

Capital Ready Mix Ltd. Black Mountain Pond/Little Soldiers Pond Sand Pit Environmental Protection Plan	Rev:	Doc. #	Page:
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# **BLACK MOUNTAIN POND/LITTLE SOLDIERS POND SAND AND GRAVEL PIT ENVIRONMENTAL PROTECTION PLAN**

Submitted by:

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Submitted to:

Government of Newfoundland and Labrador  
Department of Environment and Conservation  
Environmental Assessment Division

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## 1.0 INTRODUCTION

Capital Ready Mix Limited (CRM) is developing a sand pit in the area located east/northeast of Little Soldiers Pond, and south of Black Mountain Pond, off the Trans Canada Highway, Newfoundland. CRM intends to develop the area as a pit operation for the mining and processing of sand and gravel aggregate which will be used in CRM's concrete batching plant operations located at the Trans-Canada Highway/Columbus Drive (TCH Quarries) interchange.

Environmental protection planning is an important component of overall project planning and implementation. Environmental Protection Plans (EPPs) are commonly required as part of a project approval by government; EPPs provide a practical way in which a proponent can demonstrate an understanding of environmental regulations, practices, and procedures required to reduce or eliminate the potential environmental effects of the project.

Capital Ready Mix is committed to project development in a manner which is protective of the environment and has prepared this EPP to communicate this commitment to staff, contractors, regulatory agencies, and the public. This plan is intended for use during the construction and operation of the Black Mountain Pond/Little Soldiers Pond Sand Pit.

### 1.1 Purpose of the Environmental Protection Plan

This Environmental Protection Plan (EPP) is a field-ready document describing applicable environmental protection measures associated with construction and operation activities at the Black Mountain Pond/Little Soldiers Pond Sand Pit. It is intended to be a reference document for project personnel for the planning and execution of project-specific activities, as well as a guidance document for contingency planning.

The specific purposes of the EPP are to:

- Provide a reference document to ensure that commitments to reduce or avoid environmental effects will be met;
- Document environmental concerns and appropriate protection measures;
- Provide concise and clear instructions to project personnel regarding procedures for protecting the environment;

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- Provide a reference document for personnel when planning and/or conducting specific activities and working in specific areas;
- Provide a training aid during implementation efforts;
- Communicate changes in the program through the revision process; and
- Provide a reference to applicable legislative requirements and guidelines.

This EPP sets out the procedures, responsibilities, and control actions to be taken by CRM personnel in achieving the safe and environmentally sound completion of the work described. The EPP is to be available to all relevant staff and subcontractors to ensure that each is aware of their responsibilities and of the procedures to be used in the management of this work; this will result in open communication at all levels and serve as a means to achieve continuous improvement.

The EPP is a “living” document and, as work proceeds, this plan may be updated. Hence the document is dated and distribution is controlled such that all document holders will receive and incorporate amendments as issued.

## 1.2 Organization of the EPP

This EPP will contain the following sections:

**Section 1 Introduction.** This section will outline the purpose and organization of the EPP and describe various roles and responsibilities within the plan.

**Section 2 Environmental Policy.** This section outlines environmental policies and statements implemented by Capital Ready Mix Ltd.

**Section 3 Document Management.** This section outlines procedures for the distribution, revision, and management of the EPP.

**Section 4 Description of the Undertaking.** This section provides a summary of the works associated with development of a sand and gravel pit in the Black Mountain Pond / Little Soldiers Pond area of Newfoundland, off the Foxtrap Access Road.

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**Section 5 Permits and Approvals.** This section outlines acts, regulations, and policies pertaining to this project, as well as permits or authorizations required to maintain compliance.

**Section 6 Environmental Protection Procedures.** This section provides an overview of the environmental concerns and general environmental protection procedures associated with a variety of activities anticipated to occur during this project.

**Section 7 Compliance Monitoring.** This section provides a general statement of environmental compliance and responsibility.

**Section 8 Contingency Plans.** This section plans for potential accidental events or unplanned events.

**Section 9 Contact List.** This section provides relevant contact information.

**Section 10 References.** This section provides a list of relevant information.

### 1.3 Roles and Responsibilities

Capital Ready Mix will:

- Provide final approval of the EPP and any subsequent revisions, in cooperation with Regulators;
- liaise with relevant government agencies and interest groups as required;
- Designate an Environmental Monitor (likely the Project Manager) to oversee and ensure the implementation of the EPP.

Primary responsibility for the implementation of this EPP rests with CRM's Environmental Monitor. As a result, the Environmental Monitor will:

- be CRM's on-site representative;
- review the EPP as required;
- ensure revisions are appropriately distributed;
- ensure EPP holders and their staff are familiar with the EPP and its procedures;

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- provide orientation sessions for project personnel and staff as needed;
- monitor, or designate a representative to monitor, project work to ensure that all provisions of the EPP and government approvals/authorizations are obtained and adhered to;
- ensure reporting to all appropriate agencies incidents of non-compliance.

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## **2.0 ENVIRONMENTAL POLICY**

Capital Ready Mix Limited recognizes that all activities in support of pit development and operations must be accomplished in a manner that addresses potential impacts to the environment. CRM believes that environmental stewardship is essential to business success and aims to implement practices that eliminate or minimize negative environmental impacts.

### **2.1 Statement**

It is the policy of CRM to conduct its affairs in accordance with state-of-the-art environmental practice. To accomplish this, CRM will:

- Consider compliance with laws and regulations, permits, and related agreements to be a minimum, and build from this foundation.
- Inform all employees of their responsibility to comply with this policy and to be sensitive to the effects of CRM's operations on the environment.
- Encourage employees to suggest improvements.
- Conduct periodic audits to verify compliance with the policy and to identify areas for continued improvement and innovation.
- Precede new activities or proposed changes in operating procedures with an internal environmental assessment to determine the environmental impact and design such activities to reduce or avoid negative impacts.
- Inform contractors of their responsibility to conform to applicable environmental procedures.
- Establish procedures for reporting, responding to, and correcting any conditions or incidents with the potential for adverse environmental impact.
- Maintain open communication with the community and any concerned stakeholders about CRM's environmental policy, plans, and environmental performance.

### **2.2 Application**

This policy applies to CRM's Black Mountain Pond/Little Soldiers Pond Sand Pit and all associated staff/contractors.

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### **3.0 DOCUMENT MANAGEMENT**

The EPP is a “controlled distribution” document. The Environmental Monitor is responsible for EPP distribution and administration. Requests for copies and suggestions for changes to the document are to be submitted to that individual.

#### **3.1 Distribution**

The EPP distribution list includes all those involved in the work scope of the project, management personnel, and regulators. All document recipients are to be listed (see Table 1.0), and will receive copies of amendments and updates as they are produced. In order to ensure that all EPP documents in circulation are current, the EPP document is not to be photocopied or distributed without the prior permission of Environmental Monitor.

#### **3.2 EPP Maintenance**

The Environmental Monitor is responsible for document control, including the following:

- review of revision requests;
- general review of the EPP on an as needed basis;
- determination if EPP holders and their staff are familiar with the EPP and its procedures;
- distribution of approved revisions to plan holders.

EPP holders are to:

- keep a copy of the EPP current and ensure all revisions are entered on the revision control record;
- familiarize themselves and their personnel with the EPP and any revisions; and,
- initiate changes to improve and update the plan.

