring Framework (refer to Appendix G in EA Report) was developed to illustrate the components of the Biophysical Monitoring Plan, The framework will outline the environmental effects to be monitored, how the plan will be developed, and the process in which the results of the monitoring plans will be shared with regulators, stakeholders, aboriginal communities and the public.

The scope of the monitoring plan will include physical and biological, components of the environment. Objectives of the monitoring plan will be to:

- Confirm the nature and magnitude of predicted environmental effects;
- Assess effectiveness of mitigation measures implemented;
- Identify unexpected environmental effects of the project if they occur;
- Identify mitigation measures to address unanticipated environmental effects; where required
- Confirm compliance with regulatory requirements including approval terms and conditions; and
- Provide baseline information to evaluate long-term changes or trends.

Monitoring will be carried out on selected environmental components using environmental indicators and measurable parameters identified in the EA Report. Components to be monitored will be selected based on regulatory requirements, environmental importance, vulnerability and sensitivity, and licence requirements. The monitoring plan will describe sampling procedures, quality control and assurance programs, laboratory methods and protocols, laboratory accreditations and reporting requirements. Results from monitoring will be used to adjust mitigation measures and to modify the plan on an ongoing basis. Aboriginal Traditional and Local Knowledge will be considered and incorporated into the monitoring plan where appropriate and applicable. The Biophysical Monitoring Plan will be completed and implemented prior to the commencement of the construction phase for the Project. The monitoring plan and subsequent monitoring reports will be provided to the Contractor and Manitoba Conservation and Water Stewardship, and will be placed on the public registry established for the Project.

5.4 MANAGEMENT

Management involves the control or organization of activities and resources to resolve or respond to environmental problems, issues or concerns. Management plans provide reasoned course of actions to achieve pre-defined goals or objectives. Management strategies are identified, compared and analyzed, and preferred courses of action are implemented and evaluated.

5.4.1 Access Management Plan

An Access Management Plan will be prepared by Manitoba Hydro to control access to construction areas for the Project.

- The scope of the management plan will include security of construction sites and facilities, safety of construction workers and the general public, respect for Aboriginal rights and resource users, and protection of natural, cultural and heritage resources.

- The plan will ensure worker and public safety. It will also provide for security of Manitoba Hydro properties and facilities, and safe access to or through construction areas for authorized employees, land and resource users, and research and monitoring personnel.

- Contact requirements will be outlined for municipalities, land owners, resource users and other parties to be consulted prior to accessing lands.

- The management plan will outline security requirements including terms and conditions for access, restrictions on firearms, hunting and fishing, and other resource use activities.

- A draft Access Management Plan will be provided for review by affected stakeholders including government departments, First Nations and Metis, rural municipalities, environmental organizations and land owners.

- The plan will be completed and implemented prior to the commencement of the construction phase for the Project. Once implemented, the management plan will be reviewed after each construction season and/or annually and results from the reviews will be used to adjust plan provisions to ensure continued effectiveness.

- The plan will be provided to the Contractor and Manitoba Conservation and Water Stewardship, and will be placed on the public registry established for the Project.

5.4.2 Blasting Plans

Blasting Plans will be prepared by the Contractor to manage the storage and use of explosives at construction sites for the Project.

- The objective of the plans will be to provide for the effective management of explosives in accordance with environmental protection measures, provincial and federal legislation and guidelines, and corporate policies for explosives.
- Environmental Inspectors will conduct regular inspections of blasting activities and will submit reports to the Contractor and Construction Supervisor.
- Blasting Plans will be completed and approved prior to commencement of construction activities for Project.

5.4.3 Decommissioning Plan

A Decommissioning Plan will be prepared by Manitoba Hydro to manage decommissioning activities for the Project.

- The objective of the plan will be to provide for the decommissioning of abandoned construction areas in accordance with environmental protection measures, provincial guidelines, and corporate policies for decommissioning.
- Environmental Inspectors will conduct regular inspections of decommissioning activities and will submit reports to the Contractor and Construction Supervisor.
- The Decommissioning Plan will be completed and implemented prior to demobilizing and cleaning up abandoned construction areas for the Project.

