ANNEX II-C

CONSTRUCTION MANAGEMENT PLAN

WANATANGO FALLS HYDRO PROJECT
CONSTRUCTION MANAGEMENT PLAN
(CMP)

PART A – General Project Requirements
PART B – Wanatango Falls Hydro Project

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July 2011

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AUTHENTICATION

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The information expressed in this document represents Canadian Projects Limited's best professional judgment and is based on Canadian Projects Limited's experience as applied to the information provided at the time of preparation.

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PART A

GENERAL PROJECT REQUIREMENTS

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1 GENERAL CONSTRUCTION ENVIRONMENTAL CONSIDERATIONS

1.1 Wildlife

Construction may affect wildlife through sensory disturbance, movement restriction and habitat alteration. Some parts of the construction period will be busier than others and road upgrades for construction traffic may improve year-round access and alter existing wildlife habitat and behaviour. Some species may be temporarily displaced from their habitat for short periods during the construction phase.

Important habitats, including riparian areas, wetland complexes, unstable slopes, and protected tree species, have been avoided where possible. Activities will be scheduled to avoid sensitive nesting, rearing, mating, or staging periods wherever possible.

All food and food waste will be properly stored and disposed of to prevent attraction of wildlife to the site.

Equipment and vehicles will yield the right-of-way to wildlife. All Project personnel will use proper care and caution when operating vehicles to avoid collisions with wildlife. A log of wildlife sightings will be kept at the Project office to aid the construction personnel in determining more active wildlife areas in order to target mitigative traffic measures such as crossing signage and reduced speed limits.

1.2 Fish and Fish Habitat

All foreseeable adverse effects on fish and fish habitat are being considered in the EA phase of this Project. Adverse environmental effects on fish and fish habitat may include:

- Dewatering during construction (fish salvage);
- Reduction in water quality;
- Increased erosion and sedimentation in the watercourse;
- Disturbance of fish spawning and rearing habitat at sensitive times;
- Toxic contamination (from concrete, grout, fuel or hazardous material spills);
- Removal of riparian vegetation (effects on water temperature); and
- Physical disturbance of stream beds and habitat.

General environmental protection measures include:

- Construction planning to avoid or mitigate adverse environmental effects;
- Environmental monitoring to ensure that predicted conditions are, in fact, accurate;
- Instream work constraints (work windows or other controls to limit the significance of adverse effects at sensitive times);
- Identification and relocation of fish stranded by dewatering;
- Following industry Best Management Practices (BMPs) for environmentally sensitive work (see need BMP reference);
- Adherence to legislation, regulation, and approval terms and conditions (compliance);
- Erosion and sedimentation controls in place, effective, and monitored;
- Fuel and hazardous materials management in place, effective, and monitored;

- Prompt and effective spill response; and
- Prompt and effective clean up and restoration once construction is complete.

The Project was designed to minimize the adverse effects, including maintenance of minimum instream flows. Compensation works will be built to improve fish habitat elsewhere to compensate for the project physically occupying a defined amount of habitat.

1.3 Heritage and Archaeological Sites

Archaeological sites and objects, such as buried structures, stone tools, graves, paintings, or surface features such as culturally modified trees may be encountered during construction activity. These features represent valuable cultural resources, and uncontrolled disturbance could result in loss or damage to these resources and the valuable information represented by them.

Inventory surveys completed during the planning and approvals phase of the Project may have indicated a low probability of the presence of any significant archaeological or heritage resources in the Project area, but these surveys do not preclude archaeologically significant resources from being found. If archaeological or heritage resources are discovered during clearing or construction, work will be stopped until an archaeologist has assessed the find and a course of action is determined. A step-by-step Discovery Protocol will be prepared and implemented for project construction.

1.3.1 Culturally Modified Trees (CMT)

Trees may be altered in several ways by humans; for example, by notching, felling, carving, cutting, or stripping bark. Trees modified by aboriginal people are known as “culturally modified trees.” They are protected under the Heritage Conservation Act.

There is no simple method for identifying a CMT. Most identification involves matching the observable characteristics of an altered tree suspected of being a CMT with those listed for the different types of CMTs already identified by First Nations or archaeologists.

Workers will be advised to follow the Discovery Protocol and to notify their supervisor immediately for instructions if they encounter any trees they suspect may have been culturally modified. It is an offence to cut down a CMT unless it is a danger tree liable to fall on its own. The local First Nations and the Ministry of Natural Resources (MNR) will provide assistance. The management of cultural heritage values in forestry operations, including the best management practices and applicable legislation, are discussed in the MNR publication “Forest Management Guide for Cultural Heritage Values”[1].

1.4 Public Access During Construction

Where there was public use of the project area for recreational purposes including kayaking, canoeing, fishing and hiking, a bypass portage route will be created and maintained to re-establish continuity of access between the areas upstream and downstream of the project. The route will be properly signed to keep users on the trail. The portage will be sized for non-motorized traffic only.

Public access to the immediate project area will be controlled during construction for the safety of the public and project personnel. A combination of fencing and signage will be used to advise the public of areas that are under construction and not accessible.

[1] Ontario Ministry of Natural Resources, Forestry Branch. Forest Management Guide for Cultural Heritage Values. 2007.

1.5 Existing Site Conditions

The site may have been used for previous activities including guiding, outfitting, logging, mineral exploration, or mining which may have residual impacts on the land. Often, evidence of such activities will only be uncovered once clearing or grubbing starts, or field workers do a walk-through of the proposed Project areas. Abandoned or forgotten sites may be contaminated by materials hazardous to personnel and/or the environment, such as chemicals, asbestos, fuel, explosives, or human waste.

Before site preparation and construction activities commence, the Proponents site manager and contractors will conduct a site assessment to identify if any conditions exist that may present an environmental or safety concern. Assessments will continue routinely during construction activities.

1.6 Weather and Water

High flows and debris torrents can occur in the watershed. Project personnel will check weather forecasts and endeavour to anticipate approaching storms that may affect the Project. The Project areas site drainage will be designed to handle appropriate return-period flood events.

Should it become obvious that a storm is approaching, immediate plans should be made to adjust work schedules to protect personnel, re-schedule vulnerable tasks and facilities, manage adverse effects on the Project and the environment, and prepare for excess runoff.

During storms, sedimentation, debris, and instream flows will be naturally high in the watershed. Personnel, tools, equipment, and supplies will be made as safe and secure as possible before the storm arrives. Vulnerable sites will be protected with lock blocks or cofferdams. Exposed building sites will be protected with tarpaulins or temporary sheeting. During and/or immediately after any major storm all facilities and work sites will be inspected for damage and repairs will be conducted as required. Roads and work sites may require immediate repair or upgrading, such as culvert replacement or roadside ditching, during or immediately following a major storm. Such work will be done as soon as it is safe to do so.

1.6.1 In-Stream Work

In Ontario, the obligation of protecting streams and stream habitat during in-stream work is explained in the *Lakes and Rivers Improvement Act* of Ontario administered by the MNR. When working in or around a stream, Project personnel will ensure that:

- The timing window or the period of time in the year during which in-stream work can proceed with significantly reduced potential for harm to fish, wildlife, or habitat is respected;
- The minimum in-stream flow that must remain in the stream during the work is maintained;
- No substance, sediment, debris or material that could adversely impact the stream is allowed to enter into the stream from any construction activity, or is placed, used or stored within the stream channel;
- No standards or objectives published under the *Environment Management Act* of Ontario administered by the Ministry of Environment (MoE) for the protection of ambient water quality are exceeded or not attained now or in the future due to the work;
- There is no disturbance or removal of stable natural materials and vegetation in a stream that contribute to stream channel stability and habitat except as authorized under the regulations and in accordance with terms and conditions specified by the habitat officer;

- An approval for the work has been obtained from Federal Department of Fisheries and Oceans (DFO); and
- Fish or wildlife are relocated as required during the work and after the work has been completed.

Temporary diversion works will be constructed either around or through the work site to allow the construction of Project components such as the headworks, weir or powerhouse to proceed in dry conditions. Cofferdams will be designed by a Professional Engineer at a suitable flood return period and will be constructed in accordance with that design.

1.6.2 Drainage and Erosion Control

Activities associated with the construction phase of the proposed development that have the potential to adversely affect fish species and habitat include:

- Introduction of sediment into watercourses that supply known fish habitat downstream from the site;
- Introduction of sediment into the watercourse as a result of mass-wasting;
- Alteration or blockage of in-stream flow;
- Loss of riparian vegetation and bank cover, increasing the possibility of bank erosion; and
- Indirect disturbances of spawning activities or sites through careless water crossing, excavation, transportation, or installation of sediment control measures.

