Webequie Supply Road Project

Webequie First Nation

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APPENDIX E: MITIGATION MEASURES

AtkinsRéalis

WSR WEBEQUIE SUPPLY ROAD

WEBEQUIE FIRST NATION

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1 Introduction

The proposed mitigation measures outlined in this document are to ensure that construction and operations activities associated with the proposed Webequie Supply Road (WSR, or the Project) are conducted in accordance with applicable environmental legislation, regulations, guidelines, permits and contracts. The Contractor is responsible for ensuring compliance with contract specifications, environmental legislation, permits and authorizations.

The proposed mitigation measures are based on the Project's on-going engagement and consultation, and environmental and industry standards and best practices and include such measures as design mitigation measures; environmental protection procedures; framework of construction and operational phase environmental management plans; health and safety protocols; and commitments made during the Environmental Assessment/ Impact Assessment (EA/IA) process. The proposed mitigation measures presented in this document are not intended to be an exhaustive list and will be updated to reflect permit requirements and conditions.

1.1 Project Overview

The Project is located in northwestern Ontario, Webequie First Nation being approximately 525 kilometres (km) northeast of Thunder Bay. The Project is located on un-surveyed Ontario Crown lands and Webequie First Nation Reserve lands. The proposed Webequie Supply Road will extend in a southeast direction from the community of Webequie, then easterly to a termination point near McFaulds Lake. The WSR is a proposed two-lane all-season gravel road within a cleared right-of-way (ROW) of 35 metres (m) in width and 107 km in length, connecting Webequie First Nation and its airport to existing mineral exploration activities and proposed future mining development in the area referred to as the Ring of Fire. Approximately 17 km of the WSR is located on Webequie First Nation Reserve lands. Supportive infrastructure is required as part of the Project and includes aggregate/rock source areas (i.e., pit/quarries), temporary construction camps with storage/laydown yards, access roads and a permanent Maintenance and Storage Facility. Webequie First Nation is the proponent for the EA/IA and the conceptual preliminary engineering design for the WSR. the proponent (or Owner Operator) for the future construction and operation phases of the Project is unknown at this time and is subject to further discussions between Webequie First Nation and Ontario.

Key project activities include:

Construction

- Surveying and staking;
- Vegetation clearing and grubbing;
- Construction and use of supportive infrastructure:
  - Temporary construction camps with laydown/storage yards;
  - Temporary access roads and waterbody crossings;
  - Aggregate extraction and processing activities at pits/quarries; and
  - Maintenance and Storage Facility (MSF).
- Construction of road, including:
  - Mechanical clearing and grubbing of vegetation using heavy equipment, chainsaws, and brush-saws;
  - Installing and maintaining temporary erosion and sediment control measures;
  - Topsoil stripping and stockpiling within ROW at designated areas, where applicable;
  - Earth cut and fill operations and grading;

- Hauling of gravel, sand and rock from aggregate source areas (Sites ARA-2 and ARA-4) to and along the road corridor;
- Construction of the roadway over peatland where required;
- Fill and gravel placement and compaction;
- Installing cross-culverts in the west-to east section of the road within the lowlands/peatlands;
- Placing rock for erosion protection at road drainage inlets/outlets and at bridge and culvert waterbody crossings, where appropriate;
- Final grading and trimming of road embankment/slopes, ditches and disturbed areas within the ROW; and
- Stabilization of disturbed areas, including site restoration and clean up within the road ROW.

- Construction of permanent waterbody crossing structures;
- Emissions, discharges and wastes:
  - transport, handling and storage of fuel for equipment and vehicles;
  - handling and disposal of waste oil, lubricants and other fluid products used for the maintenance of equipment and vehicles;
  - storage, handing and disposal of solid waste generated at temporary construction camps and work sites;
  - management and/or disposal of wastewater and sewage, both hazardous and non-hazardous, in the form of liquid effluent generated by the temporary workforce at construction camps;
  - air emissions from the operation of equipment and vehicles, including engine exhaust and dust generation;
  - greenhouse gas (GHG) emissions as result of the construction of the Project;
  - noise emissions from equipment and vehicles; and
  - sediment mobilization and discharges from earthwork activities.
- Clean-up and site restoration/reclamation, including the decommissioning and removal of temporary supportive infrastructure (e.g., construction camps), excluding those which may be formalized and used for the operations phase of the Project.

Operations

- Visual patrols and inspections of the road;
- Vegetation management;
- Repair and/or rehabilitation of culverts and bridges at water crossings;
- Resurfacing and repair to road surface and shoulders;
- Aggregate and rock extraction and processing at ARA-4 site;
- Dust control;
- Road drainage system maintenance and repairs – drainage cross-culverts, ditches and inlet/outlet areas;
- Access road maintenance;
- Winter maintenance – snow clearing;
- Spills and emergency response; and
- Waste and excess materials management.

1.2 Community and Stakeholder Involvement

Webequie First Nation, or the proponent for the construction and operations phases of the Project that is still to be determined, will continue to involve Indigenous communities, the public and stakeholders to discuss project updates and solicit feedback and collaboration on Project related items. Webequie First Nation, or the proponent for construction and operation for the Project, is committed to considering input received from the Indigenous communities, stakeholders and the public for the development and implementation of the CEMP, OEMP, and Sustainability Plan.

The proposed mitigation measures outlined in this EAR/IS are based on the comments, concerns and issues that were expressed during on-going engagement and consultation with Indigenous communities and groups, the public and stakeholders. These measures reflect environmental protection guidelines to protect "Environmentally Sensitive Areas" described in the Webequie First Nation On-Reserve Land Use Plan (Webequie First Nation, 2019a) as follows.

Guidelines for Site Planning and Design

- **Mapping**. Pre-planning for development should include site investigations for environmentally sensitive areas. The extent of any environmentally sensitive area should be investigated, mapped, and included in the site plans and construction documents for any site development project.
- **Setbacks**. No clearing, tree removal, construction, or construction related activities should occur within 30 metres (100 feet) from the top-of-bank of any waterways or waterbodies. Setback areas should be clearly indicated on all site planning and construction drawings. Structures such as trails or boardwalks for community use that are carefully designed and located to minimize disturbance may be located within these setbacks.
- **Preservation of existing natural landscapes**. Beyond the 30 metre (100 feet) setbacks from waterways and waterbodies, the natural features of any landscape area should be protected by:
  a. Identifying and retaining mature trees and woody vegetation on building sites wherever and as much as possible; and
  b. Designing and planning each site to require as little grading or excavation as possible.
- **Runoff and protection of waterways**. Waterways should be protected from long-term hydrologic impacts by using drainage strategies that slow down, absorb, and filter rainwater. Basic strategies should focus on landscape and soil-based management practices (rather than underground pipes that carry polluting sediments directly to nearby waterways). Strategies include:
  a. Minimizing paved or impervious areas such as parking lots and roads; and
  b. Using rain gardens, swales, ponds, and deep un-compacted soils to collect and filter rainwater (e.g., drainage gardens at the edges of roads and parking lots).

Guidelines for Building Design

- **Healthy, green buildings**. New community facilities (e.g., Health Centre) play a central role in promoting good development practices within our community. We will endeavor to build new community facilities that incorporate both our cultural values and the highest standards for energy efficiency, water conservation and occupant health. New community facilities will act as examples or role models for other developments to follow and establish clear expectations around what our "best practices" should be.

Guidelines for During Construction

- **Setbacks**. During site development and construction, established setbacks from waterways and other protected areas should be indicated with high visibility flagging or fencing.

- **Preservation of existing natural landscapes**. The natural features of any landscape area should be protected by:
  a. Identifying and retaining mature trees and woody vegetation on building sites wherever and as much as possible.

  b. Limiting soil compaction near those trees to the drip line of the tree canopy or the edge of the vegetation.

  c. Physically protecting trees and vegetation from damage and soil compaction with construction fencing placed at or outside the drip line of the canopy.

  d. **Runoff and protection of waterways**. Water bodies and waterways should be protected from sedimentation and erosion by Installing sediment fencing between the construction site and down slope waterways prior to any other construction activity. This fencing should remain in place until all other construction is complete, and bare soils have been completely revegetated.

2 Environmental Management Plan Framework

Management plans will be developed for the construction and operation phases of the Project. **Section 2.1** describes the content of the Construction Environmental Management Plan (CEMP). **Section 2.2** describes the content of the Operation Environmental Management Plan (OEMP). The purpose of the CEMP and OEMP are to guide the proponent and its contractors in complying with applicable environmental legislation by providing criteria, standard protocols, and mitigation measures to eliminate, reduce, and/or offset potential adverse effects identified in the EAR/IS. Each management plan will be developed and implemented prior to the start of each Project phase. For example, the CEMP and component management plans will be developed and implemented before the start of Project construction activities. The OEMP will be developed during the construction phase and implemented immediately prior to the start of project operations. The OEMP will include component management plans to address potential adverse effects of operation and maintenance activities.

The component management plans are intended to provide clear direction to the proponent and its contractors on managing the environmental, social, and cultural heritage risks for the construction of the Project. A plan may specify the need for activities such as monitoring during the construction phase. Section 22 of the EAR/IS (Follow-up and Monitoring) describes the follow-up and monitoring programs that will be conducted for the Project.

The CEMP, OEMP, and their component management plans will draw from environmental guidance, best practice and standards, Indigenous Knowledge, input from Indigenous communities, and factor in the requirements from current Canadian laws and regulations. Webequie First Nation, or the proponent for construction and operations for the Project, will develop a Sustainability Plan which will be an integral part of the CEMP and OEMP and will include sustainability objectives, metrics, and targets, as well as monitoring and reporting processes, and adaptive management framework.

The CEMP, OEMP and Sustainability Plan will include additional mitigation measures, detail environmental management plans, and will incorporate the following:

- Commitments made during the regulatory review process including information requests (IRs);
- Regulatory approval conditions; and
- Ongoing engagement and consultation with Indigenous communities and groups, government departments, ministries and agencies, stakeholders and the general public.

2.1 Construction Environmental Management Plan Framework

The main body of the CEMP document will include detailed information on the following topics:

- **Project Description**: Project overview, scope of construction works, construction disturbance footprint, laydown and storage areas, schedule of works, maps/site plans.
- **Project Roles and Responsibilities**: a description of the type of positions, their responsibilities, reporting structure, and organizational structure. A description of roles will include the proponent key personnel, the Primary Contractor, Environmental Manager, and key members of the Environmental team including the Environmental Monitor.
- **Project Contacts**: contact information for the personnel on the organizational structure, government authorizing agencies and emergency response organizations.

- **Environmental and Cultural Awareness and Education**: a description of the proponent's Environmental Policy and overview of educational awareness training, with reference to the detailed subcomponent plan.
- **Health and Safety**: a description of the proponent's Health and Safety Policy and overview of health and safety awareness training, with reference to the Construction Health and Safety Plan.
- **Environmental Protection and Controls**: summary of topic-specific environmental risks and protections, plus cultural heritage and social risks and protections to be in place for the construction phase. Cross-reference to component management plans.
- **Component Management Plans**: detailed description of topic-specific component management plans to address environmental, social, and cultural heritage risks identified within the main body of the CEMP.

The CEMP and its component management plans may be updated throughout the construction phase in the event of changes in environmental best practice or standards. The component management plans of the CEMP will generally include the following format:

- Management Plan Objective(s);
- Management Strategy(ies);
- Guiding Documents (e.g., relevant legislation, guidance, policies, best practice, standards);
- Environmental Protection Measures, Specifications and/or Controls;
- Schedule/Timing of Implementation;
- Delegation of Project Role and Responsibility;
- Performance Indicator(s);
- Monitoring Requirements;
- Reporting Requirements;
- Corrective Actions; and
- Maps and Site Plans, as required.

The CEMP includes, but are not limited to, the following component plans:

- Air Quality and Dust Control Management;
- Cultural Heritage Resources Management;
- Construction Blasting Management;
- Construction Traffic Management;
- Construction Waste Management (including Hazardous, Contaminated and Controlled Materials);
- Employment and Procurement Plan;
- Environmental and Cultural Awareness and Education;
- Erosion and Sediment Control;
- Fish and Fish Habitat Management;
- Groundwater Management;
- Health and Safety Management;
- Noise and Vibration Management;
- Light Management;
- Petroleum Handling and Storage;
- Vehicle and Equipment Operations, Maintenance and Refuelling;
- Site Restoration and Monitoring;

- Spill Prevention and Emergency Response Management;
- Surface Water and Storm Water Management and Monitoring;
- Soil Management;
- Vegetation Management (includes Sensitive Habitat, Noxious and Invasive Plants); and
- Wildlife Management.

Summaries of the CEMP component management plans are provided in the following subsections.

