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5.0 ENVIRONMENTAL PROTECTION AND SUSTAINABLE DEVELOPMENT

This chapter outlines the environmental protection measures that have been integrated within the Project development and describes mitigation specifications and plans that will be implemented throughout the Project design, construction planning, construction, and the operations and maintenance phases. Environmental protection measures are derived from ESRA’s corporate environmental and safety policies and include such measures as: design mitigation measures; environmental protection procedures; detailed construction and operational phase environmental management plans; contract specifications; health and safety protocols; and contractor plans such as the Emergency Response Plan. Collectively these measures are incorporated into the Project’s Environmental Management Plan. Encompassed within ESRA’s environmental protection measures is a commitment to sustainable development (Section 5.6).

ESRA’s Environmental Protection Policy, Environmental Protection Procedures and Specifications, health and safety protocols, design mitigation measures, and the contractor’s emergency response plans are examples of the environmental protection tools and guidance that will be implemented for this Project.

Specific mitigation measures that will be applied to avoid or minimize potential adverse effects on environmental components, including measures to mitigate the effects of the environment on the Project and measures to mitigate accidents and malfunctions, are provided in **Chapters 7 through 12**. ESRA’s commitments to environmental monitoring and follow-up are provided in **Chapter 14**.

5.1 ESRA’s Environmental Program

ESRA’s commitment to environmental protection is outlined in the Authority’s [Environmental Protection Policy](#) which states that:

“The Manitoba East Side Road Authority consultants, contractors and agents are committed to being a positive and creative force for the protection and enhancement of the environment. This includes having respect for the public that could be affected by our decisions and actions and being responsible stewards of the environmental resources in our care. In recognizing that our construction activities could affect the environment, we are committed to proper understanding of these potential environmental impacts and have adopted measures aimed at protecting and preserving our environment ...”

The full policy statement is provided in **Appendix 5-1**. The Policy outlines ESRA’s commitment to environmental matters including regulatory requirements and provides the framework for ESRA’s Environmental program. Similar to the Environment Policy, ESRA’s Safety Policy outlines corporate expectations for safety performance in relation to Project development.

ESRA’s Environmental Program stems from the commitments outlined in the Policy and addresses all stages of the project including:

- Project Planning;
- Construction Planning;
- Construction; and
- Operations and Maintenance (**Figure 5-1**).

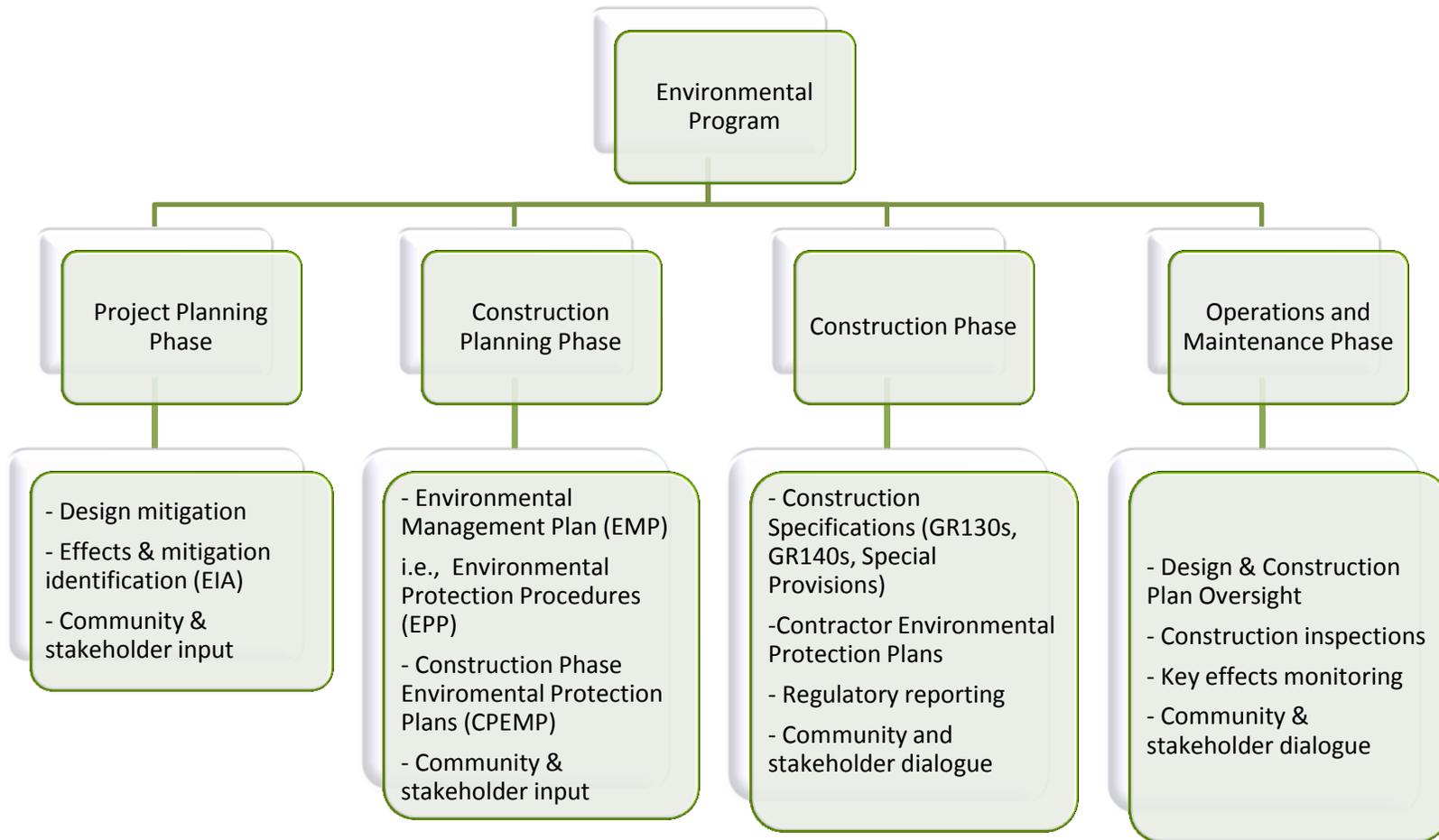


Figure 5-1: ESRA’s Environmental Program across Project Stages

5.2 Environmental Protection - Project Planning

5.2.1 Design Mitigation and Community and Stakeholder Input

Design mitigation involves modifying the design of a proposed project to mitigate potential adverse environmental effects at the environmental impact assessment stage prior to completion of the final design and commencement of construction. At this current Planning Phase for the Project, design mitigation has been accomplished by various means including complying with legislation, adopting national and international design standards and codes, adhering to established design guidelines and best management practices, and implementing mitigation measures identified from the environmental impact assessment process including:

- Information from baseline studies;
- Input from the Aboriginal and Public Engagement Program (**Chapter 4**); and
- Environmental effects identification, assessment and mitigation.

A particularly important influence on the Project design mitigation has been Project-specific input received from elders, elected officials and members of the local First Nations as well as other aboriginal communities and stakeholders during the Large Area Transportation Network Study (SNC-Lavalin *et al.* 2010a,b,c; 2011a,b). Receipt of local and traditional knowledge of environmentally and culturally sensitive areas allowed for the mitigation of potential adverse effects through a series of modifications to the proposed road corridor culminating in the selection of the preferred road alignment as proposed and assessed in this EIS. The history of Project route alternatives and mitigation incorporated into revised alignments is provided in **Chapter 2** (Project Alternatives and Selection Process). A summary of the design modifications that were incorporated into the current proposed alignment to mitigate adverse environmental and socio-economic effects identified through the Aboriginal and Public Engagement Program (**Chapter 4**) is provided in **Table 5.1**. Additional design mitigation measures identified through the EIA process (identified in **Chapters 7** through **10**) will be incorporated into a design requirements document for the design engineer. ESRA will maintain responsibility for design oversight to monitor that these measures are implemented as planned.

A particularly important influence on the Project design mitigation has been input received from the local First Nations communities, other aboriginal communities and stakeholders.

Table 5.1: Design Mitigation Resulting from Community Feedback Related to Changes in the P4 All-Season Road Route Options

Identified through Engagement	Design Mitigation	Resulting Benefit
Poor soil conditions and possible flooding of initial proposed alignment options between winter road and Lake Winnipeg due to bog and fen areas.	Road route moved east from Lake Winnipeg and existing winter road.	Better soil conditions for construction, locally available building materials reducing the project footprint. Lower risk of flooding.
Potential effects on traditional use areas and important habitat in proximity to Poplar River.	Road route moved west from Poplar River and associated traditional use areas.	Minimized potential adverse effects to traditional use areas and important habitat associated with Poplar River.
Potential effects on traditional use areas in proximity to Etomami River.	Road route moved east from Etomami River and associated traditional use areas.	Minimized potential impacts to traditional use areas associated with Etomami River.
Potential effects on traditional use areas around Many Bays Lake.	Road route moved east away from Many Bays Lake to the extent feasible.	Minimized potential impacts to traditional use areas associated with Many Bays Lake.
Consideration of safe crossing locations for trails.	Design mitigation at trapline access points and other community access points along the all-season road: <ul style="list-style-type: none"> ▪ Gradual road platform slopes to accommodate snowmobile access across the alignment; and ▪ Enhanced visibility at access points. 	Facilitates travel along established snowmobile/travel routes which will preclude the need to cut additional/alternative trails.
Consideration of watercourse navigation and fish passage requirements.	Watercourse crossings designed with appropriate vertical clearance and will be clear-span, where possible, to avoid in-water piers.	Minimized potential for obstructing navigation and fish passage as well as reduced potential of adverse effects to instream fish habitat.

References: SNC-Lavalin *et al.* 2010a,b,c,d; 2011a,b; MFESRA 2012. See **Chapter 2, Figure 2-1** for a map of the history of the P4 all-season road alignment alternatives.

5.3 Environmental Protection - Construction Planning

5.3.1 Environmental Management Plan (EMP)

An Environmental Management Plan (EMP) will be developed by ESRA during the Design Phase and will be submitted to the Environmental Assessment and Licensing Branch of Manitoba Conservation and Water Stewardship prior to commencing Project construction. The purpose of the EMP is to provide an overall environmental management framework for the Project to address environmental risks associated with the Project development. The EMP is intended for use at the

corporate level for checking that commitments made in corporate policy statements, this environmental impact statement, licences, permits and approvals are implemented and monitored. The EMP incorporates the regulatory requirements stemming from CEAA approval, *The Environment Act* Licence and other approvals. It will be implemented during the detailed design, construction, and operations and maintenance phases of the Project and updated as required to respond to substantive changes such as new information, regulatory changes, or adaptive management measures that may be implemented. A framework for the EMP is provided in **Appendix 5-2**.

The purpose of the Environmental Management Plan (EMP) is to provide an overall environmental management framework for the Project to address environmental risks associated with the Project.

The EMP documents the framework that will be used to manage the environmental aspects of the Project and includes metrics to: incorporate mitigation commitments made in the EIS into the design of the Project; monitor mitigation procedures during construction; and evaluate mitigation measures following Project completion. The EMP provides information and procedures for this Project and for use in future road projects relating to environmental awareness training, environmental protection methods, and site-specific environmental protection procedures to be implemented. Key components of the EMP include:

- Schedule and Activity Tracking;
- Detailed Design Requirements;
- Environmental Protection Procedures;
- Environmental Inspection Plan;
- Quarry Requirements Plan;
- Construction Phase Environmental Management Plans;
- Monitoring and Follow-up;
- Reporting;
- Management Review; and
- Plans and measures to address other conditions of *The Environment Act* Licence and environmental approvals as appropriate.

The EMP is supported by ESRA’s Environmental Protection Procedures and Environmental Protection Specifications for contractors. ESRA’s EMP is modeled after the ISO 14001 Environmental Management System (EMS) and comprises the corporate Environment Policy and the EMS steps of planning and implementation, checking and management review (Figure 5-2). The EMP provides the overarching framework for the management of environmental components relative to the Project. The EMP requires development of the following plans and procedures:

- Construction Phase Environmental Protection Plans;
- Environmental Inspection Plan;
- Monitoring and Follow-up Plan; and
- Environmental Protection Procedures.



Figure 5-2: ISO 14001 Environmental Management System Structure

ESRA’s environmental protection requirements for road construction projects are documented in ESRA’s Environmental Protection Procedures and Environmental Protection Specifications, referred to as GR130s. The GR130s will form part of the tender packages and construction contracts for the Project.

5.3.2 Environmental Protection Procedures (EPPs)

ESRA’s Environmental Protection Procedures (EPPs) are designed to provide guidance on environmental protection practices for preconstruction and construction activities. The current EPPs are founded on both best practices and regulatory requirements and include the following:

1. Clearing and Grubbing
2. Petroleum Handling and Storage
3. Spill Response
4. Noise Control
5. Materials Handling and Storage
6. Working Within or Near Fish Bearing Waters
7. Stream Crossings
8. Temporary Stream Diversions
9. Fish Passage
10. Fish Salvage
11. Culvert Maintenance and Replacement
12. Blasting Near a Watercourse
13. Heritage Resources
14. Wildlife
15. Wildfires
16. Erosion and Sediment Control
17. Concrete Area Management Practices
18. Dust Suppression Practices
19. Borrow Pit Decommissioning
20. Quarry Site Selection and Requirements
21. Site Selection – Temporary Work

Copies of ESRA’s EPPs are presented in **Appendix 5-3**. Included in several EPPs, including EPP 19, 20, and 21, are details on the selection criteria for Project components such as borrow areas and quarries, as well as temporary works.

5.4 Environmental Protection – Construction

Environmental protection is incorporated into the construction phase through a variety of contract specifications and special provisions and contractor submittals.

5.4.1 Contract Specifications

Construction contract specifications detail the technical design as well as Project-specific restrictions in how the work is to be completed. For the proposed all-season road Project, multiple contracts will be tendered for specific Project components (e.g., road segment, bridge). Contract specifications will be tailored to the component-specific conditions. Each contract will include site-specific requirements for environmental protection. For example, bridge and stream crossing designs incorporate erosion and sediment controls to provide permanent protection for local watercourses.

The GR130 environmental specifications that are included in ESRA construction contracts provide general environmental protection direction and requirements for environmental topics encountered for most road construction projects (GR130s are presented in **Appendix 5-4**). ESRA will update the GR130s

periodically to capture current best practices and regulatory requirements. Examples of GR130s of relevance to the proposed all-season road Project include the following:

- Record keeping;
- Inspections;
- Designated Areas and Access;
- Materials Handling, Storage and Disposal;
- Spills and Remediation and Emergency Response;
- Dust and Particulate Control;
- Noise and Noise Limitations;
- Planned and Unplanned Shutdowns;
- Staff Training and Awareness;
- Working Within or Near Water;
- Erosion and Sediment Control;
- Clearing and Grubbing;
- Heritage Resources;
- Wildlife;
- Wildfires; and
- Cement Batch Plant and Concrete Wash-out Area.

In addition to the implementation of ESRA’s GR130 specifications in their construction activities, the contractor is required to develop and implement a series of detailed environmental submittals specific to the contract (e.g., Materials Safety Data Sheets, copies of all required approvals, clearances, permits, licences, and certificates). To assist the contractor in their environmental submittals outlined in the GR130s, guidance materials will be provided to the contractor upon award.

In addition to ESRA’s Environmental Protection Specifications (i.e., GR130s), ESRA’s Workplace Safety and Health Specifications (GR140s) also form part of the tender packages for construction contracts for the Project. ESRA’s GR140s developed for the Project 1 all-season road (PR 304 to Berens River) are provided in **Appendix 5-5** for illustration purposes. A Project-specific set of GR140s will be developed for inclusion in the tender packages for the proposed P4 Project. Examples of key topics expected to be addressed in ESRA’s GR140s for the P4 Project include the following:

- Safety and Health Program Requirement;
- Safe Work Plan¹;
- Safety Representative;
- Orientation and Training;
- Monthly Reporting Procedures;
- Project Safety Information Board;
- Workplace Safety and Health Committee;
- Required Acts/Regulations on Site;
- Public Safety;
- Personal Protective Equipment;
- Fall Protection;
- Emergency Procedures;
- Incident Reporting;
- Sanitary Facilities;
- Inspections;
- Housekeeping;
- Magazine License and Explosives Storage;
- Equipment Maintenance;
- Lockout/Tagout;
- Excavations;
- Traffic Management;
- Smoking;
- Compressed Gases;
- Clearing;
- Quarry;
- Crushing;
- Drilling;
- Blasting;
- Utilities;
- Explosives Transportation (By Ground);
- Explosives Transportation (By Air); and
- Summary of Required Submission.

¹ An outline of the Safe Work Plan ESRA will require contractors to provide is in **Appendix 5-6**.

- Material Safety Data Sheets (MSDS);

5.4.2 Contractor-Required Plans

Specific environmental protection plans that each construction contractor will be responsible for providing are outlined in ESRA's GR130.3.1 (**Appendix 5-4**). To provide consistency in the standard and approach required, ESRA provides all contractors with an environmental pre-construction guidance document and associated Contractor reporting forms. Prior to construction, the contractor is required to submit plans in accordance with the GR130s for acceptance by the Contract Administrator. Examples of contractor-required plans are presented below.

Waste Management Plan

The contractor will be responsible for managing wastes associated with the construction contract. The management of various wastes that must be collected, stored, transported, and disposed of in accordance with provincial and federal legislation and guidelines are described in a plan submitted as per the specifications. Wastes will include solid non-hazardous waste, kitchen waste, liquid wastes (sewage and grey water), and hazardous wastes including contaminated soil. The Waste Management Plan will include procedures to check that the collection, storage, transportation, and disposal of all wastes generated will be conducted in a safe, environmentally responsible, and compliant manner. The plan will define roles and responsibilities to be undertaken by the various site contractors and project personnel and establish guidelines for storing and processing the wastes. The intent is to provide a high degree of control over the management of wastes thereby minimizing adverse environmental effects. The Waste Management Plan will also make appropriate references to other environmental component management plans with regard to health and safety, hazardous materials management, and emergency response.

Dust Control

Fugitive dust will be generated by road construction activities by: operating construction equipment and vehicles, blasting, rock quarrying and crushing, batching concrete, excavating, placing fill, and grading. A Dust Control Plan may be required to establish procedures for the control of dust during Project construction.

Explosives and Blasting Management Plan

As indicated in ESRA's Workplace Safety and Health Specifications (GR140s; **Appendix 5-5**), an Explosives and Blasting Management Plan for the Project will be prepared and submitted by applicable contractors after contract award for each segment of road tendered for construction and prior to initiation of blasting activities. The plan will outline best practices and regulatory requirements for the safe transportation, handling, storage, and use of explosives. Storage facilities for explosives at quarry sites will meet the federal standards and licensing requirements as specified in the *Explosives Regulation* of the *Explosives Act* as well as provincial standards and licensing requirements as specified in the *Operation of Mines Regulation of The Workplace Safety and Health Act* of Manitoba. Where applicable,

blasting restriction “windows” for the protection of aquatic and terrestrial species will be indicated in the plan and as indicated in **Chapters 8 and 9** of this EIS.

Emergency Response Plan

An Emergency Response Plan will be developed by the contractor to provide procedures to be followed in the event of unanticipated emergency situations that may occur during construction of the Project. The Emergency Response Plan will adhere to regulatory requirements and ESRA’s Workplace Safety and Health Specifications for the Project as described in the GR140s.

The objective of the construction Emergency Response Plan is to provide procedures for the safety and protection of life, environment and property, identifying a predetermined course of actions and responsible personnel for emergency situations arising from incidents, release of hazardous/toxic substances, or other emergency situations during the construction phase of the Project. The Emergency Response Plan will be structured to provide clear and easily-accessible information and will define:

An Emergency Response Plan will be developed by the contractor to provide procedures to be followed in the event of unanticipated emergency situations that may occur during construction of the Project.

- Roles and responsibilities of response personnel and organizations;
- Internal and external communication structure;
- Mandatory response actions and procedures to be executed;
- Reporting protocols to be followed; and
- Follow-up actions to be taken.

The Emergency Response Plan will cover various emergency response situations that are most likely to occur such as personal injury, fire, explosions, and hazardous substance spills. The construction Emergency Response Plan will be refined and finalized in preparation for construction permitting and in consultation with communities and relevant regulatory authorities. The procedures may be revised at any time during construction or should unanticipated circumstances warrant.

5.5 Environmental Protection – Operations and Maintenance

During the operations and maintenance phase of the Project, standard operating procedures and environmental best management practices will be implemented to promote the protection of environmental values along the all-season road. As required through discussions with regulatory agencies, Project-specific environmental protection measures may be developed for implementation during this project phase. On-going communications with local communities and all-season road users to advise of routine and unscheduled maintenance activities or changes in operations.

5.6 Management Structure, Compliance and Reporting

Monitoring is conducted to check that environmental protection measures are being implemented as planned. The implementation of environmental obligations are managed by ESRA's Environment Unit under the Vice President of Engineering and Construction. Environmental performance is communicated to the Executive at regular management meetings. Additional information regarding environmental monitoring, and the management structure and reporting during all phases of Project development, is provided in **Chapter 14**.

5.6.1 Project Design

ESRA's Engineering Unit works closely with ESRA's Environment Unit during the preliminary/functional design phase to incorporate comments from communities and other stakeholders and to identify measures to mitigate potential environmental effects. During the detailed design phase, ESRA contracts with various engineering specialists to complete design details and plan the construction staging. These activities are undertaken with oversight provided by ESRA's Engineering Unit and input from ESRA's Safety and Environment units. Prior to the release of a contract, ESRA's Engineering, Environment, and Safety units review the construction documents to check that specific mitigation measures applicable to the contract have been appropriately incorporated into the construction drawings and specifications.

5.6.2 Project Construction

ESRA's project delivery program includes working with local First Nations to develop capacity in the construction sector. This program delivery includes training programs for construction including heavy equipment operators, mentoring of First Nation-owned construction companies and provision of construction contracts under Community Benefits Agreements (CBAs) to the First Nation Construction Corporations to provide economic development and capacity building. The First Nation Corporation incorporated for the East Side Transportation Initiative is required to have a Board of Directors, General Manager, and finance, safety, and environment staff. Part of the mentoring program includes mentoring the First Nation Corporation's environment and safety staff, as well as the construction company, on the environmental and safety requirements and obligations regarding construction activities. To monitor compliance with the construction specifications including environmental and safety requirements, construction activities are overseen and mentored by an ESRA on-site-inspector, with ESRA and First Nation safety and environment officers providing additional inspection support.

In addition, ESRA oversees the delivery of the construction of the Project via tendered construction contracts. The contractor is required to adhere to the specific construction specifications (GR 130s and GR140s) and environmental protection measures covered under special provisions, including those described in the accompanying drawing package. ESRA's inspectors and Contract Administrators oversee the construction activities of both the CBA contracts and the tendered contracts, and monitor for compliance with the construction specifications and regulatory requirements.

5.6.3 Contractor's Requirements

The prime contractor will have several key personnel on their construction team who will have responsibilities for environmental protection and safety. These individuals will generally be responsible for:

- Facilitating implementation of the environmental policy;
- Implementing required environmental protection plans;
- Planning for environmental protection during construction;
- Conducting environmental inspections during site construction activities;
- Implementing the emergency response and health and safety plans; and
- Checking that environmental issues are resolved in a timely and sensitive manner.

5.7 Commitment to Sustainable Development

ESRA is committed to sustainable development as the Authority proceeds with its mandate under the *Manitoba East Side Road Authority Act*. As indicated in the Introduction **Chapter 1, Section 1.2.1**, The East Side Road Transportation Initiative evolved from the Government of Manitoba's commitment to support sustainable development in Manitoba through its acceptance in July 2000 of the [Report of the Consultation on Sustainable Development Implementation \(COSDI\)](#) (Government of Manitoba 1999). COSDI was a multi-stakeholder, consensus-based process commissioned in 1997 by the government of Manitoba to *"consider and make recommendations... on how Manitoba can best implement sustainable development principles and guidelines into decision-making, including environmental management, licensing, land-use planning, and regulatory processes."*

ESRA is committed to sustainable development as the Authority proceeds with its mandate under the Manitoba Floodway and East Side Road Authority Act.

The proposed P4 all-season road Project is part of the East Side Planning Initiative based on the COSDI report which recommended that the implementation of sustainable development include the creation of broad area plans across the province. Broad area planning was defined as integrated and coordinated planning that is based on the sustainability of the ecosystem. This type of planning process considers the environmental, social, health, cultural, and economic needs of the public, local communities, First Nations, and various stakeholders and interest groups in future land, resource, and development decisions.

Schedules A and B to Manitoba's *The Sustainable Development Act* define the principles and guidelines of sustainable development. These principles and guidelines form the basis of a sustainability evaluation framework that can be used to describe and assess the sustainability of the proposed Project. Actions taken by ESRA in relation to the principles and guidelines of sustainable development are provided in **Appendix 5-7**.

Examples of specific initiatives that will be undertaken to promote sustainable development as part of the proposed all-season road Project, and have been undertaken as part of ESRA's P1 all-season road currently under construction, include:

- **Community Benefits Agreements** – provide training and economic development opportunities for First Nation communities and members; encourage involvement in the Project through local employment, equipment rentals, and the generation of revenues and profits by band-owned construction companies.
- **Local Procurement** – provide opportunities for east side residents to be employed by the project through minimum hiring requirements, local procurement of goods, and preferential use of local equipment.
- **Project Engagement** – provide engagement opportunities for east side residents and other Aboriginal peoples to address environmental interests in the Project including the mitigation of potential impacts on the environment.
- **Traditional Knowledge Studies** – Provide opportunities to learn about traditional ways and land and resource use in order to reduce impacts on trappers, resource users, and to protect cultural and heritage resource sites.
- **Native Grass Re-vegetation Program** – Implement ESRA's native grass re-vegetation program to help restore native plants in areas affected by construction; provide employment opportunities for the gathering and propagation of local native grass seed by east side residents.
- **Wildlife Monitoring – Trapper Program** – Involve east side trappers in data collection from their traplines to mitigate impacts on wildlife, ESRA has undertaken a multi-year wildlife monitoring study that is providing valuable information on caribou, wolves, moose, furbearers, small animals, and bird species.

CHAPTER 5 APPENDICES

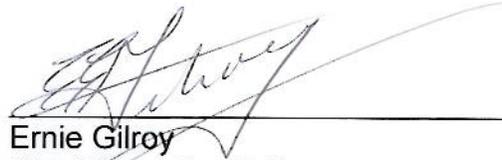
Appendix 5-1

ESRA's Environmental Protection Policy

Environmental Protection Policy

The Manitoba East Side Road Authority (ESRA), consultants, contractors and agents are committed to being a positive and creative force for the protection and enhancement of the environment. This includes having respect for the public that could be affected by our decisions and actions and being responsible stewards of the environmental resources in our care. In recognizing that our construction activities could affect the environment, we are committed to proper understanding of these potential environmental impacts and have adopted measures aimed at protecting and preserving our environment in accordance with the fundamental principles laid out below.

- We will undertake construction activities in a manner that conserves and enhances resources, prevents pollution, reduces waste and promotes recycling as much as possible.
- We will comply fully with environmental laws, regulations, permits and agreements and will incorporate our own criteria in the interests of environmental protection where no other requirement exists.
- We will undertake environmental awareness and information dissemination so that all workers and the local community understand the significance of our environmental protection measures.
- We will routinely monitor our environmental performance to evaluate the effectiveness of our environmental protection plan and practices and to identify areas where improvement can be made.
- We will take due care and caution at all times to anticipate and prevent environmental accidents on the project and to have in place a plan to respond if necessary, in a safe, effective, efficient and timely manner.
- We will carry out these environmental protection measures and interactions with our regulators and the neighboring community in an honourable, respectful, open and transparent manner.


Ernie Gilroy
Chief Executive Officer
Manitoba East Side Road Authority

AUG 1.8 2015

Dated

Appendix 5-2

Framework for ESRA's Environmental Management Plan

All-Season Road Project
Environmental Management Plan Framework
October 2015

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1 Introduction

The following introduction provides context for this Environmental Management Plan.

1.1 Background

The Manitoba East Side Road Authority (ESRA) was formed by the *Manitoba East Side Road Authority Act* with a mandate that included the construction of an All-Season Road (the Project). In carrying out this mandate, ESRA is responsible for obtaining all necessary environmental approvals and for coordinating and supervising the construction of the Project. The *Manitoba East Side Road Authority Act* establishes a Board of Directors charged with the responsibility to direct the business and affairs of the ESRA. The Project is being funded by the Province of Manitoba.

The EIA compares and describes the pre-development baseline conditions in relation to predicted conditions. The EIA was prepared to meet the requirements of the *Manitoba Environment Act*, the *Canadian Environmental Assessment Act*. The Project is a “Development” that requires a Licence pursuant to *The Environment Act*.

This EMP describes the environmental management processes that the ESRA will follow during the construction and operation of the Project. The goal of the EMP is to ensure that the environmental protection measures committed to by ESRA and the requirements of the Licence are undertaken in a timely and effective manner. The EMP describes the roles and responsibilities of the parties involved in implementing the Project. An adaptive management approach to enable continuous project and mitigation improvement is an integral principle of this EMP.

1.2 Project Overview - All Season Road Project

ESRA will meet its commitments and thereby achieve its environmental objectives through a hierarchy of the environmental plans:

- The Project Environmental Management Plan (EMP) providing an overall management framework to address potential environmental risks associated with the Project. The EMP describes the management system in terms of the why, what, how, who, and when of these plans. The EMP is consistent with the ESRA Environmental Policy (Appendix C).
- Subject-specific Environmental Protection Procedures that describe the suite of environmental protection measures for key individual environmental areas (Appendix D-Part A). These are supplemented with standard specifications included in each construction contract, General Requirements on Environment (Appendix D-Part B).
- Quarry Requirements Plan (Appendix E) that describe the environmental protection requirements related to quarrying activities that are contracted to local First Nation communities through Community Benefits Agreements.
- Monitoring Plans assess the effects of construction on specific components of the environment (i.e. wildlife monitoring, aquatic environment). A strategic plan for Wildlife Monitoring and an Aquatic Environment Monitoring Plan are provided in Appendix G.

- Construction Phase Environmental Management Plans (CPEMPs) for each phase of work to detail individual environmental protection actions during construction at the individual work sites. These plans will reference the Environmental Protection Procedures and will be developed at a later date.
- Operation Phase Environmental Management Plan (OPEMP) will describe the long-term operation and maintenance procedures and environmental protection measures to be implemented after construction is completed and a section of the road is operational for all-season use. This plan will reference the Environmental Protection Procedures and will be developed at a later date.

1.3 Environmental Oversight

The environmental management reporting and structure for the Project is shown below in **Figure 1**. ESRA, as the overall project manager, is responsible for implementing, monitoring and amending the environmental aspects of the Project. ESRA will engage the local communities to discuss various aspects of the Project through the Community and Public Involvement Program. The program adapts to the needs and interests of each local community and includes regular engagement through:

- Newsletters and local radio;
- Meetings with Chief and Council, and other local representatives such as Fur Councils, land use coordinators, and Local Liaison Committee where requested by the community;
- Periodic community meetings.

In addition, ESRA engages the communities as well as the general public through its website, and regular publications in print media, such as Grassroots News.

ESRA will also participate on, and or initiate other committees as required. Technical committees will be established as needed to plan for and respond to various environmental management aspects of the Project.

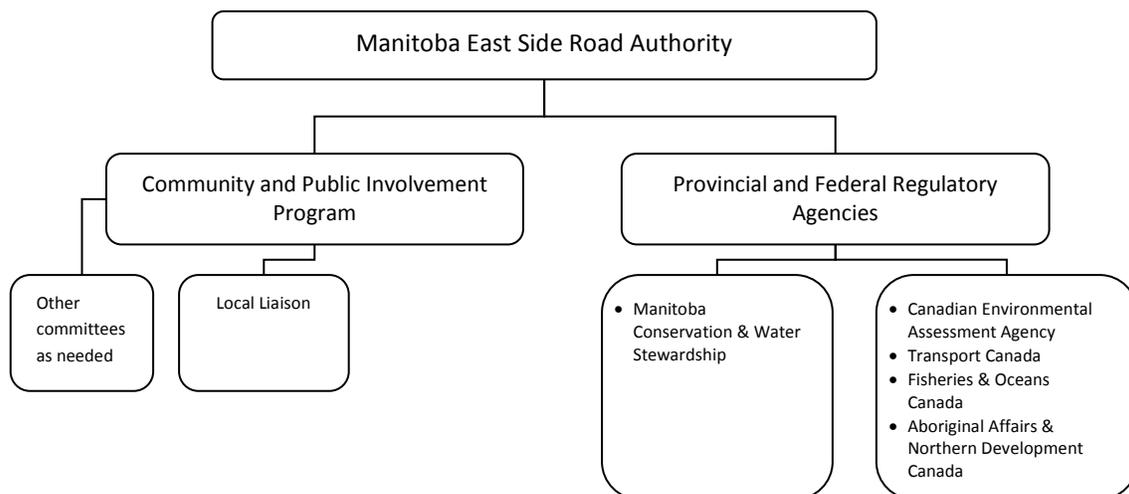


Figure 1. East Side Road Environmental Management Reporting and Communication Structure

1.4 Purpose and Structure of the Environmental Management Plan

1.4.1 Purpose

The purpose of the Environmental Management Plan is:

To describe the management system that will be implemented to ensure compliance with the federal and provincial requirements including the verification that all environmental commitments are executed, monitored, evaluated for effectiveness, and that information is reported back to the project management for adjustment if required.

