Black Point Quarry
Spill Contingency Plan and
Marine Oil Spill Emergency Plan

Note to reviewers: this Spill Contingency Plan to be revised and updated once the HSE Coordinator and other site staff have been hired. Ultimately, this Plan may be combined with the Emergency Response Plan. Blue highlights indicate text to be updated.

Vers. 2025-4
Prepared by
Black Point Aggregates Inc.

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Appendices

Record of Plan Review and Amendments			
Version	**Date Reviewed**	**Plan Amended?**	**Reviewer**
2024-1	NA	Plan created / submitted to NSECC	Ridgeway
2025-4	4/21/2025	Plan updated based on ECCC Comments	Brunson

1. Introduction

1.1 Policy Statement

Black Point Aggregates Inc. (**BPAI**) has prepared this Spill Contingency Plan (**SCP**) to ensure the health, safety and well-being of its workers are maintained over the life of the Black Point Quarry Project and marine terminal (the Project). The SCP also demonstrates BPAI's commitment to protecting public health and safety, nearby private and public property, and the local environment. The company is committed to supporting the SCP through effective preparation, hazard identification, staff training, communication and review over the course of the Project.

The SCP is also intended to meet the 2016 Condition of Environmental Assessment approval NSE 10.1 (a-h) *The Approval Holder, as part of the application for the Part V Approval under the Environment Act, must submit to NSE for review and approval a contingency plan that meets NSE's Contingency Planning Guidelines*… This SCP has been prepared in accordance with Nova Scotia's Contingency Planning Guidelines, effective date June 2021.

1.2 Function and Objectives

The SCP describes the immediate actions to take in the event of a spill incident at the Black Point Quarry site. Other emergency incidents, such as fire, explosion, severe weather, structural failure, erosion and sediment control failures, and medical emergencies are covered in the broader **Emergency Response Plan** and **Stormwater Management and Erosion and Sediment Control Plan.** Spills to the marine environment are covered in the **Marine Oil and Avian Marine Oil Spill Emergency Plan (Appendix C).**

The SCP has several additional core functions and objectives:

1. The SCP is a single point of reference that lists the major site hazards, available emergency response equipment and standard responses to potential spills. The SCP is a 'living document' and will be reviewed annually and revised as changes to site operations and geography are identified, assessed, and incorporated into the Plan[1].

2. The SCP is an orientation tool that will form part of the training materials provided to all employees, new staff and non-BPAI contractors who visit the site.

3. The SCP identifies BPAI staff roles and responsibilities for emergency response, communication, documentation and reporting, and lists external contact numbers and emergency response resources.

4. The SCP will provide guidance for BPAI management, supervisors, workers, mine rescue and external emergency response teams to assist in the response to onsite spills.

5. Finally, the SCP is also designed to meet provincial regulatory requirements under:

    a. the Environment Act [s. 78(2)(h)] which requires a written contingency plan respecting the handling of dangerous goods or waste dangerous goods;

[1] The current version of the Plan (2024-1) is submitted prior to construction and is intended to support an application for a Part V Industrial Approval. Effort has been made to coordinate information in this Plan with the Emergency Response Plan, however both plans, by necessity, lack certain site and equipment details, contact phone numbers and similar information. As a living document, this Plan will be updated once quarry staff are hired and construction details are finalized.

b. the Dangerous Goods Management Regulations [s. 10(1)] which requires contingency plans for dangerous or waste dangerous goods storage;

c. the Petroleum Management Regulations [s. 7(5)] which requires the operator of a bulk plant to hold an approved contingency plan; and

d. the Approval and Notification Procedures Regulations [s. 6(1)] which requires that an application for approval for certain project types must be accompanied by contingency plans to deal with any reasonably foreseeable sudden or gradual release of a substance that is likely to have an adverse effect.

1.3 Site Location

The 354.5 ha quarry site is located on the south shore of Chedabucto Bay approximately 4.0 km east of Fox Island, Nova Scotia (**Figure 1 – Appendix D**). The site is accessed via provincial Highway 16 (Marine Drive) and is bounded to the north by Chedabucto Bay and to the south by a 69 kV power transmission line.

The Project's civic address (where the mine office is located) is 3500 Highway 16, Municipality of the District of Guysborough, Nova Scotia B0H-1N0.

The Project is located on an undulating granite hill with minimal soil cover and overburden. The hill, which has a maximum elevation of approximately 97 m above sea level (asl), is sloped to the north where a cliff is present. The site levels off abruptly at approximately 22 m asl where it gradually grades to the rocky coast. The granite is the rock that will be quarried and crushed to produce aggregate. The approximate center of the Project site is located at 45º21'13.25"N; 61º08'56.15"W.

The property identification numbers are provided in Table 1.

Table 1:
Black Point Quarry Property Identification Numbers

1: 35212521	7: 35044056
2: 35212497	8: 35214014
3: 35212505	9: 35214022
4: 35213990	10: 35093210
5: 35212513	
6: 35212539	

Environmentally sensitive areas consist primarily of wetlands and associated ephemeral watercourses on the site as well as Fogherty Lake, the coastal vegetated buffer zone and Chedabucto Bay itself. These features are shown on **Figure 1 – Appendix D**.

1.4 Site Activities

The Black Point Quarry Project consists of aggregate production (drilling, blasting, processing, and stockpiling), along with the construction and operation of a marine shipping terminal in Chedabucto Bay adjacent to the quarry.

The anticipated average annual production rate will exceed 1.0 million metric tonnes (MT) with an anticipated peak annual production of 7.5 MT depending on market conditions. Quarry operations are expected to take place over an approximate 50+ year period, depending on the demand for aggregate and annual production volumes.

Black Point Quarry will operate year-round (weather permitting) and will have an on-call and/or skeleton crew available at all times (including holidays). Blasting activities will be limited to daytime hours and weekdays. Quarrying and processing plant activities will operate for no more than 16 hours per day. The anticipated active quarrying and processing plant schedule will be two 8-hour operating shifts, 7-days a week. An 8-hour maintenance shift will support primary quarry and plant operations.

When a ship is docked for loading, marine operations will run 24 hours per day, up to 7 days per week to accommodate shipping schedules.

The primary components associated with the Project include:

1. An unpaved access road from provincial Route 16 into the quarry;
2. The quarry and primary crushing area;
3. Main feed conveyor from the primary crusher to the processing plant;
4. The processing (finishing) plant consisting of secondary and tertiary processing (crushing and washing) and a stockpile laydown area;
5. Modular buildings that comprise the administration complex;
6. Tank Farm / product storage area; and,
7. A 200 m long marine terminal and load-out facility.

The locations of the primary project components are depicted in **Figure 2 – Appendix D.**

2. Planning

2.1 Hazard Assessment

Nova Scotia's *Dangerous Goods Management Regulations* define both dangerous and waste dangerous goods, excluding petroleum product storage tanks which are regulated under the *Petroleum Management Regulations* and used oil / contaminated used oil regulated in the *Used Oil Regulations*.

"Dangerous goods" means:

(i) a substance that is dangerous goods in accordance with Section 2.1 of the *Transportation of Dangerous Goods Regulations* (Canada). Examples include explosives, compressed gasses, pesticides, gasoline, and diesel fuel;

(ii) glycol-based antifreeze or de-icing fluids, or solutions containing those substances, in concentrations greater than 1000 mg/L; and

(iii) petroleum products with a flashpoint greater than 61 °C that are liquid in ambient conditions or during handling. Examples include oil-based paints, mineral oil and linseed oil.

"Waste dangerous goods" means dangerous goods that are no longer in use for their original purpose or materials which have become waste dangerous goods through handling including dangerous goods intended for treatment, disposal or recycling…and does not include consumer paint products as defined in the *Solid Waste-Resource Management Regulations.*

2.1.1 Material Types, Volumes and Location

A number of dangerous and waste dangerous materials may be used, spilled or generated at various locations at the site, including:

- At the bermed Tank Farm / product storage area;
- At the Maintenance Shop;
- Where vehicles and stationary equipment are used and refueled
- At the Processing Plant where conveyors, crushers and other equipment is operated

Tank Farm / Product Storage Area

The main fuel storage at the quarry will contain the following:

- The tank farm consists of one 5,000-gallon (18,928 L) capacity gasoline tank, two 20,000-gallon (75,708 L) capacity diesel tanks, and one 10,000-gallon used oil tank (37,858L). The control point for spills in the Tank Farm is the concrete floor with containment berm for the tanks.
- 55-gallon (208 L) drums, up to 550-gallon (2,081 L) totes, and five 1,500-gallon (5,678 L) tanks for lubricating oil, grease, fluids, and spent oil will also be stored in the Tank Farm, within the containment berm.
- Two backup electrical generators are fed by a 500-gallon (1,892 L) diesel tank mounted on a steel cradle inside a lined and bermed containment structure.

The location of the Tank Farm and product area is shown on **Figure 2 – Appendix D**. Safety Data Sheets (SDS) are included in **Appendix B**[2]**.** Table 2 lists the anticipated Dangerous Goods and Waste Dangerous Goods that will be stored on site.

Table 2: Dangerous and Waste Dangerous Goods List*

Material Type	CAS Registry/UN Number	Maximum Stored Volume	Location (Figure 2)
Dangerous Goods			
Gasoline	UN1203	1 x 18,928 L (5,000 USgal)	Tank Farm
Diesel	UN1202	2 x 75,708 L (2 x 20,000 USgal) 1 x 1,892 L (500 USgal)	Tank Farm
Oil	UN1268	1 x 37,858 L (10,000 USgal)	Tank Farm
Hydraulic Fluid	TBD	10,400 L (2,747 USgal)	Tank Farm
Solvents	TBD	5,200 L (25 x 55USgal)	Tank Farm and Shop
Glycol/Antifreeze	TBD	5,200 L (25 x 55USgal)	Tank Farm and Shop
Explosives	TBD	Off site storage by licensed contractor trucked in for blasting	NA

[2] Note to SPC plan: A binder with SDS will be created as construction begins once dangerous product types are confirmed; the binder will be expanded during operations. Alternatively, an on-line database may be created to provide rapid and up-to-date information in case of emergency.