2.1.1 Air Quality and Dust Control Management

The Air Quality and Dust Control Management Plan will describe mitigation measures and best practices to be used to control air emissions and dust during construction activities from operation of construction equipment and vehicles, blasting, rock quarrying and crushing, concrete batching, excavating, placing fill and grading. The Air Quality and Dust Control Management Plan developed and implemented during construction of the Project will be adapted for continuation throughout the operations phase of the Project.

The plan will address, but is not limited to:

- Use of dust suppression systems at quarries;
- Use of water sprays from trucks to increase moisture levels in active areas (e.g., haul/access roads, temporary soil and overburden stockpiles) if dry conditions are present;
- Ensuring appropriate catalytic converters, mufflers and exhaust systems are in place on equipment and functioning as designed;
- Limiting vehicle speeds and restricting vehicle and heavy equipment movement to designated areas and access routes to minimize dust generation;
- Where practical and applicable, use multi-passenger vehicles for the transport of crews to and from job sites;
- Minimize idling of vehicles and equipment when possible;
- Use of environmentally certified equipment, with a commitment that 80% of mobile and stationary engines will meet Tier 4F standards;
- Eco-driving training for work crews to reduce fuel consumption;
- No use of sand or salt is currently proposed for de-icing during winter operations. However, sand may be applied in select locations based on road safety concerns.
- Possibility of air quality monitoring and reporting as part of the Air Quality and Dust Control Management Plan and broader follow-up program; and
- Restrict or halt construction and operations during high wind or dry conditions to prevent excessive dust generation near sensitive receptors.

2.1.2 Cultural Heritage Resources Management

The Cultural Heritage Resources Management Plan will provide guidelines for the appropriate procedures to be implemented should cultural heritage or archaeological resources be encountered on-site during construction. The primary objective of this plan will be to minimize disruption in construction scheduling while promoting the preservation of cultural heritage and archaeological resources.

The plan will specify the general procedures to identify, report, and manage cultural heritage and archaeological resources during construction. The plan will also include general procedures and protocol for encountering unexpected cultural heritage or archaeological resources during ground disturbance. The Cultural Heritage Resources Management Plan will give on-site personnel information to identify cultural heritage or archaeological materials if encountered in the construction area, procedures for notification and reporting the find, and actions to follow to protect the site from impacts.

2.1.3 Construction Blasting Management

A Construction Blasting Management Plan for the Project will be prepared and submitted by applicable contractor(s) after contract award 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 Act* as well as provincial standards and licensing requirements as specified in the Ontario Regulation 213/91 – Construction Projects, under the *Occupational Health and Safety Act*. Blasting restriction "windows" for the protection of aquatic and terrestrial species described in the EAR/IS will also be addressed in the plan. Blast operations, where applicable, will be carried out in accordance with Department of Fisheries and Oceans (DFO) guidelines and Ontario Provincial Standard Specification 120 General Specification for the Use of Explosives.

2.1.4 Construction Traffic Management

The Construction Traffic Management Plan will provide guidance on how Project related traffic is managed in and around the Project site, including use of the winter road during construction of the Project. This plan will include driving routes and procedures for the site and for material and equipment transport via the winter road that is located northeast of the Town of Pickle Lake to the community of Webequie.

2.1.5 Construction Waste Management (including Hazardous, Contaminated and Controlled Materials)

The proponent's designated Contractor ("the Contractor") will be responsible for managing wastes associated with the construction contract. The Construction Waste Management Plan will describe the management of waste products and how they are collected, stored, transported and disposed of in accordance with provincial and federal legislation and guidelines. Wastes include solid non- hazardous waste, kitchen waste, liquid wastes (sewage and grey water) and hazardous wastes including contaminated soil. The 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 plan will also make appropriate references to other environmental component management plans with regard to health and safety, hazardous materials management and emergency response.

2.1.6 Employment and Procurement Plan

The Contractor will be required to have formal local and Indigenous hiring and procurement policies in place throughout project construction and to implement them. These polices will include general approaches and strategies to maximize local and Indigenous hiring consistent with industry best practice. Through these policies, the Contractor will report annually to the proponent on recruitment, retention and uptake of local and Indigenous hiring to monitor progress and

track the success of these policies and identify challenges if they arise. The proponent will continue to work with Indigenous communities and groups to identify opportunities for employment and contracting associated with the Project.

2.1.7 Environmental and Cultural Awareness and Education

The proponent will provide appropriate environmental and cultural awareness training to all personnel whose work may have an impact on the valued components (VCs) identified during the EA/IA. The proponent will implement an Environmental and Cultural Awareness and Education Plan that will be included as part of the CEMP. The plan will include input from Indigenous Knowledge holders and will provide information and methodology for the following:

- Environment and Culture Orientation: Provide training sessions to familiarize workers with environmental and cultural values before starting work;
- Daily Meetings: Hold regular briefings to reinforce environmental and cultural considerations during Project activities;
- Environmental Toolbox Talks: Conduct short, focused discussions on specific environmental and cultural topics to promote awareness and compliance;
- Information bulletins: Distribute written updates and guidance to keep personnel informed about environmental and cultural requirements;
- Sub-contractor kick-off meeting: Communicate clear instructions on environmental and cultural responsibilities before work begins; and
- Contractor kick-off meeting: Communicate expectations and procedures to contractors to align them with environmental and cultural protection goals.

2.1.8 Erosion and Sediment Control

The Erosion and Sediment Control Plan will include mitigation measures to control run-off, minimize erosion on exposed slopes and substrates, and prevent introduction of sediment or other deleterious materials from entering into watercourses. The plan will describe the applicable permits and best management practices and will follow existing guidelines as appropriate to mitigate erosion and sediment transport.

The plan will include, but not be limited to:

- A description of the nature and location of sediment fences, berms, ditches, energy dissipators, wattles, rolled erosion control products, rock armouring, seeding, and other erosion and sediment control measures.
- Specification of the procedures to be used during clearing and other construction activities with the potential to result in erosion or sedimentation such as minimize total exposed soils (e.g. timing of stripping not far in advance), working during favourable weather and environmental timing windows, construction traffic control and signage of sensitive areas, early installation of erosion and sediment control, slope texturing, early topsoil and seeding, preserve existing drainage paths, directing surface water flow around site, and specific measures to be taken during heavy rain.
- Specifications for protection for steep slopes, stockpiles, and disturbed areas.
- Provisions for re-contouring the site to manage drainage and prevent erosion.
- Procedures for installation, maintenance, removal and disposal of erosion and sediment control measures.
- Cross-reference the management requirements of other management plans such as Fish and Fish Habitat Management, Site Restoration, Surface Water and Storm Water Management and Monitoring, Vegetation Management, and Wildlife Management.

2.1.9 Fish and Fish Habitat Management

The Fish and Fish Habitat Management Plan will describe mitigation measures to avoid, reduce and/or mitigate the effects to fish and fish habitat. The plan will be developed in compliance with any condition specified by a *Fisheries Act* Authorization. The plan will:

- Provide information on fish species that are, or may be present in watercourses that will be crossed by the WSR;
- Include maps to show relevant attributes, such as fish habitat, no-go zones, or limits of construction;
- Describe protective measures to mitigate adverse effects to fish and fish habitat during the construction phase;
- Identify reduced-risk work windows for fish (e.g., permitted period to conduct in-water work), including specific species such as Lake Sturgeon;
- Specify construction activities for which fish monitoring would be necessary;
- Specify fish monitoring requirements, such as when, where and method of monitoring to be conducted by specialist staff, including Indigenous monitors;
- Clean all construction equipment prior to use at site to prevent the spread of invasive aquatic species (refer to **Section 5.23**);
- Reporting requirements, including a reporting structure consistent with the requirements of the Project's permits and authorizations; and
- Cross-reference the management requirements of other management plans such as Construction Blasting Management Plan and Erosion and Sediment Control Plan.

2.1.10 Groundwater Management

The Groundwater Management Plan will describe mitigation measures to avoid, reduce and/or mitigate the effects to groundwater resources. The plan will describe the applicable permits and best management practices and will follow existing guidelines as appropriate. The plan will include, but not be limited to:

- Identification of responsible project personnel and external contacts;
- Designation of areas for dewatering and discharging, including site maps;
- Specifications for the handling and disposal of overburden, and water disposal;
- Protocols for sampling of groundwater suspected of contamination;
- Protocols for handling, remediation and disposal of contaminated water, where applicable;
- Worker safety and training;
- Cross-reference to the Erosion and Sediment Control Plan and the Surface Water and Storm Water Management and Monitoring Plan to implement control measures to prevent adverse effects to groundwater resources; and
- Environmental inspections, monitoring and reporting requirements which will include a reporting structure consistent with the requirements of the Project's permits and authorizations.

2.1.11 Health and Safety Management

A Project-specific Health and Safety Management Plan will be implemented throughout the construction of the Project. This plan will outline specific procedures and protocols for working around construction sites in compliance with Ontario *Occupational Health and Safety Act* and will contain the following Project-specific information:

- Contact details of all on-site personnel;
- Project work or activity details to be conducted;

- Site details including location of work;
- Check-in systems;
- Accommodation;
- Travel itineraries;
- Identification of potential hazards and associated risks;
- Personal protective equipment requirements;
- Training requirements;
- Incident and reporting requirements and frequency;
- Tailgate meetings; and
- Incident and emergency management plans (e.g., flood, fire or medical events).

A site-specific health and safety orientation will be administered to all workers prior to beginning of work.

2.1.12 Noise and Vibration Management

The Noise and Vibration Management Plan will describe standards and guidance to mitigate the effects of noise and vibration from construction activities. The plan will include:

- A description of construction activities that are expected to generate noise and vibration;
- A description of local receptors;
- Noise and vibration management (i.e., equipment and machinery controls, schedule of expected noisy activities such as blasting);
- Procedure or community notification of noisy activities such as blasting;
- Communication procedures for addressing noise complaint; and
- Cross-reference of the management requirements of the Construction Blasting Management Plan.

2.1.13 Light Management

Construction activities occurring in low light environments (night) will require illumination for equipment and workers to complete tasks safely. The Light Management Plan will describe procedures and best management practices to control light emissions from constructions activities.

2.1.14 Petroleum Handling and Storage

The Petroleum Handling and Storage Plan will describe protocols and procedures for handling and storing petrochemicals on-site during construction phase. Petrochemicals include fuels, oils, lubricants, or other petroleum-based products. The plan will include:

- Identifying responsible project personnel and external contacts;
- Designating areas for storage, including site maps to be available on-site;
- Designating areas for refuelling and maintenance of vehicles, equipment, and machinery;
- Specifications for the proper storage of petrochemical products, e.g., minimum distances from sensitive locations or work sites, containment, and safety requirements;
- Specifications for the handling of petrochemical products and refuelling of vehicles, equipment, and machinery;
- Specifications for the proper disposal of petrochemical products;

- Recommendations from existing guidance such as:
  - Canadian Council of Ministers of the Environment's (CCME) "Environmental Code of Practice for Aboveground and Underground Storage Tank Systems Containing Petroleum and Allied Petroleum Products" (CCME, 2003)
  - Storage Tank Systems for Petroleum Products and Allied Petroleum Products Regulations (Government of Canada, 2020).
  - Ontario *Technical Standards and Safety Act,* 2000.
- Worker safety and training;
- Environmental monitoring and reporting requirements that will include a reporting structure consistent with the requirements of the Project's permit and authorization conditions; and
- Cross-references to the Spill Prevention and Emergency Response Management Plan for protocol to handle petrochemical spills and emergency situations.

2.1.15 Site Restoration and Monitoring

The proponent will undertake site restoration under a Site Restoration and Monitoring Plan after construction of the WSR is completed. Site restoration specifications and detailed design drawings will be developed by a qualified professional and incorporate the following, but are not limited to:

- The location(s) of site-specific restoration;
- Timing requirements;
- Permit requirements, if any;
- Criteria for accepting soil/peat overburden;
- Environmental monitoring requirements;
- Soil/peat salvage and management;
- Details of planting requirements, e.g., plant species list, number, size, and plant spacing, specifications for seeding; and
- Post-construction maintenance and monitoring.

2.1.16 Spill Prevention and Emergency Response Management

A Spill Prevention and Emergency Response Management Plan will be developed to provide measures to eliminate and reduce the potential for a spill or release of petroleum or other hazardous materials and procedures to be followed in the event of unanticipated emergency situations that may occur during construction of the Project. The plan will adhere to regulatory requirements including Ontario *Occupational Health and Safety Act*.