#### **3.3 Revisions**

As this is a controlled document, revisions may only be made by the Environmental Monitor. It is anticipated that most of the revisions to the EPP will arise from the operating personnel at site. Other revisions will be as required/requested from the provincial and federal government regulatory agencies and other stakeholders. Plan holders and readers/reviewers may initiate proposed revisions by forwarding recommended changes to the

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Environmental Monitor. Recommendations will be reviewed and appropriate revisions incorporated into the EPP. The approved revisions will be issued to all holders of controlled copies of the EPP. Each revision will be accompanied by a Revision Control Sheet that:

- provides revision instructions; and
- lists the sections being superseded.

An updated Table of Contents will be included with each revision. A revision number and revision date will be added to each revised page. EPP holders will be responsible for inserting revision pages into their document. The Revision Control Record is Table 2.0.

**Table 1.0** Black Mountain Pond/Little Soldiers Pond Sand Pit EPP Distribution List

<b>Copy Number</b>	<b>Name</b>	<b>Position</b>	<b>Location</b>
1			
2			
3			
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**Table 2.0** Black Mountain Pond/Little Soldiers Pond Sand Pit: EPP Revision Control Record

<b>EPP Section</b>	<b>Revision Date</b>	<b>EPP Holder's Signature</b>

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## **4.0 DESCRIPTION OF THE UNDERTAKING**

### **4.1 Project overview**

Capital Ready Mix is developing a sand and gravel pit in the Little Soldiers Pond/Black Mountain Pond Area of Newfoundland (see Figure 1) to supply aggregate for CRM's concrete batching plant operations located at the Trans-Canada Highway/Columbus Drive (TCH Quarries) interchange. The following sections outline the various stages of the project.

### **4.2 Pit Development**

The lease will be mined on a single bench in a series of pits sized to correspond to the projected annual production for the site. The pit will start in the northeast corner of the lease and development will move in a west, then south, and east progression on a per season basis. This pattern will be repeated until pit # 8 has been mined out (see Figure 2). After pit # 8 has been developed, the wetland area will be appropriately crossed and pit development will continue on the western part of the lease as per the pattern shown on Figure 2.

### **4.3 Mining Method and Production**

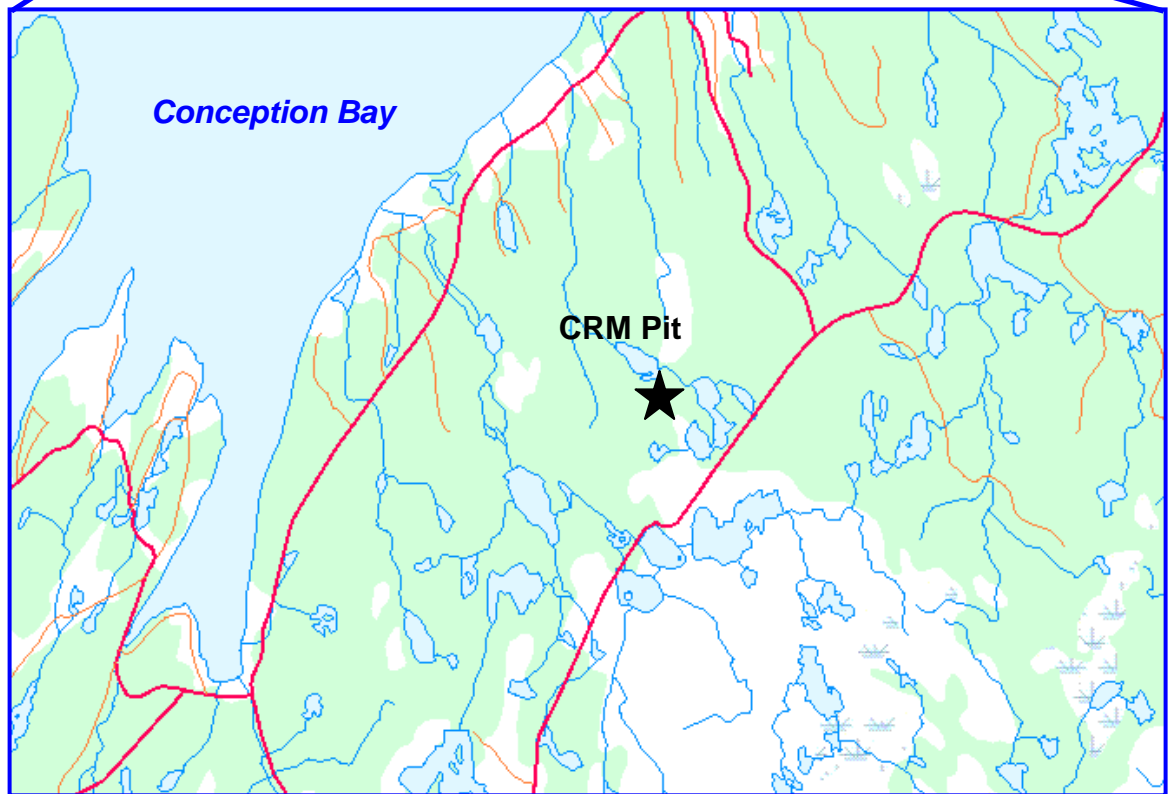
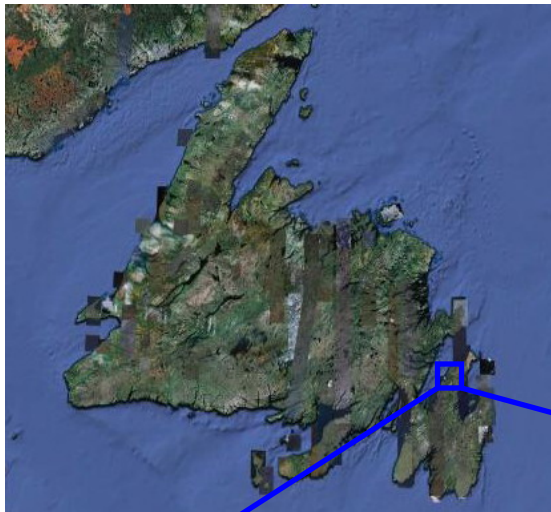
The operation's yearly production, for the first 2 to 3 years, will be mined by run-of-pit removal on a 5 to 6 m bench. During this period, the aggregate will be trucked to CRM's current processing area located on Incinerator Road. All grubbing will be windrowed along the perimeter of the lease as the pit development advances.

After the first 2 to 3 years of production, the aggregate processing facilities will be re-located to the Black Mountain Lease area. A product-laydown area, as well as a crusher, wash plant, and settling ponds will be developed in a portion of the mined out blocks numbered 1 to 3. This entire area will be graded to direct all runoff to the double-contained settling pond area.