1.4.2 Structure and Elements of the EMP

The EMP is designed after the 5-step model for an environmental management system produced by the International Organization for Standardization (ISO) Standard 14001. These steps are outlined in **Figure 2**.

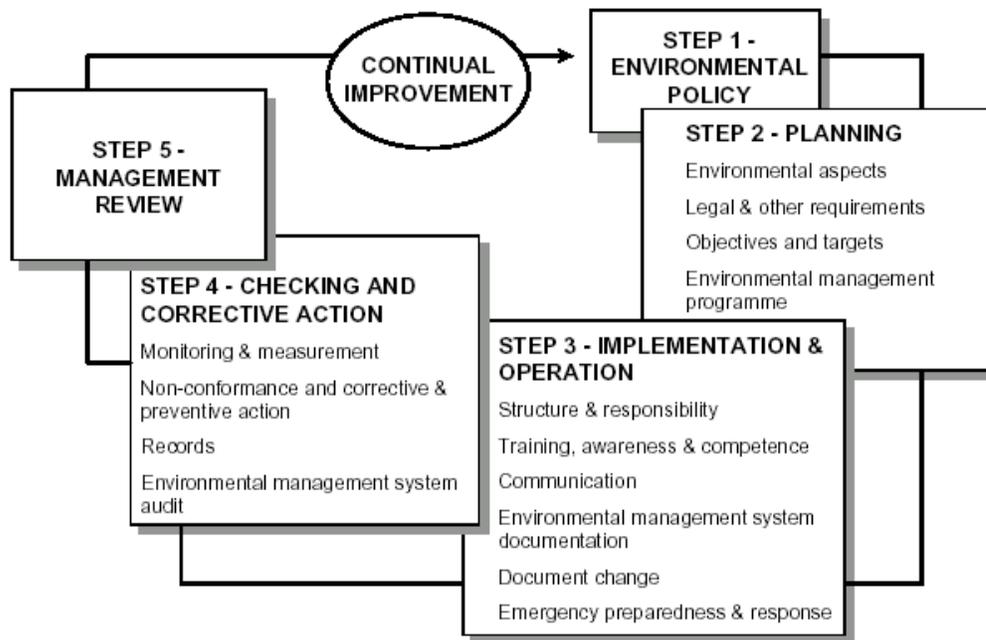


Figure 2. The 5 steps of ISO 14001

Environmental Policy

ESRA has a clear Environmental Protection Policy Statement, outlining fundamental principles aimed to protect and preserve the environment where resources could be affected by its activities. All parties to construction contracts are expected to conduct their Project-related activities in accordance with this policy. ESRA, Contract Administrators and Contractors are required to sign the Policy to demonstrate acceptance of this commitment. The ESRA Environmental Policy is attached as Appendix C.

Planning and Implementation

Step 2 of the ISO 14001 model is to plan the subsequent steps, which are the implementation and monitoring activities. Section 2 of this EMP describes the activities that ESRA will undertake to comply with the environmental requirements for the Project. The EMP is a tool with which to confirm that these activities have occurred. The key elements of the EMP include:

- Schedule and Activity Tracking;
- Environmental Protection Procedures;
- Environmental Inspection Plan;
- Construction Phase Environmental Management Plans;
- Operation Phase Environmental Management Plans;
- Monitoring and Follow-up Plans;
- Reporting; and
- Any other conditions of the Licence and environmental approvals as appropriate.

These elements form the main sections of this EMP. This EMP consists of a coordinated set of key points for each element of the EMP as follows:

- Objective of the element;
- How the objective will be achieved;
- Who has the roles and responsibilities for the element;
- What action will be taken; and
- When key milestones will be reached.

Management Review

The final step in the ISO14001 model is Management Review. The EMP embodies an adaptive management approach and allows for adjustments to the environmental protection activities as necessary, and for continuous improvement of the Project. ESRA acknowledges the need to monitor the residual effects of the Project and to evaluate the effectiveness of the environmental protection measures implemented. ESRA also acknowledges the possibility that adjustments to the mitigation measures may be indicated by the data collected respecting the predictions made or the success of the environmental protection measures implemented. Monitoring, reporting, and management decision making are integral to the various levels and elements of environmental management planning. Section 2.8 describes the Management Review process.

1.5 Community and Stakeholder Involvement

The EMP is based on the public comments, concerns, and issues that were expressed during community meetings, open houses, traditional knowledge studies, and stakeholder meetings as documented in the EA Report and the Comprehensive Study Report. This EMP is also based on on-going involvement with the communities since the completion of those reports, most recently in the gathering of traditional knowledge.

ESRA will continue to involve the communities, stakeholders and the public by meeting with community leadership annually at minimum. A Local Liaison Committee will be identified for on-going updates and input between the community and ESRA. ESRA is committed to considering community input provided in regards to the EMP and its implementation.

2 EMP Elements

2.1 Schedule and Activity Tracking

2.1.1 Objective

To ensure that planning, approval, construction, studies, environmental submittal requirements and Project commitments are anticipated and undertaken in a timely, efficient and effective manner.

2.1.2 How

In view of the complexity and the number of individual actions required for successful completion of the Project, ESRA will utilize project management practices and support software. Included in the program schedule will be critical environmental management events such as authorization submissions and reporting requirements.

2.1.3 Who

ESRA, the detailed design engineers and Contract Administrators will develop the scheduling and tracking for projects. Included in this scheduling will be submittals for permits, approvals, and authorizations and reporting requirements. ESRA management and Project Managers will receive and review the Project progress reports.

2.1.4 What

The project management program will schedule and track administrative and environmental functions within the following guidelines:

- Standard project management tools such as the Critical Path Method (CPM) will be used as the basis of developing the network logic for the Project schedule.
- Consulting engineers will develop pertinent schedule details of the engineering design and construction phases of the Project.
- ESRA will develop the portion of the overall project schedule that contains all third.
- Party input and approvals, including environmental submittals and authorizations, regulatory compliance reporting and submittals, land acquisition, utility relocations, community and public involvement and consultation.
- The ESRA portion of the schedule will be interlinked with the engineering consultants' design schedules and with the construction schedules referencing milestones for critical path items such as submission dates, permits, approvals and authorizations, monitoring and reporting and other constraints important to environmental management.

- Project Managers will be kept aware of external constraints to critical aspects such as tender and construction start dates that others may be responsible for, the delivery of which can have significant effects on the Project.

2.1.5 When

The project management system for the Project is in development.

2.2 Environmental Protection Procedures

2.2.1 Objective

To identify the suite of best management practices for the various activities of all project phases.

2.2.2 How

The Environmental Protection Procedures attached as Appendix D were developed through a review of best management practices and regulatory requirements. The Environmental Protection Procedures document the environmental measures to address key environmental issues. These procedures will be reviewed periodically and updated as required.

2.2.3 Who

The ESRA has reviewed best management practices and standard procedures available and prepared standard Environmental Protection Procedures for submission with this EMP. Engineering design team and environmental consultants have been consulted.

2.2.4 What

Environmental Protection Procedures (Appendix D – Part A) have been developed that document the suite of possible environmental protection and mitigation measures considered appropriate to address each of the following environmental subjects:

- Clearing and grubbing
- Petroleum handling and storage
- Spill Response
- Noise control
- Materials handling and storage
- Working within or near water
- Stream crossings
- Temporary stream diversions
- Fish passage
- Fish salvage
- Culvert maintenance and replacement
- Blasting near a watercourse

- Heritage resources
- Wildlife
- Wildfires
- Erosion and sediment control
- Cement batch plant and concrete wash out area

Environmental Protection Procedures and monitoring are further documented in the Environmental General Requirements (Appendix D–Part B) included in all contract specification packages. These are supplemented with additional special conditions specifications to each Contract.

2.2.5 When

The Environmental Protection Procedures are reviewed and revised annually.

2.3 Construction Phase Environmental Management Plans (CPEMP's)

2.3.1 Objective

To describe how environmental protection will be maintained during the construction of each element and component of the Project.

2.3.2 How

CPEMP's will be submitted for the various components during the construction phases of the Project to address individual construction works once design and construction plans are near finalization. The CPEMP will detail the environmental management measures described in the overall EMP that pertain to specific construction components (i.e. a specific bridge or section of road).

2.3.3 Who

ESRA will prepare and submit the CPEMP documents to the Approvals Branch. When necessary the detailed design engineers or environmental consultants will be consulted on the CPEMP.

- Under the direction of ESRA, the detailed design engineers are responsible to incorporate the appropriate environmental protection measures into the design of Project components. Work site specific environmental contract documents will be prepared by the detailed design engineers to be added to the standard specifications prepared by ESRA.
- ESRA will review the Best Management Practices and standard procedures available as presented in the environmental specifications developed by the detailed design engineers.
- The Contractor will be responsible for implementing the environmental protection measures specified in the contract documents.

2.3.4 What

The CPEMP's will document the:

- Commitments made to environmental protection and sustainable development;
- by the parties responsible to implement the plans;
- Roles and responsibilities of each party in fulfilling that commitment;
- Activity description and the potential environmental effects;
- Environmental protection measures that will be taken;
- Protocols regarding inspection and reactions to inspections findings;
- Emergency plans including training and awareness;
- Monitoring and follow-up to be undertaken;
- Documentation and reporting procedures; and
- Auditing, management review, evaluation and adjustment procedures.

2.3.5 When

The CPEMP's will be prepared and submitted to the Approvals Branch at the time of tendering each construction component of the Project.

2.4 Operation Phase Environmental Management Plan (OPEMP)

2.4.1 Objective

To describe how environmental protection will be maintained during the on-going active operation of the Project.

2.4.2 How

The OPEMP is the long term action plan that will address maintenance and other operational activities for the commissioned or operational portions of the all-season road. The OPEMP will be updated as new portions of the road are commissioned or otherwise made operational. This plan will include decommissioning activities such as winter road closure and reclamation.

2.4.3 Who

ESRA is responsible for the operation of the all-season road after construction of the Project has been completed. The OPEMP will be produced by ESRA in consultation with other government departments that have jurisdiction over aspects of the Project.

2.4.4 What

The overall OPEMP will involve both maintenance and operational aspects, including the practices and procedures of the environmental mitigation programs. The OPEMP will document the:

- Commitments made to environmental protection and sustainable development;
- Roles and responsibilities of any party identified to fulfill that commitment;
- Environmental measures and mitigation programs that will be taken;
- Monitoring and follow-up plans;
- Reporting; and
- Auditing, management review, evaluation, and adjustment procedures.

2.4.5 When:

The OPEMP will be submitted and/or updated at the time of commissioning various components of the Project.

2.5 Environmental Inspection Plan

2.5.1 Objective

To describe how ESRA will ensure appropriate field inspection during construction activities of the Project.

2.5.2 How

ESRA will undertake certain Contract Administration responsibilities and will engage outside Contract Administrators' for other Contract Administration responsibilities. ESRA's and the Contract Administrators' inspection responsibilities will be identified in the Contract Administrator Agreements and described in the CPEMP's. The results from the inspection programs will be reported to ESRA Executive, stakeholders, Aboriginal communities, and federal and provincial authorities as appropriate.

2.5.3 Who

The environmental inspection plan will involve staff from the ESRA, the Contract Administrator, and the Contractors as follows:

2.5.3.1 Manitoba East Side Road Authority

The ESRA environmental inspection team will consist of environmental specialists with environmental inspection experience. The team will be led by a senior environment officer with experience in managing an environmental field inspection unit and administering contract documents. A copy of the environmental inspection form template is included in Appendix F.

The composition of the ESRA environmental inspection team will be reviewed and evaluated at least annually. Additional staff or staff with a specific expertise will be engaged as determined necessary.

2.5.3.2 Contract Administrator

The Contract Administrator will have a site engineer or inspector on the work site at all times work is being undertaken. The environmental inspector will be on site on a regular basis but not at all times.

2.5.3.3 Contractor

The Contractor shall have staff, trained and certified in the handling of dangerous goods, present on-site whenever said dangerous goods are being utilized for the performance of the work.

2.5.4 What

The inspection activities are summarized as follows:

2.5.4.1 Manitoba East Side Road Authority

ESRA inspectors will inspect the site to ensure that the site is managed in accordance with the environmental protection requirements outlined in the contract documents. These requirements are referenced in the CPEMP. The inspectors will ensure that the construction and installation of environmental protection measures, such as silt fences and materials handling facilities, are in accordance with the contract documents.

The inspectors will focus on the maintenance of the environmental protection measures and on the adequacy of the measures to achieve the level of environmental protection. A standardized inspection form will be used to maintain a documented record of the site conditions. ESRA inspectors will bring environmental concerns to the attention of the Contract Administrator.

2.5.4.2 Contract Administrator

A Contract Administration Agreement will identify the Contract Administrator's inspection responsibilities. The Contract Administrator will ensure that the environmental protection measures are constructed, implemented and maintained (i.e. such as silt fences and sediment barriers are maintained and cleaned) in accordance with the contract documents. The Contract Administrator has the authority to issue a stop work order and to order additional environmental protection measures deemed necessary to ensure environmental protection.

2.5.4.3 Contractor

The Contractor's inspection responsibilities are prescribed by the contract documents and reported as outlined in the CPEMP's. The Contractor's major focus is to inspect the fuel storage containers, tank vehicles, dangerous goods and hazardous wastes storage facilities, sites for releases of fuel, erosion & sedimentation (water quality). The Contractor must maintain records such as the dates that inspections

took place, the name of the inspector, the results of inspections, releases of debris or deleterious substances are discovered and the corrective actions taken.

2.5.5 When

Construction inspections will commence with the start of construction and be conducted as described in the CPEMP's. Post-construction monitoring will continue for various durations appropriate to the condition being monitored.

2.6 Monitoring and Follow-up Plans

2.6.1 Objectives

- To verify environmental effects predictions made during the engineering design and environmental assessment of the Project.
- To provide data with which to evaluate the effectiveness of mitigation measures undertaken.
- To provide data with which to implement adaptive management measures for improving future environmental protection activities.

2.6.2 How

The adaptive management approach will be followed whereby lessons learned during the monitoring and follow-up programs will be applied to continually improve subsequent environmental protection activities.

ESRA will engage in-house environmental staff and specialized environmental consultants to conduct monitoring of specific components of the environment. The environmental monitoring plans that have been developed to date are provided in Appendix G. Environmental procedures including monitoring components are also provided in Appendix D Environmental Protection Procedures and Construction Contract General Requirements. Results from the monitoring and follow-up programs will be provided as appropriate to the advisory committees, stakeholders, Aboriginal communities, and federal and provincial authorities.

Additional monitoring or adjustments to the monitoring programs will be made in consideration of the responses from the advisory committees, stakeholders, Aboriginal communities, and federal and provincial authorities.

The ESRA with its consultants will consider the results from the monitoring and follow-up programs to review the status of the environmental protection activities on an on-going basis. If the monitoring programs identify any unforeseen environmental effects or the environmental protection measures are not performing as intended, the Manager of Environmental Services will bring such occurrences to the attention of the ESRA Executive Management and recommend amendments.

2.6.3 Who

ESRA will arrange and manage the contracts with the specialized environmental consultants. ESRA will also manage the community and public involvement programs through which the interested parties will be provided the information and opportunities to comment on the data. As presented in the Introduction of this EMP, ESRA is the proponent/owner of the Project. In this role, ESRA will make final decisions on adjustments to environmental activities.

The specialized environmental consultants will undertake monitoring and follow-up programs in their respective fields of expertise.

On a selective basis ESRA will solicit input and feedback from committees on its environmental protection measures and monitoring programs.

2.6.4 What

Broad project component or environment component monitoring programs will or have been developed, as described in **Table 1**. Monitoring components are included in ESRA contracts through General Requirements (GR) (Appendix D – Part A) and the Environmental Protection Procedures (EMP) (Appendix D – Part B).

- Environmental Management Procedures (Appendix D)
- Wildlife Monitoring Plan (Appendix G-Part B)
- Aquatic Environment Monitoring Plan (includes water quality, fish passage, fish habitat offsetting, bank stabilization) (Appendix G-Part A)
- Decommissioning Plan related to closure and reclamation of temporary construction facilities and borrow pits (to be provided with OPEMP)
- Winter Road Closure and Reclamation Plan (to be provided with OPEMP)
- Emergency Response Plan for environmental accidents and spills (Appendix D - Part A and Part B)

The site-specific monitoring will be done in conjunction with the overall monitoring programs where appropriate. Procedures for identifying and tracking issues and resolving conflicts or differing opinions are discussed elsewhere in this EMP. As presented in the Introduction of this EMP, ESRA is responsible for managing the Project.

2.6.5 When

Baseline monitoring began during the environmental assessment phase of the Project. Construction monitoring will be conducted routinely to determine the success of the mitigation measures implemented and to identify any unpredictable effects. Post-construction monitoring will continue for various durations appropriate to the condition being monitored.

2.7 Reporting

2.7.1 Objective

To provide regulatory authorities, Aboriginal communities, stakeholders, and the general public with timely and accurate information.

To provide the regulatory authorities, Aboriginal communities, stakeholders, and general public with opportunities to provide comments, suggestions, and opinions on the Project, the environment protection measures, and the monitoring programs.

2.7.2 How

A component is to report to the interested parties and to consider feedback in the on-going implementation of the environmental protection measures including the monitoring and adaptive management to continuously improve the environmental protection provided.

2.7.2.1 *Community and Public Involvement Plan*

ESRA has developed a Community and Public Involvement Plan (CPIP) to provide opportunities for on-going involvement of and dialogue with Aboriginal communities and local governments on the Project. The CPIP consists of the following principal elements as follows:

- **Meetings with Chief and Councils and Mayor and Councils** – ESRA will continue to meet with Chief and Council from the east side First Nation communities and Northern Affairs Communities to update them on the status of the all-season road project;
- **East Side Community Meetings** – ESRA will continue to host community meetings, in collaboration with local Chiefs and Councils, to update local residents in all east side communities on the progress of the all-season road project;
- **Community Resource Boards** – ESRA is committed to communicating with the local resource management boards and will continue to provide status updates and regular meetings and to provide presentations concerning special topics;
- **Meeting with resource users and elders** – ESRA is committed to working with community members as requested or required concerning issues of cultural and socio-economic significance; and
- **On-going Communications** - ESRA will continue to issue annual newsletters updating local east side residents about the all-season road project and will continue to maintain and update the Manitoba East Side Road Authority website (www.eastsideroadauthority.mb.ca) to ensure that local residents have access to information on the all-season road Project. ESRA will also utilize community radio, newspapers, public presentations and other media to communicate with residents on the east side of Lake Winnipeg. ESRA also maintains a toll-free telephone line (1-866-356-6355) and a general e-mail address (eastside@gov.mb.ca) for public inquiries.

2.7.2.2 Regulatory Involvement

Regulatory involvement will occur through the Environment Act Licence reporting requirements as well as those identified in other permits, authorizations, approvals.

2.7.3 Who

ESRA will ensure reporting and communication activities are conducted in accordance with requirements in the Licence and other permits, authorizations and approvals, and through the established communication channels in the Community and Public Involvement Plan.

2.7.4 What

The major elements of the Community and Public Involvement Plan are to exchange information and provide opportunities for interested parties to voice their opinions, comments and suggestions. Information will include:

- Progress of the Project;
- Up-coming construction activities in local areas;
- Opportunities for community involvement and dates of community information meetings;
- Environmental monitoring plans;
- Wildlife monitoring activities;
- Measures to protect heritage resources;
- Records of actions taken to address environmental incidents such as accidents, spills, leaks, and releases, the reporting and clean-up procedures used; and
- Other items of special interest.

2.7.5 When

The requirements for reporting to the communities and public will vary with the program and regulatory requirements.

Reporting to regulatory authorities will occur as required by permit, authorization or approvals or as otherwise requested.

2.8 Management Review

2.8.1 Objective

To maintain continuous improvement by reviewing the adequacy, suitability and effectiveness of the environmental management practices associated with the Project.

2.8.2 How

As described above, the monitoring and follow-up programs will report results to the Project Managers and the Manager of Special Projects and Environmental Services (Environmental Manager) who can take corrective action as necessary based on on-going measurement of key characteristics of the operations and activities. The results will also be reported to the regulators.

Executive Management of ESRA will also periodically review the environmental management system at a strategic level to ensure its continuing suitability, adequacy and effectiveness. The review includes assessment of opportunities for improvement and the need for changes, including to overall environmental policy and objectives.

2.8.3 Who

ESRA's management review will occur on two levels. On an on-going basis, the Division Managers, Project Managers, and the Environmental Manager will have the detailed information with which to make recommendations as the Project proceeds. The Environmental Manager and Project Managers, with input from Division Managers, will action measures to enact environment protection as outlined in this plan.

On a strategic level, the ESRA executive committee and Board of Directors have the authority to make decisions about the environmental protection practices and to take action, including through allocation of resources.

2.8.4 What

The Environmental Manager will review detailed reported results of the monitoring and follow-up activities. The review will include consideration of effectiveness of mitigation measures and accuracy of prediction of environmental effects as the construction activities proceed, with a view to adapting mitigation to further minimize adverse effects, or to improving prediction of effects, as the all-season road network on the east side proceeds. Results will be shared with ESRA management and with Project Managers.

Strategic Executive Management review will consider needs for changes to policy, objectives, and other elements of the EMP, in the light of reported results and recommendations arising from the monitoring and follow-up activities, and considering any changing circumstances and opportunities for continual improvement. Executive Management will review the various elements of the EMP, the strategic approaches and resource allocations, and the environmental practices undertaken.

2.8.5 When

The ESRA executive committee meets at least bi-monthly to monitor on-going progress as the Project proceeds. The ESRA Board of Directors meets at least quarterly. Systems are in place to record decisions.

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Appendix 5-3

ESRA's Environmental Protection Procedures

Environmental Protection Procedures

Table of Contents

1. Clearing and Grubbing
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**ENVIRONMENTAL
PROTECTION
PROCEDURES**

CLEARING AND GRUBBING

Revision March 2015

1.0 Description

- .1 The clearing and grubbing of vegetation shall be undertaken as instructed by the East Side Road Authority (ESRA) to accommodate for various activities, including geotechnical investigation, construction camp preparation and quarry site development. The Contractor is responsible for ensuring compliance with contract specifications, environmental legislation, permits and authorizations.
-

2.0 Purpose

- .1 The purpose of this procedure is to ensure that clearing and grubbing operations are conducted in accordance with applicable environmental legislation, regulations, guidelines, permits and contracts.
-

3.0 Legislation and Supporting Documents

- ESRA Contracts and Associated Documents
 - Applicable Manitoba Conservation Work Permits
 - The Manitoba Conservation Brush Disposal Guidebook – March 2005
 - The Manitoba Stream Crossing Guidelines for the Protection of Fish Habitat – May 1996
 - Environmental Protection Guidelines - Appendix 7.1 of PR 304 to Berens River All-Season Road Environmental Impact Assessment – August 2009
 - Fisheries Act (R.S., 1985, c. F-14)
 - The Manitoba Conservation Forest Management Guidelines for Terrestrial Buffers – 2010-2015
-

4.0 Procedures

- .1 Clearing and grubbing shall be limited to the site and associated access routes.
- .2 Clearing and grubbing shall only be undertaken between September, 1 of any year and April, 1 of the following year.
- .3 Within the limits as directed and staked out by the Contract Administrator, all brush and trees, except those designated by the Contract Administrator to be saved, is to be cut level with the ground, and all surface debris, excluding merchantable timber but including fallen timber, slash limbs, brush, grass and weeds, is to be disposed

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Approved by		Date of Revision 2015-03-30
Disclaimer, special note, etc.		

as directed or permitted by the Contract Administrator. Disposal may involve:

- Burning
- Spreading and compacting
- Limbing/Chipping

- .4 All clearing and grubbing operations shall be clearly marked and completed to the approval of the Contract Administrator. The Contract Administrator will take into account required buffers, and sensitive areas.
- .5 Where possible, grubbing shall not occur within 2 m (2.5 yards) of standing timber in order to prevent damage to root systems of adjacent standing trees and reduce the occurrence of blow down.
- .6 Clearing activities shall be limited to removing vegetation to ground level without disturbing root mass. Height of stumps shall not exceed 30 centimetres
- .7 Trees shall be felled towards the centre of the area to be cleared. Any brush falling outside the area to be cleared shall be moved back to the work area and disposed as directed by the Contract Administrator. The Contractor shall take all precautions against the damage to other trees, traffic structures, pole lines or property in the felling of trees. The Contractor is liable for any damages occurring in the performance of this work.
- .8 Timber from which forest products can be manufactured shall be cleared of limbs and stockpiled on the worksite as directed or permitted by the Contract Administrator. Usable timber shall be the property of the Contractor and is to be removed from the work area.
- .9 There shall be no bulldozing of woody debris into standing timber.
- .10 Existing trails, trap lines, portages and other travelways shall not be altered so as to interfere with other users.
- .11 No clearing and grubbing shall be permitted from April 1 to September 1 to avoid disturbance to nesting birds and other wildlife species.
- .12 Clearing within 30 meters of a watercourse shall be by hand
- .13 Cleared trees and vegetation shall not obstruct waterways during any season, and shall be stored above the ordinary high water mark (1 in 2 year high water mark).

4.1 Brush Disposal

- .1 Disposal of cleared trees and brush must be done as directed or approved by the Contract Administrator. Disposal may involve

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- burning, compacting, piling, burying, windrowing and compacting, limbing and chipping.
- .2 All cleared vegetation and debris that is to be burned shall be piled and compacted in windrows. Windrows shall be compacted to lie as close to the ground as possible (maximum height of 0.6 of a meter) and shall be no closer than 1 meter to the bush line. Burn piles shall be located a minimum of 15 meters from other wood and brush piles and standing timber.
 - .3 Merchantable wood that is identified by the Contract Administrator shall be stockpiled outside and immediately adjacent to the clearing limits. Stockpile sites shall be located within existing clearings or areas of non-merchantable timber. Stockpile sites shall not be located within 100 meters of a waterbody. Unless otherwise specified, all stockpiled material shall be removed from Crown land by April 30 following the date of issuance.
 - .4 The burning of debris piles shall not be permitted in the spring or early summer to avoid disturbing small wildlife species which may have young in the piles or may have prepared nesting sites. The best and preferred option for wildlife is burning in the fall or winter.
 - .5 No burning of debris piles shall occur on deep organic soils. Piles shall be a minimum of 15 meters away from standing timber and the high water mark of any waterbody.
 - .6 Slash shall be piled in a manner that allows for clean, efficient burning of all material. Avoid mixing soil into the slash.
 - .7 The Contractor shall obtain a burning permit for open fires between April 1 and November 15. Burning between November 16 and March 31 does not require a burning permit; however, the supervising officer shall be advised prior to any burning. All fires shall be completely extinguished by March 31
 - .8 Ensure safety precautions are taken to keep the fire under control. Burn piles shall be monitored, to ensure that subsequent fire hazards are not present. Upon completion of the burn, burn piles shall be completely extinguished.
 - .9 All occurrences of fire spreading beyond the debris piles shall be reported to the Contract Administrator and the Natural Resources District Supervisor.

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**ENVIRONMENTAL
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PETROLEUM STORAGE

Revision March 2015

1.0 Description

- .1 The storage and handling of petroleum and allied products shall be undertaken in accordance with contract specifications, environmental legislation, permits and authorizations as approved by the East Side Road Authority (ESRA).
 - .2 Fuel spills, leaks and releases present a hazard to human health and safety, and can be a threat to wildlife habitats, vegetation, soil, surface water and wetlands, groundwater and aquifers, and structures such as wells, drains and ditches. Besides the potential impacts on health and the environment, there may be significant costs associated with wasted fuel, treatment of oily wastewater, and remediation of fuel-impacted sites. The Contractor is responsible for complying with all contract specifications, environmental legislation, permits and authorizations.
-

2.0 Purpose

- .1 The purpose of this procedure is to ensure that all petroleum storage is carried out in accordance with applicable legislation, regulations, guidelines, permits and contracts.
-

3.0 Legislation and Supporting Documents

- ESRA Contracts and Associated Documents
 - The Manitoba Environment Act - C.C.S.M. c. E125
 - The Workplace Safety and Health Act - C.C.S.M. c. W210
 - Applicable Manitoba Conservation Work Permits
 - The Dangerous Goods Handling and Transportation Act, C.C.S.M. c. D12
 - Storage and Handling of Petroleum Products and Allied Products Regulation – 188/2001
 - National Fire Code of Canada. Canadian Commission on Building and Fire Codes, National Research Council of Canada, 2005
 - Environmental Protection Guidelines - Appendix 7.1 of PR 304 to Berens River All-Season Road Environmental Impact Assessment – August 2009
-

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4.0 Procedures

4.1 Petroleum Storage and Handling

- .1 All petroleum handling and storage shall comply with Manitoba *Regulation 188/2001* respecting “*Storage and Handling of Petroleum Products and Allied Products*”.
- .2 Petroleum products shall be transported in accordance with the Manitoba Provincial “*Dangerous Goods Handling and Transportation Act*”.
- .3 All reasonable precautions shall be taken to ensure that refuelling only takes place within a Designated Area used for fuel storage or handling.
- .4 In the event that a piece of equipment must be refuelled outside a Designated Area, the fuel shall be transported in Approved containers.
- .5 Absorbent pads, or other precautions, such as a high density polyethylene (HDPE) groundsheet, shall be used to contain the fuel and prevent fuel from being spilled onto the ground surface.
- .6 Equipment shall not be refueled from a watercraft.
- .7 All reasonable precautions shall be taken to ensure that cleaning, washing, and servicing of equipment only takes place within a Designated Area.
- .8 All mobile equipment that is not in use shall be parked within a Designated Area.
- .9 All Designated Areas used for petroleum product storage shall be a minimum distance of 100 metres from any water body and shall have the top soil stripped and be underlain with at least 30 cm of impermeable soil or approved alternate and dyked in such a manner as to contain any leakage or spillage. The dykes shall be designed, constructed and maintained to retain not less than 100% of the capacity of the total number containers or 110% of the largest container, whichever is greatest. The top soil shall be stored and used in the restoration of the site.
- .10 Tank vehicles used to deliver fuel to the worksite and/or used to move fuel around the worksite shall meet the requirements for highway tanks for the shipment of dangerous goods by road set out in CSA Preliminary Standard B620-98, *Highway Tanks and Portable Tanks for the “Transportation of Dangerous Goods”*.
- .11 All Designated Areas used for petroleum storage shall be a minimum distance of 3 metres from a property line or building and 15 metres horizontally from hydroelectric poles and lines.

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- .12 Construction, installation and removal of petroleum storage tank systems shall occur under the supervision of a registered licenced petroleum technician.
- .13 Petroleum storage tanks shall be grounded and the dispensing tank shall be attached with a bonding cable to an appropriate location on the receiving tank prior to commencing fueling.
- .14 Petroleum products shall be labeled as to their contents and stored and handled within designated areas.
- .15 Dedicated petroleum storage areas shall provide spill containment and facilitate clean up through measures such as:
- maximum separation from environmentally sensitive features;
 - clear identification of the materials present;
 - access restricted to authorized vehicles and employees;
 - impervious bermed storage areas; and
 - dedicated spill response equipment.
- .16 Storage sites for petroleum products shall be secured and signs including hazard warnings, who to contact in case of a spill, access restrictions and under whose authority the access is restricted shall be posted.
- .17 All employees involved in the handling and storage of fuels shall have WHMIS and spill response training.
- .18 All combustible engines shall be shutdown during fueling.
- .19 There shall be no smoking and no open flames at the petroleum storage area at any time.
- .20 Only above ground storage tanks shall be used for the storage of bulk petroleum products. The tanks shall be equipped with overfill protection and spill containment consisting of perimeter dykes or secondary containment in the tank design. If dykes are used, the containment areas shall be dewatered after a rainfall event and the containment water disposed of as approved by the Contract Administrator. Product inventory shall be taken weekly by the owner/operator of all aboveground storage tanks greater than 5000 litres and retained for inspection upon request.
- .21 All petroleum storage tanks with a capacity greater than 5000 litres shall be registered with Manitoba Conservation. New tanks shall be registered before installation. Tanks shall be designed, installed, and operated in accordance with the Manitoba Provincial "*Dangerous Goods Handling and Transportation Act*" and the Federal "*Transportation of Dangerous Goods Act*". Smaller stationary tanks shall adhere to requirements of the Manitoba Fire Code. A copy of the petroleum license shall be posted at the fuelling site.

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- .22 Fueling from unregistered tanks shall not be permitted.
- .23 Concrete barriers shall be installed around all petroleum storage tanks to prevent collisions.
- .24 Bulk waste oil shall be stored in aboveground oil tanks, which shall have secondary containment and a weatherproof cover. Waste oil shall be recycled by a reputable recycling agency. Waste oil shall never be used as a dust suppressant.
- .25 All petroleum storage containers and tank vehicles shall be inspected daily for leaks and spillage. Damaged or leaking fuel storage containers shall be promptly removed from site.
- .26 All petroleum handling and storage areas shall be kept clear of snow and materials so as to allow clear access and routine inspection and leak detection.
- .27 In the event that there is a spill onto the ground surface from any piece of equipment, such as a broken hydraulic hose, the entire affected area shall be cleaned up and all contaminated soil shall be appropriately disposed of offsite. Such events shall be reported to the Contract Administrator.
- .28 As petroleum storage and equipment servicing areas are taken out of service any remediation shall be conducted, including the appropriate disposal of the contaminated material to the satisfaction of the Contract Administrator.
- .29 The Contractor shall designate on-site Emergency Spill Response Coordinators.
- .30 The Contractor shall prevent fuel, lubricants or compounds from being released. All empty containers from equipment refueling and servicing shall be removed to a licenced disposal site. The Contractor shall be thoroughly familiar with provincial/federal spill response compliance procedures.
- .31 Materials required for spill containment and clean up shall be available at all sites where construction related activities occur. All vehicles hauling fuel shall carry materials and equipment for emergency spill containment.
- .32 At locations where stationary filled oil equipment is used, oil containment measures such as secondary containment shall be incorporated (i.e., berms).
- .33 Contaminated soils resulting from releases shall be remediated or disposed of in a manner approved by the Contract Administrator.
- .34 Fuel barrels shall be securely fastened to the vehicle during transport and if possible during refueling operations.

