

Environmental Assessment of Multiklient Invest Newfoundland and Labrador Offshore Seismic Program, 2017 - 2026 (LGL March 2017)

GENERAL COMMENTS

Environment and Climate Change Canada (ECCC)

Due to the recent change in name of Environment Canada to Environment and Climate Change Canada, references to the departmental name and associated acronyms (i.e. EC-CWS to ECCC-CWS) should be updated accordingly.

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 (*percna* 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.

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; and
- 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.

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

Environmental Assessment of Multiklient Invest Newfoundland and Labrador Offshore Seismic Program, 2017 - 2026 (LGL March 2017)

(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.

Department of National Defence (DND)

MARLANT Safety and Environment (MARL SE) has the following comments:

- Please identify a specific individual or office to serve as a Point Of Contact (POC) for MARLANT queries and concerns;
- Please ensure the appropriate Notice to Mariners will be issued for all underwater activities and any significant surface ventures, such as use of flares, buoys, and unconventional night lighting;
- Please ensure the appropriate Notice to Airmen will be issued for all activities that could affect air safety, such as use of balloons, Unmanned Aerial Vehicles (UAVs) or tethered airborne devices; and
- Please ensure engagement of CTF 84, through Director General Naval Strategic Readiness (DGNSR), to ensure de-confliction with possible Allied submarine activities.

The UXO Program has conducted a search of our database and there are two identified UXO sites of concern in that area (see attached) and numerous shipwrecks.

Due to the fact that there may be uncharted shipwrecks or other UXO sites or munition dumps, and in the event activities are conducted that have contact with the seabed (such as drilling or mooring), it is strongly advised that operational aids, such as

Environmental Assessment of Multiklient Invest Newfoundland and Labrador Offshore Seismic Program, 2017 - 2026 (LGL March 2017)

remotely operated vehicles, be used to conduct seabed survey to prevent unintentional contact with harmful UXO items, shipwrecks, or dumpsites that are not noted on the maps.

Should any suspected UXO be encountered during the course of the operations, do not disturb/manipulate it. Please mark the location and immediately inform the Coast Guard. Additional information is available in the 2010 Annual Edition - Notices to Mariners, Section 37. Further UXO general information is available at our website at www.uxocanada.forces.gc.ca.

Canada Nova Scotia Offshore Petroleum Board (CNSOPB)

A portion of the project area includes Fisheries Management Area 4Vs. Some fisheries originating from Nova Scotia work in the 4Vs area. It is not clear in sections 5.1.1 and A-11 of the EA Report if the proponent has consulted with or informed fisheries from Nova Scotia of the program plans.

If fisheries originating from Nova Scotia are not yet aware of the program, it is recommended that the proponent make the commitment to inform these fisheries and/or fishing organizations, as the proposed program may impact them.

Nunatsiavut Government (NG)

The Nunatsiavut Government (NG) finds this environmental assessment to be lacking in substance. The proponent has stated that they are unable to assess impacts for the period they have chosen for their project. Therefore, the timeline should be minimized until they are able to assess cumulative effects.

Paragraph 19(1)(a) of CEAA 2012 specifies that a project EA must take into account environmental effects, including cumulative environmental effects that are likely to result from the designated project in combination with other physical activities that have been or will be carried out. This environmental assessment does not clearly state the proponent's scenario with which they are assessing their own cumulative effects of a 10-year program. The proponent states that the maximum possible combinations within each year are 2D and 2D or 2D and 3D and 4D; therefore the maximum combination should be used each year for 10 years to assess cumulative effects. The proponent is applying for a 10-year project; the environmental assessment should be able to properly assess cumulative effects over that time span by assessing the certain and probable projects over that time period – otherwise each project should reduce the scope to an assessable timeframe; likely resulting in each seismic project being treated as an annual or bi-annual project with separate environmental assessments.

