



Environment and  
Climate Change Canada

Environnement et  
Changement climatique Canada

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25 November 2016

Mr. Darren Hicks  
Canada Newfoundland Offshore Petroleum Board  
Fifth Floor, TD Place  
140 Water Street  
St. John's, NL A1C 6H6

Dear Mr. Hicks:

**RE: Western Newfoundland Controlled Source Electromagnetic (CSEM) Project, 2017** **EAS 2016-094**

As requested in your email of 10 November 2016, Environment and Climate Change Canada (ECCC) has reviewed the draft Scoping Document, Project Description and letter from the C-NLOPB for Electromagnetic Geoservices Canada, Inc. (EMGS) for a proposed controlled source electromagnetic (CSEM) survey for Western Newfoundland offshore waters.

Electromagnetic Geoservices Canada, Inc. (EMGS) is proposing to conduct one CSEM survey in the western portion of the Canada-Newfoundland and Labrador Offshore Area in 2017. The duration of the survey is estimated to last from 5 to 10 days. The project involves deploying a grid of receivers 3 km apart on the seabed. The survey vessel (one of EMGS' two exploration vessels) will deploy and tow an electromagnetic source 30 m above the seabed over the receivers. Electromagnetic signal that propagates through the seabed subsurface is recorded by the receivers in the survey area. By modeling, integrating and interpreting these recordings, potential hydrocarbon sources can be determined and resistivity information is used to assess the type of fluids in a reservoir.

Environment and Climate Change Canada is responsible for administering several statutes including the *Department of Environment Act*, *Fisheries Act* (Section 36), *Canadian Environmental Protection Act*, *Canada Water Act*, *Canada Wildlife Act*, *Species at Risk Act*, and the *Migratory Birds Convention Act*, which are focused on promoting sustainable development, protecting the environment, conserving certain renewable resources and reporting on environmental conditions. ECCC is also the lead federal department in promoting a variety of federal policies and programs concerning the environment including: the *Federal Policy on Wetland Conservation*, *Wildlife Policy for Canada*, *Federal Water Policy*, *Toxic Substances Management Policy*, and *Pollution Prevention - A Federal Strategy for Action*. Stemming from these responsibilities, ECCC possesses expertise relevant to this proposal that should be considered by any Responsible Authority, in conducting the environmental assessment (EA). The following comments are for your consideration in the screening of this project.

## REVIEW COMMENTS

## Regulatory Requirements

### Fisheries Act

The proponent should be aware of the general applicability of Section 36(3) of the *Fisheries Act* which states: “no person shall deposit or permit the deposit of a deleterious substance of any type in water frequented by fish or in any place under any conditions where the deleterious substances or any other deleterious substance that results from the deposit of the deleterious substance may enter any such water”. Environmental protection and mitigation measures should reflect the need to comply with Section 36(3) of the *Fisheries Act*. For example, measures should be taken to prevent substances such as lubricating fluids, fuels, etc. from being deposited into water frequented by fish, and drainage from construction and operational drainage must not be harmful to fish.

### Migratory Birds Convention Act

Migratory birds, their eggs, nests, and young are protected under the *Migratory Birds Convention Act* (MBCA). Migratory birds protected by the MBCA generally include all seabirds (except cormorants and pelicans), all waterfowl, all shorebirds, and most landbirds (birds with principally terrestrial life cycles). Migratory birds, their eggs, nests, and young are protected under the *Migratory Birds Convention Act* (MBCA). The list of species protected by the MBCA can be found at: <https://www.ec.gc.ca/nature/default.asp?lang=En&n=496E2702-1>. Bird species not listed may be protected under other legislation.

Under Section 6 of the *Migratory Birds Regulations* (MBR), it is forbidden to disturb, destroy, or take a nest or egg of a migratory bird; or to be in possession of a live migratory bird, or its carcass, skin, nest or egg, except under authority of a permit. It is important to note that under the current MBR, no permits can be issued for the incidental take of migratory birds caused by development projects or other economic activities.

Furthermore, Section 5.1 of the MBCA describes prohibitions related to deposit of substances harmful to migratory birds:

“5.1 (1) No person or vessel shall deposit a substance that is harmful to migratory birds, or permit such a substance to be deposited, in waters or an area frequented by migratory birds or in a place from which the substance may enter such waters or such an area.