Compressed Gas	TBD	10 x 334CFT-O2 10 x 130CFT-Acetylene	Tank Farm and Shop

Waste Dangerous Good			
Used Oil & Oil Filters	TBD	37,858 L (10,000 USgal)	Tank Farm and Shop
Used Hydraulic Fluid	TBD	10,400 L (50x55 USgal)	Tank Farm and Shop
Used Solvents	TBD	5,200 L (25x55 USgal)	Tank Farm and Shop
Spent Glycol	TBD	5,200 L (25x55 USgal)	Tank Farm and Shop
Petroleum contaminated debris including shop rags, absorbent litter, oil absorbent pads and other recovery media.	TBD	No fixed volume	Tank Farm and Shop
Used vehicle and other batteries	TBD	No fixed volume	Warehouse and Shop designated storage area

*Products and quantities subject to change; table to be updated as products are purchased.

Maintenance Shop

Dangerous and waste dangerous goods will be stored, used and generated in relatively small quantities within the vehicle Maintenance Shop. These goods include oil and used oil, oil filters, lubricants, glycol, solvents, compressed gas, soiled absorbents, used batteries and related products. Most liquids will be stored in 208 L (55 gal) or smaller drums. The Maintenance Shop will be equipped with a sloped, bermed concrete floor that will direct spills to an oil water separator. The Shop will be equipped with emergency spill response equipment and fire extinguishers.

Mobile and Stationary Equipment

Mobile equipment such as excavators, bull dozers, pick-up trucks and haul trucks will be refueled on site from the Tank Farm, either with gasoline or diesel fuel. Stationary equipment such as temporary pumps and generators may require refueling on an as-needed basis. Mobile and stationary equipment may also contain glycol, motor oil and hydraulic oil. Accidental events may include spills or leaks of these products.

Processing Plant

The Processing Plant will use a variety of rock crushers, screens and conveyor systems. These systems may contain hydraulic oil that can leak or spill, either during operations or maintenance.

2.1.2 Site Characteristics, Storage and Containment

To protect the surrounding environment from fuel and other material spills, site contours where mobile and stationary equipment will operate (including the Processing Plant) will be sloped to the south, away from Chedabucto Bay, so that any spilled liquids will remain on-site. In the event of a spill within the active work area, any residual liquids or impacted surface waters will be directed to a dedicated settling basin, Catch Basin 4 (CB4) where spilled material would be contained and recovered. In the event that the settling basin is used to manage a large spill, all pumps directing outflow from the basin would be shut off until the spilled material has been recovered and the impacted holding point (i.e., the Catch Basin) has been remediated. In all cases, the spilled material will be contained and recovered as quickly as possible.

2.1.3 Potential Emergency Spill Scenarios & Mitigation

Petroleum Products: Gradual or Sudden Leaks and Spills

The potential for petroleum product spills or leaks exists during all phases of the Project. The spills could result from equipment failure (e.g., hydraulic leak from the conveyor system), damage to fuel storage or piping systems, mobile equipment or vehicle accidents, or failure to follow proper procedures related to fuel transfers or equipment maintenance. In the event of a large spill or leak, contamination of soil, groundwater and surface water (including snow and ice) may occur.

Any large spill event would be associated with diesel or gasoline stored at the Tank Farm near the Maintenance Shop, or during delivery via tanker truck to the Tank Farm.

Mitigation: Bulk fuels will be stored in above ground storage reservoirs within a bermed, impermeable secondary containment pad. The 500 gal. fuel tank for the backup generator will also be stored on a bermed concrete pad or the tank will be double-hulled and equipped with a leak sensor. Traffic speed will be controlled on site and, to the extent possible, traffic direction will be limited to one-way.

Most other dangerous and waste dangerous goods will be stored in a dedicated materials storage area within the Maintenance Shop, equipped with an impermeable, bermed concrete floor and oil-water separator. Emergency response equipment (listed below) will be available at both the Tank Farm and the Maintenance Shop, as well as other areas around the site.

Vehicle Collisions

Vehicular collisions may occur during any phase of the Project. Apart from the fuel delivery tanker truck (36,340 L or 9,600 USgal), the vehicles operating at the site will be mining equipment including bulldozers, haul trucks, loaders, excavators, graders, cranes, service vehicles (pick-up trucks) and company cars. The largest vehicle by fuel volume is a CAT 993 front end loader and could contain up to 2,044 L (540 gallons) of diesel.

Mitigation: Traffic patterns, speeds, and right-of-way signage and training will minimize the risk of vehicle collisions on the site. Operators of mobile equipment will receive initial and annual training on safe equipment operation and on issues such as awareness of blind spots. All on-site stormwater will be controlled and directed to catch basins that can be individually isolated and remediated.

Marine Terminal Incident

See **Appendix C -** Marine and Avian Marine Oil Spill Emergency Plan

Explosives Accident

An accident related to the use of explosives may occur during construction and operational phases of the Project.

Mitigation: No explosives will be stored or manufactured on site. BPAI will contract the explosives component of this project to a licensed blasting contractor. Accidents may include premature blasts or accidental detonation of blasting components, and a collision of the vehicle carrying explosives with site infrastructure or a second vehicle.

A spill of fuel oil and/or ammonium nitrate (the ANFO explosives mixture), or the emulsion itself has the potential to contaminate local ground and surface water. A spill from a truck in transit to the pit (i.e., on the access road) has a greater possibility of reaching surface watercourses as the access road to site is located along the edge of the pit and at higher ground which allows for migration.

Mitigation: Given the use of explosives exclusively within the pit area, any release would likely be managed by collection to Catch Basin 4 or the pit sump. This provides the opportunity to treat and test the water prior to discharge, minimizing the risk of environmental effects. Spills in transit to the pit would be contained within the stormwater management system which directs stormwater flow through ditches to a series of catch basins located around the site. Similar to a spill in the pit area, a spill elsewhere on the site can be contained and isolated within a catch basin for cleanup.

2.2 Resources

2.2.1 Emergency Response Equipment and Treating Agents

Emergency response equipment will be pre-positioned around the Project Site. The exact location of emergency spill and first aid kits will be determined as the site is developed and infrastructure installed. At a minimum, the Tank Farm, Maintenance Shop and Marine Terminal will be equipped with emergency response equipment. At the Marine Terminal, a seacan container or similar structure will be used to store absorbent pads, containment booms, pumps, skimmers and other emergency response equipment.

Table 3 lists on-site emergency response equipment. The location of emergency response equipment, muster stations, first aid equipment and related items are shown on **Figure 3 – Appendix D** (note to Plan: create/update Figure 3 – Mine Plan and Emergency Response Equipment and update Table 3).

Table 3: List of Emergency Response Equipment (example – to be updated)

Medical & First Aid	As stipulated in the Nova Scotia Occupational Health and Safety Regulations: • First Aid Kits • Emergency Medical Response Equipment (splits, eye wash stations, etc.) • Communication devices • Signage indicating equipment availability
Fire Fighting Resources	• 40+ ABC fire extinguishers on site • 1, rolling Ansul dry chemical extinguisher 30-A, 160-B:C • 1, 2000-gallon water truck with pumping capacity. • Water standpipes around office, shop & plant operations • 200ft 1”1/2 fire hose
Spill Response	Spill kits distributed on worksite (i.e., at/near Tank Farm, at Maintenance Shop, at mobile equipment storage areas, near processing plant, and at plant entrance). A separate set of marine spill clean up equipment will be located in a sea-can container at the marine terminal (see Appendix C for more detail). Items typically contained in a spill kit • 1-48” x 48” x 1/16” Neoprene Pad (Drain Stop) • Plug N Dike Granular, 1-gal U.S. (3.8 liters) • Splash Protection Goggles • 2-PVC Oil Resistant Gloves • 1 Pkg. Polyethylene Disposable Bags (5 mil), 10 per Package • 1 Shovel (Spark Proof) • 1 Case T-12 3”x12’ Mini Boom, 4 Booms/Case • Absorbents: 1 Bale 11P 256 17” x 19” x 1/2” Pads, 100 Pads / Bail

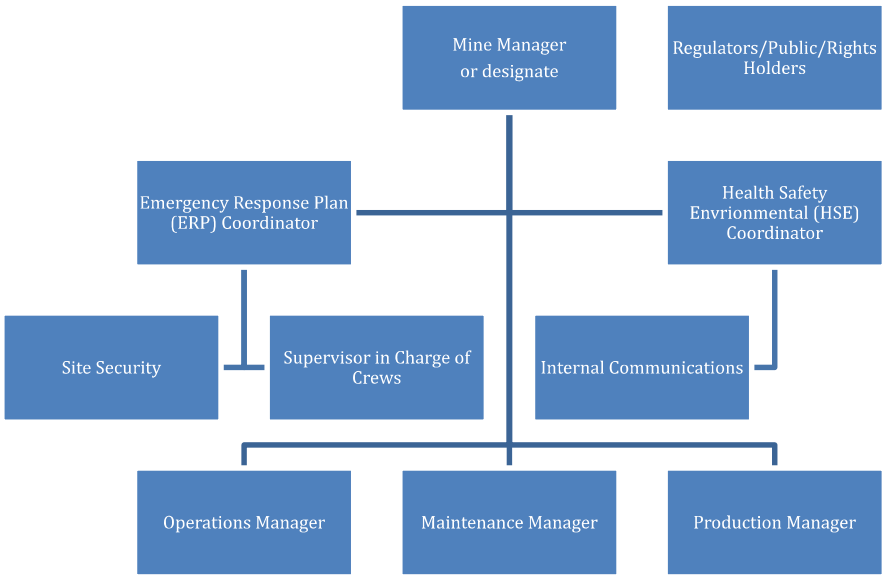
2.2.2 Internal and External Human Resources

Emergency response is ultimately the responsibility of the **Mine Manager** as Response Commander or his/her designate should the Mine Manager be absent when a spill occurs.

The Mine Manager will be supported by the **Emergency Response Plan (ERP) Coordinator**, whose primary responsibility is to develop and implement the Emergency Response and Spill Response Plans in the event of an incident. The ERP coordinator communicates with Site Security and liaises with the Supervisor in Charge of Crews to ensure site personnel not directly affected by the event are notified and acting according to the SPC Plan.

