

STATEMENT OF WORK

Sable Island Waste Management System Upgrade Sable Island National Park Reserve

November 22, 2019

Site: The site location is on Sable Island National Park Reserve. Sable Island is a remote island located approximately 300 km Southeast of Halifax Airport in the Atlantic Ocean. Access to the site is accomplished either by vessel and landing craft, by various types of charter fixed wing aircraft, or by helicopter. The project site is located at Main Station.

Transportation: For this project PCA will provide transportation to and from the island via fixed wing aircraft or helicopter for staff to Halifax airport. PCA's air charter contract is with Sable Aviation which operates a BN-2A Britten Norman Islander from Halifax Airport. Their address is 645 Pratt and Whitney Drive, Nova Scotia. If an alternate aircraft is used, PCA will provide details. The Contractor will be responsible for all transportation of staff to the YHZ Halifax airport. Equipment and materials to be delivered to Dominion Diving in Dartmouth, to be transported to the island via sealift. PCA will provide the sealift to the island, and unload the sealift on Sable Island. Equipment will be transported to the island via sealift, PCA will cover cost of sealift. Contractor to deliver all equipment to Dominion Diving Ltd, 7 Canal Street, Dartmouth NS. Loads to be less than 900 kg and be secured to pallets and wrapped to protect equipment from precipitation and sea spray during transport. An inventory of materials to be delivered must be provided and coordinate transportation with PCA. Include number of pallets, contents, weight of each pallet and TDG information.

General Description of Work: Work under this contract covers all materials, labour and equipment required for the removal of the existing waste incinerator and the supply and installation of a new multi-purpose waste incineration system and electrical components.

Sable Island NPR is a unique remotely located place and as such must be protected from any damage due to construction activities on the site. Preservation of existing ecosystem and wild life shall be given the highest priority during construction. Any damage which occurs shall be repaired at the Contractor's cost.

The Contractor shall be deemed to have experience working in remote location, become fully familiar with all conditions relative to carrying out the work. There shall be no consideration given to claims resulting from the Contractor's failure to carry out sufficient site investigations prior to quoting on the work.

Health and Safety: Health and Safety is of the utmost importance for PCA. Should an injury or medical emergency occur that requires expertise not available on the island, medical personnel must be flown in by aircraft which could take hours or days.

The Contractor is required to provide a site specific health and safety plan to PCA for review a minimum of 15 days before departing for the island. The Contractor is required to make any required edits prior to departing for the island and a copy of the final, approved plan must be on the island during the project.

All of the Contractors personnel, including sub-contractors must attend an island a 1 hour orientation upon arrival to Sable Island. Contractor to have daily tailgate safety meetings, when possible, PCA will participate in these meetings. Parks Canada reserves the right to stop all work at no expense to Parks Canada if health and safety concerns are noted.

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The Contractor must work in accordance with WHMIS and have the appropriate MSDS documentation on site for hazardous materials. Should the Contractor uncover a substance that could be considered hazardous during the project they must immediately notify the Operations Coordinator.

Known risks include working at heights, hot work, lock-out tag-out, and there is known asbestos in the door gaskets of the incinerator and in the roofing tar. Contractor to separate asbestos containing material from the other waste and properly identified and stored for disposal. See appendix for HAZMAT report. The incinerator may contain ash; this is to be factored into the removal procedures.

During hot work and for 2-hours after any activity with potential to produce ignition sources or excess heat, ensure the attendance of trained fire-watch personnel to monitor, investigate and respond to conditions. A final inspection of the hot work area and adjacent exposed areas shall be conducted 2 hours after completion of the work. Contractor to include hot work procedure in safety plan.

It is the Contractors responsibility to provide all required PPE to all site workers such as safety glasses, work boots, respirators, protective clothing, hearing protection, hard hats, etc. Parks Canada does not have PPE on site for the Contractors use.

Transportation of Dangerous Goods: All materials traveling by aircraft must adhere to transportation of Dangerous Goods Regulations. If you must transport hazardous materials, they must be packaged properly and be accompanied with proper TDG documentation. Documentation must be provided to the pilot prior to loading aircraft. All TDG requirements are the responsibility of the contractor.

Scope of Work: The current waste incinerator is located in the Incinerator Building near Main Station on Sable Island. It is powered via an underground 600v electrical line running from the APU building. The system has reached the end of its service life and the intent of this work is to replace the system with a fully function new system. The work includes but may not be limited to:

1. Remove Old Incinerator – The existing system is a Consumat System Inc, C-32PKD. This unit has an approximate total weight of 3000 kg (6600 lbs). The unit and smoke stack are to be dismantled and broken down into sections weighting less than 900 kg (1990 lbs) and stored on palletes at Main Station, for PCA to dispose of at a later date. Separate asbestos containing material into separate designated palletes.
2. Remove old electrical equipment, including 600v transformer, 50A panel, interior wiring to incinerator, etc. Store removed items securely on contractor supplied palletes (less than 900kg) at Main Station, for PCA to dispose of at a later date. Leave existing lights in place. Existing underground electrical line from APU Building to Incinerator Building to remain in place and be terminated at both ends and label as abandoned incinerator feed

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3. Supply and install new incinerator unit with all required components - Consumate System Inc, C-18PKD or approved equivalent. Process minimum 60 lb/hr Type 4 Pathological Waste. Dual chamber design with diesel burners. Unit must be broken down to fit through a 1219mm (48 inch) wide doorway, with components weighing less than 900 kg (1990 lbs.) Any required welding to be completed with an experienced welder, provide copies of certificate, and perform all manufacture required testing and preparation. Supply and install new fuel line, with ball valves on both sides of the wall and new fuel filter system, running to fuel storage area in adjacent room through concrete block wall, as per manufacture recommendations.
4. Supply and install new vent stack, with support wires, as per manufactures specifications. Install new stack in existing roof penetration. Support wires to be stainless steel 304 or 316, and tied into existing mounting points on the roof with SS turnbuckles. Scrape, prime and paint existing mounting points with black metal epoxy paint. Supply and install new roof flashing and waterproof membrane around the stack roof penetration and ensure it is water tight, and can handle the high temperatures from the unit.
5. Supply and install new electrical equipment – splitter box, 20A-2P enclose breaker, 600v-120/240 7.5kva transformer, 100-amp panel board, grounding wires and rods, teck cable to the incinerator, labels, in the same locations as the existing items. See attached single line drawing for reference.
6. Supply and install new electrical power feed run on grade approx. 350m long. Teck 90 Cable, RW90, 1000v, interlocking aluminium, PVC moisture resistant material FT4 rated, UV resistant, black colour, from the APU power supply building to the Incinerator building, and connect into the power system. 3 conductor #4 AWG. Run on grade, except where line crosses existing roadway. Two locations the feed to be buried 1150 mm deep, non-pressure treated boards placed 150mm above feed, with red tape, approx. 40 m total length to be buried. See appendix for proposed route.
7. Temporarily remove and reinstate the staircase at the Incinerator building to complete the work. Remove existing door and frame to the incinerator room and replace with new corrosive resistant fibreglass door and frame from Edwards Door System or approved equivalent, matching the existing size. Hurricane rated, polyurethane core, stainless steel (304/316) hinges, handles and latch. Door to have weather stripping seal and door sweep. Break down old door and frame and secure on pallets for disposal. Provide 4 copies of the keys upon completion.

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8. Carry out all required electrical installation and connections as required with a certified electrician licensed in the province of Nova Scotia.
9. Commission new unit and demonstrate functionality once installation is complete to the Departmental Representative. Contractor to remain on island until unit is fully functional.
10. Submit O&M manual for new equipment, with all components identified, suppliers, cut sheets, manufacture drawings, red-line drawings, maintenance requirements, warranties, etc. Submit digital version in pdf format on a flash drive and 3 paper copies in 3 ring binders.
11. Provide remote training from manufacture on the operation of the new system. Provide a video from the manufacture demonstrating the full operation of the unit. Outline any maintenance requirements. Provide a 3-hour video conference call with the manufacture to discuss any concerns about the new system for the PCA staff.
12. The Contractor shall supply all labour, tools, materials, equipment, and supervision necessary (unless specified) to perform the prescribed work. Contractor is responsible to verify all measurements and sizes on site prior to ordering new equipment. PCA will provide one flight to Sable Island after award for up to 3 contractor staff to inspect the work area and take all required measurements.
13. Execute cutting, fitting and patching required to make work fit properly. Seal all wall penetration with Dymonic 100. Review items to be cut, fitted, patched, etc.