The following general principles will avoid, prevent, or limit the environmental effects of sedimentation:

- Clearing will take place as close as practical prior to excavation and earthworks to minimize the length of time that soils are exposed;
- Where vegetation is cleared in the year prior to excavation and earthworks, the forest litter and root cover will be left in place until the soil cover is stripped at the time of excavation;
- Grubbed soil and forest litter material will be stored either in small piles or windrows next to the earthwork area or in a central soil storage pile if one is designated for the site;
- Grubbed material will be used where possible and to the extent available to restore and top dress excavated areas where desirable, including ditches and site areas that are not required for vehicle access after construction;
- Riparian areas will be cleared as per the drawings and at the very minimum to enable work to proceed safely;
- Vehicles and equipment access will be restricted to the minimum area necessary;
- Vegetation in adjoining areas will not be disturbed;
- Temporary control measures such as silt fencing, drains, settling basins and pumping systems will be installed as needed;
- Erosion-prone slopes will be stabilized and re-vegetated if permanent. Temporary slopes will be cordoned off with silt fencing or covered with geotextiles and/or coco mats, especially when in close proximity to fish bearing streams;

- Vegetation identified for protection (e.g., mature trees and potential wildlife trees) will be left intact and root systems undisturbed wherever possible;
- Any piles of topsoil and silty material (rock and rip-rap excluded) formed due to construction will be placed a minimum of 20 m from any watercourse and in a location where erosion back into the watercourse cannot occur and will not impede any drainage; and
- Excavation will be stopped during intense rainfall events or whenever surface erosion occurs affecting a fish-bearing watercourse. Silt fencing and/or other erosion protection measures will be implemented, checked, and/or repaired in anticipation of intense storm events.

1.7 Fuels, Oils and Lubricants

Storage and handling of petroleum products, fuels, oils and lubricants, many of which are flammable, will comply with industry best practices and regulatory requirements. The storage and handling of flammable substances must comply with:

- The Occupational Health and Safety Act, Part 4 – Toxic Substances, administered by the Ontario Ministry of Labour (MoL):
- Environmental Code of Good Practice for Underground Storage Tank Systems Containing Petroleum Products and Allied Petroleum Products (CCME);
- Environmental Code of Practice for Above Ground Storage Tank Systems Containing Petroleum Products (CCME); and
- National Fire Code (National Research Council).

A stand alone Spill Response Plan will be prepared for the project and posted at the site construction office and fuel storage and handling locations.

All supervisory personnel will be trained in, and be aware of, the requirements of the Workplace Hazardous Materials Information System (WHMIS) program and specific requirements for transportation of dangerous goods.

Material Safety Data Sheets (MSDS) will be kept on site at all times for any hazardous substances and their location will be made known to all workers entering the site. All workers shall review the MSDS before working with any hazardous substances.

In addition to good housekeeping and material management methods, the following practices will be implemented for spill prevention and clean up:

- All hydrocarbon fuels, oils, and lubricants will be stored in a secondary containment area;
- All vehicle fuelling will occur in one location, a minimum of 30 m from a watercourse and where site grading and spill response equipment will be established to contain spillage;
- Drip pans will be installed on equipment to intercept minor leaks;
- Locations of spill prevention and clean up materials will be made known to all workers involved in these activities;
- Sumps will be installed including an oil trap to prevent contaminated water from being pumped into a water course; and
- Absorbent mats and other spill response equipment will be readily available for deployment.

All fuel or lubricant contaminated materials will be collected and trucked to an approved regional disposal facility, or will be treated with in situ bio-remediation techniques approved by the Proponent and Regulators.

Since impacts from spills can generally be minimized if appropriate actions are implemented promptly, all spills of fuel or noxious materials will be reported immediately to Project management and environmental monitors. Spills will be handled according to the following procedures:

- Construction activities will be suspended in the immediate vicinity of the spill;
- Appropriate methods will be determined for the removal or restoration of contaminated soils or other natural materials;
- Soils and vegetation heavily contaminated with petroleum products will be collected and disposed of at an approved facility;
- Spill site will be flagged or otherwise marked to enable post-construction monitoring; and
- Lightly contaminated areas where restoration is feasible will be fertilized and then cultivated to a depth below the depth of contamination. This process will be repeated as required.

1.8 Solid Waste

The construction activities will generate waste from various sources, such as packaging from delivered equipment, off-cuts from wood form construction, used formwork, packaging and remains from consumable materials, and organic waste from worker meals. This waste is generally referred to as solid waste and if not properly controlled, may be unsightly and potentially pose human health and safety concerns. In addition, some solid wastes may attract wildlife to the Project site, putting the health and safety of wildlife and humans at risk.

No trash, litter, or waste materials will be left on or around the work site. Appropriate disposal containers will be available for the prompt disposal of waste. Contractors will be responsible for cleaning up waste materials as soon as possible after they are created and full disposal containers will be removed to the appropriate waste disposal facility on a regular basis.

Organic/food waste will be collected daily and stored in closed, animal resistant containers until disposed of at an approved waste disposal site or incinerated on-site according to project permitting standards.

1.9 Fire

Fire, whether natural or caused by construction activity, could cause serious damage to the natural environment, the Project facilities, and/or threaten worker health and safety.

Construction or other activities could start a wildfire in the surrounding forest. Temporary construction facilities such as office trailers, construction material, petroleum, oil and lubricant stockpiles, other items and equipment could accidentally catch fire. Wildfires started elsewhere could approach the construction site.

Project personnel will prepare and will be familiar with the site Fire Preparedness Plan. Fire-fighting equipment will be available to all workers and the location of such equipment will be outlined in the Fire Preparedness Plan. Locations of equipment and muster points in case of fire will be advertised as necessary around the site. Project personnel will also be familiar with fire-fighting techniques and the use of the supplied equipment.

Un-controlled fires will be immediately reported to the nearest fire emergency service and to the MNR in the case of an un-controlled fire on Crown Land.

Smoking will only be permitted in designated smoking areas and disposal of all waste will be into proper waste containers to prevent fires. Fire extinguishers will be available at designated smoking areas and will be inspected on a regular basis.

1.10 Dust Control

Un-controlled dust reduces visibility and air quality, and thus may adversely affect worker health, fish habitat, and wildlife habitat.

Project personnel will control dust at work sites and on roadways when it is warranted by the conditions. A water truck or alternate method will be used to suppress dust on all Project roads and work sites when required during dry and dusty conditions. Efforts will be made to implement dust control techniques prior to reaching critical conditions. Trucks will be required to use dust covers when they are routed through populated areas.

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2 GENERAL CONSTRUCTION ACTIVITIES & PROTECTION MEASURES

2.1 Vegetation Clearing

Trees cut in the headpond area, inside the transmission line right-of-way and wherever else possible, will have their roots left intact. Merchantable timber will be decked for removal by the Sustainable Forest Licence (SFL) holder or other party as designated by the MNR. The environmental concerns associated with vegetation clearing include:

- Erosion of exposed soil by wind and/or water, and deposition of the resulting sediment in waterbodies;
- Disturbance, clearing, or accidental removal of trees used by wildlife or by nesting birds, especially during key life cycle periods such as mating, nesting, and/or rearing;
- Blow down or damage of newly exposed trees during high wind events;
- Forest fires associated with loss of control while burning of slash and debris; and
- Entry of cut materials (woody debris) into the waterway.

2.1.1 General Environmental Protection Measures

Project personnel will ensure that clearance techniques, silt/sediment control measures, and storm response protocols are understood and addressed:

- Vegetation removal (grubbing) will only take place where absolutely required and immediately prior to construction activities to minimize soil exposure;
- Clearing will comply with the requirements of all applicable permits and approvals;
- Clearing will be limited to the area of development set out in the project description; and
- All forest clearing operations will conform to the *Crown Forest Sustainability Act*, The Forest Operations and the Silviculture Manual.

During clearing, trees will be felled into the proposed site wherever possible. Trees cleared during headpond preparation will be not be felled into the water. Wildlife trees, Culturally Modified Trees and other significant trees will be marked for protection. Marked trees will only be removed if they are a safety concern that cannot be addressed in other practical ways.