The objective of the Spill Prevention and Emergency Response Management 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 materials, or other emergency situations during the construction phase of the Project. The plan will be structured to provide clear and easily accessible information and will define:

- 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 plan will cover various emergency response situations that are most likely to occur such as personal injury, fire, explosions and hazardous material spills and will include, but not be limited to:

- A description and/or cross-reference the management requirements of the Construction Waste Management Plan as it pertains to waste generated during an emergency response;
- A description of emergency communications plans or procedures that would provide emergency instructions to surrounding communities. Procedures will include a combination of urgent immediate actions, such as public notification of safety issues, shelter-in-place and evacuation directions, as well as longer term actions such as general website and hotlines, incident status updates, injured wildlife reporting, as appropriate; and
- A description of efforts that will be taken to invite feedback from relevant regulatory authorities and Indigenous communities on emergency response procedures.

The Spill Prevention and Emergency Response Management Plan will be refined and finalized in preparation for construction and in consultation with communities and relevant regulatory authorities. The procedures in the plan may be revised during construction, as required.

2.1.17 Surface Water and Storm Water Management and Monitoring

The Surface Water and Storm Water Management and Monitoring Plan will provide procedures to manage stream flow (i.e., surface water) and runoff (i.e., storm water) during the construction of the Project. The primary objective of the plan will be to manage flow and runoff and mitigate the potential mobilization of sediment and pollutants to watercourses.

The Surface Water and Storm Water Management and Monitoring Plan will provide:

- Protective measures for maintaining current surface water quality;
- Surface water quality criteria (federal and provincial);
- Methods for surface water and storm water diversion as necessary including dewatering for site preparation, ponds, drainage ditches, and culverts;
- Measures to manage and monitor surface water during construction, including monitoring water quality prior to discharge to an existing waterbody and/or wetland;
- Relevant maps to illustrate surface water and storm water management systems in place during construction;
- Cross-reference to Erosion and Sediment Control Plan; and
- Environmental monitoring and reporting requirements including a reporting structure consistent with the requirements of the Project's permits and authorizations.

2.1.18 Soil Management

The Soil Management Plan will describe protocols and procedures for handling and storing of native soils on-site during construction phase. Protocol and procedures for the management of soils will be described in the plan and will include, but not limited to, the following:

- Identification of responsible project personnel and external contacts;
- Designation of areas for temporary stockpiling and dewatering of overburden, including site maps;
- Designation of areas for temporary stockpiling and storage of imported fill, including site maps;

- Specifications for transportation of soil, including spraying overburden and soil with water if it appears to be overly dry prior to moving it;
- Specifications for the handling and disposal of overburden, and water disposal;
- Protocols for soil sampling for excavated materials suspected of contamination;
- Protocols for handling, remediation and disposal of contaminated soil, where applicable;
- Procedures and protocols for soil management activities that adhere to the requirements of Ontario Regulation 406/19;
- Protocols for inspection, cleaning and tracking of equipment transported to site to mitigate the risks of spreading invasive species or pathogens;
- Worker safety and training;
- Cross-reference to the Erosion and Sediment Control Plan procedures to implement control measures to prevent the erosion or sedimentation of any on-site stockpiling; and
- Environmental inspections, monitoring and reporting requirements which will include a reporting structure consistent with the requirements of the Project's permits and authorizations.

2.1.19 Vegetation and Invasive Species Management

The Vegetation Management and Invasive Species Plan will provide strategies to:

- Minimize disturbance to the existing vegetation, including sensitive habitat such as riparian zones and wetlands from construction;
- Reduce and avoid impacts outside of the clearing zone during construction;
- Retain peripheral vegetation as much as possible to limit sight lines to the Project;
- Control the spread or introduction of invasive or noxious plants;
- Manage timber and brush for disposal (chipping and spreading, burning); and
- Progressively restore disturbed areas.

The plan will also include:

- Pre-construction survey protocol for vegetation management, as appropriate (e.g., pre-clearing plant survey, delineating areas of invasive or noxious vegetation, and no-go zones for clearing);
- Information on rare and sensitive habitat located within and surrounding the site;
- Information and procedures to prevent the introduction and spread of noxious and invasive plants;
- Protocols and procedures for handling and storing of cleared vegetation on-site during construction phase;
- Designating areas for temporary stockpiling of vegetation, including site maps;
- Delineating areas to be protected from construction disturbance, including site maps;
- Specifications for the handling, storage, and disposal of vegetation, including noxious and invasive plants; and
- Inspection, monitoring, and reporting requirements to be conducted by Qualified Environmental Professionals.

2.1.20 Wildlife Management

A Wildlife Management Plan will be developed prior to the initiation of Project construction to provide details on wildlife mitigation measures, implementation methods, and schedule to protect habitats and wildlife species during construction. The plan will include provisions for a compliance wildlife monitoring program consistent with the requirements of the Project's permits and authorizations, and commitments in the EAR/IS.

The Wildlife Management Plan will be written by a Qualified Environmental Professional with experience in how to mitigate potential effects on wildlife (e.g., collision avoidance, good housekeeping, activity timing windows, and waste management) and to develop wildlife enhancement strategies according to applicable standards and legislation such as the Ontario *Fish and Wildlife Conservation Act*, Ontario *Endangered Species Act*, the *Migratory Birds Convention Act*, and the *Species at Risk Act*.

The plan will also include:

- Pre-construction survey protocols for practical wildlife management (e.g., bird/nesting surveys, wildlife surveys, and waterfowl surveys, as required). Surveys are to be conducted by Qualified Environmental Professionals;
- An amphibian salvage plan to be undertaken if vegetation clearing and/or draining of water bodies is proposed during the amphibian breeding season. The amphibian salvage plan will be developed in consultation with MECP and ECCC to guide salvage activities;
- A description of timing windows for vegetation clearing outside of the bird nesting season and clearing outside of the bat active season;
- Provisions to avoid disturbing or removing active bird nests, as required;
- Specifications for wildlife monitoring requirements, such as when, where and method of monitoring to be conducted by Qualified Environmental Professionals. Reporting structure will be consistent with the requirements of the Project's permits and authorizations;
- A prohibition on wildlife feeding and hunting;
- Requirements for maintenance of clean worksites and storage of all potential wildlife attractants (food, garbage) in a manner that is inaccessible to wildlife;
- Installation of perimeter fencing to deter bear and other large wildlife from entering the construction site;
- Reporting procedures and protocols for wildlife sightings observed during construction; and
- Reporting any notable wildlife roadkill to provincial authorities where applicable, and, if appropriate, implementing site-specific mitigation (e.g., warning signs, worker notifications) for any concentrations of roadkill that may occur.

2.2 Operation Environmental Management Plan Framework

The Operation Environmental Management Plan (OEMP) will be developed prior to the commissioning and operation phase of the Project. It will be developed based on legislation, conditions attached to the Project's permits and authorizations, best management practice guides, industry standards and other documentation. It is expected that the development of the OEMP will follow similar mitigation strategies as laid out above for construction. Operational component plans will build on the component plans developed for the construction phase of the Project, and will include commitments to post-construction monitoring, maintenance, and repair as recommended in the EAR/IS.

The OEMP and its component management plans may be updated throughout the operation phase in the event of changes in environmental best practice or standards. The OEMP includes, but are not limited to, the following component plans:

- Erosion and Sediment Control;
- Fish and Fish Habitat Management;
- Energy Management;
- Health and Safety Management;
- Noise Management;

- Petroleum Handling and Storage;
- Inspection, Maintenance and Repair/Rehabilitation of Road and Supportive Infrastructure;
- Spill Prevention and Emergency Response Management;
- Surface Water and Storm Water Management and Monitoring;
- Vegetation Management and Monitoring; and
- Wildlife Management and Monitoring.

Summaries of the OEMP component management plans are provided in the following subsections.

2.2.1 Erosion and Sediment Control

The Erosion and Sediment Control Plan to be developed and implemented during construction of the Project will be adapted for continuation throughout the operations phase of the Project. This plan will include:

- Measures to control runoff and prevent erosion;
- Specifications for inspection and repair (if necessary) of erosion protection measures at road ditches, culverts, and bridges; and
- Procedures for maintaining the WSR's drainage system including road ditches.

2.2.2 Fish and Fish Habitat Management

The Fish and Fish Habitat Management Plan will describe mitigation measures to avoid, reduce and/or mitigate the effects to fish and fish habitat during operations. The plan will:

- Provide information on fish species that are, or may be present in watercourses that will be crossed by the WSR;
- Describe protective measures to mitigate adverse effects to fish and fish habitat during the operation phase;
- Identify reduced-risk work windows (permitted period to conduct in-water work including specific species such as Lake Sturgeon), for fish for road maintenance, repair or other operational issues;
- Specify operational activities for which fish monitoring would be necessary;
- Specify fish monitoring requirements, such as when, where and method of monitoring to be conducted by specialist staff, including Indigenous monitors;
- Identify and implement measures to prevent the spread of invasive aquatic plants and animals such as Ontario's Action Plans for Water Users 'Clean, Drain, Dry' practices, livewell disinfection, bait restrictions and public awareness campaigns;
- Reporting requirements, including a reporting structure consistent with the requirements of the Project's permits and authorizations; and
- Cross-reference the management requirements of other management plans such as Spill Prevention and Emergency Management Plan and Erosion and Sediment Control Plan.

2.2.3 Energy Management

The Energy Management Plan will describe guidance to reduce operational GHG emissions associated with the MSF. This plan will also contribute to annual inventory emissions tracking. The plan will include:

- An engine idling policy to reduce fuel consumption of vehicles and equipment to reduce GHG emissions;

- Opportunities to reduce operational GHG emissions from fuel storage system, diesel power generators, and on-site waste incinerator; and
- The use of efficient, lower-emission vehicles and equipment, where practical.

2.2.4 Health and Safety Management

The Health and Safety Management Plan to be developed and implemented during construction of the Project will be adapted for continuation throughout the operations phase of the Project.

2.2.5 Noise Management

The Noise and Vibration Management Plan to be developed and implemented during construction of the Project will be adapted for continuation throughout the operations phase of the Project.

2.2.6 Petroleum Handling and Storage

The Petroleum Handling and Storage Plan to be developed and implemented during construction of the Project will be adapted for continuation throughout the operations phase of the Project.

2.2.7 Inspection, Maintenance and Repair/Rehabilitation of Road and Supportive Infrastructure

An Inspection, Maintenance and Repair/Rehabilitation of Road and Supportive Infrastructure Plan will be developed prior to the commissioning of the WSR and will be implemented throughout the operations phase of the Project. This plan will include:

- Procedures for periodic inspection and regular maintenance of the WSR including the road ROW, road surface, drainage systems, culverts, and bridges;
- Procedures for documentation and records for maintenance activities to provide knowledge and information pertaining to maintenance operations, contract controls, expenditures and possible liability action; and
- Maintenance Quality Standards in general conformance with MTO Maintenance Manual (2003). This may include but not limited to: vegetation control, groundcover restoration, road patrol, debris and waste management, inspection/maintenance of rest area and maintenance areas, inspection/maintenance of ditches, culverts, bridges, structure cleaning, removal of obstructions to water flow at bridges/culverts, additional erosion control measures, monitoring/removing ice jamming at bridges, signs, fencing, guide rails, winter maintenance level of service, operations and resources.

2.2.8 Spill Prevention and Emergency Response Management

The Spill Prevention and Emergency Response Management Plan to be developed and implemented during construction of the Project will be adapted for continuation throughout the operations phase of the Project.

2.2.9 Surface Water and Storm Water Management and Monitoring

The Surface Water and Storm Water Management and Monitoring Plan to be developed and implemented during construction of the Project will be adapted for continuation throughout the operations phase of the Project. This plan will include:

- Protective measures for maintaining current surface water quality;
- Measures to manage storm water runoff; and
- Environmental monitoring requirements if specified by the Project's permits and authorizations.

2.2.10 Vegetation and Invasive Species Management and Monitoring

The Vegetation and Invasive Species Management and Monitoring Plan to be developed and implemented during construction of the Project will be adapted for continuation throughout the operations phase of the Project.

2.2.11 Wildlife Management and Monitoring

The Wildlife Management and Monitoring Plan to be developed and implemented during construction of the Project will be adapted for continuation throughout the operations phase of the Project.

2.3 Sustainability Plan Framework

The purpose of the Sustainability Plan is to describe the goals, objectives and targets that the proponent will follow to contribute to a more sustainably-oriented project, develop a framework for sustainable implementation, and document existing sustainability initiatives within the WSR based on the three pillars of sustainability: Environmental, Economic and Community/Social.

The Sustainability Plan may be updated throughout the operation phase in the event of changes in environmental best practice or standards.

3 General Environmental Protection Measures

This section outlines general environmental protection measures to be implemented during construction phase and operations and maintenance phase of the Project.