Equipment on the Island:

1. PCA operates a Bobcat T650 skid steer on the island with a 900kg/2000 lbs lifting capacity. PCA will operate the machine, which can be used during the project.
2. PCA operates a Lincoln Electric AC/DC 225/125 stick welder unit on the island. This unit is available to the contractor to use on the project, contractor to provide all consumables and PPE to complete any welding work and trained welding personnel. If larger welding equipment is required, contractor is to supply their own and transport on the sealift with the other equipment.

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Contractor Duties:

1. All products and materials shall be new.
2. Order products specified from designated suppliers. Order in quantities and at times compatible with construction schedule and site storage capacity.
3. Transport, unload and handle before shipping to the island via sealift. PCA will unload sealift when it arrives on the island.
4. Promptly inspect delivered products, and give written report to the Project Manager on condition of all items received. Contractor to provide secure storage for purchased equipment prior to sealift to Sable Island, and transport all equipment to Dominion Diving in Dartmouth for loading on the sealift.
5. Pay demurrage charges.
6. Provide all tools and lifting equipment to complete the work.
7. Install, connect and finish products as specified.
8. Submit shop drawings, cut-sheets and equipment and product information for all items used on the project to Departmental Representative for review, as soon as possible after award, and to allow for materials to be shipped to meet the schedule.

Documents Required on site:

1. Specifications.
2. Addenda.
3. Reviewed shop drawings.
4. Change orders.
5. Other modifications to Contract.
6. Field inspection and test reports.
7. Copy of approved work schedule
8. Manufacturers' installation and application instructions.
9. All required provincial and federal safety requirements.
10. Site Specific Safety Plan

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Electrical equipment:

1. Enclosed moulded case circuit breaker, 600v, 20a, 2 pole, 10,000KA interrupting rating, NEMA type 4x enclosure, heavy duty. Supply spare 20a fuse.
2. 7.5kVa Epoxy encapsulated transformer, 600-120/240VAC, single phase.
3. Panelboard, 100A, 120/240, 3 wire, 24 circuits, surface mount, main lugs, single phase, Square D, NEMA 12 enclosure and branch breakers. Supply breakers to service new equipment, with spare 30A and 20A breaker. Load balance.
4. Splitter box, 600v, 60A, single phase, 3W, NEMA 12 enclosure and splitter blocks.
5. Ground rod copper clad steel, 21 mm diameter, 3m long.
6. Provide lamicoid nameplates on all equipment (electrical and mechanical), and abandoned power feed, with voltages, amp rating etc. listed.
7. Provide new fire retardant plywood for mounting equipment to walls, and use stainless mounting hardware.
8. See attached Single Line Diagram for reference.

Site Pictures: Contractor is responsible to take preconstruction pictures of the building, existing systems, new systems, the surrounding grass and work area, progress pictures and of the completed work. Supply pictures to Parks with the O&M manual submission. Digital format is acceptable on a contractor supplied thumb drive.

Accommodations on Island: Accommodations for contractors will be provided by PCA at no cost. Accommodations will be in available housing on the island in shared "dormitory" style rooms with common kitchen, washroom, and lounge areas and private or semi-private bedrooms. Bedrooms will be shared is dependent on building occupancy. There can be as many as 4 to a room in busy times. Contractor staff may be asked to group together in bedrooms at any time as required by the Parks Canada Operations Coordinator.

All Contractor staff are required to supply their own bedding, including pillows, towels and toiletries. There are laundry facilities on site and soap is provided. Toilet paper is provided. All Contractor staff must supply their own food, however kitchen facilities and potable water are provided. Glass bottles are discouraged. Contractor is requested to transport goods in recyclable plastic containers or cans where possible. Basic dishes, utensils, spices, appliances, cleaning supplies, etc. are provided. Contractor staff shall leave the facilities clean and are required to do their share of cleaning in a busy environment. Composting facilities are provided by Parks Canada for food waste. Garbage and recycling are picked up by PCA staff. Contractor staff shall remove their excess food when they leave the island, ensure the refrigerator is clean and empty and bedrooms are clean.

At start of project the Contractor must indicate how many staff will be on the island to complete the work and expected duration.

Communication on the Island: There is access to phone and internet that is subject to some restrictions. Use of these systems will be outlined by PCA Operations Coordinator. Streaming, gaming, heavy down/up loading, etc. is not permitted. There is Satellite TV in the common area of the Visitors Quarters to be shared with all users.

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Handheld radios may be provided to the Contractor to communicate with PCA staff. Should damage occur to the radio due to careless behavior, the cost to repair or replace may be the responsibility of the Contractor based on PCA discretion.

Wildlife: The Contractor must provide a 20 metre buffer between personnel and wildlife, which includes horses, seals and bird colonies. Should wildlife approach personnel while on the island or while working, you must attempt to safely move away and continue to provide a 20 metre buffer. Should wildlife become an issue, or you observe wildlife in distress, contact the Operations Coordinator.

Expected Weather: Sable Island has a unique weather environment that can be difficult to predict and can change within a short period of time. The Contractor **must be prepared to experience delays getting to and getting off the island** and downtime on the island when work cannot be completed due to weather such as high winds, lightning storm, heavy rain, fog, etc. The Contractor **must consider the high likelihood of weather delays** when procuring food, medical prescriptions and other supplies for the duration on the island and should not rely on planned re-supply flights to arrive on scheduled date. It is essential that should any member of the Contractor's work team require essential medication that they come to Sable with **at least double** the supply necessary for the length of stay. Should the Contractor run out of food due to extended delays in resupply or getting off the island, food can be supplied from Parks Canada at no cost to the Contractor.

The Contractor must review the weather forecasts on a daily basis to determine which days are best suited to work outside and/or work inside. Should the weather or other circumstances prevent safe working conditions outside the Contractor will make every effort to avoid downtime for on island staff. Should downtime be unavoidable, the Contractor must discuss with the Departmental Representative immediately. As stated delays are common both attempting to get on and off the island. Expect delays due to weather during. Contractor will not be compensated for delays while waiting on the mainland for flights to the island. Plan to have a potential of 3 days waiting for a schedule flight to return to the mainland after work is complete. Any potential delays must be reported to the Departmental Representative immediately. Any agreed delays will be negotiated using a daily standby rate.

Work Schedule:

1. The Contractor to submit work schedule, Gantt Chart format, to the Departmental Representative within five days of award of the Contract for approval by the Departmental Representative. Schedule will be approved or reject in writing. Rejected schedules to be revised within 5 days.
2. Equipment shall be ordered and stored in Halifax arriving before March 15, 2020, in preparation to be transported to the Island via barge in April/May 2020 (weather pending). Equipment to be delivered to Dominion Diving prior to scheduled departure date for loading, coordinate deliveries with PCA and Dominion Diving, and receive permission before delivering items.

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3. Removal of old equipment after the new equipment is delivered to the island. Depending on weather and station occupancy, work could be completed on the island from May 1 to October 31, 2020.
4. All work shall be completed by November 1/20.

Measurement and Payment: This project will contain several Lump Sum items. There shall be no measurement for payment associated with the work, completed items can be progress billed. Final payment will be release once the system is fully commissioned.

1. **Mobilization/Demobilization.** This will include all costs not included in any of the other items, and will include overhead, food, supplies, moving equipment to Dominion Diving in Dartmouth for the sealift., transportation to the airport, training, etc.
2. **Supply new incinerator unit and associated components.** This will include the cost to procure, receive, and provide storage for the incinerator and associated components in Halifax. Equipment to be received prior to March 15, 2020, once inspected and confirmed by PCA staff this item can be progress billed.
3. **Supply new electrical equipment and associated components.** This will include the cost to procure, receive, and provide storage for the power feed teck cable, breaker, transformer, splitter, panel board, grounding system, etc. and associated components in Halifax. Equipment to be received prior to March 15, 2020, once inspected and confirmed by PCA staff this item can be progress billed.
4. **Supply misc. equipment.** This item to include all costs for equipment not included in other supply items, including the new door, pallets and debris bags for waste storage, etc.
5. **Remove existing equipment.** This item to include the removal of existing incinerator, stack, electrical equipment etc., from the incinerator building and the relocation to the designated storage area and secured on pallets.
6. **Install new incinerator.** This item includes all the associated costs for the installation and assembly of the new incinerator, stack, fuel lines, valves, roof penetration flashings etc.
7. **Install new electrical feed and equipment.** This includes the costs for the installation of all new electrical equipment, ground and running the new power feed from the APU building to the incinerator building, all excavation required where the line crosses roadways, etc.