Environmental Assessment of Multiklient Invest Newfoundland and Labrador Offshore Seismic Program, 2017 - 2026 (LGL March 2017)

Section 5.5 states that the mitigation measures will “be adhered to during each survey year, with necessary adjustment based on monitoring and follow up”. There is no detailed monitoring program specified in the environmental assessment. Please detail the monitoring plans that will be used to assess the effects of and adjust the mitigation measures. An environmental effects monitoring plan is an essential part of any environmental assessment (see Table 3 in Duiker et al., 2012), and should be required in the EA process, especially for longer term EAs.

The Nunatsiavut Government takes issue with the referencing of previous EA studies to validate or defend a position. Rather than providing evidence to support conclusions, the proponent has instead asked the reviewer to refer to past EAs that are not included in the document. This is poor EA practice and should be discouraged by the regulator.

The environmental assessment states that it incorporates best practice into its mitigations, however it does not explain why the new NMFS sound exposure criteria requirements have not been assessed in this case as a best practice. Instead, MKI is relying on the Statement of Canadian Practice with respect to the Mitigation of Seismic Sound in the Marine Environment, which is based on a 2004 Canadian Science Advisory Secretariat (CSAS) report that outlines the large data gaps and potential consequences of seismic exploration as well as encouraging the use of new mitigation measures, particularly in cases where cumulative effects should be assessed. The more recent CSAS Report, the Review of Mitigation and Monitoring Measures for Seismic Survey Activities in and Near the Habitat of Cetacean Species at Risk, highlights next steps and best practices for seismic surveys using three case studies of Atlantic SARA species. This document should be applied to the consideration of mitigation measures for this project and can be found here: <http://waves-vagues.dfo-mpo.gc.ca/Library/364484.pdf>

In light of the most minimal sound mitigation being used in this environmental assessment while other jurisdictions are working to apply to new evidence and research to their mitigation practices, what opportunities exist for the adoption of best practices and improved mitigation? What specific reporting requirements exist in order to ensure adaptive mitigation over the 10-year period of the project?

Fish, Food and Allied Workers (FFAW)

The overall study area for this EA is large. While fisheries data has been examined in the document there is no discussion regarding the regime shift (from a shellfish dominated to groundfish dominated fishery) that is currently underway in our dynamic marine environment. An increase in Atlantic cod abundance was mentioned (page 58), but increased fishing activity is anticipated for all groundfish species (e.g. Atlantic cod, turbot, Atlantic halibut, grey sole, redfish, yellowtail flounder, etc.) throughout the scope of this ten year EA. *It is critical that effective and regular communication ensue*

Environmental Assessment of Multiklient Invest Newfoundland and Labrador Offshore Seismic Program, 2017 - 2026 (LGL March 2017)

with the fishing industry throughout the EA lifespan so that the seismic company is kept apprised of ongoing developments with fisheries in the vast project area.

There is some misinterpretation of gear type data in the report (page 78). For example, it is important to clarify that snow crab would be the only commercial species targeted in “pots” in the study area. There may be incidental bycatch of the other species listed in this section of the report as being fished with pots but it would not be the target species. As well, long lines are used for Atlantic halibut and on a smaller scale with Atlantic cod but the other species listed would be incidental bycatch. Atlantic cod are not directed commercially with a rod and reel. Furthermore, gill nets were not even discussed as a gear type although it is listed in the associated Table 4.9 (pages 80-81). *It is recommended that this section be rewritten to more accurately reflect the gear types used and the species targeted using two categories - fixed or mobile gear. (The pot fishery for yellowtail and Greenland halibut was also mentioned on Page 188).*

The collaborative DFO-industry post season crab survey is undergoing changes in terms of the location and number of survey stations. However, changes have not been confirmed for 2017. We question the source of the number of stations for 2017 (1316 indicated in the report – page 116). As well, reported stations within the project area and the associated map of stations (page 116) should have a caveat statement noting that stations may be subject to change from year to year. This is a new development. *It is therefore crucial that the seismic company maintain effective communication with FFAW/Unifor and DFO to receive accurate information on the post-season crab survey going forward.*