3.1 Contractor Submittals

1. The Contractor will be responsible for implementing the environmental protection measures specified in the contract documents and providing specific plans for approval by the proponent, relevant regulatory authorities, and Indigenous communities. The plans will detail how the Contractor will meet the specifications (e.g., Erosion and Sediment Control Plan).
2. The Contractor will be responsible for the completion of and reporting on applicable monitoring programs. Post-construction monitoring will continue for the appropriate duration of the condition being monitored. The Contractor will be required to submit monthly environmental report and incident reports.

3.2 Regulatory Permits and Authorizations

1. Necessary permits, authorizations, licences, and approvals must be obtained, and regulatory requirements must be fulfilled for a particular activity or construction site prior to the commencement of the applicable activity or construction at that site.
2. The Contractor shall adhere to conditions specified in permits, authorizations, licences, approvals and letters of advice or directive issued for the Project.

3.3 Regulations and Guidelines

Industry standards and best practices, regulations, and guidelines that have been considered for the proposed mitigation measures include but are not limited to:

3.3.1 Federal

- *Fisheries Act*, 1985 and Regulations, Operational Statements, and related guidelines:
  - DFO's Measures to Protect Fish and Fish Habitat (DFO, 2022) and applicable Codes of Practice (DFO, 2024);
  - DFO's document "Guidelines for the Use of Explosives in or Near Canadian Fisheries Waters" (Wright and Hopky, 1998);
  - Ontario Restricted Activity Timing Windows for the Protection of Fish and Fish Habitat (DFO, 2013);
  - DFO's Interim code of practice: End-of-pipe fish protection screens for small water intakes in freshwater (DFO, 2024);
- *Explosives Act*, 1985;
- *Migratory Bird Convention Act*, 1994;
- *Species at Risk Act*, 2002;
- *Transportation of Dangerous Goods Act*, 1992;

- National Fire Code of Canada, 2020;
- Canadian Council of Ministers of the Environment's (CCME) "Environmental Code of Practice for Aboveground and Underground Storage Tank Systems Containing Petroleum and Allied Petroleum Products" (CCME, 2003);
- Storage Tank Systems for Petroleum Products and Allied Petroleum Products Regulations (Government of Canada, 2020);
- Health Canada "Guidance for Evaluating Human Health Impacts in Environmental Assessment: Noise"
- *Navigable Waters Act*, 1985; and
- Canadian Water Quality Guidelines (CCME 1987-93).

3.3.2 Provincial

- *Fish and Wildlife Conservation Act*, 1997;
- *Endangered Species Act*, 2007;
- *Crown Forest Sustainability Act*, 1994;
- *Public Lands Act*, 1990;
- *Ontario Invasive Species Act*, 2015;
- Ontario Invasive species action plans – Boaters Action Plan (MNR, 2022);
- *Forest Fires Prevention Act*, 1990 and Regulation 207/96 (Outdoor Fires);
- Forest Management Guide for Conserving Biodiversity at the Stand and Site Scales (MNR, 2010);
- *Dangerous Goods Transportation Act*, 1990;
- *Environmental Protection Act*, 1990 and Regulations:
  - Regulation 675/98 Classification and Exemption of Spills and Reporting of Discharges;
  - Regulation 224/07 Spill Prevention and Contingency Plans;
  - Regulation 347: General – Waste Management;
- *Technical Standards and Safety Act,* 2000;
- *Energy Act*, 1990;
- *Fire Marshals Act*, 1990;
- *Occupational Health and Safety Act*, 1990 and Regulations:
  - Regulation 213/91 – Construction Projects;
- *Aggregate Resources Act*, 1990;
- *Planning Act*, 1990;
- *Waste Management Act*, 1992 and Regulations;
- *Water Resources Act*, 1990 and O. Reg. 255/11 (Government of Ontario, 2011);
- Ontario Water Quality Objectives (MOEE, 1999);
- Ontario Fishery Regulations, 2007 under the federal *Fisheries Act;*
- MECP Publication NPC-233 – Information To Be Submitted For Approval Of Stationary Sources Of Sound (MOE, 1995);
- MECP Publication NPC-119 – Blasting (MOE, 1978);
- MECP Publication NPC-300 – Environmental Noise Guideline – Stationary and Transportation Sources – Approval and Planning (MECP, 2013);
- Environmental Guidelines for Access Roads and Water Crossings (MNR, 1990);

- Ministry of Natural Resources and Forestry and Fisheries and Oceans Canada Protocol for the Review and Approval of Forestry Water Crossings – Section 8 – Approved Water Crossing Standards (MNR and DFO, 2021);
- Ministry of Transportation Maintenance Manual (MTO, 2003);
- Ministry of Transportation Highway Drainage Design Standards: WC-12 – Fish Passage through Culverts (MTO, 2008);
- *Ontario Heritage Act*, 1990:
  - Standards and Guidelines for Consultant Archaeologists (Ministry of Citizenship and Multiculturalism, 2011);
- Standards and Guidelines for Conservation of Provincial Heritage Properties (Ministry of Citizenship and Multiculturalism, 2010);
- Environmental Guide for Built Heritage and Cultural Heritage Landscapes (Ministry of Transportation, 2007);
- Forest Management Guide for Conserving Biodiversity at the Stand and Site Scales (MNR, 2010);
- Ontario Provincial Standard Specification 804 – Construction Specification for Temporary Erosion Control (MTO, 2021a);
- Ontario Provincial Standard Specification 120 – General Specification for the Use of Explosive (MTO, 2014);
- Ontario Provincial Standard Specification 805 – Construction Specification for Temporary Erosion and Sediment Control Measures (MTO, 2021b); and
- Environmental Guide for Erosion and Sediment Control During Construction of Highway Projects (MTO, 2015).

3.3.3 Other

- ISO 1996-2:2007, Acoustics — Description, measurement, and assessment of environmental noise – Part 2: Determination of environmental noise levels.
- Webequie First Nation On-reserve Land Use Plan (Webequie First Nation, 2019a).
- Webequie First Nation Community Based Land Use Plan (Webequie First Nation, 2019b).

3.4 Record Keeping

1. The Contractor shall maintain a record file at the project construction 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 with other project documentation. Relevant information and/or events to be documented in a timely manner may include, but are not limited to:
   a. All accidents, spills, leaks, and releases and the reporting and clean-up procedures used;
   b. Any reviews, improvements and adjustments to the environmental protection measures;
   c. Details of all environmental training sessions, including the schedule of these sessions and the names of participants;
   d. A full inventory of dangerous goods brought onto the site;
   e. A full inventory of all hazardous wastes encountered on the site;
   f. Records of all waste hauled from the site for disposal, including the location, name and description of the disposal facility and waybills/manifests;
   g. 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;
   h. Records of all fuel transported and stored at the site;

i. Records of equipment inspections and maintenance;
j. Records of all public complaints;
k. Records of actions taken to remove deleterious substances and debris from watercourses; and
l. Wildlife encounters and/or management measures employed.

2. Regular inspections of construction, operation and maintenance components and activities will be documented in the Contractor's monthly environmental reports and the proponent's inspection reports. Results from the inspection program will be reported to Indigenous communities, other stakeholders and federal and provincial authorities as appropriate.

3.5 Reporting

Reporting will be conducted to provide regulatory authorities, Indigenous communities, stakeholders and general public with information as the Project progresses. This will also provide opportunities for comments, suggestions and opinions on the Project to be provided in relation to the environment protection measures and monitoring programs. This will allow for continuous improvement of the environmental protection through adaptive management.

The proponent will ensure reporting and communication activities are conducted in accordance with requirements in the Project's permits, authorizations and approvals. Regular contact will be made with relevant regulatory authorities and Indigenous communities to keep them informed of activities relating to the Project, including but not limited to:

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

4 Designated Areas and Access

1. For the purpose of outlining proposed key mitigation measures in this document, “designated areas” for construction management include the following:
   a. Construction camp(s), including laydown and staging area(s);
   b. Waste storage area(s);
   c. Fuel storage and refuelling area(s);
   d. Equipment servicing area(s);
   e. Parking area(s);
   f. Cement batch plant(s);
   g. Cement washout area(s); and
   h. Others as required by the proponent.
2. All equipment, materials, supplies and support infrastructure will be mobilized to Webequie First Nation via the Webequie First Nation winter road. The Contractor will construct access roads to the camp/laydown areas and transport the required equipment, materials, supplies and support infrastructure to the laydown areas.
3. 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.
4. The designated areas shall be contained within the Project Footprint.
5. 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. Sediment and erosion control measures will be implemented for protection of the environment (refer to **Section 2.1.8**).
6. Locations within designated areas where equipment, hazardous material and/or wastes will be stored or maintained shall be underlain with at least 30 centimetres of impermeable soil or approved equal and lined with an impermeable groundsheet to contain spills and minimize cleanup costs.
7. Designated areas shall be located a minimum of 50 m from any waterbody, with the exception of the aggregate/rock source area ARA-2 which will include an existing vegetation buffer zone of a minimum of 100 m in width from the unnamed lake.
8. 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.
9. The Contractor shall restore the designated areas and access roads not required for on-going maintenance to their original condition.
10. The Contractor shall ensure access to designated areas is restricted to prevent access of unauthorized personnel.

5 Road Construction Environmental Protection Measures

This section describes key mitigation measures that will be applied during construction of the WSR. These measures will be incorporated into the CEMP and its subcomponent plans.

5.1 Clearing and Grubbing

All construction and operations/maintenance activities shall be undertaken in accordance with applicable guidelines and permit requirements. The Contractor is responsible for ensuring compliance with contract specifications, environmental legislation, permits and authorizations.

1. Clearing and grubbing shall be limited to the permanent development area and associated temporary supportive infrastructure during construction (i.e., access roads, camps, aggregate areas) and those areas within road ROW requiring vegetation management during operation of the Project.
2. Clearing and grubbing shall only be undertaken between September 1 of any year and April 14 of the following year outside the active season for species at risk (SAR) birds and SAR bats in Northern Ontario (MECP, 2023). If vegetation clearing is required between April 15 and August 31, an avian biologist will be retained to conduct a survey for nesting activities/behaviors to manage risks to active nests protected by the *Migratory Bird Convention Act.*
3. Clear and grubbing shall be limited to the current work area and shall not be done far in advance of road construction activities to limit erosion and sedimentation. Erosion and sediment control measures shall be installed once areas become exposed.
4. Within the limits as directed and staked out, all brush and trees, except those determined to be saved, is to be cut level with the ground, and all surface debris, fallen timber, slash limbs, brush, grass and weeds, is to be disposed as directed or permitted. Disposal may involve:
    a. Burning;
    b. Spreading and compacting;
    c. Chipping; and
    d. Transport of merchantable or unmerchantable timber to Webequie First Nation for community use.
5. All clearing and grubbing operations shall be clearly marked and completed in accordance with contract removal design drawings, taking into account prescribed buffers, and sensitive areas.
6. Clearing activities shall be limited to removing vegetation to ground level without disturbing root mass. Standing timber will be cut as close to the ground level as possible (typically 15 centimetres).
7. Trees shall be felled towards the center 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. The Contractor shall take all precautions against the damage to other trees 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 (merchantable) shall be cleared of limbs and stockpiled on the worksite in consolidated piles. Merchantable timber shall be made available for community use free of charge upon request from community member or organizations. Removal and or disposal of any unused merchantable timber remains the responsibility of the Contractor.
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. Vegetation will be largely removed by mechanical means, except within 15 m of a waterbody. In these areas, vegetation will be removed manually, using chain saws and other hand-held equipment, while leaving the under growth and duff layer undisturbed to prevent erosion, until such time as construction of foundations for bridges and culverts is initiated.
12. Cleared trees and vegetation shall not obstruct waterways during any season, and shall be stored above the ordinary high-water mark. Stockpiles of any material are to be stored a minimum of 50 m from any waterbody or watercourse.
13. Disposal of cleared trees and brush must be done in accordance with contract specifications and may involve burning, compacting, piling, burying, windrowing and compacting, and chipping.
14. All cleared vegetation, grubbed material, and debris that is to be left in place shall be piled and compacted in windrows.
15. Cleared and grubbed material that is to be burned shall be piled for burning.
16. Merchantable timber shall be stockpiled within existing clearings and at least 50 m from a waterbody.
17. The burning shall be done in the winter.
18. No burning of debris piles shall occur on deep organic soils.
19. Slash shall be piled in a manner that allows for clean, efficient burning of all material. Avoid mixing soil into the slash.
20. The Contractor shall obtain a burning permit for open fires between April 1 and October 31.
21. 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.

5.2 Petroleum Handling and Storage

Fuel spills, leaks and releases present a hazard to human health and safety, and can be a threat to soil, groundwater and aquifers, surface water, vegetation, wetlands, and wildlife habitats. 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.

