Environmental Stewardship Branch
16th Floor, Queen Square
45 Alderney Drive
Dartmouth, NS B2Y 2N6

File No: 4186-1

Data File: C:\My Documents\EA Corresp\2006\039.doc

17 February 2006



Ms. Beth Vardy
Canada-Nova Scotia Offshore Petroleum Board
1791 Barrington Street
Halifax, NS B3J 3K9

Dear Ms. Vardy:

**RE: Canadian Superior Seismic Exploration Activities on the Marauder (EL 2415), Marconi (EL 2416) & Mariner (EL 2409) Blocks** **EAS #2006-039**

Environment Canada (EC) has reviewed the project description for the above-referenced undertaking, which was received on January 27, 2006. Based on the information provided, it is understood that the proponent proposes to conduct a multi-year, multi-survey seismic exploration program on the Mariner (EL 2409), Marauder (EL 2415) and Marconi (EL 2416) Blocks as well as the lands between the Mariner and Marauder Blocks. The surveys are anticipated to take place at any time in a given year between 2006 and 2013.

## DETERMINATION

The project description was reviewed in accordance with Section 6 of the Federal Coordination Regulations under the *Canadian Environmental Assessment Act* (CEAA). Based on the information provided and as indicated on the attached form (Appendix 1), it is not likely that EC has a power, duty or function in relation to the project which would trigger CEAA. However, EC has expertise that should be considered in the environmental assessment (EA) of proposed activities. This expertise stems from the department's mandate as set out in various statutes including the *Migratory Birds Convention Act* (MBCA), *Species at Risk Act* (SARA), *Department of Environment Act*, *Canadian Environmental Protection Act* (CEPA), and the *Fisheries Act* (Section 36). EC also offers guidance on several pertinent government-wide environmental policies and programs including the Federal Policy on Wetland Conservation, A Wildlife Policy for Canada, the Federal Water Policy, Toxic Substances Management Policy and Pollution Prevention: A Federal Strategy for Action. Through the Meteorological Service of Canada, EC has pertinent expertise on weather, climatology, and atmospheric science.

## EA REVIEW COMMENTS

The attached guidance document (Appendix 2) is designed to facilitate consideration of EC-administered legislation and related expertise in the EA of any proposed seismic activity in the offshore. It is recommended that the document be used to guide the proponent in the preparation of the assessment report.

**Proximity to Sable Island**

It is understood that EL 2409 is located 2 to 10 km north of Sable Island (p. 1). It also stated that the proponent will require a 10 km vessel turn-around perimeter around the survey area and that the EA will take into account this expanded area (p. 6). This implies that the vessel could come even closer to Sable Island. Given the island's special status, the EA should be shaped by the need to conserve and protect its ecosystem components (e.g., migratory bird populations).

**Species at Risk**

SARA amends the definition of "environmental effect" in subsection 2(1) of CEAA to clarify, for greater certainty, that an EA must always consider impacts on listed wildlife species, their critical habitat or the residences of individuals of that species. SARA (s. 79) requires that the federal authority responsible for an EA notify the competent minister in writing without delay if a project is likely to affect a listed wildlife species or its critical habitat. The threshold for notification is only that a listed wildlife species or its critical habitat is likely to be affected notwithstanding any mitigation that may be contemplated or whether the effect is adverse or positive. The objective of the exercise is to facilitate timely communication and consultation on the matter.

SARA (s. 79) also requires that adverse effects of a project on listed species and their critical habitat be identified as part of the EA process. If the project is implemented, measures must be taken to avoid or lessen adverse effects on listed species and their critical habitat and the effects must be monitored. Mitigation measures must be consistent with recovery strategies and action plans for the species. The February 2004 EC publication, *Environmental Assessment Best Practice Guide for Wildlife at Risk in Canada*, should be consulted accordingly.

*Roseate Tern*

The Project Description recognizes that small numbers of endangered Roseate Terns nest on Sable Island with colonies of Common and Arctic terns, and that terns are present in the **Project area** during the breeding season from May to August, after which their young fledge and they migrate out of the Project area (p. 16). Table 3.3 however, states that the Roseate Tern does not breed within the **study area** so the "**Project area** has not been recognized as critical for this species".

