Environmental Management Plan

Reed Road Watermain Replacement Project

Prepared for:

Sunshine Coast Regional District
1975 Field Road, Sechelt BC V0N 3A1

Prepared By

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VERSION TRACKING TABLE

Table 1 is intended to track the document's revision history of significant changes from Version 1.0 of the EMP submitted to the Owner for review.

Table 1 Version Tracking Table for Environmental Management Plan

Version Number	Date Issued yyyy/mm/dd	Description	Prepared by	Reviewed by
1.0	2025-07-18	First draft Issued to SCRD for Review	Barsanti Environmental	Mark McCullough, SCRD
1.1	2025-07-31	Revisions to V1.1	Barsanti Environmental	Stephen Misiurak and Lauren Walkey, SCRD
1.2	2025-08-07	Revision to V1.2	Barsanti Environmental	Mark McCullough, SCRD
1.3	2025-08-15	Revision to V1.3 Construction Layout Design Change	Barsanti Environmental	Mark McCullough, SCRD
Final	2025-08-21		Barsanti Environmental	

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DISCLAIMER

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1 INTRODUCTION

1.1 Project Background

The Sunshine Coast Regional District (SCRD) is upgrading its water system in SCRD Area E Elphinstone. The SCRD is replacing the old asbestos cement (AC) watermain which is problematic and prone to rupture with a new, 300 mm ductile iron watermain. This work will happen between Henry Road and the Reed Road Pump Station, just east of the Payne Road and Reed intersection. This project is important for providing reliable, clean water and updating the aging infrastructure. (See Appendix A for maps).

1.2 Purpose of the Environmental Management Plan

This Environmental Management Plan (EMP) describes the current environmental features of the Project area, and the potential of temporary environmental impacts expected during construction. The EMP specifies the mitigation measures that will be put in place to avoid or minimize negative effects on sensitive environmental areas. The EMP further provides guidance for the following construction activities.

- Environmental Monitoring;
- Surface Water Quality Protection;
- Contaminated Soil Management;
- Fish And Fish Habitat Protection;
- Vegetation Management;
- Wildlife and Wildlife Habitat Protection;
- Erosion and Sediment Control;
- Fuel Storage and Handling;
- Materials and Waste Management;
- Concrete and Asphalt Management;
- Air Quality and Dust Control;
- Heritage And Archaeology
- Soil and Sediment Management;
- Spill Prevention and Emergency Response; and
- Environmental Incident Reporting

The EMP summarizes potential environmental issues and specifies the requirements for the Contractor (TBD) to develop and implement a Construction Environmental Management Plan (CEMP) (Section 4).

The EMP serves as a guide for the Contractor and forms part of the contract requirements of the Project.

2 PROJECT DESCRIPTION

2.1 Project Location

The Project location is on Reed Road in the Sunshine Coast Regional District (SCRD). The eastern limit is at the pump station, slightly east of Payne Road and the opposite extent is approximately 935 m west at the intersection with Henry Road (Appendix A).

2.2 Project Works

2.2.1 Watermain Abandonment and Replacement

The core of this project involves the abandonment in place of the existing asbestos cement watermain adjacent to the road right-of-way and installation of new watermain within the road surface.

- New Piping: Install 900 m of 300mm Class 350 CL52 Ductile Iron Pipe and 300mm DR11 HDPE pipe at roadway cross culvert crossings.
- Existing services will be connected to new the mainline in the road alignment so not to disturb existing drainage.
- Ends of all asbestos cement mains will be plugged and filled with 0.5m of concrete and abandoned in place.

2.2.2 Environmental Protection Measures

All construction methods are specifically designed to minimize environmental impact, particularly concerning watercourses. During work tasks near environmentally sensitive areas a Contractor supplied environmental monitor will be onsite to monitor the work activities.

- Chaster Creek and Seasonal Ditches: While the watermain alignment is adjacent to several seasonal ditches and crosses Chaster Creek, construction methods are engineered to avoid direct instream disturbance to either the creek or the ditches.
- Culvert Crossings: At locations where the watermain crosses existing culverts, the new watermain will be installed either above or below the culvert structures. This approach ensures no work occurs within the culvert structure or the underlying stream channel. Specific crossings include:
  - 1+215: Crossing under 900mm culvert (Under)
  - 1+412: Crossing over 2000mm culvert (Over)
  - 1+607: Crossing under 600mm culvert (Under)

- 1+664: Crossing under 1000mm culvert (Under)
- 1+796: Crossing under 600mm culvert (Under)

2.3 Regulatory Context: Permits and Specific Conditions

The Owner has successfully obtained all necessary regulatory reviews and permits for instream works and archaeology, primarily through the established regulatory avenues of the *Water Sustainability Act (WSA)* and the *Heritage Conservation Act*. This comprehensive regulatory compliance is supported by an archaeological assessment, with Insitu's review and conclusions stating, "Based on extensive previous monitoring with negative results, the proposed footprint is considered to contain low archaeological potential and therefore there is at low risk of inadvertently impacting cultural heritage properties."