The **Health Safety & Environmental (HSE) Coordinator's** role is to help with communication during and after the incident, ensure proper record keeping and reporting, and follow up on lessons learned regarding the cause, response and prevention of future incidents.

A generalized organizational chart is shown below; roles and responsibilities are described in section 2.3.



Internal staff training is described in section 4.1 while external contractors available to respond to an emergency spill or other incident are listed in section 2.3 and Table 5.

2.2.3 Security and Communications

BPAI staff or an external contracted security firm will perform the duties of site security. Security will be located at a controlled point near or at the mine office or at the site entrance. All BPAI staff and external contractors will be required to sign-in/sign-out to ensure that an accurate roll call can be made in the event of an emergency event.

The site will have a gate restricting access at the south property boundary. Fencing may be installed to prevent accidental access to dangerous or active areas, but a complete perimeter fence is not expected at this time

The site will be equipped with emergency lighting, fire alarm systems, an air-horn to alert workers to an emergency, and on-site telephone communications with key operations personnel and equipment operators.

To address the risk of an emergency incident occurring during times when the facility is not staffed (e.g., statutory holidays) the following measures will be taken:

- BPAI will designate trained staff members who can react to alarms and incidents. They will respond to an emergency incident reporting telephone number and be available 24 hours a day / seven days a

week through a rotating schedule. The on-call personnel will be familiar with the SPC and ERP and will have the contact numbers for local emergency services and site support contractors.

- Sensitive equipment and/or areas of the site (e.g., the Tank Farm) may be equipped with sensors to monitor for fires and leaks if needed. The sensors will be connected to alarms that will sound upon detecting anomalous conditions. If warranted, automated alerts can be sent via SMS, email or phone call to on-call personnel or contracted security services.
- Spill containment berms and spill pads will be inspected regularly to ensure they undamaged by winter weather. Containment systems will be emptied of accumulated water following rain events to ensure sufficient volume is available to accommodate accidental spills when the site is unoccupied.
- BPAI will include practice drills specifically aimed at familiarizing staff to respond to incidents when the site is not occupied as part of its emergency response training.
- Representatives of Queensport and Canso Fire Departments will be invited to meet with the Black Point Safety Supervisor or equivalent in order to view the site layout and infrastructure, review access and evacuation routes and understand the activities undertaken at the site and products on hand. Access to the SDS database will be provided as requested.

2.3 Roles and Responsibilities

The BPAI **Spill Response Team** will typically consist of five personnel: the Mine Manager / Response Commander, the Emergency Response Plan (ERP) Coordinator, the Health, Safety & Environment (HSE) Coordinator and two responders, one of which may be a mechanic since mechanical equipment such as pumps and skimmers may be needed.

Mine Manager (Response Commander) or Designate if Mine Manager off-site.

As Response Commander, the Mine Manager is ultimately responsible for directing BPAI's spill response and is responsible for the outcomes of that response. The Mine Manager is the focal point for information exchange between BPAI administrative and operational staff, internal and external responders such as fire fighters and spill response teams, and regulatory officials.

1. Staff with relevant knowledge regarding the spill will report to the Mine Manager.
2. During times of crisis and during follow-up reporting phases, critical decisions are made by the Mine Manager. It is the Mine Manager who issues directives to staff and establishes the Incident Command Centre.
3. The Mine Manager is responsible for communicating with regulatory agencies, First Nation communities and stakeholders.
4. In the event that the spill incident requires additional external resources, including specific technical expertise, additional equipment, etc. the Mine Manager / Response Commander will be responsible for obtaining these resources in a timely manner from the off-site resources listed on Table 5 of this SCP.
5. Once the crisis has passed, the Mine Manager is ultimately responsible for ensuring the level or response is acceptable to regulatory agencies and is ultimately responsible for the contents of the final report describing BPAI's response to the emergency (the report itself may be authored by others).

Emergency Response Plan (ERP) Coordinator

The ERP Coordinator is second in command and supports the Response Commander. The ERP Coordinator's primary responsibility will be to assess emerging dangerous and unsafe situations and develop measures for assuring personnel safety. The ERP Coordinator may also assist with response

operations through communication with Site Security and the Supervisor in Charge of Crews to ensure site personnel are notified, accounted for and acting according to the SPC Plan.

1. The ERP Coordinator maintains this document including annual comprehensive annual reviews and periodic content revisions as necessary.
2. Under the direction of the Response Commander, the ERP Coordinator is responsible for directing and monitoring rescue teams, as well as internal and external responders.
3. If needed, the ERP Coordinator is responsible for liaising with Site Security and the Supervisor in Charge of Crews and ensuring site evacuation is completed.
4. The ERP Coordinator has overall responsibility for hazard assessments, emergency response planning and training.

Health, Safety and Environmental (HSE) Coordinator

The HSE Coordinator's role is to assist with communication during and after the incident, ensure proper record keeping and reporting, and follow up on lessons learned regarding the cause, response and prevention of future incidents.

1. The HSE Coordinator is responsible for compliance with regulations related to this Plan.
2. The HSE Coordinator will oversee site remediation, sampling, monitoring and response reporting, will provide an "internal lessons" learned debrief and will help the ERP Coordinator update hazard assessments and the SCP as needed.
3. The HSE Coordinator is the primary record keeper for all information related to the emergency event and is responsible for reporting after the event.

Outside Organizations and Agencies

Nearby spill response contractors, vacuum trucks, and waste disposal services can be sourced from the companies below. Contact numbers for the organizations below are given in **Section 3.3 Spills Notification Contact List, Table 5**. Local fire responders are located in Queensport (the Chedabucto Fire Station, located 5615 Highway 16, Queensport), in Canso and in Guysborough.

- Mill Creek Environmental Services (including marine service), 276 Sable Drive Sydney, NS;
- Point Tupper Marine Services Ltd (PTMS), Point Tupper 902-625-1711. PTMS is a federally certified marine oil spill response agency;
- Mattle Brothers Construction Ltd (MBCL), RR#1 Monastery, Antigonish. MBCL is a provincially certified responder for domestic oil spills;
- Envirosystems located in Dartmouth and Debert, NS;
- Clean Harbours / Debert Technical Services located in Debert, NS
- United Rentals can provide a variety of rental equipment, including emergency response-related material, located in Port Hawkesbury, NS; and
- Irving Equipment, where lift cranes can be rented, located at 43 Atlantic Street in Dartmouth.

For large spills in the marine environment, **East Coast Response Centre (ECRC)** is a private management company who provides marine oil spill response services upon request. ECRC will not assume the role of Response Commander but will act under the direction of the BPAI Response

Commander to provide a plan of action, equipment, resources and operational management in the clean-up effort.

Should BPAI require the assistance of ECRC in the event of a spill, they would call a 24-hour emergency number provided by ECRC. ECRC's call-out process quickly activates ECRC personnel, contractors and equipment to the degree necessary to respond to the size and circumstances of the spill. The role of ECRC will be more fully described once BPAI develops a marine vessel spill response plan as part of the Navigation Safety Assessment Program administered by Transport Canada.

2.4 Incident Command Centre

BPAI has created an Emergency Response Plan (ERP) to prepare for and respond to a variety of emergency scenarios. The non-spill emergency scenarios under which the Incident Command Centre (ICC) would be triggered are described in the ERP. Below are the potential spill events that could trigger an ICC response.

2.4.1 When the Incident Command Center (ICC) is Activated

The ICC will be activated in the event of a Level 2 spill incident.

Level 1: A **minor spill** event that is confined to the immediate quarry site and can be handled by BPAI/available contractor personnel using the response resources, manpower and equipment at hand. A Level 1 spill is defined as a spill less than the Reportable Quantity amount on Table 4.

Level 2: A **major spill** event where an incident has spread beyond the quarry site, or where employee safety is at risk or where external resources (i.e., emergency services, or contractors/external resources are required. A Level 2 spill is defined as a spill in excess of the Reportable Quanty amount on Table 4.

2.4.2 How the ICC is Activated

First responders have four primary responsibilities once a spill has been detected:

1. Ensure his/her own safety and the safety of others first.
2. Isolate, remove or extinguish all ignition sources.
3. Identify the spilled material and assess the hazard to persons and the environment in the vicinity of the spill or leak, identify escape routes.
4. In the case of a Level 2 (major) event, report the spill, leak or system failure without delay to the Mine Manager – the Response Commander - who will in turn notify the Spill Response Team and establish the ICC as needed. Level 1 events must also be reported to the Mine Manager, but this can be done upon completion of the clean-up.

2.4.3 Location of the ICC

The ICC will be established on site at the Mine Office conference room. The Mine Office is equipped with an emergency generator in case of a power failure while the conference room has:

- A copy of the Spill Contingency Plan and Emergency Response Plan with emergency contact numbers
- Internet — WIFI and cable direct
- Cellular signal and signal boosters; landline telephone

- First Aid equipment, PPE and Spill Response Kits

2.5 Public Relations

As noted, the Mine Manager - Response Commander - is responsible for communicating with regulatory agencies, First Nation communities and stakeholders. The Mine Manager is also responsible for communicating with BPAI head office in the event of a spill.

All external communication to the media and public will be completed by approval from the BPAI management and procedures will be followed as outlined in the **Communication and Complaints Resolution Plan.**

Some basic protocols include:

- Affected families (if applicable) must be informed as early as possible and prior to any media releases.
- The names of the people affected shall not be released publicly until they have been rescued or recovered, and authorization from their families has been received.
- All outside calls should be directed through BPAI as responsible for public and media relations.

3. Implementation and Operation

3.1 Activation

All spills of dangerous or waste dangerous materials, no matter their size, are to be reported to the Mine Manager. The spill classification is as follows:

Level 1: A **minor spill** event that is confined to the immediate quarry site and can be handled by BPAI/available contractor personnel using the response resources, manpower and equipment at hand. A Level 1 spill is defined as a spill less than the Reportable Quantity amount on Table 4.

Level 2: A **major spill** event where an incident has spread beyond the quarry site, or where employee safety is at risk or where external resources (i.e., emergency services, or contractors/external resources) are required. A Level 2 spill is defined as spills in excess of the Reportable Quantity amount on Table 4.