(2) No person or vessel shall deposit a substance or permit a substance to be deposited in any place if the substance, in combination with one or more substances, results in a substance — in waters or an area frequented by migratory birds or in a place from which it may enter such waters or such an area — that is harmful to migratory birds.”

It is the responsibility of the proponent to ensure that activities are managed so as to ensure compliance with the MBCA and associated regulations.

### Species at Risk Act

The proponents should also be reminded that the prohibitions under the *Species at Risk Act* (SARA) are now in force. The complete text of SARA, including prohibitions, is available at <http://laws-lois.justice.gc.ca/eng/acts/s-15.3/>.

It should be noted that Section 79 of the *Species at Risk Act* states:

“79. (1) Every person who is required by or under an Act of Parliament to ensure that an assessment of the environmental effects of a project is conducted, and every authority who

makes a determination under paragraph 67(a) or (b) of the Canadian Environmental Assessment Act, 2012 in relation to a project, must, without delay, notify the competent minister or ministers in writing of the project if it is likely to affect a listed wildlife species or its critical habitat.

(2) The person must identify the adverse effects of the project on the listed wildlife species and its critical habitat and, if the project is carried out, must ensure that measures are taken to avoid or lessen those effects and to monitor them. The measures must be taken in a way that is consistent with any applicable recovery strategy and action plans.”

#### Canadian Environmental Protection Act

The proponent should also be aware of the potential applicability of the *Canadian Environmental Protection Act* (CEPA). The *Canadian Environmental Protection Act* enables protection of the environment, and human life and health, through the establishment of environmental quality objectives, guidelines and codes of practice, and the regulation of toxic substances, emissions and discharges from federal facilities, international air pollution, and disposal at sea.

#### ***Migratory Birds & Species at Risk***

The Canadian Wildlife Service of Environment and Climate Change Canada (ECCC-CWS) has reviewed the above project and has the following comments.

#### Considerations Specific to Migratory Birds

Migratory birds, their eggs, nests, and young are protected under the federal *Migratory Birds Convention Act* (MBCA) and the complementary regulations (*Migratory Bird Regulations*, *Migratory Bird Sanctuary Regulations*). Certain species are recognized to be at risk under the federal *Species at Risk Act* (SARA), provincial endangered species legislation, the Committee on the Status of Endangered Wildlife in Canada (COSEWIC), or by the Atlantic Canada Conservation Data Centre.

In conducting the environmental assessment (EA), the vulnerability of individual species/groups of migratory birds to sampling programs must reflect a consideration of the following basic factors:

- Distribution and abundance of species during scheduled project activities;
- Impact pathways;
- Mitigation;
- Cumulative effects; and
- Provisions for follow-up on assessment accuracy and mitigation effectiveness.

The following impact pathways influencing migratory birds must be considered in the analysis of any seismic survey:

- Noise disturbance from equipment including both direct effects (physiological), or indirect effects (foraging behaviour or prey species);
- Physical displacement as a result of vessel presence (e.g., disruption of foraging activities);
- Nocturnal disturbance from light (e.g., increased opportunities for predators, attraction to vessels and subsequent collision, disruption of incubation);
- Exposure to contaminants from accidental spills (e.g., fuel, oils) and operational discharges (e.g., deck drainage, gray water, black water); and

- Attraction of, and increase in, predator species as a result of waste disposal practices (i.e., sanitary and food waste) and the presence of incapacitated/dead prey behind the vessel.

The proponent should refer to any applicable Strategic Environmental Assessments (SEA), where appropriate. For annual updates, the proponent is encouraged to contact ECCC-CWS to ensure that information listed in the SEA is still accurate.

#### Considerations Specific to Species at Risk

If a migratory bird species is listed under Schedule 1 of SARA and could be affected by operations, steps must be taken to ensure compliance with both SARA and the *Canadian Environmental Assessment Act (CEAA)*.