### **4.4 Reclamation and Closure Plan**

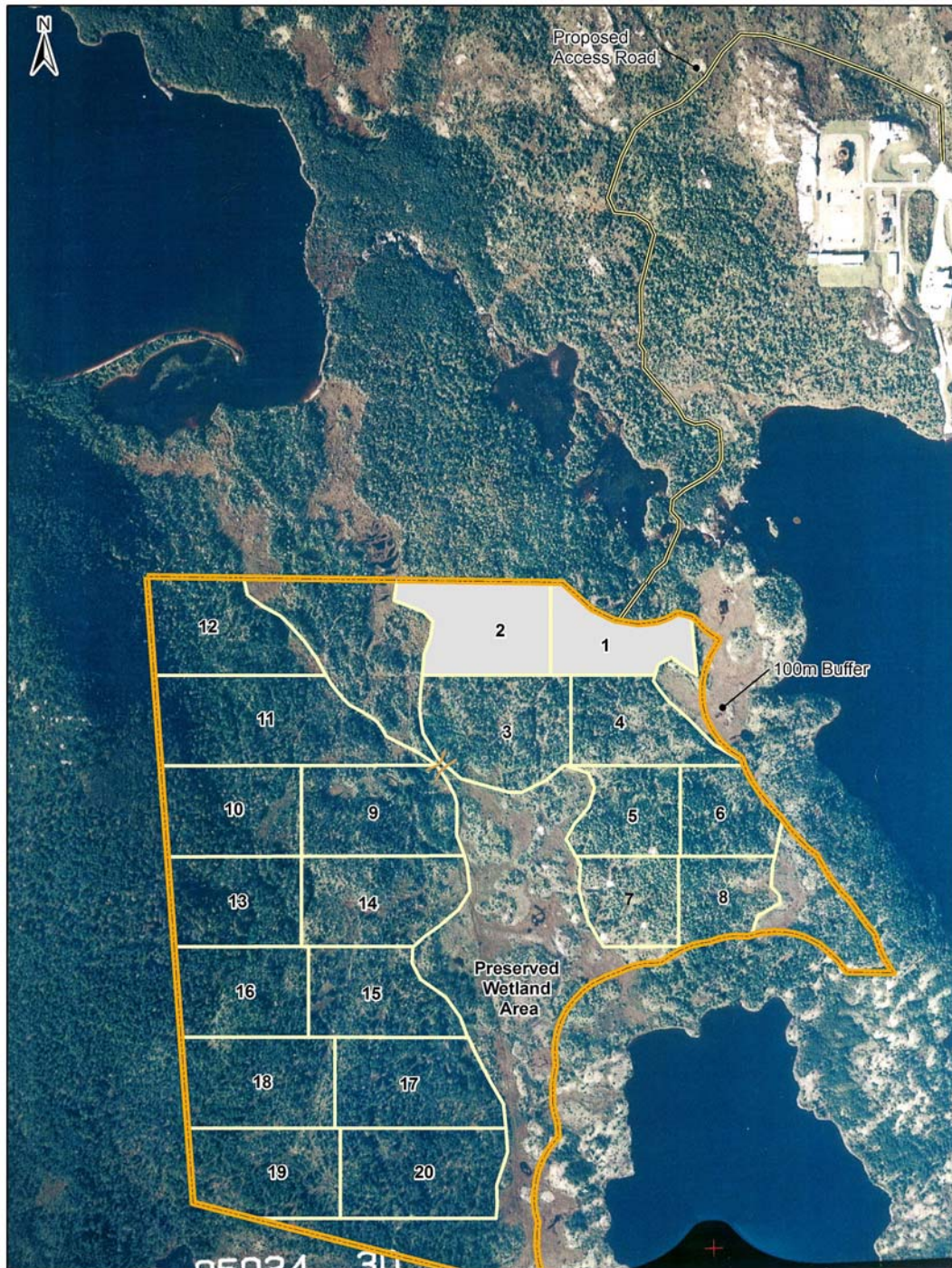
Progressive reclamation is part of the standard conditions of the pit lease. These terms require that lease holders slope mined-out areas, and preserve and re-spread the original organic material from the site.

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**Figure 1.0** Approximate location of the proposed pit.

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**Figure 2.0** Schematic of Pit Development

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CRM's reclamation policy exceeds the requirements of the lease. Surficial soils, subsoil, and grubbing will be stripped to prepare each excavation phase. These materials will be initially used to construct perimeter berms, then, as required, will be utilized to cover reclaimed areas. The sloping requirement will be achieved by leaving a buffer of aggregate in place along the lease boundary containing a sufficient volume that, when re-contoured with a dozer, the pit-face of the mined out area can be sloped to the required 30 degree angle. Following final sloping, the preserved organic material and subsoil will be spread, hydro-seeded with grass seed, and finally planted with tree seedlings native to the area.

As a result of the design of this site (*i.e.* progressive development over a series of pits), reclamation will also be completed in a progressive manner. Perimeter reclamation will be completed on block 1 in the northeast corner of the lease in year 2 of operations. The pit floor area of block 1, as well as blocks 2 and 3, will become the laydown and processing areas for the operation as described previously (Section 4.3). The perimeter of these blocks, however, will be reclaimed to completion with grass and tree seedlings.

All other mining blocks, including the pit floor areas, will be reclaimed progressively as the working pit face advances through the site. CRM's reclamation plan as described above will result in a gently sloping, vegetated area that is a safe, environmentally stable, visually-pleasing area that will blend with the surrounding ecosystem.

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## 5.0 PERMITS AND APPROVALS

The conduct of the work is subject to various regulatory controls. Listed below are the applicable legislation and regulations related to the scope of work.

**Table 3.0** Permits issued for activities at the Black Mountain Pond/Little Soldiers Pond Sand Pit

Department/Agency	Applicable Legislation	Permit	Project Element
Mines and Energy Division, Department of Natural Resources	<i>Pit Materials Act</i> and Regulations	Exploration License (Date: June 12, 2008)	Exploration and drilling
Department of Environment and Conservation	<i>Environmental Protection Act, 2002</i>	Release from the EA process (Sept 22, 2006)	Pit project
Forestry Division, Department of Natural Resources	<i>Forestry Act</i> and Timber Cutting Regulations	Commercial Cutting Permit (Date: June 13, 2008)	Land clearing

**Table 4.0** Permits and approvals that may be required for the Black Mountain Pond/Little Soldiers Pond Sand Pit

Department/Agency	Applicable Legislation	Authorization	Project Element
<b>Federal Government Requirements</b>			
Canadian Environmental Assessment Agency/Regulatory Authorities	<i>Canadian Environmental Assessment Act, 1995</i>	Release from EA process	Applicable Law List controls
Department of Fisheries and Oceans	<i>Fisheries Act, Section 35(2)</i>	Authorization for the Harmful Alteration, Disruption or Destruction of fish habitat	Construction of a stream crossing for site access; installation of culverts
Transport Canada	<i>Transportation of Dangerous Goods Act, 1992</i>	Permit to store, handle and transport dangerous goods	Storage, handling and transportation of fuel and chemicals

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Provincial Government Requirements			
Mines and Energy Division, Department of Natural Resources	<i>Pit Materials Act</i> and Regulations	Pit Permit	Pit construction and operation
Water Resources Division, Department of Environment and Conservation	<i>Water Resources Act</i>	Permit to alter a body of water	Construction of a bridge and installation of culverts
Water Resources Division, Department of Environment and Conservation	<i>Water Resources Act</i>	Certificate of approval for construction (site drainage)	Site run-off being discharged to receiving waters
Water Resources Division, Department of Environment and Conservation	<i>Water Resources Act</i>	Water Use Licence	Water withdrawal for use during pit development
Department of Environment and Conservation	<i>Wildlife Act</i> and Regulations	Authorization to control nuisance animals	Construction activity
Pollution Prevention Division, Department of Environment and Conservation	Used Oil Control Regulations	Certificate of authorization	Storage of used oil
Forestry Services Branch, Department of Natural Resources	<i>Forestry Act</i> and Forest Fire Regulations	Permit to burn	Site clearing and Construction activity
Department of Education, Industrial Training Section		Blasters Safety Certificate	Blasting
Environmental Protection Division, Government Services Centre	<i>Environmental Protection act,</i> <i>Fire Prevention Act</i> and Storage and Handling of Gasoline and Associated Products Regulations	Certificate of Approval for Storing and Handling Gasoline and Associated Products	Storage, handling and transportation of fuel products
Forestry Services Branch, Department of Natural Resources	<i>Forestry Act</i> and Timber Cutting Regulations	Commercial Cutting Permit	Land clearing

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## 6.0 ENVIRONMENTAL PROTECTION MEASURES

This section provides a description of environmental protection procedures for work comprising routine mining activities and associated site development at the Black Mountain Pond/Little Soldiers Pond Sand Pit, including the following:

Blasting

Storage, handling and transfer of fuel/hazardous material

Equipment operations, use and maintenance

Dust control

Dewatering work areas and site drainage

Waste disposal

Clearing of vegetation

Grubbing, stripping and materials excavation

Disposal of excavated debris

Sedimentation and erosion prevention

Surveying

Stream crossings

Groundwater development and use

Linear developments

Light and noise levels

Vehicle and heavy equipment traffic

As required, protection procedures can be modified to address future activities, site conditions, changes in engineering design and/or construction work methods, and overall environmental performance as work proceeds.