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- .35 All petroleum product storage sites and mobile transportation units shall, at all times, be equipped with appropriate categories of equipment and volumes of fire suppression products.
- .36 Fueling procedures shall be posted where fueling occurs.

4.2 Emergency Response Plan For Spills

- .1 It is the responsibility of the Contractor to conduct appropriate soil testing on Designated Area(s) and contract work sites prior to the mobilization of equipment to the site to establish baseline conditions. The Contractor will be held responsible for any contamination unless evidence to the contrary can be provided by the contractor.
- .2 The Contractor shall ensure that due care and caution is taken to prevent spills, at all times.
- .3 An updated list of key contacts and telephone numbers for reporting spills, problems, etc., shall be kept on-site at all times.
- .4 A Workplace Hazardous Materials Information System (WHMIS) file shall be maintained on-site for all hazardous materials at the work area. Prior to commencement of the Work, Material Safety Data Sheets (MSDS) shall be submitted to ESRA and the Contract Administrator for all hazardous materials to be used on-site. No material shall be brought to the site without prior submission of a MSDS.
- .5 All major spills of petroleum products or other hazardous substances with significant impact on the environment and threat to human health and safety (as defined in Table 1) shall be reported to Manitoba Conservation and the Contract Administrator, immediately after occurrence of the environmental accident, by calling the 24-hour emergency number (204) 945-4888.
- .6 All spills shall be reported to ESRA and the Contract Administrator within 24 hours whether it was necessary to report the spill to Manitoba Conservation or not. The spill report shall include the following:
 - location of spill or release (GPS coordinates)
 - personnel responding to the spill
 - material spilled
 - cause of spill
 - estimated amount of material spilled
 - estimated area and volume of soil affected by the spill
 - cleanup action undertaken
 - means used to contain, transport and dispose of the materials involved

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- .7 The Contractor shall designate a qualified supervisor(s) as the on-site emergency response coordinator(s) who shall be on site at all times that work is being undertaken.. The emergency response coordinator(s) shall have the authority to redirect manpower and equipment in order to respond in the event of a spill.
- .8 An updated environmental emergency plan and on-site spill response and containment plan for each dangerous good/hazardous waste shall be maintained in the work area at all times.
- .9 The designated emergency response coordinator shall periodically review and if necessary revise the on-site response plan.
- .10 Appropriate materials for containment and cleanup of any spill of dangerous goods or hazardous wastes shall be available on-site when such materials are present in the work area. Also designated personnel and first responders shall be familiar with the storage location and proper application of such containment and cleanup materials.
- .11 All spills of quantities less than those set out in Table 1 and without a potential impact to the environment shall be contained and cleaned up immediately by on-site personnel in accordance with the on-site emergency response and containment plan.

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Table 1
Spills that must be reported to Manitoba Conservation as
Environmental Accidents

Column I Classification	Column II Hazard	Column III Reportable Quantity Or Level
1	Explosives	All
2.1	Compressed Gas (Flammable)	100 L*
2.2	Compressed Gas	100 L*
2.3	Compressed Gas (Toxic)	All
2.4	Compressed Gas (corrosive)	All
3	Flammable liquids	100 L
4	Flammable Solids	1 Kg
5.1 PG** I & II	Oxidizer	1 Kb or 1 L
PG III	Oxidizer	50 Kg or 50 L
5.2	Organic Peroxide	1 Kg or 1 L
6.1 PG I	Acute Toxic	1 Kg or 1L
PG II & III	Acute Toxic	5 Kg or 5 L
6.2	Infectious	All
7	Radioactive	Any discharge or radiation level exceeding 10 m Sv/h at the package surface and 200 uSv/h at 1m from the package
8	Corrosive	5 Kg or 5 L
9.1	Miscellaneous (Except PCB mixtures)	50 Kg 0
9.1	PCB mixtures	500 grams
9.2	Aquatic Toxic	1 Kg or 1 L
9.3	Wastes (Chronic Toxic)	5 Kg or 5 L

- .12 All personnel responsible for the handling of dangerous goods and hazardous wastes shall be familiar with the on-site response and containment plan.

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- .13 The following actions shall be taken by the person in charge of the spilled material or by first person(s) arriving at the scene of a hazardous material accident or by the on-site emergency-response coordinator:

.1 Notification and Spill Assessment

- .1 Notify the emergency-response coordinator
- .2 Identify exact location and time of accident
- .3 Request assistance as required by magnitude of accident from Manitoba Conservation (24-hour Spill Response Line (204) 945-4888), Police, Fire Department, or Ambulance and Company backup
- .4 Notify Manager, Special Projects and Environmental Services for the ESRA

.2 Attend to Public Safety

- .1 Secure the area from public access
- .2 Eliminate ignition sources
- .3 Initiate evacuation of immediate area if necessary

.3 Gather and Assess Information on Status of Situation, noting:

- .1 Personnel on-site
- .2 Cause and effect of spill
- .3 Estimated extent of damage
- .4 Amount and type of material involved
- .5 Proximity to waterways

.4 If safe to do so, and in Accordance with the On-Site Response and Containment Plan Try to Stop the Dispersion or Flow of Spill Material by:

- .1 Approach from upwind
- .2 Stop or reduce leak if safe to do so
- .3 Dyke spilled material with dry, inert sorbet material or dry clay
- .4 Prevent spill material from entering waterways, utilities or other openings by dyking when in proximity to waterways

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**ENVIRONMENTAL
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SPILL RESPONSE

Revision March 2015

1.0 Description

- .1 The Contractor shall develop and submit to the East Side Road Authority a spill response plan in accordance with all applicable contract specifications, environmental legislation, permits and authorizations.
 - .2 Fuel spills, leaks and releases present a hazard to human health and safety, and can be a threat to wildlife habitats, vegetation, soil, surface water and wetlands, groundwater and aquifers, and structures such as wells, drains and ditches. Besides the potential impacts on health and the environment, there may be significant costs associated with wasted fuel, treatment of oily wastewater, and remediation of fuel-impacted sites. The Contractor is responsible for complying with all contract specifications, environmental legislation, permits and authorizations.
-

2.0 Purpose

- .1 The purpose of this procedure is to ensure that all necessary precautions are taken to prevent spills, leaks or releases, in accordance with applicable legislation, regulations, guidelines, permits and contracts.
-

3.0 Legislation and Supporting Documents

- ESRA Contracts and Associated Documents
 - The Manitoba Environment Act - C.C.S.M. c. E125
 - The Workplace Safety and Health Act - C.C.S.M. c. W210
 - Applicable Manitoba Conservation Work Permits
 - The Dangerous Goods Handling and Transportation Act, C.C.S.M. c. D12 - 2010
 - Storage and Handling of Petroleum Products and Allied Products Regulation – 188/2001
 - National Fire Code of Canada. Canadian Commission on Building and Fire Codes, National Research Council of Canada, 2005
 - Environmental Protection Guidelines - Appendix 7.1 of PR 304 to Berens River All-Season Road Environmental Impact Assessment – August 2009
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4.0 Procedures

4.1 General

- .1 All petroleum handling and storage shall comply with Manitoba Regulation 188/2001 respecting "*Storage and Handling of Petroleum Products and Allied Products*".
- .2 Petroleum products shall be transported in accordance with the Manitoba Provincial "*Dangerous Goods Handling and Transportation Act*" and the federal "*Transportation of Dangerous Goods Act*".
- .3 Tank vehicles used to deliver fuel to the worksite and/or used to move fuel around the worksite must meet the requirements for highway tanks for the shipment of dangerous goods by road set out in CSA Preliminary Standard B620-98, *Highway Tanks and Portable Tanks for the "Transportation of Dangerous Goods"*.
- .4 Dedicated petroleum storage areas shall provide spill containment and facilitate clean up through measures such as:
 - maximum separation from environmentally sensitive features;
 - clear identification of the materials present;
 - access restricted to authorized vehicles and employees;
 - impervious bermed storage areas; and
 - dedicated spill response equipment.
- .5 All employees involved in the handling and storage of fuels and hazardous materials shall have WHMIS training.
- .6 The Contractor shall designate on-site Emergency Spill Response Coordinators.

4.2 Emergency Response Plan For Spills

- .1 The Contractor shall ensure that due care and caution is taken to prevent spills, at all times.
- .2 An updated list of key contacts and telephone numbers for reporting spills, problems, etc., shall be kept on-site at all times.
- .3 A Workplace Hazardous Materials Information System (WHMIS) file shall be maintained on-site for all hazardous materials at the work area. Prior to commencement of the Work, Material Safety Data Sheets (MSDS) shall be submitted to ESRA for all hazardous materials to be used on-site. No material shall be brought to the site without prior submission of a MSDS.
- .4 All major spills of petroleum products or other hazardous substances with significant impact on the environment and threat to human health and safety (as defined in Table 1) shall be reported to Manitoba Conservation, immediately after occurrence of the

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environmental accident, by calling the 24-hour emergency number (204) 945-4888.

- .5 All spills shall be reported to ESRA within 24 hours whether it was necessary to report the spill to Manitoba Conservation or not. The spill report shall include the following:
 - personnel responding to the spill
 - material spilled
 - cause of spill
 - estimated amount of material spilled
 - estimated area and volume of soil affected by the spill
 - cleanup action undertaken
 - means used to contain, transport and dispose of the materials involved
- .6 The Contractor shall designate a qualified supervisor(s) as the on-site emergency response coordinator(s). The emergency response coordinator(s) shall have the authority to redirect manpower and equipment in order to respond in the event of a spill.
- .7 An updated on-site spill response and containment plan for each dangerous good/hazardous waste shall be maintained in the work area at all times.
- .8 The designated emergency response coordinator shall periodically review and if necessary revise the on-site response plan.
- .9 Appropriate materials for containment and cleanup of any spill of dangerous goods or hazardous wastes shall be available on-site when such materials are present in the work area. Also designated personnel and first responders shall be familiar with the storage location and proper application of such containment and cleanup materials.
- .10 All spills of quantities less than those set out in Table 1 and without a potential impact to the environment shall be contained and cleaned up immediately by on-site personnel in accordance with the on-site emergency response and containment plan.
- .11 All personnel responsible for the handling of dangerous goods and hazardous wastes shall be familiar with the on-site response and containment plan.

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Table 1
Spills that must be reported to Manitoba Conservation as
Environmental Accidents

Column I Classification	Column II Hazard	Column III Reportable Quantity Or Level
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2.1	Compressed Gas (Flammable)	100 L*
2.2	Compressed Gas	100 L*
2.3	Compressed Gas (Toxic)	All
2.4	Compressed Gas (corrosive)	All
3	Flammable liquids	100 L
4	Flammable Solids	1 Kg
5.1 PG** I & II PG III	Oxidizer	1 Kb or 1 L
5.2	Oxidizer	50 Kg or 50 L
5.2	Organic Peroxide	1 Kg or 1 L
6.1 PG I PG II & III	Acute Toxic	1 Kg or 1L
6.2	Acute Toxic	5 Kg or 5 L
6.2	Infectious	All
7	Radioactive	Any discharge or radiation level exceeding 10 m Sv/h at the package surface and 200 uSv/h at 1m from the package
8	Corrosive	5 Kg or 5 L
9.1	Miscellaneous (Except PCB mixtures)	50 Kg 0
9.1	PCB mixtures	500 grams
9.2	Aquatic Toxic	1 Kg or 1 L
9.3	Wastes (Chronic Toxic)	5 Kg or 5 L

.12 The following actions shall be taken by the person in charge of the spilled material or by first person(s) arriving at the scene of a hazardous material accident or by the on-site emergency-response coordinator:

.1 Notification and Spill Assessment

- .1 Notify the emergency-response coordinator
- .2 Identify exact location and time of accident

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- .3 Request assistance as required by magnitude of accident from Manitoba Conservation (24-hour Spill Response Line (204) 945-4888), Police, Fire Department, or Ambulance and Company backup
- .4 Notify Manager of Environmental Services for the MFA
- .2 Attend to Public Safety**
 - .1 Secure the area from public access
 - .2 Eliminate ignition sources
 - .3 Initiate evacuation of immediate area if necessary
- .3 Gather and Assess Information on Status of Situation, noting:**
 - .1 Personnel on-site
 - .2 Cause and effect of spill
 - .3 Estimated extent of damage
 - .4 Amount and type of material involved
 - .5 Proximity to waterways
- .4 If safe to do so, and in Accordance with the On-Site Response and Containment Plan Try to Stop the Dispersion or Flow of Spill Material by:**
 - .1 Approach from upwind
 - .2 Stop or reduce leak if safe to do so
 - .3 Dyke spilled material with dry, inert sorbet material or dry clay
 - .4 Prevent spill material from entering waterways, utilities or other openings by dyking Proximity to waterways

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**ENVIRONMENTAL
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NOISE CONTROL

Revision March 2015

1.0 Description

- .1 All construction activities shall be undertaken by means that do not result in violation of the noise by-laws of adjacent municipal authorities. The Contractor is responsible for ensuring compliance with contract specifications, environmental legislation, permits and authorizations.
-

2.0 Purpose

- .1 The purpose of this procedure is to ensure that the Contractor complies with noise by-laws of the adjacent municipal authorities.
-

3.0 Legislation and Supporting Documents

- ESRA Contracts and Associated Documents
 - Applicable Permits, Authorizations and Licences.
-

4.0 Procedures

- .1 All plant and equipment supplied by the Contractor for use on the Project shall be effectively “sound-reduced” by means of proper silencers, mufflers, acoustic linings, acoustic shields or acoustic sheds.
- .2 The Contractor shall comply with the noise By-laws of the adjacent First Nations, communities and municipal authorities.
- .3 Any operation of plant or equipment outside the hours as regulated by the adjacent First Nations, communities or municipal authorities shall require an exemption in writing. The Contractor shall provide a copy of such an exemption to the Contract Administrator.

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**ENVIRONMENTAL
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MATERIALS HANDLING AND STORAGE

Revision March 31, 2015

1.0 Description

- .1 This procedure specifies materials handling and storage requirements during all phases of construction.
-

2.0 Purpose

- .1 The purpose of this procedure is to ensure that construction sites are kept clean and orderly at all times in accordance with applicable contract specifications, legislation, permits and authorizations.
-

3.0 Legislation and Supporting Documents

- ESRA Contracts and Associated Documents
 - The Dangerous Goods Handling and Transportation Act, CCSM c D12
 - Workplace Safety and Health Act, CCSM c W210
 - The Environment Act, CCSM c E125
 - Onsite Wastewater Management Systems Regulation No. 83/2003
 - Environmental Protection Guidelines - Appendix 7.1 of PR 304 to Berens River All-Season Road Environmental Impact Assessment – August 2009
 - Applicable Permits, Authorizations and Licenses.
-

4.0 Procedures

4.1 General

- .1 All construction areas shall be kept clean and orderly at all times during and at completion of construction.
- .2 Waste material shall be recycled to a degree that is economically and practically feasible.
- .3 There shall be no indiscriminate dumping of waste and litter on or off the construction site.
- .4 Different waste streams shall not be mixed.
- .5 All waste materials shall be collected and contained in a designated waste storage area and in containers appropriate to the waste classification until removed from the site for recycling or disposal.
- .6 Waste storage sites shall be designated for each worksite and camp as approved by the Contract Administrator.
- .7 Waste material (i.e. food and food containers) that is likely to attract nuisance wildlife shall be stored in wildlife proof storage bins and

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hauled off site at regular intervals for disposal at an approved disposal facility.

- .8 Contaminated runoff or water shall be contained and prevented from entering any watercourse. The collected contaminated runoff or water shall be hauled off site for disposal at an approved disposal facility.

4.2 Domestic Solid Wastes, Demolition and Construction Waste

- .1 At no time during construction shall domestic solid, demolition, or construction waste be permitted to accumulate at any location on the work site, other than at a dedicated waste storage site, unless approved by the Contract Administrator.
- .2 All domestic solid waste containers shall be clearly marked to identify the nature and type of material to be deposited (e.g. containers for recyclable material and containers for disposal).
- .3 No on-site burning of waste or any other material is allowed unless approved by the Contract Administrator. The Contractor shall be responsible for obtaining a burning permit from Manitoba Conservation for burning between April 1 and November 15.
- .4 All domestic solid waste storage shall be confined to Designated Areas.
- .5 Waste concrete from concrete pumps and concrete trucks, cleanout materials from concrete trucks, concrete pumps and other equipment shall be deposited only in the concrete washout Designated Area. All of this material shall be hauled off site, for disposal at an approved landfill or to a recycling facility, not later than at the closure of the Designated Area.

4.3 Domestic Sewage

- .1 All sewage shall be collected through the provision of an outside toilet facility in compliance with the *Onsite Wastewater Management Systems Regulation No. 83/2003*.
- .2 All collected sewage shall be removed from the site at least once every seven (7) days by a registered sewage hauler, as defined in section 21(1) of the *Onsite Wastewater Management Systems Regulation No. 83/2003* and disposed of at a wastewater treatment facility licenced under The Environment Act or otherwise federally regulated.

4.4 Dangerous Goods/Hazardous Waste Handling and Disposal

- .1 Dangerous goods/hazardous wastes shall be identified and shall be handled in accordance with The Dangerous Goods Handling and Transportation Act and Regulations and Health Canada's Workplace Hazardous Materials Information System (WHMIS).

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- .2 The Contractor shall have staff, trained and certified in the handling of dangerous goods, present on-site whenever said dangerous goods are being utilized for the performance of the work.
- .3 All dangerous goods/hazardous waste shall be confined to Designated Areas and stored in a secure manner to prevent access by non-designated employees.
- .4 Designated dangerous goods/hazardous waste storage areas shall have the top soil stripped and be lined with at least 30 cm of impermeable material or approved equal and dyked in such a manner as to contain any leakage or spillage. The dykes shall be designed, constructed and maintained to retain not less than 100% of the capacity of the total number of containers or 110% of the largest container, whichever is greatest. The top soil shall be stored and used in the restoration of the site.
- .5 Disposal of hazardous waste shall only be at hazardous waste facilities licensed under The Dangerous Goods Handling and Transportation Act.
- .6 All waste stored at designated hazardous waste storage areas shall be removed from the site at least once every seven (7) days.
- .7 Hydrocarbons shall not be stored or disposed of in earthen pits on-site.
- .8 All used oils shall be stored in appropriate drums or tanks until removed to a registered waste oil recycling centre or hazardous waste disposal facility.
- .9 Used oil filters shall be drained, placed into suitable storage containers and disposed of at approved facilities. The oil drained out of the used filters shall be collected and handled in the same manner as used oil.
- .10 A pesticide use permit shall be obtained prior to the application of pesticides. The Contractor shall ensure that all pesticides are applied by a licenced commercial applicator and adhere to all conditions specified in this permit. These conditions include submitting a properly completed post seasonal form to the Contract Administrator at the completion of the Contract or at the end of each calendar year confirming that any terms and conditions of the permit have been satisfied. The Contractor shall supply the following information to the Contract Administrator for this form:
 - .1 The name of each pesticide used
 - .2 The Pest Control Product number of each pesticide
 - .3 Quantity in litres of each pesticide used

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Procedure name:
Materials Handling and Storage

Reference number
EP5

- .4 Total area treated in hectares
- .5 A map of the treated areas
- .6 Legal description of the land where practical
- .7 Color coded map to indicate where each type of pesticide was used
- .11 All pesticides shall be handled and applied by or under the direct supervision of a licensed commercial applicator, as defined in section 4.1 of the *Pesticides Regulation 94/88*, and further all pesticides shall be used in accordance with any terms and conditions of the permit.
- .12 As dangerous goods/hazardous waste storage areas are taken out of service any remediation shall be conducted, including the appropriate disposal of the contaminated material to the satisfaction of the Contract Administrator.

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**ENVIRONMENTAL
PROTECTION
PROCEDURES**

**WORKING WITHIN OR
NEAR FISH BEARING WATERS**

Revision March 2015

1.0 Description

- .1 This procedure specifies requirements for working within or near fish bearing waters during all phases of construction.
-

2.0 Purpose

- .1 To ensure that any works occurring within a watercourse is conducted according to applicable guidelines and permit requirements.
 - .2 To ensure the implementation of appropriate mitigation measures and Best Management Practices to protect aquatic habitats.
 - .3 To ensure that water quality standards are met throughout the course of instream construction activities.
-

3.0 Legislation and Supporting Documents

- ESRA Contracts and Associated Documents
 - Applicable Manitoba Conservation Work Permits
 - Applicable Fisheries and Oceans Canada (DFO) Authorizations
 - Manitoba Stream Crossing Guidelines for the Protection of Fish and Fish Habitat
(www.gov.mb.ca/waterstewardship/fisheries/habitat/sguide.pdf)
 - Freshwater Intake End-of-Pipe Fish Screen Guidelines – Department of Fisheries and Oceans 1995 (www.dfo-mpo.gc.ca/Library/223669.pdf)
 - Environmental Protection Guidelines – Appendix 7.1 of PR 304 to Berens River All-Season Road Environmental Impact Assessment – August 2009
 - Best Management Practices – Appendix 7.2 of PR 304 to Berens River All-Season Road Environmental Impact Assessment – August 2009
-

4.0 Procedures

- .1 The Contractor shall schedule and plan the Work so that the amount of in-water work is kept to a minimum. Construction activities shall not occur within 100 meters of a watercourse with the exception of construction of a watercourse crossing.
- .2 In-water work shall be restricted to low flow periods where possible. Whenever possible, in-water works shall be scheduled during a

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period when the watercourse is seasonally dry or frozen to the bottom.

- .3 The Contractor shall not undertake construction activities in fish bearing waters or potentially fish bearing waters between April 1 and June 30 of any year, or during periods of high stream flow or identified spawning periods.
- .4 Material, cleared vegetation, stockpiles and/or waste shall not be deposited or stored within 100 meters of a watercourse, unless approved by the Contract Administrator. No borrow shall be removed from within 100 meters of water body.
- .5 The disturbance to the stream bed and banks shall be minimized. Use existing trails, roads or cut lines to access the site where possible to avoid disturbance to riparian vegetation.
- .6 All construction activities shall be suspended during adverse weather conditions (i.e., heavy rains).
- .7 As a general rule, keep roads a minimum of 100 meters away from a watercourse except when crossing the watercourse. This often forces the alignment onto drier sites. If a 100 meter distance is not possible, allow a buffer zone of undisturbed vegetation between the road and the waterway, using a buffer zone width of approximately 10 m plus 1.5 times the slope gradient or 30 m, whichever is greater.
- .8 Backfill (i.e. rip rap and other rock materials) installed adjacent to a fish bearing water body shall be clean and well graded granular material that is free of fines.
- .9 Where possible, in-water work shall be staged to occur as a single event and machinery access shall be limited to a single point on the shoreline.
- .10 The distance between the machinery access point and the worksite shall be minimized.
- .11 The Contractor shall use an in-stream pad built of washed gravel where in-water equipment activity would generate excess sediment.
- .12 If Work is being conducted under a Fisheries and Oceans Canada (DFO) Authorization, adhere to all conditions outlined within the Authorization.
- .13 Equipment shall arrive on site in a clean, washed condition, and free of fluid leaks.
- .14 Equipment shall be kept in good repair to prevent leakage of fuel oil etc. Avoid fuelling, changing oil, repairing or washing any equipment within 100 meters of the normal high water mark. Ensure runoff and water used for equipment cleaning does not enter any water body.

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- .15 Spill containment and cleanup supplies shall be stored and accessible on site at all times.
- .16 Vehicles and other equipment shall be kept away from and out of the water unless instructed otherwise by the Contract Administrator.
- .17 If there is no existing crossing and the watercourse must be crossed, a temporary crossing shall be constructed to keep all vehicles and equipment out of the watercourse.
- .18 Concrete works shall be conducted in a manner that does not allow direct or indirect entry of concrete, concrete fines or concrete wastewater into the watercourse.
- .19 Natural debris removal shall be limited to that which is necessary to protect bridge piers or abutments or to that which is blocking culverts.
- .20 Debris and other objects shall be lifted out of the water whenever possible. Items shall not be dragged across the stream bed/lake bottom and banks/shoreline.
- .21 All banks/shoreline areas that are disturbed shall be restored to their original conditions as soon as practicable, including re-vegetation if necessary. Erosion and sediment control measures shall be implemented, inspected and maintained until vegetation is established.
- .22 Whenever it is necessary to remove existing beaver dams reference shall be made to the DFO document *“Manitoba Operational Statement Habitat Management Program DFO Beaver Dam Removal”*. Work plans for beaver dam removal shall be provided to the Contract Administrator 5 business days prior to the start of dam removal.

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Disclaimer, special note, etc.		

**ENVIRONMENTAL
PROTECTION
PROCEDURES**

STREAM CROSSINGS

Revision March 31, 2015

1.0 Description

- .1 The installation of stream crossings will be required to facilitate various activities. The Contractor is responsible for ensuring compliance with contract specifications, environmental legislation, permits and authorizations.
-

2.0 Purpose

- .1 The purpose of this procedure is to ensure that stream crossings are installed in accordance with applicable environmental legislation, regulations, guidelines, permits and contracts.
-

3.0 Legislation and Supporting Documents

- ESRA Contracts and Associated Documents
 - Applicable Manitoba Conservation Work Permits
 - Manitoba Stream Crossing Guidelines for the Protection of Fish and Fish Habitat –May 1996
(www.gov.mb.ca/waterstewardship/fisheries/habitat/sguide.pdf)
 - Freshwater Intake End-of-Pipe Fish Screen Guidelines – Department of Fisheries and Oceans 1995 (www.dfo-mpo.gc.ca/Library/223669.pdf)
 - Ice Bridges and Snow Fills Operational Statement, Version 3.0 – Fisheries and Oceans Canada 2007 (www.dfo-mpo.gc.ca/regions/central/habitat/os-eo/provinces-territoires/mb/index-eng.htm)
 - Temporary Stream Crossing Operational Statement, Version 1.0 – Fisheries and Oceans Canada 2008 (www.dfo-mpo.gc.ca/regions/central/habitat/os-eo/provinces-territoires/mb/index-eng.htm)
 - Environmental Protection Guidelines - Appendix 7.1 of PR304 to Berens River All-Season Road Environmental Impact Assessment
 - Best Management Practices – Appendix 7.2 of PR 304 to Berens River All-Season Road Environmental Impact Assessment – August 2009
-

4.0 Procedures

- .1 All stream crossings shall be constructed in accordance with *The Manitoba Stream Crossing Guidelines for the Protection of Fish Habitat – May 1996*.

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- .2 A minimum vegetated buffer strip of 30 metres shall be maintained between the worksite and watercourse except at the actual crossing location.
- .3 Where possible, existing stream crossings shall be utilized to traverse watercourses.
- .4 Temporary stream crossings shall be located at straight stream sections, perpendicular to the bank. In particular, meandering bends, braided streams, alluvial fans and other unstable areas shall be avoided.
- .5 Temporary stream crossings shall be located at a narrow channel section where the width is no greater than five meters (measured from high water mark to high water mark) to minimize the crossing length.
- .6 Temporary stream crossings shall be designed for their intended construction loading and to accommodate anticipated water flows.
- .7 The number of temporary stream crossings constructed shall be minimized.
- .8 When feasible, the construction of stream crossings shall be scheduled for the period of lowest stream flow and should be a single event.
- .9 Streams shall be crossed at right angles to minimize shoreline disturbance to the extent possible.
- .10 The natural alignment of the stream shall be maintained.
- .11 Where possible, there shall be no dredging, infilling, grading or excavating of the channel bed or banks.
- .12 Temporary stream crossings shall be removed as soon as possible following completion of the work or when it is no longer required.
- .13 Following the removal of a temporary stream crossing, the site shall be restored to its original state. The restoration shall include appropriate erosion and sediment control measures and re-vegetation of disturbed areas as required.

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**ENVIRONMENTAL
PROTECTION
PROCEDURES**

TEMPORARY STREAM DIVERSIONS

Revision March 2015

1.0 Description

- .1 Worksite isolation shall be undertaken as instructed by the East Side Road Authority (ESRA) to accommodate any in water works that must be conducted “in the dry” within fish bearing waters to minimize erosion and sedimentation and maintain downstream flows. The Contractor is responsible for ensuring compliance with contract specifications, environmental legislation, permits and authorizations.
 - .2 Suspended sediment presents a hazard to fish and fish habitat as it can clog and abrade gills, smother eggs, change habitat structure and cover food supply. Maintaining downstream flows is critical to the survival of many aquatic species.
-

2.0 Purpose

- .1 The purpose of this procedure is to ensure that temporary stream diversions are installed in accordance with applicable environmental legislation, regulations, guidelines, permits and contracts.
-

3.0 Legislation and Supporting Documents

- ESRA Contracts and Associated Documents
 - The Environment Act - C.C.S.M. c. E125
 - The Workplace Safety and Health Act - C.C.S.M. c. W210
 - Applicable Manitoba Conservation Work Permits
 - Department of Fisheries and Oceans’ *“Freshwater Intake End-of-Pipe Fish Screen Guideline”* (1995).
 - The Manitoba Stream Crossing Guidelines for the Protection of Fish Habitat – May 1996
 - Fisheries Act – RSC, 1985, c. F-14
 - Environmental Protection Guidelines - Appendix 7.1 of PR 304 to Berens River All-Season Road Environmental Impact Assessment – August 2009
-

4.0 Procedures

4.1 General

- .1 Temporary stream diversions shall be constructed under low flow conditions and shall be designed to accommodate flows that may occur during storm events.
- .2 Instream diversion structures (i.e., sheet piling, sandbags, etc.) shall be constructed using erosion resistant materials.

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- .3 Temporary stream diversions shall be designed to provide fish passage, even during low flow conditions. If elevated pipes are used, remove diversion during fish migration periods.
- .4 Stream diversion channels shall be constructed in the dry, excavating from downstream to upstream. Diversion channels shall have gentle curves and similar gradient to the natural watercourse.
- .5 To help prevent potential erosion, the diversion channel shall be lined with erosion resistant materials (i.e., plastic, rock) where practicable.
- .6 While the worksite is isolated, flow shall be maintained downstream at all times.
- .7 A fish salvage operation shall be conducted by a qualified biologist with a "live fish handling permit" prior to dewatering of the isolated work area.
- .8 The site shall be restored as soon as possible following completion of the Work. The restoration work shall include re-vegetation of disturbed areas (i.e. channel banks), infilling any temporary channels, removing all construction materials and debris and installation and maintenance of required erosion and sediment control measures.

4.2 Temporary Diversion Channels

- .1 Temporary diversion channels shall be designed to accommodate expected watercourse flow from storm events.
- .2 Temporary diversion channels shall be constructed "in the dry" by not excavating upstream and downstream ends of the channel.
- .3 Existing watercourses shall not be disturbed until temporary diversion channels have been constructed.
- .4 Diversion channels shall be opened from the downstream end first. Stabilize the connection of the diversion channel to the main watercourse. Pump flows around work site, if possible during construction of the channel connection.
- .5 The upstream connection to the main watercourse shall be constructed and stabilized while pumping flows, if possible, around the work area.
- .6 Gradient controls shall be used to ensure that diversion channel slopes correspond to the existing channel gradients.
- .7 Erosion control measures shall be installed to protect any unstable channel beds and banks.
- .8 The diversion channel shall be inspected following a severe rainstorm or at the end of the spring freshet to identify areas of incipient erosion. Eroded areas shall be repaired promptly.

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4.3 Pumped Diversions

- .1 Pumped diversions shall be used wherever a channel must be completely blocked to allow work 'in the dry'.
- .2 Intakes shall be sized and screened to prevent debris blockage and fish mortality in accordance with DFO's *Freshwater Intake End-of-Pipe Fish Screen Guideline*.
- .3 The Pumping system shall be sized to accommodate expected watercourse flow from storm events (generally 1 in 5 year event, although the 1 in 2 year event may be used for non-critical situations).
- .4 Pumps shall be discharged onto geofabric, gravel, straw bales or an alternate approved by the Contract Administrator to dissipate the energy of discharge and mitigate scouring of channel banks and/or streambed.

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**ENVIRONMENTAL
PROTECTION
PROCEDURES**

FISH PASSAGE

Revision March 31, 2015

1.0 Description

- .1 Providing fish passage shall be undertaken as instructed by the East Side Road Authority (ESRA) to accommodate for in-water construction activities. The Contractor is responsible for ensuring compliance with contract specifications, environmental legislation, permits and authorizations.
-

2.0 Purpose

- .1 The purpose of this procedure is to ensure that fish passage is maintained in accordance with applicable environmental legislation, regulations, guidelines, permits and contracts.
-

3.0 Legislation and Supporting Documents

- ESRA Contracts and Associated Documents
 - The Environment Act - C.C.S.M. c. E125
 - Applicable Manitoba Conservation Work Permits
 - Fisheries Act – RSC, 1985, c. F-14
 - Environmental Protection Guidelines - Appendix 7.1 of PR 304 to Berens River All-Season Road Environmental Impact Assessment – August 2009
-

4.0 Procedures

- .1 Flow shall not be constricted by more than one third (33%) of the original stream width.
- .2 Flow shall be maintained at all times to permit the safe and unimpeded passage of fish. A temporary diversion channel to direct flows around the work site shall be constructed if flows are to be constricted by more than one third of the original stream width in fish bearing waters. In non fish bearing waters a pumped diversion may be used instead to maintain flows downstream.
- .3 Cleared trees, vegetation or construction materials shall not obstruct waterways during any season, and shall be stored above the ordinary high water mark (1 in 2 year high water mark).

