GENERAL COMMENTS

Canada – Newfoundland and Labrador Offshore Petroleum Board

Tables 5.11, 5.16 and 5.19 have"PicketVessel" as one word.

The printed copy of the EA Report should include a Table of Contents.

Environment Canada – CWS

Previous comments on the scoping document and project description (submitted on November 19, 2013) are still applicable to the EA Report.

FFAW

The commercial fishery is very important to the many rural communities in Newfoundland & Labrador. While the membership of the FFAW|Unifor live in communities as far north as Fish Cove Point (just north of Cartwright), our Labrador members' fish in NAFO divisions 2G, 2H, 2J and 3K for crab, shrimp, turbot, cod, etc. As well, our harvesters in 4R (northern Newfoundland) have rights to fish in 2J, and our northeast coast fishers still have fishing rights of the coast of Labrador as well. We also have members who fish quotas for the Natuashish Government in 2H.

There is an item on utilizing a 7 day temporal pre-research survey separation that comes up in several places in the document (i.e. pgs. 156, 184). It is the understanding of FFAW|Unifor that this is being accepted by DFO when it comes to their Research Vessel Trawl Surveys, but it is not feasible to be utilized in connection with the execution of the Industry-DFO Collaborative Post-Season Trap Survey for Snow Crab. If there are further questions on these matters it would be worthwhile to communicate with the shell-fish research scientists at DFO. The reviewer is only aware of the implementation of spatial separation having been discussed in the context of any recent programs in Newfoundland & Labrador. The FFAW|Unifor is obliged to again state that any impact on either harvesting of fisheries science should be recognized as unacceptable in the Newfoundland & Labrador waters.

Nunatsiavut Government

Inuit depend on the marine environment for a subsistence lifestyle and for their economic livelihood, particularly in regards to the Inuit Fishery. As is the case with all seismic activity, this program could potentially have negative impacts on Labrador Inuit health and wellbeing. The Nunatsiavut Government continuously recommends that seismic activities not begin prior to September 15 of each year and is adamant that seismic activities do not disrupt the fishery, irrespective of the seismic survey plan of MKI.

The Nunatsiavut Government recommends that adaptive management be required for Project-specific or cumulative effects, whether conducted by MKI, government bodies, or in combination. This would include the implementation of contingency plans and resources to enable responsive action, especially in areas where effect predictions are uncertain and where predictive errors may have serious consequences (e.g. disruption to traditional livelihoods or Inuit Fishery).

Currently, Labrador Inuit bear the majority of the risk associated with seismic activities with few tangible benefits to the region. The Nunatsiavut Government expects the Proponent to accept a degree of responsibility for any negative changes to the Inuit Fishery and subsistence fishing, and that the burden of proof would not rest on Inuit stakeholders to demonstrate a cause and effect relationship with seismic processes and the fisheries.

Hiring, training and ensuring meaningful employment for Labrador Inuit is essential. This could be established through an employment outreach program, with defined minimum targets for Labrador Inuit hiring. Such a program should include transportation assistance and measures to address social and cultural issues including any associated language barriers, if necessary. This would also include the establishment of paid trainee positions to be in place onboard the seismic vessel in order to build capacity. Furthermore, given that our Inuit fishers are not represented by the Fish, Food and Allied Workers Union, the Nunatsiavut Government is adamant that the Inuit Fisheries Liaison Officer be present on the seismic vessel at all times during the Project.

We also request that the Proponent support through on-going basis Nunatsiavut government businesses and service providers for the duration of their activity on the north coast of Labrador.

The Nunatsiavut Government recommends that an annual report be submitted to the CNLOPB and the Nunatsiavut Government no later than January 31, detailing the progress and potential environmental impacts of the Project, including progress on the implementation of mitigation measures and Inuit-specific opportunities.

Potential mitigation measures could still be arranged for the 2014 MKI seismic program and the Nunatsiavut Government recommends increased communication and consultation to address the ongoing concerns of Inuit in the region. Currently, few steps have been taken by the proponent to address the potential negative impacts of seismic activity within the Labrador Inuit Settlement Zone and Inuit Fishery.

Department of National Defence (DND)

Comments from DND's letter dated January 27, 2014 have been reflected in the EA Report. The proponent is reminded that DND is likely to be operating in the vicinity of the study area in a non-interference manner during the project timeframe; thus, there is potential for interaction with naval operations in areas where seismic activities will occur. DND is to be kept informed of dates and locations of seismic activities.

SPECIFIC COMMENTS

Canada – Newfoundland and Labrador Offshore Petroleum Board

Section 1.0 Introduction, 2nd paragraph, line 6, page 1 – If there is "*the possibility of 2D and 3D seismic surveys occurring in the same year*" then this activity should be assess as part of the project proposed.