Federal

Federal Acts (and their regulations) and Guidelines that may apply to works carried out during this Project include:

- Fisheries Act (RSC 1985, c. F-14)
- Species At Risk Act (SC 2002, c. 29)
- Migratory Birds Convention Act (SC 1994, c. 22)

Provincial

Provincial Acts and Guidelines that apply to works carried out during this Project include:

- BC Wildlife Act, and
- Wildfire Act (RSBC 1996, c. 488)
- Water Sustainability Act (SBC 2014, c. 15)

Water Sustainability Act

Approval under the WSA - Subsection 11(1) and 11(2) (Changes in and about a stream (CIAS), vFCBC Tracking Number 100483802) authorizes the SCRD to make the following CIAS.

Nesting Birds – Migratory Bird Convention Act

If vegetation removal activities occur during the defined nesting period, the Contractor's Environmental Monitor (EM) or an Appropriately Qualified Professional (AQP) will conduct an intensive survey of the Site where vegetation is to be removed following standard Breeding Bird Nest Survey Protocols normally used on projects of this size and scope.

Regardless of the time of year, a nest survey, including cavity nests, will be conducted by the Contractor's Environmental Monitor or AQP to ensure that no nests protected under Section 34 of the BC Wildlife Act or Schedule 1 of the Migratory Birds Regulations (MBR) 2022 are present within the Project footprint.

In the event any protected nests are identified, the Contractor's Environmental Monitor will be responsible for developing and implementing a nest management plan including appropriate mitigation measures, such as no Work buffers, to avoid contravention of the *Migratory Birds Convention Act* and the *Wildlife Act*. If a nest structure of a MBR 2022 Schedule 1 species, or a nest protected under Section 34 of the BC Wildlife Act, is located, and the nest cannot be avoided during construction, the Ministry will be contacted for further guidance on next steps.

3 Environmental Features and Potential Effects

3.1 Fish and Fish Habitat

Three streams and one ditch are present in the Project footprint (Appendix B). The streams are Chaster Creek Tributary, Chaster Creek and Webb Brook. Chaster Creek Tributary and Webb Brook flow into Chaster Creek south of the Project footprint, and Chaster Creek eventually flows into the Salish Sea. These watercourses are fish bearing streams.

In addition, a roadside ditch is present along the north shoulder of Reed Road. The ditch conveys water originating from natural sources and is therefore classified as a stream in the WSA. The ditch exhibits ephemeral wetland characteristics in some places and provides seasonal habitat (potentially breeding habitat) to aquatic species (e.g amphibians), and food and nutrients to downstream fish populations.

Project activities will include work near these streams and the ditch and may have the potential to cause negative effects on fish and fish habitat. This can be avoided with the proper implementation of the mitigation measures contained in this document.

3.2 Vegetation

Vegetation in the Project footprint is largely comprised of maintained lawn-scaping, herbaceous plants on the road shoulder and native and non-native shrubs. No observations of Noxious Weeds were made in the Project footprint.

Disturbance of vegetation is anticipated to be minimal and occur only where the residential services are connected.

3.3 Wildlife

The riparian areas on the watercourses provide valuable travel corridors for all wildlife. Encounters with common, charismatic mammals such as deer, bear, and racoon etc. may occur during construction.

Shrubs and trees are likely used by a variety of songbird species particularly during the breeding season, which is generally identified as the period between March 1 and August 31 of each year.

Watercourses and wetted areas throughout the Project footprint, including roadside ditches, provide suitable habitat for amphibians such as frogs, toads, or salamanders, and for waterfowl.

3.4 Species-at-Risk

There is potential for rare wildlife to be present within suitable habitats in the Project footprint. No critical habitat for species at risk (SAR) occurs within 2 km of the Project footprint. However, suitable habitat for the provincially Blue- listed Northern red-legged frog (*Rana aurora*) is present in some portions of the roadside ditch that exhibit ephemeral wetland conditions. Effects on these areas are not anticipated if the mitigation measures described in this document are implemented.

4 Construction Environmental Management Plan (CEMP) Requirements

The Contractor is responsible for preparing a CEMP. The CEMP is to be prepared by a Qualified Environmental Professional[1] (QEP) and should consider any limitations described herein, and shall, at minimum, include the following components:

- Work plan including designated Project footprint, Project schedule, proposed works methodology, and environmental monitoring plan including site inspection checklist and monitoring report template;
- Contact List and Emergency Numbers;
- Environmental protection and mitigation measures, as detailed in Section 6, related to:
    - Surface Water Quality;
    - Contaminated Soil
    - Fish and fish habitat protection;
    - Vegetation protection;
    - Wildlife and habitat protection;
    - Erosion and sediment control;
    - Fuel Storage and Handling;
    - Materials and Waste Management;
    - Concrete and Asphalt Management;
    - Air quality and Dust Control and Noise;
    - Spill prevention and emergency response;
    - Incident management plan, as detailed in Section 7
- The Contractor will follow all applicable requirements of The Sunshine Coast Regional District Noise Bylaw No. 597.