Prepared by	Revision Number 9.1	Date Issued
Approved by		Date of Revision 2010-11-02
Disclaimer, special note, etc.		

**ENVIRONMENTAL
PROTECTION
PROCEDURES**

FISH SALVAGE

Revision March 31, 2015

1.0 Description

- .1 Fish salvage operations shall be undertaken as instructed by the East Side Road Authority (ESRA) to accommodate for in-water construction activities. The Contractor is responsible for ensuring compliance with contract specifications, environmental legislation, permits and authorizations.
-

2.0 Purpose

- .1 To ensure that fish salvages are conducted in accordance with applicable environmental permits, guidelines and legislation.
 - .2 To ensure that best management practices and guidelines are implemented for the protection of aquatic species.
-

3.0 Legislation and Supporting Documents

- ESRA Contracts and Associated Documents
 - Applicable Manitoba Conservation Work Permits
 - Applicable Manitoba Water Stewardship Live Fish Handling Permit
 - Applicable Fisheries and Oceans Canada Authorizations
 - Environmental Protection Guidelines - Appendix 7.1 of PR304 to Berens River All-Season Road Environmental Impact Assessment
-

4.0 Procedures

- .1 A fish salvage operation shall be conducted where site isolation and/or dewatering is required.
- .2 Fish salvages shall be conducted by qualified professionals possessing the necessary Manitoba Conservation Permits for fish handling.
- .3 Fish salvages shall be conducted following the isolation of the worksite and prior to the completion of dewatering and/or commencement of construction works.
- .4 Partial dewatering is permissible to decrease wetted area and increase efficiency of capture, provided that pump intakes are adequately screened (See DFO *Freshwater Intake End-of-Pipe Fish Screen Guideline*). However, the fish salvage shall be completed prior to dewatering the entire area.
- .5 If necessary, captured fish shall be placed in a holding tank with adequate water until released.

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Disclaimer, special note, etc.		

- .6 Captured fish shall be cataloged by species. The length and weight of a representative proportion of captured fish species shall be recorded.
- .7 The following information shall be collected and recorded:
 - .1 Date
 - .2 Location (watercourse name and geographic coordinates)
 - .3 Description of project/construction works
 - .4 Physical habitat parameters – channel width, wetted width, size (area) and depth of salvage area, water temperature
 - .5 Fish capture method (e.g. Seine net, dip net, gill net, backpack electrofishing)
 - .6 Effort (e.g. two passes with a seine net; two people dip netting for 0.5 hours; backpack electrofishing for 350 seconds);
 - .7 Number of fish collected, by species
 - .8 Length and weight of a representative proportion of captured fish species
- .8 All captured fish shall be released downstream of the worksite.

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Disclaimer, special note, etc.		

**ENVIRONMENTAL
PROTECTION
PROCEDURES**

**CULVERT MAINTENANCE
AND REPLACEMENT**

Revision March 2015

1.0 Description

- .1 Culvert maintenance and replacement shall be undertaken as instructed by the East Side Road Authority (ESRA) to accommodate for in-water construction activities. The Contractor is responsible for ensuring compliance with contract specifications, environmental legislation, permits and authorizations.
-

2.0 Purpose

- .1 To ensure that culvert maintenance and replacement is conducted in accordance with applicable environmental permits, guidelines and legislation.
-

3.0 Legislation and Supporting Documents

- ESRA Contracts and Associated Documents
 - Applicable Manitoba Conservation Work Permits
 - Manitoba Stream Crossing Guidelines for the Protection of Fish and Fish Habitat
(www.gov.mb.ca/waterstewardship/fisheries/habitat/sguide.pdf)
 - Freshwater Intake End-of-Pipe Fish Screen Guidelines – Department of Fisheries and Oceans 1995 (www.dfo-mpo.gc.ca/Library/223669.pdf)
 - Applicable Fisheries and Oceans Canada (DFO) Authorizations or Letters of Advice
 - Fisheries Act, RSC., 1985, c-F14
 - The Environment Act - C.C.S.M. c. E125
 - The Workplace Safety and Health Act - CCSM. c. W210
 - Environmental Protection Guidelines - Appendix 7.1 of PR304 to Berens River All-Season Road Environmental Impact Assessment
 - Best Management Practices – Appendix 7.2 of PR 304 to Berens River All-Season Road Environmental Impact Assessment – August 2009
-

4.0 Procedures

- .1 Material and debris removal shall be timed to prevent disruption to sensitive fish life stages by adhering to DFO's restricted activity timing windows unless accumulated material is preventing the passage of water and/or fish through the structure. The Contractor shall not undertake construction activities in fish bearing waters or potentially fish bearing waters between April 1 and June 30 of any year, or during periods of high stream flow.

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- .2 Emergency debris removal using hand tools or machinery (e.g. backhoe) may be carried out at any time of year. Emergencies include situations where carrying out the project immediately is in the interest of preventing damage to property or the environment, or is in the interest of public health or safety. DFO is to be notified immediately.
- .3 Effective erosion and sediment control measures shall be installed prior to starting work. These measures shall be inspected regularly during the course of construction. The contractor shall make all necessary repairs if any damage occurs.
- .4 The contractor shall limit the removal of accumulated material (i.e., branches, stumps, other woody materials, garbage, etc.) to the area within the culvert, immediately upstream of the culvert and to that which is necessary to maintain culvert function and fish passage.
- .5 Accumulated material and debris shall be removed slowly to allow clean water to pass, to prevent downstream flooding and reduce the amount of sediment-laden water going downstream.
- .6 The contractor shall follow the mitigation measures and conditions set out in DFO's *Operational Statement* on the "Beaver Dam Removal" when removing beaver dams and associated debris for culvert maintenance.
- .7 Machinery shall arrive at site in a clean condition and shall be operated on land (from outside of the water) and in a manner that minimizes disturbance to the bed and banks of the watercourse.
- .8 The bed and banks of the watercourse shall be restored to preexisting conditions following a disturbance.
- .9 To ensure that fish passage is maintained, culverts in fish bearing waters shall adhere to the following design criteria:
 - .1 For culverts less than 25 m long the flow velocity through the crossing shall not exceed 1 m/s
 - .2 For culverts greater than 25 m long the flow velocity through the crossing shall not exceed 0.8 m/s
 - .3 The crossing shall not be impassable to fish for longer than 3 consecutive days once in 10 years or 7 consecutive days once in 50 years
 - .4 The culvert shall be designed such that fish passage is possible even in low flows
- .10 If more than one culvert is to be installed, a minimum of 2 m between adjacent culverts is recommended. There shall be no more than three culverts at one crossing.

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Disclaimer, special note, etc.		

- .11 If works are being conducted under a DFO Authorization, all conditions outlined within the Authorization shall be adhered to.
- .12 A site visit shall be conducted prior to the commencement of in-water construction activities to determine the site-specific environmental protection measures that may be required (i.e., worksite isolation methods, site restoration considerations, erosion and sediment control materials required, etc.).
- .13 Cofferdams or other structures (diversions) shall be installed to separate the dewatered worksite from flowing water. Materials that are used to build these dams shall not be taken from below the high water mark (1 in 2 year high water level). Cofferdams shall be designed to accommodate any expected high flows during the construction period.
- .14 Downstream flows shall be maintained at all times. If isolated sites are required, flows shall be detoured around the sites, and original flows through the site shall be restored as soon as work is completed.
- .15 A fish salvage operation shall be conducted prior to dewatering of isolated sites.
- .16 The contractor shall maintain a culvert gradient as close to the natural stream grade as possible.
- .17 The contractor shall install culverts a minimum of 30 cm or 10% of culvert diameter (whichever is greater) below the normal stream bed.
- .18 The contractor shall avoid using frozen backfill. Backfill shall be compacted to avoid settling, hydrostatic uplifting or side movements of the culvert that may lead to blockage of fish passage or washouts.
- .19 Slopes shall be contoured to an appropriate steepness to minimize erosion; erosion controls shall be installed as soon as possible.
- .20 Soils shall be graded in the direction away from the watercourse and never into the stream itself.

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Disclaimer, special note, etc.		

**ENVIRONMENTAL
PROTECTION
PROCEDURES**

BLASTING NEAR A WATERCOURSE

Revision March 31

1.0 Description

- .1 Blasting within or near a watercourse shall be undertaken as instructed by the East Side Road Authority (ESRA). The Contractor is responsible for ensuring compliance with contract specifications, environmental legislation, permits and authorizations.
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2.0 Purpose

- .1 To ensure that blasting near water bodies is conducted according to applicable guidelines and permit requirements.
 - .2 To ensure the protection of aquatic environments by implementing appropriate Best Management Practices during blasting activities.
-

3.0 Legislation and Supporting Documents

- Dangerous Goods Handling and Transportation Act, CCSM c. D12
 - ESRA Contracts and Associated Documents
 - Applicable Manitoba Conservation Work Permits
 - Applicable Fisheries and Oceans Canada (DFO) Authorizations or Letters of Advice
 - Manitoba Stream Crossing Guidelines for the Protection of Fish and Fish Habitat
(www.gov.mb.ca/waterstewardship/fisheries/habitat/sguide.pdf)
 - Guidelines for the Use of Explosives In or Near Canadian Fisheries Waters (1998) (www.dfo-mpo.gc.ca/oceans-habitat/habitat/water-eau/explosives-explosifs/page03_e.asp)
 - Environmental Protection Guidelines – Appendix 7.1 of PR 304 to Berens River All-Season Road Environmental Impact Assessment – August 2009
 - Best Management Practices – Appendix 7.2 of PR 304 to Berens River All-Season Road Environmental Impact Assessment – August 2009
-

4.0 Procedures

- .1 Blasting plans shall comply with blasting regulations and reflect the appropriate timing of life cycle events as they relate to critical life functions of fish and wildlife species (i.e. migration, calving, nesting and spawning). Therefore, to reduce impacts to birds and other wildlife, blasting activities shall be restricted to outside the most sensitive breeding and brood rearing months (i.e. May to late July) as much as possible. Blasting in watercourses classified as fish habitat

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Disclaimer, special note, etc.		

Procedure name:
Blasting Near A Watercourse

Reference number
EP12

is prohibited between April 1 and June 30 of any year, or during periods of high stream flow or identified spawning periods.

- .2 Where applicable, blasting shall be undertaken during winter months to minimize permafrost degradation.
- .3 Reference shall be made to DFO's document "*Guidelines for the Use of Explosives in or Near Canadian Fisheries Waters*" 1998. Blasting plans shall be submitted to DFO and Manitoba Conservation prior to commencement of blasting in areas that could affect fish habitat.
- .4 The blasting contractor shall possess all required permits/certificates. Notification shall be given to affected parties including site employees and the local general public prior to each blasting event.

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**ENVIRONMENTAL
PROTECTION
PROCEDURES**

HERITAGE RESOURCES

Revision November 2015

1.0 Description

- .1 Heritage resources are an important component of Manitoba's historical legacy which may be uncovered during a wide range of construction activities. Heritage resources may include human remains, a heritage site, a heritage object, and any work or assembly of works of nature or human endeavor that is of value for its archeological, paleontological, pre-historic, historic, cultural, natural, scientific, or aesthetic features, and may be in the form of sites or objects or a combination thereof.

2.0 Purpose

- .1 To ensure that due consideration has been given throughout the design and construction phases of the project in order to minimize the potential disturbances to heritage resources.

3.0 Legislation and Supporting Documents

- ESRA Contracts and Associated Documents
- The Heritage Resources Act CCSM. c. H39.1
- Environmental Protection Guidelines - Appendix 7.1 of PR 304 to Berens River All-Season Road Environmental Impact Assessment – August 2009

4.0 Procedures

- .1 Specific areas where heritage or cultural resources of interest are suspected of being present such as along major waterways at crossings shall be inspected prior to the start of construction to confirm potential presence and extent.
- .2 Where archeological or historic artifacts are encountered during construction activities, work at that location shall immediately cease and the discovery shall be reported to the Field Supervisor and Contract Administrator. The Contract Administrator shall inform the Province of Manitoba's Historic Resources Branch and any affected communities.
- .3 A specialist historic resource consultant shall be utilized to assess archeological or historic artifacts that are encountered and recommend mitigation measures. ESRA will engage interested communities and Manitoba's Historic Resources Branch to present and discuss mitigative options..

Prepared by: J. Clarke	Revision Number 13.2	Date Issued: November 2015
Approved by		Date of Revision 2015-11-23
Disclaimer, special note, etc.		

**ENVIRONMENTAL
PROTECTION
PROCEDURES**

WILDLIFE

Revision March 2015

1.0 Description

- .1 Wildlife includes a broad range of species that may be affected by various activities. This procedure is intended to compliment other targeted procedures, regulatory requirements and monitoring plans. The Contractor is responsible for ensuring compliance with contract specifications, environmental legislation, permits and authorizations.

2.0 Purpose

- .1 To ensure that appropriate environmental measures are implemented to avoid, minimize and/or mitigate potential effects on Wildlife.

3.0 Legislation and Supporting Documents

- ESRA Contracts and Associated Documents
- The Wildlife Act CCSM. c. W130
- The Endangered Species Act CCSM. c. E111
- Species at Risk Act S.C 2002, c. 29)
- Applicable Manitoba Conservation Work Permits
- Environmental Protection Guidelines - Appendix 7.1 of PR 304 to Berens River All-Season Road Environmental Impact Assessment – August 2009

4.0 Procedures

- .1 Employees, workers and other staff shall not hunt or trap wildlife.
- .2 The Contractor shall not remove, destroy or disturb species pursuant to *Manitoba Regulation 25/98*, or any future amendment thereof, respecting *Threatened, Endangered and Extirpated Species*, or species listed in the federal Species at Risk Act.
- .3 Wildlife habitat shall not be destroyed or damaged, except pursuant to a licence, permit or other authorization issued for the Project.
- .4 No person shall take or be in possession of or willfully destroy the nest or eggs of birds.
- .5 No person shall remove, disturb, spring or in any way interfere with any trap set out lawfully by any other person for the purpose of taking furbearing animals.
- .6 No blasting shall be permitted within close proximity to sensitive wildlife habitat during critical lifecycle periods.
- .7 Construction camps and worksites shall be kept clean and tidy. All food and garbage waste shall be stored in an appropriate manner

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and be disposed of at an area which has been designated as an appropriate waste disposal site.

- .8 Employees, workers and other staff shall not feed or harass wildlife that they may encounter.
- .9 Nuisance wildlife shall be immediately reported to the Natural Resources officer and onsite supervisor.
- .10 Trees containing large nests of sticks and areas where active dens or burrows occur shall be identified, left undisturbed and reported to the Natural Resources Officer.
- .11 Whenever it is necessary to remove existing beaver dams reference shall be made to the DFO document *“Manitoba Operational Statement Habitat Management Program DFO Beaver Dam Removal”* as well an *“Authorization to remove beaver dams”* must be issued by Manitoba Conservation.
- .12 To reduce the possibility of vehicle collisions with wildlife, vehicle speed shall not exceed posted speed limits and wildlife warning signs shall be installed where appropriate.
- .13 No temporary roadbed borrow operations shall occur within 2 kilometres of known caribou calving areas along access roads from May 15 to July 1 of any given year.

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**ENVIRONMENTAL
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WILDFIRES

Revision March 31, 2015

1.0 Description

- .1 Wildfires can be a threat to people and activities taking place in wilderness areas particularly when under dry conditions. Advance planning and the implementation of safety measures is needed effectively respond to wildfires when they do occur.
-

2.0 Purpose

- .1 The purpose of this procedure is to ensure that appropriate measures are in place to prevent and/or minimize effects caused by wildfires during construction and operation activities.
-

3.0 Legislation and Supporting Documents

- ESRA Contracts and Associated Documents
 - The Fires Prevention and Emergency Response Act CCSM. c. F80
 - The Forest Act CCSM. c. F150
 - The Wildfires Act CCSM. c. W128
 - The Workplace Safety and Health Act - CCSM. c. W210
 - The Dangerous Goods Handling and Transportation Act C.C.S.M. c. D12
 - Applicable Manitoba Conservation Work Permits
 - Environmental Protection Guidelines - Appendix 7.1 of PR 304 to Berens River All-Season Road Environmental Impact Assessment – August 2009
 - Wildfires in Manitoba: How to Prepare [*Brochure*]
-

4.0 Procedures

- .1 An evacuation and emergency preparedness plan addressing wildfires shall be implemented and submitted to the Contract Administrator prior to commencing construction.
- .2 No fires shall be started without first taking sufficient precautions to ensure that the fire can be kept under control.
- .3 To the extent possible, burning shall be avoided during the dry season. In Manitoba the dry season is typically defined as occurring between April 1st and November 15th of a given year. In the event that burning is required, an application for a burning permit shall be submitted for approval to Manitoba Conservation. All conditions imposed by the burning permit shall be adhered to.

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- .4 In the event that burning is required, any active fires shall be monitored by staff for the duration of the burning activities. No fires shall be left unattended.
- .5 No activity shall be conducted which may cause a fire to spread. Similarly, burning or smoldering matter shall not be placed where it may cause a fire to spread.
- .6 A primary zone shall be established around camp sites and other longer term temporary structures associated with construction and maintenance activities. Flammable materials such as leaves, brush, dead limbs, and fallen trees shall be cleared from the area regularly.
- .7 Combustible materials such as fuel and/or other hazardous substances shall be stored in a safe manner.
- .8 The locations of construction camps, offices, and related structures shall be chosen in such a fashion as to minimize the risk of exposure to wildfires.
- .9 In the event that a wildfire occurs, it shall be immediately reported to the Contract Administrator and to Manitoba Conservation at 1-800-782-0076.
- .10 All reasonable steps shall be taken in order to prevent a fire from burning out of control or spreading from land owned or occupied for construction purposes.
- .11 In the event that a wildfire is identified where construction activities are taking place, all reasonable attempts shall be made in order to extinguish the wildfire. All available equipment, services and labor shall be made available at the disposal of an officer for the purposes of wildfire protection operations.
- .12 All construction and related activities taking place in the vicinity of a wildfire shall cease until advised by the Contract Administrator that it is safe to resume operations.

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**ENVIRONMENTAL
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EROSION AND SEDIMENT CONTROL

Revision March 2015

1.0 Description

- .1 Erosion and sediment control shall be implemented as required to prevent, minimize and/or mitigate environmental effects. The Contractor is responsible for ensuring compliance with contract specifications, environmental legislation, permits and authorizations.
-

2.0 Purpose

- .1 The purpose of this procedure is to ensure that erosion and sediment control measures are installed to prevent, minimize and/or mitigate environmental effects in accordance with contract specifications, applicable legislation and associated regulations and guidelines.
-

3.0 Legislation and Supporting Documents

- ESRA Contracts and Associated Documents
 - The Fires Prevention and Emergency Response Act CCSM. c. F80
 - The Forest Act CCSM. c. F150
 - The Wildfires Act CCSM. c. W128
 - The Workplace Safety and Health Act - CCSM. c. W210
 - The Dangerous Goods Handling and Transportation Act CCSM. c. D12
 - Applicable Manitoba Conservation Work Permits
 - Environmental Protection Guidelines - Appendix 7.1 of PR 304 to Berens River All-Season Road Environmental Impact Assessment – August 2009
-

4.0 Procedures

- .1 The installation of erosion and sediment control measures shall be completed in accordance with the Contract Documents as approved by the Contract Administrator.
- .2 Prior to construction, all vegetated areas that are to be preserved or untouched shall be well marked out and noted.
- .3 Vegetation cover shall be preserved for as long as possible; operations shall be halted during heavy rainstorms.
- .4 Effective erosion and sediment control measures shall be installed before starting work within or near fish habitat.
- .5 Erosion and sediment control measures shall be inspected regularly and after every major rain or spring melt event; necessary repairs shall be made immediately after damage has been discovered.

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- .6 A turbidity curtain shall be installed downstream of all in-water works within fish bearing waterways.
- .7 Hand clearing shall be utilized within 30 meters of a water way instead of mechanical clearing where possible to prevent disturbance of the organic soil layer.
- .8 Slash and debris that is collected during clearing operations shall be retained and used to temporarily protect erosion-prone slopes.
- .9 Sediment shall be prevented from entering streams by placing overburden or topsoil stockpiles well above the high water mark.
- .10 Stream banks and bed shall be protected with erosion-resistant materials such as riprap at culvert openings.

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ENVIRONMENTAL PROTECTION PROCEDURES

CONCRETE WASHOUT AREA MANAGEMENT PRACTICES

Revised March 30, 2015

Prepared by: T.Martin	Revision Number 17.1	Date Issued: March 2015
Approved by		Date of Revision 2015-03-30
Disclaimer, special note, etc.		

1.0 Description

1. This procedure specifies best management practices for the implementation and use of concrete washout areas during all phases of construction.
-

2.0 Purpose

1. The purpose of this procedure is to ensure that any concrete, concrete fines or washout produced is disposed of in accordance with applicable contract specifications, legislations, permits and authorizations.
-

3.0 Legislation and Supporting Documents

- ESRA Contracts and Associated Documents
 - Applicable Manitoba Conservation Work Permits
 - Environment Act
 - Manitoba Stream Crossing Guidelines for the Protection of Fish and Fish Habitat (www.gov.mb.ca/waterstewardship/fisheries/habitat/sguide.pdf)
 - Freshwater Intake End-of-Pipe Fish Screen Guidelines – Department of Fisheries and Oceans 1995 (www.dfo-mpo.gc.ca/Library/223669.pdf)
 - Environmental Protection Guidelines - Appendix 7.1 of PR304 to Berens River All-Season Road Environmental Impact Assessment
 - Best Management Practices – Appendix 7.2 of PR 304 to Berens River All-Season Road Environmental Impact Assessment – August 2009
 - Fisheries Act (RSC., 1985, c. F-14)
-

4.0 Procedures

1. Concrete wash out areas should be designated at the pre-construction site meeting and approved by ESRA.
2. Concrete washout areas should be located a minimum of 100 meters away from the normal high water mark of a waterbody or watercourse and in a non porous soil location, as outlined in GR130.8.1.1
3. Concrete works shall be conducted in a manner that does not allow direct or indirect entry of concrete, concrete fines or concrete washout into the watercourse in accordance with GR130.15.1.20 and GR130.8.1.
4. As per tender submission, specification 330, Section 5.10.3. - Concrete truck wash out areas shall be at a dedicated site 100m away from nearby

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watercourses and waterbodies and shall be cleaned up at the end of the construction activities to the satisfaction of the Contract Administrator.

5. Where water for concrete washout activities is taken from a watercourse or waterbody, the Department of Fisheries and Oceans Freshwater Intake End-of-Pipe Fish Screen Guidelines, the Water Rights Act and other appropriate legislative and mitigative measures must be followed.
6. The contractor shall comply with all requirements as laid out in the Water Rights Act, including but not limited to:
 - a. The contractor must not release any excess cement and/or wastewater to surface waters, including wetlands.
 - b. Any containment area must not be connected to or drain to any surface waters, including wetlands.
 - c. Any wastewater generated on site must be contained within the construction site.
7. The contractor shall comply with all requirements as laid out in the Environment Act Licence No. 2929 regarding utilization, cleanup and disposal of water, waste and hazardous materials at the washout site.
8. All Concrete obtained and utilized for ESRA projects must be sourced from a concrete batch plant licensed in accordance with the Manitoba Environment Act.
9. The contractor shall comply with all requirements laid out in the Concrete Batch Plant licence.
10. The contractor shall follow guidelines as laid out in the Environmental Impact Assessment, including but not limited to:
 - a. Appendix 7.1, Section 12.7 – Reclamation and Site Cleanup:
The contractor will
 - begin reclamation and site cleanup as soon as construction has been completed;
 - recontour, stabilize, and re-vegetate disturbed areas to suit original conditions

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ENVIRONMENTAL PROTECTION PROCEDURES

DUST SUPPRESSION PRACTICES

March 30, 2015

Prepared by: T.Martin	Revision Number 18.1	Date Issued: March 2015
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Disclaimer, special note, etc.		

1.0 Description

1. This procedure specifies best management practices for the implementation and use of dust suppression on roadways during all phases of construction.
-

2.0 Purpose

1. The purpose of this procedure is to ensure that any chemical or material used on roads for suppression dust is done so in accordance with applicable contract specifications, legislations, permits and authorizations.
-

3.0 Legislation and Supporting Documents

- ESRA Contracts and Associated Documents
 - Applicable Manitoba Conservation Work Permits
 - The Environmental Act, CCSM c E125
 - Canadian Environmental Protection Act, 1999, SC 1999, c 33
 - Manitoba Stream Crossing Guidelines for the Protection of Fish and Fish Habitat (www.gov.mb.ca/waterstewardship/fisheries/habitat/sguide.pdf)
 - Environmental Protection Guidelines - Appendix 7.1 of PR304 to Berens River All-Season Road Environmental Impact Assessment
 - Best Management Practices – Appendix 7.2 of PR 304 to Berens River All-Season Road Environmental Impact Assessment – August 2009
 - Fisheries Act (R.S., 1985, c. F-14)
-

4.0 Procedures

1. Follow the manufacturer's specifications or other tested and approved procedures.
2. The application shall be limited to the roadway, driveway or parking lot.
3. Carefully monitor the application rate to ensure adequate coverage without pooling or runoff of products.
4. The amount of dust suppressant applied should not exceed the minimum amount required to effectively suppress dust.
5. There should be no evidence of excess product on the roadway.
6. The material must not migrate or run off the traveled portion of the roadway.
7. Dust suppressants must conform with the manufacturer's specifications and must not contain concentrations of contaminants that would not normally be found in the suppressant.

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8. Ensure that dust suppressants do not enter and contaminate water bodies, including surface and groundwater. Do not allow the product to leave the roadway.
9. Do not apply products to areas of roads that are subject to flooding.
10. Do not apply products if precipitation is occurring, or forecast to occur before the product sets or cures.

5.0 Working near water

- Observe a 50 metre setback from any watercourse.
- Apply as per the manufacturer's guidelines.
- Avoid over-application or application beyond the road shoulder.

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**ENVIRONMENTAL
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BORROW PIT DECOMMISSIONING

December 2015

1.0 Description

- .1 The excavation of a borrow pit shall be undertaken in areas outlined by the Contractor, Contract Administrator or by the East Side Road Authority (ESRA), and consist of the excavating of material, other than Solid Rock.
 - .2 The decommissioning of borrow pits shall include the removal or disposal of all site debris, appropriate sloping of borrow pit sides, removal of site access, and promoting of natural re-establishment of vegetation. The Contractor is responsible for ensuring compliance with all contract specifications, environmental legislation, permits and authorizations.
-

2.0 Purpose

- .1 The purpose of this procedure is to ensure that borrow pit decommissioning operations are conducted in accordance with applicable environmental legislation, regulations, guidelines, permits and contracts.
-

3.0 Legislation and Supporting Documents

- ESRA Contracts and Associated Documents
 - Applicable Manitoba Conservation Work Permits
 - The Manitoba Conservation Brush Disposal Guidebook – March 2005
 - The Manitoba Stream Crossing Guidelines for the Protection of Fish Habitat – May 1996
 - Environmental Protection Guidelines - Appendix 7.1 of PR 304 to Berens River All-Season Road Environmental Impact Assessment – August 2009
 - Fisheries Act (R.S., 1985, c. F-14)
 - The Manitoba Conservation Forest Management Guidelines for Terrestrial Buffers – 2010-2015
 - Manitoba Infrastructure and Transportation Standard Construction Specifications for Grading – January 2008
-

4.0 Procedures

4.1 Clearing and Grubbing

- .1 Where clearing and grubbing is required, it shall be completed prior to excavation of the borrow pit.

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- .2 Clearing and grubbing shall be limited to the site and associated access routes.
- .3 Clearing and grubbing shall only be undertaken between September, 1 of any year and April, 1 of the following year.
- .4 All clearing and grubbing operations shall occur in accordance with the Clearing and Grubbing Environmental Protection Procedure (EP1).

4.2 Brush Disposal

- .1 Disposal of cleared trees and brush must be done as directed or approved by the Contract Administrator. Disposal may involve burning, compacting, burying, windrowing and compacting, limbing and chipping.
- .2 All cleared vegetation and debris that is to be burned shall be piled and compacted in windrows. Windrows shall be compacted to lie as close to the ground as possible (maximum height of 0.6 of a meter) and shall be no closer than 1 meter to the bush line. Burn piles shall be located a minimum of 15 meters from other wood and brush piles and standing timber.
- .3 Merchantable wood that is identified by the Contract Administrator shall be stockpiled outside and immediately adjacent to the clearing limits. Stockpile sites shall be located within existing clearings or areas of non-merchantable timber. Stockpile sites shall not be located within 100 meters of a waterbody. Unless otherwise specified, all stockpiled material shall be removed from Crown land by April 30 following the date of issuance.
- .4 The burning of debris piles is not permitted in the spring or early summer to avoid disturbing small wildlife species which may have young in the piles or may have prepared nesting sites. The best and preferred option for wildlife is burning in the fall or winter.
- .5 No burning of debris piles shall occur on deep organic soils. Piles shall be a minimum of 15 meters away from standing timber and the high water mark of any waterbody.
- .6 Slash shall be piled in a manner that allows for clean, efficient burning of all material. Avoid mixing soil into the slash.
- .7 The Contractor shall obtain a burning permit for open fires between April 1 and November 15. Burning between November 16 and March 31 does not require a burning permit; however, the supervising officer shall be advised prior to any burning. All fires shall be completely extinguished by March 31
- .8 Ensure safety precautions are taken to keep the fire under control. Burn piles shall be monitored, to ensure that subsequent fire hazards

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are not present. Upon completion of the burn, burn piles shall be completely extinguished.

- .9 All occurrences of fire spreading beyond the debris piles shall be reported to the Contract Administrator and the Natural Resources District Supervisor.
- .10 All brush disposal operations shall occur in accordance with the Clearing and Grubbing Environmental Protection Procedure (EP1).

4.3 Borrow Pit Sloping

- .1 The borrow pit excavation shall be conducted as uniformly as possible to the depths and within the limits outlined by contract specifications, environmental legislation, permits and authorizations.
- .2 Upon excavation completion, stockpiled stripping shall be placed uniformly over the slopes and bottom of the borrow pit.
- .3 Side slopes shall maintain a slope of 4:1, unless otherwise permitted or directed.
- .4 Upon completion of the borrow pit excavation, the Contactor shall cap, level and trim the borrow pit prior to decommissioning the area. If burying woody debris, the area shall be capped with ½ metre of clay. Stockpiled topsoil shall be spread to promote natural re-establishment of vegetation.

4.4 Access Road Removal

- .1 The temporary access road to the borrow pit, and any equipment brought onto site, shall be removed or blocked as soon as possible following completion of the work or when it is no longer required.
- .2 Following the removal of the temporary access road, the site shall be restored as per section 4.3.4.

4.5 Re-Vegetation

- .1 Borrow pits will be left in a manner which promotes natural re-vegetation of the site.
 - .1 In cases where seeding is required, and when conditions permit, it shall commence immediately upon completion of capping and trimming operations. When conditions do not permit immediate seeding, ESRA will endeavor to ensure seeding is completed within the next growing season.
 - .2 Seeding operations shall not be carried out under adverse conditions of high winds, or ground covered with snow, ice, or standing water.

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ENVIRONMENTAL PROTECTION PROCEDURES

Quarry Site Selection and Requirements

March 31, 2016

Prepared by: Gordon Chamberlain	Revision Number	Date Issued: March 31, 2016
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Appendices

Appendix A – Quarry Site Plan

Prepared by: Gordon Chamberlain	Revision Number	Date Issued: March 31, 2016
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1.0 Description

1. This procedure specifies best management practices for the selection of quarry sites and quarry development.
-

2.0 Purpose

1. The purpose of this procedure is to outline criteria for site selection of quarries and their development.
-

3.0 Legislation and Supporting Documents

- ESRA Contracts and Associated Documents
 - The Fires Prevention and Emergency Response ACT CCSM. c. F80
 - The Forest Act CCSM. c. F150
 - The Wildfires Act CCSM c. W128
 - The Workplace Safety and Health Act – CCSM. c. W210
 - The Dangerous Goods Handling and Transportation Act CCSM. c. D12
 - Applicable Manitoba Conservation Work Permits
 - Environmental Protection Guidelines – Appendix 7.1 of PR 304 to Berens River All-Season Road Environmental Impact Assessment – August 2009
 - Explosives Act R.S.C., 1985, c. E-17
-

4.0 General

.1 General

- .1 The Contractor is to comply with all legislation, licences, authorizations and permits respecting the Project.
- .2 This quarry site selection and requirements procedure is to be read in conjunction with GR140.33 Quarry, GR140.34 Crushing, GR140.35 Drilling, GR140.36 Blasting, GR140.37 Magazine Licence and Explosive Storage, GR140.38 and .39 Explosive Transportation

5.0 Procedures – Site Selection Criteria

.2 Site Selection

All proposed quarries are subject to a site selection analysis by ESRA to confirm that the proposed quarry site will not interfere with sensitive features including heritage resources and known cultural sites; sensitive wildlife habitat including species at risk and migratory birds; surface water, fish or fish habitat; or other sensitive sites.