The difference between the terms "project area" and "study area" should be clarified in the EA (i.e., how can Roseate Terns be present in the Project area, but not the study area?). Furthermore, the EA should recognize that the Roseate Tern can forage up to 30 km from its breeding ground. In the case of Sable Island, Roseate Terns feed on sand lance in the shallow waters off the tips of the Island. Also, it should be noted that the Roseate Tern may be present on Sable Island from **April** until August.

Given the proximity of the project to the eastern tip of Sable Island (particularly the Mariner Block), the EA should also consider potential impacts of proposed seismic activities on Roseate Tern foraging, including impacts to sand lance.

*Ivory Gull*

Table 3.3 indicates that the Ivory Gull is listed on Schedule 1 of SARA as a species of special concern. It should be noted however, that recent population surveys have revealed sharp declines in Northern nesting sites. The status of the species will likely be re-evaluated in the near future in light of this new information.

Table 3.3 states that "the Project area has not been recognized as critical for this species", given that the Ivory Gull breeds almost exclusively in high Arctic Coastal areas. While EC does not disagree with this conclusion, the possibility of encountering one or more individual birds still exists given that the Ivory Gull is occasionally observed in small concentrations in coastal and offshore areas of NS during the winter. In fact, an Ivory Gull was recorded in Halifax Harbour in January 2005. As is generally the case for seabirds, the Ivory Gull is most commonly in highly productive areas of upwelling.

Additional comments related to cumulative effects, contingency planning and effects of the environment on the project can be found in EC's concurrent review of proposed exploration drilling on EL 2415 and EL 2416 (see Kirstein to Vardy, February 17, 2006).

I trust these comments will provide helpful guidance for preparation of the EA report. Should you have any questions, please do not hesitate to contact me at 426-1703.

Yours truly,

***Original Signed by Jayne Roma***

Jayne Roma
Environmental Assessment Section
Pollution Prevention Division
Environmental Protection Operations Directorate (Atlantic)

Attachments (2)

cc B. Jeffrey
K. Keddy
F. Kirstein
M. Thompson
B. Horne
A. Boyne
R. Gautreau

**Appendix 1**

# Federal Coordination Regulations
# Environment Canada Section 6 Response

| | |
|---|---|
| **Project Title:** | Marauder (EL2415) and Marconi (EL2416) Exploratory Drilling Activities |
| **Location/Province:** | Sable Island Bank, Offshore NS |
| **Proponent:** | Canadian Superior |
| **Notification Date:** | 27 January 2006 |
| **EAS #** | 2006-039 |

In accordance with the Federal Coordination Regulations (Section 6), under the Canadian Environmental Assessment Act (CEAA), Environment Canada (EC) has reviewed the project description, and wishes to advise you of the following:

☐ EC is likely to be a Responsible Authority (RA), and thus require an environmental assessment under Section 5 of CEAA.

Trigger Type: ☐ Proponent ☐ Land Transfer ☐ Funding ☐ Law List

Law List Item :

OR

☒ EC is NOT likely to be a Responsible Authority (RA).

OR

☐ Additional information (below) is required to determine if EC is likely to be an RA.

☒ EC is in possession of expert and specialist information that is necessary to conduct an environmental assessment of this project.

| *Original Signed by Jayne Roma* | (902) 426-1703 | 15 February 2006 |
|---|---|---|
| Reviewer, Environment Canada (Atlantic Region) | Telephone | Date |

**Appendix 2**

# EC Perspective on EA Needs Related to Seismic Programs

## Migratory Birds and Species at Risk

### *General*

Migratory birds, their eggs, nests, and young are protected under the federal *Migratory Birds Convention Act* 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 species at risk legislation, the Committee on the Status of Endangered Wildlife in Canada (COSEWIC) or by the Atlantic Canada Conservation Data Centre.

In conducting the EA, the vulnerability of individual species/groups of migratory birds to seismic programs should reflect a consideration of the following basic factors:

- distribution of species during scheduled project activities
- impact pathways
- cumulative effects
- mitigation
- provisions for follow-up on assessment accuracy and mitigation effectiveness.

### *Considerations Specific to Species at Risk*

If a wildlife species is listed under Schedule 1 of SARA or under provincial legislation (a listed wildlife species), and could be affected by seismic activities, certain steps must be taken to ensure compliance with both SARA and the *Canadian Environmental Assessment Act* (CEAA). SARA amends the definition of "environmental effect" in subsection 2(1) of the CEAA to ensure that assessments always consider potential impacts on listed wildlife species; their critical habitat; or the residences of these species.