1. All petroleum handling and storage shall comply with Ontario *Technical Standards and Safety Act*.
2. Petroleum products shall be transported in accordance with the federal *Transportation of Dangerous Goods Act* and Ontario *Dangerous Goods Transportation Act*.
3. All reasonable precautions shall be taken to ensure that re-fueling only takes place within a designated area used for fuel storage or handling.
4. In the event that a piece of equipment must be re-fueled 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 50 m from any waterbody and shall have the topsoil stripped and be underlain with at least 30 centimetres 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 at least 110% of the capacity of the total number of containers. The stripped topsoil 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 Standard CSA B620-20: Highway Tanks and TC Portable Tanks for the Transportation of Dangerous Goods.
11. Construction, installation, and removal of petroleum storage tank systems shall occur under the supervision of a registered licenced petroleum technician.
12. 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.
13. Petroleum products shall be labeled as to their contents and stored and handled within designated areas.
14. Dedicated petroleum storage areas shall provide spill containment and facilitate clean up through measures such as:
    a. Maximum separation from environmentally sensitive features;
    b. Clear identification of the materials present;
    c. Access restricted to authorized vehicles and employees;
    d. Impervious bermed storage areas; and
    e. Dedicated spill response equipment.
15. 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.
16. All employees involved in the handling and storage of fuels shall have a Workplace Hazardous Materials Information System (WHMIS) and spill response training.
17. All combustible engines shall be shutdown during fueling.
18. There shall be no smoking and no open flames at the petroleum storage area at any time.
19. 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 snowmelt or a rainfall event and the containment water disposed of.
20. Tanks shall be designed, installed, and operated in accordance with the Ontario *Dangerous Goods Transportation Act* and the Federal *Transportation of Dangerous Goods Act*. A copy of the petroleum license shall be posted at the fuelling site.
21. Fueling from unregistered tanks shall not be permitted.
22. Concrete barriers shall be installed around all petroleum storage tanks to prevent collisions.
23. 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.
24. 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.
25. 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.

26. 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 at a licenced soil recycling facility. If contaminated soil is to be stored on site for any time, a designated storage area is to be identified and prepared to prevent secondary contamination. Contaminated soil is segregated.
27. 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.
28. The Contractor shall designate on-site Emergency Spill Response Coordinators.
29. 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.
30. 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.
31. At locations where stationary filled oil equipment is used, oil containment measures such as secondary containment shall be incorporated (i.e., berms).
32. Contaminated soils resulting from releases shall be remediated or disposed of.
33. Fuel barrels shall be securely fastened to the vehicle during transport and if possible during refueling operations.
34. 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.
35. Fueling procedures shall be posted where fueling occurs.
36. All fuel transfers must occur with an absorbent pad and/or oil catcher placed underneath to catch spills.
37. After fuelling – catch all drips on the absorbent pad, and use a rag or absorbent pad to wipe off the nozzle.
38. Accidental spills must be cleaned up immediately using the procedures outlined in **Section 5.3** (Spill Prevention and Emergency Response).
39. Used absorbent pads must be discarded in a designated spill disposal container.
40. It is the responsibility of the Contractor to conduct appropriate soil testing on 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.
41. The Contractor will maintain an emergency response plan in accordance with the procedures outlined in **Section 5.3** (Spill Prevention and Emergency Response) and applicable legislations.

5.3 Spill Prevention and Emergency Response

The Contractor shall develop a Spill Prevention and Emergency Response Management Plan in accordance with all applicable contract specifications, environmental legislation, permits and authorizations.

Fuel spills, leaks and releases present a hazard to human health and safety, and can be a threat to soil, groundwater and aquifers, surface water, vegetation, wetlands, and wildlife habitats. 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.

5.3.1 General Measures

1. All petroleum handling and storage shall comply with Ontario *Technical Standards and Safety Act*.
2. Petroleum products shall be transported in accordance with the federal *Transportation of Dangerous Goods Act* and Ontario *Dangerous Goods Transportation 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 Standard CSA B620-20: Highway Tanks and TC 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:
    a. Maximum separation from environmentally sensitive features;
    b. Clear identification of the materials present;
    c. Access restricted to authorized vehicles and employees;
    d. Impervious bermed storage areas; and
    e. Dedicated spill response equipment.
5. All employees involved in the handling and storage of fuels and hazardous materials shall have a Workplace Hazardous Materials Information System (WHMIS) training.
6. The Contractor shall designate on-site Emergency Spill Response Coordinators.
7. 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.

5.3.2 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 Proponent's Environmental Manager 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, that are defined as reportable under Ontario Regulation 675/98 Classification and Exemption of Spills and Reporting of Discharges, shall be reported to the MECP Spill Action Centre, immediately after occurrence of the environmental accident, by calling the 24-hour emergency number (Toll Free: 1-800-268-6060). The Contractor will follow any instructions given by the MECP regarding spill response.
5. All spills shall be reported to Proponent's Environmental Manager within 24 hours whether it was necessary to report the spill to the MECP or not. The spill report shall include the following information:
    a. Personnel responding to the spill;
    b. When the spill happened (date and time);
    c. Where the spill happened;
    d. The source of the spill;
    e. Material spilled;

f. Cause of spill;
g. Issue being reported, for example air or water pollution;
h. Effect of the spill, for example a sooty film left on soil surface;
i. Estimated amount of material spilled;
j. Estimated area and volume of soil affected by the spill;
k. The weather conditions (for example, precipitation, temperature, wind direction, etc.) at the time when the spill occurred (if known);
l. Cleanup action undertaken; and
m. 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. A spill that is identified as “non-reportable” under subsection 6(2) of Ontario Regulation 224/07 (Spill Prevention and Contingency Plans) 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.
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:

i. Notify the emergency-response coordinator;
ii. Identify exact location and time of accident;
iii. Notify the proponent’s Manager of Environmental Services for Operation and Maintenance; and
iv. Notify the MECP Spill Action Centre (Toll Free:1-800-268-6060), and local police and emergency services in the community of Webequie.

2) Attend to public safety:

i. Secure the area from public access;
ii. Eliminate ignition sources; and
iii. Initiate evacuation of immediate area, if necessary.

3) Gather and assess information on status of situation, noting:

i. Personnel on-site;
ii. Cause and effect of spill;
iii. Estimated extent of damage;
iv. Amount and type of material involved; and

v. Proximity to waterways.

4) **If safe to do so, and in accordance with the Emergency Response Plan, try to stop the dispersion or flow of spill material by:**
   i. Approach from upwind;
   ii. Stop or reduce leak if safe to do so;
   iii. Dyke spilled material with dry, inert sorbet material or dry clay; and
   iv. Prevent spill material from entering waterways, utilities or other openings by dyking proximity to waterways.

5.4 Noise Control

All construction and operations activities shall be undertaken in compliance with noise by-laws, where applicable, and commitments made to Indigenous communities or municipal authorities to control noise. The Contractor is responsible for ensuring compliance with contract specifications, environmental legislation, permits and authorizations.

1. All vehicles 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 will ensure that vehicles, equipment and noise control measures are maintained in proper working order
3. Blasting charge size limit shall be in compliance with NPC-119 cautionary limit.
4. The Contractor shall comply with the noise By-laws, where applicable, noise control measures, as agreed upon with adjacent Indigenous communities and municipal authorities, and any noise related clauses incorporated in the Project’s permits and authorizations.
5. Any operation of plant or equipment outside the hours as regulated by the adjacent Indigenous communities or municipal authorities shall require an exemption in writing. The Contractor shall provide a copy of such an exemption to the proponent.

5.5 Materials Handling and Storage

Materials handling and storage shall be undertaken in accordance with applicable guidelines and permit requirements. The Contractor is responsible for complying with all contract specifications, environmental legislation, permits and authorizations.

5.5.1 General Measures

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 at an approved facility.
6. Waste storage sites shall be designated for each worksite and camp as approved by the proponent.
7. Waste material (e.g., food and food containers) that is likely to attract nuisance wildlife shall be stored in wildlife proof storage bins and hauled off site at regular intervals for disposal at an approved facility.

8. Contaminated runoff or wastewater shall be contained and prevented from entering any watercourse. Depending on availability, these may be treated on site using portable facilities or transported offsite for treatment at approved disposal facilities.

5.5.2 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 proponent.
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 proponent. The Contractor shall be responsible for obtaining a burning permit from Ontario Ministry of Natural Resources (MNR) for burning between April 1 and October 31.
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.

5.5.3 Domestic Sewage

1. All sewage shall be collected through the provision of an outside toilet facility in compliance with the Ontario Regulation 213/91 – Construction Projects, under the *Occupational Health and Safety Act*.
2. All collected sewage shall be managed on-site through use of sewage treatment plant and discharged according to permit and/or authorization requirements; or shall be removed for off-site disposal at an existing, approved sewage disposal facility. The appropriate approvals (e.g., environmental compliance approvals, federal approvals, etc.) will be acquired, as needed.

5.5.4 Dangerous Goods/Hazardous Waste Handling and Disposal

1. Dangerous goods/hazardous wastes shall be identified and shall be handled in accordance with Ontario *Regulation 347: General – Waste Management* under the *Environmental Protection Act*, and Health Canada's Workplace Hazardous Materials Information System (WHMIS).
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 topsoil stripped and be lined with 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 at least 110% of the capacity of the total number of containers. The stripped topsoil shall be stored and used in the restoration of the site.
5. All waste stored at designated hazardous waste storage areas shall be removed from the site for disposal at hazardous waste facilities licensed under Ontario *Environmental Protection Act.*
6. Hydrocarbons shall not be stored or disposed of in earthen pits on-site.
7. 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.

8. 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.
9. 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 proponent and restoration of designated areas.

5.6 Working Within or Near Fish Bearing Watercourses

All construction and operations/maintenance activities within a watercourse shall be undertaken in accordance with applicable guidelines and permit requirements to protect aquatic species and habitats. The Contractor is responsible for ensuring compliance with contract specifications, environmental legislation, permits and authorizations.

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 30 m of a watercourse with the exception of construction of a watercourse crossing (e.g., crossing structures, approaching roadways, and approaching ditches).
2. In-water work shall be restricted to low flow periods where possible. Whenever possible, in-water works shall be scheduled during a period when the watercourse is seasonally dry or frozen to the bottom.
3. The Contractor shall not undertake construction activities in fish bearing watercourses or potentially fish bearing watercourses during the Ontario Restricted Activity Timing Windows for the Protection of Fish and Fish Habitat (as appropriate depending on the species present, [DFO, 2013]). If in-water work is required during this period, DFO and MNR will be consulted well in advance to request an extension to the fisheries timing window. Depending on the sensitivity of the waterbody, time of year and the species present an extension may not be granted.
4. Waste debris from vegetation clearing and grubbing shall not be deposited or stored within 50 m of a watercourse.
5. 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 (e.g., heavy rains).
7. Backfill (e.g., rip rap and other rock materials) installed adjacent to a fish bearing waterbody shall be clean granular material that is free of fines.
8. 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.
9. The distance between the machinery access point and the worksite shall be minimized.
10. The Contractor shall use an in-stream pad built of clean granular materials where in-water equipment activity would generate excess sediment.
11. If work is being conducted under authorizations, permits or approvals issued by MNR and/or Fisheries and Oceans Canada (DFO), the contractor will adhere to all conditions and requirements as outlined.
12. Equipment shall arrive on site in a clean, washed condition, and free of fluid leaks.
13. Equipment shall be kept in good repair to prevent leakage of fuel oil, etc. Avoid fuelling, changing oil, repairing or washing any equipment within 50 m of the normal high-water mark. Ensure runoff and water used for equipment cleaning does not enter any waterbody.
14. Spill containment and cleanup supplies shall be stored and accessible on site at all times.
15. Vehicles and other equipment shall be kept away from and out of the water.
16. 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 while maintaining stream flow.
17. 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.

18. Natural debris removal shall be limited to that which is necessary to protect bridge piers or abutments or to that which is blocking culverts.
19. Debris and other objects shall be lifted up and out of the water whenever possible. Items shall not be dragged across the stream bed/lake bottom and banks/shoreline.
20. 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.
21. All work to remove beaver dams shall be in compliance with DFO's *Code of Practice: Beaver Dam Breaching and Removal* (DFO, 2024).

5.7 Temporary Watercourse Crossings

Installation of temporary watercourse crossings shall be undertaken in accordance with applicable guidelines and permit requirements to protect aquatic species and habitats. The Contractor is responsible for ensuring compliance with contract specifications, environmental legislation, permits and authorizations.