The Contractor must submit the CEMP to the SCRD at least 14 calendar days prior to the commencement of construction activities to allow for adequate review time by the SCRD. The CEMP must meet the requirements of the Environmental Management Plan (prepared by the Owner) and any regulatory requirements noted in the permit. Works may not proceed until the CEMP and any associated revisions have been approved by the SCRD.

[1] In British Columbia, a QEP is an applied scientist or technologist who is registered and in good standing with an appropriate BC professional organization constituted under an Act and must provide services within their registered area of expertise.

5 Environmental Monitoring Roles and Responsibilities

Environmental personnel will execute the required environmental monitoring activities associated with the Project. Given the nature of the work areas, a part-time environmental monitor is likely required. Tasks assigned to environmental personnel will be consistent with the expectations of the Applied Biologists Regulation under the Professional Governance Act. Additional environmental professionals (i.e., QEPs or AQPs) may be required to provide specialized services.

The Contractor shall engage an Environmental Monitor, who is a QEP to:

- Monitor the Contractor's construction activities.
- Review and monitor the Contractor's Erosion and Sediment Control (ESC) design and implementation.
- Ensure that all appropriate environmental best management practices are being adhered to.
- Complete watercourse isolation and aquatic life salvage (if required) and, obtain the necessary wildlife salvage permits if a salvage is necessary.

The Contractor will be responsible for preparing an ESC plan and the CEMP, communicating any changes to the construction activities that may impact the ESC measures and abiding by any recommendation of the Environmental Monitor.

Prior to commencing construction and the instream works; the Contractor shall provide the ESC plan to the SCRD and Barsanti Environmental for review. The ESC plan shall be provided at least fourteen calendar days prior to the start of construction and in-stream works. Works should not commence until the ESC plan is approved by the SCRD and Barsanti Environmental.

5.1 Environmental Monitoring and Compliance Tracking

The Contractor's Environmental Monitor will be available throughout the duration of the Work to represent the Contractor in all matters related to the protection of the environment and will attend all key meetings at which environmental protection measures are to be discussed.

The Environmental Monitor will be available to respond to unforeseen incidents, such as spills of hazardous substances or releases of sediment to watercourses, within thirty (30) minutes of being notified.

The Environmental Monitor will attend the Site, in accordance with the terms of the Project Approvals and Authorizations, and the Environmental Monitor shall attend the Site during the following activities:

- Safety and environmental orientation meetings prior to the start of construction.
- Preconstruction surveys for bird nests, invasive plants, and wildlife prior to the start of Construction, as required.
- Installation and removal of any erosion and sediment control measures.

- Within twenty-four (24) hours of periods of heavy rainfall (heavy rainfall is defined as 25 mm or greater within twenty-four (24) hours).
- Emergency spill incidents.
- Shut down periods to review sediment and erosion control mitigation measures.

The EM will keep field notes and logs of Site visits conducted. The EM will document Site conditions/compliance and will keep a photographic record of activities as work progresses and provide monitoring reports on the conditions deemed appropriate by the SCRD.

Formal monitoring reports will include a list of construction activities, water quality monitoring results and environmental protection measures implemented or mitigative strategies employed, as well as photographs where appropriate. A discussion of the effectiveness of the environmental protection measures will be included. Special provisions will be detailed, and any post construction monitoring requirements (e.g. restoration seeding) outlined, especially where a potential impact may not be realized immediately. Reporting will also include any deficiencies, correction measures implemented and subsequent compliance with the environmental protection plan. Non-compliance will be documented, and the measures taken to correct such deficiencies will be tracked. Reports will be submitted to the SCRD within 72-hours of the monitoring site visit, unless urgency dictates sooner.

5.2 Project Contact List

The CEMP should list the contacts and agencies for when unplanned accidents or incidents occur. The SCRD is to be notified of any environmental incident, immediately after its occurrence.

6 Environmental Mitigation Measures / Protection Measures

Careful planning and management of work practices in a manner that adheres to the requirements of the Project Authorizations and Approvals, this EMP, standard best management practices, and the Contractor's CEMP, will help to ensure that the likelihood that environmental impacts are either avoided or minimized. Impacts that cannot be prevented will be mitigated such that impacts are minimized in extent and duration. Measures to avoid, prevent, and mitigate potential environmental impacts specific to the Project are detailed below.

The mitigation strategies contained in the following subsections represent the major components that are required to be accounted for in the Contractor's CEMP and are to be implemented by the Contractor to mitigate construction impacts on the environment. The following is not an exhaustive list of all the components required in the CEMP and additional measures not listed may be required to ensure compliance with the relevant Acts, Regulations, and BMPs

6.1 Surface Water Quality Management

Should any water need to be discharged to the environment (such as a creek, catch basin, and ditch), the water quality shall meet the most stringent of municipal, district, or BC Approved and Working Water Quality Guideline (BC WQC) requirements for water quality. The Environmental Monitor will conduct analytical testing of any water to determine any exceedances of federal or provincial water quality standards (Table 2) prior to release of water.