Level 1 (minor) spills can be reported to the Mine Manager or HSE Coordinator upon completion of clean-up but Level 2 (major) spills must be reported immediately upon detection. As Response Commander, it is the Mine Manager's responsibility to report the spill to regulatory authorities and others, as described below. In addition, all other serious incidents, such as injury, vehicle collision, fire (as defined in the Emergency Response Plan) must also be reported to the Mine Manager.

Mine Manager Telephone (24 hours):	xxx-xxx-xxxx
ERP Coordinator (24 hours):	xxx-xxx-xxxx
HSE Coordinator Telephone (24 Hours)	xxx-xxx-xxxx
Site Security Telephone (24 hours)	xxx-xxx-xxxx

The Mine Manager is also responsible for ensuring the **Spill Report Form** (**Appendix A**) is completed and filed, although this task may be delegated to the person who initially reported the spill and/or the HSE Coordinator.

Note: All spills in excess of the Reportable Quantity column in Table 4 must be reported to Nova Scotia Environment and Climate Change through the Nova Scotia Environmental Emergency Response Line (1-800-565-1633 or 1-902-426-6030).

Table 4: Immediate Reportable Quantities of Spilled Materials

(source: Federal Transport of Dangerous Goods Act (TDGA) and Nova Scotia Environmental Emergencies Regulations)

Item No.	TDGA Class	Description of Contaminant	Reportable Quantity
1	1	Explosives	Any amount
2	2.1	Compressed gas (flammable) *e.g. propane*	100 L
3	2.2	Compressed gas (non-corrosive, non-flammable)	100 L
4	2.3	Compressed gas (toxic)	Any amount
5	2.4	Compressed gas (corrosive)	Any amount
6	3	Flammable liquids *e.g. gasoline, diesel*	100 L
7	4.1	Flammable solids	25 kg
8	4.2	Spontaneously combustible solids	25 kg
9	4.3	Water reactant solids	25 kg
10	5.1	Oxidizing substances	50 L or 50 kg
11	5.2	Organic peroxides	1 L or 1 kg
12	6.1	Poisonous substances	5 L or 5 kg
13	6.2	Infectious substances	Any amount
14	7	Radioactive substances	Any amount
15	8	Corrosive substances *e.g. sulphuric (battery) acid*	5 L or 5 kg
16	9.1 (in part)	Miscellaneous products or substances, Excluding PCB mixtures and environmentally hazardous substances	25 L or 25 kg
17	9.1 (in part)	PCB mixtures of 50 or more parts per million	0.5 L or 0.5 kg
18	9.2	Environmentally hazardous substances	1 L or 1 kg
19	None	Dangerous wastes	5 L or 5 kg
20	None	Asbestos waste as defined in the *Asbestos Waste Management Regulations*	50 kg
21	None	Used oil as defined in the *Used Oil Regulations*	100 L
22	None	Contaminated used oil as defined in the *Used Oil Regulations*	5 L
23	None	A pesticide in concentrated form	5 L or 5 kg
24	None	A pesticide in diluted form	70 L
25	None	Unauthorized sewage discharge into fresh water or sensitive marine water	100 L
26	None	Ozone depleting substances as defined in the *Ozone Layer Protection Regulations*	25 kg

It is important to note that any amount of spilled material, including quantities less than those listed, could be harmful to migratory birds. All spills that have the potential to impact wildlife, regardless of if the spill is reportable, will be evaluated to determine if it could be harmful to migratory birds or other wildlife.

3.2 Notification

All BPAI staff and all contractors entering on site are required to carry cellular telephones that can be used to report a spill or other incident to the Mine Manager. Emergency telephone numbers will also be

posted at strategic locations around the quarry site, typically near first aid stations and emergency spill response kits. As noted, Level 2 (major) spills must be reported to the Mine Manager immediately upon detection, no matter the time of day or night.

The Mine Manager in turn will alert the ERP Coordinator and HSE Coordinator (the core of the Spill Response Team). Together, these people will determine who will notify others listed on the **Spills Notification Contact List** (below) as needed, with ultimate decision-making responsibility resting with the Mine Manager / Response Commander.

3.3 Spills Notification Contact List

Table 5 Spills Notification Contact List

1. Black Point Quarry Staff	
Mine Manager – Response Commander (24 hours)	xxx
ERP Coordinator	xxx
HSE Coordinator (24 hours)	xxx
Site Security (24 hours)	xxx
Project Questions and Complaints	205-298-3189
2. Government and NGO Contact Information	
Emergency: Fire Department and Ambulance Dispatch	**911**
NS Environmental Emergencies (oil spills, etc.)	**1-800-565-1633** or (902) 426-6030
CANUTEC Emergency (Canadian Transport Emergency Centre – Dangerous Goods Emergency)	888-226-8832 or *666 on a cellular phone
CANUTEC Information (non emergencies)	1-613-992-4624
24-hour marine incident and emergency reporting line	1-888-850-4625
Joint Rescue Coordination Center (JRCC) Halifax	(902) 427 2100
Canso Fire Department	(902) 366-2798 (non-emergencies)
Nova Scotia Environment - Antigonish Regional Office	902-863-7401
Fisheries and Oceans Canada - Maritimes Regional Office	(902) 426-3550 or 800-565-1633 (24 hr)
Sydney MCTS Officer in Charge (Canadian Coast Guard)	902-564-7752
Transport Canada – (Marine Safety) Regional Transportation Centre (Dartmouth Office)	(902) 426-7725 or 1-800-387-4999
Emergency Management Office (Nova Scotia)	1-866-424-5620
Transport Canada – Navigable Waters Protection (Dartmouth Office)	(902) 426-5907
Nova Scotia Department of Natural Resources	1-800-565-2224 (Forest Fire Reporting) (902) 424-5935 (Other Inquiries)
Nova Scotia Museum (Archaeological Reporting)	Robert Ogilvie, Curator of Special Places Tel: (902) 424-7344
Guysborough RCMP Detachment	(902) 533-3801 (non-emergencies)
Guysborough Fire Department	902-533-2413 / 3577
Guysborough Hospital	(902) 533-3702
District of Guysborough	902-533-3705
Marine Animal Rescue Society (MARS)	1-866-567-6277

Regional Medical Officer of Health (Eastern Zone)	Dr. Jesse Kancir, 23 Bay Street, Antigonish xxx
ECCC-CWE Main Office	(506) 364-5044 or SCFATLEvaluationImpact-CWSATLImpactAssessment@ec.gc.ca
3. Contractors and Support	
Mill Creek Environmental Services (Sydney, NS)	902-539-6161
Mattle Brothers Construction Ltd (Antigonish, NS)	902-232-2582
Envirosystems (Dartmouth and Debert, NS	902-481-8008
Clean Harbours (Debert, NS)	902-662-3336
United Rentals (Port Hawkesbury)	902-625-2232
Irving Equipment (crane rentals – Dartmouth NS)	800-561-2726
Point Tupper Marine Services Ltd (PTMS) – Marine Oil Spills	902-625-1711
Emergency Health Services (EHS) Nova Scotia	Call 911 for emergencies to be connected to fire, police or ambulance services.
Strait Richmond Hospital Emergency	(902) 625 - 3100 318 Hospital Road, Evanston, Nova Scotia
St. Martha's Regional Hospital	(902) 867 - 4500 25 Bay Street Antigonish, Nova Scotia
Pollution Incident ECRC	(613) 930-9690
Superport Project Lead	Les MacIntyre (902) 227 – 7990 (Cell) (902) 625 – 3375 (Office)
Superport Dispatch (24/7 Line)	(902) 625-4527
SuperPort Marine Main Office	(902) 625-3375 30 Water Street Port Hawkesbury, NS B9A3L1
Hope for Wildlife	(902)407-9453

For spills that are threatening health or safety and require immediate help, contact 911.

For all environmental emergencies, including terrestrial and marine hydrocarbon spills, call 1-800-565-1633. This number is the Maritime Regional Office, Canadian Coast Guard Fisheries and Oceans Canada. It is a 24-hour telephone number with an Environmental Emergency Responder on call to respond to all environmental emergencies. Calls will be directed to the appropriate reporting authorities, including Nova Scotia Environment, Fisheries or Climate Change Canada.

The Occupational Health and Safety (OHS) Act states that employers must report any accident at the workplace that results in bodily injury, including unconsciousness, third degree burn, loss of sight in one or both eyes, poisoning, asphyxiation and any injury that requires the admission to hospital, endangers life, is likely to be fatal or death. The major release of a hazardous substance in a workplace must also be reported.

To report an incident to the Nova Scotia OHS division, call 1-800-952-2687 as soon as possible. The Global Harmonized System and WHMIS 2015 regulations apply to chemicals under the employer's control that could result in a spill and requires that a Safety Data Sheet (SDS) is on hand in the event of a

spill. This document is essential to providing information on first aid and proper measures for accidental releases, including personal precautions, protective equipment, emergency procedures, containment and cleaning up. Employers should also have an evacuation plan in place and posted in the event of a major spill that could occur in a workplace.

According to the federal Fisheries Act, the release of any substance (in any amount) that may be harmful to fish or fish habitat into water frequented by fish must be reported to a fisheries officer (902) 426-3550 or 800-565-1633 (24 hr).

Injured wildlife should be reported to a local rehabilitation center or corrdianation and response. Bird mortality incidents of 10 or more birds in a single event, or an individual species at risk, should be reported within 24 hours of the event to ECCC-CWS Main Office (see Table 3).

3.4 Response Procedures

3.4.1 Discharge Prevention Measures

Discharge prevention measures at this facility include training of personnel in the operation and maintenance of equipment to prevent and contain spills and annual briefings to assure understanding of the contents of the SPC Plan. Discharge prevention measures also include regular inspections of tanks and secondary containment, and drainage controls.