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## 6.1 Blasting

Blasting will be required during access road development only. Detonation of explosives will produce vibrations and noise in the surrounding environment. The primary environmental concerns associated with blasting include airborne dust/debris and shock waves, with resulting effects on human health and vegetation.

Noise and dust from blasting can be a human health hazard for workers. Dust and rock from a blast can smother and damage terrestrial vegetation. Blasting in or near water bodies can affect organisms with swim bladders (fish). The introduction of silt into the water column is also a concern for water quality and related effects on aquatic life.

### ***Environmental Protection Procedures***

Capital Ready Mix recognizes the potential for effects from blasting. As a result, CRM has incorporated operational procedures to reduce or eliminate negative effects, while maximizing safety and efficiency, into their blasting regime. The procedures are as follows:

- a) While there is no expectation that blasting will occur near water bodies, it is acknowledged that guidance is available in the form of a DFO Fact Sheet (Blasting - Fish and Fish Habitat Protection) and Guidelines for the use of Explosives in or near Canadian Fisheries Waters” (Wright and Hopkey, 1998); these guidelines will be strictly adhered to.
- b) The handling, transportation, storage, and use of explosives will be conducted in compliance with all applicable laws and regulations, including the *Explosives Act* and the *Transportation of Dangerous Goods Act*.
- c) Explosives shall be used in a manner that will reduce or avoid damage or defacement of landscape features outside the work area. Controls will be exercised to calculate explosive loads and control over scattering of blasted material beyond the limit of activity. Time delay blasting cycles or blasting mats shall be used, as necessary, to control the scatter of blasted material.

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d) A Blasters' Safety Certificates (Government of Newfoundland, Institutional and Industrial Education Division) and a Temporary Magazine License (Natural Resources Canada) shall be obtained and held in good standing.

e) Use of explosives shall be restricted to authorized, trained, and qualified personnel.

f) There shall be separate magazines for explosives and for blasting caps. All magazines shall have the appropriate approvals.

g) All blasting associated debris, such as explosive boxes and used blasting wire, will be collected for proper disposal as soon as possible following each blast.

h) Utilization of Dyno Nobel North America "Canadian Blast Site Safety Manual" guidelines to ensure for safe, environmentally conscious blasting procedures;

i) A blasting plan will be made available to the local interest committee.

j) Blast patterns and procedures will be designed to control shock or instantaneous peak noise levels to ensure that the magnitude of explosions is limited to only what is necessary.

k) The immediate area of the site will be visually surveyed prior to blasting. Operations will be delayed if wild animals (*i.e.* big game, such as moose) are observed within 100 m of blasting operations. Animals will be allowed to leave of their own accord; under no circumstances will noise or other devices be used to harass or otherwise disturb animals.

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## 6.2 Storage, Handling and Transfer of Fuel/Hazardous Materials

Hazardous substances that may be used on site include the following:

- Gasoline, diesel fuel, grease, motor oil, hydraulic fluids;
- Propane;
- Explosives;
- Acetylene;
- Paints;
- Concrete additives;
- Antifreeze;
- Cleaners and solvents.

The primary concern with respect to hazardous substances is an uncontrolled release to the environment, i.e. a spill. Subsequent adverse effects may include contamination of terrestrial and aquatic environments, as well as groundwater quality and human health concerns.

### ***Environmental Protection Measures***

Only persons qualified in the handling of fuel and other hazardous materials as stated in government laws and regulations will handle fuel and other hazardous materials.

#### *Transport of fuel and other hazardous materials*

a) The transport of fuel and other hazardous materials will be undertaken in compliance with the *Transportation of Dangerous Goods Act*. All goods entering the site will be inspected to ensure that the appropriate placards or labels and manifest are in place and the security of the product is assured. All persons handling dangerous goods must show proof of certification of training in the transportation of dangerous goods as required under the Act. Security staff and the Project Environmental Monitor will be trained in the requirements of the Act.

#### *Storage of fuel and other hazardous materials*

a) Waste oils, lubricants and other used oils shall be reused, recycled or disposed of at an approved licensed waste management facility in accordance with the provincial Used Oil Control Regulations (2002).

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b) Drums of petroleum products or hazardous wastes shall be tightly sealed against corrosion and rust and surrounded by an impermeable barrier in a dry, water-tight building with an impermeable floor.

c) Explosives will not be manufactured or stored on site in bulk, but will be ordered as needed from reputable suppliers.

d) Petroleum storage tanks shall be registered with Government Services and all leaks/spills shall be reported to that department.

#### *Equipment refueling*

a) Equipment refueling is to comply with the Storage and Handling of Gasoline and Associated Products Regulations (2003).

b) Refueling and lubrication of equipment shall occur in such a manner as to minimize the possibility of contamination to soil or water, *i.e.* 100 m from any water body and on level terrain.

c) When refueling equipment, operators shall:

- use leak-free containers and reinforced rip and puncture-proof hoses and nozzles;
- be in attendance for the duration of the operation; and
- seal all storage container outlets except the outlet currently in use.

d) Regular inspections shall be made of hydraulic and fuel systems on machinery. Leaks shall be repaired immediately.

e) Fuelling attendants shall be trained in the requirements under the spill contingency plan.

f) Any soil contaminated by small leaks of oil or grease from equipment will be disposed of in accordance with the Waste Management Regulations (2003) according to the *Environmental Protection Act* and the Used Oil Control Regulations (2002).

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g) Refueling or servicing of equipment shall not be allowed within 100 m of watercourses, waterbodies or ecologically sensitive areas. Furthermore, these activities will be undertaken on level terrain, on a prepared impermeable surface complete with a collection system to ensure oil, gasoline, and hydraulic fluids do not enter surface waters.

#### *Hazardous materials*

a) Hazardous materials shall be used only by personnel who are trained and qualified in the handling of these materials and only in accordance with manufacturers' instructions and government regulations.

b) The Workplace Hazardous Materials Information System (WHMIS) Regulations under the *Occupational Health and Safety Act* will apply to all handling of hazardous materials. Material Safety Data Sheets (MSDS) will be readily available on site for all hazardous materials.

c) A complete inventory of the hazardous materials on site shall be maintained according to the WHMIS and shall be made available to regulator agencies upon request.

d) All hazardous materials shall be removed and disposed of in an acceptable manner in accordance with government regulations and requirements.

#### *Spills of fuels and hazardous materials*

a) Precautions will be taken to prevent and reduce the spill of fuel and other hazardous materials. In the event of a spill on land or in the freshwater environment, the **Environmental Emergencies 24 Hour Report Line** will be contacted (709 – 772 – 2083 or 1-800-563-9089).

b) Every effort will be made to immediately control the source of the leak or spill and clean up the contaminated area.

c) There shall be appropriate spill clean-up equipment will be on site as required, including adsorbents and open-ended barrels. Equipment shall be readily available in the event of a spill, and personnel will be knowledgeable about response equipment location, as well as response procedures (See Section 8.1).