5.4.4 Emergency Preparedness and Response Plan

An Emergency Preparedness and Response Plan Framework will be prepared by Manitoba Hydro to prepare for and respond to emergency situations at construction sites for the Project.

- The objective of the framework will be to provide for emergency preparation and response in accordance with provincial legislation and guidelines, and corporate policies and procedures for the protection of human health and the environment.
- The scope of the framework will include spills or releases of hazardous substances including petroleum products, accidents involving hazardous substances, medical emergencies, explosions and fire.

- Environmental protection measures will be prescribed for the provision of emergency response planning, responsibilities, training, exercises, procedures, containment, and clean-up equipment and materials.

- Environmental Inspectors will conduct regular inspections of construction activities including emergency preparedness and response measures.

- Contractors will be required to prepare contract-specific Emergency Preparedness and Response Plans that conform to contract specifications and are consistent with the Emergency Preparedness and Response Plan Framework.

5.4.5 Erosion and Sediment Control Plan

An Erosion and Sediment Control Framework will be prepared by Manitoba Hydro in accordance with Canadian professional erosion and sediment control standards to manage construction activities that cause soil erosion and result in sediment releases to the aquatic environment.

- Contractors will be required to prepare contract-specific Erosion Protection and Sediment Control Plans that conform to contract specifications and are consistent with the Manitoba Hydro Erosion Protection and Sediment Control Plan.

5.4.6 Rehabilitation Plan

A Rehabilitation Plan will be prepared by Manitoba Hydro to manage rehabilitation activities at construction sites for the Project.

- The objective of the plan will be to provide for the rehabilitation of completed construction sites in accordance with environmental protection measures, provincial guidelines, and corporate policies for rehabilitation.

- The Contractor will prepare and implement site-specific rehabilitation plans for each construction project or contract.

- Environmental Inspectors will conduct regular inspections of rehabilitation sites and will submit reports to the Contractor and Construction Supervisor.

- The Rehabilitation Plan will be completed and implemented prior to demobilizing and cleaning up construction sites for the Project.

- The plan will be provided to the Contractor and Manitoba Conservation and Water Stewardship, and will be placed on the website established for the Project.

5.4.7 Remediation Plans

Remediation Plans will be prepared by the Contractor to manage remediation activities at any contaminated sites identified as a result of the Project.

- The objective of the plans will be to provide for the remediation of contamination in accordance with environmental protection measures, provincial legislation and guidelines, and Manitoba Hydro policies for contaminated sites.
- Environmental Inspectors will conduct regular inspections of remediation activities and will submit reports to the Contractor and Construction Supervisor.
- Closure reports will be prepared by Environmental Inspector for each successfully remediated site.
- The plans will be provided to the Manitoba Hydro and Manitoba Conservation and Water Stewardship, and will be placed on the website established for the Project.

5.4.8 Solid Waste/Recycling Management Plan

A Solid Waste/Recycling Management Plan will be prepared by Manitoba Hydro to manage wastes at construction camps and work sites including marshalling yards for the Project.

- The objective of the plan will be to provide for effective waste management in accordance with provincial legislation and guidelines, and corporate policies and procedures for the protection of human health and the environment.
- The scope of the plan will be limited to solid non-hazardous wastes and will include waste reduction, recycling and reusing initiatives.
- Environmental protection measures will be prescribed for the storage of kitchen wastes, recycling and disposal of construction wastes and disposal of wastes at licenced facilities.
- Environmental Inspectors will conduct regular inspections of construction activities including waste management.
- The plan will be reviewed after each construction season and annually and results from the reviews will be used to adjust plan provisions to ensure continued effectiveness.
- The Solid Waste/Recycling Management Plan will be completed and implemented prior to the commencement of the construction phase for the Project.

5.4.9 Vegetation Management Plan

A Vegetation Management Plan will be prepared by Manitoba Hydro to manage vegetation during construction of the Project.

- The objective of the plan will be to provide for effective vegetation management in accordance with provincial legislation and guidelines, and corporate policies and procedures for the protection vegetation and the environment.