Furthermore, this communication will be important as we reiterate that the 7 day/30 km temporal/spatial buffer (page 171 and 224) is **NOT** an acceptable mitigation for fisheries or fisheries science in the view of FFAW/Unifor. It continues to be our stance that seismic work should **NOT** be conducted in the vicinity of survey stations until they have been sampled for the year. *We have worked cooperatively with MKI over the past few years on this issue and anticipate the same level of understanding going forward.*

The CNLOPB’s current Compensation Guidelines (March 2002) are a bit ambiguous regarding oil spills. The report indicates that these Guidelines would be used in the event of a substantial hydrocarbon release (page 189). *We request further information as to how these Guidelines would be followed.*

Groundfish Enterprise Allocation Council (GEAC)-Canadian Association of Prawn Producers (CAPP)

We note that the study area encompasses virtually all of the regions fished by our membership in the offshore waters of NL. We feel that such a large spatial footprint for

Environmental Assessment of Multiklient Invest Newfoundland and Labrador Offshore Seismic Program, 2017 - 2026 (LGL March 2017)

the project makes it all but impossible for us to assess the impacts of the project on our activities, as we do not know with any precision how the activities will be conducted relative to our harvesting activities. Given that the timing of the project activities is May 1st to November 30th, there will certainly be some overlap between our harvesting activities and potential seismic activity.

The relationship between seismic activity and the behavior of shrimp and groundfish is poorly understood. We have experienced substantial changes in catch rates and resource distribution associated with nearby seismic activity and feel that this EA does not adequately consider those risks. This is especially true given the broad nature of the study area and the reality that responses may differ in areas recently surveyed (e.g. southern areas) and those areas where this is the 'first' such activity (e.g. northern areas). A one-size-fits-all assessment may not be reasonable in this context.

The impact on fisheries VEC is very poorly described. From our perspective, any mitigation should include a spatial and temporal avoidance of harvesting activities that is based on a discussion between those operators on the water and the surveyor. We suggest that such mitigation is not discussed in this document, and should be considered.

As we have noted in other EAs, the document suggest that no fisher will be required to relocate based on the exploration activities. We question this conclusion, especially given that we have observed substantial reduction in catch rates of both shrimp and groundfish as a result of seismic testing within the general vicinity. This means that although a seismic survey vessel may not force us to immediately relocate to avoid the survey vessel, the resultant impacts of fish distribution from the seismic pulses will cause us to significantly alter our fishing plans – even leading us to abandon some areas for several months. We request that the EA include some parameters on the avoidance of activity, to be determined through direct discussion with us. This avoidance should include both a spatial and temporal element to allow our harvesting activities to continue without reductions in catch rates.

We suggest that there is not sufficient information in this document to adequately assess the impacts of seismic exploration on shrimp and groundfish behavior and distribution (and thus the catch rates experienced by our operators).

We submit these comments based on our past experience with seismic exploration near our harvesting grounds. This experience has generally not been positive and we seek to improve our relationships with the oil and gas exploration industry such that the benefits of our oceans can benefit all sectors.

SPECIFIC COMMENTS

Canada-Newfoundland and Labrador Offshore Petroleum Board (C-NLOPB)

Section 1.1 Relevant Legislation and Regulatory Approach, page 1 – Environment Canada (EC) is now Environment and Climate Change Canada (ECCC).

Section 1.1 Relevant Legislation and Regulatory Approach, page 3 – The *Geophysical, Geological, Environmental and Geotechnical Program Guidelines* were revised in April 2017.

Section 2.2 Project Overview, page 7 – The potential interaction and assessment of effects tables in Section 5.7 Effects of the Project Activities on the Environment lists Echo Sounder and Side Scan Sonar as project activities. A description of these activities should be provided.