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- .1 No operator of a quarry is to establish or mine a quarry closer than 150 metres from a residence, unless the operator has established a vegetated berm or tree screen sufficient to shield the quarry from view from the residence.
- .2 With the exception of quarries that are contiguous with the road right-of-way, all quarry operations shall maintain a 100 metres buffer from the proposed road right-of-way.
- .3 Habitat occupied by endangered species shall be avoided (GR130.19.2).
- .4 Quarry site selection shall consider the proximity of sensitive sites including waterbodies, wildlife, heritage resources and culturally important sites. Setbacks will vary depending on circumstances however selected areas are to be a minimum of:
 - 1. 100m from a water course or water body (GR130.15.1.2)
 - 2. 100m buffer from any large stick nest, eagle nest, heron rookery, or any other sensitive wildlife area (GR130.19.9)
 - 3. 30m from heritage resources or identified cultural sites
 - 4. Other setbacks as required
- .5 Prior to development quarry sites shall be assessed for the potential of acid rock generation with the intent of not developing such sites.

6.0 Quarry Development

.3 General

- .3 The Contractor is to comply with all legislation, licences, authorizations and permits respecting the Project.
- .4 All operations are subject to the appropriate Acts and Regulations,
- .5 The Contractor is not to commence any mobilization or drilling activities until a Quarry Lease and Work Permit have been issued by the Province of Manitoba.
- .6 The Contractor’s Site Supervisor is to attend a pre-construction meeting with the ESRA Contract Administrator, at a mutually agreed upon date, to discuss the development of the quarry and establishment of the crushing operation. The meeting is to be initiated by the Contractor and be held in advance of commencing the field quarry establishment operations. Topics to be discussed will include the type and quantity of equipment to be used, sequence of work, traffic control, environmental requirements and other pertinent topics.

.4 Scope of Work

- .1 The development of the Quarry lease shall be in accordance with the attached site plan.
- .2 The major components of the Work are as follows:
 - a) Access Road Construction
 - b) Clearing and Grubbing
 - c) Blasting

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d) Gravel Crushing and Stockpiling of aggregate

- .3 A buffer zone shall be maintained between the excavation area and the registered quarry site boundary.

.5 Fuel Handling and Spill Response

- .1 All dangerous goods must be handled in accordance with The Dangerous Goods Handling and Transportation Act.
- .2 The Contractor shall ensure that due care and caution is taken to prevent spills, at all times.
- .3 Tank vehicles used to deliver fuel to the work site and/or used to move fuel around the work site must meet the requirements for highway tanks for the shipment of dangerous goods by road set out in CSA Preliminary Standard B620-98, *Highway Tanks and Portable Tanks for the Transportation of Dangerous Goods*
- .4 An updated list of key contacts and telephone numbers for reporting spills, problems, etc., is to be kept on-site at all times.
- .5 A Workplace Hazardous Materials Information System (WHMIS) file is to be maintained on-site for all hazardous materials at the work area. Prior to commencement of the Work, Material Safety Data Sheets (MSDS) are to be submitted to the Contract Administrator for all hazardous materials to be used on-site. No material shall be brought to the site without prior submission of a MSDS.
- .6 All spills shall be reported to the Contract Administrator within 24 hours. The spill report shall include the following:
 - Personnel responding to the spill
 - Material spilled
 - Cause of spill
 - Estimated amount of material spilled
 - Estimated area and volume of soil affected by the spill
 - Cleanup action undertaken
 - Means used to contain, transport and dispose of the materials involved
- .7 The Contractor shall designate a qualified supervisor(s) as the on-site emergency response coordinator(s). The emergency response coordinator(s) shall have the authority to redirect manpower and equipment in order to respond in the event of a spill.
- .8 Appropriate materials for containment and cleanup of any spill of dangerous goods or hazardous wastes shall be available on-site when such materials are present in the work area. Also designated personnel and first responders shall be familiar with the storage location and proper application of such containment and cleanup materials.
- .9 All spills shall be contained and cleaned up immediately by on-site personnel in accordance with the on-site emergency response and containment plan.

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.6 Quarry Site Development and Mobilization

.1 Description

- .1 This section of the covers the mobilization and demobilization of equipment, tools, materials, facilities and all things necessary for the Work including but not limited to site access, site work roads, site drainage, snow removal, clearing and grubbing, general site cleanup and restoration.

.2 Equipment/Materials

- .1 Equipment, implements, tools, materials, and facilities are to be of a size and type as required to complete the Work in the required time. The equipment to be used for the Work is to include, but may not be limited to, bulldozers, front-end loaders, rock trucks, graders and backhoes.
- .2 All equipment, implements, tools, plants, materials, and facilities are to be kept in good working order. The Contractor is required to have sufficient standby equipment available at all times, as required.

.3 Submittals

- The Contractor shall submit to ESRA a site plan showing the location of the proposed crushing operation.
- The Contractor is to provide ESRA at least eleven working days advance notice of the location of the crushing operation. The notice to ESRA is to include a drawing of the working area including the location of the initial extraction area, the progression of the extraction area and the location of sheds, offices, toilets and other temporary structures, drainage and stockpile areas. The suitability of the working area is to be subject to approval of ESRA.
- The Contractor is to provide the ESRA Contract Administrator with at least six working days advance notice of the intention to commence production of aggregates. The notice shall include a preliminary schedule for the clearing, establishment of access, relocation of equipment, establishment of water and wastewater services, blasting and commencement of crushing operation.
- Prior to preparatory work for each blast the Contractor is required to submit a blast plan to the Contract Administrator including such information as
 - the location, depth and area of each blast;
 - diameter, depth, pattern and inclination of blast holes;
 - the type, strength, amount, column load and distribution of explosives to be used per hole, per delay and per blast;
 - the sequence and pattern of delays and the description and purposes of any special methods to be adopted.

.4 Construction Methods

- .1 Site work roads are to be confined to the Quarry Lease with the exception of the quarry access road.
- .2 The Contractor is responsible for maintaining the site and promoting surface water runoff to minimize ponding after rainfall events. In the event that ponding

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does occur, it shall be discharged or removed through erosion and sediment control devices, as accepted by the Contract Administrator.

.7 Clearing and Grubbing

.1 Description

- .1 Clearing and grubbing consists of the removal and disposal of all tree stumps, roots, logs, shrubs, grass, weeds, fallen timber and other surface litter wherever they occur within the crushing operation and stockpile sites.
- .2 Burning of debris piles will be required when large accumulations of limbs and tops are not desired as fuelwood or for use as alternate forest products. Piles left for long periods of time will become a fire hazard.
- .3 All persons involved in clearing and grubbing activities shall follow safe work practices and procedures regarding chain saw operation, fueling, personal protective equipment, safety features, and transportation and storage.
- .4 All persons involved in tree felling shall possess a training certificate for chainsaw and tree felling operations.

.2 Construction Methods

- .1 Prior to the production of aggregates, the source of supply is to be cleared, grubbed and stripped of overburden to only the extent and manner necessary as approved by ESRA.
- .2 Brush disposal must be in accordance with the ***Manitoba Conservation Brush Disposal Guidebook – March 2005.***
- .3 Within the limits as directed and staked out by ESRA, all brush and trees, except those designated by ESRA to be saved, is to be cut level with the ground, and all surface debris, excluding merchantable timber but including fallen timber, slash limbs, brush, grass and weeds, is to be disposed as directed or permitted by ESRA.
- .4 Within areas where excavation will be made and where the embankment grade is less than one metre above the original ground level, all stumps and roots are to be grubbed out.
- .5 Trees are to be felled towards the centre of the area to be cleared. Any brush falling outside the area to be cleared is to be moved back to the work area and disposed as directed by ESRA. The Contractor is to take all precautions against the damage to other trees, traffic structures, pole lines or property in the felling of trees. The Contractor is liable for any damages occurring in the performance of this work.
- .6 Timber from which forest products can be manufactured is to be cleared of limbs and piled on the quarry site as directed or permitted by ESRA. Usable timber is to be the property of the Contractor and is to be removed from the work area.
- .7 A buffer zone is to be maintained between the excavation area and the registered quarry site boundary
- .8 No operator of a quarry is to establish or mine a quarry closer than 150 metres from a Provincial Trunk Highway, Provincial Road or residence,

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- unless the operator has established a vegetated berm or tree screen sufficient to shield the quarry from view from the road or residence.
- .9 The burning of debris piles is not permitted in the spring or early summer to avoid disturbing small wildlife species which may have young in the piles or may have prepared nesting sites. The best and preferred option for wildlife is burning in the late summer or fall.
- .10 No burning of debris piles shall occur on deep organic soils. Piles shall be a minimum of 15 metres away from standing timber and the high water mark of any waterbody.
- .11 Slash shall be piled in a manner that allows for clean, efficient burning of all material. Avoid mixing soil into the slash.
- .12 A burning permit is required, for open fires, between April 1 and November 15. Burning between November 16 and March 31 does not require a burning permit; however, the supervising officer must be advised prior to any burning. All fires must be completely extinguished by March 31.
- .13 Ensure safety precautions are taken to keep the fire under control. Burn piles must be monitored, to ensure that subsequent fire hazards are not present. Upon completion of the burn, burn piles must be completely extinguished.
- .14 All occurrences of fire spreading beyond the debris piles must be reported to the District Supervisor.

7.0 Quarrying and Crushing Operations

.1 Description

- .1 This subsection addresses those activities associated with the day to day operation of the quarry site, including but not limited to blasting, crushing and stockpiling of materials.

.2 Materials

- .1 The produced aggregate and supplementary granular material shall consist of sound durable particles of crushed rock, gravel, stone, sand and fines free from sod, roots and organic material.
- .2 The aggregate shall be well-graded and shall not vary from the maximum to minimum of the specification ranges for consecutive tests.
- .3 Traffic gravel shall be subject to testing at the time the material is being produced in accordance with ESRA instruction. The Contractor shall place the processed aggregate in a separate stockpile until satisfactory production tests have been completed. Rejected material shall be immediately moved either to the vicinity of the feed end of the crusher for reprocessing or to an area completely removed from any approved material.
- .4 The addition of supplementary granular material to a quarried material shall not be permitted.
- .5 Crushers shall, unless otherwise approved by ESRA, be equipped with an approved mechanical sampling device for obtaining samples off the main delivery belt.

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.3 Submittals

- .1 In accordance with Section 25 of the Manitoba Provincial **Quarry Minerals Regulation – M162** the holder of a quarry shall provide the Mining Recorder with:
 - an annual statement of the total quantity of quarry mineral produced from the quarry lease;
 - a royalty payment;
 - a rehabilitation levy payment; and
 - the annual rent, no later than the 30th day following the anniversary date of the lease.
- .2 Only quarry minerals that are **produced and removed** from the quarry shall be included within the annual statement.
- .3 Quarry mineral removed by a contractor for a public purpose is **exempt** from payment of royalties where the public agency certifies in an **exemption certificate** prepared on a form furnished by the recorder that the quarry mineral has been used for a public purpose.
- .4 Pursuant to subsection 6.3.1, a rehabilitation levy of **10¢ per tonne** is required for production of aggregate quarry mineral (** Every operator of an aggregate quarry shall remit to the recorder a rehabilitation levy equal to the product of the number of tonnes of aggregate quarry mineral produced multiplied by .10). This only applies to quarry minerals that are **produced and removed** from the quarry lease (the lease holder does not pay this fee as long as the quarry mineral remains stockpiled on the quarry lease).

.4 Construction Methods

- .1 Quarry operations shall not be permitted within 150 metres of a Provincial Trunk Highway, Provincial Road or Residence.
- .2 The Contractor is required to ensure all fuel storage and equipment servicing areas are located a minimum of 100 metres from any waterbody.
- .3 If authorized to work in or near a waterbody the Contractor is required to ensure that any work is done in accordance with the **Manitoba Stream Crossing Guidelines for the Protection of Fish and Fish Habitat, May 1996**.
- .4 The Contractor may be subject to operational restrictions if in close proximity to sensitive wildlife receptors such as caribou calving areas as required by ESRA and/or as provided by permit.
- .5 The Natural Resource Officer in Lake Winnipeg East, must be notified no less than one week prior to completion of operations to allow for final inspection of the operation.
- .6 All operations must be completed to the approval of the local Natural Resource Officer.
- .7 Immediately following blasting, and at any time during the quarry operation, all excavated faces which, in the opinion of the Contract Administrator and/or the Contractor, are unsafe or appear to endanger persons, work, or property, shall be scaled and the loose rock shall be removed from the excavation.

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- .8 The active excavation face is to be maintained at stable slopes, to the satisfaction of the Contract Administrator.
- .9 The Contractor is required to adhere to the maximum peak particle velocity and minimum set back distances as recommended in the ***Guidelines for the Use of Explosives In or Near Canadian Fisheries Waters, 1998.***
- .10 The Contractor is required to minimize disturbance to vegetation and install erosion and sediment control measures to as directed by the Contract Administrator.
- .11 The Contractor is to maintain the quarry site in a tidy condition and free from the accumulation of debris.
- .12 The suitability and location of stockpile sites, as well as access to the sites, including sites at the crushing operation or elsewhere shall be subject to the approval of ESRA.
- .13 The Contractor is required to provide stockpile sites, which are level, well-drained and have adequate bearing capacity to support the weight of the material which is to be placed thereon.
- .14 Stockpiles are to be constructed at locations and by methods that will neither interfere with nor damage utility lines or other utility infrastructure.
- .15 Access to stockpiles shall be readily available at all times
- .16 The Contractor is to clear the stockpile sites of all debris, vegetation, rocks, snow and other objectionable material prior to placing any aggregate on the stockpile sites.
- .17 The pile of material at the end of the discharge belt shall not be allowed to build up to a height greater than 3 metres.
- .18 Stockpiling is to be performed using loaders, trucks or stacking conveyors.
- .19 When trucks or loaders are used, loads shall be spot dumped uniformly over the entire stockpile area. The aggregate shall be placed in layers not exceeding 1.25 metres in depth. Each layer shall be completed and levelled prior to placing the succeeding layer.
- .20 If more than one material is to be stockpiled at the same site, each stockpile shall be separated by a sufficient distance to allow equipment access to all sides of the stockpile.
- .21 Aggregates which become mixed with others of different kind, class, source or gradation or which become contaminated by foreign material will be rejected and shall be promptly removed from the site of work.
- .22 The completed stockpiles shall be neat, regular in form and constructed to occupy the smallest feasible area.

8.0 Decommissioning Phase

- .1 A Decommissioning Plan is to be developed in consultation with ESRA and in accordance with all applicable Legislation and Regulations.

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Contractor

Date

Environment Officer

Date

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**ENVIRONMENTAL
PROTECTION
PROCEDURES**

**SITE SELECTION –
TEMPORARY WORKS**

Revision April 18, 2016

1.0 Description

- .1 This procedure specifies best management practices for the selection of temporary works sites, including: camps and laydown areas, general temporary works, and access roads.
-

2.0 Purpose

- .1 The purpose of this procedure is to outline criteria for selection of temporary works sites to prevent and/or minimize effects during their development, operation, and decommissioning.
-

3.0 Legislation and Supporting Documents

- ESRA Contracts and Associated Documents
 - Applicable Manitoba Conservation Work Permits
 - Applicable Fisheries and Oceans Canada (DFO) Authorizations or Letters of Advice
 - The Manitoba Stream Crossing Guidelines for the Protection of Fish Habitat – May 1996
 - Temporary Stream Crossing Operational Statement, Version 1.0 – Fisheries and Oceans Canada 2008
 - The Manitoba Conservation Forest Management Guidelines for Terrestrial Buffers – 2010-2015
 - Fisheries Act (R.S., 1985, c. F-14)
 - The Environment Act, CCSM c E125
 - The Heritage Resources Act CCSM. c. H39.1
 - The Wildlife Act CCSM. c. W130
 - The Endangered Species Act CCSM. c. E111
 - Species at Risk Act S.C 2002, c. 29
 - Environmental Protection Guidelines - Appendix 7.1 of PR 304 to Berens River All-Season Road Environmental Impact Assessment – August 2009
 - Project 4 – All-Season Road Connecting Barends River to Poplar River First Nation Environmental impact Statement– February 2016
-

4.0 Procedures

Use the following citing criteria for temporary works where appropriate.

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Selection Criteria for Temporary Construction Sites	
Camps and Laydown Areas	The Contractor shall submit details of the proposed camp and/or laydown area for review and acceptance by the Contract Administrator in accordance with the General Conditions. Submittals shall include marked up Drawings, and coordinates of the proposed camp and/or laydown area including access, and shall provide sufficient detail to demonstrate full compliance with these specifications (GR130.3.1).
	No work is to begin without having the proper permits or authorizations in hand for said work (GR130.4.1) such as provincially issued Work Permits.
	The Contractor shall adhere to conditions specified in any and all permits, authorizations, licences, approvals and letters of advice or directive issued for the Work (GR130.4.2)
	Avoid habitat occupied by endangered species (GR130.19.2)
	Avoid habitat defined as a Caribou calving area. No operations with 2 km of known caribou calving areas from May 15 to July 1 of any given year, unless by prior approval (EP14 – Wildlife 4.13)
	Avoid areas identified as nesting sites of colonial birds
	Avoid areas of cultural and archaeological sensitivity as defined by traditional knowledge surveys and studies
	Preference will be given to areas with natural drainage and low lying areas will be avoided
	Preference will be given to areas in the proximity of current construction activities
	Preference will be given to areas in the proximity of existing access routes and roads
	Preference will be given to areas that are flat as to reduce the work needed to level the area
	Preference will be given to areas that minimize the risk of exposure to wildfires (GR130.20.8)
	Avoid altering existing trails, portages, and other travel routes (Project 4 – EIS 3.3.3)
	Preference will be given to areas that minimize haul distances resulting in reduced potential for noise, equipment emissions and dust (Project 4 – EIS 7.2.3)
	Area should be located within 500 m of the proposed all-season road right-of-way (Project 4 – EIS 3.3.4)
	Selected areas are to be a minimum of 100 m from a water course or water body (GR130.8.5, GR130.15.1.2, & EP6 - Working Within or Near Fish Bearing Waters 4.7)
Material, cleared vegetation, stockpiles and/or waste shall not be deposited or stored within 100 m of a water body, unless approved by the Contract Administrator (GR130.15.1.1 & EP6 Working Within or Near Fish Bearing Waters 4.4)	
Construction activities shall not occur within 100 m of a watercourse (GR130.15.1.2). Where a 100 m distance is not possible, a buffer zone of undisturbed vegetation between the construction activities and the watercourse shall be established. The buffer zone width shall be established according to the following formula: $Width = 10\text{ m} + 1.5(\text{slope gradient})$ or 30 m, whichever is greater (GR130.15.1.3)	

	Maintain a 100 m buffer from any large stick nest, eagle nest, heron rookery, or any other sensitive wildlife area (GR130.19.9 & GR130.17.1.5)
	Clearing and grubbing shall only be undertaken between September 1 of any year, and April 1 of the following year (GR130.17.1.2); conduct pre-clearing migratory bird nest surveys during the nesting season (Project 4 – EIS Table 9.41)
	Grubbing activities shall end 2 m from any standing timber (GR130.17.3.1)
	Windrows shall be no closer than 1 m to the bush line. Burn piles shall be located a minimum of 15 m from other wood and brush piles and standing timber, and the high water mark of any water body
	Size of blasting areas and the magnitude of blast charges will be limited in the vicinity of sensitive receptors (e.g., use more holes with smaller charges) (Project 4 – EIS 9.2.3)
	Petroleum storage shall be a minimum distance of 3 m from a property line or building and 15 m horizontally from hydroelectric poles and lines (EP2 – Petroleum Storage 4.11)
	Selected areas are to be a minimum of 100m from a water course or water body (GR130.15.1.2)
	<p>Other: – Tender packages issued to contractors include mapping of “areas of non-disturbance” that are off-limits and not to be developed for temporary or permanent works. Areas of non-disturbance include heritage and cultural resources, sensitive environmental sites for wildlife or vegetation, trapper cabins or other structures and include appropriate setbacks as referenced from Manitoba Conservation Forest Practices Guidebook Forest Management Guidelines For Terrestrial Buffers: Table 1 (GR130.17.1.5) Table 2 (GR130.17.1.4).</p> <p>Guidance material provided to contractors to support contract submittals (including plans for camps and laydown areas) are encouraged to use existing disturbed areas, flat terrain and avoid areas of high water table where practical.</p>

Temporary Works General	All Temporary Works are subject to approval by the Contract Administrator before development by the Contractor. The Contact Administrator ensures that the temporary works do not conflict with known sensitive features (i.e. heritage and cultural sites, sensitive wildlife areas such rookeries and nesting colonies, large stick nests, species at risk habitat, trapper cabins) or are developed during sensitive timing windows. Temporary works (camps, laydowns, quarries) are subject to provincial Crown Lands Work Permits and additional restrictions may be incorporated in these permits if site specific conditions require. (GR130.4)
Access Roads	<p>Existing stream crossings will be utilized whenever possible and the number of temporary stream crossings will be minimized (GR130.15.5). If a temporary stream crossing is necessary, requirements stated in GR130.15 (Working within or near water)and GR130.16 (Erosion and Sediment Control) will be adhered to</p> <p>Maintain a buffer from sensitive habitat*(GR130.17.1.5)</p> <p>Maintain a buffer from physical features (i.e trapper cabins)*(GR130.17.1.4)</p> <p>Maintain a 100m buffer from any large stick nest, eagle nest, heron rookery, or any other sensitive wildlife area (GR130.19.9)</p> <p>Avoid habitat occupied by endangers species (GR130.19.2)</p> <p>Avoid habitat defined as a Caribou calving area</p> <p>Avoid areas defined as nesting sites of colonial birds</p> <p>Avoid areas of cultural and archeological sensitivity as defined by traditional knowledge surveys and studies (GR130.18)</p> <p>Avoid areas of known permafrost where possible (insulating top cover of organic soil will be employed if unavoidable) (GR130.17.2.1)</p> <p>Avoid areas in proximity to communities in order to comply with municipal and/or First Nation noise bylaws (GR130.12.2)</p> <p>Avoid areas that will result in changes to existing trails, trap lines, portages, and other travel corridors (GR130.17.3.3)</p> <p>Preference will be given to areas in the proximity of current construction activities</p> <p>Preference will be give to areas with winter access for clearing purposes (GR130.17.1.2)</p> <p>Preference will be given to locations for which the contractor can limit public access (GR130.8.8)</p> <p>Preference will be given to terrains which can be restored to their original condition (GR130.8.7)</p> <p>Preference will be given to areas where the terrain allows from the straightest and shortest</p>

	possible route
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*Manitoba Conservation Forest Practices Guidebook Forest Management Buffers: Table 1.Guidelines For Terrestrial

**Maintain a buffer from physical features as defined by the Manitoba Conservation Forest Practices Guidebook Forest Management Guidelines For Terrestrial Buffers: Table 2.

Appendix 5-4

ESRA's GR130s Environmental Protection Specifications

GR130 – ENVIRONMENTAL PROTECTION SPECIFICATIONS

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GR130 – ENVIRONMENTAL PROTECTION SPECIFICATIONS

GR130.1 DESCRIPTION

- .1 This Specification covers general requirements for the protection of the Environment.

GR130.2 ENVIRONMENTAL PROTECTION PLAN

- .1 The Contractor shall plan and implement the Work of this Contract in accordance with the Specifications and Drawings.

GR130.3 SUBMITTALS

- .1 The Contractor shall submit details of the proposed Designated Areas for review and acceptance by the Contract Administrator in accordance with the General Conditions. Submittals shall include marked up Drawings, and coordinates of the proposed Designated Areas including access, and shall provide sufficient detail to demonstrate full compliance with these specifications. Designated Areas requiring submittals are:
 - .1 laydown and staging area(s);
 - .2 waste storage area(s);
 - .3 fuel storage and refuelling area(s);
 - .4 equipment servicing area(s);
 - .5 work camp(s);
 - .6 parking area(s);
 - .7 cement batch plant(s);
 - .8 cement washout area(s); and
 - .9 others as required by the Contract Administrator.
- .2 The Contractor shall submit for review and acceptance by the Contract Administrator 10 business days in advance of the start of work:
 - .1 Environmental Emergency Plan for Spill Response and Remediation;
 - .2 Material Safety Data Sheets;
 - .3 A Water Quality and Fish Protection Plan including but not limited to:
 - Construction Phase Erosion and Sediment Control measures;
 - In-water works;
 - Water quality monitoring;
 - Isolation plan;
 - Fish salvage and;
 - Mussel salvage.
 - .4 monthly reports providing the records as specified in GR130.5 of this Specification;
 - .5 Waste Management Plan;
 - .6 Material Management Plan in the event of an Unplanned Shutdown;
 - .7 Problem Wildlife Management Plan;

- .8 Cement Washout Plan;
- .9 Petroleum Storage and Equipment Fuelling and Servicing Plan;
- .10 Evacuation and Emergency Preparedness Plan in the Event of a Wildfire;
- .11 Copies of all required approvals, clearances, permits, licences, and certificates issued to the contractor, or their sub-contractors, including but not limited to:
 - Batch Plant Environment Act Licence;
 - Fish collection permits;
 - Septic permits;
 - Crown Lands Well permit.
- .12 Other submittals as required.

GR130.4 ENVIRONMENTAL APPROVALS AND AUTHORIZATIONS

- .1 No work is to begin without having the proper permits or authorizations on hand for said work.
- .2 The Contractor shall adhere to conditions specified in any and all permits, authorizations, licences, approvals and letters of advice or directive issued for the Work.
- .3 Where ESRA applies for permits, authorizations, licences, approvals and letters of advice or directive to any regulatory body to facilitate the Contractor's work plan, there shall be no award for damages, delay claims or other costs by the Contractor on ESRA as a result of delays in issuance or rejections of applications.

GR130.5 RECORD KEEPING

- .1 The Contractor shall maintain a record file at the Site in which all relevant information relating to materials handling, spills, leaks, releases, and the implementation and adjustment of the environmental protection measures shall be documented. The Contractor shall maintain a copy of these records for a minimum of 5 years. Relevant information and/or significant events to be documented and provided to the Contract Administrator in a timely fashion may include, but are not limited to:
 - .1 all accidents, spills, leaks, and releases and the reporting and clean-up procedures used;
 - .2 any reviews, improvements and adjustments to the environmental protection measures;
 - .3 details of all environmental training sessions, including the schedule of these sessions and the names of participants;
 - .4 a full inventory of dangerous goods brought onto the site;
 - .5 a full inventory of all hazardous wastes encountered on the site;
 - .6 records of all waste hauled from the site for disposal, including the location, name and description of the disposal facility and waybills/manifests;
 - .7 records of all material hauled from the site for recycling, including the location, name and description of the person or facility the material was delivered to;
 - .8 records of all fuel transported and stored at the site;
 - .9 records of equipment inspections and maintenance;

- .10 records of all public complaints;
- .11 records of actions taken to remove deleterious substances and debris from watercourses;
- .12 records of annual use of pesticides; and
- .13 wildlife encounters and/or management measures employed.

GR 130.6 GENERAL

- .1 All construction traffic shall be restricted to the Site, existing roads, or approved access routes.
- .2 The Contractor shall employ all reasonable precautions to prevent the general public from entering the Site.
- .3 The Contractor shall maintain equipment and vehicles in good working order and shall restrict the servicing of equipment to Designated Areas. Where equipment and vehicles cannot be moved to the Designated Area, spill containment is required.
- .4 The design of temporary works shall be provided to the Contract Administrator and shall be approved in advance of construction. There may be cases where community concerns and/or changing regulatory schemes may require the Contractor to design temporary works beyond what is outlined in regulation or in these General Requirements. If costs associated with these additional temporary works are not identified prior to the Submission Deadline, GC7.00 will apply.
- .5 In the design of temporary works, the Contractor shall assume, unless otherwise advised in writing by the Contract Administrator, that all watercourses are navigable and shall design temporary works in accordance with this premise. Where navigability cannot be provided, the Contractor shall provide a plan that outlines warning signage and markers and alternate means of passage for approval by the Contract Administrator.

GR130.7 INSPECTIONS

- .1 Periodic inspections of the site will be conducted to ensure that the Site is managed in accordance with the specifications. The Contractor shall address inadequate environmental protection measures, remediate contamination and restore site conditions to the satisfaction of the Contract Administrator.
- .2 As sites are decommissioned the CA will retain a third party independent environmental consultant to assess these sites. The contractor shall remediate, including appropriate disposal of contaminated material to the satisfaction of the CA.

GR130.8 DESIGNATED AREAS AND ACCESS

- .1 The Contractor shall construct and maintain Designated Areas for their intended purpose and in a manner which provides for inspection including the regular clearance of snow.
- .2 The Designated Areas shall be contained within the Site unless otherwise authorized by the Contract Administrator.
- .3 The topsoil in Designated Areas shall be stripped and stockpiled for later reuse in site restoration. Granular material shall be placed to ensure all weather accessibility.

- .4 Locations within Designated Areas where equipment, hazardous material and/or wastes will be stored or maintained shall be underlain with at least 30 cm of impermeable soil or approved equal and lined with an impermeable groundsheet to contain spills and minimize cleanup costs. Hazardous materials must also comply with the additional requirements outlined in GR 130.9.2.4.4.
- .5 Designated Areas shall be located a minimum of 100 metres from any waterbody.
- .6 Access to Designated Areas from a public roadway shall be such that it is not a safety hazard to the employees or the general public.
- .7 The Contractor shall restore the Designated Areas and access roads not required for on-going maintenance to their original condition.
- .8 The Contractor shall ensure access to Designated Areas is restricted to prevent access of unauthorized personnel.

GR130.9 MATERIALS HANDLING, STORAGE AND DISPOSAL

GR130.9.1 General

- .1 All construction areas shall be kept clean and orderly at all times during and at completion of construction.
- .2 The Contractor shall take all reasonable measures to prevent compounds harmful to human health or the environment from being released.
- .3 All unused, partially used and waste material shall be removed and properly disposed of prior to the end of the Contract.
- .4 Materials required for spill containment and clean up shall be available at all locations where construction related activities occur.

GR130.9.2 Handling and Storage of Wastes

GR130.9.2.1 Domestic Solid, Demolition and Construction Waste

- .1 Waste material shall be recycled to the degree that is economically and practically feasible.
- .2 There shall be no dumping of waste on or off the construction site.
- .3 Different waste streams shall not be mixed.
- .4 Waste shall be stored in Designated Areas for each worksite and camp as approved by the Contract Administrator. At no time during construction shall domestic solid, demolition, or construction waste be permitted to accumulate at any other location on the work site.
- .5 All waste materials shall be collected and contained in marked containers appropriate to the waste classification until removed from the site for recycling or disposal as approved by the Contract Administrator.

- .6 All solid waste generated at the camp must be disposed of at a registered waste disposal ground or recycling facility. On-site burning or burial is not permitted.

GR130.9.2.3 Domestic Sewage and Grey Water

- .1 All sewage and grey water shall be collected through the provision of a wastewater management system in compliance with the *Manitoba Regulation No. 83/2003* respecting *Onsite Wastewater Management Systems* or any future amendments thereof.
- .2 All collected sewage shall be removed from the site at least once every seven (7) days, where transportation permits, by a registered sewage hauler and disposed of at a Designated licensed wastewater treatment facility.

GR130.9.2.4 Dangerous Goods/Hazardous Waste Handling and Disposal

- .1 Dangerous goods/hazardous wastes shall be identified and shall be handled in accordance with *The Dangerous Goods Handling and Transportation Act* and Regulations, WHMIS and any other applicable regulation.
- .2 All dangerous goods/hazardous waste storage areas shall have the top soil stripped and lined with at least 30 cm of impermeable material and an impermeable ground sheet in a manner as to minimize the spread of any leak or spill. Top soil shall be stored and used in the restoration of the area.
- .3 All dangerous goods/hazardous wastes shall be stored with a storage vessel or constructed dyking system designed to contain 110% of the total volume. Where dyke shall be used it shall be designed and maintained in such a manner so as to capture spills. Accumulated fluid in the dyke is to be disposed of as hazardous waste unless test results from an approved accredited lab demonstrate otherwise.
- .4 A WHMIS file shall be maintained on-site for all hazardous materials at the work area. Prior to commencement of the Work Material Safety Data Sheets (MSDS) shall be submitted to the Contract Administrator for all hazardous materials to be used on-site. No material shall be brought to the site without prior submission of a MSDS.
- .5 The Contractor shall have staff trained and certified in the handling of dangerous goods present on-site whenever dangerous goods are being transported, stored or utilized for the performance of the work. All staff responsible for the handling of dangerous goods and hazardous wastes must also be trained in emergency spill response and containment.
- .6 All dangerous goods/hazardous waste shall be confined to Designated Areas and stored in a secure manner to prevent access by unauthorized personnel.
- .7 Disposal of hazardous waste shall only be at hazardous waste facilities licensed under *The Dangerous Goods Handling and Transportation Act*.
- .8 All hazardous waste stored at Designated Areas shall be removed from the site at least once every seven (7) days or as approved by the Contract Administrator. Should access to the site pose an issue, all hazardous waste shall be stored in an approved storage vessel until transportation of waste can be accomplished.
- .9 All used oil shall be stored in leak-proof drums with tight fitting lids or tanks until removed to a registered waste oil facility or hazardous waste disposal facility. Outdoor storage of

used oil in drums must be stored in such a manner so as to provide for secondary containment, prevent corrosion and damage from collision and prevent a spill to the environment.

- .10 Used oil filters shall be drained, placed into suitable storage containers and disposed of at approved facilities. The oil drained out of the used filters shall be collected and handled in the same manner as used oil.
- .11 A pesticide use permit shall be obtained prior to the application of pesticides. The Contractor shall ensure that all pesticides are applied by a licensed commercial applicator and adhere to all conditions specified in *Manitoba Regulation 94/88* respecting *Pesticides* or future amendments thereof and associated permits. The Contractor is to submit a completed post seasonal form to the Contract Administrator at Substantial Performance and at the end of each calendar year, confirming that the terms and conditions of the permit have been satisfied.