1. All watercourse crossings shall be constructed in accordance with DFO's Measures to Protect Fish and Fish Habitat (2022) and applicable Codes of Practice (DFO, 2024) and MNR's Environmental Guidelines for Access Roads and Water Crossings.
2. A minimum vegetated buffer strip of 30 m shall be maintained between the worksite and watercourse except at the actual crossing location.
3. Where possible, existing watercourse crossings shall be utilized to traverse watercourses.
4. Temporary watercourse 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 watercourse crossings shall be designed for their intended construction loading and to accommodate anticipated water flows during their lifespan.
6. The number of temporary watercourse crossings constructed shall be minimized.
7. When feasible, the construction of watercourse crossings shall be scheduled for a period of low stream flow and should be a single event.
8. The natural alignment of the watercourse shall be maintained.
9. Where possible, there shall be no dredging, infilling, grading or excavating of the channel bed or banks.
10. Temporary watercourse crossings shall be removed as soon as possible following completion of the work or when it is no longer required.
11. Following the removal of a temporary watercourse crossing, the site shall be restored to its original state. The restoration shall include appropriate erosion and sediment control measures, establishment of stream bed and banks as required, and re- vegetation of disturbed areas as required.
12. Snow fill and ice bridge crossings will not impede natural water flow or fish passage at any time, except for brief, controlled construction periods. Where winter water flow is expected or confirmed, culverts will be installed beneath snow fills to maintain connectivity and fish passage (especially where fall-spawning species occur). Any culverts installed as temporary winter watercourse crossings will include removal mechanisms that allow timely extraction before the spring thaw.

5.8 Temporary Watercourse Diversions

Temporary watercourse diversions shall be undertaken in accordance with applicable guidelines and permit requirements to protect aquatic species and habitats. The Contractor is responsible for ensuring compliance with contract specifications, environmental legislation, permits and authorizations.

5.8.1 General Measures

1. Temporary watercourse diversions shall be constructed under low flow conditions and shall be designed to accommodate flows that may occur during the structure's lifetime.
2. In-stream diversion structures (i.e., sheet piling, sandbags, etc.) shall be constructed using erosion resistant materials.
3. Temporary watercourse 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. Watercourse diversion channels shall be constructed in the dry, excavating from downstream to upstream. Diversion channels shall have gentle curves, similar capacity, and similar gradient to the natural watercourse.
5. To help prevent potential erosion, the diversion channel shall be lined with erosion resistant materials (e.g., plastic, rock).
6. While the worksite is isolated, flow shall be maintained downstream at all times.
7. A fish salvage operation shall be conducted using qualified professionals under the conditions of a MNR Licence to Collect Fish for Scientific Purposes 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 (e.g., channel banks), infilling any temporary channels, removing all construction materials and debris, and installation and maintenance of required erosion and sediment control measures.

5.8.2 Temporary Diversion Channels and Cofferdams

1. Temporary diversion channels and temporary cofferdams used to isolate a section of a waterbody in order to construct crossing structures shall be undertaken in accordance DFO's *Interim standard: in-water site isolation* (2024).
2. Temporary diversion channels/cofferdams shall be designed to accommodate expected watercourse flow during the lifetime of the temporary structures.
3. Existing watercourses shall not be disturbed until temporary diversion channels, cofferdams, or by-pass pumps have been installed.
4. Temporary diversion channels shall be constructed "in the dry" by excavating upstream and downstream ends of the diversion channel last.
5. Diversion channels shall be opened from the downstream end first. Stabilize the connection of the diversion channel to the existing watercourse. Pump flows around work site, if possible, during construction of the channel connection.
6. The upstream connection to the existing watercourse shall be constructed and stabilized while pumping flows, if possible, around the work area.
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.

9. The diversion channel shall be inspected following a severe flood event or at the end of the spring freshet to identify areas of incipient erosion. Eroded areas shall be repaired promptly.
10. Cofferdams shall be designed to withstand the column of water outside.
11. Cofferdam areas must be pumped to allow for construction “in the dry”.

5.8.3 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 *Interim code of practice: End-of-pipe fish protection screens for small water intakes in freshwater (*2024).
3. Water shall be drawn from the near surface to minimize turbidity. The Pumping system shall be sized to accommodate expected watercourse flow during the lifetime of the diversion (generally 1 in 5-year or 1 in 2-year design flow). Pumps shall be discharged onto geofabric, gravel, straw bales or an alternate approved by the proponent to dissipate the energy of discharge and mitigate scouring of channel banks and/or streambed.

5.9 Fish Passage

Fish passage during in-stream construction activities shall be maintained in accordance with applicable guidelines and permit requirements to protect aquatic species and habitats. The Contractor is responsible for ensuring compliance with contract specifications, environmental legislation, permits and authorizations.

1. Fish passage should be accommodated by maintaining a water depth of at least 200 millimeters (eight inches) or the natural stream depth at the location.
2. Flow shall be maintained at all times to permit the safe and unimpeded passage of fish.
3. In some watercourses, a pumped diversion may be used instead of a diversion channel to maintain flows downstream.
4. Cleared trees, vegetation, or construction materials shall not obstruct waterways during any season and shall be stored above the ordinary high-water mark.

5.10 Fish Salvage

Fish salvage operations shall be undertaken in accordance with applicable guidelines and permit requirements to protect aquatic species and habitats. The Contractor is responsible for ensuring compliance with contract specifications, environmental legislation, permits and authorizations.

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 under the conditions of a MNR Licence to Collect Fish for Scientific Purposes.
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’s *Interim code of practice: End-of-pipe fish protection screens for small water intakes in freshwater*). 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.

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:
    a. Date;
    b. Location (watercourse name and geographic coordinates);
    c. Description of project/construction works;
    d. Physical habitat parameters – channel width, wetted width, size (area) and depth of salvage area, water temperature;
    e. Fish capture method (e.g., minnow traps, gill net);
    f. Effort (e.g., two people dip netting for 0.5 hours);
    g. Number of fish collected, by species; and
    h. Length and weight of a representative proportion of captured fish species.
8. All captured fish shall be released downstream of the worksite.

5.11 Bridge and Culvert Installation

Installation of bridges and culverts shall be undertaken in accordance with applicable guidelines and permit requirements. The Contractor is responsible for ensuring compliance with contract specifications, environmental legislation, permits and authorizations.

1. All watercourse crossings shall be constructed in accordance with DFO's Measures to Protect Fish and Fish Habitat (2022) and applicable Codes of Practice (DFO, 2024) and MNR's Environmental Guidelines for Access Roads and Water Crossings. The Contractor shall not undertake construction activities in fish bearing watercourses or potentially fish bearing watercourses during the Ontario Restricted Activity Timing Windows for the Protection of Fish and Fish Habitat (as appropriate depending on the species present, [DFO, 2013]). If in-water work is required during this period, DFO and MNR will be consulted well in advance to request an extension to the fisheries timing window. Depending on the sensitivity of the water body, time of year and the species present an extension may not be granted.
2. When removing beaver dams and associated debris for bridges or culvert installation, the Contractor shall:
    a. Adhere to DFO's Code of Practice: Beaver Dam Breaching and Removal (DFO, 2024).
    b. Time work to avoid harm to spawning fish, eggs, and larval fish.
    c. Install effective sediment and erosion control measures before starting work. Erosion and sediment control is to be inspected regularly to ensure proper function and repaired immediately if found damaged.
    d. Operate machinery from outside the water that minimizes the disturbance to the banks and bed of the watercourse.
    e. Remove dam gradually to allow water to release slowly and prevent sediment at the bottom of the stream from being released downstream.
    f. Not create a breach in the dam exceeding the width of the original stream.
    g. Not use explosives without MNR and DFO approval.
    h. Safely return any stranded fish to the main channel.
    i. Stabilize any waste material above the ordinary high-water mark. Spoil piles shall be removed or contained within appropriate erosion and sediment control measures.
    j. Minimize removal of riparian vegetation.
    k. Re-vegetate any disturbed area.

l. Maintain erosion and sediment control until such time as the as re-vegetation is complete.

3. 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.
4. The bed and banks of the watercourse shall be restored to pre-existing conditions as required following a disturbance.
5. If work is being conducted under authorizations, permits or approvals issued by MNR and/or Fisheries and Oceans Canada (DFO), the contractor will adhere to all conditions and requirements as outlined.
6. A site visit shall be conducted by qualified professionals prior to the commencement of in-water construction activities to determine the site-specific environmental protection measures that may be required (e.g., worksite isolation methods, site restoration considerations, erosion and sediment control materials required, etc.).
7. 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.
8. Cofferdams or other structures (e.g., 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 ordinary high-water mark. Cofferdams shall be designed to accommodate any expected high flows during the construction period.
9. A fish salvage operation shall be conducted prior to dewatering of isolated sites, using qualified professionals under the conditions of a MNR Licence to Collect Fish for Scientific Purposes.
10. The Contractor shall maintain a culvert gradient as close to the natural stream grade as possible.
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. Roadway embankment slopes shall be contoured to an appropriate steepness to minimize erosion; erosion controls shall be installed as soon as possible and maintain until the site is stabilized.

5.12 Blasting Near a Watercourse

Blasting within or near a watercourse shall be undertaken in accordance with applicable guidelines and permit requirements to protect aquatic species and habitats. The Contractor is responsible for ensuring compliance with contract specifications, environmental legislation, permits and authorizations.

1. Blasting plans developed by the Contractor 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 rearing months as much as possible. Blasting in watercourses classified as fish habitat is prohibited during the Ontario Restricted Activity Timing Windows for the Protection of Fish and Fish Habitat (as appropriate depending on the species present, [DFO, 2013]). If in-water work is required during this period, DFO and MNR will be consulted well in advance to request an extension to the fisheries timing window. Depending on the sensitivity of the water body, time of year and the species present an extension may not be granted.
2. Reference shall be made to DFO's document "Guidelines for the Use of Explosives in or Near Canadian Fisheries Waters" (Wright and Hopky, 1998) – See Tables 5-1 and 5-2 below. Blasting plans shall be submitted to and approved by DFO prior to commencement of blasting in areas that could affect fish habitat.
3. The blasting contractor shall possess all required permits/certificates. Notification shall be given to affected parties including site employees and the local communities/general public prior to each blasting event. Blast operations, where applicable, will be carried out in accordance with Department of Fisheries and Oceans (DFO) guidelines and Ontario Provincial Standard Specification 120 General Specification for the Use of Explosives.

Table 5-1: Setback Distance (m) From Centre of Detonation of a Confined Explosive to Fish Habitat to Achieve 100 KPA Guideline Criteria for Various Substrates (Wright and Hopky, 1998).

Substrate Type	Weight of Explosive Charge (kg)							
	0.5	1	2	5	10	25	50	100
Rock	3.6	5	7.1	11	15.9	25	35.6	50.3
Frozen Soil	3.3	4.7	6.5	10.4	14.7	23.2	32.9	46.5
Ice	3	4.2	5.9	9.3	3.2	20.9	29.5	41.8
Saturated Soil	3	4.2	5.9	9.3	13.2	20.9	29.5	41.8
Unsaturated Soil	2	2.9	4.1	6.5	9.2	14.5	20.5	29

Table 5-2: Setback Distance (m) from Centre of Detonation of a Confined Explosive to Spawning Habitat to Achieve 13 mm/s Guideline Criteria For All Types of Substrates (Wright and Hopky, 1998).

	Weight of Explosive Charge (kg)						
	0.5	1	5	10	25	50	100
Setback Distance (m)	10.7	15.1	33.7	47.8	75.5	106.7	150.9

5.13 Cultural Heritage Resources

Unexpected built heritage and/or archaeological resources may be uncovered during construction activities. Cultural heritage resources may broadly include works or assembly of works of nature or of humans that is of value for their paleontological, archeological, pre-historic, historic, cultural, natural, scientific, or aesthetic interest. Archaeological resources, also referred to as archaeological site(s), are something made or left behind by humans in the past, primarily of value for its pre-historic, historic, cultural or scientific significance.

A Cultural Heritage Resources Management Plan will be developed to guide contractors in the event that a previously unidentified cultural heritage or archaeological resources (e.g., projectile points, modified bone, pottery fragments) are suspected or encountered unexpectedly during construction. The plan will include the following provisions:

1. Should previously undocumented archaeological resources be discovered, they may be a new archaeological site and therefore subject to Section 48(1) of the *Ontario Heritage Act*. The proponent or person discovering the archaeological resources must cease alteration of the site immediately and engage a licensed consultant archaeologist to carry out an archaeological assessment and recommend mitigation measures, in compliance with Section 48(1) of the *Ontario Heritage Act*. All unexpected finds must also be reported to affected Indigenous communities.

2. Webequie First Nation and other applicable Indigenous communities must be engaged to and provided opportunity to participate in any supplemental field surveys/assessment to document the find, including discussion of mitigative options.