Section 2.2 Project Overview, page 7, first paragraph –Although “*Specific data acquisition plans for 2D, 3D and/or 4D surveys during 2018-2026 are not determined*”, the environmental assessment should be based on the maximum amount to be acquired each year and therefore this number should be stated.

Section 2.2 Project Overview, 3rd paragraph, page 7 – Section III of the *Geophysical, Geological, Environmental and Geotechnical Program Guidelines* (April 2017) states that “*Operators are expected to implement a seabird and marine mammal observation program throughout all C-NLOPB authorized program activities. Such a program should involve a designated observer trained in marine mammal **and seabird** observations.*”

Section 2.2.7 Seismic Streamers, page 10 – if it is possible that future 3D surveys may tow more than 16 streamers, then it should be included in this assessment. The purpose of an EA Update is to outline the proposed activities, confirm that the proposed program activities fall within the scope of the previously assessed program, and indicate if, with this information, the EA predictions remain valid. It is not appropriate to assess additional activities in an EA Update.

Section 2.2.7 Seismic Streamers, page 10 – what will be the total width of the streamers?

Section 2.5 Consultations, page 15 – It is stated that *Results of the remaining Labrador consultations will be included in the Addendum to the EA that is prepared to address EA reviewer comments*. Please provide details and results.

Environmental Assessment of Multiklient Invest Newfoundland and Labrador Offshore Seismic Program, 2017 - 2026 (LGL March 2017)

Section 2.7 Environmental Monitoring, page 16 – “As per LGL protocol, seabird observations will be conducted...” During the initial scoping phase, ECCC commented on and made multiple submissions on protocols for bird observations, handling birds of multiple scenarios. It is the position of the C-NLOPB that ECCC protocols are adhered to.

Section 2.2.8.1 Vessels, pg 10 – “When necessary, escort vessels will be used to scout ahead of the seismic vessels for fishing vessels and gear, and hazards such as ice and floating debris.” Section 5.5 Mitigation Measures, Table 5.1, pg 171 states that mitigation identified to avoid potential effects on fishing gear is the “use of escort vessel”. Please explain what is meant by “when necessary”? Section II (2) c) of the *Geophysical, Geological, Environmental and Geotechnical Program Guidelines* (April 2017) states that “Communication throughout survey operations with fishing interests in the area should be maintained. The use of a “Fisheries Liaison Officer” (FLO) onboard the seismic vessel is considered best practice in this respect. The use of a standby/picket/guard/chase vessel is also considered best practice in this respect. “

Section 4.6.1 Species at Risk within the Study Area, Table 4.20, page 152 – the scientific name for Harlequin Duck (Eastern population) is *Histrionicus histrionicus*.

Section 5.5 Mitigation Measures, pg 170 and Section 5.9 Mitigation Measures and Follow-up, pg 224- Section 5.1.4.1 Environmental Assessment of the *Geophysical, Geological, Environmental and Geotechnical Program Guidelines* (C-NLOPB April 2017) states that the environmental assessment report should include *a table that lists all of the environmental commitments and mitigation measures made by the Applicant during the environmental assessment that is suitable for tracking the subsequent status of those commitments and measures. Thirty days prior to commencement of the project, the Applicant shall submit the tracking table identifying the status of each of the environmental commitments and mitigation measures.* Tables 5.1 and 5.19 should also include any commitments made throughout the assessment.

Section 5.7.2 General Activities-Marine Use, page 174, paragraph one – Just to confirm, the escort vessel will be onsite with the seismic vessel at all times the seismic vessel is acquiring data. When the picket/chase/escort vessel is to be unavoidably absent from the operational area and/or is unable to perform its duties, the operator is expected to perform a risk assessment of their ongoing operations and to plan and implement risk mitigation measures to minimize the potential for negative interaction with commercial fishers. The risk assessment and the type of mitigations expected were communicated to MKI on August 25, 2016.

Section 5.7.4 Fish and Fish Habitat VEC, Table 5.3, page 181 – this table is missing the Vessel/Equipment Rows, see Table 5.6 for reference.