Instream works are not anticipated by the project design team. If that changes for any reason then water quality monitoring must be conducted by an AQP or a designate (in writing) Environmental Monitor on every day in which instream works are being conducted. Measurements must be taken upstream of any works taking place and within the extent of the sedimentation downstream of where instream work is actively occurring. Measurements are to be taken immediately prior to works beginning, and then at regular intervals until the work is completed and may require additional frequency during wet weather conditions. Wet weather conditions will be defined as being equal to or greater than 25 millimetres of rainfall within a 24-hour period. In situ parameters that will be routinely measured include pH and turbidity.

Table 2. Water Quality Guidelines

Parameter	Criteria
Turbidity - Nephelometric Turbidity Units (NTU) [a]	• Change from background of 8 NTU at any one time for a duration of 24 h in all waters during clear flows or in clear waters • Change from background of 2 NTU at any one time for a duration of 30 d in all waters during clear flows or in clear waters • Change from background of 5 NTU at any time when background is 8 NTU • 50 NTU during high flows or in turbid waters • Change from background of 10% when background is >50 NTU at any time during high flows or in turbid waters
Hydrocarbon	• Visible sheen on water • Visible stain in soil • Olfactory queues
pH [b]	• 6.5 – 8.0

[a] Values are from the B.C. Approved Water Quality Guidelines (2006) for Turbidity, Suspended and Benthic Sediments – Aquatic Life. [b] Values are from the B.C. Approved Water Quality Guidelines (2018) Summary of pH Criteria for fresh water.

6.2 Contaminated Soil

If soil or other substrate suspected of being contaminated is detected, work in the vicinity of the affected substrate will stop immediately and the EM will be contacted to assess the situation and ensure containment. Prior to removal of contaminated soil from the Project area the Contractor's AQP shall prepare a response and removal plan. The plan will be provided to the SCRD for review and approval.

Contaminated soils must be handled, transported, and disposed of in accordance with the BC *Environmental Management Act* and its Regulations (Contaminated Sites Regulation and Hazardous Waste Regulation), and the federal Canadian Council of Ministers of the Environment (CCME) guidelines and Transportation of Dangerous Goods (TDG) Regulations.

The Contractor will not remove surplus soil from the Site before the EM has assessed the proposed soil disposal location.

If soil odour, debris, discolouration and/or water sheen is encountered during construction activities, the Contractor will:

- Stop work and contact the Owner and EM immediately to report the location and nature of the suspected contamination;
- Under the supervision of an appropriately trained Environmental Professional (or delegate), segregate these soils from potentially uncontaminated soils during excavation;
- Arrange with the EM for sampling, analysis, and removal/disposal options of the contaminated soils;
- Stockpile soils on polyethylene sheeting (6 mil or greater) at least 30 meters from any watercourse;
- Cover each pile with polyethylene sheeting to prevent erosion, silt and/or contaminant runoff.

If stockpiling the soil is not possible, the EM will arrange for the soils to be handled as inferred contaminated. The suspect soils will be removed from site by a licensed carrier for direct transport to a permitted facility.

6.3 Fish and Fish Habitat Protection

Works in the Project area are in close proximity to natural fishbearing watercourses, and ditches.

It is vital to the Project's success that the Contractor meet all terms and conditions of the Project Authorizations and Approvals.

The Contractor should,

- Keep a copy of Project approvals for instream works, including associated plans and drawings, at the Project site at all times.
- Only work outside of the reduced risk instream work window (August 1 to September 15) if
  - I. Advised by a QEP on the timing of the work based on: the nature of the works, environmental values (including fish, amphibians, wildlife, any listed species present), water quality, weather conditions, water levels, and any other relevant factors).
  - II. The QEP provides construction mitigation advice to prevent adverse environmental impacts.
  - III. The QEP provides daily or full-time supervision of all work in or near the stream
  - IV. The advice supplied by the QEP on the points listed above is documented in writing and submitted as part of the post construction reporting for this Project.
- Conduct works in compliance with the documentation supplied to the WSA Water Manager for review of the Project Authorization.
- Carry out all work in accordance with the Provincial "Requirements and Best Management Practices for Making Changes In and About a Stream in B.C." (2022),
- Ensure all ESC measures are in place prior to conducting construction works and that the ESC measures are properly maintained at all times.
- Any rock or materials that are used in the stream will be clean, free of debris and from a non-acid generating source.

6.4 Vegetation Management

While the need for vegetation clearing is anticipated to be minimal, should woody vegetation need to be removed then, with respect to the MBCA, the following mitigation measures are recommended (also refer to Section 6.5):

- Vegetation clearing and tree removal should be conducted outside of the songbird nesting period which occurs between March 16 and August 15 (ECCC, 2018);
- If vegetation clearing is planned within this period, a nesting bird survey must be conducted by a qualified professional no more than three days prior to vegetation removal activities;
- If an active nest is identified within the Project Area during construction activities, the Project EM should be notified immediately, and no work is to commence until further assessment/direction is received from the EM/ Qualified Environmental Professional (QEP).
- If, at any time, a vegetation species at risk is identified on the Site, immediately inform the Project EM and stop work until further assessment/direction is received from the EM/Qualified Environmental Professional;