3. The *Funeral, Burial and Cremation Services Act, 2002, S.O. 2002, c.33* requires that any person discovering human remains must cease all activities immediately and notify the police or coroner. If the coroner does not suspect foul play in the disposition of the remains, in accordance with *Ontario Regulation 30/11* the coroner shall notify the Registrar, Ontario Ministry of Public and Business Service Delivery and Procurement, which administers provisions of that Act related to burial sites. In situations where human remains are associated with archaeological

resources, the Ministry of Citizenship and Multiculturalism should also be notified (at archaeology@ontario.ca) to ensure that the archaeological site is not subject to unlicensed alterations which would be a contravention of the *Ontario Heritage Act*.

5.14 Wildlife and Wildlife Habitat

This section includes key mitigation measures to be implemented to eliminate or reduce potential effects on wildlife and wildlife habitat. The Contractor is responsible for ensuring compliance with contract specifications, environmental legislation, permits and authorizations.

1. Employees, workers and other staff shall not hunt or trap wildlife.
2. The Contractor shall not remove, destroy or disturb species pursuant to Ontario *Fish and Wildlife Conservation Act, 1997*, or any future amendment thereof, respecting Threatened, Endangered and Extirpated Species, or species listed in the federal *Species at Risk Act* and/or provincial *Endangered Species 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 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 proponent's Environmental Manager.
10. Trees containing large nests of sticks and areas where active dens or burrows occur shall be identified and left undisturbed.
11. Buffer distances will be left around nests, dens, or roosts, as required.
12. Whenever it is necessary to remove existing beaver dams' reference shall be made to the mitigation measure 5.11.2.
13. 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.
14. For vegetation clearing and removal associated with the development of aggregate/quarry site, reference shall be made to the mitigation measures outlined in **Section 5.1** (Clearing and Grubbing).
15. Prior to removing temporary structures, an inspection shall be conducted to determine the presence or absence of bird nests or bat maternity roosts. If nests or roosts are discovered, work shall be suspended and the proponent's Environmental Manager will be contacted for further advice.

5.15 Wildfires

This section includes key mitigation measures to prevent or reduce effects caused by wildfires during construction and operations activities. Advanced planning and the implementation of safety measures is needed to effectively respond to wildfires when they do occur.

1. An evacuation and emergency preparedness plan by the Contractor addressing wildfires shall be implemented and submitted to the proponent 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 Ontario the dry season is typically defined as occurring between April 1 and October 31 of a given year. In the event that burning is required, an application for a burning permit shall be submitted for approval to MNR. All conditions imposed by the burning permit shall be adhered to.
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 proponent and to the MNR at 310-FIRE (3473).
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 proponent that it is safe to resume operations.

5.16 Erosion and Sediment Control

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

1. The installation of erosion and sediment control measures shall be completed in accordance with the contract specifications as approved by the proponent.
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 and not stripped well in advance of construction; operations shall be halted during heavy rainstorms and exceedingly wet conditions.
4. Effective erosion and sediment control measures shall be installed before starting work within or near fish habitat.
5. Any water pumping required during construction will be discharged onto pump pads (or equivalent) to ensure no native soil is disturbed and no sedimentation runoff is discharged into the environment.
6. During construction activities, water may be managed using various pumps; to minimize the risk of sedimentation or contamination being discharged to the environment, pump discharge pads and sumps will be installed as appropriate at discharge locations.

7. Erosion and sediment control measures shall be inspected by the Contractor regularly and after every major rain or spring melt event; necessary repairs shall be made immediately after damage has been discovered. Inspections will be confirmed by the proponent's environmental staff.
8. Hand clearing shall be utilized within 15 m of a watercourse instead of mechanical clearing where possible to prevent disturbance of the organic soil layer.
9. Slash and debris that is collected during clearing operations shall be retained and used to temporarily protect erosion-prone slopes.
10. Sediment shall be prevented from entering watercourses by placing aggregate material or topsoil stockpiles a minimum of 30 m above the high-water mark and applying erosion and sediment control measures to exposed slopes. Stockpile sites will be located within cleared road ROW or at laydowns/storage areas within construction camps where vegetation clearing has been removed to accommodate construction of the WSR.
11. Stream banks and bed shall be protected with erosion-resistant materials such as riprap at culvert openings.

5.17 Concrete Washout Management Practices

This section specifies best management practices for the implementation and use of concrete washout areas during construction. The Contractor is responsible for ensuring compliance with contract specifications, environmental legislation, permits and authorizations.

1. Concrete wash out areas should be designated at the pre-construction site meeting and approved by the proponent.
2. Concrete washout areas should be located a minimum of 50 m away from the ordinary high-water mark of a waterbody and in a non-porous soil location, and shall be cleaned be cleaned up at the end of the construction activities to the satisfaction of the proponent.
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.
4. Where water for concrete washout activities is taken from a watercourse or waterbody, DFO's *Interim code of practice: End-of-pipe fish protection screens for small water intakes in freshwater* and other appropriate legislative and mitigative measures must be followed.
5. The Contractor shall comply with all requirements as laid out in the *Water Resources 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; and
    c. Any wastewater generated on site must be contained within the construction site.
6. The Contractor shall comply with all requirements as laid out in applicable approvals/permits regarding utilization, cleanup and disposal of water, waste and hazardous materials at the washout site.
7. All concrete obtained and utilized for the Project must be sourced from a concrete batch plant licensed in accordance with the Ontario *Environmental Protection Act*.
8. With regard to reclamation and site cleanup, the Contractor will:
    a. Begin reclamation and site cleanup as soon as construction has completed; and
    b. Re-contour, stabilize, and re-vegetate disturbed areas to suit original conditions.

5.18 Dust Control Practices

This section outlines best management practices for controlling dust at the project construction site. Water will be used to control dust. The Contractor is responsible for ensuring compliance with contract specifications, environmental legislation, permits and authorizations.

1. Use of dust suppression systems at quarries.
2. Limiting vehicle speeds and restricting vehicle and heavy equipment movement to designated areas and access routes to minimize dust generation.
3. Restrict or halt construction and operations during high wind or dry conditions to prevent excessive dust generation near sensitive receptors.
4. When deemed necessary, exposed excavations, disturbed ground surfaces and traffic areas will be sprayed with water.
5. Carefully monitor the water application rate to ensure adequate coverage without pooling, runoff of water, or erosion of sediments.
6. Observe a 50-metre setback from any watercourse.
7. Avoid over-application or application beyond the construction site.
8. The water must not migrate or run off the construction site or enter watercourses.
9. Ensure that the water applied does not contain contaminants.
10. Temporary cover and daily maintenance for soil or fill stockpiles will be used and/or these areas will be kept moist during construction.
11. Adhere to conditions of Permit to Take Water and/or Environmental Sector Activity Registration, related to the taking of water from waterbodies, where applicable.
12. Should chemical dust suppressants, such as magnesium chloride, are proposed, they will not be applied within 50 m of a water crossing or beyond the road footprint. In general, the use and application of dust suppressants, where applicable, will be conducted in accordance with MTO OPSS – Construction Specification for Dust Suppressants.

5.19 Aggregate Pit Decommissioning

The development of aggregate pits at sites ARA-2 and ARA-4 shall be undertaken in areas outlined as in the EAR/IS approved and permit(s) issued under the Ontario *Aggregate Resources Act*. The decommissioning of aggregate pits shall include the removal or disposal of all site debris, appropriate sloping of pit slope, removal of site access, and reseeding or promotion of naturalization of the area. The Contractor is responsible for ensuring compliance with contract specifications, environmental legislation, permits and authorizations.

5.19.1 Clearing and Grubbing

1. Where clearing and grubbing is required, it shall be completed prior to excavation of the aggregate pit.
2. Clearing and grubbing shall be limited to the site and associated access routes.
3. All clearing and grubbing operations shall occur in accordance with the Clearing and Grubbing Measures (**Section 5.1**).

5.19.2 Brush Disposal

1. Disposal of cleared trees and brush must be done as directed or approved by the proponent. Disposal may involve burning, compacting, piling, burying, windrowing and compacting, and chipping.
2. All brush disposal operations shall occur in accordance with the Clearing and Grubbing Measures (**Section 5.1**).

5.19.3 Aggregate Pit Sloping

1. The aggregate 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 stripped soil shall be placed uniformly over the slopes and bottom of the aggregate pits.
3. Rehabilitated pit slopes at ARA-2 and ARA-4 banks will be no steeper than 3:1, unless otherwise approved in the aggregate permit.
4. Upon completion of the pit excavation, the Contactor shall cap, level and trim the aggregate pit prior to decommissioning the area. Stockpiled topsoil shall be spread, and the area re-vegetated.

5.19.4 Access Road Removal

1. Any temporary access road to an aggregate pit, and any equipment brought onto site, shall be removed 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; and disturbed areas re-vegetated to suit original conditions.

5.19.5 Re-Vegetation

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

5.20 Quarry Site Selection and Development Requirements

This section specifies best management practices for the development of the quarry at site ARA-2. The Contractor is responsible for ensuring compliance with contract specifications, environmental legislation, permits and authorizations.

5.20.1 Site Selection

1. Habitat occupied by endangered species will I be avoided or minimized, where feasible and practicable in the selection and operation of the quarry.

2. Quarry site selection within the large area of ARA-2 shall consider the proximity of sensitive sites including waterbodies, wildlife, cultural heritage resources and culturally important sites. Required setbacks from sensitive sites will vary depending on the nature of the sites. Any setbacks associated with permit applications under the *Aggregate Resources Act* will be incorporated in the required site plans or construction documents.
3. Prior to development of quarry sites, the potential for acid rock generation will be assessed with the intent of not developing such sites.

5.20.2 Quarry Development

5.20.2.1 General Measures

1. The Contractor shall comply with all legislation, licences, authorizations and permits respecting the Project.
2. Wildlife habitat shall not be destroyed or damaged, except pursuant to a licence, permit or other authorization issued for the Project. The proponent/contractor will consult with MECP regarding potential adverse effects to endangered and threatened species if activities will be carried out within or near their habitat.
3. All operations are subject to the appropriate Acts and Regulations.
4. The Contractor shall not commence any mobilization or drilling activities until an aggregate permit under the *Aggregate Resources Act* have been issued by MNR.
5. Blasting shall be conducted in accordance with Ontario Provincial Standard Specification (OPSS) 120 General Specification for the Use of Explosive. A pre-blasting survey will be conducted to identify water supply wells and other environmentally sensitive features within 250 m from the blasting location. Mitigation measures will be modified or enhanced, if needed, based on the survey results. Blasting will not be conducted within 50 m of water supply wells (if any) and should be avoided in shallow groundwater table areas, where possible.
6. The Contractor's Site Supervisor shall attend a pre-construction meeting with the proponent, at a mutually agreed upon date, to discuss the development of the quarry and establishment of the crushing operation. The meeting shall be initiated by the Contractor and be held in advance of commencing the field quarry establishment operations. Topics to be discussed shall include the type and quantity of equipment to be used, sequence of work, traffic control, environmental requirements and other pertinent topics.
7. The Contractor is responsible for maintaining the site and promoting surface water runoff to minimize ponding after rainfall events. In the event that ponding does occur, it shall be discharged or removed using effective erosion and sediment control devices and pumps (if required), as accepted by the proponent.

5.20.2.2 Scope of Work

1. Quarry development shall be carried out in accordance with a permit (including the site plan) issued under the the Ontario *Aggregate Resources Act*.
2. The major components of the work are as follows:
    a. Access Road Construction,
    b. Clearing and Grubbing,
    c. Blasting, and
    d. Gravel Crushing and Stockpiling of Aggregate.
3. Site work roads shall be confined to the quarry site boundary with the exception of the quarry access road.
4. A buffer zone shall be maintained between the excavation area and the registered quarry site boundary.

5.20.2.3 Fuel Handling and Spill Response

1. All dangerous goods shall be handled in accordance with Ontario *Technical Standards and Safety 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 Standard CSA B620-20: Highway Tanks and TC Portable Tanks for the Transportation of Dangerous Goods.
4. An updated list of key contacts and telephone numbers for reporting spills, problems, etc., shall be kept on-site by the Contractor at all times.
5. 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 the proponent 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 proponent's Environmental Manager within 24 hours. The spill report shall include the following:
    a. Personnel responding to the spill;
    b. Material spilled;
    c. Cause of spill;
    d. Estimated amount of material spilled;
    e. Estimated area and volume of soil affected by the spill;
    f. Cleanup action undertaken; and
    g. 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. 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.

5.20.2.4 Quarry Site Development and Mobilization

Description

Site development and mobilization 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.