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Codes and Standards: All work shall conform to applicable Acts, Regulations, Codes and Standards, including but not limited to the most recent version of the following:

- a. National Building Code of Canada
https://www.nrc-cnrc.gc.ca/eng/publications/codes_centre/2015_national_building_code.html
- b. National Fire Code of Canada
https://www.nrc-cnrc.gc.ca/eng/publications/codes_centre/2015_national_fire_code.html
- c. Canada Labour Code Part II
<http://laws-lois.justice.gc.ca/eng/acts/L-2/index.html>
- d. Canada Occupational Health and safety Regulations
<http://www.fallpro.com/fall-protection-info-center/regulations/canada-federal/>
- e. Canadian Electrical Code
- f. All work must be performed in conformance with the attached Basic Impact Assessment (BIA).

Waste: The Contractor shall dispose of all waste material at the end of each day as per the direction of the Operations Coordinator. At the conclusion of each work day, the work site must be clean, and safe for persons entering the worksite. At the end of the project, the Contractor must remove all personal belongings, excess materials, excess supplies and excess food from the island upon departure. Relocated removed equipment to be store in designated area by Departmental Representative, all old equipment to be stored and secured on contractor supplied pallets for disposal by PCA at a later date.

Contract Meetings: Shortly after contract award a pre-construction meeting will be required in Halifax between a PCA Representative and the contractor and key subcontractors to discuss a schedule, plan of work, safety, etc. Attend project meetings at times and locations approved by the Departmental Representative. Parks will record notes of meetings, and distribute to all parties

Point of Contact: The overall project will be managed by the Departmental Representative (located in Halifax) and the day to day activities on the island will be managed by the Operations Coordinator (on the island) or other designated personnel. Any contractual issues, contract changes or amendments must be discussed with and agreed to in writing by the Departmental Representative. The Departmental Representative will be identified during the pre-construction meeting.

Warranty: Provide a written warranty for a period of one (1) year following the date of accepted commissioning/demonstration. The warranty shall cover all labour and materials required to repair or replace any defects and/or malfunctions in the controllers or the connections to adjacent related systems, and remote troubleshooting with the manufacture. PCA will provide flights for any warranty work.

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Sable Island National Park Reserve**

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Appendix

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Sable Island Waste Management System Upgrade Sable Island National Park Reserve

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STATEMENT OF WORK

**Sable Island Waste Management System Upgrade
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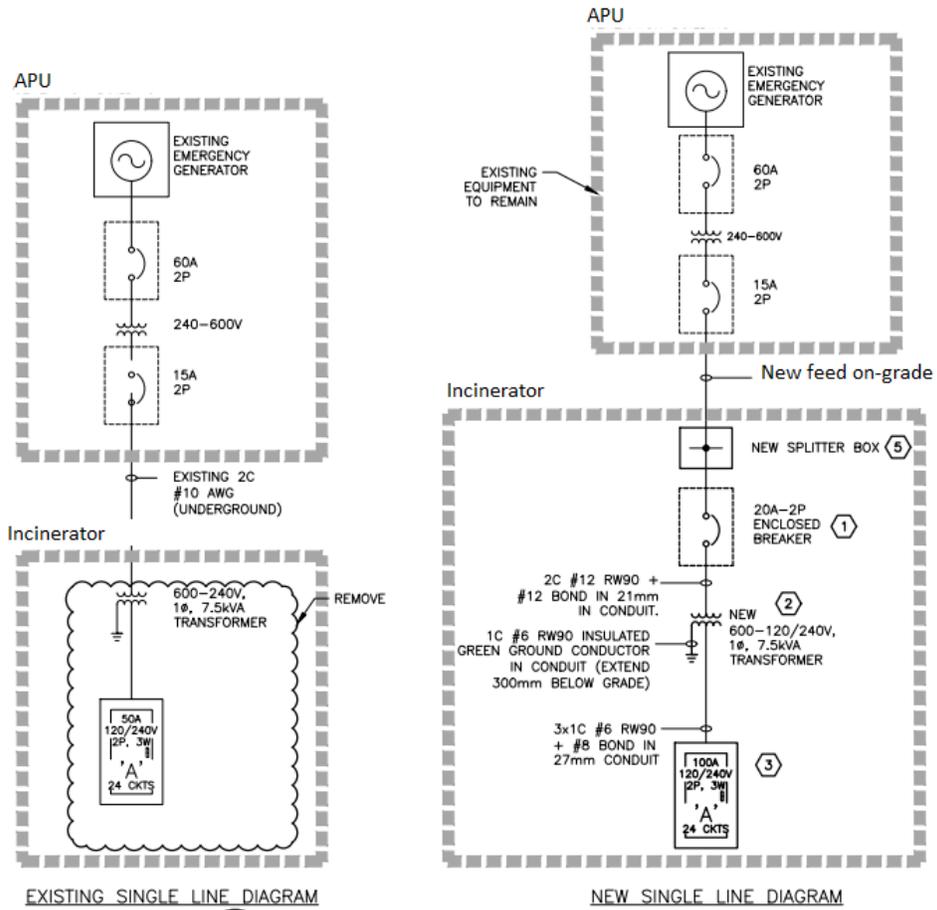


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DEMOLITION PLAN—Electrical



EXISTING SINGLE LINE DIAGRAM

NEW SINGLE LINE DIAGRAM

1 SINGLE LINE DIAGRAM
- N.T.S.



Parks Canada Basic Impact Analysis

1. PROJECT TITLE & LOCATION

Sable Island – Waste Incinerator Upgrade
Sable Island National Park Reserve, Mainland Nova Scotia Field Unit

2. PROPONENT INFORMATION

Jonathan Nash, Project Manager, Parks Canada, 902 402 1743

3. PROPOSED PROJECT DATES

Planned commencement: 2019-11-12
Planned completion: 2020-12-31

4. INTERNAL PROJECT FILE

MNSFU-25-2019-SI

5. PROJECT DESCRIPTION

The existing incinerator system at Sable Island is a Consumat Systems unit that was installed in 1982. The unit, which is a critical piece of infrastructure on Sable Island and part of site's waste management system, has reached the end of its service life and requires replacement. The project footprint will be centred at the existing Incinerator building which will be accessed using existing roads with the skidsteer on the island.

The project entails decommissioning the existing incinerator with its disposal offsite. The existing unit will be disassembled, packed on pallets and placed in storage on the island until the next available sealift for removal off island. The new incinerator will be installed within the existing building, with upgrades made to the electrical system and new flashing installed around the new roof vent (Figures 1, 2, 3). The project will include laying of a new armoured Tech electrical cable from the APU building to the incinerator building, a distance of approximately 290 m, at grade, as part of the upgraded electrical system. Minor digging will be required to bury the new electrical cable where it crosses road ways and near the incinerator building.

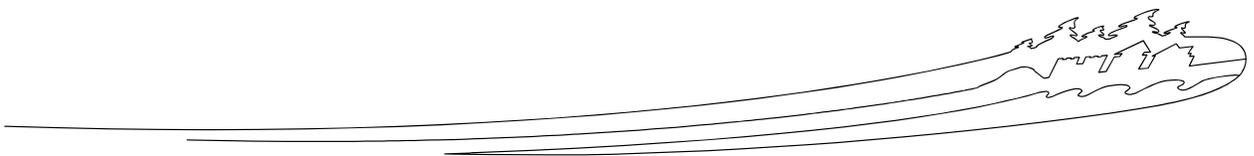
The waste disposal system will be offline until the new system is operational, so adequate preparation is required to ensure that there is sufficient storage capacity of waste at the Main station until the new unit is commissioned. The on site operations staff will need training in the new maintenance and operational procedures of the system.

Given the unique nature of the installation and location, the project has a moderately long time line. It is anticipated that the project will go to tender in autumn 2019. Equipment procurement and manufacture will occur through winter 2019/20, with materials shipped to the island in May/June 2020 and installation between September and November 2020.

6. VALUED COMPONENTS LIKELY TO BE AFFECTED

This project has the potential to adversely effect:

- Natural Resources (Species at Risk, Air Quality)





- Cultural Resources (Heritage assets)
- Visitor Experience.

The project site is confined with the existing infrastructure complex at the island's Main Station and is situated in an area designated Zone II (Wilderness Area) (Parks Canada, 2019). Motorized access within Zone II areas is not permitted except strictly controlled motorized access for research, park operations and outreach and education activities relating to the park that are authorized by Parks Canada and are consistent with Parks Canada policy and regulations. Ecologically Sensitive Site #1 represents critical habitat (nesting colony) for the Roseate Tern, which is located immediately adjacent and to the east of the existing incinerator building (Figure 4).