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*Disposal of hazardous wastes*

- a) All hazardous waste will be handled according to the provincial *Environmental Protection Act*. Waste classified as “hazardous” or “special” that can not be disposed of in regular landfill sites will be sent for disposal at a licensed hazardous waste management company.
- b) All necessary precautions will be taken to prevent and reduce the spillage, misplacement or loss of fuels and other hazardous materials.
- c) Hazardous waste materials will only be handled by persons who are qualified and trained in handling these materials as stipulated in government laws and regulations.
- d) Waste accumulated on site prior to disposal will be confined, so that it does not pose an environmental or health hazard.
- e) Waste material will not be disposed of on-site or in a body of water.
- f) Burning of waste is not permitted.
- g) Where hazardous waste materials are to be stored outdoors, a designated area will be established, graded, and fitted with an impermeable membrane, covered with local soil and surrounded by an earth berm.
- h) Waste oils, lubricants, and other used oil will be retained in a tank or closed container, and disposed of in accordance with the Used Oil Control Regulations (2002).
- i) Any soil contaminated by small leaks of oil or grease from equipment will be disposed of according to the *Environmental Protection Act*.

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### 6.3 Equipment Operations, Use, and Maintenance

A variety of vehicles and heavy equipment will be used throughout the pit site, including heavy equipment, flat bed trucks, generators, etc. Environmental concerns associated with operating, using and maintaining such equipment includes air emissions, accidental spills, noises, and chronic leaks that may contaminate on-site water bodies.

#### ***Environmental Protection Procedures***

a) All approvals, authorizations, and permits for project activities shall be strictly adhered to.

b) All noise control devices will be maintained in good operating condition.

c) All equipment will meet the requirements of the provincial *Air Pollution Control Regulations* under the *Environmental Protection Act*. All equipment will have exhaust systems regularly inspected and mufflers will be operating properly.

d) Regular maintenance inspections for leaks will be made on all equipment. If problems are identified, the equipment will be taken out of service and corrective action taken to prevent release of hydrocarbons into the environment.

e) Drip pans shall be placed under pumps and generators. Absorbent material will be kept at all sites where pumps and generators are in use.

f) All hydrocarbon leaks shall be reported to the Environmental Monitor. Upon detection of a leak, the equipment is to be shut down and corrective action taken to repair the leak and clean up any contamination. Approval of the Environmental Monitor is required before re-commencing operations.

g) Hoses and connections on equipment will be inspected routinely for leaks and drips.

h) Equipment maintenance and fueling activities will be performed at designated sites and in compliance with applicable regulations. All heavy equipment will be maintained and operated as outlined in the Occupational Health and Safety legislation.

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i) Only minor repairs and maintenance (eg. lubrication) of 'non-mobile' equipment will be performed on-site. All major repairs are to be performed at a location outside the pit site.

j) Fuel shall not be stored near generators or located adjacent to water bodies

k) All fuel and hazardous materials will be handled according to procedures outlined in Section 6.2.

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#### **6.4 Dust Control**

The environmental concerns associated with dust include human health effects (eg. dust inhalation) and potential effects on aquatic ecosystems, waterfowl, and vegetation (eg. contaminant uptake).

##### ***Environmental Protection Procedures***

The following measures shall be taken to mitigate potential effects of dust:

- a) Dust from road and in-pit travel shall be controlled where possible by using frequent applications of water.

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## 6.5 Dewatering Work Areas and Site Drainage

The primary concern with site dewatering and drainage is the potential for siltation and the potential associated effects on water quality, aquatic ecosystems and sensitive habitats.

### ***Environmental Protection Procedures***

- a) Filtration or other suitable measures, such as settling ponds, silt fences and dykes, shall be provided to remove silt and reduce the turbidity of water pumped from work areas before discharging.
  
- b) Site water that has met applicable regulations will be discharged to vegetated areas as opposed to directly into a waterbody; vegetation will act as a natural filter, reducing any potential effects.
  
- c) Monitoring site run-off at the pit will be conducted as per provincial requirements to ensure effluent quality standards.

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## 6.6 Waste Disposal

Waste (e.g., domestic wastes, paper, cardboard and wood), if not properly controlled and disposed of, will be unsightly and could cause human safety and health concerns. It could also attract wildlife leading to the potential for human-wildlife conflicts.

### ***Environmental Protection Procedures***

a) Sewage will be handled by an approved portable facility during operation. Disposal of sewage shall comply with Department of Health guidelines, the *Environmental Protection Act*, and the Department of Environment and Conservation Regulations. All waters disposed of on the proposed site will comply with the Environmental Control Water and Sewer Regulations (2003).

b) All solid waste will be handled according to the provincial *Environmental Protection Act*.

c) All solid waste materials shall be considered, prior to disposal, for reuse, resale, or recycling. Solid waste produced by site personnel and operations will be regularly collected and disposed of at Robin Hood Bay.

d) Waste accumulated on site prior to disposal will be confined, so that it does not pose an environmental or health hazard.

e) Work areas will be kept clear of waste and litter to reduce the potential for attracting wildlife and reducing potential interactions with wildlife.

f) Any organic waste that may attract animals (i.e., food) will be stored in covered, wildlife-proof containers.

g) Burning of waste is not permitted.

h) All hazardous wastes generated will be handled according to the procedures for handling fuel and hazardous materials (Section 6.2).

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## 6.7 Clearing of Vegetation

Vegetation clearing (eg. trees and shrubs) will be required for site preparation activities for work areas and lay down areas. Potential environmental concerns include the loss of habitat, the sedimentation of watercourses, uncontrolled burning of slash, stockpiling vegetation in or near watercourses, and disturbance or destruction of historic resources.

### ***Environmental Protection Procedures***

a) Clearing activities will be limited to required areas and will comply with applicable permits, including the Cutting Permit and a Permit to Burn from the Department of Natural Resources, Forestry Services Branch, as required.

b) Capital Ready Mix project staff have indicated the possible presence of Eastern White Pine (*Pinus strobus* L.) in the project area. Prior to clearing activities, Eastern White Pine will be flagged and personnel responsible for clearing works will be informed that these trees are to be left undisturbed.

c) If the nest of any migratory bird is encountered during vegetation clearing, Capital Ready Mix will adhere to measures set out in Section 8.2.

d) Clearing or removal of trees will be restricted to only those areas required.

e) Chain saws or other hand-held equipment will be used in clearing vegetation except where alternative methods or equipment are approved by Capital Ready Mix. The use of mechanical clearing methods, such as bulldozers, will not occur except where it can be demonstrated that there is no merchantable timber, and where the resulting terrain disturbance and erosion will not result in the loss of topsoil or the sedimentation of nearby waterbodies. All chainsaw operators will be equipped with an adequate fire extinguisher during the fire season, as well as shovels and axes.

f) A 100 m buffer zone of undisturbed vegetation will be maintained between construction areas and all water bodies, watercourses, and ecologically sensitive areas.

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g) Merchantable or usable timber will be removed under permit of an existing forest operator.

h) Disposal of cleared unmerchantable timber, slashings and cuttings by burning shall be in compliance with the *Forest Fire Regulations*, Environmental Code of Practice for Open Burning, and the Permit to Burn. At no time will fires be left unattended.

i) Slash or any other construction material or debris will not be permitted to enter any watercourse, and will be piled above spring flood levels for later disposal.

j) Cleared vegetation will be used to restore habitat where practical.

k) Where possible, timber will be felled inward toward the work area to avoid damaging any standing trees.

l) Throughout the lifetime of the pit, site rehabilitation will include the planting of 31 ha of merchantable softwood timber tree species in a manner that provides for normal forest tree cover growth.