Equipment/Materials

1. Equipment, implements, tools, materials, and facilities shall be of a size and type as required to complete the work in the required time. The equipment to be used for the work shall include bulldozers, front-end loaders, rock trucks, graders, backhoes, and other equipment as needed.
2. All equipment, implements, tools, plants, materials, and facilities shall be kept in good working order. The Contractor shall have sufficient standby equipment available at all times, as required.

Submittals and Advanced Notice

1. The Contractor shall submit to MNR a site plan showing the location of the proposed crushing operation.
2. The operational details associated with the development of quarries in ARA-2 will be documented in the required permit applications submitted under the Ontario *Aggregate Resources Act*.
3. The Contractor shall provide the proponent with an 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.
4. Prior to preparatory work for each blast, the Contractor shall submit a blast plan to the proponent including such information as:
    a. The location, depth and area of each blast;
    b. Diameter, depth, pattern and inclination of blast holes;
    c. The type, strength, amount, column load and distribution of explosives to be used per hole, per delay and per blast;
    d. The sequence and pattern of delays and the description and purposes of any special methods to be adopted; and
    e. Notification protocols and procedure to nearby Indigenous communities (e.g., Webequie First Nation)

5.20.2.5 Clearing and Grubbing

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. 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.
3. All persons involved in tree felling shall possess a training certificate for chainsaw and tree felling operations.

Construction Measures

1. Prior to the production of aggregates, the source of supply shall be cleared, grubbed and stripped of overburden to only the extent and manner necessary as approved by MNR.
2. Clearing and grubbing associated with the development of aggregate/quarry site, reference shall be made to the mitigation measures outlined in **Section 5.1** (Clearing and Grubbing).

5.20.3 Quarrying and Crushing Operations

5.20.3.1 Description

Quarrying and crushing operations consist of those activities associated with the day-to-day operation of the quarry site, including but not limited to blasting, crushing and stockpiling of materials.

5.20.3.2 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 the contract specifications. 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 the proponent be equipped with an approved mechanical sampling device for obtaining samples off the main delivery belt.

5.20.3.3 Reporting

1. Reporting of quarry mineral production and removal from the quarry site shall be in accordance with applicable permits or authorization under the Ontario *Aggregate Resources Act.*
2. The Contractor will inform local Indigenous communities prior to the commencement of quarry operations and prior to blasting. Communication will include actions to take if collecting country foods downwind of blasting in areas where dust is likely to settle (thoroughly wash foods prior to consuming).

5.20.3.4 Construction Measures

1. The Contractor shall ensure all fuel storage and equipment servicing areas are located a minimum of 50 m from any waterbody.
2. If authorized to work in or near a waterbody, the Contractor shall ensure that any work is done in accordance with the DFO's Measures to Protect Fish and Fish Habitat (DFO, 2022) and Ontario Restricted Activity Timing Windows for the Protection of Fish and Fish Habitat (DFO, 2013).
3. The Contractor may be subject to operational restrictions if in close proximity to sensitive environmental receptors (such as fish, birds, and wildlife, during critical life stages or periods of traditional land use) as required by MNR and/or applicable permits. The frequency of blasts is at the discretion of the Contractor based on construction timelines, aggregate requirements, physical conditions of the geography, and availability of supplies, provided the blasts comply with these restrictions.
4. Immediately following blasting, and at any time during the quarry operation, all excavated faces which, in the opinion of the proponent, are unsafe or appear to endanger persons, work, or property, shall be scaled and the loose rock shall be removed from the excavation.
5. The active excavation face shall be maintained at stable slopes, to the satisfaction of the proponent.
6. The Contractor shall ensure work adheres to the maximum peak particle velocity and minimum set back distances as recommended in the DFO's document "Guidelines for the Use of Explosives In or Near Canadian Fisheries Waters" (Wright and Hopky, 1998).
7. The Contractor shall minimize disturbance to vegetation and install erosion and sediment control measures as directed by the proponent.
8. The Contractor shall maintain the quarry site in a tidy condition and free from the accumulation of debris.
9. 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 MNR.
10. The Contractor shall provide stockpile sites, which are level, well drained and have adequate bearing capacity to support the weight of the material that is to be placed thereon.
11. Stockpiles shall be constructed at locations and by methods that will neither interfere with nor damage utility lines or other utility infrastructure.
12. Access to stockpiles shall be readily available at all times.

13. The Contractor shall clear the stockpile sites of all debris, vegetation, rocks, snow and other objectionable material prior to placing any aggregate on the stockpile sites.
14. The pile of material at the end of the discharge belt shall not be allowed to build up to a height greater than 3 m.
15. Stockpiling shall be performed using loaders, trucks or stacking conveyors.
16. 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 m in depth. Each layer shall be completed and levelled prior to placing the succeeding layer.
17. 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.
18. Aggregates which become mixed with others of different kind, class, source or gradation or which become contaminated by foreign material shall be rejected and promptly removed from the site of work.
19. The completed stockpiles shall be neat, regular in form and constructed to occupy the smallest feasible area.

5.20.4 Quarry Decommissioning

A Decommissioning Plan, including the progressive rehabilitation of the site shall be developed in consultation with MNR and in accordance with all applicable legislation and regulations.

5.21 Site Decommissioning and Rehabilitation

All temporary sites shall be decommissioned, as part of the progressive rehabilitation and closure of the site. The decommissioning shall include the removal or disposal of all site debris, appropriate sloping and regrading of the area, removal of site access, and the promotion of natural re- establishment of vegetation. The Contractor is responsible for ensuring compliance with contract specifications, environmental legislation, permits and authorizations.

5.21.1 Site Decommissioning

1. All temporary structures and equipment shall be removed from the temporary site.
2. All granular material shall be stripped and removed from the temporary site.
3. The area shall be leveled to natural or pre-existing grade and slope prior to decommissioning the area. Stockpiled topsoil and other organic matter that had been removed from the site shall be spread to promote natural re-establishment of vegetation.

5.21.2 Access Road Removal

1. Access roads and any equipment brought onto site shall be removed or blocked as soon as possible following completion of the work, or when no longer required.
2. Access roads shall be obstructed and blocked using, rocks, gates, timbers or other barriers to impede access.

5.21.3 Re-Vegetation

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

5.22 Water Quality Monitoring

Water quality monitoring shall be undertaken to demonstrate that deleterious substances are not entering waterbodies or watercourses. Monitoring shall be undertaken as instructed by MNR and/or MECP prior to, during, and after in-water construction activities in fish-bearing watercourses and may be required when working near fish-bearing watercourses or tributaries to fish bearing watercourses. The Contractor is responsible for ensuring compliance with contract specifications, environmental legislation, permits and authorizations.

1. Water quality monitoring shall occur:
    a. When working in-water in fish-bearing watercourses, or near fish-bearing watercourses when below the ordinary high-water mark.
    b. As required by permit, licence or authorization by MNR when working near fish-bearing watercourses or tributaries to fish-bearing watercourses.

2. Water quality monitoring shall consist of:
    a. Total Suspended Solids (TSS) and turbidity monitoring during stream crossing construction and shall be based on an upstream- downstream approach, with sufficient coverage of the study area to define effects in the initial zone of dilution, as well as effects downstream (spatial extent and magnitude of any increases):
        i. A TSS/turbidity relationship for each in-water work shall be developed; turbidity shall be used as a surrogate for rapid on- site monitoring.
        ii. Regular in-situ turbidity monitoring shall be conducted and laboratory TSS samples shall be collected and analyzed as required to validate in-situ monitoring where required by permit, licence or authorization for the work.
        iii. Further sampling shall be conducted as required by permit, licence or authorization for the work.
    b. Data collected at downstream sites shall be compared to data collected at upstream reference sites (background conditions) and compared to the Canadian Water Quality Guidelines (CCME 1987-93), and Ontario Water Quality Objectives (MOEE 1999) for the protection of aquatic life. Further monitoring and corrective action may be required if data falls beyond applicable standards or guidelines.

3. Water quality monitoring activities shall be conducted or overseen by a qualified professional pre-approved by MECP. Works requiring water quality monitoring shall not be undertaken without the presence of a qualified professional, or a person trained by a qualified professional as authorized by MECP.
4. The spatial extent and intensity of water quality monitoring during in-water works shall depend upon the presence and velocity of stream flow at the time of construction, or other permit, licence or authorization requirements.

5. The Contractor shall be responsible for:
    a. Preparing a Water Quality Management Plan for work requiring, or that may require water quality monitoring and submitting the Plan to MECP and/or MNR prior to the start of the contract. The Plan shall include a description of the works and measures proposed to mitigate adverse changes to water quality.
    b. Contracting with a qualified professional to conduct water quality monitoring activities unless otherwise directed by MECP in writing.
    c. Conducting water quality monitoring prior to, during, and after construction activities.
    d. Reporting exceedances immediately to MECP.
    e. Ceasing work if exceedances occur and employing corrective actions to mitigate exceedances prior to restarting work.
    f. Notifying MECP immediately when the water quality monitoring plan is not being adhered to.
    g. Submitting water quality monitoring reports prepared by a qualified professional to MECP.

6. Water Quality Monitoring Reports shall include:
    a. Coordinates of sampling locations;
    b. Description of the construction activities;
    c. Description of the TSS-Turbidity relationship;
    d. Measurements and timing of measurements of TSS and Turbidity;
    e. All other sampling data and analysis; and
    f. Exceedances based on rapid on-site monitoring results and corrective actions employed to mitigate exceedances.

7. Water quality analysis shall be conducted at a Canadian Association for Laboratory Accreditation certified laboratory as prescribed by the Water Quality Management Plan. Field equipment shall be calibrated in accordance with manufacturer's specifications prior to the start of monitoring work.

5.23 Prevention of the Transfer of Invasive Species

This section outlines procedures to prevent the transfer of invasive species prior to, during, and after construction activities, including in-water work and work in sensitive or remote wilderness areas. The Contractor is responsible for ensuring compliance with contract specifications, environmental legislation, permits and authorizations.

5.23.1 Aquatic Environment

1. The Contractor shall ensure that equipment which has previously been in contact with an aquatic ecosystem, including but not limited to rivers, lakes, and marshes is properly cleaned so as to prevent the spread of aquatic invasive species.
    a. Equipment of particular concern includes, water tanks, tank trucks, pumps, hoses, intake screens, boats and motors, and fish and water monitoring equipment.
    b. Equipment coming in contact with aquatic ecosystems shall be cleaned, drained completely, dried, and inspected before and after contact using the "clean, drain, dry method" method outlined in Ontario's Boaters Action Plan (MNR, 2022).
    c. Equipment that has come into contact with aquatic ecosystems in another province, territory, or country must be decontaminated using the "clean, drain, dry method" method outlined in Ontario's Boaters Action Plan (MNR, 2022).

2. In the event that aquatic invasive species are discovered during inspection the Contractor shall inform the proponent's Environmental Manger as well as MNR via:
    a. phone: call the Ontario Federation of Anglers and Hunters' Invading Species Hotline at Toll-free: 1-800-563-7711;
    b. online: through EDDMapS Ontario, a web-based mapping system, at this link;
    c. https://www.eddmaps.org/ontario/distribution/;
    d. mobile phone: download the EDDMapS Ontario app on your mobile phone:
        i. iOS: https://itunes.apple.com/gr/app/ontario/id727309669?mt=8; and
        ii. or Android: https://play.google.com/store/apps/details?id=com.bugwood.eddmapsontario.

5.23.2 Terrestrial Environment

1. To prevent the transfer of terrestrial invasive species, all equipment shall be cleaned to remove all earthen material and plant debris and inspected before being brought to sight and before it is removed from sight. Cleaning shall be carried out with a pressure washer or scrub brush. If soap is used it shall be phosphate free.
2. In the event terrestrial invasive species are discovered the Contractor shall inform the proponent's Environmental Manager as well as MNR via:
    a. phone: call the Ontario Federation of Anglers and Hunters' Invading Species Hotline at Toll-free: 1-800-563-7711;
    b. online: through EDDMapS Ontario, a web-based mapping system, at this link;
    c. https://www.eddmaps.org/ontario/distribution/; and
    d. mobile phone: download the EDDMapS Ontario app on your mobile phone:
        i. iOS: https://itunes.apple.com/gr/app/ontario/id727309669?mt=8; and
        ii. or Android: https://play.google.com/store/apps/details?id=com.bugwood.eddmapsontario.

5.23.3 Documentation

1. Documentation of measures to ensure the prevention of the spread of aquatic and terrestrial species invasive species shall be incorporated into the CEMP, its respective component plans, and inspection/monitoring reports including:
    a. History of equipment work locations and potential sources of contamination.
    b. Documentation of cleaning and decontamination (date, personnel, confirmation of methods used).

6 References

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