The Technical Document for Batch Waste Incineration (Environment Canada, 2010) provides guidance on the regulatory requirements and operational best practice of small scale batch incinerators and is applicable to this project. An important threshold for the operation of batch incinerators is 26 tonnes per year, above which additional operational, performance and monitoring requirements are applicable. The Sable NPR incinerator currently is operated approximately once per week, disposing of 4 to 6 bags of household waste per burn. If each bag is assumed to weigh 15 kg, (+/- 90 kg per weekly burn) the annual disposal rate is estimated to be 4.7 tonnes, well below the 26 tonne threshold. Up until 2019, the typical staffing complement at the island was four persons. Commencing in 2020, with the discontinuation of metrological staff, the typical staffing complement will be reduced to three persons, further reducing the generation of waste requiring disposal.

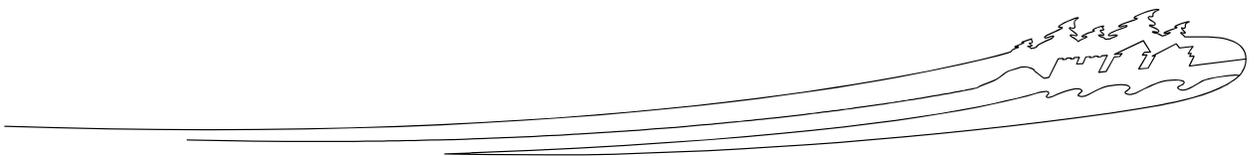
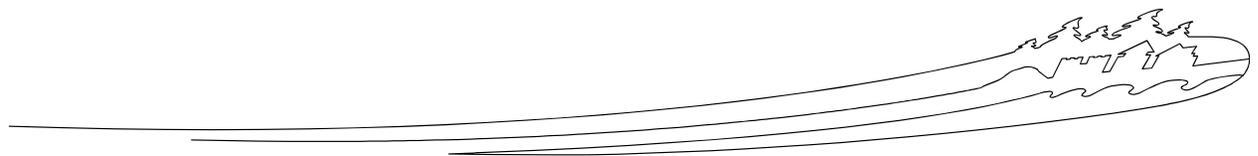




Table 1: Sable NPR Waste Disposal Practices and National Operational Good Practice (EC, 2010)

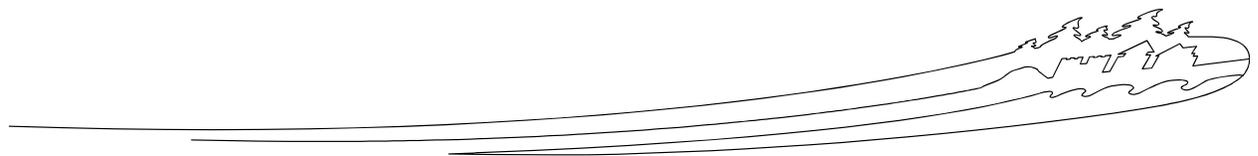
Guidelines for Operational Good Practice	Details	Current Practice at Sable NPR	Future Practice at Sable NPR
1. Understand Waste Stream, with the implementation of Reduce, Reuse and Recycle where ever possible	<ul style="list-style-type: none"> Sable NPR is actively working with contractors and visitors to minimize the amount of garbage brought to the island and requiring disposal. This is identified as a target in the Management Plan (2019). On site source separation and recycling practices are currently in place with the composting of organic waste. 	Yes	Yes
2. Use the Appropriate Incinerator.	<ul style="list-style-type: none"> The existing Consumat incinerator at Sable has been in operation since approximately 1984 and has adequately addressed the waste disposal requirements. The replacement unit is anticipated to be a comparable model with updated controls and monitoring equipment. 	Yes	Yes
3. Properly equip and install the incinerator	<ul style="list-style-type: none"> The replacement incinerator will be sized and installed in accordance with the operational needs of the Sable NPR and the manufacturer’s recommendations. 	Yes	Yes
4. Operate the Incinerator for Optimum Combustion	<ul style="list-style-type: none"> Wastes are sorted and bagged by type, weighed and loaded in the incinerator. Operators are appropriately trained. 	Yes	Yes
5. Safely Handle and Dispose of Incineration Residues	<ul style="list-style-type: none"> Residual ash from incinerator operations are currently collected as necessary in metal drums for storage and annually removed from the island and disposed of by a licenced waste contractor. 	Yes	Yes



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6. Maintain Records and Report	<ul style="list-style-type: none">Monitoring records on the type, amount, and frequency of waste disposal will be maintained. As the Sable NPR annual waste disposal via incineration is < 26 tonnes, mandatory reporting is not required.	No	Yes
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7. EFFECTS ANALYSIS

The objective of this project is to decommission and remove the existing waste incinerator at Sable Island and replace it with a new unit in the existing building.

Natural Resources

Potential impacts to natural resources from this project include damaging sensitive dune vegetation (compaction, erosion, sedimentation and contamination). Other potential effects include the loss or damage to native flora as well as the introduction and spread of non-native or invasive species.

This project will occur within horse habitat as well as in close proximity to habitat used by Common and Arctic Terns (including critical habitat for the Endangered Roseate terns). In addition, work occurs within habitat of the Ipswich sparrow (listed as “special concern” under SARA). However, the project has a relatively small footprint, being confined to the Main Station. The temporal phasing of the project will seek to have the work conducted when the SAR are not breeding. Vehicle use and the footprint of this project will be limited to pre-defined travel routes (pre-identified by parks staff on site).

Barn Swallows are a threatened species that have been seen at Main Station and West Light, but there have been no nests found in either 2018 or 2019. Critical habitat includes artificial structures such as outbuildings and large culverts. Parks Canada staff are not aware of any critical habitat within the bounds of project area.

The Sable Island Sweat Bee is a threatened species under SARA on account of it residing on a secluded island and is endemic to Sable Island. Nesting appears to occur in areas of bare or sparsely vegetated sand (e.g. trails), foraging occurs wherever there is a high density of flowering plants. Sweat Bees likely prefer stable sites without high sand deposition. At this time, no critical habitat has been identified, however, traversing sparsely vegetated areas should be avoided in order to protect potential nesting sites. Potential habitat taking into account these features is mapped out in Figure 5. Recent findings of over 100 Sweat Bee nests around the Main station confirms suitable habitat to be semi-open sand. Sweat Bee nests are not readily identifiable and require observation of open sand area to identify the use of access borrows. Surveys around any areas requiring digging will be conducted prior to work commencing.

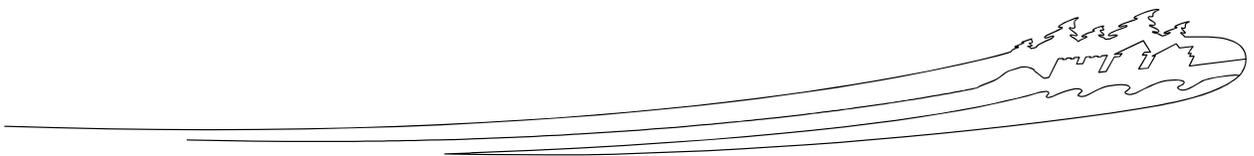
The Ipswich Sparrow is a migratory bird of special concern that primarily breeds on Sable Island. They are known to perch along the fences throughout the island and are found in heathland or dense marram grass growing on coastal dunes and beaches. On Sable Island, the species suitable breeding habitat is threatened by erosion. Caution should be taken to ensure that potential nesting sites are left undisturbed. area.

Cultural Resources

This project may disturb some artefacts through installation of burial of the armoured electrical cable under road ways. The proponent should be able to mitigate these effects.

Visitor experience

Impacts to visitor experience may include impact to landscape and visual aesthetics as well as noise disturbance during construction and access restrictions during construction. Sable Island National Park Reserve receives visitation throughout the summer months. The decommissioning of the incinerator and





installations of the new unit will occur outside of the main visitor season. The incinerator building is physically separated from areas frequently used by visitors, being located approximately 275 m to the south of the main complex. It is anticipated that the project will not have an adverse impact on visitor experience.