GR130.9.2.5 Petroleum Handling and Storage

- .1 Fuel tanks are not to be used without a proper authorization and documentation of such (Permit, etc.)
- .2 All petroleum handling, and storage shall comply with *Manitoba Regulation 188/2001* respecting *Storage and Handling of Petroleum Products and Allied Products* or future amendments thereof, the Manitoba Fire Code and all other applicable requirements.
- .3 Petroleum products shall be transported in accordance with the Manitoba Provincial *Dangerous Goods Handling and Transportation Act*.
- .4 Fuelling of storage tanks and mobile equipment is to take place within Designated Area(s) for fuel storage and fuelling.
- .5 In the event that a piece of equipment must be fuelled or maintained outside a Designated Area, the fuel shall be transported in approved containers.
- .6 All fueling activities shall use spill trays and/or polyethylene (HDPE) groundsheets to contain the fuel and prevent fuel from being spilled onto the ground surface. Fuelling areas should be kept clean and free of snow and other materials so as to allow clear access and routine inspection and leak detection.
- .7 Tank vehicles used to deliver fuel to the worksite and/or to refuel around the worksite shall meet the requirements for highway tanks for the shipment of dangerous goods by road set out in CSA Preliminary Standard B620-98, *Highway Tanks and Portable Tanks for the Transportation of Dangerous Goods* or any future amendment thereof.
- .8 Equipment shall not be refueled from fuel dispensed from a watercraft.
- .9 Petroleum storage shall be a minimum of 3 metres from property lines or buildings, 15 metres horizontally from hydroelectric poles and lines, 1 metre from other storage tanks and 100 metres from any watercourse.
- .10 Petroleum storage tanks shall be grounded and the dispensing tank shall be attached with a bonding cable to an appropriate location on the receiving tank prior to commencement of fueling.

- .11 Petroleum products shall be labeled as to their contents and stored and handled within Designated Areas which clearly identify the materials present.
- .12 Access to the Designated Area(s) for petroleum storage areas shall be restricted to authorized personnel.
- .13 Storage tanks shall be secured.
- .14 Signs shall be posted in Designated Area(s) for fuel storage and refueling including:
 - .1 Materials identification and hazard placards;
 - .2 Storage tank permit(s);
 - .3 Spill response procedures including contact list in the event of a spill;
 - .4 Clean up procedures;
 - .5 Fuelling procedures; and
 - .6 Access restrictions.
- .15 Personnel involved in the handling and storage of fuels shall have WHMIS and spill response training.
- .16 Combustible engines shall be shutdown during fueling.
- .17 No smoking and no open flames are permitted at storage tanks or the Designated Area for fuel storage and refueling at any time.
- .18 Only above ground storage tanks shall be used for the storage of bulk petroleum products. All storage tanks over 230 litres must be double-walled tanks meeting the standard defined under the *Canadian Council of Ministers of the Environment Environmental Code of Practice for Aboveground and Underground Storage Tank Systems Containing Petroleum and Allied Petroleum Products*. All storage tanks over 5000 litres require a permit and must meet the requirements under the *Manitoba Regulation 188/2001 respecting Storage and Handling of Petroleum Products and Allied Products* or any future amendments thereof,
- .19 Storage tanks shall be equipped with overfill protection and spill containment at the transfer area(s) in the system design approved by the Contract Administrator.
- .20 Product inventory shall be taken weekly by the owner/operator of all above-ground storage tanks greater than 5000 litres and retained for inspection upon request.
- .21 Barriers shall be installed to encircle petroleum storage tanks to prevent collisions with vehicles and heavy equipment. The mass, height and setback of the barricades are to be determined by the size of equipment on site and shall be operable under conditions of snow accumulation.
- .22 All petroleum storage containers and tank vehicles shall be inspected daily for leaks and spillage. Damaged or leaking fuel storage containers shall be promptly removed from the Site.

- .23 Secondary containment shall be incorporated at locations where stationary equipment is used.
- .24 Fuel barrels shall be transported in accordance with the *Dangerous Goods Handling and Transportation Act* and be securely fastened to vehicles during transport.
- .25 Fuel transfers must be monitored.
- .26 All vehicles hauling fuel shall carry materials and equipment for emergency spill response.
- .27 All petroleum product storage sites and mobile transportation units shall, at all times, be equipped with appropriate categories of equipment and volumes of fire suppression products.

GR130.10 SPILLS AND REMEDIATION AND EMERGENCY RESPONSE

- .1 All spills or accidental releases of petroleum products or other hazardous substances to a watercourse, to federal lands, and/or as specified by the *Manitoba Regulation 439/87* respecting *Environmental Accident Reporting* or future amendments thereof shall be immediately reported to Manitoba Conservation and the Contract Administrator.

It is the responsibility of the Contractor to conduct appropriate soil testing on Designated Area(s) and contract work sites prior to the mobilization of equipment to site to establish baseline conditions. The Contractor will be held responsible for any contamination unless evidence to the contrary can be provided by the Contractor.

- .2 All environmental emergencies shall be reported to the Contract Administrator within 24 hours whether it was necessary to report the spill to Manitoba Conservation or not. The report shall include the following:
 - .1 Location of spill or release (GPS coordinates);
 - .2 Personnel responding;
 - .3 Materials spilled;
 - .4 Cause of spill;
 - .5 Estimated quantity of released material;
 - .6 Estimated area and volume of soil affected;
 - .7 Cleanup action undertaken; and
 - .8 Means used to contain, transport and dispose of the materials involved.
- .3 The Contractor shall designate a qualified on-site emergency response coordinator(s) who shall be on site at all times that work is being undertaken. The emergency response coordinator(s) shall have the authority to redirect manpower and equipment in order to respond in the event of a spill, release or other environmental emergency.
- .4 All spills or releases of petroleum and other products shall be contained, treated and disposed of in accordance with the *Manitoba Regulation 188/2001* respecting the *Storage*

and Handling of Petroleum Products and Allied Products Regulation or any future amendment thereof and any other applicable requirement.

- .5 An updated environmental emergency plan for each dangerous good/hazardous waste shall be maintained in the work area at all times. The environmental emergency plan must include:
 - .1 The identification of any environmental emergency that can reasonably be expected to occur and that would likely cause harm to the environment or constitute a danger to human life or health and identification of the harm or danger;
 - .2 a description of the measures to be used to prevent, prepare for, respond to and recover from any environmental emergency identified above;
 - .3 a list of individuals who are to carry into effect the plan in the event of an environmental emergency and a description of their roles and responsibilities;
 - .4 the identification of the training received for each of these individuals;
 - .5 a list of the emergency response equipment and the equipment's location; and
 - .6 the measures to be taken to notify members of the public who may be adversely affected by an environmental emergency.
- .6 The Contractor is responsible for restoring site, including soil and water remediation resulting from the activities of the Contractor, any Subcontractors and agents of the Contractor.
- .7 As the Designated Areas are scheduled for decommissioning, the Contract Administrator will coordinate an environmental site assessment(s) of the Designated Areas by ESRA or its Agent. The Contractor will provide notice to the Contract Administrator at least 30 days prior to completion of work and/or Designated Area(s) decommissioning.
- .8 Where spill events occur, the Contract Administrator will coordinate an environmental site assessment(s) by ESRA or its Agent.
- .9 The Contract Administrator and the ESRA will coordinate the submission of a Remedial Action Plan (RAP) to Manitoba Conservation for approval, if necessary. The Contractor shall remediate contaminated sites as per the criteria identified in the approved RAP and to the satisfaction of the Contract Administrator.
- .10 The Contractor may, at their expense, engage a member of the Association of Professional Engineers and Geoscientists of the Province of Manitoba to draft and submit a RAP to Manitoba Conservation for approval. The Contractor must provide copies of the RAP draft(s) and approval(s) to ESRA prior to the start of remediation.
- .11 Where multiple Contractors are using a Designated Area the Contract Administrator shall ensure an agreement is reached between Contractors to deal with overlap of responsibility for site restoration and remediation.
- .12 The Contractor shall provide a work plan and schedule to the Contract Administrator regarding remediation activities within 10 business days following receipt of approved RAP and at minimum 5 business days prior to the anticipated start of remedial works. Remedial works shall only begin in the presence of ESRA or their designated agent.

- .13 The Contractor shall provide the equipment and personnel required to conduct the remediation in a timely manner and shall work cooperatively with ESRA and their designated agent to address site contamination.
- .14 The Contractor shall dispose of all contaminated materials at a licensed treatment facility unless otherwise provided for in the RAP. Contaminated runoff or water shall be collected and contained. The collected runoff shall be disposed of as identified in the RAP.
- .15 Waybills for disposal shall be provided by the Contractor to the Contract Administrator in all instances. The Contract Administrator may, prior to issuing Substantial Performance to the Contractor, require a hold-back, which will be released to the Contractor following submission of all waybills.

GR130.11 DUST AND PARTICULATE CONTROL

- .1 All work shall be conducted by methods that minimize the raising of dust from construction operations.
- .2 Water or approved dust suppressants only shall be used for dust control when necessary. The use of waste petroleum or petroleum by-products is not allowed.
- .3 All vehicles used to haul materials to or from the work site shall have the load covered with a tarpaulin during transport.
- .4 All stock piles or spoil piles shall be maintained as to minimize wind erosion.

GR130.12 NOISE AND NOISE LIMITATIONS

- .1 All equipment supplied by the Contractor shall be effectively sound-reduced by means of silencers, mufflers, acoustic linings, acoustic shields or acoustic sheds.
- .2 The Contractor shall comply with the noise By-laws of the adjacent First Nations and/or municipal authorities.
- .3 Any operation of equipment outside the hours as regulated by the adjacent First Nations and/or municipal authorities shall require an exemption in writing. The Contractor shall provide a copy of such an exemption to the Contract Administrator.
- .4 The Contract Administrator may impose requirements on the Contractor to minimize noise nuisance at their discretion.

GR130.13 PLANNED AND UNPLANNED SHUTDOWNS

- .1 The Contractor shall ensure all equipment, supplies, and any other items used during construction are relocated to Designated Areas for laydown and staging or taken off site prior to any shutdown period.
- .2 All dangerous goods/hazardous waste shall be removed from the Site, including from the Designated Areas for waste and/or fuel storage, for any shutdown period where transportation permits and/or at the discretion of the Contract Administrator. In all instances dangerous goods/hazardous waste shall be securely stored and inspected regularly during the shutdown.

- .3 Waste products shall be removed from the construction site during a shutdown period, including from the Designated Areas where transportation permits and/or at the discretion of the Contract Administrator. The demolition and construction waste products, such as gravel and waste concrete, may be left on-site as long as they are stored in a secure Designated Area for waste.
- .4 The Contractor shall submit a plan to the Contract Administrator for removal and/or securing of equipment, supplies and waste materials in the event of an unplanned shutdown.

GR130.14 STAFF TRAINING AND AWARENESS

- .1 The Contractor shall provide mandatory training and awareness sessions prior to the start of construction and to new personnel to ensure all personnel working on the Contract are aware of and understand the environmental provisions of the Contract documents including relevant drawings, specifications and Contractor submittals and updates. Such orientation and participants shall be documented.
- .2 The Contractor shall submit the planned frequency and records of these meetings. The Contractor shall maintain access to all environmental provisions of the Contract documents including relevant drawings, specifications and Contractor submittals and updates, in a location and manner accessible to all employees, subcontractors, and agents,

GR130.15 WORKING WITHIN OR NEAR WATER

GR130.15.1 General

- .1 Material, cleared vegetation, stockpiles and/or waste shall not be deposited or stored within 100 metres of a watercourse, unless approved by the Contract Administrator, No borrow shall be removed from within 100 meters of a water body.
- .2 Construction activities shall not occur within 100 meters of a watercourse with the exception of construction of a watercourse crossing.
- .3 Where a 100 meter distance is not possible, a buffer zone of undisturbed vegetation between the construction activities and the watercourse shall be established. The buffer zone width shall be established according to the following formula: $Width = 10 \text{ meter} + 1.5(\text{slope gradient})$ or 30 meters whichever is greater.
- .4 Backfill installed adjacent to a fish bearing water body shall consist of clean and well graded granular material that is free of fines. Rip-Rap and other rock or granular materials to be used in or adjacent to a fish bearing water body shall be free of fines.
- .5 Vehicles and other equipment shall be kept away from and out of the water unless otherwise approved by the Contract Administrator. Equipment shall not be washed within 100 meters of a watercourse. Where the Contractor will be using equipment or supplies in water, and where there is risk of importing invasive species, the Contractor shall clean the equipment and supplies in accordance with Manitoba Conservation's *Protocol for Cleaning Equipment*.
- .6 Whenever it is necessary to remove existing beaver dams, the Contractor shall adhere to the GR130.15.10. Work plans for beaver dam removal shall be provided to the Contract

- Administrator 10 business days prior to the start of dam removal for application of a beaver dam removal permit from Manitoba Conservation.
- .7 Effective erosion and sediment control measures shall be implemented where and when necessary to prevent sediment from entering any watercourse and in accordance with GR130.16.
 - .8 The Contract Administrator and/or an ESRA Environment Officer shall inspect the site prior to the commencement of in-water construction activities.
 - .9 Deleterious substances shall be prevented from entering any watercourse or any of their contributory channels.
 - .10 A silt curtain should be placed downstream of in water work.

GR130.15.2 Timing of Work

- .1 The Contractor shall schedule, plan, and carry out works such that in-water work is kept to a minimum. When practical, in-water work shall be staged to occur as a single event.
- .2 In-water work shall be restricted to low flow periods and shall be scheduled during a period when the watercourse is seasonally dry or frozen to the bottom whenever possible.
- .3 The Contractor shall not undertake construction activities in watercourses during periods of high stream flow.
- .4 South of Leaf River, the Contractor shall not undertake construction activities in fish bearing waters or potentially fish bearing waters between April 1 and June 30, during periods of high stream flow or identified spawning periods. In waters that have fall spawning fish, the Contractor shall not undertake construction activities between September 15 to April 30, unless otherwise authorized by the Fisheries and Oceans Canada and Manitoba Conservation.
- .5 North of Leaf River, the Contractor shall not undertake construction activities in fish bearing waters or potentially fish bearing waters between April 15 and July 15, during periods of high stream flow or identified spawning periods. In-waters that have fall spawning fish, the Contractor shall not undertake construction activities between September 1 to May 15, unless otherwise authorized by the Fisheries and Oceans Canada and Manitoba Conservation.

GR130.15.3 Disturbance to Stream Bed and Stream Banks

- .1 Machinery access for in-water work shall be limited to a single point on the shoreline. The distance between the machinery access point and the worksite shall be minimized. The machinery shall arrive on site in a clean, washed condition, and be free of fluid leaks prior to any in-water work.
- .2 The Contractor shall use an in-water pad built of washed gravel where in-water equipment activity may generate excess sediment.
- .3 The Contractor shall minimize the disturbance to stream bed and banks. The bed and banks of the watercourse shall be restored to preexisting conditions following a disturbance.

- .4 The Contractor shall use existing trails, roads or cut lines to access the site where possible to avoid disturbance to riparian vegetation.
- .5 Debris and other objects shall be lifted out of the water whenever possible. Items shall not be dragged across the stream bed/lake bottom and banks/shoreline.

GR130.15.4 AUTHORISATIONS AND APPROVALS

- .1 Construction within 30 meters of a waterway requires authorization by Manitoba Conservation except construction of watercourse crossing approaches.
- .2 Fisheries and Oceans Canada Authorization(s) may be required prior to the commencement of any in-water or near water work. ESRA shall obtain these permits as required. The Contractor is required to provide ESRA with all project specific information required for these submissions a minimum 90 calendar days prior to the undertaking of in-water and/or near water works, with the understanding that Fisheries and Oceans Canada may request additional information. ESRA shall not be responsible for delays associated with Fisheries and Oceans Canada Authorization(s). All conditions specified in Fisheries and Oceans Canada Authorizations, Letters of Advice and/or other Fisheries and Oceans Canada directives apply to the work.
- .3 Transport Canada (TC) Navigation Protection Approval(s) may be required for the construction of permanent, temporary or other watercourse crossings and/or in water structures. ESRA shall obtain these permits as required. The Contractor is required to provide ESRA with all project specific information required for these submissions a minimum 90 calendar days prior to the need to undertake the works with the understanding that TC may request additional information. ESRA shall not be responsible for delays associated with TC Navigation Protection Approval(s). All conditions specified in TC Navigation Protection Approval(s) and other directives apply to the work.
- .4 For all temporary work and construction activities required for in-water works ESRA will apply for required authorizations, permits, and approvals. Contractors must supply detailed schedules and work plans to facilitate these applications and cooperate with additional information requests from regulatory bodies. It may take up to 90 or more business days to process applicable authorizations, permits required. The contractor is bound by all conditions specified in regulatory directives applicable to the work. ESRA shall not be held responsible for any delays related to approvals.

GR130.15.5 Stream Crossings

- .1 Where possible existing stream crossings shall be utilized to traverse watercourses. The number of temporary stream crossings shall be minimized.
- .2 All stream crossings shall be constructed in accordance with *The Manitoba Stream Crossing Guidelines for the Protection of Fish Habitat – May 1996*. They must be designed for their intended construction loading and to accommodate intended water flows.
- .3 Streams shall be crossed at right angles at a narrow channel section where the width is no greater than five meters, measured from high water mark to high water mark. Meander bends, braided streams, alluvial fans and other unstable areas shall be avoided.
- .4 The natural alignment of the stream shall be maintained.

- .5 Dredging, infilling, grading or excavating of the channel bed or banks of fish bearing waterways will require DFO authorizations.
- .6 If there is no existing crossing and the watercourse must be crossed, the contractor must either:
 - .1 Construct a temporary crossing or ice bridge. Ice bridges constructed solely of clean water do not require Fisheries and Oceans Canada Authorization provided they do not obstruct fish passage during timing windows. Ice bridges constructed otherwise require Fisheries and Oceans Canada Authorization; or
 - .2 Ford the watercourse. For one-time crossing (over and back) of watercourses where the width is no greater than five meters, measured from high water mark to high water mark. For larger watercourses or crossings that require multiple fordings, Fisheries and Oceans Canada Authorization shall be obtained.
- .7 Fording activities may require water quality monitoring as per GR130.15.8.
- .8 Temporary stream crossings shall be removed as soon as possible following completion of the construction activities or when it is no longer required, whichever is sooner.

GR130.15.6 Base Flow, Diversions and Fish Passage

- .1 The Contractor is responsible for maintaining base flows for the duration of construction activities in watercourses requiring in-water and near water work, including those works which may require the installation of cofferdams and related structures, unless otherwise approved.
- .2 Temporary stream diversions may be used wherever a watercourse must be completely blocked to allow work in the dry.
- .3 Temporary stream diversions shall be constructed under low flow conditions. The Contractor must ensure the diversion structure design accommodates any expected high flows during the construction period. Materials used shall not be taken from below the high water mark.
- .4 Diversion channels shall be constructed in the dry by excavating from downstream to upstream and removing the ends of the channel last. Diversion channels shall have gentle curves and similar gradient to the natural watercourse.
- .5 In-water diversion structure channels shall be constructed using erosion resistant materials.
- .6 Existing watercourses shall not be disturbed until temporary diversion channels have been constructed.
- .7 Gradient controls shall be used to ensure that diversion channel slopes correspond to the existing channel gradients.
- .8 Erosion control measures shall be installed to protect any unstable channel beds and banks in accordance with GR130.16 of this specification.
- .9 The diversion channel shall be routinely inspected to identify areas of incipient erosion. Eroded areas shall be repaired immediately.

- .10 A pumped diversion may be used to maintain flows downstream in non-fish bearing watercourses.
- .11 For pumped diversions of fish bearing watercourses all water intakes shall be sized and screened to prevent blockage and/or fish mortality in accordance with Fisheries and Oceans Canada's *Freshwater Intake End-of-Pipe Fish Screen Guideline*.
 - .1 The pumping system shall be sized to accommodate expected watercourse flow from storm events.
 - .2 Pumps shall be discharged onto geofabric, gravel, straw bales or an alternate approved by the Contract Administrator to dissipate the energy of discharge.
- .12 Temporary stream diversions shall be designed to provide fish passage, even during low flow conditions. The diversion shall be removed during fish migration periods where elevated pipes are used.
- .13 At least one-third of the width of any fish bearing watercourse shall be left open to permit the safe and unimpeded passage of fish. If width is to be constricted by more than two thirds Fisheries and Oceans Canada Authorization is required. Authorizations shall be sought in accordance with GR130.15.4
- .14 The original flows through the site shall be restored as soon as work is completed.

GR130.15.7 Fish Salvage

- .1 The Contractor cannot initiate any work where fish salvage may be required without a live fish handling permit and the direct oversight of a qualified Fish Biologist.
- .2 Fish salvage shall be conducted prior to the commencement of in-water construction activities and/or prior to dewatering of an isolated work area.
- .3 Where fish salvage is being coordinated by others, the Contractor must cooperate and coordinate with the Contract Administrator, ESRA and its agents.
- .4 The Fish and Water Quality Protection Plan shall be developed by the Contractor so as to minimize the onsite requirement for a fish biologist to the greatest extent practical. Any alterations to the submitted Fish and Water Quality Protection Plan shall be submitted 15 days in advance of the start of work.
- .5 The Contractor must advise the Contract Administrator 15 business days in advance of in-water works where fish salvage is required. The Contractor shall reconfirm the schedule 5 business days and 48 hours in advance of the start of work. Any alteration to the schedule after the 5 business days which results in direct or indirect costs to the Contractor Administrator, ESRA or its agent shall be at the Contractor's expense.
- .6 Fish salvage shall be conducted immediately after an area within a watercourse has been isolated. Partial dewatering is permissible to decrease wetted area and increase efficiency of capture, however, the fish salvage shall be completed prior to dewatering the entire area.
- .7 The Contractor must provide access and facilitate fish salvage activities including removal of ice within the isolated area and any other works as necessary at no additional cost.

- .8 Isolation structures shall be monitored by the Contractor once the fish salvage is completed to ensure that they remain barriers to fish passage and do not allow fish to enter the isolated area. In the event that the isolation is breached or expanded in a manner that may allow fish to enter the isolated area, fish salvage by ESRA or its agent will be required. The salvage shall be conducted at the Contractor's expense.

GR130.15.8 Water Quality Monitoring

- .1 Water quality monitoring shall be required for in-water work in fish-bearing watercourses and may be required when working near fish-bearing watercourses or tributaries to fish bearing watercourses to demonstrate that deleterious substances are not entering into the watercourse. Water quality monitoring shall also occur when working upstream and within 5km of a water treatment plant intake.
- .2 A Fish and Water Quality Protection Plan shall be prepared by the Contractor in advance of construction works and any amendments must be submitted 15 days in advance of the start of work requiring or may requiring water quality monitoring. The Plan shall include a description of the works and measures proposed to mitigate adverse changes to water quality.
- .3 Where water quality monitoring is being coordinated by others, the Contractor must cooperate and coordinate with Contract Administrator, ESRA and its agents. All water quality monitoring activities must be conducted or overseen by a qualified Fish Biologist. No works requiring monitoring shall be undertaken without a qualified Fish Biologist representative.
- .4 The Contractor must advise the Contract Administrator 15 business days of work where water quality monitoring is or may be required. The monitoring shall be conducted prior, during and after construction activities. The Contractor shall reconfirm the schedule 5 business days and 48 hours in advance of the start of work. Any alteration to the schedule which results in direct or indirect costs to the Contract Administrator, ESRA or its agent shall be at the Contractor's expense.
- .5 Where monitoring results demonstrate changes above *Manitoba Water Quality Standards, Objectives and Guidelines (MWQSOGs)*, the activity shall cease until effective mitigative measures are taken. Where an isolated work area is being dewatered and discharge exceeds guidelines, mitigation measures may include diverting waters to splash pads or settling ponds prior water re-entering a watercourse or diverting to the top of bank where the water will not run back into the watercourse.

GR130.15.9 Culvert Maintenance and Replacement

- .1 Construction and maintenance activities, including material and debris removal, shall be timed to prevent disruption to sensitive fish life stages on fish bearing waterways by adhering to the timing windows outlined in GR130.15.2 where accumulated material is preventing the passage of water and/or fish through the structure.
- .2 Emergency debris removal(s) may be carried out at any time of year.
- .3 The Contractor shall limit the removal of accumulated material to the area within the culvert, immediately upstream of the culvert and to that which is necessary to maintain culvert function and fish passage.

- .4 Erosion controls shall be installed as soon as possible in accordance with GR130.16 of this specification.
- .5 Accumulated material and debris shall be removed slowly to allow clean water to pass, to prevent downstream flooding and reduce the amount of sediment-laden water going downstream.
- .6 Installation or replacement of culverts shall occur in isolated and dewatered worksites. Diversion structures shall be installed in accordance with GR130.15.6 of this specification.
- .7 Culverts in fish bearing waters shall adhere to the following design criteria to ensure that fish passage is maintained:
 - .1 For culverts less than 25 meters long the flow velocity through the crossing shall not exceed 1 metre/second;
 - .2 For culverts greater than 25 meters long the flow velocity through the crossing shall not exceed 0.8 metre/second;
 - .3 The crossing shall not be impassable to fish for longer than 3 consecutive days once in 10 years or 7 consecutive days once in 50 years; and
 - .4 The culvert shall be designed such that fish passage is possible even in low flows.
- .8 A minimum spacing of 2 meters between adjacent culverts is required if more than one culvert is to be installed at a crossing location. There shall be no more than three culverts at one crossing.
- .9 The Contractor shall maintain a culvert gradient as close to the natural stream grade as possible.
- .10 The Contractor shall install culverts a minimum of 30 centimeters or 10% of culvert diameter (whichever is greater) below the normal stream bed.
- .11 The Contractor shall avoid using frozen backfill. Backfill shall be compacted to avoid settling, hydrostatic uplifting or side movements of the culvert that may lead to blockage of fish passage or washouts.
- .12 Slopes shall be contoured to an appropriate steepness to minimize erosion.
- .13 Soils shall be graded in the direction away from the watercourse and never into the stream.
- .14 Metal culverts are not to remain on site and should be disposed at an appropriate disposal or recycling facility.

GR130.15.10 Beaver Dam Removal

- .1 Beaver Dams to be removed shall be identified in consultation with and as approved by the Contract Administrator. Beaver dams may not be removed without first obtaining authorization from Manitoba Conservation.
- .2 Removal of the dam shall not adversely affect a fishery, or recreational property uses that

depend on the dam's existence, both upstream and downstream.

- .3 Removal activities shall be restricted to removal or breaching of the dam itself and shall not involve channel or shoreline modification downstream of the dam.
- .4 Beaver dam removal is not to be conducted in the winter as this may result in loss of fish habitat.
- .5 Whenever possible remove beaver dams by hand.
- .6 Remove the dam gradually to allow a slow release of water to prevent sediment release and potential flooding downstream.
- .7 if explosives are to be used in dam removal, individual detonations shall not exceed one kilogram of explosives, diesel fuel and fertilizer are not to be used as explosives.
- .8 Removals are not to be completed on beaver dams directly connected to a culvert or bridge.

GR130.15.11 Blasting Near a Watercourse

- .1 The Contractor may be requested by the Contract Administrator to modify the timing of blasts to respect key life cycle events to critical life functions of fish and wildlife.
- .2 Blasting near watercourses classified as fish habitat shall adhere to set back and weight of explosive charge guidelines as referenced in Fisheries and Oceans Canada document *Guidelines for the Use of Explosives in or Near Canadian Fisheries Waters 1998*. Where these guidelines cannot be met, blasting plans shall be submitted to the Contract Administrator for ESRA's application to Fisheries and Oceans Canada to obtain necessary approvals prior to commencement of blasting in areas that could affect fish habitat.

GR130.16 EROSION AND SEDIMENT CONTROL

- .1 Erosion and sediment control measures shall be installed in accordance with the Contract specifications and as directed by the Contract Administrator.
- .2 Erosion and sediment control for work near water must be installed prior to any disturbance and maintained throughout the contract.
- .3 Erosion and sediment control for road works must be installed and maintained progressively as directed by the Contract Administrator.
- .4 Prior to construction, all vegetated areas that are to be preserved or untouched shall be well marked. Vegetation cover shall be maintained to the greatest extent possible adjacent to watercourses.
- .5 Vegetation cover shall be preserved for as long as possible by staging construction. Vegetation within 30 m of a watercourse shall be cleared by hand.
- .6 Operations shall be halted during heavy rain events.
- .7 Erosion and sediment control measures shall be installed before starting work within 100m of a waterway. Erosion and sediment control measures are to be inspected weekly

- and after every major rain or melt event for proper functioning; necessary repairs shall be made immediately.
- .8 Turbidity curtains shall encircle in-water works and be installed in such a manner so as to prevent sediment from escaping the isolated area.
 - .9 Slash and debris from clearing operations shall be retained and used to temporarily protect erosion-prone slopes.
 - .10 Stream banks and bed at culvert openings shall be protected with erosion-resistant materials such as riprap.
 - .11 The Contractor shall ensure that the point of discharge from seepage, runoff water or pumped water from any excavation is a minimum of 30 meters from any watercourse.
 - .12 All disturbed areas including shorelines shall be restored to their original condition as soon as practicable following completion of construction activities. The restoration may include but is not limited to, infilling of any temporary diversion channels; removal of construction materials and debris; installation, maintenance, and removal of sediment and erosion control measures and re-vegetation of disturbed areas.
 - .13 When re-vegetation by seeding, the Contractor shall use an approved seed mix in accordance with the Contract. Where there is sufficient time in the growing season seeding will commence immediately upon completion of trimming operations. Seed mixtures will be selected based on specific soil conditions and location.
 - .14 Pesticides shall be applied by hand within 30 m of all waterbodies.
 - .15 Sediment and erosion control measures shall remain in place and be maintained until the vegetation has become established.

GR130.17 CLEARING AND GRUBBING

GR130.17.1 General

- .1 Clearing and grubbing shall be limited to the Site and associated access routes.
- .2 Clearing and grubbing shall not occur between April 1 and September 1 of any year to minimize disturbances to wildlife and habitat.
- .3 Prior to clearing or grubbing work areas shall be clearly marked and approved by the Contract Administrator.
- .4 A vegetation buffer shall be maintained between the ROW and any development including, but not limited to, borrow areas, quarries, laydown areas, personal property, utility poles and camps as outlined in the *Forest Management Guidelines for Terrestrial Buffers*.
- .5 A vegetation buffer shall be maintained between the ROW and sensitive features including, but not limited to, sticknests, mineral licks, dens, heritage sites as outlined in the *Forest Management Guidelines for Terrestrial Buffers*.

GR130.17.2 Clearing

- .1 Clearing in known permafrost areas will be minimized where possible. Where clearing cannot be avoided the Contractor shall retain the top layer of organic soil, ground vegetation and an insulating cover.
- .2 Areas for selective clearing (i.e. sensitive) must be accurately flagged as approved by Contract Administrator prior to clearing. Appropriate mitigation measures must be identified and applied. Any new sensitive areas found during clearing must be reported to the Contract Administrator and are not to be cleared.
- .3 Trees shall be felled towards the centre of the ROW and woody debris shall not fall or be pushed into standing timber. Any debris or trees that fall outside of the ROW shall be moved back into the ROW.
- .4 Clearing activities shall be limited to removing vegetation to ground level without disturbing root mass. Height of stumps shall not exceed 30 centimetres.
- .5 Clearing within 30m of a watercourse shall be by hand.

GR130.17.3 Grubbing

- .1 Grubbing activities shall end 2 meters from any standing timber to avoid disturbing the root systems of nearby standing trees and reduce blow down.
- .2 The Contractor will take steps to avoid damage to property when grubbing. The Contractor is responsible for any damages and will be required to fix any damage to property to its original condition.
- .3 Grubbing will not change access to the existing trails, trap lines, portages and other travel corridors.

GR130.17.4 Disposal and Storage

- .1 Merchantable wood identified by the Contract Administrator shall be stockpiled outside and immediately adjacent to the clearing limits. Stockpile sites shall be located within existing clearings or areas of non-merchantable timber. Unless otherwise specified, all stockpiled material shall be removed from Crown Land by April 30 of any given year.
- .2 Disposal of cleared trees and brush must be done as directed or approved by the Contract Administrator. Disposal may involve burning, compacting, piling, burying, windrowing and compacting, limbing and chipping.
 - .1 Windrows have to be compacted as close to the ground as possible with a maximum height of 0.6 metre.
 - .2 If burying is selected as a means of disposing woody debris, the area shall be capped with ½ metre of clay, followed by the stockpiled topsoil, and revegetated.
 - .3 Wood and brush piled for burning must be located at least 15 meters from other wood and brush piles and standing timber prior to burning. If piles are windrowed for burning a 15 meter break should occur for every 100 meters in length. Trees and brush shall be piled in a way that allows for clean and complete burning of all

material. Avoid mixing soil into the slash. See GR130.20 for additional burning restrictions.

- .4 For exploratory clearing burning must occur in the centre of the right of way or push outs, whichever is furthest from standing timber.

GR130.18 HERITAGE RESOURCES

- .1 Areas where heritage or cultural resources of interest are suspected of being present shall be inspected prior to the start of construction.
- .2 Work shall immediately cease where archaeological or historic artifacts are encountered during construction activities. The discovery shall be reported to the Contract Administrator and ESRA.
- .3 Work at the location will be suspended until a Historic Resource Consultant can assess archeological or historic artifacts that are encountered and mitigation measures are confirmed with the Manitoba Historic Resources Branch.