Environmental Assessment of Multiklient Invest Newfoundland and Labrador Offshore Seismic Program, 2017 - 2026 (LGL March 2017)

Section 5.7.7 Marine Mammal and Sea Turtle VEC, Table 5.12, page 205 – why is the geographic extent for the Marine Mammal VEC less than a km², with respect to vessel/equipment presence, but it is up to 100 km² for the Bird VEC?

Section 5.7.7 Marine Mammal and Sea Turtle VEC, Table 5.14, page 210 – why is the geographic extent for the Sea Turtle VEC less than a km², with respect to vessel/equipment presence, but it is up to 100 km² for the Bird VEC?

Section 5.7.8 Species at Risk VEC, Table 5.17, page 217 – why is the geographic extent for the Species at Risk VEC, of which there are two bird species, less than a km², with respect to vessel/equipment presence, but it is up to 100 km² for the Bird VEC?

Environment and Climate Change Canada (ECCC)

Section 2.7 Environmental Monitoring, page 16 - ECCC-CWS has a mobile version of the Eastern Canada Seabirds at Sea (ECSAS) database that can be provided to the proponent, which will facilitate data entry. The MMO or delegated personnel can enter data into the database while undertaking observations, with little to no need for post-processing.

C-NLOPB comment: This database was provided to MKI (Neil Paddy) in July of 2015

Section 4.4 Marine-associated Bird VEC, page 118 - Quote: “The most current census data related to important seabird nesting colonies in Newfoundland and Labrador have been acquired from the CWS and are incorporated into this EA.” Please provide citation.

Section 5.7.6.3 Effects Assessment of other Routine Project Activities - Accidental Releases, page 195 - Quote: "Upon investigation of a visually identified hydrocarbon sheen, such birds would find that its odour does not resemble that of any food item. As a result, these birds would be unlikely to come in contact with a sheen during foraging." Please provide citation or remove.

Fisheries and Oceans Canada (DFO)

Section 2.2.7 Seismic Streamers, page 10 – the maximum spacing between streamers should be noted.

Section 2.2.9 Waste Management, page 11 – does “garbage” include liquid waste discharges? If so, the second sentence should note as such.

Environmental Assessment of Multiklient Invest Newfoundland and Labrador Offshore Seismic Program, 2017 - 2026 (LGL March 2017)

Section 3.2 Climatology, page 20 – it is assumed that the noted data reports provided in the first paragraph of page 20 (e.g. CNLOPB 2008, CNLOPB 2014, Oceans 2014) are the most recent / up to date datasets for the hind cast data; this should be confirmed and noted accordingly in this paragraph.

Section 3.2.4 Weather Variables, page 23, first sentence – a reference for ICOADS should be provided within Section 6 Literature Cited.

Section 4.3.1 Information Sources, page 64 – it is felt that this section could benefit from addition of a table showing / describing the source (i.e. DFO and NAFO), time period and geographic location represented by the DFO and NAFO data.

Section 4.3.3.2 Study Area Catch Analysis 2010-2015, Fishing Gear Used in the Study Area, page 78, second sentence - "...pots (snow crab, Greenland halibut, redfish, American plaice, Atlantic cod and Atlantic halibut)..." suggests that pot gear is used to capture Greenland halibut, plaice, redfish, cod and halibut. Pot gear is used exclusively to capture snow crab rather than the other noted species unless the catch of the other species is by catch. Either way this sentence needs to be clarified and corrected accordingly.

Section 4.3.5 Recreational Fisheries, page 99, second paragraph, first sentence - this could be amended to reflect that the noted recreational groundfish fishery has occurred and has been concluded for 2016.