8. MITIGATION MEASURES

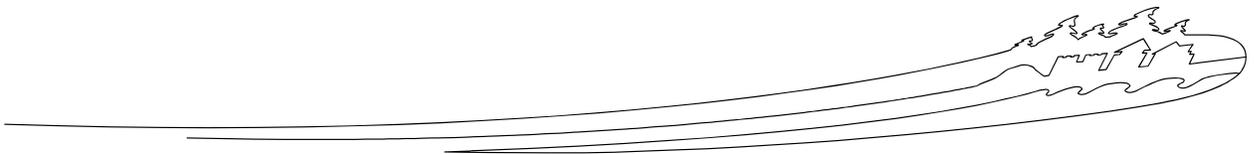
General

1. The contractors work will be overseen by Parks Canada staff.
2. Monitoring during the construction activity as well as post survey will be necessary to evaluate adherence to mitigations

Natural Resources

Direct Effects to natural resources can be mitigated by adherence to industry standards, OHS and Waste Management Regulations and additional mitigations:

3. Wildlife
 - a. Horses/seals:
 - i. The contractor will be required to attend a site debriefing once arriving on the island in which they will be informed they must provide a buffer of 20 metres from the horses.
 - ii. Seals are not expected to be in the area of work, but could be encountered while traveling to and from the sites. The same 20 m buffer will exist for the seals.
 - iii. Should wildlife approach personnel while on the island or while working, you must attempt to safely move away and continue to provide a 20 metre buffer. Should wildlife become an issue, or you observe wildlife in distress, contact the Operations Coordinator.
 - b. Terns/birds:
 - i. Construction equipment and personnel must remain on impacted roadways and will not venture into tern nesting habitat and project operations must avoid tern nest sites.
 - ii. The known **nesting period for the Roseate Terns are mid-May to late-July**. Due to timing of the project this species is not expected to be present or to be disturbed by the activities of this project.
 - iii. The nesting period for **the Ipswich (Savannah) sparrow is mid-to-late April to mid-August**. Before any movement of vehicles and contractor staff into the work sites is scheduled, the travel routes will be pre-defined and walked by parks staff.
 - iv. The contractor must provide a 20 metre buffer between personnel and bird colonies. At the planned time of construction, few, if any, birds are anticipated to be present.
 - v. Where movement of skid steer operated loader is necessary it shall be restricted to path of least disturbance and the travel with use of additional





mitigations (see “Dune Vegetation Retention and Erosion Control” section) and the route of travel has to be scouted before by parks staff.

- vi. Only Parks staff may operate vehicles and the loader on Sable Island.
- vii. If there is the potential to cause a negative effect on a nesting area, work will stop and be reviewed by the park ecologist.
- viii. Completing the project in a timely fashion would be a benefit as this is outside the nesting season for most birds.

c. Sweat Bees

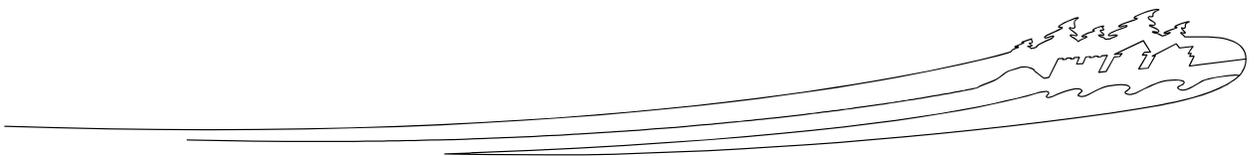
- i. Sweat bees are active from mid-may to late October
- ii. Sheltered, stable areas of bare or sparsely vegetated sand should be avoided unless absolutely necessary.
- iii. The project footprint will be kept at a minimum to reduce the risk of accidental encounter of a Sweat Bee nest.
- iv. Surveys in the area of any proposed digging will be conducted prior to the commencement of disturbance.
- v. Mitigations in the identified areas include:
 - 1. Prevent any disturbance to outlined areas if possible
 - 2. Foot traffic should be directed to minimize impacted to identified areas in Figure 5.
- vi. Observation of any life stage of Sweat Bees shall be reported to Parks Canada (PCA) Staff immediately and information will be reviewed by the park ecologist and the impact assessment officer (IAO)
- vii. If a nest is encountered, work will halt immediately and PCA staff, the park ecologist or the IAO will be informed immediately.

4. Vegetation and Erosion

- a. New electrical cable will be placed at grade and only buried where it crosses roads and enters the incineration building.
- b. Soil disturbance due to staging will be minimized to reduce footprint.
- d. Work should be done in an efficient manner that minimizes trampling of the area.

5. Dune Vegetation Retention and Erosion Control

- a. Vehicles, including skid steer should be limited to existing trails and must adhere to the Parks Canada BMP for Permitted Vehicle Use at SINPR.
- b. Travel routes contractor staff as well as vehicles that do not use pre-existing routes will be identified and pre-approved by parks staff.
- c. A route to and from the site and around the site will be scouted by Parks Canada staff to ensure the route is mostly, if not all, through marram grass and to avoid well established heath.

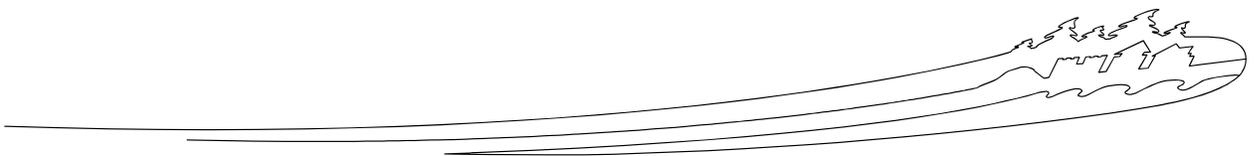




6. Fueling Equipment- Fuel storage and refuelling will be done in accordance with Best Management Practices developed for Parks Canada as follows:
 - a. All equipment shall be properly tuned, free of leaks, in good operating order and equipped with standard air emissions control devices. Vehicles found leaking petroleum products at the site will be ordered off site.
 - b. Petroleum product storage shall be off-site in secure areas.
 - c. The Spill Response Plan should be reviewed detailing the containment and storage, security, handling, use and disposal of empty containers, surplus product or waste generated in the application of these products in accordance with all applicable federal and provincial legislation. The Plan shall include a list of products and materials to be used or brought to the construction site that are considered or defined as hazardous or toxic to the environment.
 - d. Spill kits shall be provided at re-fuelling, lubrication, and repair locations that are capable of dealing with 110 % of the largest potential spill and shall be maintained in good working order. Site staff shall be informed of the location of the spill response kit(s) and be trained in its use.
 - e. Machinery (e.g., bobcats) should be stored, maintained and refuelled on a flat surface.
 - f. Refueling of equipment must only occur at Main Station. Refueling equipment at the remote sites is not allowed.
 - g. Timely and effective action shall be taken to stop, contain and clean-up all spills.
 - h. Island operations staff must be notified immediately of any spill. Spills may also be reported to the Environment Canada oil spill and pollution (24 hr.) reporting line: 1 800.565.1633. In the event of a major spill, all other work shall be stopped and all personnel devoted to spill containment and clean-up. The Project manager will notify the Environmental Surveillance Officer (ESO) of any spills and provide documentation and pictures of remedial action.
 - i. The costs involved in a spill incident (the control, clean up, disposal of contaminants and site remediation to pre-spill conditions) shall be the responsibility of the proponent. The site will be inspected to ensure completion to the expected standard and to the satisfaction of Parks Canada.

7. Demolition

- a. Special precautions should be taken during the demolition of structures to minimize destruction of vegetation. When possible, the use of heavy equipment should be minimized.
- b. Spill kits for any potential hazardous substance (e.g. sealants) should be available and present near work activities.
- c. If possible, deconstruct rather than demolish. Take all reasonable efforts to salvage and recycle as much material as possible to divert from landfill sites and reduce impact of transporting off island.
- d. Contractor must be aware of environmental constraints: harsh winds/gusts that may spread waste during demolition. Proper mitigation such as dust collection and collection mats have to be in place.





- e. Drop sheets shall be used below all material that may produce dust, chips, or debris.
- f. Any water generated from cleaning or removal operations must be appropriately contained, treated or disposed of in accordance with applicable legislation.

8. Waste Disposal

- a. Waste disposal and packaging has to follow Guidelines on Nova Scotia Environment's Landfills, as well as provincial and federal accepted best practices for disposal.
- a. The Contractor must collect all loose debris and package on pallets.
- b. Storage of debris removed from site:
 - i. minimize on site storage time
 - ii. Store on flat ground (slope less than 10%) more than 10m from high water mark
 - iii. Make sure storage bags are closed and not exposed to weather
 - iv. elevate to avoid contact with water runoff
 - v. inspect storage area for evidence of uncontained debris

9. Work Site Cleanup

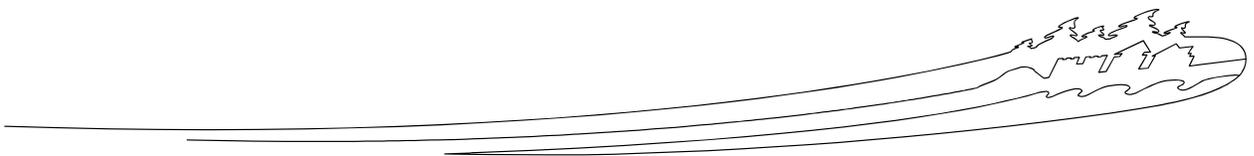
- a. Maintain a tidy work site
- a. clean-up of dust and debris at the end of each day to prevent debris being dispersed in the environment

Cultural Resources

Although the limited amount of excavation poses little risk to cultural resources, contractors and Parks Canada staff should be prepared to deal with cultural resources unearthed during this project. The electrical cable runs mostly at grade, but it will be buried underneath the road and underground as it approaches the building. The combined length of this underground trenching is less than 10m. The trenches in these locations will be approximately 1m deep. It is not necessary for an archaeologist to test these areas in advance, nor to monitor construction.