3.4.2 Discharge and Drainage Controls

Secondary containment is provided for all aboveground storage tanks at the facility. All oil storage/handling areas including the Tank Farm, fuel dispensers, fuel/oil loading and offloading areas, crusher oil tanks, mobile fuel trucks, and mobile equipment are engineered to collect a spill in the immediate area and/or to drain into catch basins, the oil-water separator (for spills at the Maintenance Facility), low catchment swales, or the quarry pit. These drainage controls are provided to prevent a release of oil to surface and groundwater and are described in more detail in the **Stormwater Management Plan.**

3.4.3 Containment and Diversionary Structures

Appropriate containment and/or diversionary structures or equipment to prevent a discharge from a spill will be provided for this facility. The containment systems at the Tank Farm and Maintenance Facility, including walls and floor, are capable of containing hydrocarbons and are constructed so that any discharge from a primary containment system, such as a tank or pipe, will not escape the containment system before cleanup occurs.

Standard bermed concrete floors will be constructed at the s Tank Farm and Maintenance Facility to ensure a spill would be contained in the immediate area. In the event a spill was to leave the immediate vicinity of the fuel containment, flow would be directed to catch basin CB4. The discharge structure of CB4 is designed to control and prevent the release of a spill until the spill can be cleaned up.

3.4.4 Spill Release Scenarios

Based on how and where oil and other petroleum products are used and stored at this facility, **Table 6** (below) describes potential types of spill/release scenarios, estimated volume released, the probable flow direction of the spill, and the predicted spill rate.

Table 6: Spill Release Scenarios

Potential Failure	Spill Direction	Predicted Volume Released	Predicted Flow Rate
Complete failure of diesel, gasoline, or lube tanks	To catch basin CB4	Up to 75,708 L (Depends on tank capacity)	Instant
Leak from diesel, gasoline, or lube tank	To catch basin CB4	Up to 75,708 L (Depends on tank capacity)	Gradual
Overfill of diesel, gasoline, or lube tank	To catch basin CB4	Up to 37,858 L	Gradual to Instant
Failure of crusher oil tank	To plant settling ponds	Up to 2,272L	Gradual to Instant
Hose leak at crusher oil tank	To plant settling ponds	Up to 2,272 L	Gradual

Tank truck leak or failure	To plant ponds or quarry pit sump	Up to 36,340 L	Gradual to Instant
Hose leak on mobile equipment	To plant ponds or quarry pit sump	Up to 871 L	Gradual to Instant
Drum leak or failure	To plant ponds or quarry pit sump	Up to 208 L	Gradual to Instant
Tote leak or failure	To plant ponds or quarry pit sump	Up to 2082 L	Gradual to Instant

3.4.5 Initial Actions

First responders will initially consider the severity of the spill:

Level 1: A **minor** event that is confined to the immediate quarry site and can be handled by BPAI/available contractor personnel using the response resources, manpower and equipment at hand.

Level 2: A **major** event where an incident has spread beyond the quarry site, or where employee safety is at risk or where external resources (i.e., emergency services, or contractors/external resources are required. Public safety however, is not threatened.

Before responding to any spill, it is important to first **STOP** and **THINK**:

- Identify Hazards
- Assess Risks
- Control Risks

There are three basic priorities when responding to a spill:

✓ Respond Quickly

✓ Respond Safely

✓ Full Notification and Reporting

The following initial actions should be taken by the first person(s) who identifies a spill:

1. Be alert, ensure your safety and the safety of others first.
2. For a hydrocarbon spill, isolate, remove or extinguish all ignition sources.
3. Identify the spilled material (refer to SDS if necessary) and assess the hazard to persons and the environment in the vicinity of the spill or leak, identify escape routes.
4. Report the spill, leak or system failure without delay to the Mine Manager, who will in turn notify the Spill Response Team.
5. Before undertaking a response action proximal to the spill, ensure personnel have and wear the appropriate personal protective equipment (PPE).
6. Assess whether the spill, leak or system failure can be readily stopped or brought under control.
7. Control the source of the spill. Upright the container, plug the hole, or turn off valve/pump. Block spill drainage paths and, if possible, implement spill response measures at the site and appropriate Control Points.
8. If possible, without further assistance, control any danger to people and the environment.

9. Contain the spill by digging a berm, using absorbent materials, or diverting the spill away from watercourses/wells. Priority should be given to preventing the spill from entering a water body.
10. Clean up the spill safely using appropriate methods (e.g. scoop up or absorb) and/or according to the requirements of an Emergency Responder. Consult MSDS sheets for specific cleanup procedures
11. Gather information on the event and the status of the situation, including the nature, extent and approximate amount of the spill and, if spill is into a waterbody, estimate speed of water flow.
12. Resume any safe, effective action to contain, clean up, or stop the flow of the spilled product. Await the arrival of the Spill Response Team.

3.4.6 Containment

The ability to contain and recover spilled materials is influenced by the spill location, the size and rate of release, transport and terrain conditions. This information needs to be matched against the time needed to deploy response personnel and equipment. The following response elements need to be considered:

- Equipment and support material mobilization time
- Personnel mobilization, transmit and assembly at spill site
- Actual equipment set-up and deployment time.

The type and size of the containment method chosen will depend on the following factors:

Size of spill - Berms surrounding large spills that cover extensive areas are difficult and time consuming to build. Earth and snow berms may be more easily put into place than sand bag containment. It is also important to build the berm as close to the source as possible to minimize any spreading.

Terrain - Steep or varied terrain can make an effective response difficult, particularly with heavy equipment. Spills will travel faster on steep inclines and require faster response times. Larger, flat areas will require longer berms to contain a spill; however, spills travel much slower allowing additional time frames for the construction of barriers.

Soil types - Loose, coarse or dry soils will allow liquid spills to be absorbed and require additional work to remove contaminated materials. Frozen soil creates a natural barrier that aids in clean up. Trenches or berms can be difficult to construct without the use of heavy machinery.

Proximity to water - It is important that every precaution be taken to ensure that spills do not enter a waterway. If there is any possibility of contamination, a stream or river should be protected by diversion of the spill from the watercourse.

Weather - Weather can play an important role in spill response operation, particularly if the ground is frozen (or beginning to thaw). The presence of water (either from rainfall or spring melt) can increase the clean-up requirements. Water will also increase the tendency for the spill to spread and pose a hindrance to the effective clean up.

Location - the location that the spill occurs will greatly influence the type of containment measures and the ability to successfully clean up the spill.

Daylight - during the winter daylight is at a minimum. This greatly reduces the ability to assess the spill and provide an adequate response. Insufficient light requires that additional sources be available to affect the cleanup.

Temperature - Air temperatures of the north, with the extremes during the winter, demand attention by response personnel to ensure the safety of the response team. Although the extreme cold can be

beneficial to the containment of a spill on land, it can also be detrimental in the efficiency and response time to control and contain the spill.

3.4.7 Spills on Land

- Once a spill is identified, all sources of ignition should be turned off (e.g., no smoking, shut off engines).
- Identify the product involved, the source of the leak or spill, and if safe to do so and If readily possible, stop the leak or spill.
- Contain the spill to ensure the potential for the spilled material reaching a body of water is minimized; block entry of spills to waterways by building berm or trench
- Secure the affected area, ensuring the area is safe for entry and does not represent a threat to human health and safety of the spill responders. Public access to the area should be restricted.
- Deploy spill kits as appropriate and consider a berm or dyke around the spill to contain the liquid product; block drainage paths down-gradient.
- Leaks from a tank may be stopped by utilizing patching kits.
- Spills (on gravel, rock, soil, vegetation) may be contained by building a soil berm down slope of the running or seeping product. Plastic tarps can be placed over the berm and at the foot of it, to permit the spilled product to pool on the tarp for easy capture.
- Absorbent pads can be used for this purpose, and the pads can be squeezed into empty drums and re-used.
- Larger pools can be pumped back into drums, empty storage tanks, or “TIDY” tanks.
- It is especially important to prevent the liquid product from entering a body of water as potential environmental impacts may be greater. Even if a spill is contained, it is important to collect free product as soon as possible because seepage into a permeable ground surface can occur.
- Stains on rock may be soaked up with absorbent sheeting or pads. The sheeting should be placed in drums for disposal in an approved manner.
- Contaminated soil and vegetation may have to be removed and disposed of in an environmentally acceptable manner.

3.4.8 Spills on Snow

The presence of snow can assist in containing spilled liquid and functions as a natural absorbent to facilitate containment and recovery.

- Containment on snow is readily achieved and is very effective due to its absorbent qualities. Some liquid spills will become immobile within snow and are easily recovered for transport or disposal.
- Trench or ditch to intercept or contain fuel on snow, where feasible
- Snow can be used in the construction of berms. Compact the snow around the outside perimeter of the spill area. Whenever possible, snow should be left in place to avoid contaminating the underlying substrate berm and lined with plastic sheeting.
- A snow berm can be strengthened by spraying it with a fine water mist that forms an ice layer on top of the snow.
- The snow-liquid mixture can be scraped up and stored in a lined area or in drums for subsequent disposal.
- Construct a berm with snow, either manually or with shovels or heavy equipment such as Bobcats and Front-end Loaders as available

3.4.9 Spills on Ice

For spills that occur on ice, from either direct spillage or migration, containment is greatly affected by the strength of the ice. If the spill does not penetrate the ice, and the ice is safe to work on, then the methods of containment are similar to those employed for a spill on land. Where the spill has penetrated the ice, the situation should be handled similar to that on open water.

- Once a spill is identified, all sources of ignition should be turned off (e.g. no smoking, shut off engines).
- Where a spill occurs on ice, snow should be compacted around the edge of the spill to serve as a berm (and lined with plastic sheeting). The ice will limit seepage of fuel into the water, but the contaminated snow/ice must be immediately scraped up.
- For spills on thin ice, in situ burning should be considered but this requires regulatory approval.
- Remaining contaminated snow can be placed in drums or in a lined berm (on land) for subsequent approved disposal.