Cut materials will be removed from the riparian zone daily to ensure they do not enter the river during high flow events. Slash and other construction material or debris will not be disposed of in or near a watercourse.

Brush will be disposed of by burning or chipping. When burning is carried out it will be under permit with the MNR and according to the *Forest Fires Prevention Act*.

2.2 Grubbing, Stripping, Grading and Soil Salvage

Root structures and ground mat material will only be removed where specifically required. Overburden will be stockpiled where practical for future reclamation work.

The principal environmental concerns associated with grubbing, stripping, grading, and soil salvage activities are the potential effects on freshwater habitat due to disturbed soil being washed or blown into a watercourse. The release of large quantities of accumulated surface water from the construction site into adjacent watercourses during high rainfall or runoff events is a further source of sediment loss during stripping. All grubbing, stripping, and debris disposal

activities will comply with the Fisheries Act, which requires that no person shall deposit or permit the deposit of a deleterious substance of any type in water frequented by fish or in any place under any conditions where the deleterious substances may enter any such water.

2.2.1 General Environmental Protection Measures

Prior to grubbing activity, Project personnel will meet to discuss the prescribed strategy and responsibility for sediment and erosion control. The contractors will have prepared and will follow a Care of Water Plan.

Silt fences will be erected on the sides where there is potential for surface runoff leaving the disturbed area. Grubbing will not proceed prior to the installation of appropriate surface drainage controls.

Grubbing will be suspended during and immediately after intense rainstorms that have resulted in excessive runoff.

Mitigation measures will be implemented in anticipation of runoff of sediment-laden water during grubbing and stripping (e.g. settling ponds, ditch blocks, interception ditches, sediment screens, etc.). French drains, energy dissipaters, straw mats, geotextiles, and interception ditches will be used as needed on a site-specific basis to control erosion.

Where grubbed materials are stockpiled or re-spread during reclamation, stumps and roots will be left on the ground surface to maintain soil cohesion, to dissipate the energy of runoff, and promote natural revegetation. Erosion control measures will be implemented in areas prone to soil loss.

2.3 Excavation

Appropriate methods will be used for excavation. No excavation or borrowing will be done without the appropriate plans, surveys, permits, and approvals in place. Excavations conducted improperly or without proper planning have the potential to cause damage to the surrounding environment through slope failures, un-controlled sediment transport, un-controlled generation of dust, uncovering and releasing contamination from pre-existing dumps or caches, and/or acting as a hazard to the mobility of wildlife.

2.3.1 General Environmental Protection Measures

Project personnel will review an area prior to the disturbance of a new site to ensure that environmental concerns are addressed, that contingency plans are in place, and that adequate resources, including personnel, are available on site to implement control, mitigation and protection measures. Reconnaissance may reveal old dumps, caches, spills, or other potential hazards that will be accommodated before the work is done.

Where practical, existing borrow sites and associated roads, trails or cut lines will be used instead of developing new sites. Borrow sites for aggregate will be located in upland locations and separated from streams and lakes by a minimum 30 m wide buffer of undisturbed terrain in order to minimize potential for siltation. The borrow area, stockpile area, and limits of clearing will be staked to prevent accidental over-extension of the affected area.

Where possible, topsoil will be placed in separate stockpiles for future use to re-contour and restore disturbed areas.

Erosion control berms and settling basins will be constructed where required and incorporated into the natural drainage where practicable.

Restoration, including appropriate drainage and erosion control measures, will be implemented as soon as possible following excavation or borrow site abandonment to prevent erosion and

assist natural recovery of vegetation. Stockpiled overburden and soils will be re-contoured prior to seed application.

2.4 Rock Blasting

The principal concern about blasting activities is the potential for nitrogenous residues/seepage and/or rock debris to enter the water and affect fish populations. A secondary concern relates to acid rock drainage when water drains through newly exposed rock releasing acids into the drainage system.

2.4.1 General Environmental Protection Measures

If deemed necessary by a geotechnical engineer, detailed investigations will be undertaken to determine if Acid Rock Drainage (ARD) is an issue. If ARD is determined to be likely, an ARD Management Plan will be prepared including measures for avoidance, mitigation, and treatment methods for ARD as well as long-term storage methods for acid-generating spoils.

Rock removed from excavations may be used for embankments, riprap erosion protection, slope stabilization, cofferdam construction, fish habitat optimization, topping and rework of access roads, provided it is environmentally suitable (e.g. not acid generating and clean) and of proper grade.

2.5 Concrete Construction

Concrete may be produced on site for construction of the works. Wash water from concrete production may contain cement, chemical additives, and form oil. Some concrete additives pose potential human health and/or habitat hazards. The amount of concrete needed, and the number, timing and location of concrete pours, will be determined on site. The batch plant operator will be responsible for all concrete production permits, approvals, and operation.

2.5.1 General Environmental Protection Measures

Concrete pours will be conducted “in the dry” and efforts shall be made to prevent concrete from contacting the watercourse until it is properly cured.

Project personnel will be made aware of safe concrete handling procedures. Cementitious products in concrete mix are very alkali rich (high pH) and are deadly to aquatic life if sufficient quantity comes into contact with a habitable watercourse. Concrete handling will employ watertight forms, spill contingencies, and designated truck clean out pits. Clean out pits and washing areas will be established well away from a watercourse and will be subject to best industry practice and regulatory requirements.

CO_2 canisters and diffusers shall be on hand for immediate deployment in the watercourse should that be necessary.

2.6 Site Reclamation

Reclamation activities include cleanup, grading, and re-vegetation. All disturbed access roads and work sites will be reclaimed as soon as possible after disturbance. Failure to clean up, grade, and re-vegetate the work sites could lead to local surface instability and increased erosion.

During the initial site assessment prior to construction work, pictures will be taken and notes will be made regarding the original state of the site including native vegetation. Reclamation work will proceed in the interest of returning the site to its pre-project conditions where possible.

2.6.1 General Environmental Protection Measures

Appropriate silviculture treatments will be used to restore and re-vegetate the work sites. The Contractor shall stabilize all contours and disturbed slopes. Newly stabilized slopes will be monitored by qualified personnel and unstable slopes will be repaired as soon as instability is discovered. Seed mixes and revegetation procedures will meet MNR standards.

3 ENVIRONMENTAL PROTECTION BY PROJECT COMPONENT

3.1 Siteworks

3.1.1 Road/Trail Upgrading

Shutdown protocols are the primary control measures during road/trail upgrading. These protocols involve monitoring weather forecasts and planning the work accordingly, including stabilizing work areas in anticipation of forecasted storm events. The work activities will be modified or stopped during severe or prolonged precipitation until ground conditions improve.

Ditch and culvert upgrades will be carried out in the dry at all times by damming and pumping water flow around the work area if necessary. Any new, erodible soil cuts exposed during upgrade work will be re-seeded soon after the work is completed and before the end of a construction season.

Where a forest service road falls under the auspices of a Forest Management Plan and/or where the responsible forestry company is engaged in the road upgrading process, the applicable requirements of the Forest Management Plan will be observed related to any upgrading or extension of the road towards the project site. The Sustainable Forest License (SFL) holder will be contacted and consulted in regards to the most appropriate way to collaborate on the work.

3.1.2 New Access Roads

Cut and fill slopes along the road alignment will be constructed to stable angles for the material being used, followed by re-seeding before the end of the construction season. Sediment control fencing will be installed 1 m beyond the intended toe of the road fill to prevent sediment from the construction area migrating beyond the grubbed area, out of the access road right-of-way.

The control measures described in section 3.1.1 for ditch and culvert upgrades also apply for new ditch and culvert construction.

Extra caution shall be exercised where new access road construction is within 30 metres of a water course. The following additional control measures will be implemented:

- Prior to commencing work, the contractor will review the detailed work plan with the environmental monitor and Project management;
- A silt/sediment control fence will be installed between the water course and the proposed works;
- All loose clearing and grubbing materials will be removed from the area at the end of each work day;
- Ditching will be installed to direct any surface runoff from the exposed works into a sediment trap and sediment control structures;
- Earthworks will be scheduled to minimize duration of exposure; and
- Required erosion protection material and/or re-seeding will be installed as soon as practical following the work.