Section 4.5.1 Marine Mammals (page 133-135), Table 4.17 - appropriate population names should be included for those species noted as being listed under SARA or by COSEWIC. This section should also note that based on work completed in 2016 by researchers at Dalhousie University in the southern Grand Banks/Flemish Pass/Flemish Cap areas and which has been reported in various media sources (e.g. CBC News online) it would appear that northern bottlenose whales from both the North Atlantic and Scotian Shelf populations frequented the noted areas studies in 2016. This is also supported by information presented in Table 4.18 on marine mammal sightings. As such it is felt that the representation in Table 4.17 and various sections of the EA that describe northern bottlenose whales as "rare" is not accurate and should be reconsidered and amended to reflect the reasonable likelihood of occurrence within the study area to be something other than rare.

Section 4.5.1.3 Toothed Whales (Odontocetes), first sentence - this should be amended to also include reference to Table 4.18.

Environmental Assessment of Multiklient Invest Newfoundland and Labrador Offshore Seismic Program, 2017 - 2026 (LGL March 2017)

Section 4.5.3 Marine mammal and Sea Turtle Data Gaps, page 149, last sentence - "...opportunistic efforts are being made during seismic surveys to collect more distribution and abundance data for marine mammal and sea turtles". It should be described or noted how this data is being compiled and reported.

Section 4.6.2.3 Marine Mammals and Sea Turtles, Northern Bottlenose whales, page 156 – see above comment on Section 4.5.1 the description of northern bottlenose whales provided on page 156 should also factor this comment into the description accordingly.

Section 4.6.3 Data Gaps associated with the Species at Risk VEC, page 157, second paragraph - it is mentioned the "sensitive areas VEC" it is assumed that this is an error and the noted sentences should refer to the "Species at Risk VEC" rather than the sensitive areas VEC. This should be clarified and corrected accordingly.

Section 4.7.1 Sensitive Areas within the study area, page 158 and 159 – please combine bullets 3 and 4 as they all fall under the Newfoundland and Labrador Shelves Bioregion the Oceans Program no longer references the Placentia Bay Grand Banks Large Ocean Management Area vis a vis EBSAs. As such there are 18 EBSAs in total. Bullet 6 please add the acronym (AOI) following "Area of Interest". Bullet 8 the area described is known as the Hatton Basin and Bullet 8 should be amended accordingly. Bullet 10 and 11 can be combined as both are identified as Fishery Exclusion Areas. Bullet 15 should make the distinction that the Gilbert Bay is designated as an MPA under Canada's Oceans Act and the Milne Seamount Complex is designated internationally as a component of the OSPAR Network of Marine Protected Areas.

Section 4.7.1 Sensitive Areas within the study area Figure 4.40 – this figure depicts the Bonavista Cod Box as a DFO area, it should be noted that is an area that fishers recognize as an important cod spawning area however it is currently not under any protective measures by DFO.

Section 4.7.1 Sensitive Areas within the study area, page 161, second paragraph - the information presented in the first sentence is incorrect and should be omitted; the Southeast Shoal of the Grand Bank has not been recommended and proposed for MPA designation. Currently, the Laurentian Channel AOI is being proposed as an MPA. This paragraph should be amended accordingly. It is felt that if the purpose of this paragraph is to follow up on areas that are legislated then a short description of all such areas could be / should be provided including (from an Oceans Management perspective) Gilbert Bay MPA, the Fishery Exclusion Areas (Hawke Channel and Funk Island Deep), NAFO coral/sponge and seamount fishery closures, and the 30 Coral Protection Zone.

Environmental Assessment of Multiklient Invest Newfoundland and Labrador Offshore Seismic Program, 2017 - 2026 (LGL March 2017)

Section 4.7.2 Data gaps associated with Sensitive Area VEC, page 162 – Bullet 1 it should be noted that there was new and updated distribution data presented in 2016 in the CSAS report ‘Delineation of Coral and Sponge Significant Benthic Areas in Eastern Canada Using Kernel Density Analyses and Species Distribution Models’ (CSAS, Research Document 2016/093) which if not already should be included within the appropriate sections of the EA report. Also with respect to Bullet 3 it should be noted that Ecological Risk Assessment (ERA) to evaluate the risk posed by bottom contact fisheries on significant coral and sponge communities has been carried out on three areas identified in the 2016 CSAS (mentioned above) including areas in the Hatton Basin, Hopedale Saddle, and Tobin’s Point. These areas are being proposed as fisheries closures and extensive consultations on each area are currently underway.