Section 2.1 Spatial and Temporal Boundaries, page 6 – While the proponent has only listed 5 "corner" coordinates, it is obvious that the Project Area in Figure 1.1 is not a pentagon-shaped polygon. The Project Area is irregularly shaped with more than 5 coordinates and the proponent needs to provide additional "corner" points.

Please provide the coordinates for the Study Area.

Section 2.1 Spatial and Temporal Boundaries, paragraph 5, page 6 – It should be (Sikumiut 2008).

Section 2.2.6.1 Seismic Vessel, page 9 – It should be Gibraltar.

Section 2.2.6.1 Seismic Vessel, page 9 – It should be Coasting.

Section 4.2.1.4 Benthos, paragraph 1, page 25 – It should be bryozoans.

Section 4.2.2.1 Macroinvertebrate and Fish Species Harvested during Commercial Fisheries, subsection Snow Crab, paragraph 4, page 30 – The DFO official needs to be indentified here.

Section 4.4 Seabirds and Migratory Birds, paragraph 1, page 92 - The author states that, "There are over 30 species of marines birds occurring...", but only 27 are listed in Table 4.6 and 3 are "scarce." The table or the text needs to be corrected.

Table 4.10, page 107 – There are three instances where "palagic" is used. The reviewer assumes it is meant to be "pelagic", if so, this needs to be corrected.

Section 4.6.1.2 Northern Bottlenose Whale, paragraph 2, page 128 – It should read, "The recovery goal for this population is to..."

Section 4.6.1.2 Northern Bottlenose Whale, paragraph 3, page 128 – It should read, (see Figure 4.43).

Section 4.6.1.7 Fin Whale, page 133 – "polarregions" is written as one word.

Section 5.4.2 Project Area, 1st paragraph, last line, page 145 – It is stated that "*The western boundary of the Project Area is 20 km offshore of The Zone*" yet the note for the

Northwest Project Area corner in Table 5.1 states "coincident with northeastern tip of 'The Zone'. Please explain how it can be 20 km offshore of The Zone.

Section 5.7 Effects of the Environment on the Project, 2nd paragraph, line 9, page 162 – Please provide information on the "*wind and wave conditions*" that suspend seismic vessel surveys.

Section 5.8.4.1 Underwater Sound, subsection Behavioural Effects, paragraph 1, page 171 – Anecdotal information requires multiple observations (in these cases it would require multiple fish harvesters observing the same events). If it is only a single report from a fish harvester, which it appears to be, then the "anecdotal" needs to be removed and the observation by each fish harvester needs to be properly described as a single observation.

Section 5.8.5.2 Vessel Presence (including towed seismic equipment), page 183 – The sentence, "Because of the length of the streamers being towed behind it, the maneuverability of a seismic vessel is restricted and other vessels must give way" is not entirely correct. This is only as a last resort to failed communication and avoidance mitigation. As the proponent clearly states on page 156 that the use of a scout vessel will be used in active fishing areas there seems to be contradictory language by the proponent. This needs to be corrected.

Section 5.8.5.2 Vessel Presence (including towed seismic equipment), line 8, page 183 – It is not clear from the statement "*the turning radius required between each track line extends the assessment area beyond the actual survey project area (but stays within the Project Area)*" that the turning radius will stay within the Project Area.

Section 5.8.6.5 Presence of Vessels and Helicopters, page 192 – The title of this subsection implies that helicopter presence will be discussed, however this does not appear to be the case.

Section 5.8.6.6 Accidental Releases, paragraph 1, page 193 – It should read, "Marine gas oil is a low sulphur, light fuel..."

Section 5.8.7.4 Effects of Accidental Releases, line 3, page 208 – The maximum amount of fuel potentially spilled by the seismic vessel or picket vessel should be available for discussion.

Environment Canada – CWS

Section 4.4 Seabirds and Migratory Birds, paragraph 1, **page 92 -** Quote: "(2) Quaker Hat Island near Cape Harrison, (3) Gannet Islands and Bird Island in Groswater Bay/Table Bay"

These two main concentrations are not grouped correctly. Should read as follows: 2) northeast Groswater Bay and Quaker Hat Island near Cape Harrison, 3) Gannet Islands and Bird Island, 4) Table Bay, and 5) Wadham Islands and Funk Island.