Invasive Plants

- The contractor must take all precautions to prevent the introduction and spread of noxious weeds and invasive vegetation;
- During the course of earthworks, any fill material that cannot be sourced from within the Project footprint will be sourced from the local area or region, whenever possible, and if brought from offsite, will be certified free of invasive plant propagules, as necessary.
- Inspect vehicles and equipment for plant matter;
- Wash down all vehicles and equipment prior to entering and leaving the Site;
- Remove any noxious weeds and invasive plants encountered within right-of-way (ROW) and dispose accordingly;
- All noxious weed material must be placed into impermeable plastic bags and tightly secured;
- Remove noxious weeds by manual and hand methods. Do not use machinery, burning or herbicides to control noxious weeds;
- All Noxious weed material must be disposed of at an approved facility. The contractor should arrange such a facility prior to the start of works;

6.5 Wildlife and Wildlife Habitat Protection

The following mitigation measures are recommended:

- Implement appropriate waste management and disposal practices;
- Prohibit feeding of wildlife;
- Report vehicle-wildlife collisions, install warning signs or impose reduced speed limits in areas where collisions may occur;
- Avoid unnecessary noise and other disruptions;
- The EM shall be notified of all wildlife observations on site;
- If any nests, dens or signs of wildlife are observed, ensure no disturbance occurs around the habitat and contact the EM immediately; and if, at any time, a wildlife species-at-risk is observed on-site, stop work immediately and notify the Project EM.

Species-at-Risk and Amphibians

There is potential for the presence of amphibian and reptile species in being the general vicinity of the Project site including the Northern Red-Legged Frog (*Rana* aurora), a Blue-listed species at risk. A preclearance survey will be conducted prior to ground disturbance works. If an incidental encounter occurs the Contractor will pause work, notify the EM, and the EM will determine an appropriate response and course of action. A salvage permit is required prior to conducting a capture and relocation of any wildlife, including amphibians and reptiles at all life stages.

Birds

Before the removal of any other woody vegetation or any ground disturbance taking place during the breeding bird season, the Contractor will consult the EM, and/or a QEP to determine the required mitigation strategy to be applied.

No nests or structures of Schedule 1 of the Migratory Birds Regulations (MBR) 2022 are presently known within the Project footprint. In the event any protected nests are identified, the Contractor's EM will be responsible for developing and implementing a nest management plan including appropriate mitigation measures, such as no Work buffers, to avoid contravention of the Migratory Birds Convention Act and the Wildlife Act.

If a nest structure of a MBR 2022 Schedule 1 species, or a nest protected under Section 34 of the BC Wildlife Act, is located, and the nest cannot be avoided during construction, the Ministry will be contacted for further guidance on next steps.

The Contractor will implement all recommendations provided by the EM. Any active nest encountered at site and not previously identified must result in an immediate stop to works within 50 m of the nest and the EM is to be contacted for further direction.

Risks of non-compliance with either the provincial *Wildlife Act* or federal *Migratory Birds Convention Act* are extremely low if works are carried out as described within this EMP.

6.6 Erosion and Sedimentation Control

The key factors in erosion and sediment control planning are to intercept and manage water that occurs on-Site in order to limit the potential for soils to become eroded and for sediment-laden surface runoff to enter drainages.

By planning construction timing and implementing BMPs, it is expected that the probability for erosion and sedimentation will be mitigated.

The Contractor is responsible for preparing and implementing an Erosion and Sediment Control Plan (ESCP) with site-specific considerations to mitigate erosion, sediment transport and sedimentation. ESC methods will be based on established BMPs and guidelines[2] designed to reduce erosion and sedimentation by limiting or stabilizing exposed soils, diminishing surface runoff velocity, and capturing entrained sediments. ESC measures will include protecting sediment sources from natural erosive forces, such as wind, rain, and surface flows, as well as construction activities which might erode soils or mobilize sediment. Necessary supplies and equipment for implementing BMPs, such as silt fencing, tarps, filter fabric, straw bales, straw wattles, silt curtains, pumps, hoses, etc., will be kept on-Site by the Contractor and utilized as required to maintain environmental compliance.

The Contractor shall incorporate all temporary and permanent soil erosion and sediment control features into the Works, as outlined in the accepted work schedule and ESCP. The ESCP shall be updated to reflect changing conditions on Site, at the direction of the Environmental Monitor, and the SCRD.

[2] Erosion, sediment and drainage control methods are detailed in the *2020 Standard Specifications for Highway Construction*. Ministry of Transportation and Infrastructure. Vol 1. November 2020, the *National Guide to Erosion and Sediment Control on Roadway Projects*, Transportation Association of Canada 2005, and the "*Standards and Best Practices for Instream Works*".

6.7 Fuel Storage and Handling

Pickup trucks will be fueled off site and onsite equipment will either be filled by pickup-mounted, double-walled tidy tanks or small containers (< 23 L), provided fueling is carried out at least 30 m from the nearest open surface water.

Pouring of fuel and lubricants will be done carefully and over an absorbent barrier (i.e., spill pad, absorb-all). Gas pumps (i.e., tidy tanks) must be properly turned off and stored when not in use. Lids will be promptly replaced on open fluid containers.

All fuel, oil, and lubricant containers will be double walled and, if stored, have 110% containment and protection from the elements and fastened down to prevent spill over.