3.4.10 Spills Into Water

It is important to immediately control the release of liquid product spilled into water and to contain it to the immediate spill area if possible. Assuming that product has entered water, actions to be taken can include:

- Contain spill as close to release point as possible
- Contain the spill as close to release point as possible: deploy boom (s) to contain the spill area or to deflect the liquid product into a backwater area if available for containment/recovery of product. The effectiveness of this action can be limited by winds, currents (in the case of moving water) and other factors.
- Apply absorbent pads and similar materials to capture small product spills on water.
- Absorbent booms can be drawn in slowly to encircle spilled product and absorb it. Absorbent booms are often utilized as a secondary barrier to recover any hydrocarbons that escape containment booms.
- Contaminated material must be subsequently placed in drums or portable tanks for subsequent approved disposal.
- In the event of a larger spill on water, immediately seek the assistance of the Mine Manager / Spill Response Team. Refer also to the Marine Oil Spill Response Plan in Appendix C.
- A skimmer may be deployed once a boom has been secured to capture the spilled product. The skimmer utilizes a mechanism to draw and recover hydrocarbons. It is then pumped through hoses to empty fuel drums or other temporary liquid storage devices.
- Spill response personnel will be trained and prepared for open water response situations. The personnel will be prepared and equipped for rapid response given that open water conditions

3.4.11 Spill of Explosives

Should an explosive component spill occur, the spill will be managed under the direction of the blasting contractor. A spill from a truck on the access road or elsewhere within the property would be managed by the Proponent's staff as any other fuel spill.

3.5 Rehabilitation

In the event of a large spill or a spill where not all the spilled liquid product can be readily cleaned up with materials on hand (as described above), delineation of the affected area may be required. This could include subsurface investigation of the area (i.e., digging of test pits, soil sampling, installation of monitoring wells) to determine the horizontal and vertical extent of the spill in the soil and groundwater.

For spill-related field monitoring programs that may need to be implemented, samples collected for chemistry and benthic community assemblage assessment would include at least one upstream sample (for reference purposes) and multiple downstream samples. All other endpoints would normally include an upstream and downstream sample only.

The results of such monitoring would assist in the development of an appropriate remediation plan for the affected area. In these cases, qualified environmental consultants would be retained to provide advice on how to proceed with delineation monitoring and remediation of the spill.

Following initial spill response and containment, the approach to final cleanup and restoration of the affected area will be discussed and a plan developed in consultation with the applicable inspector prior to implementation. Where necessary, site-specific studies may be undertaken by external contractors or environmental consultants to ensure appropriate cleanup objectives are met and a site-specific approach for soil replacement and revegetation is implemented.

3.6 Disposal

Disposal requirements will vary depending on the type of contaminant that was released, the media that is contaminated, the volume of contaminated material, the presence of any debris, and the location of the site. As such, following a release, a Site Professional (e.g., an environmental consultant) will be retained to assess the situation and collect representative samples of the waste material for laboratory analysis to determine appropriate handling and disposal requirements.

Most soil disposal sites will require sample analytical results prior to accepting the material. Depending on the analytical results, contaminated soils may be acceptable at some facilities but not others. Disposal sites that can accept contaminated soils (pending approval of laboratory results) include the following:

- GFL Environmental Limited Guysborough Municipal Waste Facility
  151 Waste Management Road, Boylston, NS B0H 1G0
  Phone: (902) 232-2316

- Atlantic Soils & Associated Management Limited
  PO Box 40, Merigomish, NS B0K 1G0
  Phone: (902) 396-4110

- Groundfix Remediation Services
  144 Mingo Road, Kemptown, NS B6L 2N9
  Phone: (902) 293-8080

- SRT Soil Remediation Technologies Limited
  2 Cono Drive, PO Box 2129, Dartmouth, NS B2W 3Y2
  Phone: (902) 435-7645

- Envirosoil Limited
  927 Rocky Lake Drive, Bedford, NS B4A 3Z2
  Phone: (902) 835-3381

- Victoria County Bioremediation Facility
  445 Old Margaree Road, Baddeck, NS B0E 1B0
  Phone: (902) 295-2026

Liquid and specialized wastes can be disposed of by GFL Environmental Limited at various locations throughout Nova Scotia, including:

- 660 MacElmon Road, Debert, NS B0M 1G0
  Phone: (800) 933-5959

- 203 Aerotech Drive, Goffs, NS B2T 1K3
  Phone: (902) 835-9095

- 25 Akerley Boulevard, Dartmouth, NS B3B 1J7
  Phone: (800) 933-5959

- 673 Keltic Drive, Sydney, NS B1L 1B6
  Phone: (800) 933-5959

Any solid or liquid wastes must be transported in appropriate vehicles by contractors with applicable licenses, permits, signage and insurance. Prior to disposal, all contaminated waste will be stored in totes, barrels, or in covered stockpiles for protection from the elements. Any contaminated material should be kept segregated from non-contaminated materials.

3.7 Reporting

The Mine Manager acting as Response Commander is ultimately responsible for ensuring the Spill Response Form in **Appendix A** is completed, although this task may be delegated to the HSE Coordinator or others.

In addition, in the event that the spill (i.e., accident or malfunction) has the potential to cause adverse environmental effects, the Mine Manager of if designated the HSE Coordinator shall:

1. notify[3] relevant federal and provincial authorities and Indigenous groups of the accident or malfunction as soon as possible and, in writing, the Impact Assessment Agency of Canada (IAAC);

2. submit a written report to IAAC no later than 30 days after the day on which the accident or malfunction took place. This report shall also be submitted to the Nova Scotia Department Environment and Climate Change. The written report shall include:

   - a description of the accident or malfunction and of its adverse environmental effects of the accident or malfunction;

   - the measures that were taken to mitigate the adverse environmental effects

   - any views received from relevant federal and provincial authorities and Indigenous groups with respect to the accident or malfunction, its adverse environmental effects or measures taken by the Proponent to mitigate adverse environmental effects;

   - a description of any residual adverse environmental effects, and any additional measures

[3] As required by IAAC 7.4 (a federal condition of Environmental Assessment Approval).

required by the Proponent to mitigate residual adverse environmental effects; and

- details concerning the implementation of the SPC and ERP.

3. In addition, BPAI shall submit a written report to the Impact Assessment Agency of Canada no later than 90 days after the day on which the accident or malfunction took place, on the changes made to avoid a subsequent occurrence of the accident or malfunction, and on the implementation of any additional measures to mitigate residual adverse environmental effects taking into account the information in the initial written report referenced above.

4. Administrative

4.1 Training

As noted, the purpose of the SCP is to provide a guide to all site staff in the event of an accidental release of fuel or other hazardous material. The SCP identifies key response personnel and their roles and responsibilities in the event of a spill, as well as the equipment and other resources available to respond to a spill. All persons involved with the Project must read and be familiar with the SCP. All staff will be expected to know the following:

- Location and content of the SCP;
- Properties and hazards associated with the chemicals being handled;
- Inventory and proper use of the spill response kit;
- Required appropriate personal protective equipment (PPE); and
- Required notification procedures to be employed in the event of an incident and details to be communicated.

All members of the Spill Response Team will be trained and familiarized with the spill response resources, including their location and access, this SCP and appropriate spill response methodologies and reporting. Training for Spill Response Team members will include large Level 2 events. Fuel handling crews will be trained in the safe operation of the tank farm, spill prevention techniques and initial spill response actions (Table 7).

A typical training session will include review of the components of the SCP including:

- The Spill Contingency Plan itself
- Initial actions and spill reporting procedures
- Individuals' roles and responsibilities regarding spill prevention, detection, response and clean-up
- Location(s) of hard copies of the SCP, maps and spill kits
- Equipment available for spill response
- Content of spill kits
- Spill response and clean-up strategies and techniques.

The commitment to communication will ensure that employees are trained in their responsibilities according to the SCP. Site wide communication of basic SPC responsibilities will be shared with new employees as part of their orientation. Ongoing revisions to the SCP will be communicated once approved.

Table 7: Summary of Emergency Response Training

Name of Training	Who	Review/Renewal
SPC Training	All BPAI staff and external contractors	• At initial orientation to site then annually
Incident Command Structure	Mine Manager, HSE Coordinator, ERP Coordinator, Operations Manager, Maintenance Manager, Accounts Manager, Mine Rescue Captains.	• Yearly review of ERP/SCP • Annual review of company structure within SCP • Table top exercise (2 years)
Incident Command Center	Mine Manager, HSE Coordinator, ERP Coordinator, Operations Manager, Maintenance Manager, Accounts Manager, others identified in IC Structure	• Annual review of company structure • Tabletop exercise (2 Years)
Site Orientation	Guysborough County Volunteer Fire Department	• First week upon hire / annual review • At contractor first site visit / annual renew
Mine Emergency Response Plan	Mine Manager, HSE Coordinator, ERP Coordinator, Operations Manager, Maintenance Manager, Accounts Manager	• Initial training • Annual Review

4.2 Exercises

Response training will include spill response exercises where attendees will take appropriate actions and deploy suitable equipment and materials to combat a specifically designed, realistic, spill scenario. The simulated spill will involve a test medium which poses no environmental hazard but behaves like those requiring a response if spilled.

Spill exercises will be undertaken once per year, alternating summer and winter conditions, and at locations representing the range of environmental conditions that exist. Popcorn, puffed wheat or a heavier inert substance will be used to simulate the “spill”.

Worker orientation sessions will be held prior to the start of each season or operations year. This will ensure all returning individuals receive a refresher while any new individuals become familiar with on-site spill prevention and response measures.

All training exercises will address the following:

• validate the contingency plan;

• confirm the effectiveness of response training;

• practice response techniques and procedures;

• develop improvements in response procedures; and

• introduce new concepts for future exercises.

BPAI will retain records of all individuals who attend the training session and exercises, as well as copies of their training certificates (e.g., first aid, WHIMS).

4.3 Maintenance of Response Equipment

Equipment inspection and maintenance including upgrading outdated or expired equipment and supplies is the responsibility of the HSE Coordinator. Inspections will be undertaken on a regular, rotating basis and will be documented by the HSE Coordinator. Emphasis will be placed on areas of known potential hazards such as the Tank Farm and Maintenance Facility but the HSE Coordinator will also inspect the site for emerging new hazards so they can be documented and inserted into training sessions.

Preventative equipment maintenance will be performed to help prevent spills. Preventative maintenance will include:

- Regular inspection and maintenance of heavy equipment and site vehicles, including conveyors, fuel transfer hoses and fuel/oil lines;
- Identified equipment or vehicle deficiencies will be repaired.
- Tanks used for transporting greywater will be regularly and properly inspected and maintained by the operator.
- Drips that make contact with the ground will be cleaned up immediately.
- All vehicles and camp units will be equipped with fire extinguishers

4.4 Updating

At a minimum, this SCP will be updated annually to ensure that the plan continues to meet the requirements and guidelines set forth by regulatory agencies.