Section 5.4 Effects Assessment Procedures, page 169 – it is felt that there should be a very short summary of the effects assessment procedures presented in this section of the EA, rather than referring readers to previous EA Reports.

Section 5.5 Mitigation Measures, page 170 - the listed bullets should also include reference to the Species at Risk Act and the Marine Mammal Regulations which are undergoing amendment. It should be noted that Schedule 11 of the proposed amended MMR provide approach distances for marine mammals based on species, vehicle (vessel, aircraft, etc), area and timing. Given that the proposed seismic survey(s) are scheduled to run from 2017 to 2026 it is recommended that the proponent be aware of any potential implications that may arise if any proposed amendments to MMR are accepted during the timeframe covered by the proposed survey program.

Section 5.5 Mitigation Measures Table 5.1, page 171 – as noted in later comments based on this table it is not clear what mitigations will be employed to monitor marine mammal presence within the 500 m exclusion radius during periods of darkness and/or low visibility. This will require clarification in accordance with similar comments to follow.

Section 5.5 Mitigation Measures, page 172 – similar to comment on Section 5.4 above it is felt that there should be a very short summary of the 7 mitigation categories noted on page 172 presented in this section of the EA rather than referring readers to previous EA Reports.

Section 5.6 Effects of the environment on the Project first sentence last paragraph, page 172 – as a small point it is also likely that poor visibility will affect the ability of marine mammal observers to observe marine mammals within the 500 m radius around the air gun array perhaps the first sentence in the last paragraph should also include this effect of the environment on the project.

Section 5.7.4.1 Sound - \physical and Physiological Effects, page 177, last paragraph, last sentence – this sentence notes that “Effects of exposure to <500 Hz sound and marine vessel sound appear to be primarily behavioural and somewhat temporary” please define or clarify what is meant by “somewhat temporary” and provide an appropriate reference.

Section 5.7.4.1 Sound Table 5.4, page 182 – the text provided on page 181(see last sentence assessment of effects of sound) gives a level of confidence as medium, however the information presented in Table 5.4 provides level of confidence as 2-3 (medium to high). One of either the wordings on page 180 or the rankings in table 5.4 need to be amended.

Section 5.7.8.3 marine Mammal and Sea Turtles Species at Risk, page 216, first sentence - it is indicated that among others “northern bottlenose whales are not expected to occur regularly in the project area” based on information presented in earlier comments (see Section 4.5.1 above) it is felt that this is not an accurate reflection on the potential occurrence of northern bottlenose whales in the study area in particular the southern most part as well as areas of the Flemish Pass and Flemish Cap. This sentence should be amended accordingly.

Section 5.9 Mitigation Measures and Follow up, page 225, first paragraph – it is noted that “...observers will watch for marine mammals and sea turtles during daylight periods”. Building on earlier comments it is not clear what measures will be employed to monitor for SARA listed endangered and/or threatened mammals (e.g. Scotian Shelf population northern bottlenose whales) and sea turtles during periods of darkness and/or low visibility. Based on information presented in Tables 3.11, 3.12 and 3.13 during the May to October timeframe (i.e. planned survey timeframe) survey the frequency of poor visibility (<500 m) ranges from 4%, 5.4% and 7.3% (October) and from 26%, 40.3%, 33 % (July) respectively for the Flemish Cap, Grand Banks and Laurentian Basin respectively. Given this likelihood and the precautionary possibility of encountering northern bottlenose whales it is not clear why there is no acknowledgement that other more precautionary mitigation measures may be needed / used during periods of low visibility / darkness especially within the southern most parts of the study/project area. This should be clarified.