Secondary containment will be used around fueling areas to prevent contamination from spills and leaks.

Fully stocked emergency spill response kits appropriate to the type of work being conducted and including an adequate inventory of sorbent pads and socks to respond to petroleum leaks and spills from construction related activities.

Oil sorbent sheets and/or containers will be placed under vehicles and equipment parked in high-risk areas for >2 hours, or immediately under any vehicle or equipment that is leaking.

Any waste oil or other waste materials must be removed from the site as soon as possible in accordance with Transportation of Dangerous Goods Regulation and the BC Hazardous Waste Regulation. All waste containers and containers of dangerous goods must be labeled appropriately and stored in a secure location, protected from the weather until disposal can be arranged.

6.8 Materials and Waste Management

Any material which is no longer of use, or that is discarded after primary use, can be referred to as waste. Wastes can either be classified as non-hazardous or, if including dangerous goods (as defined in the Hazardous Waste Regulation, B.C. Reg. 63/88), hazardous. Non-hazardous materials that can be recycled or salvaged, should be.

Certain materials required during construction, or produced as a by-product, may pose a hazard to the health and safety of the employees and environment if not handled, stored, transported, and disposed of properly. To mitigate this hazard, the Contractor will manage all wastes in accordance with this EMP and WorkSafe BC regulations.

The Contractor will be responsible for adhering to all Worksafe BC regulations for working with the existing Asbestos Cement pipe, including disposal of the interfering portions. Worksafe BC regulations include, but may not be limited to, Section 6.7 (1), 6.25-6.28.

Garbage and General Waste

- Solid wastes generated during this Project will not be deposited in environmentally sensitive areas. All solid waste will be disposed of offsite.
- Solid wastes generated by the Project will be contained and removed on a regular basis to maintain a clean and tidy environment.
- The Contractor will take special care to ensure that litter, garbage, and any food source (e.g. coffee cups, lunch wrappers, cigarette packages) are confined to vehicles or garbage bins at all times.

Sanitary Wastes

The Contractor will provide portable sanitary facilities throughout the duration of the construction period. The facilities will be located as far away from any drainage ditches as possible and at least 30 m away from natural watercourses.

Hazardous Wastes and Equipment-related Wastes

Hazardous materials associated with this Project include conventional materials common to any construction site, such as fuels (diesel and gasoline) and oils (engine, hydraulic, and small motor oil). All materials will be handled and cleaned up according to the manufacturer's instructions and to regulatory standards.

6.9 Concrete and Asphalt Management

Concrete can increase the alkalinity of water to levels in exceedance of BC Water Quality Guidelines (BCWQG) specifications. Concrete and concrete wash shall be kept out of surface waters. Where possible, construction features shall be pre-cast and brought to Site already cured. In addition to the measures listed in the FMP, other measures to manage concrete and concrete waste include:

- Work involving concrete should be conducted to limit the potential for concrete to enter the aquatic environment.
- When poured at the Project site, fresh and uncured concrete shall be covered, and surface waters directed away from works.
- Concrete works should be scheduled for dry weather.
- Quick set additives should be added to the concrete to decrease curing time.
- Workers should be familiar with concrete clean up procedures in the event of a spill.
- Waste concrete and concrete wash shall be removed from the Site and disposed of at an approved facility.
- Where waste concrete and concrete wash cannot be immediately removed from the Site, mater should be stored in a leak-proof covered container.
- Spill trays shall be in place under concrete pouring.
- Concrete wastes, including wastewater from batching or cleaning, or cutting cured concrete shall only be disposed of at an approved disposal site.
- All cement contaminated wastewater will be considered toxic until the water is at a pH of 6.5-8.0.
- Vehicles shall not be washed on Site. Containers or trucks carrying cement or fresh concrete shall be washed at a site approved by the SCRD.
- Ensure that appropriate mitigation measures (e.g., CO_2 tank and regulator, hose, and gas diffuser) are readily available on site during concrete pours and curing, and ensure crews are trained in their use.
- Monitor water in contact with uncured concrete for acceptable pH levels and monitor pH in the watercourses adjacent to concrete works. Implement emergency measures if concrete contact water enters a watercourse and pH levels are outside the limits imposed by the relevant guidelines and standards.
- When applying asphalt, precautions will be taken to keep the substance limited to the asphalt and concrete surfaces. Nothing shall be allowed to enter a waterbody.

6.10 Air Quality and Dust Control

The Contractor will work to achieve zero idling of machinery onsite.

During periods of inactivity and while stopped within a queue formed under the direction of a traffic control person or device, idling of Contractor and Sub-Contractor off-road equipment shall be minimized and are not to exceed the following:

- Motor vehicles and light diesel trucks – one (1) minute;
- Heavy duty diesel vehicles – five (5) minutes;
- Diesel Vehicles involved in construction Site passenger transportation – ten (10) minutes; and
- Construction Equipment - exempt when actually employed at the Site for work intended.

Dust Control

On an as required basis, to maintain proper air quality onsite the Contractor will sweep the roads to ensure dust does not accumulate on the roads and become airborne.