3.1.3 Bridges

Bridge installation will be in accordance with the Navigable Water Protection Act, DFO Operational Statements and MNR requirements. Copies of these approval documents will be made available on site. Key action items will be:

- The contractor responsible will be required to submit a detailed work plan for review and approval by Project management;
- Any instream works will be completed within the specified instream work window except for clear span bridges installed according to the applicable DFO Operational Statement;
- No construction material or debris will be delivered to the stream network directly or indirectly;
- Control measures as outlined above will be implemented for work within the riparian zone; and
- All creek banks will be restored to their original contour and the banks repaired and/or rip-rapped immediately after bridge/abutment installation.

3.1.4 Construction Camp

There are several unique issues associated with construction camps that are not present on other areas of the project. Housing and feeding people in a remote area requires water taking, sewage treatment and organic waste incineration. Camps can also affect wildlife due to the longer term presence of people at the site and by being attracted to the site through the smells of food preparation and disposal.

Required approvals will be obtained from the MOE and the Ministry of Health. The construction camp will be set up and operated according to the requirements of the *Health Protection and Promotion Act*.

The Proponent will prepare and implement an Attractant Management Policy to minimize the effect on wildlife from the storage, preparation and disposal of food products at the camp.

An electrified fence will be installed around the perimeter of the camp if the area is a known habitat for bears for the safety and security of Project personnel and the bears in the area. Bear awareness training will be provided to all Project personnel to provide information on minimizing human-bear interactions and appropriate response training if an interaction does occur.

3.2 Headworks

3.2.1 Construction Sequence

The majority of the headworks area may be cleared ahead of the main construction work, leaving stumps, forest litter and low vegetation in place.

Stage 1 cofferdam installation will follow, generally installed parallel to the water course for conduit/bypass projects, to keep the water flow in the natural channel and minimizing the chances of flooding of the intake structure construction site. Grubbing and excavation of the site will then proceed in the dry, followed by the intake and sluiceway structure construction. For close-coupled projects, the stage 1 cofferdam will be installed across the water course, isolating one half of the river allowing construction of either the intake/powerhouse or weir structure to take place. Close-coupled projects will likely require a downstream cofferdam be employed as well to prevent back-water from flooding out the construction site.

Once the first phase of the in-stream structure is complete, the stage 1 cofferdam will be removed, allowing the flow to be diverted through the intake/powerhouse or sluiceway gate,

rejoining the natural alignment downstream of the construction area. A stage 2 cofferdam will then be constructed across the natural flow channel downstream of the second phase in-stream construction area directing all remaining flow away from the construction area allowing the work to be completed in dry conditions. Once the structure is complete, the stage 2 cofferdam will be removed allowing water to flow through the intake channel or spillway.

Earth material for cofferdam work may come from various sources; including blasted rock generated on-site, imported clean fill or from earth borrow areas on-site where possible. Silt control methods will be used as described in other parts of this document to minimize the risk that excavation, storage and placement of cofferdam material could enter waterways.

3.2.2 General Environmental Protection Measures

The major construction activities that will occur in and around the water course, are the construction of the headworks, powerhouse tailrace and possibly bridges for facility access. The cofferdams and associated diversion works for these activities will be depicted on the construction drawings and will include the key conditions used in their design such as the month of construction and design flood return period.

Site conditions will be assessed immediately before implementation water diversion structures and the designer will be consulted prior to undertaking construction of these works. Some changes may be required due to changed site conditions or timing to ensure the diversion works can be implemented as intended.

The cofferdams will be designed by a Professional Engineer. They will be constructed of clean fill with impermeable rubber liner or 1 m^3 sand filled nylon mesh cargo bags (approximately 1600 kg dry) with smaller synthetic sand bags (22.5 kg dry) and a polyethylene plastic sheet liner. The smaller bags will be used to fill irregularities in the ground surface and gaps between the larger bags. The crest elevation of the cofferdams and the resulting flow channel will be designed to manage up to a 1 in 20 year maximum daily flow event for the intended period of construction.

If necessary, a sump and pump shall be set up immediately downstream of the cofferdams to catch seepage passing through the cofferdam before it reaches the work area. Eliminating surface water flow and creating an effective isolation of the work area will be the primary method of controlling sediment production. Silty water created in the work area through mixing groundwater or precipitation with excavated material will be pumped to a vegetated bench inside forested land or a sufficiently latent pond or passive drainage channel to allow the sediment to settle without deposition to the local watercourses. The environmental monitor will be consulted regarding the pumping discharge location and will approve the location before this activity commences.

A containment dike will be constructed downstream of the structure during construction to ensure that any potential concrete spills will be intercepted. A CO_2 diffusion system and non-allum based flocculent will be available as required. Water discharged from these locations will be tested before release to ensure TSS and pH are within acceptable limits.

A diversion and headpond filling plan will be developed and agreed upon with the environmental monitor prior to the work being carried out. In general, the filling will be carried out slowly and incrementally with upstream and downstream sampling of turbidity to ensure the work is not increasing suspended solids or pH in the water beyond acceptable levels. If acceptable levels are close to being exceeded, the work will be suspended until turbidity levels drop. The work will then continue with modifications if necessary.

3.3 Penstocks & Open Cut Channels

3.3.1 General Environmental Protection Measures

Clearing of penstock and/or open cut channel right-of-ways will be done within flagged limits to prevent any excess clearing. In critical or sensitive areas, orange HDPE safety fencing will be erected to prevent access to these areas. Silt/sediment control fencing will be installed between the work area and the water course.

Before construction proceeds at any creek or culvert crossings, environmental control measures will be installed and made functional to isolate the work area from flowing water before the water crossing work proceeds. Depending on the specific crossing, the water flow will be diverted from an upstream location to the road ditch downstream of the site, if this was its original path, or pumped around the construction site and back into the natural flow channel below the site. The intent is to minimize disturbance to natural drainage patterns.

The right-of-way for the penstock and/or open cut channel will only be grubbed where necessary, from the top of cut to the toe of the access bench fill slope. Before the end of the initial construction season, final cut slopes will be seeded as soon as possible. Temporary erosion protection will be applied to slopes if they are left exposed at the end of the initial construction season and need to be re-worked with the final penstock or channel work. A silt/sediment control fence will be installed along the toe of the fill slope along the entire length of the works in order to prevent sediment migration from the right-of-way.

Excavated earth material that is placed into permanent backfills, berms or dykes will be stabilized prior to removing the temporary silt control fencing as provided for in the design.

3.4 Powerhouse

3.4.1 General Environmental Protection Measures

Surface and seepage water from the site will be directed into a sediment trap at one location with enough storage time to allow suspended sediment to settle before the water is pumped out to an approved discharge location.

Tailrace excavation at the intersection with the river will be completed within the instream work window. The excavation will be carried out from the powerhouse working towards the water course so that flowing water does not infiltrate the cut until the final phase of excavation. Turbidity will be monitored upstream and downstream of the powerhouse to confirm the work is not increasing the suspended solids in the water beyond acceptable levels. A silt curtain will be used in the water course adjacent to the excavation, if it is practical, to minimize siltation of the water course. If acceptable turbidity levels are close to being exceeded the work will be suspended under direction of the environmental monitor until levels drop. The work will then be re-started with modifications if necessary.

3.5 Changes During Construction

Conditions encountered during construction can be different from what was expected in the planning and design phase. For this reason, there must be an opportunity to make changes to the actual control measures used or the manner in which control measures are used for care of water on the project during construction. Except for the case where there is an immediate need to correct a situation where any delay for receiving approval could cause significant harm to the environment or to wildlife, any modifications to the measures described in this document will be discussed with the environmental monitor for approval prior to implementing those modifications on site.

3.6 Inspection and Maintenance

Measures installed during construction will be inspected regularly. Any damage or defect will be recorded and repaired. Additional inspections will be carried out prior to forecast storm events, if possible during such events and especially after the storm event has passed to ensure the control measures are still effective.

Upon completion of construction, all temporary control measures will be removed as appropriate. Some measures may be left until such time that new vegetation has properly established itself. Any sediment behind silt fences will be dug out and disposed of at a suitable location, and if necessary minor grading and seeding will be done. All materials removed will be disposed in designated waste areas or hauled off site for proper disposal.

3.7 Substation and Transmission Line

Clearing of the transmission line right-of-ways will proceed as outlined in Section 2.1. Clearing width will generally be 20 m, except where the transmission line is situated on a relatively steep side-slope which would require additional clearing on the upslope side. As per Section 1.3, any heritage or archaeological findings will be brought to the attention of Project management. At water crossings, clearing will proceed with the proper erosion and water protection techniques implemented (i.e. silt fencing, felling of trees away from the watercourse, etc.). A vegetated buffer will be maintained at all significant water crossings. The right-of-way will not be grubbed in any case, and extra attention will be given to maintaining low level bushes and vegetation that will not cause a safety hazard with the line. Where necessary, temporary bridges will be installed to completely isolate the watercourse from vehicles required for the transmission line works.