GR130.19 WILDLIFE

- .1 During the term of the Contract, the Contractor, its employees and agents shall not hunt, trap or harass wildlife at or in the vicinity of the Site.
- .2 The Contractor shall not remove, destroy or disturb endangered species or their habitat as defined under the *Manitoba Endangered Species Act* and/or *Species at Risk Act*.
- .3 Wildlife habitat shall not be destroyed or damaged, except pursuant to a license, permit or other authorization issued for the Project.
- .4 No person shall take, or have possession of, or willfully disturb, destroy the nest or eggs of birds pursuant to the *Migratory Birds Convention Act* and/of the *Manitoba Wildlife Act*.
- .5 No person shall remove, disturb, spring or in any way interfere with any trap set out lawfully by any other person for the purpose of taking furbearing animals.
- .6 The Contract Administrator may restrict construction activities, including blasting, within close proximity to sensitive wildlife or wildlife habitat during critical lifecycle periods.
- .7 Construction camps and worksites shall be kept clean and tidy and free of wildlife attractants. All food and garbage waste shall be stored in bear proof containers away from sleeping quarters and be disposed of at an area which has been designated as an appropriate waste disposal site. Disposal shall occur at regular intervals.
- .8 Employees, workers and other staff shall not feed or harass wildlife that they may encounter. Nuisance wildlife shall be immediately reported to the Natural Resources Officer, Contract Administrator and onsite supervisor.
- .9 Trees containing large nests of sticks and areas where active dens or burrows occur shall be identified, left undisturbed and reported to the Contract Administrator. No construction is to occur within 100m of an eagle's nest, heron rookery or other sensitive wildlife area without prior approval from the Contract Administrator and ESRA.

GR130.20 WILDFIRES

- .1 An evacuation and emergency preparedness plan addressing wildfires shall be prepared and submitted to the Contract Administrator prior to the commencement of work.
- .2 No fires shall be started without first taking sufficient precautions to ensure that the fire can be kept under control. The Contract Administrator must be notified prior to any burning.
- .3 Burning will normally occur between November 16th and March 31st. To the extent possible, burning shall be avoided between April 1st and November 15th of any given year. In the event that burning is required, an application for a burning permit shall be submitted by MFESRA for approval to Manitoba Conservation.
- .4 All fires shall be monitored by the Contractor for the duration the burning activities. No fire shall be left unattended.
- .5 No activity shall be conducted which may cause a fire to spread. Similarly, burning or smoldering matter shall not be placed where it may cause a fire.
- .6 A primary zone shall be established around camp sites and other longer term temporary structures associated with construction and maintenance activities. Flammable materials such as leaves, brush, dead limbs, and fallen trees shall be cleared from the area regularly.
- .7 Combustible materials shall be stored in a safe manner.
- .8 The locations of construction camps, offices, and related structures shall be chosen in such a fashion as to minimize the risk of exposure to wildfires.
- .9 No burning shall occur on deep organic soils like peat. If a fire occurs in peat soils it must be immediately extinguished.
- .10 Burning near communities or roadways shall occur only when weather conditions allow the safe dispersal of smoke.
- .11 Any wildfire or any fire outside the intended burn area, shall be immediately reported to the Contract Administrator and to Manitoba Conservation at 1-800-782-0076.
- .12 All reasonable attempts shall be made to extinguish wildfires. All available equipment, services and labor shall be made available for the purposes of wildfire protection operations.
- .13 All construction and related activity taking place in the vicinity of a wildfire shall cease until advised by the Contract Administrator that it is safe to resume operations.

GR130.21 CEMENT BATCH PLANT AND CONCRETE WASH OUT AREA

- .1 It is the Contractor's responsibility to ensure that on-site concrete batch plants have a current *Environment Act* Licence and Crown Lands Work Permit prior to commencing on-site operation.
- .2 The Contractor shall apply for the Crown Lands Work Permit unless otherwise advised by the Contract Administrator, and shall provide to the Contract Administrator prior to the start of work.
- .3 Where ESRA applies for the Crown Lands Work Permit for the batch plant, the Contractor shall provide ESRA a copy of all necessary documentation a minimum 45 days prior to operation to support the work permit application including but not limited to the *Environment Act* Proposal, environmental protection/management plans and Licence.
- .4 The Contractor must obtain all applicable permits for ground or surface water withdrawals and provide to the Contract Administrator prior to the start of operations. Permits are required under the *Water Rights Act* where water removal from a surface water course exceeds 25,000L/day.
- .5 Concrete wash out areas shall be located so as to avoid the removal of standing timber. Concrete wash out areas shall be a minimum 100 m from a water course or other sensitive feature and shall not drain to any water course.
- .6 Decommissioned concrete wash out areas shall be left in such a manner so as to not impede future construction activities or pose a hazard to people or the environment.

GR130.22 MEASUREMENT AND PAYMENT

- .1 The requirements set out in GR130 are considered incidental to the Work and will not be measured for payment unless indicated otherwise in the Specifications.

Appendix 5-5

ESRA's GR140s Workplace Safety and Health Specifications

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GR140 – WORKPLACE SAFETY AND HEALTH SPECIFICATIONS**GR140.1 General**

- .1 This Specification covers safety and health requirements for all workers on this project.
- .2 The East Side Road Authority is committed to providing a safe and healthy workplace for workers, contractors, consultants, stakeholders, and visitors on the project and is dedicated to the continuous improvement of the Workplace Safety and Health Program.
- .3 These Contract specifications shall not be considered as inclusive of all safety and health requirements for work on the project or as set out in applicable federal or provincial legislation.
- .4 Words and phrases defined in legislation have the same meaning in this Contract, unless otherwise specified.

GR140.2 Certificate of Recognition (COR) or Equivalent

- .1 The Contractor shall submit annually a letter of Good Standing from the Association through whom the Contractor is COR certified, within sixty (60) days of their annual audit date.

GR140.3 Requirement for a Written Health and Safety Program

- .1 The Contractor shall submit a current copy of the Contractor's Safety and Health Program as defined in section 7.4 of *The Workplace Safety and Health Act* or as defined under the COR program.

GR140.4 Prime Contractor

- .1 The Contractor is the Prime Contractor for the Works at the Site, and, notwithstanding any of the actions of the Contract Administrator in accordance with these GRs or the Contract, shall have all of the duties and responsibilities of a Prime Contractor.
- .2 For the purposes of 7(2)(a) of *The Workplace Safety and Health Act*, the Contract entered into between the Contractor and ESRA, which incorporates these GRs, is a Contract to serve as a Prime Contractor.
- .3 In addition to his/her role as Prime Contractor, the Contractor may also be an "Employer" and "Contractor", as those roles are set out in *The Workplace Safety and Health Act*, and shall have all of the duties and responsibilities of an employer and Contractor.
- .4 The Contractor shall be solely responsible for workplace safety and health at the site and at any other locations where the Contractor's workers or Sub-Contractors undertaking the work and for compliance with all laws, rules, regulations, and practices required by the applicable construction and workplace safety legislation.
- .5 The Contractor shall ensure suitable personal protective equipment is available, used and maintained and train workers in its use, limitations, and maintenance.
- .6 The Contractor shall lead by example and promote a safe and healthy workplace.

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- .7 The Contractor shall ensure proper training for all supervisors and workers, and maintain such training records onsite.
 - .8 The Contractor shall immediately correct unsafe acts or conditions.
 - .9 The Contractor shall establish adequate communication systems (meetings, safety talks, daily pre-jobs inspections, etc.) to ensure supervisors and workers are aware of safety and health issues and maintain complete documentation regarding such communications.
 - .10 The Contractor shall evaluate and document Subcontractor safety performance.
 - .11 The Contractor shall provide competent supervision.

GR140.5 Safe Work Plan

- .1 The Contractor shall submit a safe work plan on the ESRA template for activities specified in the Contract a minimum of seven (7) days prior to the commencement of any work on-site.
- .2 The safe work plan shall include:
 - .1 contract for (company name)
 - .2 contract number
 - .3 location of work
 - .4 project owner
 - .5 dates of work
 - .6 Contract Administrator name and contact number(s)
 - .7 Prime Contractor and contact number(s) of:
 - (i) Project Manager
 - (ii) Site Supervisor
 - (iii) Safety Officer
 - (iv) Environment Officer
 - (v) Worker Safety and Health Representative
 - .8 scope of work / major tasks of Prime Contractor
 - .9 Subcontractor and contact number(s) of:
 - (i) Project Manager
 - (ii) Site Supervisor
 - (iii) Safety Officer
 - (iv) Environment Officer
 - (v) Work Safety and Health Representative
 - .10 scope of work / major tasks of Subcontractor
 - .11 equipment involved to complete the contract
 - .12 training requirements and qualifications

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- .13 training records availability
 - .14 personal protective equipment (ppe) required, including area / task specific ppe
 - .15 scope of work, specifically:
 - (i) work activity
 - (ii) hazards that apply to each work / task activity and ranked by severity / probability
 - (iii) control measures
 - (iv) safe work procedures availability
 - .16 control measures to protect other workers / public, specifically:
 - (i) work activity
 - (ii) hazards
 - (iii) control measures
 - .17 emergency contacts for:
 - (i) local fire department
 - (ii) ambulance service (if not, provide a procedure)
 - (iii) RCMP / band constable contact numbers
 - (iv) nearest hospital / nursing station (name and phone numbers)
 - (v) driving directions to nearest hospital / nursing station
 - (vi) map attached (map to nursing or emergency station)
 - (vii) Manitoba Conservation contact numbers
 - (viii) Workplace Safety and Health Branch contact numbers
 - .18 on-site emergency responders and equipment:
 - (i) on-site emergency coordinator
 - (ii) on-site back up emergency coordinator
 - (iii) emergency communication devices used on-site for summoning assistance and site evacuation
 - (iv) standby emergency transportation vehicle on-site
 - (v) list of all first aiders
 - (vi) location of all first aid kits
 - (vii) location of all fire extinguishers
 - (viii) location of spill kits
 - (ix) location of eye wash station
 - (x) location of material safety data sheets (msds) or safety data sheets (sds)
 - (xi) location of muster points
 - .19 approval, signature and date of:
 - (i) person drafting this safe work plan
 - (ii) Project Manager
 - (iii) Contractor's safety person
 - (iv) Contractor's worker safety representative
- .3 The Contractor shall forward copies of all requested safe work procedures to the Contract Administrator within three (3) working days of the request.

GR140.6 Orientation and Training

- .1 The Contractor shall ensure that every worker, including Subcontractors, visitors and all other persons attending the jobsite, attend a project specific safety orientation facilitated by the Contractor. An orientation must always be given to new workers as defined under *The Workplace Safety and Health Act*. New workers will be required to sign an attendance / acknowledgement sheet.
- .2 The Contractor shall develop an Orientation that includes, as a minimum:
 - .1 Employer and worker rights and responsibilities under *The Workplace Safety and Health Act*, and applicable regulations.
 - .2 Name and contact information of the new worker's supervisor.
 - .3 Procedure for reporting unsafe acts and conditions at the workplace.
 - .4 Procedure for exercising the right to refuse dangerous work at the workplace.
 - .5 Contact information for the Safety and Health Committee or Safety Representative.
 - .6 Any policies, programs and safe work procedures that the employer is required to develop as stated in *The Workplace Safety and Health Act* and applicable regulations that apply to the work to be done by the worker.
 - .7 Any hazards to which the worker may be exposed and the control measures undertaken to protect the worker.
 - .8 Emergency procedures (first aid, fire, evacuation, etc).
 - .9 Location of first aid facilities / means of accessing first aid / procedures for reporting illnesses and injuries.
 - .10 Emergency contacts / first aid personnel / reporting phone numbers.
 - .11 Identification of prohibited or restricted areas of activities.
 - .12 Review of the safe work plan.
 - .13 Site access (parking, haul roads, etc.).
- .3 The Contractor shall ensure that their Supervisors and Workers, including all Subcontractors have received the appropriate training and certification in safety and health to ensure they are competent to perform all required work in a safe manner. Training records must be requested and retained by the Contractor and made available to the Contract Administrator upon request. Required training may include, but is not limited to:
 - .1 *Manitoba Workplace Safety and Health Act and Regulation*
 - .2 *Manitoba Regulations 212/2011, Operation of Mines Regulation*
 - .3 Blasters certificate issued by The Manitoba Workplace Safety and Health Division
 - .4 Construction Safety Association of Manitoba (CSAM)

- .5 Manitoba Heavy Construction Association Work Safely Program
- .6 Workplace Hazardous Material Information System (WHMIS) or Global Harmonized System
- .7 Transportation of Dangerous Goods (TDG)
- .8 First Aid and CPR under the *Manitoba Regulation 217/2006, Part 5*
- .9 Flagperson certification

GR140.7 Reporting Procedures

- .1 The Contractor shall submit a Monthly Project Site Safety Summary on the ESRA template to the Contract Administrator.
- .2 The Summary shall be submitted to the Contract Administrator by the 15th of the following month.
- .3 The Monthly Project Site Safety Summary shall include:
 - .1 project name and number
 - .2 month and year
 - .3 type of work
 - .4 Prime Contractor
 - .5 Prime Contractor Site Representative
 - .6 Contract Administrator
 - .7 number of worker orientations conducted (attach attendance sheets)
 - .8 number of toolbox meetings conducted (attach copy of toolbox talks)
 - .9 number of jobsite inspections conducted (attach copy of reports)
 - .10 explosives inventory submitted, if applicable
 - .11 number of incidents / injuries reported, identifying:
 - (i) number of property damage(s)
 - (ii) number of near misses
 - (iii) number of injuries, specifically: first aid, medical aid and loss time
 - .12 number of incidents / injuries investigations conducted
 - .13 corrective actions recorded on incident reports
 - .14 comments
 - .15 signature and date of Prime Contractor's Site Representative

- .4 Weekly Toolbox Talks
The Prime Contractor and Subcontractors will conduct weekly toolbox talks covering topics applicable to worksite operations. Records of the toolbox talks shall be submitted to the Contract Administrator along with the Monthly Project Safety Summary and shall include:
 - .1 topic;
 - .2 attendance (signatures);
 - .3 company and facilitators name; and
 - .4 date, time and location.

GR140.8 Project Safety Information Board

- .1 A general safety bulletin board(s) shall be erected by the Contractor to display safety legislation, specifically:
 - .1 Company Safety and Health Policy
 - .2 Harassment Prevention Policy
 - .3 Violence Prevention Policy
 - .4 Working Alone Safe Work procedure
 - .5 First Aiders List with expiration date of certification
 - .6 Emergency Procedures
 - .7 Any Improvement Order or Report, if recommended to be posted by a Safety and Health Officer of the Workplace Safety and Health Division

GR140.9 Workplace Safety and Health Committee

- .1 The Contractor shall hold regular safety and health committee meetings as specified in *The Workplace Safety and Health Act*.
- .2 Minutes of these meetings must be forwarded to the Contract Administrator within ten (10) days of the meeting.
- .3 When a Workplace Safety and Health committee exists, post the following:
 - (i) committee member names with the date of each member's office expiry date,
 - (ii) scheduled dates of committee meetings,
 - (iii) agenda for each meeting; and
 - (iv) a copy of the minutes from each meeting with required signatures until all matters resolved.
- .4 When a Safety Representative exists, post the following:
 - (i) name of the safety representative,
 - (ii) scheduled dates of meetings; and
 - (iii) an agenda for each meeting.

GR140.10 Workplace Safety and Health Representative

- .1 A workplace with five (5) or more workers must elect a safety and health representative.
- .2 The responsibilities of the workplace safety and health representative shall be, but are not limited to:
 - .1 attend required meetings;
 - .2 investigate workplace incident(s) and participate with inspections;
 - .3 act as the site safety contact for on-site workers; and
 - .4 must approve and sign safe work plan.

GR140.11 Required Acts / Regulations on Site

The Contractor shall ensure that any additional legislation required during the lifetime of the contract is available on site.

General:

- .1 The Contractor shall ensure copies of *The Workplace Safety and Health Act and Regulation(s)* are available at each work site.
- .2 The Contractor shall ensure copies of *The Canada Labour Code, Part II and Regulations* are available at each work site.

Blasting:

- .1 The Contractor shall ensure copies of the:
 - .1 *Government of Canada, Natural Resources, The Explosives Safety and Security Branch, Explosives Act*
 - .2 *Government of Canada, Natural Resources, Explosives Regulations, 2013*
 - .3 *Government of Canada, Natural Resources, Explosive Resources* (applications, forms, guidelines, directives, standards, etc.)
- .2 The Contractor shall ensure copies of *The Operation of Mines Regulation, Manitoba Regulation 212/2011* is available on site.
- .3 The Contractor shall ensure *The Quarry Minerals Regulation, 1992, Manitoba Regulation 65/92* is available on site.

GR140.12 Contract Interface

- .1 All Contract Interface Areas (CIA), if any, between adjacent Contracts are defined as controlled areas, and shall be shown on the drawings.
- .2 Further to GR140.4, the Contractor's Prime Contractor responsibilities shall be defined by the construction limits at the site and the Contractor shall not work outside these construction limits. When the Contractor works within fifty (50) m of his construction limits, he/she shall contact the Contract Administrator.

- .3 If any of the Contractors working on adjacent Contracts wish to request access to a particular interface area outside of their assigned dates, he/she shall notify the appropriate Contract Administrator in writing. If the responsible Prime Contractor agrees in writing to allow access to the interface area, then the Contractor working outside of his/her assigned time period shall fall under the responsibility of the Prime Contractor. The agreement to allow an adjacent Contractor access into the interface area shall be in writing prior to any work being undertaken, equipment mobilized, and materials deposited / removed, as accepted by the Contract Administrators for all affected Contracts.
- .4 When the Contractor has completed all required work within each of the interface areas, he/she shall notify the Contract Administrator in writing.
- .5 The Contractor shall notify the Contract Administrator in writing his/her intent to work within each of the interface areas a minimum of five (5) working days prior to equipment and material mobilization, even if he/she is working within his assigned time periods.

GR140.13 Personal Protective Equipment

- .1 The Contractor shall establish a Personal Protective Equipment (PPE) Program for the project to ensure the equipment is suitable for the job, maintained and used. General PPE required to be worn on the project must be put on before entering the project site. At minimum, each worker must be trained in the use, care and limitations of:
 - .1 Head Protection (Mandatory)
 - (i) must be CSA approved
 - (ii) must be Type 2, Class E with a peak
 - .2 Foot Protection (Mandatory)
 - (i) must be Grade 1 CSA approved work boot
 - (ii) must be minimum six (6) inches in height
 - (iii) must cover the ankle
 - .3 High Visibility Clothing (Mandatory)
 - (i) must be CSA approved
 - (ii) must be Class 2, Level 2
 - .4 Eye and Face Protection (Mandatory)
 - (i) CSA approved safety glasses must be worn where the hazard of eye injuries exist. Side shields must be utilized with prescription safety glasses
 - .5 Hand / Skin (Mandatory)
 - (i) gloves suitable for the hazards (chemicals, chainsaw operation, material handling)

- .6 Hearing Protection (Job Specific)
 - (i) hearing protection must be available where noise levels exceed 85 dBA
 - (ii) either plugs or muffs (or both)

- .7 Respiratory Protection (Job Specific)
 - (i) NIOSH approved respirator protection must be supplied to and used by all workers potentially exposed to a noxious dust, gas, vapour, mist or fume
 - (ii) respiratory equipment must be fit tested

- .8 Chainsaw (Job Specific)
 - (i) chainsaw hardhat complete with safety visor made of nylon or metal
 - (ii) hearing protection
 - (iii) gloves
 - (iv) chainsaw pants or chaps

- .9 Flagperson (Job Specific)
 - (i) CSA Class 3 Level 2, high-visibility apparel in fluorescent yellow green
 - (ii) Protective headwear in a fluorescent colour (equipped with retro-reflective tape during hours of darkness)
 - (iv) must be Grade 1 CSA approved work boot

GR140.14 Fall Protection

- .1 The Contractor shall ensure that workers are trained in the use of fall protection as required in *MR 217/2006, Part 14*; and *MR 212/2011 Parts 4 and 12*.

GR140.15 First Aid and Emergency Procedures

- .1 Emergency occurrences including incidents (i.e. people, vehicle, equipment, material or property damage) must be reported to the Contract Administrator as soon as reasonably practicable.
- .2 Emergency numbers shall be posted in site trailers, carried near satellite phones, M-Sat phones, 2-way radios, and any other form of communication used at the work site.
- .3 Workers shall be made aware of site specific emergency plans and evacuation procedures during their Prime Contractor orientation and as the job changes during the project. Evacuation procedures shall be conspicuously posted on Safety and Health Program Boards in areas that may be utilized by all workers.
- .4 Muster point signs shall be posted.

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- .5 Emergency response plans shall be prepared for:
- .1 personal injury;
 - .2 fire;
 - .3 explosion; and
 - .4 spills.
- .6 First aid trained personnel shall meet requirements as stated in *MR 217/2006, Part 5*.
- .1 Definitions:
- (i) “close workplace” means a workplace from which, under normal travel conditions and using the means of transportation used at the workplace in an emergency, an ill or injured worker can be transported to a medical facility in **thirty** (30) minutes or less.
 - (ii) “distant workplace” means a workplace from which, under normal travel conditions and using the means of transportation used at the workplace in an emergency, an ill or injured worker can be transported to a medical facility in two (2) hours or less.
 - (iii) “isolated workplace” means a workplace
 - (a) that is normally accessible only by air; or
 - (b) from which, under normal travel conditions and using the means of transportation used at the workplace in an emergency, an ill or injured worker cannot be transported from the workplace to a medical facility within two (2) hours or less.
 - (iv) “medical facility” means
 - (a) a hospital;
 - (b) a medical clinic;
 - (c) a physician’s office; or
 - (d) a nursing station operated and administered by the Government of Manitoba or Canada or both, or operated by a person or entity under an agreement with one or both governments.

- .7 The Prime Contractor shall ensure the following requirements are met with respect to required first aid trained personnel on-site:

Table 1		
	Close Workplace	
Number of Workers per shift	Low hazard work	Other work
1 to 10	-	-
11 to 40	FA1	FA2
41 to 100	FA1	2 FA2s
101 to 199	2 FA1s	2 FA2s
200 or more	3 FA1s	3 FA2s

Table 2		
	Distant Workplace	
Number of Workers per shift	Low hazard work	Other work
1 to 10	-	FA1
11 to 40	FA1	FA2
41 to 100	FA1	2 FA3s
101 to 199	2 FA1s	2 FA3s
200 or more	3 FA1s	3 FA3s

Table 3		
	Isolated Workplace	
Number of Workers per shift	Low hazard work	Other work
1 to 10	FA1	FA2
11 to 40	FA1	FA3
41 to 100	2 FA1s	2 FA3s
101 to 199	2 FA1s	3 FA3s
200 or more	3 FA1s	4 FA3s

- .8 The individuals who are acting as First Aiders on the site must meet all of the qualifications as set out in legislation, and must provide proof of their qualifications to the Contract Administrator prior to starting work on-site.
- .9 The Prime Contractor shall identify first aid trained personnel on-site.
- .10 The Contractor shall ensure the required number of first aid kits are on site.
- .11 The Contractor shall ensure drills are conducted to familiarize workers with emergency procedures.
- .12 The Contractor shall ensure the required number of fire extinguishers is on-site for emergency purposes.
- .13 Emergency eyewash station(s) shall be provided at the workplace.

GR140.16 Incident Reporting

- .1 The Contractor shall report all incidents including personal injury, property damage, and near misses.
- .2 The Contractor shall provide a preliminary report to the Contract Administrator within twelve (12) hours of the incident.
- .3 The Contractor shall provide a detailed incident report within twenty-four (24) hours of the occurrence to the Contract Administrator.
- .4 The Contractor's reports shall include corrective action, and a time frame to implement the corrective action.
- .5 The Contractor shall inform workers on site by the next scheduled shift of the incident particulars through a tool box talk, posted notice, or other means of communication acceptable to the Contract Administrator.
- .6 If required, the Contractor shall contact the required authorities within the time frame identified in the applicable legislation. (i.e. *The Workplace Safety and Health Act, The Workers Compensation Board*)
- .7 The following serious incidents must be reported immediately to the *Workplace Safety and Health Division* by the fastest means of communication available:
 - .1 in which a worker is killed;
 - .2 in which a worker suffers;
 - (i) an injury resulting from electrical contact,
 - (ii) unconsciousness as a result of a concussion,
 - (iii) a fracture of his or her skull, spine, pelvis, arm, leg, hand or foot,
 - (iv) amputation of an arm, leg, hand, foot, finger or toe,
 - (v) third degree burns,
 - (vi) permanent or temporary loss of sight,
 - (vii) a cut or laceration that requires medical treatment at a hospital as defined in *The Health Services Insurances Act*, or
 - (viii) asphyxiation or poisoning; or
 - .3 that involves;
 - (i) the collapse or structural failure of a building, structure, crane, hoist, lift, temporary support system or excavation,
 - (ii) an explosion, fire or flood,
 - (iii) an uncontrolled spill or escape of a hazardous substance, or

(iv) the failure of an atmosphere-supplying respirator.

.8 All incident reports shall be reviewed by the ESRA Safety Manager.

GR140.17 Sanitary Facilities

.1 The Contractor shall supply the following at each work site:

- .1 Drinking water as per *MR 217/2006*, Parts 4.6(1), 4.6(2), and 4.6(3).
- .2 Toilet facilities and washbasins as per *MR 217/2006*, Parts 4.7, 4.8(1), 4.8(2), 4.8(3), and 4.8(4).
- .3 Hand cleaning facilities as per *MR 217/2006*, Part 4.10.

GR140.18 Thermal Stress

.1 The Contractor is responsible to implement safe work procedures and control measures when a worker is exposed to conditions that create a safety and health risk with respect to heat or cold stresses in the workplace.

GR140.19 Inspections

- .1 The Prime Contractor shall be evaluated by ESRA on a regular and random basis to ensure their safety and health policies, programs, plans and procedures are being implemented to achieve compliance with the Contractor's safety and health program and applicable legislation. These reviews do not affect the autonomy of each Prime Contractor or their responsibility to ensure the project is in compliance with legislative requirements.
- .2 The evaluation / inspection shall identify physical and procedural deficiencies that must be corrected by the Contractor to ensure compliance with legislative requirements.
- .3 The Contractor shall maintain a copy of all documentation required to be kept on the project, according to applicable legislation, prior to the work commencing. This includes, but is not limited to the Contractor's safety and health policies, records of training, equipment operators manuals, log books, material safety data sheets (MSDS) or safety data sheets (SDS), engineers drawings, applicable permits, job hazard analysis (JHA's), specific procedures for hazardous work, etc. All information must be readily available on site.

GR140.20 Housekeeping

- .1 The Contractor shall ensure the work site is kept in a neat, orderly fashion.
- .2 The Contractor shall ensure lay down areas and site trailers are kept in a neat, orderly fashion to avoid hazards on the worksite.

GR140.21 Material Safety Data Sheets (MSDS) or Safety Data Sheets (SDS)

.1 The Contractor shall ensure a copy of the Material Safety Data Sheets (MSDS) or Safety Data Sheets (SDS) is in a location accessible to all workers, including ESRA personnel, on the work site, for each hazardous product that is used and / or kept on site.

GR140.22 Storage of Controlled Products

- .1 The Contractor shall follow the storage instructions of all on-site products as stated on the Material Safety Data Sheet (MSDS) or Safety Data Sheets (SDS), and *The National Fire Code*.

GR140.23 Compressed Gases

- .1 No smoking shall be allowed within eight (8) metres of the compressed gas storage area. No smoking signs must be posted in the area indicating the minimum safe distance.
- .2 Cylinders shall not be in contact with the ground, ice, snow, water, salt, or subjected to high temperatures.
- .3 Bottle cylinders shall be stored and secured in an upright position in racks or welding carts with an insulated chain or non-conductive belt.
- .4 When transporting bottle cylinders in a vehicle, cylinders shall be secured to the vehicle, regulators removed, and the valve protection cap shall be installed.
- .5 Compressed gasses shall not be stored with six (6) metres of combustible or flammable materials.
- .6 Empty containers of compressed gases shall be stored separately from full or partially full containers in cylinder rack.

GR140.24 Utilities

- .1 The Contractor must make timely application to authorities for required permits before starting work on or near a public right-of-way.
- .2 The Contractor must obtain utility clearances for required utilities in the vicinity of the Work before starting construction.
- .3 The Contractor must advise / arrange with utilities when blasting is scheduled within three (3) m of hydro lines.
- .4 The Contractor must arrange with utilities to provide **a** Safety Watch when required during construction.
- .5 The Contractor must provide not less than seventy-two (72) hours notice to the Contract Administrator concerning:
 - .1 Proposed traffic detour implementation
 - .2 Proposed removal of traffic detours
 - .3 Proposed road closures
 - .4 Proposed road openings
 - .5 Proposed equipment working at night around utilities
- .6 The Contractor must ensure adherence as per *MR 217/2006, Part 25*.

GR140.25 Equipment Maintenance

- .1 The Contractor shall establish an area for conducting equipment maintenance.
- .2 The Contractor shall ensure that a written lockout / tagout procedure is established and followed during equipment maintenance.
- .3 The Contractor shall ensure workers adhere to the lockout / tagout procedure for removing defective equipment and tools from service.
- .4 The Contractor shall ensure equipment is equipped with appropriate fire extinguishers.

GR140.26 Lockout / Tagout

- .1 The Contractor shall develop and post a lockout / tagout procedure for all tools, equipment, and machinery.
- .2 The Contractor shall ensure that workers are trained on and adhere to the lockout / tagout procedure for all tools, equipment, and machinery.
- .3 The Contractor shall submit a copy of their lockout / tagout procedure as part of the safe work plan.

GR140.27 Excavations

- .1 Excavation and trenching work must be done in accordance with *MR 217/2006, Part 26*.

GR140.28 Traffic Management

- .1 The Contractor must supply, erect, maintain and remove applicable traffic control devices, provide flagpersons and follow traffic control procedures in accordance with the Specification, the *Manitoba Infrastructure and Transportation "Manitoba Work Zone Traffic Control Manual – Provincial Roads and Provincial Trunk Highways"* or as shown on the Drawings. Flagpersons shall be trained in the proper traffic control procedures appropriate for the prevailing conditions and shall have proof of certification from a recognized training program.
- .2 Immediately correct non-compliant traffic control signing as directed by the Contract Administrator. The Contract Administrator may suspend work until the signing is corrected. Claim for delay of work or contract extension due to this action will not be approved.
- .3 The Contractor shall prepare a traffic management plan, ensuring that traffic management is undertaken in accordance with Manitoba Infrastructure and Transportation specifications. For reference, see the website address for the *"Manitoba Work Zone Traffic Control Manual"* for Manitoba Infrastructure and Transportation.
- .4 The Contractor's traffic management plan shall also require acceptance by the Contract Administrator. The traffic plan shall address emergency access and residential / public access adjacent to the site.

- .5 The traffic management plan shall be submitted to the Contract Administrator within five (5) days prior to the start of work.
- .6 Notwithstanding and in addition to Manitoba Infrastructure and Transportation "*Manitoba Work Zone Traffic Control Manual*" Specification 200 "Traffic Control", the contractor shall adhere to the Signage Plan in the Tender Drawings.
- .7 All vehicles driving onto a construction site that is exposed to traffic must be equipped with an approved lighting system (beacon). This safety system must be in use at all times while on the construction site.

GR140.29 Smoking

- .1 Smoking in enclosed public places, indoor workplaces and in a vehicle used for work while carrying two or more employees is prohibited, pursuant to *The Non-Smokers Health Protection Act*.
- .2 Contractors shall ensure there are sufficient receptacles to extinguish cigarettes or other smoking materials and ensure workers are trained in preventing fires on the worksite(s).
- .3 Contractors shall ensure smoking is prohibited in designated fuelling areas and applicable signage shall be posted.

GR140.30 Clearing

- .1 Hand clearing shall be conducted by individuals who possess current operation of chainsaw certificates.
- .2 An emergency transport vehicle shall be present at the work site while clearing occurs.
- .3 A first aid kit that meets or exceeds *MR 217/2006* requirements shall be located at the work site.
- .4 A first aid trained person that meets or exceeds *MR 217/2006* requirements shall be present at the work site.
- .5 Required fire extinguishers and other firefighting equipment as directed by the Contract Administrator shall be located at the work site.
- .6 Emergency procedures, including equipment and the communication system shall be reviewed with workers prior to the commencement of clearing.

GR140.31 Quarry

- .1 The Contractor shall ensure the quarry is operated pursuant to *MR 212/2011*, Operation of Mines Regulation.
- .2 The Contractor shall ensure the appropriate signage is posted at the entrance.
- .3 The Contractor shall ensure a protective barrier is securely in place to prevent persons from entering a dangerous area.
- .4 The Contractor must ensure that all earth, clay, sand, gravel, loose rock, trees and other vegetation is removed to expose the bedrock within 2 m from the rim of working, and that the material beyond 2 m from the rim of working is sloped away from the rim, and all benches are less than 20 m in height.

- .5 The Contractor shall maintain a protective curb or ridge of material at an open pit or quarry; along the outer edge of a ramp; a roadway that is within 20 m of a hazardous slope; and a bench, when mobile equipment is working within 8 m of the bench edge.
- .6 The minimum height of the curb is one metre, or one-half (1/2) the diameter of the largest wheel of the equipment in use; and in the case of a curve, of sufficient height to stop runaway mobile equipment.
- .7 Haul routes shall be established within the quarry for hauling and inspection vehicles.
- .8 Prior to permitting a person to work near the face of an open pit or quarry, the face must be examined by the supervisor / blaster following a blast and at least daily.
- .9 The Supervisor must ensure that corrective action is taken if hazardous conditions are identified during an examination.
- .10 When working with clay, sand, gravel or other unconsolidated materials the contractor must not undercut the face or use equipment with a reach that is less than the vertical height of the working face.