6.11 Heritage and Archaeology

An archaeological assessment, informed by extensive previous monitoring with negative results, indicates that the proposed project footprint has low archaeological potential and consequently presents a low risk of inadvertently impacting cultural heritage properties.

Despite this low-risk assessment, the SCRD and the contractor are committed to diligent oversight. Project personnel will maintain a watchful presence for any potential archaeological findings encountered during construction and will report them immediately and appropriately in accordance with regulatory procedures.

7 Environmental Incident Reporting

Environmental Incident's (EI) are incidents that have caused, or have the potential to cause, adverse environmental damage and/or effects, or adverse effects to fish, wildlife, archaeological sites, or other environmental resources. Examples include fuel or hazardous materials spills, uncontrolled fire, and situations or activities that indicate non-compliance with pertinent environmental legislation, regulations, licenses, permits, approvals, plans, performance standards, and the requirements outlined within this EMP. The purpose of the EI Procedures is to mitigate effects on the environment and provide a rigorous approach for investigating incidents and preventing future occurrences. The EI Procedures are designed to identify contributing factors to the incident, as well as document remedial measures, corrective actions and reporting requirements/submittals. If it is not clear whether an incident or near miss warrants an incident report, the Contractor is to consult their EM or the SCRD immediately.

Internal Reporting

The Contractor will immediately notify the EM and the SCRD and Barsanti Environmental of all spills, regardless of quantity, and all environmental incidents and near misses and will submit Environmental Incident Reports and/or Spill Reports within 24 hours. Spill reports will include, but are not limited to, the following information:

- Time and location of spill;
- Type, quantity, and source of material;
- Weather conditions at time of spill;
- Personnel and equipment involved;
- Response measures implemented;
- Results of cleanup and disposal methods for contaminated materials; and
- Corrective Actions to prevent future occurrences.

External Reporting

In the event of an environmental incident or non-compliance with any of the terms or conditions of this Approval, an AQP will help the Contractor to immediately mitigate the situation. Within 48 hours, each incident must be reported to the Water Manager at SouthCoastWSAReporting@gov.bc.ca with the Approval number in the subject line. The incident report must describe mitigation measures employed and a rationale as to why works have resumed or the next steps required before works may resume. The holder of the Approval must follow the advice of the AQP.

The Contractor will report or provide all necessary support to report spills to provincial and/or federal regulatory agencies, as required. If the SCRD or the Contractor's EM cannot be contacted within 30 minutes, it is the responsibility of the Contractor to report externally reportable spills and ensure externally reportable incidents have been reported to the respective regulatory agencies in the time frames provided under legislation (generally within

24 hours). Examples of externally reportable environmental incidents include:

- Any spill that has entered or are likely to enter a body of water.
- Any spill quantity equal to or exceeding reporting thresholds as per BC Spill Reporting Regulation.
- Any spill of natural gas caused by a break in a pipeline or fitting operating above 100 PSI that results in a sudden and uncontrolled release of natural gas that is above or equal to the listed quantity for natural gas.

SPILL REPORTING

In the event of a spill, properly trained field personnel should be mobilized to respond to the spill following these general BMP procedures:

- Report all spills to the EM, regardless of quantity.
- Stop the spill at its source.
- Contain and control the spill.
- Notify the appropriate authority:
  - Report minor spills to the Project site supervisor and the EM.
- Clean up the spill using absorbent pads or other materials based on the type and quantity of substance spilled.
- The EM should record the incident in a field logbook describing communication, mitigation, and clean-up measures.

7.1 External Spill Reporting

In the event of a spill occurring that triggers the BC Spill Reporting Regulation, this incident must be immediately reported to the Emergency Management BC (EMBC); formally Provincial Emergency Program or PEP) at 1-800-663-3456 and/or Environment Canada (EC) at the 24-hour emergency telephone number 604-666-6100. Spill response advice can be obtained from both EC and EMBC.

GENERIC EMERGENCY SPILL RESPONSE PLAN

INCIDENT

If a spill of fuel, oils, lubricants, or other harmful substances occurs at the Site, the following procedures will be implemented. ALL spills must be reported internally immediately regardless of the amount, and especially if released to a water body.

SPILL RESPONSE STEPS

1. ENSURE SAFETY
2. STOP THE FLOW (when possible)

3. SECURE THE AREA
4. CONTAIN THE SPILL
5. NOTIFY/REPORT (EMBC; 1-800-663-3456)
6. CLEAN-UP

(Circumstances may dictate another sequence of events)

ENSURE SAFETY

- Ensure Personal, Public and Environmental Safety
- Wear appropriate Personal Protective Equipment (PPE)
- Never rush in, always determine the product spilled before taking action
- Warn people in immediate vicinity
- Ensure no ignition sources if spill is of a flammable material

STOP THE FLOW (when possible)

- Act quickly to reduce the risk of environmental impacts
- Close valves, shut off pumps or plug holes/leaks, set containers upright
- Stop the flow of the spill at its source