Clearing, grubbing, stripping, grading and soil salvaging of the area used for the substation will proceed as outlined in Sections 2.1 and 2.2. The footprint of the substation will be flagged to prevent unnecessary over-clearing. Erosion protection measures will be implemented to prevent sediments from moving overland. Reclamation work will involve reseeding and will be completed on all areas not directly in the footprint of the substation.

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4 CONSTRUCTION MONITORING

The Project will be subject to a detailed Monitoring Program that starts during the planning and design phase, well before construction, and will carry on after commissioning. The monitoring program is developed and carried out in accordance with regulatory approvals and requirements. The Construction Monitoring Plan is one component of the overall Monitoring Program that also includes a number of other items listed below.

4.1 Stream Water Quality Control

Water quality in the stream may be affected by sediment accidentally introduced during the construction phase, and best industry practice erosion control procedures will limit the adverse effects of sedimentation. To ensure these procedures are implemented and effective, water quality will be monitored on a regular basis as defined by the Monitoring Program.

4.2 Settlement Ponds Water Quality Monitoring

Water quality will be monitored at the settlement pond discharges on a weekly basis to verify compliance with discharge criteria. Opportunistic samples may also be taken as designated by the environmental monitor to ensure compliance during sensitive works. Sediment traps and screens will be checked as required to ensure they are working properly. All sediment control measures will be maintained as part of routine site management practices, but will receive additional attention after high rainfall events.

4.3 Water Flow Monitoring

Water flow will be monitored on the stream before and during construction. Water flow monitoring will continue at those stations and also through the plants once they are operational.

4.4 Habitat Monitoring

Inventory, monitoring, and assessment efforts may identify potentially sensitive habitats and specific sites that require construction monitoring, including:

- Benthic Habitat;
- Riparian Areas;
- Old Growth Forest;
- Wetlands;
- Headpond;
- Bypassed Reaches;
- Bird Nesting Areas;
- Species at Risk/Endangered Species; and
- Fish and Fish Habitat.

The Monitoring Program will specify all monitoring requirements.

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PART B

WANATANGO FALLS HYDRO PROJECT

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1 CONSTRUCTION DETAILS

The construction details and sequence described below are proposed based on the information currently available and could change in part or in whole depending on conclusions from the EA process, modifications to the final project location and final design. Refer to the appropriate sections in this report for a description of the environmental protection and mitigation measures that will be employed for each of these construction activities.

1.1 Access

Access to the east side of the site will be via Newmarket Concession Road 5 and along an existing trail which may require some surface regrading or widening. This trail leads to within approximately 150 m of the location of the adjustable gate spillway. During construction, a new temporary road will be constructed to access this spillway.

Access to the west side of the site will also be Via Newmarket Concession Road 5 and along an existing trail which will require surface regrading and widening for approximately 350 m. The existing trail crosses a tributary and may need improvements to this water crossing. This trail leads to within approximately 150 m of the powerhouse location and a new permanent road will be constructed to access the powerhouse.

Existing road upgrades and new road construction will be conducted using excavators, haul trucks and other earth moving equipment. Some drilling and blasting may be required, depending on the bedrock elevation.

1.2 Temporary Siteworks

1.2.1 Borrow/Laydown Areas

The project construction will require use of granular material for the construction of roads, embankments, yards, cofferdams and concrete structure backfill. The total volume of borrow materials required is not known at this time as it will depend on the final project design. Materials excavated from the road alignment will be re-used for the road bed and other construction requirements if the materials are suitable for this use. Some on-site processing of materials may be required (screening or crushing) to improve their engineering characteristics. Earth borrow material may be excavated from the up-slope side of the north bank access road.

Initial field investigations identified clay and rock in the project area but noted that sand and gravel may be rare or unavailable. A more detailed assessment of possible construction resources identified a potential borrow pit (to be investigated) about 4 km west of the project and another about 7 km east. The assessment also provided known locations of sand and gravel deposits approximately 18 km southwest. Geotechnical materials may need to be trucked to site from these locations, to be decided once the potential borrow pits have been investigated further.

Two 1000 m^2 areas, one near the powerhouse and another near the adjustable gate spillway will be cleared and levelled and converted to construction laydown areas. The powerhouse laydown area will be used for construction materials and equipment storage, construction offices, parking, etc. The spillway laydown will be used for all of the same purposes, except will likely not contain site offices or parking. The powerhouse laydown area can be reduced post-construction with some area remaining for operations purposes while the spillway laydown can be completely reclaimed.

An additional area of up to 5000 m^2 may be required for stockpiling topsoil, excavated soil material that is unsuitable for construction use and extra blast rock material if it cannot all be incorporated into the construction.

The overflow dam on the large island will consist of a combination of concrete and earthfill. The relative amount of earthfill to concrete will depend on the final project design which may vary significantly from the design represented here. Earthfill will be sourced to the extent available on-site. The primary borrow locations will include the abutment areas of each spillway at each shoreline and the rock blasting excavations for the powerhouse and other structure foundations. Where additional borrow material is required, excess material from the access road construction and ditching operations will be used. To generate additional blast rock material, the foundation or powerhouse excavations may be extended wider to generate the required material. Development of additional rock borrow areas outside of the construction site area is not being contemplated.

1.2.2 Construction Camp

A construction camp should not be necessary for construction at Wanatango Falls given the proximity of the site to Cochrane. Local work force will be utilized as much as possible and there are sufficient accommodations in these communities for workers from out of town as required.

1.2.3 Concrete Batch Plant

Timmins is not in close proximity to the project thus a concrete batch plant will be required. This plant will be located either at the borrow area or at a discrete area closer to the project if the borrow area is determined to be too far away. The location of the concrete batch plant will be finalized once the borrow pit location has been determined. A batch plant located within the borrow area would not add any incremental area of development to the project. If located at a discrete area, the batch plant can be expected to cover approximately a 2400 m^2 area.

1.2.4 Cofferdams

Temporary cofferdams will be installed in the river during the construction process. They will be used to divert flow first away from the stoplog spillway and the tailrace of the powerhouse, then away from the adjustable gate spillway to allow for construction of these structures to occur in dry conditions. Two types of cofferdams will be used during construction activities.

Type A cofferdams consist of cargo bags filled with clean, local granular material and transported to site in haul trucks or on a tractor trailer bed. They are installed using an excavator and/or a crane to place the bags sequentially in the river.

Type B cofferdams will consist of rockfill with an impermeable liner and will have 2H:1V side slopes and a top width as necessary for expected construction traffic. They are installed first by placing a pier of clean, coarse rock into the river with an excavator and then moving along this pier to extend the cofferdam across the channel. Once the coarse material zone has been placed, the excavator will place progressively finer material on the upstream side further decreasing flow through the channel. The final stage will involve the installation of a flexible, impermeable membrane on the upstream face of the cofferdam. The base of the membrane will be weighted to allow it to sink to the river bed.

The types of cofferdams during each construction stage is shown on the sequencing drawings and listed below.

The phase 1 cofferdams upstream of the stoplog spillway will be approximately 75 m long combined and will be Type B for access to the island. The phase 1 cofferdam downstream of the powerhouse tailrace will be approximately 60 m long and will be Type A. The phase 2 cofferdam upstream of the adjustable gate spillway will be approximately 50 m long and will be Type B to access the island. The phase 2 cofferdam upstream of the intake channel will be approximately 40 m long and will be type A. The total footprint of the cofferdams is dependent on the elevation/height of dam required to prevent overtopping of the cofferdam during the 1:20

year flood events during construction and depth to a suitable base material in the river. Although this information is not known until further investigation and design work have been completed, for the purpose of estimating the footprint area, it is assumed that the type A cofferdams will be two cargo bags wide at the base and two high, and type B cofferdams will be 6 m wide at the crest. The resulting footprint will be approximately 1500 m^2. Consideration of flows during construction and evaluation of the 1:20 year flow rate may change this estimate by up to 1.5 to 2 times.

1.3 Construction Sequence

The construction sequence has been represented on Drawing 12-211 and is described in the sections below.