GR140.32 Crushing

- .1 The crushing operation must be accessible by emergency vehicles at all times.
- .2 Electrical cables shall be buried, covered or secured above ground.
- .3 Crushed material shall not impede or block haul roads.
- .4 Restricted vehicle / pedestrian areas shall be marked.
- .5 The crusher, genset and all components must be grounded.
- .6 Footing / pads must be stable and support the load.
- .7 Emergency STOPS must be in place and tested.
- .8 Guards must be in place where there are any moving parts that create a hazard.

GR140.33 Drilling

- .1 Employers shall not allow workers to wear loose clothing, accessories, or have unconfined hair as this is an entanglement hazard when working with the machinery.
- .2 The driller / driller helper shall conduct a pre-inspection of the drilling machine.
- .3 The Contractor must not allow a worker to drill a hole or cause or permit a hole to be drilled at an open pit or quarry at a location less than 4.5 m from a hole containing explosives or from a mishole; or 300 mm from a bootleg. (a bootleg is the bottom remnant or intact portion of a hole that has been charged and blasted and contains no visible explosive.)
- .4 The Contractor must ensure that before a borehole is drilled, all loose rock or other material that may pose a risk to the safety and health of a worker or other person is scaled or removed. If blasting may have occurred previously in the area of the blast

site, the drilling face must be thoroughly cleaned in accordance with appropriate procedure.

- .5 The Contractor must ensure all drill holes are of sufficient size to permit the easy and unobstructed insertion of the explosive charge to the bottom of the hole.
- .6 Drilling must not occur within eight (8) meters of a charged hole / misfire.
- .7 Equipment shall be shut off when not in use; except in winter months.
- .8 Ensure a spill kit is in close proximity to the drilling operation.
- .9 Ensure a fire extinguisher is mounted or close to the equipment.
- .10 Adequate lighting shall be required for drilling at night. Lighting shall *meet MR 217/2006, Part 4.1, and MR 212/2011, Part 12.16.*
- .11 There shall be no drilling at night if loading of the blast has commenced.
- .12 The Contractor must adhere to *MR 212/2011, Parts 4 and 12, and MR 217/2006, Part 14*, and not allow work on the wall of an open pit or quarry or within 3.5 m of the crest when there is danger of the worker falling more than 1.5 m unless the worker:
 - .1 has adequate fall protection that meets the requirements prescribed in 14.2 to 14.23 of the Workplace Safety and Health Regulation; and
 - .2 is not working alone.

GR140.34 Loading and Blasting

- .1 The designated blaster is responsible for safety on site with respect to loading and blasting operations.
- .2 The Contractor shall submit a Blast Plan a minimum of two (2) weeks prior to any blast. The Blast Plan shall include, at a minimum:
 - .1 name of the blaster in charge with his/her credentials
 - .2 pre-notification of blast dates
 - .3 identification of hazards from blast and required controls
 - .4 types of signs to be used and location of placement
 - .5 procedure for loading
 - .6 procedure for use of explosives
 - .7 procedure for guarding loaded holes
 - .8 procedure for blasting, including a map of all entry points with guards
 - .9 warning devices to be used pre and post blast
 - .10 procedure for transporting explosives
 - .11 how explosives will be stored and licensed
 - .12 procedure for removing misholes including the type of explosives that may be washed out of the mishole and the equipment and method to be used

-
- .3 The certified blaster must notify the Contract Administrator twenty-four (24) hours prior to loading.
 - .4 The blaster shall conduct a toolbox talk with all personnel involved in the blast prior to loading of the blast.
 - .5 Loading of holes and blasting must be overseen by the blaster certified by *Workplace Safety and Health, Mines Branch, Province of Manitoba*.
 - .6 A preliminary Blast Details Report including layout must be filed with the Contract Administrator prior to a blast and the completed Blast Details Report must be submitted to the Contract Administrator within four (4) hours of every blast, including misfires.
 - .7 The Contractor shall ensure signage is posted at the entry of a quarry indicating the scheduled time of a blast.
 - .8 Explosives shall not be left unguarded at the blasting site at any time.
 - .9 Unused explosives shall be returned to the magazine site prior to the blast
 - .10 Explosive packaging shall be destroyed prior to, or immediately after the blast. If packaging is burned, the following criteria must be met:
 - .1 area must be a minimum of eight (8) metres from a loaded hole
 - .2 the surface under the burning area must not have any open cracks
 - .3 area must be a minimum of ten (10) metres from the vertical edge of the pit
 - .4 must be a minimum of eight (8) metres from any vegetation
 - .11 Prior to blasting, all machinery and equipment shall be moved to a safe distance as determined by the certified blaster, prior to blasting.
 - .12 Blast mats may be required when blasting within five hundred (500) metres of any building, overhead power or electrical lines, or other stationary machinery or equipment.
 - .13 Guards shall be placed at all approaches prior to the blast.
 - .14 Radio transmitters and M-Sat phones shall be turned off when guards are posted.
 - .15 Workers shall be present at a designated muster point prior to the blast and a roll call shall be taken. A copy of the roll call shall be attached to the blast details report.
 - .15 A warning signal shall be given prior to the blast.
 - .16 The blaster must check the site for misfires or unexploded explosives. Any and all cutoffs/misfires must be reported to the Contract Administrator within four (4) hours of the occurrence by the Contractor.
 - .17 Misfires shall be marked in accordance with *MR 217/2006, Part 34.17*.
 - .18 An "all clear" warning signal shall be given after the blast area is checked.

- .19 The Contractor must notify the Contract Administrator when a blast is loaded at night, lighting requirements shall meet *MR 217/2006, Part 4.14*.
- .21 The Contractor must contact Manitoba Hydro when blasting within three (3) m of hydro lines to obtain the necessary clearance.
- .22 The Contractor must notify Nav Canada / Land Use five (5) business days prior to blasting. The Contractor shall contact East Side Road Authority for the required forms.

GR 140.35 Magazine License and Explosives Storage

General Requirements

- .1 Magazines must be certified complete with a serial number.
- .2 Magazines may be licensed by either Federal or Provincial authorities.
- .3 The Magazine layout must be filed with either Federal or Provincial Authorities and the appropriate distances observed.
- .4 Explosives storage may not exceed the quantity designated on the magazine license.
- .5 A copy of the Magazine License shall be posted in the magazine(s) or in an office in close proximity to the magazine(s). A copy of the license must be forwarded to the Contract Administrator within thirty (30) days of receipt from either the Provincial or Federal authorities.
- .6 If a lightning storm is approaching, immediately secure the magazines and vacate the area.
- .7 Vehicles / equipment shall not be parked within eight (8) metres of a magazine, unless loading and unloading of explosives is occurring.
- .8 The placement and distances of storage magazines must be maintained between the magazines. Distance is dependent on the amount of explosives and the required distance from the road. Follow the guidelines set out in the *Explosives Regulatory Division, Blasting Explosive and Initiation Systems – Storage, Possession, Transportation, Destruction and Sale, March 2008*, and *MR 212/2011, Part 6, Schedule A (Section 6.46) Table*.

Provincial Requirements

- .1 When licensed by the Province of Manitoba, the magazine must be in the care of an authorized person, and there must be a list of the requirements in Part 6 of MR12/2011 relating to the care and use of explosives posted in or in the vicinity of the magazine.

Federal Requirements

- .1 Federally, a magazine license (F060-01) must be obtained from *Natural Resources Canada, Explosives Regulatory Division*.
- .2 The Blaster in charge must be stated on the application form.
- .3 Once approved and the magazines are in place, the local RCMP must be notified with the exact location of the magazines. (Notify the RCMP detachment closest to the magazine site.)

- .4 A magazine license is required to purchase or transport explosives.
- .5 The ground area used for magazine placement must be flat and free of brush, long grass, or any readily combustible or flammable materials for at least eight (8) m around the container.
- .6 When barriers are required between magazines they shall be constructed from material free of trees, grass or other combustible materials. Barriers shall be constructed of sufficient height and width to totally block site lines from one magazine to the other magazine.
- .7 The magazine storage site must have surveillance records that are maintained and documented. Surveillance records must include the time and date of surveillance, and must be available to regulatory inspectors and the police.
- .8 The storage site must have a sturdy lockable barrier. A sign stating "Danger Explosives - No Trespassing" must be installed at the gate.
- .9 Magazines must be fifteen (15) meters from transmission lines (hydro lines).
- .10 Magazines must not be placed within thirty (30) meters of a body of water.
- .11 The Contractor shall ensure the Guideline for Security Plan May 2014 is implemented as required by Natural Resources Canada.
- .12 The Contractor shall ensure the Guideline for Fire Safety Plan April 2014 is implemented as required by Natural Resources Canada.
- .13 The Contractor shall ensure the Guideline for Key Control Plan February 2014 is implemented as required by *Natural Resources Canada's* guideline.
- .14 Magazines must be locked at all times. The blaster is responsible for the keys for the magazine.
- .15 Follow the reporting procedures of accidents and incidents as required by *Explosives Regulations Division, Natural Resources Canada*.
- .16 Magazines must be absolutely clean and explosives must not be stacked higher than the "stacking line" in the magazine. (15 centimeters from the ceiling)
- .17 Inventory records of explosives must be kept in the magazine and a copy forwarded to Contractor Administrator on a monthly basis.

GR140.36 Explosives Transportation (By Ground)

- .1 The Contract Administrator must be notified of any explosive shipment at least forty-eight (48) hours prior to shipping date.
- .2 The driver is required to have a current Transportation of Dangerous Goods (TDG) certificate.
- .3 Vehicles used to transport explosives must be registered through a Provincial or Territorial Agency.
- .4 The driver is required to have a current driver's license and must be a minimum of eighteen (18) years of age. If transporting more than 2000 kg of explosives, the driver must be a minimum of twenty-one (21) years of age.

- .5 The vehicle shall be in sound mechanical condition.
- .6 The vehicle shall be fuelled up prior to loading explosives. Refuel only if necessary.
- .7 Transportation of Dangerous Goods (TDG) placards shall be placed on all four (4) sides of the vehicle.
- .8 Explosives must not be transported with any other dangerous goods.
- .9 Explosives must not be transported in a towed vehicle or trailer, with the exception of a tractor (semi) trailer.
- .10 The vehicle transporting explosives must not carry passengers other than those persons involved in the transport.
- .11 Smoking is not allowed in an eight (8) meter radius of the vehicle carrying explosives.
- .12 The transporting vehicle compartment must be free of any metal or electrical fixtures. Iron or steel compartments must be covered with leather, wood, tarpaulin or other suitable material on either a permanent or temporary basis.
- .13 The portion of the vehicle transporting explosives shall be fully enclosed, locked, fire resistant van, tank, fixed container or compartment.
- .14 The load of explosives being transported shall not exceed eighty percent (80%) of the carrying capacity of the transport vehicle.
- .15 The vehicle transporting explosives shall be equipped with a minimum of a one (1) 5 lb ABC fire extinguisher.
- .16 The transporting vehicle shall not be left unattended once explosives have been loaded.
- .17 The driver must ensure copies of Material Safety Data Sheets (MSDS) and /or Safety Data Sheets (SDS) accompany the shipment.

GR140.37 Explosives Transportation (By Air)

- .1 Transport explosives by Aircraft requirements are set out in the Transportation of Dangerous Goods Regulations Part 12 Air and must be adhered to.
- .2 There shall be proof of current Transportation of Dangerous Goods Certificates on file.
- .3 A copy of the notification by the supplier of the shipping name, UN number, primary class and compatibility group of the explosives to the Air Carrier must be forwarded to the airport manager. This is required forty-eight (48) hours before explosives are loaded on the aircraft.
- .4 The airport manager must receive twenty-four (24) hours notice prior to the explosives shipment.
- .5 The Contractor shall receive an advance copy of TDG shipping document.
- .6 The shippers' declaration of Dangerous Goods shall be completed and accompany the shipment
- .7 The Contractor shall meet the shipment at the Airport to receive the explosives upon arrival.

- .8 Explosives must not remain at the airport. Explosives must be immediately transported to the magazine site.
- .9 The Contractor must determine the necessity of a guard for the explosives during the offloading of explosives to the transporting vehicle.
- .10 Explosive packaging must be marked individually with the magazine number.
- .11 The Contractor must check the shipment for open or damaged packaging. Damaged or opened packaging must be returned to the supplier with proper TDG shipping documentation immediately.
- .12 Detonators must be shipped in proper containers and must be shipped separately.
- .13 Receiving transport vehicles must be licensed by a federal or provincial agency and must be equipped with a flashing amber beacon.
- .14 The Supplier and Contractor must ensure that explosives being shipped are legal to ship.
- .15 The Contractor must ensure the supplier sends Material Safety Data Sheets (MSDS) or Safety Data Sheets (SDS) with the TDG shipping documentation.

GR140.38 Summary of Required Submissions

- | | | |
|-----|---|----------|
| .1 | Annual Letter of Good Standing from Association | GR140.2 |
| .2 | A copy of the Contractor's Safety and Health Program | GR140.3 |
| .3 | Safe Work Plan | GR140.5 |
| .4 | Reporting Procedures (Monthly Project Site Summary Report) | GR140.7 |
| .5 | Workplace Safety & Health Committee | GR140.9 |
| .6 | Lock Out / Tag Out Procedure | GR140.26 |
| .7 | Traffic Management Control Plan | GR140.28 |
| .7 | Blast Plan | GR140.34 |
| .8 | Blast Details Report Every Blast Including Misfires | GR140.34 |
| .9 | A copy of the Roll Call attached to the Blast Details Report | GR140.34 |
| .10 | Copy of the Designated Blaster's Workplace Safety & Health Blasters Certificate | GR140.34 |
| .11 | Copy of the Magazine(s) License | GR140.35 |

GR140.39 Measurement and Payment

- .1 The requirements set out in GR140 are considered incidental to the Work and will not be measured for payment unless indicated otherwise in the Specifications.

Appendix 5-6

ESRA's Safe Work Plan

SAFE WORK PLAN

Contract For:	<input style="width: 95%;" type="text" value="Enter COMPANY name"/>		
Contract Number:	<input style="width: 95%;" type="text" value="Enter Contract Number, an example P4-BR-B4 (P4 is the project area, BR is the First Nation, B4 is brush clearing contract 4)"/>		
Location:	<input style="width: 95%;" type="text" value="Enter location of Work"/>		
Project Owner:	East Side Road Authority	Dates of Work:	<input style="width: 95%;" type="text" value="Enter dates of work based on Work Plan or Contract schedule"/>
Contract Administrator	Name:	<input style="width: 95%;" type="text" value="Enter name of CA and phone #'s"/>	
	Phone:		

1. Description of Work			
Prime Contractor Contact Information	Project Manager:		Tel:
	Site Supervisor:	As the PRIME CONTRACTOR, Enter the name and phone number of the designated project manager, site supervisor, safety officer, environment officer, and worker safety representative.	Tel:
	Safety Officer:		Tel:
	Environment Officer:		Tel:
	Worker Safety Representative:		Tel:
Scope of Work / Major Tasks If applicable refer to Supplemental Conditions 2.00 AND Add Additional Tasks	Enter the scope of work. Scope of work may be found in the Contract (see Supplemental Conditions 2.00) or Work Plan. Write/type as is provided in the Contract or Work Plan, or provide a brief description. Be sure to include all primary tasks.		
Sub-Contractor Contact Information	Project Manager:		Tel:
	Site Supervisor:	As the SUB- CONTRACTOR, Enter the name and phone number of the designated project manager, site supervisor, safety officer, environment officer, and worker safety representative.	Tel:
	Safety Officer:		Tel:
	Environment Officer:		Tel:
	Worker Safety Representative:		Tel:
Subcontractor Scope of Work / Major Tasks	Enter the scope of work of the sub-contractor. Scope of work may be found in the Contract or Work Plan. Write/type as is provided in the Contract or Work Plan, or provide a brief description. Be sure to include all primary tasks.		

SAFE WORK PLAN

2. Equipment Involved		
Equipment	Number	Owner
<div style="border: 1px solid red; padding: 5px; margin: 0 auto; width: 80%;"> Enter each piece of equipment individually involved with this contract. Include the unit number and the owner of the equipment. If there are two dozers, use one line for each dozer to identify unit number. </div>		

3. Training Requirements and Qualifications	
All Personnel	<div style="border: 1px solid red; padding: 5px;"> Enter the training requirements and qualifications for all personnel. Example: WHMIS, first aid, company orientation, safe work plan, task specific certifications, etc. </div>
Subcontractors	<div style="border: 1px solid red; padding: 5px;"> Enter the training requirements and qualifications for all subcontractors. Example: WHMIS, First Aid, task related certifications, company orientations, safe work plans, etc. </div>
Other (i.e Task/Area Specific Requirements)	<div style="border: 1px solid red; padding: 5px;"> Enter the training requirements and qualifications related to specialized work activities for all personnel and subcontractors. Example: Fall Protection Training, Excavation, Flagging Coordinator/ Person, etc. </div>

Training Records Available: YES NO

4. Personal Protective Equipment	
All On-Site Personnel	<div style="border: 1px solid red; padding: 5px;"> Enter the personal protective equipment (ppe) to be worn on-site and the class / type of PPE. </div>
Area / Task Specific Requirements	<div style="border: 1px solid red; padding: 5px;"> Enter the personal protective equipment (ppe) that is to be for specific tasks, include class / type and /or the CSA standard. </div>
Other Requirements	<div style="border: 1px solid red; padding: 5px;"> Enter any additional personal protective equipment (ppe) to be worn for specific tasks, include class / type and /or the CSA standard. </div>

SAFE WORK PLAN

Hazard Rating System	
Severity 1) Fatality or Disability 2) Loss Time Injury 3) Reportable Injury - No loss Time 4) Minor Medical Treatment	Probability a) Immediate b) Probable c) Possible d) Remote

5. Scope of work: Please supply all relevant Safe Work Procedures

Work Activity	Hazards (Ranked by Severity and probability)	Controls	Safe Work Procedures Available
Enter the work activity. Enter one work activity per line, using the scope of work activities. Examples of work activities would be Installing Culvert OR Mechanical Brush Clearing.	Enter all the hazards associated with the work activity listed. ← Once all hazards are identified for the identified work activity, use the Hazard Rating System above to identify the severity and probability for each identified hazard.	For each hazard, provide or plan for a control measure, such as: <u>Eliminate (including substitute)</u> – e.i. remove the hazard or substitute (replace) hazardous material or machines <u>Engineering</u> – e.i. designs, modifications, processes <u>Administrative Control</u> – e.i. alter the way work is done, policies, rules, including safe work practices and operating procedures <u>Personal Protection Equipment</u> – e.i. reduce exposure such as contact with chemicals and noise.	<input type="checkbox"/> Yes <input type="checkbox"/> No Check Yes or No for each activity identified.
			<input type="checkbox"/> Yes <input type="checkbox"/> No

SAFE WORK PLAN

6. Control Measures to Protect Other Workers/Public: This section details how you will protect other workers and members of the public sharing the worksite, or working in areas adjacent to the worksite from any physical or chemical hazards that the work may generate. In the case of occupied office space chemical hazards include dust and odours.

Hazard	Control Measure
Identify the hazard(s) that may affect workers or the public.	For each hazard identified, provide a control measure to eliminate the hazard.

7. Emergency Contacts

Local Fire Department:	Provide the phone number for the local fire department. If none, make inquiries on the next possible resources. A source must be identified.
Ambulance Service: (If Available)	Provide a number. If not, provide reference on how the procedure.
RCMP/Band Constable:	Provide local police detachment phone number(s).
Nearest Hospital / Nursing Station:	Name: _____ Phone Number: Provide phone number to nearest hospital or nursing station.
Driving Directions to Nearest Hospital / Nursing Station:	Provide written instructions to hospital / nursing station or attach the written driving instructions.
Map Attached:	Yes <input type="checkbox"/> No <input type="checkbox"/> Attach map to nursing station.
Manitoba Conservation:	Information: (204) 945-6784 Environmental Accident Reporting: (204) 945-4888 or 1-800-214-6497
Workplace Safety and Health Branch i.e. Serious Incidents Reporting	(204) 957-7233 or 1-855-957-7233

SAFE WORK PLAN

8. On Site Emergency Responders and Equipment	
On-Site Emergency Coordinator	Identify the on-site Emergency Coordinator.
Back-up On-Site Emergency Coordinator	Identify the BACK-UP on-site Emergency Coordinator.
Emergency Communication Device(s) a) Summoning Assistance b) Site Evacuation	List the devices used to communicate (CALL) for emergency assistance and to evacuate. If protocol has been attached, please identify in this area.
Standby Emergency Transportation Vehicle(s)	Identify the mode of emergency transportation available on-site.
List of all 1st Aiders on site	Identify level of first aiders and post.
Location of First Aid Kits	Identify location of all first aid kits.
Location of Fire Extinguishers	Identify location of all fire extinguishers.
Location of Spill Kits	Identify location of all spill kits.
Location of Portable Eye Wash Station	Identify location of potable eye wash station OR protocol.
Location of Material Safety Data Sheet(s)	Identify location of Material Safety Data Sheets.
Location of Muster Point	Identify MUSTER POINTS.

SAFE WORK PLAN

John Doe

Safety Officer

January 1, 2000

**Person drafting this
Safe Work Plan:**

John Doe, Safety Officer, January 1, 2000

Name

Title

Date

**Project Manager
Approval:**

Susie Doe

General Manager

January 1, 2000

Susie Doe, General Manager, January 1, 2000

Name

Title

Date

**Contractor's Safety
Person :**

John Doe

Safety Officer

January 1, 2000

John Doe, Safety Officer, January 1, 2000

Name

Title

Date

**Worker Safety
Representative(s):**

Willy Doe

Safety Worker Rep.
/Equipment Operator

January 1, 2000

Willy Doe, Safety Worker Representative / Equipment Operator, January 1, 2000

Name

Title

Date

This Safe Work Plan does not in any way replace the Contractor's responsibilities under the Workplace Safety & Health Act and Regulations to ensure Workplace Safety and Health Programs are in place to protect workers and members of the public from potential hazardous conditions on the job.

This Safe Work Plan shall be posted at the project site and made available to East Side Road Authority Safety and Environment Officers, and Construction Inspectors. The Safe Work Plan will be used to monitor safe practices on site as required by the Workplace Safety and Health Act.

Appendix 5-7

Sustainability Assessment of the Proposed P4 All-Season Road Project

Appendix 5-7: Sustainability Assessment of the Proposed P4 All-Season Road Project

Principles and Guidelines of Sustainable Development	Actions Undertaken and Commitments by ESRA
Integration of Environmental and Economic Decisions	<ul style="list-style-type: none"> ▪ The proposed Project connecting Berens River and Poplar River First Nations to the existing southern transportation network is part of the provincial commitment to provide all season road access to and between remote, isolated communities on the east side of Lake Winnipeg. ▪ The purpose of the proposed Project is to provide safe and more reliable road transportation between the communities of Berens River and Poplar River First Nations. ▪ The scope of the environmental impact assessment of this Project considers biophysical, socio-economic and Aboriginal environmental components. ▪ The environmental impact assessment concluded that the beneficial social economic and health benefits outweigh any potential adverse environmental effects.
Economic decisions should adequately reflect environmental, human health, and social effects.	
Environmental and health initiatives should adequately take into account economic, human health, and social consequences.	
Stewardship	<ul style="list-style-type: none"> ▪ ESRA is committed to being a positive and creative force for the protection and enhancement of the environment; having respect for the public that could be affected by our decisions and actions; and being responsible stewards of the environmental resources in our care (Section 5.1; ESRA Environmental Protection Policy). ▪ The proposed Project is consistent with the recommendations in ‘Promises to Keep ...Towards a Broad Area Plan for the East Side of Lake Winnipeg’ (East Side Planning Initiative 2004) which concluded that there was support for a regional all-season road network north of the Bloodvein First Nation community and concluded that action today will provide benefit for many generations into the future. ▪ The proposed Project is part of a regional transportation network that will eventually connect the remote communities on the east side of Lake Winnipeg with the provincial road network. This will benefit the health, social well-being and economy of those communities for future generations. ▪ The proposed Project, and future road projects, will provide employment training and experience opportunities for Aboriginal communities in the region.
The economy, the environment, human health, and social well-being should be managed for the equal benefit of present and future generations.	
Manitobans are caretakers of the economy, the environment, human health, and social well-being for the benefit of present and future generations.	
Today's decisions are to be balanced with tomorrow's effects.	
Shared Responsibility and Understanding	<ul style="list-style-type: none"> ▪ ESRA has undertaken an extensive Aboriginal and public engagement program consisting of community meetings, traditional design workshops, and open houses (Chapter 4) aimed at providing information about the proposed Project and obtaining information for use in the project design and environmental assessment. ▪ Information obtained from the Aboriginal and public engagement program has been incorporated into the final design of the proposed Project and has been used in the development of specific mitigation measures in the environmental assessment report.
Manitobans should acknowledge responsibility for sustaining the economy, the environment, human health and social well-being, with each being accountable for decisions and actions in a spirit of partnership and open cooperation.	
Manitobans share a common economic, physical and social environment.	

Principles and Guidelines of Sustainable Development	Actions Undertaken and Commitments by ESRA
<p>Manitobans should understand and respect differing economic and social views, values, traditions, and aspirations.</p>	<ul style="list-style-type: none"> ▪ The project design has considered the various issues and concerns of Manitobans living on the east side of Lake Winnipeg including regional transportation, economic development and employment opportunities, cost of goods and services, and aboriginal and community development.
<p>Manitobans should consider the aspirations, needs and views of the people of the various geographical regions and ethnic groups in Manitoba, including aboriginal peoples, to facilitate equitable management of Manitoba's common resources.</p>	
<p>Prevention</p>	<ul style="list-style-type: none"> ▪ ESRA is committed to a proper understanding of potential environmental effects of the Project and have adopted measures aimed at protecting and preserving our environment and promoting sustainable development (Section 5.7, Appendix 5-1). ▪ The proposed Project was subject to a broad-scoped environmental assessment (this document) that identified, assessed and mitigated potentially adverse environmental effects, and identified environmental protection measures to check that mitigation measures are implemented and effective. ▪ Environmental protection plans, specific component plans and monitoring plans will be implemented to prevent potentially adverse environmental effects and to implement actions to correct mitigation measures that are not fully effective.
<p>Manitobans should anticipate, and prevent or mitigate, significant adverse economic, environmental, human health and social effects of decisions and actions, having particular careful regard to decisions whose effects are not entirely certain but which, on reasonable and well-informed grounds, appear to pose serious threats to the economy, the environment, human health, and social well-being.</p>	
<p>Conservation and Enhancement</p>	<ul style="list-style-type: none"> ▪ The proposed Project was subject to a broad-scoped environmental impact assessment (this document) that identified, assessed, and mitigated potentially adverse effects on ecological processes, biological diversity, and life-support systems. ▪ Specific baseline studies were carried out on vegetation, aquatic and wildlife resources to provide relevant, recent, and representative ecological information for consideration in the environmental assessment. ▪ Aboriginal values were considered in decision-making processes through the inclusion of traditional and local knowledge in the design of the proposed Project and in the environmental assessment. ▪ Mitigation measures for the proposed Project include provisions to limit access by hunters and fishers to the region by blocking and re-vegetating temporary access roads.
<p>Manitobans should:</p>	
<p>(a) maintain the ecological processes, biological diversity and life-support systems of the environment;</p>	
<p>(b) harvest renewable resources on a sustainable yield basis;</p>	
<p>(c) make wise and efficient use of renewable and non-renewable resources; and</p>	
<p>(d) enhance the long-term productive capability, quality, and capacity of natural ecosystems.</p>	
<p>Rehabilitation and Reclamation</p>	<ul style="list-style-type: none"> ▪ The proposed Project was designed to use previously disturbed areas, wherever feasible. ▪ Any contaminated sites resulting from construction activities or encountered along the road right-of-way will be assessed and remediated in accordance with provincial standards. ▪ Construction sites for the proposed Project, including quarry sites, borrow areas, staging areas,
<p>Manitobans should:</p>	
<p>(a) endeavour to repair damage to or degradation of the environment; and</p>	

Principles and Guidelines of Sustainable Development	Actions Undertaken and Commitments by ESRA
(b) consider the need for rehabilitation and reclamation in future decisions and actions.	construction camps, and temporary access roads will be re-vegetated once these temporary areas are no longer required using natural processes augmented with native and naturalized plants and seeds.
<p>Global Responsibility</p> <p>Manitobans should think globally when acting locally, recognizing that there is economic, ecological and social interdependence among provinces and nations, and working cooperatively, within Canada and internationally, to integrate economic, environmental, human health, and social factors in decision-making while developing comprehensive and equitable solutions to problems.</p>	<ul style="list-style-type: none"> ▪ While the focus of the proposed Project is a relatively small area on the east side of Lake Winnipeg, ESRA’s scope extends throughout the east side of Lake Winnipeg region to areas in northern Manitoba. Environmental issues within the scope of this region include transportation, boreal woodland caribou protection, protected areas, and tourism and recreation which have global implications. ▪ The proposed Project has a relatively small regional project footprint area and a correspondingly small ecological footprint, while the socio-economic footprint is comparatively larger due to employment and economic development opportunities.
Guidelines for Sustainable Development	
Efficient Use of Resources - which means:	<ul style="list-style-type: none"> ▪ While the proposed Project does not involve the commercial use of natural resources, the environmental assessment considered the protection of existing resources and the potential for future resource harvesting and use in the future due to improved road access over time. ▪ The potential for future resource harvesting and use was considered in the cumulative environmental assessment for the proposed Road Project.
(a) encouraging and facilitating development and application of systems for proper resource pricing, demand management and resource allocation together with incentives to encourage efficient use of resources; and	
(b) employing full-cost accounting to provide better information for decision makers.	
Public Participation - which means:	<ul style="list-style-type: none"> ▪ ESRA has built on the history of public participation carried out for east side of Lake Winnipeg initiatives including the East Side Planning Initiative and the Large Area Transportation Network. ▪ The Aboriginal and Public Engagement program for the proposed Project (Chapter 4) consisted of leadership and community meetings, Traditional Knowledge workshops, and open houses aimed at providing information about the proposed Project and obtaining information for use in the project design and environmental assessment. ▪ Notification for the engagement program included newspaper announcements, posters placed in public locations, letters to individuals and organizations, and phone calls to community leadership and coordinators. ▪ The engagement program will continue through construction and the operation and maintenance phases of the proposed Project.
(a) establishing forums which encourage and provide opportunity for consultation and meaningful participation in decision making processes by Manitobans;	
(b) endeavouring to provide due process, prior notification and appropriate and timely redress for those adversely affected by decisions and actions; and	
(c) striving to achieve consensus amongst citizens with regard to decisions affecting them.	

Principles and Guidelines of Sustainable Development	Actions Undertaken and Commitments by ESRA
<p>Access to Information - which means:</p> <p>(a) encouraging and facilitating the improvement and refinement of economic, environmental, human health, and social information; and</p> <p>(b) promoting the opportunity for equal and timely access to information by all Manitobans.</p>	<ul style="list-style-type: none"> ▪ The Aboriginal and public engagement program provided information on the proposed Project to First Nation and other potentially affected communities, and facilitated input to the project design and environmental assessment. ▪ Information obtained from Aboriginal communities during baseline studies and the Aboriginal and public engagement program for the environmental assessment was returned to the communities. This included traditional knowledge shared with ESRA, meeting notes, minutes, maps, photographs and other forms of information. ▪ This environmental assessment report and supporting documentation will be placed on Manitoba’s Environmental Assessment and Licencing Branch’s public registry.
<p>Integrated Decision Making and Planning - which means: encouraging and facilitating decision making and planning processes that are efficient, timely, accountable, and cross-sectoral and which incorporate an inter-generational perspective of future needs and consequences.</p>	<ul style="list-style-type: none"> ▪ Broad Area Planning for the east side of Lake Winnipeg (East Side Planning Initiative 2004) was born out of the ‘Report of the Consultation on Sustainable Development Implementation (COSDI)’ (Government of Manitoba 1999) and continued through the Large Area Network Study (SNC Lavalin <i>et al.</i> 2011a). ▪ These initiatives have served as models for implementing the principles and guidelines of sustainable development through integrated decision making and planning.
<p>Waste Minimization and Substitution - which means:</p> <p>(a) encouraging and promoting the development and use of substitutes for scarce resources where such substitutes are both environmentally sound and economically viable; and</p> <p>(b) reducing, reusing, recycling and recovering the products of society.</p>	<ul style="list-style-type: none"> ▪ The proposed Project is located in a remote area of Manitoba that is only accessible by air and winter road. This provides both a challenge and an opportunity to ESRA to employ locally available materials, supplies and labour to the extent feasible. ▪ The right-of-way for the proposed Project will be selected for constructability to minimize the extent of disturbance beyond the project footprint to the extent feasible. ▪ Locally available materials will be used in the construction and operation of the proposed Project to the extent feasible, including rock and aggregate materials for road building, and organic soils for reclamation. ▪ The extent of cleared areas, including number of trees cut, will be minimized; salvageable trees will be made available to local communities for use as firewood.
<p>Research and Innovation - which means: encouraging and assisting the researching, development, application, and sharing of knowledge and technologies which further our economic, environmental, human health, and social well-being.</p>	<ul style="list-style-type: none"> ▪ Baseline studies, wildlife research and mapping for the environmental assessment of the proposed Project have incorporated recent research findings and technologies. ▪ Traditional and local knowledge has been used to augment and support scientific knowledge and technologies whenever possible.