The annual review process will:

- Review changes in company policy, industrial emergency planning standards, industrial codes of practice, or applicable legislation (federal, provincial, municipal);
- Record in writing on a Record of Plan Review table at the front of the SPC Plan, each amendment to the plan. The most common amendments include telephone listings, named response personnel, equipment available, list of dangerous goods handled, and emergency services available;
- Following an exercise or an incident involving the activation of the plan, the response should be evaluated via debriefing sessions, and the plan upgraded and modified as necessary; and any revisions to the plan should be reviewed and approved by the Mine Manager.

Appendix A

Spill Report Form

Spill Report Form

Spill Date: _____

Reported by: _____

Time reported: _____

Actual time of spill: _____

Time of clean-up commencement: _____

Location of spill: _____

_____

_____

Weather: _____

Description of the source of the spill and cause of the release. Reference relevant photos and attach.

Substance spilled: _____

Quantity spilled: _____

Incident reported while on-site to: _____Time_____

Names of individuals or parties involved in the cleanup:

Materials and methods used to respond to the spill:

List any safety or health concerns that result from the spill:

Nature, extent, duration, and environmental effected:

How were contaminated materials disposed:

Corrective actions implemented while on site:

Was sufficient emergency response material available?

Did respondents know how to react correctly to the spill?

Immediate and longer term follow up actions for clean up:

Person responsible for follow up: _____

Preventative and corrective actions recommended:

Disposal receipt: ☐ Attached ☐ To Follow

Time and date the spill was reported to the regulators

Time: _____ Date: _____

Reported by:

Incident Report completed? _____By_____

_____

Print Name

_____

Signature

_____

Date

Appendix B

Safety Data Sheets (SDS)

Appendix C

Marine and Avian Marine Oil Spill Emergency Plan

Marine Oil Spill Emergency Plan

BPAI will construct and operate a 200 m long marine terminal and load-out facility, adjacent to the quarry, in Chedabucto Bay. Marine vessel fueling will not occur at the site. The Marine Oil Spill Emergency Plan outlines the steps to be taken to identify, contain and respond to a spill **from land into the marine environment**. Response to spills that occur as a result of fuel leaks from ships or tug boats will take place in accordance with the shipboard spill response plans specific to each vessel and will be further elaborated in consultation with Transport Canada during the Navigation Safety Assessment Process (NSAP). However, it is best practice for BPAI personnel to be familiar with the vessel's spill response measures to assist in rapid spill containment.

C1. Potential Contaminants

While spill prevention is the preferred manner to address spills to the marine environment, spill response is required in the event that a spill occurs on land and flows or otherwise reaches the ocean. A key to effective spill response is the timely implementation of controls and mitigation measures by following clearly established procedures.

Primary concerns related to spills of petroleum hydrocarbons to the marine environment include:

1. Potential spills or leaks from tanks or trucks used for fueling at the facility to the ground surface (resulting in groundwater seepage) or into the marine environment;

2. Potential spills or leaks during fuel filling and dispensing activities at the facility impacting soils, vegetation, marine life, or marine wildlife and potentially resulting in groundwater seepage) and/or into the marine environment;

3. Potential spills or leaks from storage containers to the ground surface (resulting in groundwater seepage) and/or into waterbodies; and

4. Potential spills or leaks from machinery, heavy equipment, or vehicles (e.g., ship loader) at the facility to the ground surface (resulting in groundwater seepage) or into the marine environment.

Surface water contaminants, if present, are captured in the immediate area of the fuel/oil storage containment or along the adjacent berm to prevent entry into Chedabucto Bay. No potential surface water pathways for contaminant transport to Chedabucto Bay have been identified. However, should hydrocarbons or other hazardous substances be present on the ground surface and seep into groundwater, release to surface water bodies is possible via groundwater to surface marine environment transport.

C2. Marine Oil Spill Response and Communication

As described in section 3.4.1 'Initial Actions', all spills that reach the marine environment should be considered a Level 2: Major Event. First responders will initially consider the severity of the spill and then proceed with the Initial Actions described below.

C2.1 Initial Action

Before responding to any spill, it is important to first **STOP** and **THINK**:

- Identify Hazards
- Assess Risks
- Control Risks

There are three basic priorities when responding to a spill:

✓ Respond Quickly

✓ Respond Safely

✓ Full Notification and Reporting

The following initial actions should be taken by the first person(s) who identifies a marine oil spill:

1. Be alert, ensure your safety and the safety of others first.
2. For a hydrocarbon spill, isolate, remove or extinguish all ignition sources.
3. Identify the spilled material (refer to SDS if necessary) and assess the hazard to persons and the environment in the vicinity of the spill or leak, identify escape routes.
4. Report the spill, leak or system failure without delay to the Mine Manager, who will in turn notify the Spill Response Team.
5. Before undertaking a response action proximal to the spill, ensure personnel have and wear the appropriate personal protective equipment (PPE).
6. Assess whether the spill, leak or system failure can be readily stopped or brought under control.
7. Control the source of the spill. Upright the container, plug the hole, or turn off valve/pump. Block spill drainage paths and, if possible, implement spill response measures at the site and appropriate Control Points.
8. If possible, without further assistance, control any danger to people and the environment.
9. Contain the spill by on land digging a berm, using absorbent materials, or diverting any additional spill away from the marine environment. Priority should be given to preventing any additional spill from entering the marine environment.
10. Clean up the spill safely using appropriate methods (e.g. scoop up or absorb) and/or according to the requirements of an Emergency Responder. Consult MSDS sheets for specific cleanup procedures
11. Gather information on the event and the status of the situation, including the nature, extent and approximate amount of the spill that remained on land and the amount that reached the marine environment.
12. Resume any safe, effective action to contain, clean up, or stop the flow of the spilled product. Await the arrival of the Spill Response Team.

C2.2 Containing Spills on Land with Potential to Reach the Marine Environment

The ability to contain and recover spilled materials is influenced by the spill location, the size and rate of release, transport and terrain conditions and the marine environment (current, wind, weather etc.). This information needs to be matched against the time needed to deploy response personnel and equipment. The following response elements need to be considered:

- Equipment and support material mobilization time
- Personnel mobilization, transmit and assembly at spill site
- Actual equipment set-up and deployment time.

The type and size of the containment method chosen will depend on the following factors:

Size of spill - Berms surrounding large spills that cover extensive areas are difficult and time consuming to build. Earth and snow berms may be more easily put into place than sand bag containment. It is also important to build the berm as close to the source as possible to minimize any spreading. Even a small amount of oil can spread quickly on water and can be quickly transported by wind and waves.

Terrain - Steep or varied terrain can make an effective response difficult, particularly with heavy equipment. Spills will travel faster on steep inclines and require faster response times. Larger, flat areas will require longer berms to contain a spill; however, spills travel much slower allowing additional time frames for the construction of barriers.

Soil types - Loose, coarse or dry soils will allow liquid spills to be absorbed and require additional work to remove contaminated materials. Frozen soils create a natural barrier that aids in clean up. Trenches or berms can be difficult to construct without the use of heavy machinery.

Proximity to water - It is important that every precaution be taken to ensure that spills do not enter the marine environment. If there is any possibility of contamination, the perimeter of the marine environment should be protected by diversion of the spill from the ocean.

Weather - Weather can play an important role in spill response operation, particularly if the ground is frozen (or beginning to thaw) or if the marine environment is dangerous. Marine wind and waves will increase the tendency for the spill to spread and pose a hindrance to the effective clean up.

Location - the location that the spill occurs will greatly influence the type of containment measures and the ability to successfully clean up the spill.

Daylight - during the winter daylight is at a minimum. This greatly reduces the ability to assess the spill and provide an adequate response. Insufficient light requires that additional sources be available to affect the cleanup.

Temperature - Air temperatures of the north, with the extremes during the winter, demand attention by response personnel to ensure the safety of the response team. Although the extreme cold can be beneficial to the containment of a spill on land, it can also be detrimental in the efficiency and response time to control and contain the spill. Extreme cold water temperatures of the marine environment pose a hindrance to the effective clean up.

C2.3 Responding to Spills in the Marine Environment

It is important to immediately control the release of liquid product spilled into the marine environment and to contain it to the immediate spill area if possible. Assuming that product has entered the marine environment, actions to be taken can include:

- Employ the on-site workboat to deploy booms, absorbent pads, etc
- Contant Guysborough or Canso Fire Department
- Deploy boom (s) to contain the spill area or to deflect the liquid product into a backwater area if available for containment/recovery of product. The effectiveness of this action can be limited by winds, currents (in the case of moving water) and other factors.
- Apply absorbent pads and similar materials to capture small product spills on water.
- Absorbent booms can be drawn in slowly to encircle spilled product and absorb it. Absorbent booms are often utilized as a secondary barrier to recover any hydrocarbons that escape containment booms.

- Contaminated material must be subsequently placed in drums or portable tanks for subsequent approved disposal.

- In the event of a larger spill on water, immediately seek the assistance of the response team.

- A skimmer may be deployed once a boom has been secured to capture the spilled product. The skimmer utilizes a mechanism to draw and recover hydrocarbons. It is then pumped through hoses to empty fuel drums or other temporary liquid storage devices.

- Spill response personnel will be trained and prepared for open water response situations. The personnel will be prepared and equipped for rapid response given the open water conditions

Should an explosive component spill occur, the spill will be managed under the direction of the blasting contractor. A spill from a truck on the access road or elsewhere within the property would be managed by the Proponent's staff as any other fuel spill.

C2.4 Responding to Third Party Marine Spills

It is anticipated that spills generated by third parties and occurring off of the BPAI site may be observed or discovered by BPAI personnel. These could include spills in the marine environment, such as those generated by ships, barges, support vessels, or unrelated vessels.

In the event of an observed spill, the employee or contractor should notify the operator of the source of the spill as well as the BPAI Spill Response Team as described in Section 2.3. This should be reported to the appropriate regulatory bodies, as described in Section 3.7.