Stage 1 (4-6 months)

The first stage of construction will be to upgrade existing access and build new access to both banks of the river. Most areas covered by the footprint of the project or laydown areas would be cleared during this time. Blasting and excavation of portions of the intake channel could begin after site preparation is complete. Stage 1 would start in mid-summer or other suitable timing to coordinate with the first in-stream construction window so that phase 1 cofferdam installation can start once the access road construction is completed, likely in late-summer of 2012.

Stage 2 (8-10 months)

Installation of the phase 1 cofferdams will start during the prescribed in-stream construction window, currently assumed to be in late-summer. The remainder of the powerhouse and tailrace areas will be blasted and excavated and the construction of the powerhouse will begin during this period with emphasis on the intake. The construction of the embankment dams adjacent to the powerhouse will be completed during this period once the powerhouse has been backfilled. The phase 1 cofferdams upstream of the stoplog spillway would be used to access the large island in the centre of the rapids in order to complete the stoplog spillway. Construction of the overflow dam on the island would also be partially completed during stage 1.

The final constructed footprint for the intake channel, powerhouse and tailrace is estimated to be approximately 2500 m² based on concept design estimates, and 800 m² for the adjacent embankment dams. These estimates may change depending on the final design for these structures.

The powerhouse area will be excavated by excavator and drill and blast. The blast rock will be removed and hauled to a stockpile/storage area, or re-purposed directly from the excavation on such areas as site roads, in the substation, powerhouse yard or laydown areas for final grading.

Following the powerhouse excavation, concrete construction will commence with the placement of a levelling mudslab, followed by successive stages of wood forming, reinforcing and embedded steel installation and concrete pouring. This work will require a mobile or tower crane set up near the edge of the excavation to move forms, reinforcing steel and other materials into and out of the work site. Concrete will likely be placed either by pump truck or crane and bucket. The stoplog spillway constructed adjacent to the powerhouse will follow the same sequence of concrete construction. The powerhouse construction will likely involve steel erection and installation by crane for the roof and potentially the upper portion of the powerhouse walls.

Substation construction could commence in stage 2 once the powerhouse has been constructed to yard grade and the structure backfill is complete.

Transmission line right-of-way clearing and line construction will be completed in the least impacting and most cost effective way. For overland sections (which are not constructed parallel

to an access road) this will likely involve track-mounted equipment working through winter. This allows for easier access across frozen ground using snow to fill in small depressions smoothing out the access instead of having to cut and fill with soil. Adjacent to access roads, the transmission line work can proceed during winter or summer with relatively minor impact. The right-of-way will be cut 20 m wide in most cases except on steeper side-slopes where additional up-slope clearing may be required.

Headpond clearing is fairly minimal on this project and will be completed in a time period that will least impact the river and surrounding environment, which is assumed to be in winter. This assumption will be confirmed during the EA process and scheduling of the headpond clearing will be finalized as required. Generally the clearing of trees and wood debris will be completed to an elevation 0.5 m above Design Flood Level.

Stage 3 (4-6 months)

Removal of the phase 1 cofferdams upstream of the stoplog spillway and installation of the phase 2 cofferdam upstream of the adjustable gate spillway will proceed in the next available in-stream window. If only one window is granted each year, this stage is assumed to start in late-summer of 2013. The phase 1 cofferdam downstream of the powerhouse will remain through stage 3.

The phase 2 cofferdam will be used for access to the main island and will divert water flow through the completed stoplog spillway (with stoplogs removed), allowing construction to proceed on the adjustable gate spillway. This construction may involve some blasting for site levelling and will include concrete construction using a similar process as outlined for stage 2. Dry commissioning will be completed on the gate. An embankment dam will also be constructed along this alignment. The remainder of the intake channel will be excavated, tying the channel into the river at the upstream end. Additional phase 2 cofferdams may be required to complete this work however they have not been shown on the attached construction sequencing plans.

The final constructed footprint of the stoplog spillway, overflow dam, adjustable gate spillway and embankment dam is estimated to be 1600 m². This estimate may change depending on the final designs.

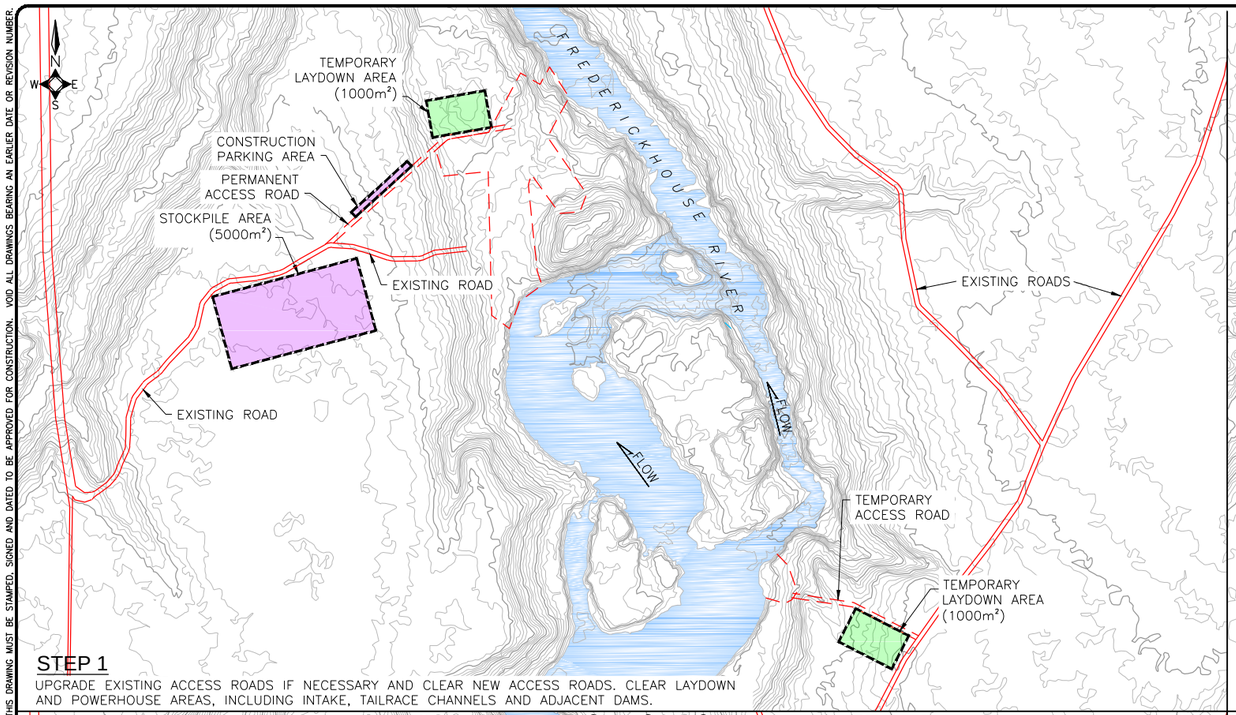
Electrical and mechanical installation will continue within the powerhouse during this stage if not already completed. The remainder of the intake channel will be excavated, tying the channel into the river at the upstream end once the powerhouse electrical/mechanical installation is complete, or at least sufficiently ready to accept head on the upstream wall.

The substation and transmission lines will be completed and tied to the powerhouse and dry commissioning of the plant will be completed. Remaining sections of the overflow dam on the island will be completed in stage 3. Reclamation will be started on any work areas that are in their final state.