The following species at risk may be incidentally found near the project site in migration: Harlequin Duck, Barrow's Goldeneye, Red Knot (*rufa* subspecies), Piping Plover, Olive-sided Flycatcher, Red Crossbill (*perca* subspecies) and Common Nighthawk. Though unlikely to be found within the project footprint, these species may occur within the study area and we request that sightings be reported to ECCC-CWS.

It should be noted that the SARA list may change through the life of the project. Species listed after project approval may require additional mitigations. The proponent is encouraged to annually update the list of SARA species potentially affected by the project.

#### Cumulative Effects Assessment to be included in the EA

The discussion of cumulative effects must be shaped primarily by the valued ecosystem components under consideration. While an accounting of past, present and future projects and activities is a starting point in a cumulative effects assessment, the analysis must consider how impacts from the proposed project will combine with impacts from other projects and activities. In the context of marine birds, for example, the proponent must consider how the project will contribute to existing impacts (e.g., increase in predation, loss of foraging habitat) on birds from other activities (e.g., other oil and gas activities, fishing, shipping).

#### Information Sources to be included in the EA

The proponent should be aware of Environment and Climate Change Canada's Eastern Canadian Seabirds at Sea (ECSAS) program. This program has conducted over 4000 surveys covering 7800 km of ocean track in the Newfoundland and Labrador offshore area since 2006. The most up-to-date data for the study area must be included in the EA. This information is available by contacting Carina Gjerdrum (Pelagic Seabird Biologist, ECCC-CWS) at [carina.gjerdrum@canada.ca](mailto:carina.gjerdrum@canada.ca).

The ECSAS program can be cited as follow: Gjerdrum, C., D.A. Fifield, and S.I. Wilhelm. 2011. Eastern Canada Seabirds at Sea (ECSAS) standardized protocol for pelagic seabird surveys from moving and stationary platforms. Canadian Wildlife Service Technical Report Series No. 515. Atlantic Region. vi + 36 pp.

While an EA may conclude that the overall impact of a seabed survey on seabirds is relatively small, it remains important that the opportunity for this activity to impact federally-protected avian species be properly acknowledged in the EA. Accordingly, it is also expected that the proponent commit to all reasonable measures to mitigate the potential for such impacts to occur. These measures are outlined below.

#### Mitigations – General

Mitigation measures related to adverse effects, including cumulative effects, must be identified. Measures must be consistent with the MBCA and SARA and with applicable management plans, recovery strategies and action plans. Mitigation must reflect a clear priority on impact avoidance opportunities. The following specific measures must be among those which are considered in preparing a mitigation strategy:

Should storm-petrels or other species become stranded on vessels, the proponent is expected to adhere to the protocol *The Leach's Storm-Petrel: General Information and Handling Instructions* (attached). A permit will be required to implement this protocol and the proponent must be advised that such a permit must be in place prior to the initiation of proposed activities. Please note that MBCA permit applications can be obtained from ECCC-CWS via email at [ec.scfatlpermis-cwsatlpermits.ec@canada.ca](mailto:ec.scfatlpermis-cwsatlpermits.ec@canada.ca).

It is expected that the proponent demonstrate how they will minimize or prevent the release of hazardous substances on board the vessel (e.g. chemicals for equipment repairs, fuels, lubricants) into the marine environment. Attention must be paid to impact avoidance and pollution prevention opportunities and a contingency plan must be developed to enable a quick and effective response in the event of a spill. Other management practices and preventative maintenance plans must be outlined such as a protocol to prevent spill events. This protocol must describe conditions that will allow the sampling program to be conducted without spill incidents (e.g., the range of environmental conditions within which the equipment can operate).

#### Light Attraction and Migratory Birds

Attraction to lights at night or in poor visibility conditions during the day may result in collision with lit structures or their support structures, or with other migratory birds. Disoriented migratory birds are prone to circling light sources and may deplete their energy reserves and either die of exhaustion or be forced to land where they are at risk of depredation.