- The scope of the plan will include introduction of exotic species, controlling vegetation, protection of protected species, forest insects and diseases, and re-vegetation of disturbed sites.

- Environmental protection measures will be prescribed for washing equipment and vehicles prior to entering construction sites, protecting protected species, controlling vegetation at construction sites and restoring and re-vegetating disturbed sites.

- Environmental Inspectors will conduct regular inspections of construction activities including vegetation management.

- The plan will be reviewed after each construction season and annually and results from the reviews will be used to adjust plan provisions to ensure continued effectiveness.

- The Vegetation Management Plan will be completed and implemented prior to the commencement of the construction phase for the Project.

5.5 AUDITING

Auditing is a systematic approach to defining environmental risk and/or determining the conformance of an operation with respect to prescribed criteria. An environmental audit typically involves a methodical examination of evidence that may include interviews, site visits, sampling, testing, analysis, and verification of practices and procedures. Environmental protection plans for the Project will be audited annually. Environmental protection plan audits will be conducted by accredited environmental auditors. The audit results will help to evaluate the effectiveness of environmental protection measures, to learn from inspection and monitoring programs, and to improve project planning and environmental assessment performance.

5.6 SUMMARY

This section outlined inspecting, monitoring and auditing requirements for the Project. Inspecting, monitoring and auditing results will be used in updating the environmental protection plan as outlined in the following section.

6.0 PLAN UPDATING AND REVIEW

6.1 OVERVIEW

This section outlines how environmental protection plans will be reviewed and updated for the Project.

6.2 PROJECT PHASE UPDATES

This Draft Environmental Protection Plan for the Project covers the period from submission of the Environment Act Proposal to receipt of an Environment Act Licence and other approvals. At that time Construction Environmental Protection Plans will be prepared to include licence terms and conditions and other regulatory requirements. It is anticipated that several environmental protection plans will be prepared for the various project components or construction contracts. The Construction Environmental Protection Plans will cover the construction period from beginning to end.

Operation Environmental Protection Plans will be prepared prior to completion of the Project. Operation Environmental Protection Plans will cover the period from commissioning to the eventual decommissioning of the Project. Environmental protection plans will be prepared for each major project component.

A Decommissioning Environmental Protection Plan will be prepared prior to decommissioning of any part of the Project.

6.3 CONSTRUCTION SEASON REVIEWS

Construction Environmental Protection Plans for transmission line project components will be reviewed at the end of each construction season and will be updated based upon the results of the reviews. Construction season reviews will be conducted by Licensing and Environmental Assessment in consultation with Contractor and Manitoba Hydro personnel, regulators and stakeholders. Checklists will be used to ensure that reviews address all required information in a consistent manner. It is expected the construction work in northern Manitoba will be carried out during the winter months from November to March. The results of each construction season review will be summarized in a report that documents the issues addressed and provides recommended updates to the environmental protection plan.

6.4 ANNUAL REVIEWS

Construction Environmental Protection Plans for the construction power and switching station, project components will be reviewed at the end of each fiscal year ending on March 31 and will

be updated based upon the results of the reviews. Annual reviews will be conducted by Licensing and Environmental Assessment in consultation with Contractor and Manitoba Hydro personnel, regulators and stakeholders. Annual reviews will be conducted so that they coincide with construction season reviews to the extent possible. Checklists will be prepared to ensure that reviews address all required information in a consistent manner. The results of each annual season review will be summarized in a report that documents the issues addressed and provides recommended updates to the environmental protection plan.

6.5 INCIDENT REVIEWS

Construction Environmental Protection Plans will be subject to review in the event of any incident including environmental accidents, fires and explosions, reportable releases of hazardous substances and non-compliance situations.

6.6 LIST OF REVISIONS

A list of revisions will be maintained at the beginning of each environmental protection plan that identifies the nature of the revision, section revised, responsibility and dates.

6.7 SUMMARY

This section outlined how environmental protection plans will be reviewed and updated for the Project. Both construction season and annual reviews will be conducted. Plans will be updated for construction, operation and decommission phases of the Project. A list of revisions will be maintained in each environmental protection plan.

7.0 REFERENCES

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