Stage 4 (1-2 months)

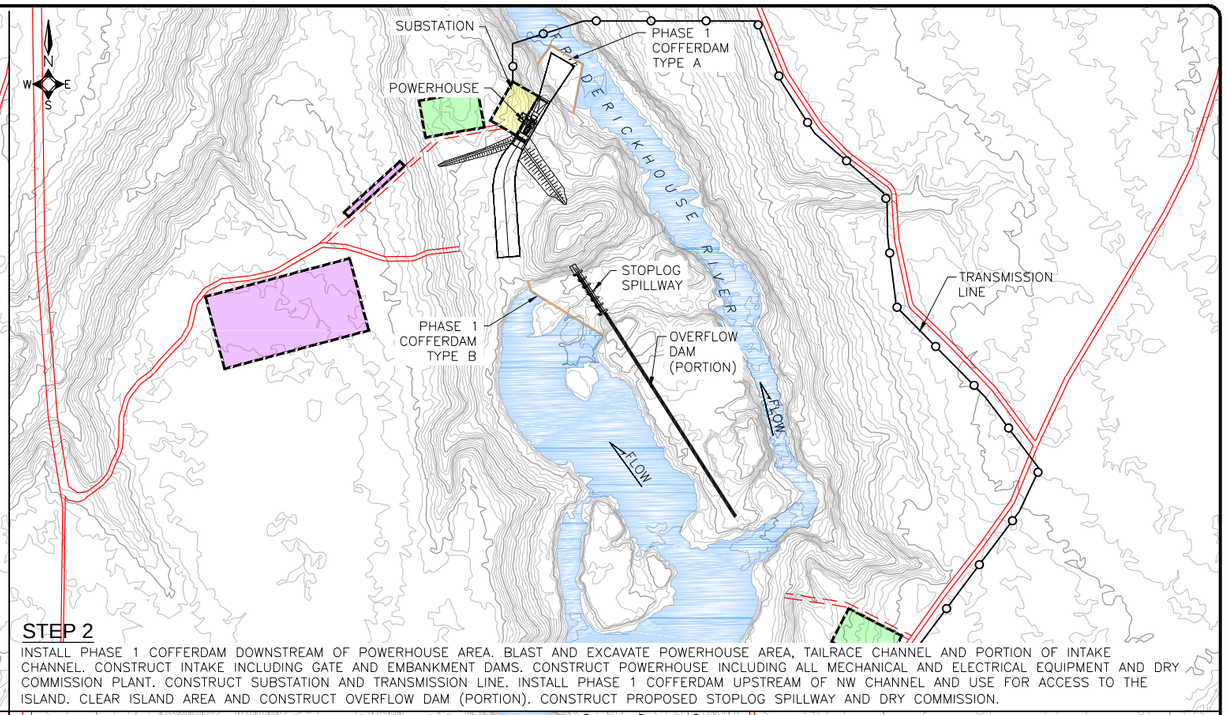
The final stage of construction will involve the removal of the phase 1 cofferdam downstream of the powerhouse tailrace and the phase 2 cofferdam above the adjustable gate spillway and stoplogs will be installed allowing for water to fill the headpond. Additional work will include reclamation of the overall site, removal and restoration of the temporary works and commissioning of the plant.

The first headpond filling will be completed during the commissioning phase. Before filling the headpond, an inspection of the cleared banks will be carried out and loose woody debris will be removed from the inundation area to prevent a large amount of debris from collecting in the headpond and flowing downstream.



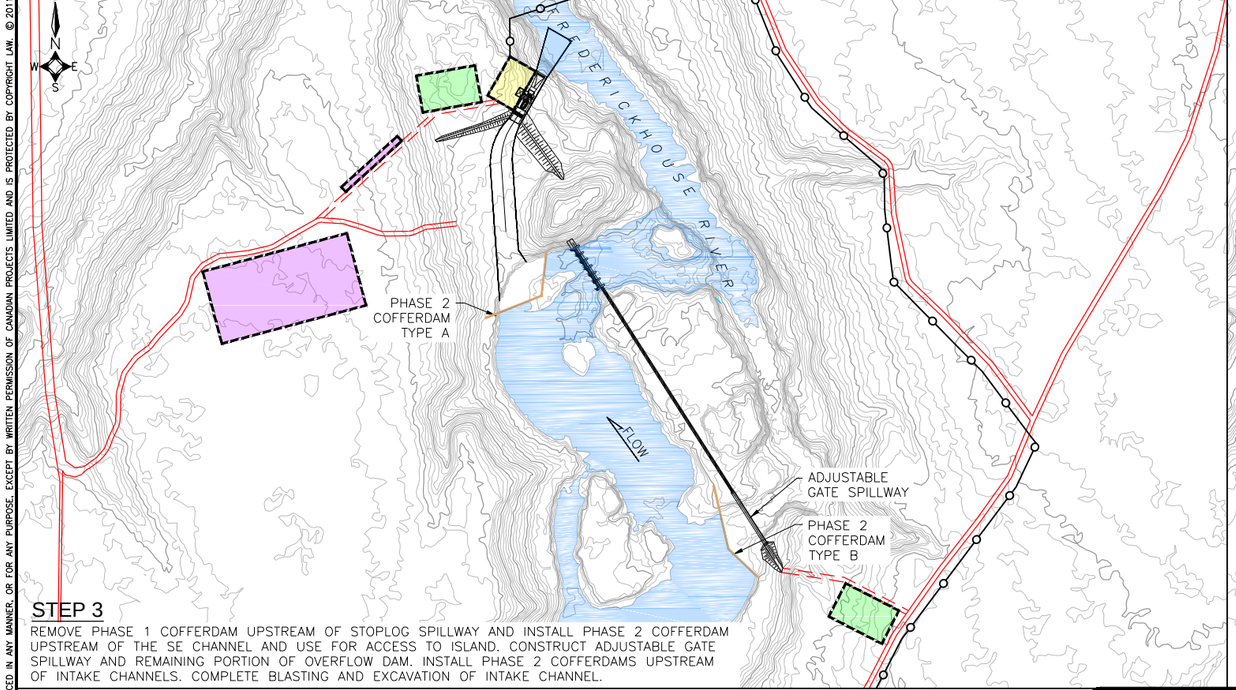
STEP 1

UPGRADE EXISTING ACCESS ROADS IF NECESSARY AND CLEAR NEW ACCESS ROADS. CLEAR LAYDOWN AND POWERHOUSE AREAS, INCLUDING INTAKE, TAILRACE CHANNELS AND ADJACENT DAMS.



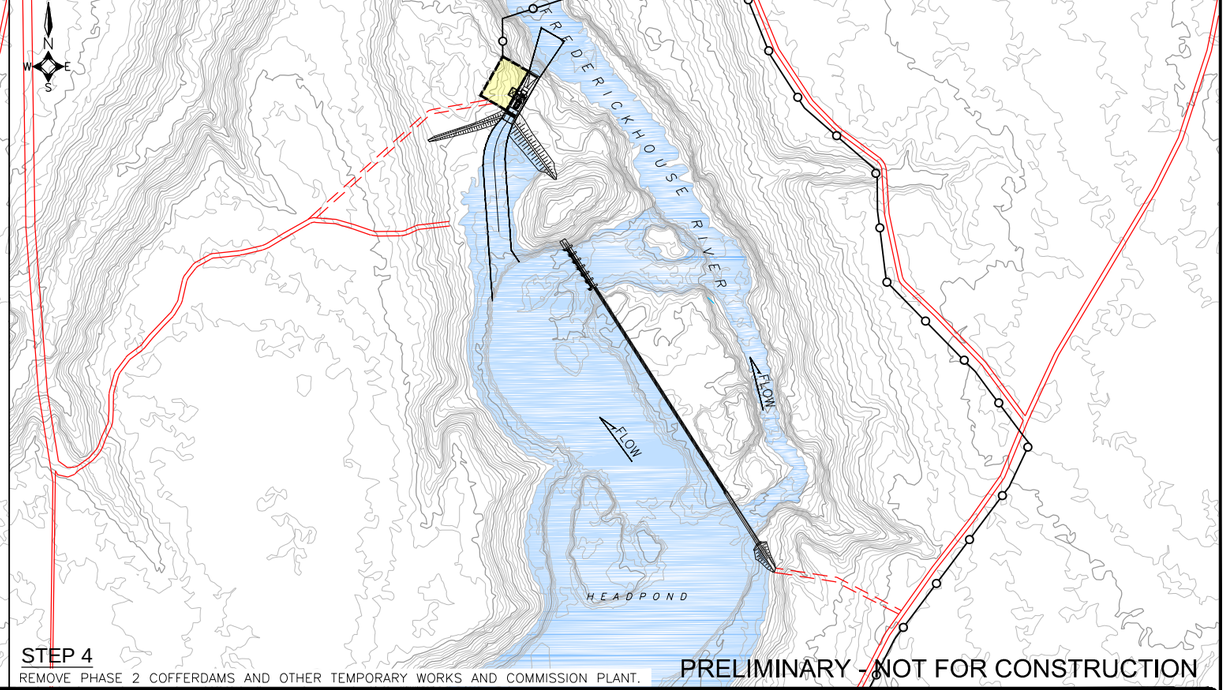
STEP 2

INSTALL PHASE 1 COFFERDAM DOWNSTREAM OF POWERHOUSE AREA. BLAST AND EXCAVATE POWERHOUSE AREA, TAILRACE CHANNEL AND PORTION OF INTAKE CHANNEL. CONSTRUCT INTAKE INCLUDING GATE AND EMBANKMENT DAMS. CONSTRUCT POWERHOUSE INCLUDING ALL MECHANICAL AND ELECTRICAL EQUIPMENT AND DRY COMMISSION PLANT. CONSTRUCT SUBSTATION AND TRANSMISSION LINE. INSTALL PHASE 1 COFFERDAM UPSTREAM OF NW CHANNEL AND USE FOR ACCESS TO THE ISLAND. CLEAR ISLAND AREA AND CONSTRUCT OVERFLOW DAM (PORTION). CONSTRUCT PROPOSED STOPLOG SPILLWAY AND DRY COMMISSION.