To reduce risk of incidental take of migratory birds related to human-induced light, ECCC-CWS recommends implementation of the following beneficial management practices:

- The minimum amount of pilot warning and obstruction avoidance lighting should be used on tall structures. Warning lights should flash, and should completely turn off between flashes.
- The fewest number of site-illuminating lights possible should be used in the project area. Only strobe lights should be used at night, at the lowest intensity and smallest number of flashes per minute allowable by Transport Canada.
- Lighting for the safety of the employees should be shielded to shine down and only to where it is needed.
- LED lights should be used instead of other types of lights where possible. LED light fixtures are less prone to light trespass (i.e. are better at directing light where it needs to be, and do not bleed light into the surrounding area), and this property reduces the incidence of migratory bird attraction.

Non-emergency flaring at night should be avoided. If the proponent is unable to completely avoid flaring activities at night, then the proponent should identify methods to address risks to nocturnally migrating birds and breeding seabirds, particularly storm-petrels. The proponent should identify periods of high risk for bird/flare interactions, measures to avoid incidental take of migratory birds, and monitoring plans which explore how flare timing can be modified. Furthermore, the proponent should investigate the potential to install flare shields to reduce light emissions and potentially reduce bird mortality.

Ellis et al. 2013 state that bird stranding reports on vessels and platforms “cannot directly assess the mortality caused by strikes and flaring because it is unknown how many birds are killed and not recovered. More work is required to relate the numbers of birds found on vessels and platforms to the total number of birds dying from collisions and flaring.” Hence there is a strong need for research and monitoring to quantify mortality events, particularly around flares, and identify conditions leading to mortality events, by implementing a monitoring program incorporating bird detection technology on platforms and mobile drilling ships.

Reference: Ellis, J. I., S. I. Wilhelm, A. Hedd, G. S. Fraser, G. J. Robertson, J.-F. Rail, M. Fowler, and K. H. Morgan. 2013. Mortality of migratory birds from marine commercial fisheries and offshore oil and gas production in Canada. *Avian Conservation and Ecology* 8(2): 4. <http://dx.doi.org/10.5751/ACE-00589-080204>.

#### Mitigations - Data Collection

ECCC-CWS has developed a pelagic seabird monitoring protocol (attached) that is recommended for use by experienced observers on all offshore projects. A guide for pelagic seabirds of Atlantic Canada has also been attached, for assistance in identifying pelagic seabirds in the area.

A report of the seabird monitoring program, together with any recommended changes, is to be submitted to ECCC-CWS on a yearly basis. In an effort to expedite the process of data exchange, ECCC-CWS recommends that the data (as it relate to migratory birds or Species at Risk) collected from the monitoring program be forwarded in digital format to ECCC-CWS following annual program completion (Contact for data is Josh Mailhiot, ECCC-CWS Environmental Assessment Coordinator: [joshua.mailhiot@canada.ca](mailto:joshua.mailhiot@canada.ca)). These data will be centralized for ECCC-CWS’s internal use to help ensure that the best possible natural resource management decisions are made for these species in Newfoundland and Labrador. Metadata will be retained to identify source of data and will not be used for the purpose of publication. ECCC-CWS will not copy, distribute, loan, lease, sell, or use of this data as part of a value added product or otherwise make the data available to any other party without prior express written consent.

#### Mitigations - Oil Pollution Incidents

The assessment of environmental effects which could result from accidents and malfunctions should include a consideration of potential spill events. The assessment should be guided by the need to ensure compliance with the general prohibitions against the deposit of a deleterious substance into waters frequented by fish (Section 36, *Fisheries Act*) and against the deposit of oil, oil wastes or any other substance harmful to migratory birds in any waters or any area frequented by migratory birds (Section 5.1, *Migratory Birds Convention Act*). In addition, it should be focused on potential worst–case scenarios (e.g., concentrations of marine birds, presence of wildlife at risk). Based on this analysis, the environmental assessment should describe the precautions that will be taken and the contingency measures that will be implemented to avoid or reduce the identified impacts.

In developing a contingency plan that would support the assessment of accidents and malfunctions, and a determination that impacts could be avoided or reduced, it is recommended that the Canadian Standards Association publication, *Emergency Planning for Industry* CAN/CSA-Z731-95 (Reaffirmed 2002), be consulted as a useful reference. All spills or leaks, including those from machinery, fuel tanks or streamers, should be promptly contained, cleaned-up and reported to the 24-hour environmental emergencies reporting system (Phone: 1-800-563-9089).