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## 6.8 Grubbing, Stripping and Materials Excavation

Grubbing is the removal of the vegetation mat and associated debris, while stripping is the removal of topsoil. All other soil material is removed by excavation.

The principal concerns associated with grubbing, stripping and excavation are the potential adverse effects on terrestrial ecosystems and water quality, including:

- destruction of terrestrial habitat; and
- potential for siltation, erosion and run-off.

### ***Environmental Protection Procedures***

a) Grubbing of the organic vegetation mat and/or the upper soil horizons will be restricted to the minimum area required.

b) The organic vegetation mat and upper soil horizon material that has been grubbed will be spread in a manner so as to cover inactive exposed areas.

c) Any surplus of such material will be stored or stockpiled for site rehabilitation and revegetation purposes. The location of the stockpiles will be recorded and accessible for future rehabilitation purposes. Any topsoil encountered shall be stockpiled separately and buried to prevent erosion and loss of nutrients.

d) Measures will be implemented to reduce and control runoff of sediment-laden water during grubbing, and the re-spreading and stockpiling of grubbed materials. Where grubbed materials are re-spread or stockpiled, as many stumps and roots as possible will be left on the ground surface to maintain soil cohesion, dissipate the energy of runoff and promote natural revegetation. Erosion control measures will be implemented in areas prone to soil loss (Section 6.10).

e) Where erosion into a water body is a concern, the length of time that inactive grubbed areas will be left exposed to the natural elements will be controlled and reduced to prevent unnecessary erosion.

f) Grubbing activities will adhere to the buffer zone requirements (100 m).

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g) During grubbing, care will be taken to ensure that grubbed material will not be pushed into areas that are to be left undisturbed.

h) Capital Ready Mix is aware of the value of wetlands and will avoid intrusion into high quality wetlands.

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## 6.9 Disposal of Excavated Debris

Excavation activities increase the potential for erosion due to exposed soils. The potential associated effects include runoff, containing high sediment loads, impacting nearby water quality, aquatic ecosystems, and environmentally sensitive areas.

Waste materials will be generated during access road construction and site development/use activities.

### ***Environmental Protection Procedures***

The following procedures shall be used to mitigate the potential environmental effect of the activities associated with the disposal of excavated waste materials:

- a) Where appropriate, efforts shall be made to re-use excavated waste for the construction of the access roads, or other project related activities including future rehabilitation of the pit site.
- b) Excavated waste material that is to remain in one disposal location for extended periods of time will be appropriately protected by stabilization of the material and/or perimeter sediment control.
- c) CRM is aware of the value of wetlands and will avoid intrusion into high quality wetlands.

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## 6.10 Sedimentation and Erosion Prevention

Pit activities, including clearing, grubbing and excavation, have the potential to cause erosion and sedimentation problems. Eroded material may cause siltation in water bodies and, subsequently, decrease suitable habitat for aquatic and terrestrial animals.

### ***Environmental Protection Procedures***

The possibility of detrimental effects from runoff and erosion is a concern with any pit operation and is addressed by adequate planning and operation.

- a) All work in the vicinity of the pit will be conducted in accordance with conditions set out in applicable permits, approvals and/or authorizations.
- b) A 100 m buffer zone of undisturbed natural vegetation between construction areas and all waterbodies will be maintained.
- c) Siltation control structures (i.e. silt curtains, cofferdams, sediment fences, etc.) will be constructed as necessary prior to beginning any activities involving disturbance of the site.
- d) Soil disturbance will be reduced by limiting the area exposed at any one time, stabilizing exposed soil with anti-erosion devices (i.e. rip rap, filter fabrics, gravel or wood chips), and revegetation of disturbed areas.
- e) Water will be directed from the site to vegetated areas (natural or man made) within the project boundaries, which will filter any potential suspended solids.
- f) Wash water will be collected and piped to industry approved settling ponds to allow suspended solids to precipitate out.
- g) Wash water will be recycled from the settling ponds back into the operations for reuse in aggregate washing and dust suppression.
- h) Primary means for controlling erosion will be to avoid activity that contributes to erosion; the disturbance of new areas will be minimized.

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i) Drainage ditches along the access road will be stabilized if required (e.g., lining with vegetation or rock, terracing, interceptor swales, installation of rock check dams) to reduce soil erosion. Any such measures will be properly maintained following installation.

j) All areas of exposed erodible soil will be stabilized by back-blading, grading and/or compacting to meet engineered slope requirements.

k) If an environmental inspection reveals that silt is entering nearby waterbodies, further mitigative measures will be implemented, such as temporary drainage ditches, siltation control (settling) ponds, ditch blocks/check dams or sediment dam traps, to intercept run-off. The necessary or appropriate measures will be determined in the field.

l) All work and marshalling and storage areas will be monitored for erosion and appropriate repair action taken as necessary.

m) Existing or new siltation control structures used in this work will be monitored for excessive accumulation of sediment; accumulated sediment will be removed from control structures to ensure the effectiveness of the systems. Effluent from control structures will be released to vegetated areas to ensure appropriate filtration prior to entering any waterbody.

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### 6.11 Buffer Zones

Buffer zones are vegetated boundaries maintained along water bodies. Without adequate buffer zone vegetation, streams, ponds and lakes can become laden with silt from run-off. Vegetation also provides cover for fish.

#### Environmental Protection Procedures

- a) A 100 m buffer zone of undisturbed natural vegetation shall be maintained between excavation areas and all waterbodies, watercourses, and ecologically sensitive areas.

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## 6.12 Surveying

Surveying activity may include the following activities:

- Vegetation removal;
- Traversing;
- Establishing targets, permanent benchmarks, and transponder stations.

Surveying activities may disturb vegetation, wildlife, and historic resources.

### ***Environmental Protection Procedures***

#### *Vegetation Removal*

a) Width of survey lines will be limited to that which is absolutely necessary for line of sight and unobstructed passage.

b) Whenever possible, cutting lines to the edge of open areas will be avoided.

c) Wherever possible, trees and shrubs will be cut flush with the ground; stumps will not exceed 15 cm.

d) Cutting of survey lines will be kept to a minimum.

e) No attempt to harass or disturb wildlife will be made by any person.

f) Vehicles will yield the right-of-way to wildlife.

g) There will be no cutting in areas designated as sensitive without notification and approval of the Environmental Monitor.

h) Historic resource discoveries will not be disturbed during survey work and will be reported as per applicable regulations.

#### *Traversing*

a) All terrain vehicles will not be allowed off the right-of-way except as approved by the Environmental Monitor.

b) Wildlife will not be disturbed or harassed by any personnel.

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c) Motorized vehicles will not be permitted to enter sensitive areas without notification and approval of the Environmental Monitor.

d) The extent of activities in sensitive areas will be minimized.

*Establishing Targets, Permanent Benchmarks and Transponder Locations*

a) A driven T-bar, well embedded to readily identify each benchmark location will be used.

b) Wildlife will not be disturbed or harassed by any personnel.

c) Access to sensitive areas is to be approved by the Environmental Monitor.

d) Standard iron bars and sledge hammers are to be used to establish benchmarks.

e) Heavy equipment will not be used to access sensitive areas.

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### 6.13 Stream Crossings

Stream crossings and culvert installations have the potential to cause direct disturbances to or mortality of fish, disturbance of waterfowl, and disturbance or loss of fish habitat.