C3. Avian Marine Oil Spill Emergency Plan

This section describes potential emergency response measures in the event that seabirds or shorebirds have been impacted by a hydrocarbon spill originating at the BPAI quarry or marine terminal, or as a result of BPAI activities.

Individuals responding to an oil spill will follow the *National Policy on Wildlife Emergency Response* (Government of Canada, 2023). For oil spills in the marine environment, the Canadian Wildlife Service (CWS) has created methods that are preventative and responsive to emergency incidents, some of which are presented below (CWS, 2012). Certain methods are more suited for on shore, near shore, and at sea; therefore, it is important to determine the most suitable option based on the location of the spill.

C3.1 Hazing

Hazing is a method of preventing birds from coming in contact with oil by deterring them from an oil spill. It is important to implement hazing as soon as possible following a spill to reduce the interaction with birds with the oil. Some hazing methods require permits; for the purpose of this plan, methods that can be implemented quickly without permits are presented as options. The hazing methods presented in Table 8 are options to implement immediately following a spill (Chilvers, 2024, CWS, 2012):

Table C1: Offshore and Onshore Hazing Options

Hazing Options	On Shore	Offshore	Feasible at Night
Fences or Net off Areas	X		Yes
Aircraft and/or Drones	X	X	No
Motorboats		X	No
All Terrain Vehicles	X		No
Reflective tape and surfaces	X		No
Overhead wires	X		Yes
Predator or distress calls	X	X	Yes
Scare Devices, e.g., Breco buoys, phoenix wailer, legal propane cannons, blank pistols, pyrotechnical pistols firing crackers shells at < 495fps)	X	X	Yes
Human or predator bird decoys	X		No

C3.2 Disperse Oil

Dispersing the oil can prevent bird contact by rapidly removing or containing the oil on the water's surface. Mechanical dispersal methods such as booms, sorbents, transfer systems (e.g., pumps) and skimmers are recommended to be implemented immediately. Various types of booms are effective depending on the location of the spill. Netting and shore sealing booms are recommended for spills near the shore. Inflated offshore booms are recommended for oil spills offshore and in more harsh marine conditions (Government of Canada, 2023, CWS, 2012). Other options include oil dispersant products and surface washing agents approved by Environment and Climate Change Canada (ECCC) are recommended for offshore spills. Approved agents listed under the *Regulations Establishing a List of Spill-treating Agents* (Canada Oil and Gas Operations Act) include (Government of Canada, 2016):

- Corexit® EC9500A
- Corexit® EC9580A

The list of approved agents should be consulted prior to construction in case the list has changed.

Using the weather and environmental conditions to allow for natural disbursement may also be considered, following discussions with CWS (Government of Canada, 2023, CWS, 2012). In some cases, allowing for natural dispersing may be preferred.

Oiled Bird Emergency Responses

Bird collection and beached bird surveys can be implemented if birds become oiled. These options require individuals with authorization and a permit to collect and handle the birds. Bird collection would be

conducted either from a vessel or on the shore. Live bird collection would be prioritized above collecting deceased birds. Collection gear and equipment may include dip nets, cardboard boxes or cloth bags (to contain live birds), plastic bags for dead birds.

For live oiled birds, a humane response will be determined to rehabilitate, euthanize or have no human involvement following the National Policy on Wildlife Emergency Response (ECCC, 2022). The decision will be made considering the following factors:

- Conservation status of the bird
- Probability of successful rehabilitation
- Safety of personnel
- Environmental and geographic constraints
- Available resources
- Potential impacts to birds
- Recovery time for the bird
- Type of incident and degree of exposure
- Specific regulatory agency policies

Beached bird surveys along the adjacent shoreline of a spill should be implemented as soon as possible following the oil spill until one week following spill clean-up. CWS or equivalent staff are recommended to oversee the collected of beached birds. Bearched bird surveys will continue for one week after the date that the oiled birds ceases to show up on beaches, regardless of how long this occurs following the spill clean-up.

C3.3 Impacts on Birds and Habitats

Following a major oil spill at sea, the oil can reach nearby islands and coastlines impacting the lifecycles of various bird species. Marine birds and waterfowl are the most susceptible to impacts from oil spills as these species frequently congregate in groups and often breed in large colonies. Marine birds and waterfowl are sensitive to negative impacts of an oil spill year-round. Some species overwinter in Nova Scotia waters, spending all their time in the ocean where even a small amount of oil can compromise waterproofing and cause rapid onset of hypothermia. The most sensitive seasons for negative impacts of an oil spill to birds are spring migration (late March to May), breeding (May to July), and fall migration (late July to November). The potential impacts of a substantial oil spill to birds and their habitats for the Project are:

- Bird Mortality
- Alteration of habitat
- Sublethal and indirect impacts

Bird Mortality

Extensive avian mortality following exposure to oil following a major oil spill has been well documented. The greatest risk of oil to birds is loss of feather waterproofing, leading to loss of buoyancy, and onset of hypothermia in the cold waters of the North Atlantic. This is irrespective of health or age of birds. Additionally, offshore oil spills can have devastating impacts. (Wilhelm *et al*. 2007 and Haney *et al*. 2014). Oil spills close to the coast are likely to result in a greater mortality than spills well offshore. Wind and wave direction and intensity on the day of the spill and subsequent days will also have an impact on avian mortality.

Habitat Alteration

Marine oil spills can impact avifauna by directly altering their habitats, primarily through avoidance of the area. A study of the Exxon Valdez oil spill found negative effects on habitat use of 45% of species studied

(Day et al. 1997). Most of the affected species recovered within 2.5 years; however other species took longer to recover. In addition, habitat-related impacts can persist for decades following an oil spill.

Sublethal and Indirect Impacts

Exposure to contaminates in oil such as polycyclic aromatic hydrocarbons (PAHs) can have sublethal impacts to birds. Examples of sublethal impacts include mucosal irritation, hemorrhages, lesions, diarrhea, and anemia. These effects would hinder a bird's ability to survive and function in its marine habitat.

PAHs from oil spills can bind to sediments and soils, eventually entering the avian food chain via benthic invertebrates and fish. These impacts can have long term population impacts on avifauna. Documented sublethal impacts on birds following oil spills include differences in blood total PAH levels and blood parameters which implies impairment to organs (Alonso-Alvarez et al. 2007) and anemia (Walton et al., 1997).

C3.4 Monitoring of Effects

Rehabilitation of birds and their habitats is critical following an oil spill. In the event of an oil spill, a detailed monitoring plan will be developed. The monitoring plan will include short-and long-term monitoring and be developed in consultation with CWS and ECCC. A high-level discussion of monitoring options is presented below.

Avian Short-Term Monitoring

Avian monitoring will be implemented as soon as possible following an oil spill to determine the extent and impacts of the spill. Trained avian seabird observers will be assigned on all vessels and aircraft monitoring the spill. Monitoring will include details of all oiled and unoiled birds that are observed. Recommended data for collection includes:

- GPS coordinates,
- Approximate number of birds and species impacted
- Approximate number of birds and species not impacted
- Estimated number avifauna species at risk and conservation concern oiled and unoiled
- Photos

The purpose of at-sea or coastal surveys, as described in ECCC 2022b, is to get reliable densities of birds utilizing the area, which can then be extrapolated to obtain a robust estimate of total impacted birds.

Avian Habitat Monitoring

Following an oil spill, affected avian habitats will be monitored to determine if rehabilitated birds can return to their original habitats or be relocated. Monitoring of bird habitat will occur in the different seasons following the spill (spring, summer, fall, and winter) and may include the following:

- Visual monitoring of the habitats
- Delineation of affected areas
- Photos of affected areas
- Soil samples of affected areas for PAH testing
- Estimated abundance and diversity of birds using the habitat
- Delineation of vegetation loss from oils surfaces

Nova Scotia Department of Natural Resources (NS NR) will be contacted as needed for additional guidance regarding monitoring of avian habitats following an oil spill.

Avian Long-Term Monitoring

Long term monitoring of the impacts of an oil spill on birds and their habitat will be implemented by trained avian professionals following the acute phase of a spill. Directly impacted habitats will be monitored on an annual basis to determine when avian deterrents can be removed. Long term monitoring of impacts to birds at the population level will be implemented by using bioindicators to monitor the long term sublethal impacts. Bioindicators such as blood tests can help determine when a population may be recovering from a spill.

C3.5 Rehabilitation

Should a significant spill event occur and cause an impact to birds, a detailed rehabilitation plan will be developed by qualified environmental consultants. The rehabilitation plan will be based on desktop data, collected baseline data, and input from ECCC. A high-level discussion of examples of rehabilitation options are presented in the sections below.

Rehabilitation Facility

Collected live birds from oil spills that are selected for rehabilitation can be transported to a rehabilitation centre. Rehabilitation facilities must have the appropriate ECCC permits and operation in compliance with all applicable federal legislation. ECCC should be contacted for a list of approved facilities. Birds recovering in the rehabilitation centres, may either be released back into their original habitats or moved to approved wildlife parks for wildlife that cannot be released back into the wild.

Release to Original Habitat

Results of habitat monitoring should be consulted to determine if birds can be released into their original habitats. Key factors to consider prior to release of birds back into their habitats and into previously affected areas include:

- If the original habitat was impacted by the spill or not.
- If PAH concentrations in soil are exceeding provincial and federal guidelines for wildlife and avifauna.
- If the habitat is suitable for relocation (e.g., oil saturated areas, loss of vegetation)
- If other avian species successfully using the area.

Relocation

If the original habitats of the oiled birds are not suitable following a spill, relocation of the affected species may be recommended. Relocation of impacted birds following an oil spill has been successful for certain species (Selman et al., 2012). Birds should be relocated to suitable habitat for the target species. Supplemental feeding twice a day with the preferred food of the target species is also suggested to increase the chances of survival of relocated birds.

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Guidelines for Effective Wildlife Response Plans (ECCC 2022a)

Guidance and Protocols for Wildlife Surveys for Emergency Response (ECCC 2022b)

G*uideline for the Capture, Transport, Cleaning and Rehabilitation of Oiled Wildlife* (ECCC 2021)

Appendix D

Figure 1: Site Location
Figure 2: Site Layout and Project Components
Figure 3: Mine Plan and Emergency Response Equipment