For safeguarding cultural resources, the following protocols and guidelines should be followed for both Parks Canada staff and contractors.

- 10. **Operations will halt immediately** should any cultural or archaeological resources be discovered. The discovery of such resources must be reported to the Sable Island Operations Coordinator immediately and shall not be disturbed prior to an archaeological assessment of their nature and significance.
- 11. The Sable Island Operations Coordinator shall contact the field unit CR Manager and the Terrestrial Archaeology unit immediately.
- 12. Staff and contractors must be prepared to deal with artifacts.
- 13. Staff and contractors should follow the precautionary principle. If something unexpected is exposed during clean-up, err on the side of caution and record what has been found. If those artifacts or potential archaeological sites may be impacted by further work activity, that work





should pause until such time that Parks staff can consult with experts on the items' historical or cultural value.

14. If artifacts are found, they must be photographed in situ (in place) and collected in plastic ziplock bags for analysis at the Parks archaeology lab in Dartmouth. These should be clear plastic bags labelled with permanent ink noting the date, location, depth below surface, lateral extent, if it was found with or below debris or structures etc., and other information. A short written description of the context is encouraged.
15. Any artifacts, features, or cultural contexts (see below) require a GPS point, line, or area polygon, whichever is most appropriate.
16. The Accidental Finds Protocol must be followed at all times, especially when an archaeologist is not on site to monitor activities. The protocol states:

“As archaeological testing is by nature sampling (not 100 percent coverage) there is a chance that features, cultural contexts, or artifact concentrations are encountered in the course of trenching or excavation activity. If the discovery is a significant find of architectural ruins, a high concentration of artifacts, or an extended cultural context such as a layer of deposited organic soil within the sand, then all work should stop in the immediate area. The area will be photographed, the image forwarded to the project manager and the terrestrial archaeologist who will determine the next steps.”

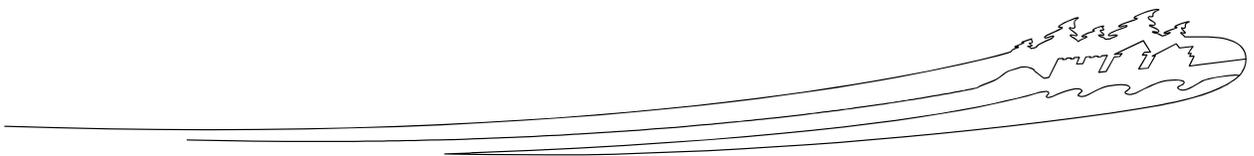
Visitor Experience

17. Separation distances between visitors and the construction area will be maintained. Physical work will occur during autumn 2020, where visitor usage of Sable NPR is reduced. Should visitors be present during the construction period, clear signage and barriers will be used to demarcate the construction area.

9. OTHER Considerations

Check all that apply

- Public/stakeholder engagement
- Aboriginal engagement or consultation
- Surveillance
- Follow-up monitoring, required to evaluate effectiveness of mitigation measures and/or assess restoration success
- Follow-up monitoring, required by legislation or policy (indicate basis of requirement e.g. required by the *Species at Risk Act*)





SARA Notification

Environmental Surveillance Officer, Andrew Sharpe, Project Manager, Jason Surette or Island Operation Coordinators will conduct project surveillance. Surveillance intensity will be scaled to the risks associated with project phases. Photo documentation during the project as well as of the cleaned up site and the packed hazardous and non-hazardous materials are required.

SIGNIFICANCE OF RESIDUAL ADVERSE EFFECTS

Potential Negative effects should be suitably mitigated as per the implementation of this BIA. There are no anticipated significant residual adverse effects.

10. EXPERTS CONSULTED

Include Parks Canada experts. Add as many entries as necessary for the project.

Department/Agency/Institution: Parks Canada	Date of Request: 2019-10-29
Expert's Name & Contact Information: Dan Kehler	Title: <i>Park Ecologist Sable Island</i>
Expertise Requested: Confirm the lack of potential impact to natural resources, especially species at risk and ensure reasonable mitigations are in place.	
Response: Comments integrated into BIA.	
Department/Agency/Institution: Parks Canada	Date of Request: 2019-10-30
Expert's Name & Contact Information: Keith Mercer, Ph.D. P.O. Box 9080, Station A, Halifax NS B3K 5M7 Keith.Mercer@pc.gc.ca Telephone 902-426-1992	Title: Cultural Resource Manager, Parks Canada
Expertise Requested: Review of BIA to ensure cultural resource management process is followed and Archaeological requirements are met.	
Response: Comments integrated into BIA.	

11. DECISION

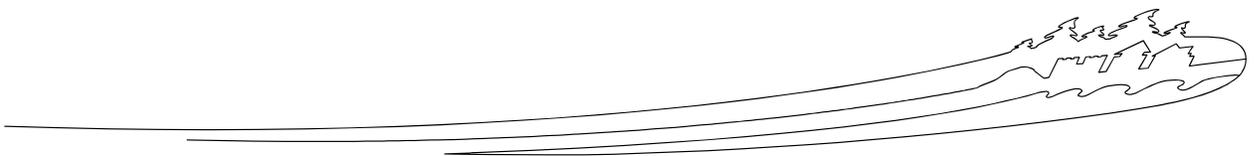
Taking into account implementation of mitigation measures outlined in the analysis, the project is:

- not likely to cause significant adverse environmental effects.
- likely to cause significant adverse environmental effects.

NOTE: If the project is identified as likely to cause significant adverse effects, CEAA 2012 prohibits approval of the project unless the Governor in Council (Cabinet) determines that the effects are justified in the circumstances. A finding of significant effects therefore means the project CANNOT go ahead as proposed.

FOR SARA REQUIREMENTS:

- There are no residual adverse effects to species at risk and therefore the SARA-Compliant Authorization Decision Tool was not required





12. RECOMMENDATION AND APPROVAL

(Add additional blocks as required)

<p>Prepared by: Andrew Sharpe, Impact Assessment Officer, MNSFU, Parks Canada</p>	<p>Date: November 12, 2019</p>
<p>Recommended by: Functional manager of the project (name): Jonathan Nash, MNSFU, Parks Canada</p>	<p>Date: November 12, 2019</p>
<p>Approval signature: Eric Nielsen A/Field Unit Superintendent, MNSFU, Parks Canada</p>	<p>Date: November 13, 2019</p>

13. ATTACHMENTS

Figures 1 to 5.

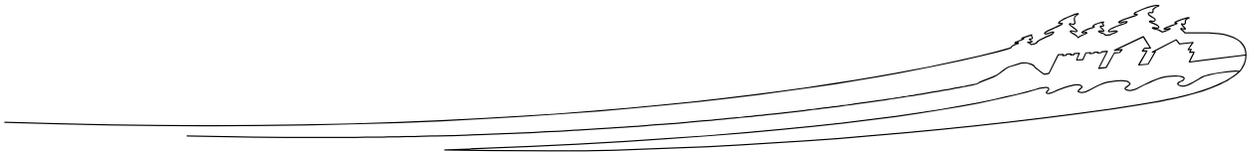
Appendix 1: SARA Compliant Decision Tool

14. NATIONAL IMPACT ASSESSMENT TRACKING SYSTEM

- Project registered in [tracking system](#)
- Not yet registered *(CEAA 2012 requires PCA submit a report to Parliament annually. EIAs must be entered in the tracking system **by the end of April** to enable reporting.*

References

Parks Canada, 2019. Sable Island National Park Reserve of Canada Management Plan. 29 p.