SARA also requires that the person responsible for a federal EA must, without delay, notify the competent minister(s) in writing if the project being assessed is likely to affect a listed wildlife species or its critical habitat. The person must also identify adverse effects of the project on listed species and their critical habitat. And if the project is implemented, the person must ensure that measures are taken to avoid or lessen adverse effects and that effects are monitored. Mitigation measures must be consistent with recovery strategies and action plans for the species. Prohibitions under SARA are now in force.

Additional information on SARA, including a list of species scheduled under the Act, is available at www.sararegistry.gc.ca/default_e.cfm.

### *Impact Pathways for Migratory Birds*

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

- noise disturbance from seismic 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, streamer fluids) 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.

### *Cumulative Effects*

The discussion of cumulative effects should 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 should 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 should 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*

While proponents are encouraged to employ peer-reviewed literature to support their conclusions, few studies on the interactions between birds and seismic survey activities have been conducted[1], and none have been conclusive. It is important to recognize the limited applicability of available research findings in the discussion of impacts (i.e., conclusions likely do not apply to interactions with large concentrations of birds). It should also be noted that, while the Oil and Gas Observer Program (OGOP) dataset contains the most recent seabird data available for the Scotian Shelf, surveys have not been dedicated to determining impacts of seismic on seabirds, but rather are distribution data collection exercises.

While an EA may conclude that the overall impact of a seismic 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.

### *Mitigation*

Mitigation measures related to adverse effects, including cumulative effects, should be identified. Measures should be consistent with the *Migratory Bird Convention Act* and SARA and with applicable management plans, recovery strategies and action plans. Mitigation should reflect a clear priority on impact avoidance opportunities. The following specific measures should 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 described in Williams and Chardine's brochure entitled, *The Leach's Storm Petrel: General Information and Handling Instructions* (to be provided directly). A permit is required to implement the Williams and Chardine protocol. The proponent should be advised that it is required to complete a permit application form prior to proposed activities. This form is available from Keith McAloney at the Canadian Wildlife Service, who can be reached at keith.mcaloney@ec.gc.ca or at 506-364-5013.

- Ramping-up the air gun array over a 30-minute period - a procedure typically used for other animal groups - may encourage marine birds to leave the survey area and may reduce the potential for adverse interactions between the project and marine birds accordingly.

- It should be demonstrated how the release of hazardous substances onboard the seismic vessel (e.g. streamer fluid, chemicals for streamer repairs, fuels, lubricants) into the marine environment will minimized or prevented. Attention should be paid to impact avoidance and pollution prevention opportunities (e.g., solid streamer technology) and a contingency plan should be developed to enable a quick and effective response in the event of a spill. Other management practices and preventative maintenance plans should be outlined such as a protocol to prevent streamer-related spills (should fluid-filled streamers be used). This protocol should describe conditions that will allow the seismic program to be conducted without spill incidents (e.g., the range of environmental conditions within which streamers can operate, monitoring to detect leaks or tears).

### *Follow-up Program*

EC is prepared to assist in the development of a follow-up program, designed to test impact predictions (e.g., predictions regarding effects of lighting on marine birds).

---

[1] These studies include: Lacroix *et al* (2003), Stemp (1995), Turnpenny and Nedwell (1994), Evans *et al* (1993).

*Data Collection*

The proponent could also take the opportunity to collect bird distribution data during proposed activities in anticipation of EA needs related to future activity in the area. As with the testing of impact predictions, a data collection effort should be designed in consultation with EC and be carried out by an individual who is appropriately trained and dedicated to recording marine bird observations. EC would be pleased to review the results of a data collection program.

## Effects of the Environment on the Project

Seismic operations will be somewhat sensitive to environmental conditions (e.g., wind, waves, ice). The EA should focus 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).

## Effects of Accidents and Malfunctions

The mandatory assessment of environmental effects which could result from accidents and malfunctions should include a consideration of potential spill events, such as spills from damaged seismic streamers. 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, MBCA). 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 EA 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, CAN/CSA-Z731-03, 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 (1-800-565-1633 for NS and 1-800-563-9089 for NL).