STEP 3

REMOVE PHASE 1 COFFERDAM UPSTREAM OF STOPLOG SPILLWAY AND INSTALL PHASE 2 COFFERDAM UPSTREAM OF THE SE CHANNEL AND USE FOR ACCESS TO ISLAND. CONSTRUCT ADJUSTABLE GATE SPILLWAY AND REMAINING PORTION OF OVERFLOW DAM. INSTALL PHASE 2 COFFERDAMS UPSTREAM OF INTAKE CHANNELS. COMPLETE BLASTING AND EXCAVATION OF INTAKE CHANNEL.



STEP 4

REMOVE PHASE 2 COFFERDAMS AND OTHER TEMPORARY WORKS AND COMMISSION PLANT.

PRELIMINARY - NOT FOR CONSTRUCTION

NOTES

1. ALL DIMENSIONS ARE IN MILLIMETRES AND ELEVATIONS IN METRES, UNLESS NOTED OTHERWISE.
2. 0.5m INTERVAL CONTOURS FROM LIDAR FLOWN JUNE, 2009.
3. ALL COORDINATES ARE UTM NAD83, ZONE 17N.

SCALE 1:4 000

0 40 80 120 160 200

METRES

REV	Y	M	D	REVISION DESCRIPTION	DES	CHK	DRN	CHK
A	11	05	30	FOR REVIEW	ZPV	RJS	AD	CPB

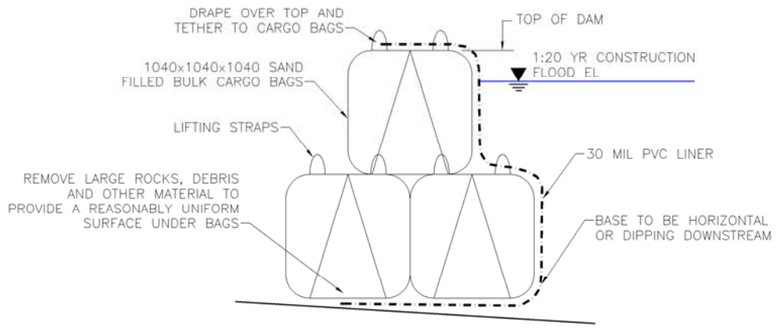
Canadian Projects Limited
CALGARY, ALBERTA

Xeneca Power Development Inc.

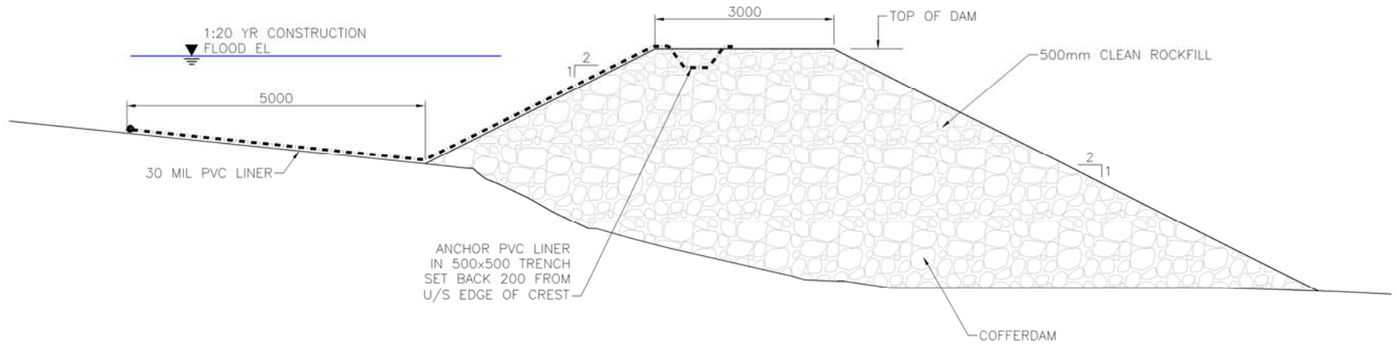
XENECA POWER DEVELOPMENT INC.

WANATANGO HYDRO PROJECT
GENERAL - PROJECT
CONSTRUCTION SEQUENCE
PLANS

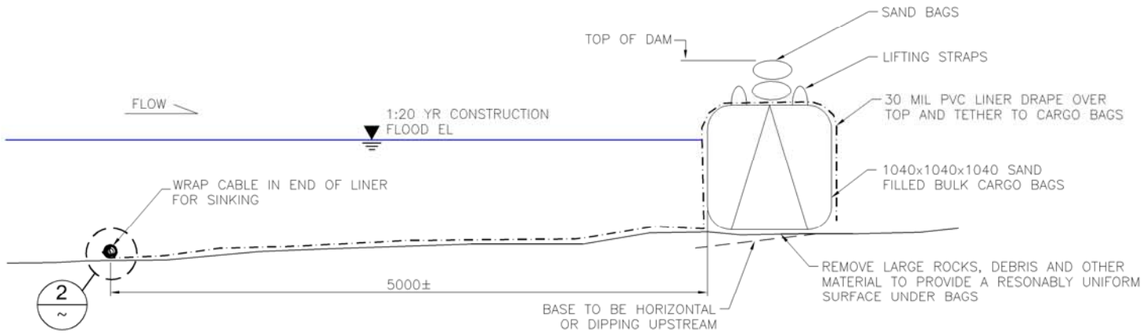
PROJECT NUMBER 1052-001
CADD NUMBER 4.3.079
DRAWING NUMBER 12-151



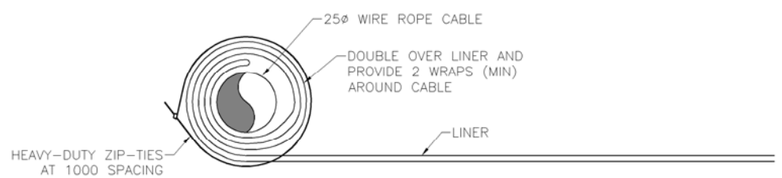
COFFERDAM - TYPE A (MULTI CARGO BAGS)
1:50



COFFERDAM - TYPE B
1:100



COFFERDAM - TYPE A (SINGLE CARGO BAGS)
1:50



DETAIL 2 ~
NTS

NOTES

1. ALL DIMENSIONS ARE IN MILLIMETRES AND ELEVATIONS IN METRES, UNLESS NOTED OTHERWISE.
2. COFFERDAM SHOWN TO ILLUSTRATE CONSTRUCTION DETAILS. INSTALL COFFERDAMS IN SIMILAR FASHION TO THE NECESSARY SIZES AND ELEVATIONS.
3. EXERCISE CAUTION WHEN WORKING INSIDE OF COFFERDAM AREAS, ESPECIALLY DURING FLOOD CONDITIONS. EVACUATE WORK AREA IF DESIGN FLOOD LEVEL IS EXPECTED TO BE EXCEEDED.
4. MONITOR COFFERDAMS DAILY TO MAINTAIN INTEGRITY.

PRELIMINARY - NOT FOR CONSTRUCTION

0 1000 2000 3000 4000 1:100
0 500 1000 1500 2000 1:50
MILLIMETRES

REV	Y	M	D	REVISION DESCRIPTION	DES	CHK	DRN	CHK
A	11	05	26	FOR REVIEW	CPB	RJS	DMB	CPB

Canadian Projects Limited
CALGARY, ALBERTA

Xeneca Power Development Inc.

XENECA POWER DEVELOPMENT INC.

ONTARIO HYDRO PROJECTS
GENERAL - PROJECT
COFFERDAMS
SECTIONS AND DETAIL

PROJECT NUMBER 1052-001
CADD NUMBER 4.3.080
DRAWING NUMBER 00-151