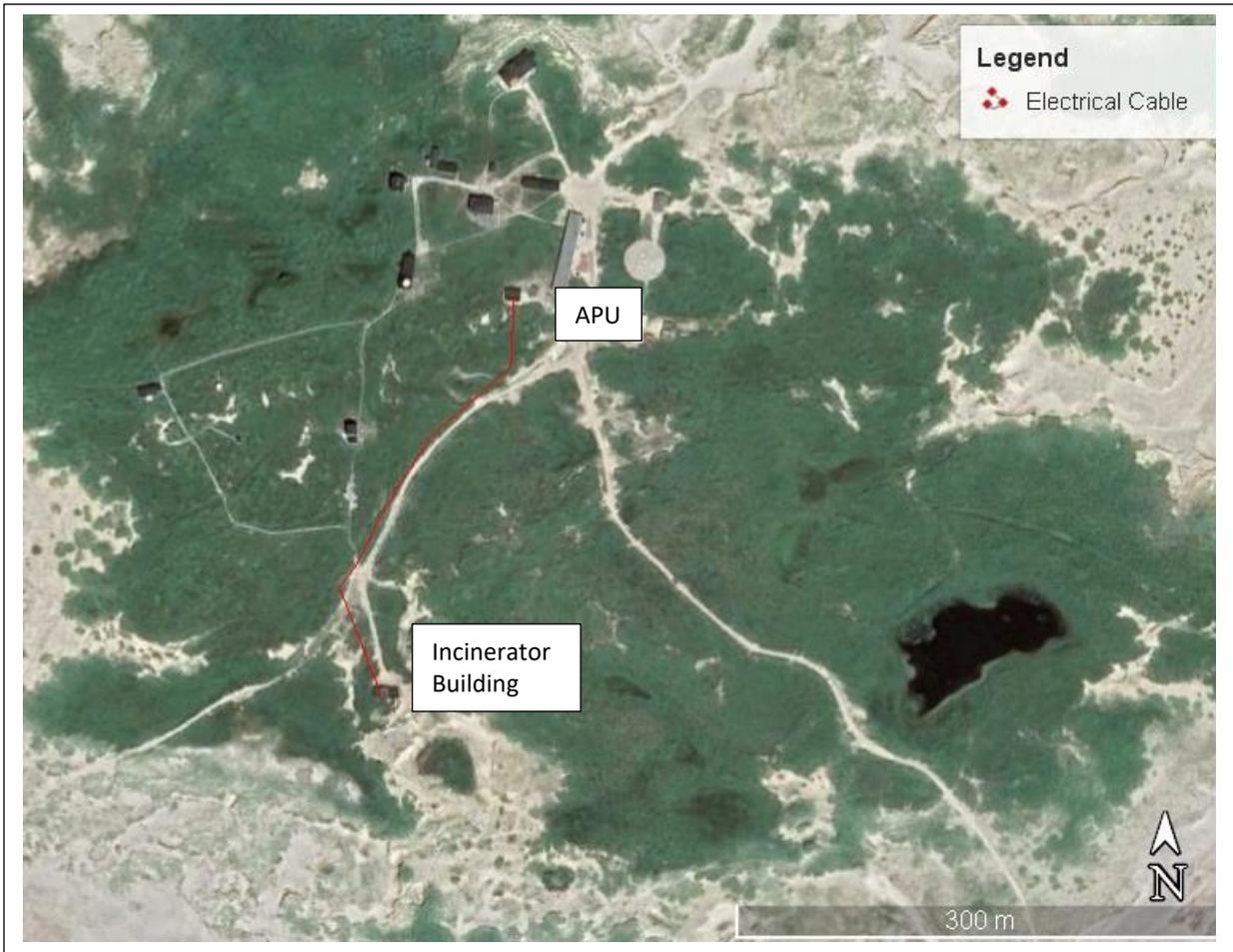


Figure 1: Overview map of Sable Island Main Station, showing location of Incinerator Building and alignment for new electrical cabling.



Figure 2: Existing Sable NPR incinerator building.

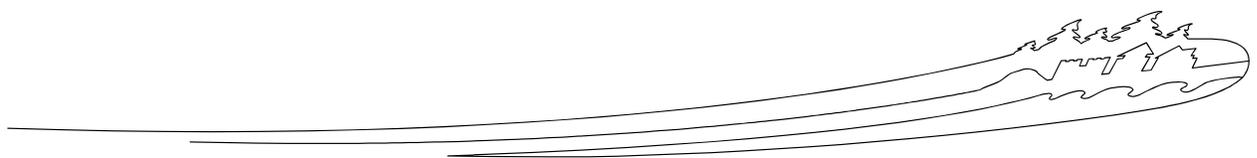




Figure 3: Existing Sable Island NPR incinerator

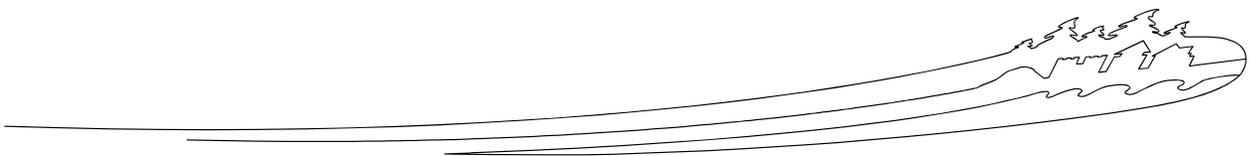




Figure 4: Sable Island National Park Reserve 2015 Tern colony at Main Station, with Incinerator Building identified by blue circle.

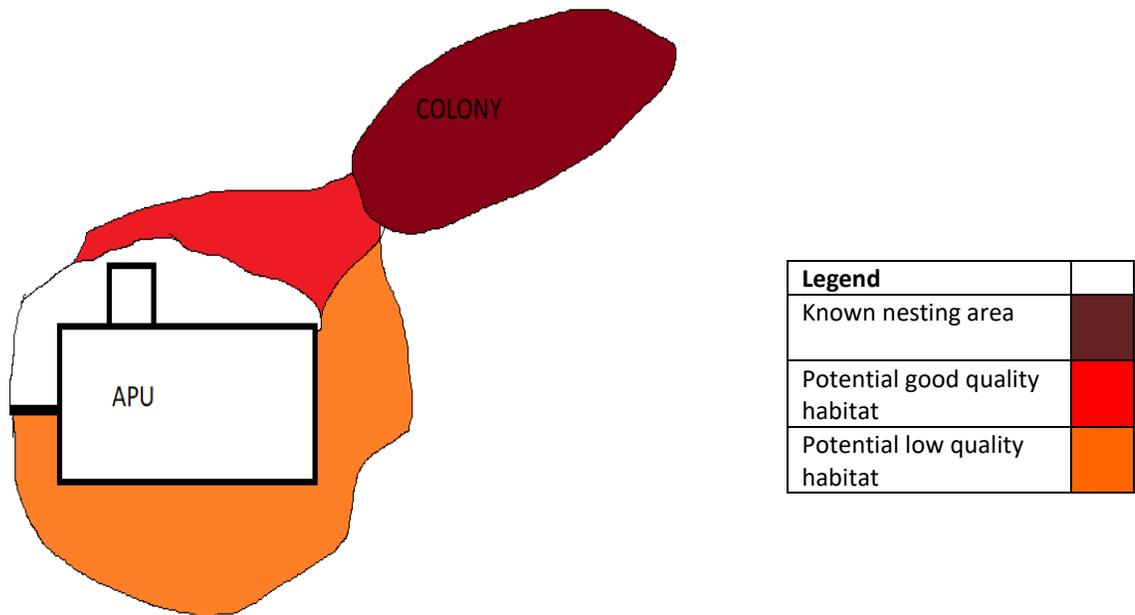
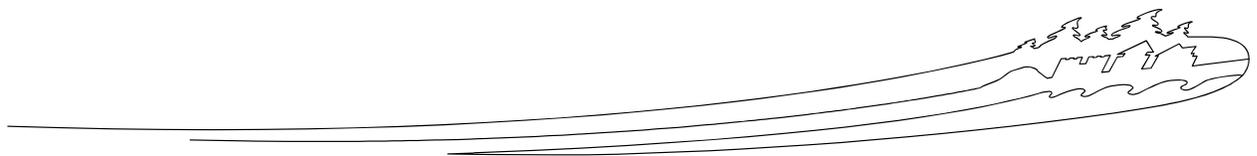


Figure 5: Identification of known and potential Sweat Bee nesting habitat in the vicinity of the APU.





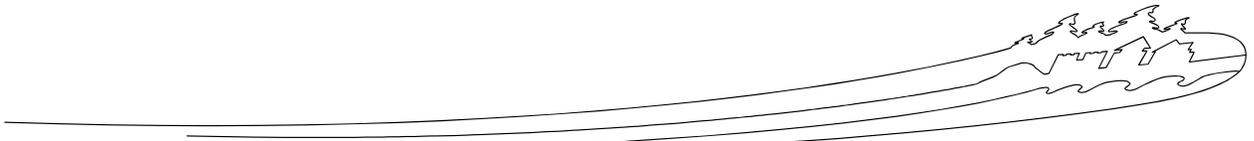
Appendix 1: SARA-Compliant Authorization Decision Tool

- **This tool is for use when the BIA has determined that project activities will lead to residual adverse effects to THR, EN, or EX species at risk** (i.e. even after mitigation measures are applied, there are effects to individuals, residences or critical habitat of THR, EN or EX species at risk).
- This tool provides a structured process to record effects of a project on species at risk (SAR), determine if a SARA authorization is required, if it can be issued, and how to issue it.
- Consultation with a representative of the [Species Conservation and Management \(SCM\)](#) team is encouraged to help ensure consistent application of this tool.
- Guidance for each question is provided in *grey italics* text within the form and should be deleted from the final version.