SECURE THE AREA

- Limit access to spill area
- Prevent unauthorized entry onto Site

CONTAIN THE SPILL

- Block off and protect drains and culverts
- Prevent spilled material from entering drainage structures (ditches, culverts, drains)
- Use spill sorbent material to contain spill
- If necessary, use a dike, berm or any other method to prevent any discharge off Site
- Make every effort to minimize contamination
- Contain as close to the source as possible

NOTIFY/REPORT

- Notify the EM and the Project Manager of incident for any volume (provide spill details). When necessary, the first external call should be made to (see spill reporting requirements): EMBC (24 hours)
- Provide necessary spill details to other external agencies (see spill reporting requirements)

SPILL REPORTING REQUIREMENTS

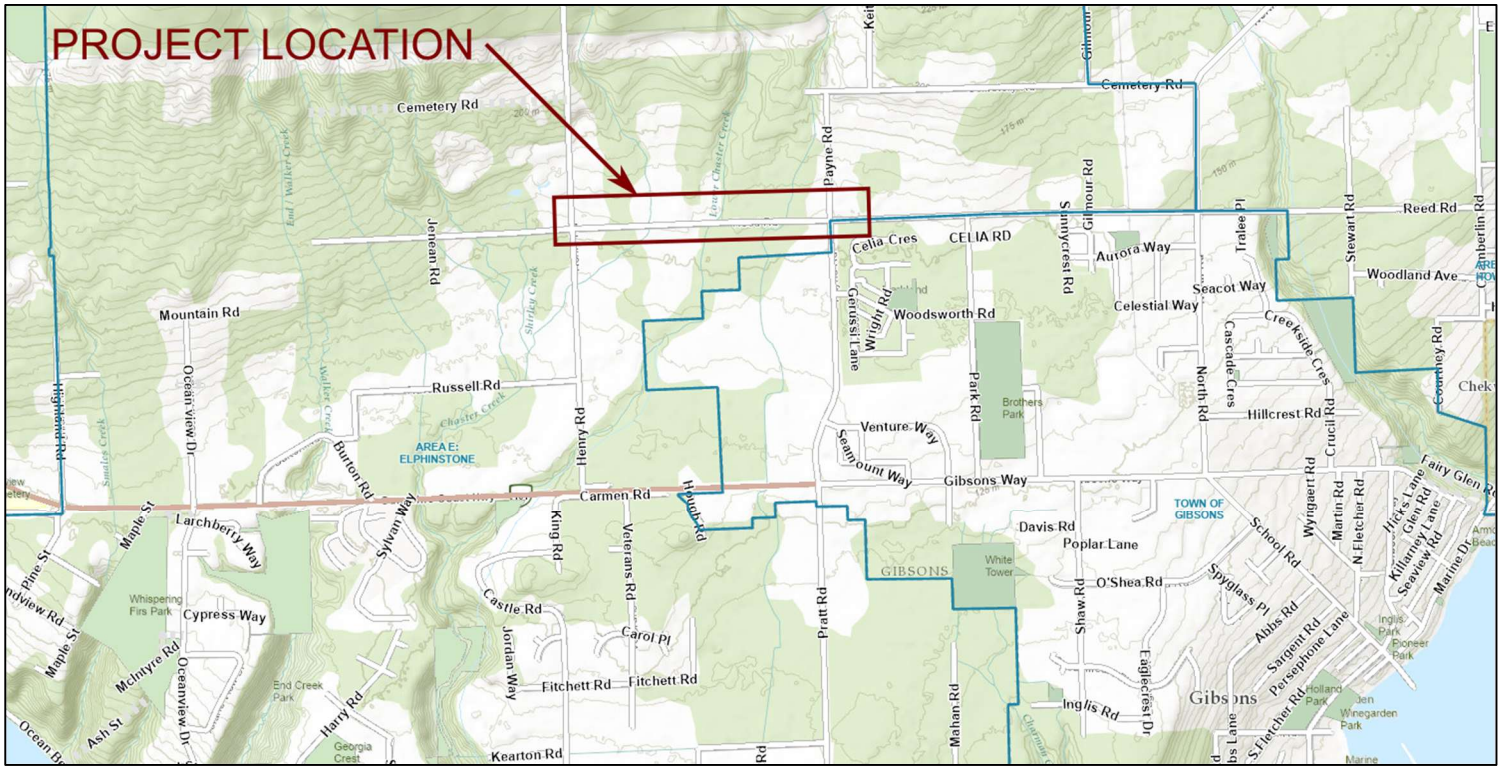
PEP 1-800-663-3456

SUBSTANCE	AMOUNT	REPORTABLE TO
Oils	> 100 litres	EMBC
	Any amount into water	EMBC, DFO & BC ENV
Special Wastes		
Oil with > 50 ppm PCB	> 1 litres	EMBC
Corrosive	> 5 kilograms	EMBC
Hazardous	> 5 litres	EMBC

Note: If in doubt regarding spill size, affected environment, materials involved and whether reportable, err on the side of caution and report the spill to the external body (i.e., EMBC)

The list of emergency contacts will be posted in strategic locations, along with the Spill Response Plan (contacts will be updated as required).

APPENDIX A – PROJECT LOCATION



APPENDIX B – PROJECT LAYOUT