#### ***Environmental Protect Procedures***

- a) Specific erosion and sedimentation control practices will be implemented on a site-specific basis and based on guidelines and principles as outlined by the Department of Fisheries and Oceans and Section 6.10.
- b) Stream crossings shall be constructed in compliance with applicable permits, regulations and authorizations, including NLDOEC, DFO, and Navigable Waters.
- c) Stream crossing activities shall be conducted under the supervision of the Environmental Monitor.
- d) Work shall be completed in a manner that ensures deleterious substances, including sediment, fuel and oil, do not enter watercourses or waterbodies.
- e) Watercourse banks and floodplains will be adequately protected from erosion by seeding, sodding, or placing of riprap, as required.
- f) A minimum buffer of undisturbed natural vegetation (20 m from the high water mark) shall be left between the access road and the bank of any watercourse which it parallels.
- g) Culvert installations shall adhere to all applicable regulations/permits and in accordance with the Environmental Guidelines for Culverts from the Department of Environment and Conservation (Water Resources Division, 1992).
- h) Bridge installations shall adhere to all applicable regulations/permits and in compliance with the Environmental Guidelines for Bridges from the Department of Environment and Conservation (1989) and Operational Statements from DFO on the construction and maintenance of clear-span bridges (Version 3.0, 2007).

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#### **6.14 Groundwater Development and Use**

Potable water requirements during construction will be provided from drilled wells. Environmental concerns associated with potable water include the proximity to sources of contamination and excessive drawdown on the water table.

##### ***Environmental Protection Procedures***

a) Wells shall be developed in consultation with the Department of Environment and Conservation, Water Resources Division to avoid areas of groundwater constraint, eg. potential sources of contamination and other wells.

b) Water extraction rates shall be established under approval of the Department of Environment and Conservation, Water Resources Division, to address concerns with respect to drawdown or other potential effects on the water table.

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### 6.15 Linear Developments

Linear developments include a range of construction related activities that are standard operations for most project types. Construction of access roads, ditching, right-of way clearing and grubbing are examples. Capital Ready Mix recognizes the potential of linear developments to cause disturbance to both terrestrial and aquatic habitat, particularly with respect to soil erosion and sedimentation.

#### ***Environmental Protection Procedures***

##### *Access Road Construction/Maintenance*

- a) Road construction materials shall not be removed from any stream.
- b) Siltation control measures shall be installed and maintained as needed.
- c) Work shall not be undertaken on easily erodible materials, during or immediately following heavy rainfalls.
- d) Access road development shall adhere to appropriate permits, approvals, and guidelines, including culvert installations, bridge installations, stream crossings, etc.

##### *Drainage and Ditching*

- a) Access roads shall be adequately ditched where necessary to allow good drainage.
- b) Wherever possible, ditches shall be kept at the same gradient as the road.
- c) Culverts shall be marked for easy location during snow removal or if they fill in from debris accumulation.
- d) Ditching shall proceed in the upslope direction and wherever possible, ditches shall be kept at the same gradient as the road.
- e) Natural drainage shall be maintained whenever practical.
- f) Ditches shall not empty into any natural wetland or watercourse.

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g) Rip-rap or an erosion control blanket designed for high flows shall be used to line the bottom of ditches that have steep gradients and/or excessive erosion.

h) Siltation control measures shall be installed and maintained as required.

i) Work shall not be undertaken on easily erodible materials, or during or immediately following heavy rainfalls.

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### **6.16 Light and Noise Levels**

During both the construction and operations phase of the project there will be an increase in noise levels due to increased vehicle traffic. The periodic use of dynamite will also cause instantaneous noise emissions.

Noises and lights associated with mining activity can cause behavioural changes in wildlife, including avoidance behaviours, distribution changes, etc.

### **Environmental Protection Procedures**

- a) Blasting activities shall be conducted as per Section 6.1
  
- b) All vehicles shall follow a designated project route and shall be properly maintained to minimize noise. All vehicles and generators shall have exhaust systems regularly inspected and mufflers shall be operating properly.

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### **6.17 Vehicle and Heavy Equipment Traffic**

Direct physical disturbances as a result of vehicles can adversely affect both terrestrial and aquatic environments. Heavy equipment has the potential to impact aquatic ecosystems and water quality, as well as environmentally sensitive areas. A variety of equipment is required for the various stages of project construction. This equipment includes bulldozers, backhoes, excavators, large trucks, flatbed trailers, graders, etc.

#### ***Environmental Protection Procedures***

- a) During access road development, equipment and vehicles shall only operate in required areas. Existing paths are to be used as much as possible. Vehicles are to travel in a straight line and single file as much as possible, and only travel through areas as required.
- b) During operations, equipment and vehicles shall only operate on the access road and areas designated for construction activities.
- c) Erosion control measures shall be implemented as required and monitored during development and operations. Repairs shall be completed as required.
- d) In-stream work shall be performed in compliance with permits and approvals from Newfoundland and Labrador Department of Environment and Conservation and the Department of Fisheries and Oceans.

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## 7.0 COMPLIANCE MONITORING

Capital Ready Mix Limited will be responsible for environmental compliance monitoring on-site and will instruct staff and contractors on project-associated environmental issues and expectations. Routine inspections and monitoring will ensure implementation of environmental protection measures specified in this document and applicable contracts, permits, approvals and authorizations.

Compliance monitoring will include, but will not be limited to, the condition and stability of the access road, bridge, culverts, etc, as well as site run-off, presence and/or mortality of migratory birds, fuel storage facilities, etc.

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## 8.0 CONTINGENCY PLANS

Contingency plans have been developed to address accidents and unplanned incidents. These contingency plans will be modified as required throughout the life of the project.

The following contingency plans have been developed for this project:

- Fuel and Hazardous Materials Spills
- Forest Fires
- Discovery of Historic Resources
- Migratory Bird and Wildlife Encounters

Capital Ready Mix Ltd. supports preventative measures as the first line of defense against the possibility of accidents.

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## 8.1 Fuel and Hazardous Material Spills

Fuel and hazardous materials can be damaging to vegetation, soil, surface water, ground water, wildlife, aquatic organisms, historic resources and human health and safety.

### ***Environmental Protection Procedures***

In the event of a fuel or hazardous material spill, the following procedures will apply:

a) The individual who discovers the leak or spill shall make a reasonable attempt to immediately stop the leakage and contain the flow.

b) Spill location, type of fuel or hazardous material, volume and terrain condition at the spill site shall be determined and reported immediately to the Environmental Monitor.

c) All spills 70 litres or greater are required to be reported, in accordance with provincial regulations.

d) Any spill on land, regardless of size, that may enter a waterbody frequented by fish shall be reported immediately to the spill line (709) 772-2083 or (800) 563-9089, as required by the *Fisheries Act*. Required pertinent information includes:

- name of reporter and phone number;
- time of spill or leak;
- time of detection of spill or leak;
- type of product spilled or leaked;
- amount of product spilled or leaked;
- location of spill or leak;
- source of spill or leak;
- type of accident - collision, rupture, overflow, other;
- owner of product and phone number;
- if the spill or leak is still occurring;
- if the spill or leaked product is contained, and if not, where it is flowing;
- wind velocity and direction;
- temperature;

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- proximity to water bodies, water intakes, and facilities; and
- snow cover and depth, terrain, and soil conditions.

f) The Environmental Monitor shall act as the "On-Scene-Commander" (OSC) for the purposes of cleaning up a fuel or hazardous materials spill and shall be trained in spill clean-up procedures and how to mobilize the clean-up equipment.

g) The cleanup equipment present shall include spill kits as described in Sections 6.2 and 8.1.

h) In reaching decisions on containment and clean-up procedures, the safety of staff will be a priority, followed by protection of water supplies and minimizing damage to waterbodies.

i) The OSC shall:

- act in consultation with the regulating authorities to assess site conditions and environmental impacts of various cleanup procedures;
- deploy on-site staff to assist in clean-up, as required;
- take all necessary precautions to ensure that the incident does not recur;
- prepare all reports and provide to regulators as required.