Spills could result in significant effects on migratory birds in the event that large numbers of birds, or individual species at risk (SAR), are affected. Migratory birds, including bird species at risk, could be significantly affected if spills affect important habitats or critical habitat for SAR. Disturbance resulting from accidental events during the breeding season in the vicinity of SAR or colonial bird nesting areas could also result in significant effects if it results in nesting failure or site abandonment by the birds.

Strategies to minimize or prevent accidental or chronic releases must be emphasized in a mitigation program. Proponents are required to demonstrate response preparedness and to identify provisions for ensuring measures are implemented to eliminate or minimize resulting sheens or slicks in the event of accidents and malfunctions involving the release of oil. The following considerations are requested to be factored into the development of a response plan that would help reduce impacts on seabirds:

- measures for containing and cleaning up spills (of various sizes);
- equipment that would be available to contain spills;
- specific measures for the management of large and small spills (e.g., breaking up sheens);
- mitigation measures to deter migratory birds from coming into contact with the oil;
- mitigation measures to be undertaken if migratory birds and/or sensitive habitat becomes contaminated with the oil; and
- the type and extent of monitoring that would be conducted in relation to various spill events.

In order to assist proponents in preparing a plan for dealing with an oil spill which would potentially threaten migratory birds, EC-CWS has prepared a guidance document (attached), a sample protocol document used for oiled birds on beaches (attached), and a protocol for handling non-oiled but dead birds found on vessels (attached).

#### Clarification – Oil-based products in Transmitter and/or Receivers.

It is not stated if oil-based products (e.g. lubricants or fuel) will be used in the transmitter and receivers. The presence or lack thereof of oil-based products in these devices should be stated in the environmental assessment. ECCC-CWS recommends that transmitters and receivers without hydrocarbon-based fluids be used.

#### ***Effects of the Environment on the Project***

Seismic operations will be somewhat sensitive to environmental conditions (e.g., wind, waves, ice). The environmental review should include considerations on how such conditions acting on the project could have consequences for the environment (e.g., increased risk of spills and impacts on valued ecosystem components). Marine weather information can be found on the Meteorological Service of Canada website at [www.weatheroffice.gc.ca/marine](http://www.weatheroffice.gc.ca/marine). Additional information on regional climatology can be found at [www.climate.weatheroffice.ec.gc.ca](http://www.climate.weatheroffice.ec.gc.ca), or by contacting Environment Canada directly. Also, ice information can be found on the Canadian Ice Service website at [www.ice-glaces.ec.gc.ca](http://www.ice-glaces.ec.gc.ca).

#### ***Effects of Accidents and Malfunctions***

The mandatory assessment of environmental effects that result from accidents and malfunctions should include a consideration of potential spill events. The assessment should be guided by the

need to ensure compliance with the general prohibitions against the deposit of a deleterious substance into waters frequented by fish (Section 36, *Fisheries Act*) and against the deposit of oil, oil wastes or any other substance harmful to migratory birds in any waters or any area frequented by migratory birds (Section 35, *Migratory Birds Regulations*). In addition, it should be focused on potential worst-case scenarios (e.g., concentrations of marine birds, presence of wildlife at risk). Based on this analysis, the environmental review should describe the precautions that will be taken and the contingency measures that will be implemented to avoid or reduce the identified impacts.

Proponents are encouraged to prepare contingency plans that reflect a consideration of potential accidents and malfunctions and that take into account site-specific conditions and sensitivities. The Canadian Standards Association publication, *Emergency Preparedness and Response*, CAN/CSA-Z731-03, is a useful reference.

All spills or leaks of petroleum or other hazardous materials, including those from machinery, fuel tanks or streamers, should be promptly contained, cleaned-up and reported to the 24-hour environmental emergencies reporting system (St. John's 709-772-2083; other areas 1-800-563-9089).

I trust that this information will be of assistance in your review of this proposal. If you wish to discuss these comments or have further questions, please do not hesitate to contact me at your convenience.

Yours truly,

Original Signed by Shelley Decker

Shelley Decker  
Environmental Assessment Analyst  
Environmental Protection Operations Directorate

Attachments

Cc: M. Hingston  
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