Date this document was completed:	Where this activity will occur: (i.e., PCA site)	SAR implicated by this activity:	Title of proposed activity (e.g., Trail development in Blue Meadow):	Author of this Document:	Collaborators involved in drafting this document:
Nov. 11, 2019	Sable Island NPR	Roseate tern, Sweat Bee, Ipswich Sparrow	Incinerator Replacement	Andrew Sharpe	None

Part A – Does a SARA authorization need to be considered for this activity?
<p>1. Will the activity lead to residual adverse effects that contravene a SARA prohibition for a listed endangered (En), threatened (Th) or extirpated (Ex) species at risk, its residence or its critical habitat? (If more than one species will be affected, clearly delineate the effects on each species).</p> <p>SARA prohibitions: s.32 - Cannot: kill, harm, harass, capture, or take individuals; possess, collect, buy, sell or trade individuals or parts of individuals; s.33 – Cannot damage or destroy residences; s.58 – Cannot destroy any part of critical habitat¹; s.80 - Cannot carry out an activity that is prohibited under a protection order.</p> <p><input type="checkbox"/> Yes. Residual adverse effects of the activity will contravene a SARA prohibition.</p> <p>Continue to Question 2.</p> <p><input checked="" type="checkbox"/> No. Residual adverse effects of the activity will NOT contravene a SARA prohibition.</p> <p>STOP - you have completed the tool. Check the first box in Part C and submit for approval.</p>
<p>2. Is the activity authorized under S. 83 of SARA?</p> <p><input type="checkbox"/> Yes. A SARA authorization is NOT required. The activity is authorized in a recovery strategy or action plan;</p> <p>OR</p> <p><input type="checkbox"/> Yes. A SARA authorization is NOT required. The activity is required for public safety, health or national security AND authorized by or under another Act of Parliament.</p> <p><i>Refer to the Guideline for the use of SARA ss. 83(1)(a) Exceptions in Protected Heritage Areas for further details. Append the completed s.83 template to this decision tool for final decision approval by the appropriate FUS/Director of a Waterway, or Delegate.</i></p>

¹ Critical habitat destruction would result if a portion of the critical habitat were degraded, either permanently or temporarily, by activities occurring either internal or external to the critical habitat, such that the habitat function provided by the degraded portion is no longer available to the species when needed.





STOP - If all activities that would contravene a SARA prohibition are already authorized under SARA s.83, **check the first box in Part C and submit for approval.**

No. A SARA authorization is required. Continue to Part B.

Part B – Is the activity eligible for authorization under SARA?

****Complete ONLY if you have answered NO to Question 2, above****

3. Does the activity fall into one of the following three categories?

Select the appropriate box (check only one) and **continue to Question 4** OR, if the proposed activity DOES NOT fit in any of the three categories below the activity CANNOT be authorized, and you can check the second box in **Part C and submit for approval.**

- The activity is scientific research related to the conservation of the species and conducted by qualified persons; **OR**
- The activity benefits the species or is required to enhance its chance of survival in the wild (an activity that supports the implementation of recovery actions as described in recovery documents (recovery strategies/action plans) for the species, where these area available. Where recovery documents are not available, the activity must support the recovery of the species based on an assessment of best information available (incl. status reports, species experts, peer-reviewed information); **OR**
- Affecting the species is incidental to the activity (i.e. the purpose of the activity is not to engage in an activity that is prohibited under SARA (e.g., kill, harm, harass an individual; destroy a residence or critical habitat). For example, fishing for a listed species cannot be permitted, but accidental by-catch *may* be.

4. Alternatives that would reduce the impact(s) on the species have been considered and the best solution adopted

SARA Policy Statement: The applicant is required to consider all reasonable alternatives to their activity with a view to reducing the impact on the species, make a choice among the alternatives considered, and justify why this choice is the best one. The range of alternatives considered will be proportional to the significance of the activity’s anticipated impact on species at risk. Costs may be considered when deciding whether a given alternative is reasonable. Among the reasonable alternatives identified, the solution that best advances conservation of the species must be adopted.

Continue to Question 5.

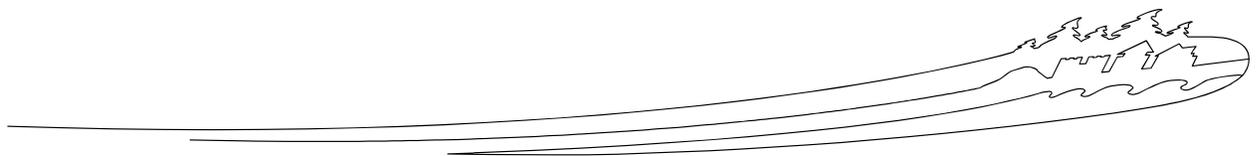
5. All feasible measures must be taken to minimize the impact of the activity

SARA Policy Statement: The feasibility of measures will be determined based on an evaluation of biological, ecological, technical and economic factors. The amount of analysis required to identify all feasible measures, and the nature of such measures, must be proportional to the significance of the activity’s impact on species at risk.

Continue to Question 6.

6. Will the activity jeopardize the survival or recovery of the species?

SARA Policy Statement: An activity would be considered to jeopardize the survival or recovery of a species at risk if the activity would prevent the attainment of the population and distribution objectives described in a recovery strategy for the species. **Where a proposed activity would jeopardize the survival or recovery of**





the species, a permit could be issued only if the activity were accompanied by actions to benefit the species such that the residual effects of the activity would not jeopardize its survival or recovery.

Yes. The activity CANNOT be authorized.
Check the second box in Part C and submit for approval.

No. The activity CAN be authorized.
 No. The activity CAN ONLY be authorized with the implementation of an offset to avoid jeopardizing survival or recovery of the species. Refer to the *Guidance and Template for the Use of Biodiversity Offsets as Part of a SARA s.74 Authorization in Protected Heritage Areas* for further details. Append the completed offsetting plan to this decision tool for final decision approval by the appropriate FUS/Director of a Waterway, or Delegate.
Check the third box in Part C and submit for approval.

Part C – SARA Authorization Decision
*****Note: if this section addresses multiple species, specify to which species the answer(s) pertain.*****

Select the appropriate answer and continue to Part D.

This activity does not require a SARA authorization, as indicated in Questions 1 and 2.

This activity requires a SARA authorization but cannot be authorized because it does not fit into one of the three required categories (see response to Question 3) OR it does not meet one of the SARA pre-conditions (see responses to Questions 4-6).

This activity requires a SARA authorization and can be authorized (see response to Questions 3-6).

Part D - Prepare the SARA authorization and posting explanation
*****Issue the SARA authorization using the [template on the intranet](#) and complete Question 7 to prepare the explanation for the [SAR Public Registry](#).*****

7. Provide description for posting
 SARA requires an explanation of why a SARA authorization is issued to be posted on the SARA Public Registry in both official languages within 30 days of the authorization being issued. Prepare the explanation, using the information you entered in your RCPS application, or impact assessment process, and previous sections of this tool. Your regional SCM representative will have the explanation translated and will publish it on the SARA registry.

Regional or Local Number:
Start Date of Authorization: XXX **End Date of Authorization:** XXX

Issuing Authority: Parks Canada Agency

Authority Used: SARA s.74

Location of Activity (province, territory or ocean): XXX

Affected Species:

Purpose:
Select the answer indicated in Section 3 of this Appendix:

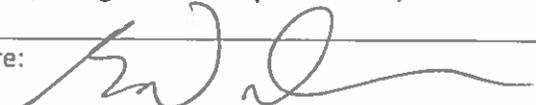




- Affecting the species is incidental to the activity; OR
- The activity is necessary or beneficial to the species, OR
- The activity is scientific research related to the conservation of the species and conducted by qualified persons.

Description of the Activity:

Pre-Conditions:

Part E – SARA Authorization Recommendation and Approval	
Prepared by (add additional blocks as required) Andrew Sharpe, Impact Assessment Officer	Date: 2019-11-11
Recommended by Troy Pretzlaw, Acting Resource Conservation Manager, MNSFU	Date: 2019-11-11
Decision Approval	
Name & Position: Eric Nielson, Acting Field Unit Superintendent, MNSFU	
Signature: 	Date: 279 11 12