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## 8.2 Migratory Bird and Wildlife Encounters

Migratory birds may be impacted by construction activities in a number of ways, including: dust, noise (disturbances to nesting or feeding), reduction in water quality, destruction of habitat, etc.

Wildlife encounters pose a risk for stress or injury to wildlife as well as site personnel. Control measures and environmental protection procedures have been put in place to reduce the risk to wildlife and humans.

### ***Environmental Protection Procedures***

#### *Migratory Birds*

- a) All conditions under the *Migratory Birds Convention Act* and Regulations shall be adhered to.
- b) Capital Ready Mix staff shall be aware that migratory birds, their eggs, nests, and young are protected under the *Migratory Birds Convention Act*.
- c) If the nest of any migratory bird is encountered during vegetation clearing, the nest site and neighbouring vegetation will be left undisturbed until nesting is completed and construction activities be minimized in the immediate area until nesting is completed.
- d) No person shall disturb, destroy, or take the nest or egg of a migratory bird.
- e) Staff shall avoid disturbances to all birds in and near the project area; concentrations of birds shall not be approached.
- i) Site and working areas shall be kept clean of food scraps and garbage. Waste shall be collected for disposal at an approved landfill site.

#### *Wildlife Encounters*

#### Prevention Measures

- a) Project personnel are prohibited from hunting, trapping, or fishing on site.
- b) Site and working areas will be kept clean of food scraps and garbage.

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c) Waste will be collected for disposal in appropriate containers. Waste will be transferred to the local landfill routinely as needed.

#### Response Actions

a) No attempt shall be made by any person at the project site to chase, catch, divert, follow, or otherwise harass wildlife by vehicle or on foot.

b) Equipment and vehicles will yield the right-of-way to wildlife.

c) No personal pets, domestic or wild, shall be permitted on site.

d) When nuisance animals are identified in the project area, Capital Ready Mix staff will consult with the Department of Environment and Conservation; all actions will comply with Wildlife Division regulations and permits.

e) Under provincial wildlife regulations, the displacement and release of any animal is the sole jurisdiction of the Department of Environment and Conservation, and is to be undertaken only under appropriate supervision.

f) If the nest of any raptor or other bird is encountered, activity in the vicinity of the nest is to be curtailed until the Wildlife Division is contacted and appropriate mitigation is applied.

g) No attempts to chase, catch, divert, follow or otherwise harass wildlife by ATV, aircraft, vehicle, or on foot shall be made by any person at the Project Site.

h) Equipment and vehicles shall yield the right-of-way to wildlife.

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### 8.3 Discovery of Historic Resources

Historic resource material that is disturbed, destroyed, or improperly removed from a site represents a cultural loss of information and history that could otherwise be handled and interpreted in an efficient and appropriate manner.

#### ***Environmental Protection Procedures***

a) All Capital Ready Mix personnel shall be informed of their responsibility to report any unusual findings, and to leave such findings undisturbed.

b) In the event of the discovery of an artifact or archaeological site, the following procedures shall apply:

- Personnel shall report the find immediately to the Environmental Monitor.
- All work shall cease in the immediate area of the discovery until such time as the proper authorities (Provincial Archaeologist) are advised of the discovery and authorization to resume work is granted.
- Personnel shall mark the site's visible boundaries. Personnel will not move or remove any artifacts or associated material unless the integrity of the material is threatened.

c) The Environmental Monitor shall report the find to the Provincial Archaeology Office, St. John's, at 709 726 2462 and comply with the instruction provided. The Environmental Monitor shall provide the following information:

- nature of the find;
- precise location and the time of the find;
- nature of the activity resulting in the find;
- identity of the person(s) who made the find;
- present location of the material, if moved, and any protective measures initiated for the material and the site; and,
- extenuating circumstances.

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#### **8.4 Fire**

Activities related to site development have the potential to result in fire, which could spread to the surrounding area.

##### ***Environmental Protection Procedures***

Capital Ready Mix shall take all precautions necessary to prevent fire hazards when working at the site. These include, but are not limited to:

- a) Proper disposal of all flammable waste on a regular basis.
- b) CRM shall make available, in proper operating condition, sufficient fire fighting equipment to suit its labour force and fire hazards. Such equipment shall comply with and be maintained to the manufacturer's standards. CRM shall train its personnel in the use of such equipment.
- c) In the event of a brush fire, staff shall take immediate steps to contain or extinguish the fire.
- e) The Environmental Monitor shall act as the On-Scene-Commander (OSC) for the purpose of fighting any forest fires.
- f) Fires shall be reported immediately to the OSC/Environmental Monitor, who will report the fire as per provincial requirements:

Provincial Forest Fire Communications Centre

##### Contact Information - Regular Hours

709 637 2328 or 709 637 2653

Fax: 709 637 2403

##### Contact Information - After Hours

709 637 2328 or 709 632 1154

1-866-709-FIRE(3473)

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The following information shall be provided:

- name of the reporter and phone number;
- time of detection of the fire;
- size of the fire; and
- location of the fire.

g) The RCMP and closest fire department shall also be notified immediately through the emergency response system (911).

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## 9.0 CONTACT LIST

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### **LORAX Environmental Services Limited**

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### **Environment Canada - *Environmental Protection***

Glen Troke

Environmental Assessment Coordinator

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### **Environment Canada - *Canadian Wildlife Service***

Jeanette Goulet

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### **Fisheries and Oceans Canada**

Terry Fleet

Area Habitat Biologist - Eastern

Mount Pearl, NL

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### **Department of Government Services**

Robert Whitten

Director, Operations Division, ST. JOHN'S REG. OFFICE

Tel: 709 729 2860

### **Department of Environment and Conservation**

John Eason

Manager, Environmental Impact Management Section

Tel: 709 729-5706

### **Department of Natural Resources**

#### ***Forestry Branch***

Conservation Officer, Avalon District – Paddy's Pond

Tel: 709 729 4180

### **Department of Employment and Labour Relations**

Occupational Health and Safety Branch

Industrial Accidents

Tel: 709 729 4444

### **Canadian Coast Guard – Environmental Emergencies**

Tel: 709 772 2083

### **Royal Newfoundland Constabulary**

Tel: 1 800 363 4334

### **Royal Canadian Mounted Police**

Tel: 1 800 709 7267

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## 10.0 REFERENCES

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Department of Fisheries and Oceans. 2007. Newfoundland and Labrador Operational Statement: Measures to Protect Fish and Fish Habitat When Constructing Clear-Span Bridges, Version 3. DFO/2007-1283.

Gosse, M.M., A.S. Power, D.E. Hyslop, and S.L. Pierce. 1998. Guidelines for Protection of Freshwater Fish Habitat in Newfoundland and Labrador. Fisheries and Oceans, St. John's, NL. X + 105 pp., 2 appendices.

Wright, D.G., and G.E. Hopky. 1998. Guidelines for the use of explosives in or near Canadian Fisheries Waters. Can. Tech. Rep. Fish. Aquat. Sci. 2107: iv+34p.