Section 4.4 Seabirds and Migratory Birds, paragraph 1, page 92 - Quote: "These five island groups support almost 660,000 pairs of breeding seabirds. More than 40% of the North American breeding population of Razorbill nests on the mid-Labrador coast alone. The Gannet Islands (including the Gannet Cluster) off Hamilton Inlet, the largest breeding seabird nesting colony in Labrador, supports more than 91,000 pairs of nesting seabirds in the summer (Table 4.7). The Wadham Islands and Funk Island, 50-100 km south of the Study Area, host over 430,000 pairs of seabirds that travel great distances on foraging sorties."

Population numbers for seabird colonies in this report in general and Table 4.7 in particular are in large part from dated sources, and should be updated through the use of the most recent information available. Seabird colony numbers are routinely assessed and updated by EC-CWS and its partners, and data are compiled and stored in the CWS Atlantic Region Colonial Waterbird Database. These data can be obtained by contacting Sabina Wilhelm, EC-CWS colonial seabird biologist, at Sabina.wilhelm@ec.gc.ca.

Section 4.4.1 Important Bird Areas for Seabirds, paragraph 1, page 96 - Quote: "These eight IBAs contain almost 660,000 pairs of breeding seabirds of 11 species. The Gannet Islands contain the largest seabird colony on the coast of Labrador with 14,329 pairs of Razorbill (about 33% of the North American breeding population), 38,666 pairs of Atlantic Puffin, and 36,702 pairs of Common Murre (see Table 4.7)."

Population numbers for seabird colonies in this report in general and Table 4.7 in particular are in large part from dated sources, and should be updated through the use of the most recent information available. Seabird colony numbers are routinely assessed and updated by EC-CWS and its partners, and data are compiled and stored in the CWS Atlantic Region Colonial Waterbird Database. These data can be obtained by contacting Sabina Wilhelm, EC-CWS colonial seabird biologist, at Sabina.wilhelm@ec.gc.ca.

Section 4.4.2 Distribution and Abundance, paragraph 1, page 96 - Quote: "The seabird colonies at The Gannet Islands and Funk Island are exceptions."

Attached are two EC-CWS technical reports that can provide updated trend information on seabirds breeding in Groswater Bay and on one of the Wadham Islands. Additional more recent data for these and other colonies within the study area exist and are available upon request from EC-CWS.

Robertson, G. J. and R. D. Elliot. 2002. Changes in seabird populations breeding on Small Island, Wadham Islands, Newfoundland. Canadian Wildlife Service Technical Report Series No. 381. Atlantic Region. iii + 26 pp.

Robertson, G. J., R. D. Elliot, and K. G. Chaulk. 2002. Breeding seabird populations in Groswater Bay, Labrador, 1978 and 2002. Canadian Wildlife Service Technical Report Series No. 394. Atlantic Region. iv + 31 pp.

Section 4.4.2 Distribution and Abundance, paragraph 1, page 96 - It should be noted in this section that the ECSAS program is ongoing, and a current focus on ECSAS monitoring is the Labrador Sea. Please see the attached report (Tranquilla et al. in press) for updated information in the region.

Section 4.4.2.8 Alcidae (Murres, Black Guillemot, Atlantic Puffin, Razorbill, and Dovekie), paragraph 1, page 101 - Quote: "Common Murre breeds in large colonies on the mid-Labrador coast with a total of 47,000 pairs at five main colonies (see Table 4.7)."

Population numbers for seabird colonies in this report in general and Table 4.7 in particular are in large part from dated sources, and should be updated through the use of the most recent information available. Seabird colony numbers are routinely assessed and updated by EC-CWS and its partners, and data are compiled and stored in the CWS Atlantic Region Colonial Waterbird Database. These data can be obtained by contacting Sabina Wilhelm, EC-CWS colonial seabird biologist, at Sabina.wilhelm@ec.gc.ca.

Section 4.4.2.8 Alcidae (Murres, Black Guillemot, Atlantic Puffin, Razorbill, and Dovekie), paragraph 2, page 102 - Quote: "About 43% (18,526 pairs) of the North American breeding population of Razorbill nests on the mid-section of Labrador coast (see Table 4.7). Most of these (14,329 pairs) are on The Gannet Islands (CWS unpubl. data)."

Population numbers for seabird colonies in this report in general and Table 4.7 in particular are in large part from dated sources, and should be updated through the use of the most recent information available. Seabird colony numbers are routinely assessed and updated by EC-CWS and its partners, and data are compiled and stored in the CWS Atlantic Region Colonial Waterbird Database. These data can be obtained by contacting Sabina Wilhelm, EC-CWS colonial seabird biologist, at Sabina.wilhelm@ec.gc.ca.

Section 4.4.2.8 Alcidae (Murres, Black Guillemot, Atlantic Puffin, Razorbill, and Dovekie), paragraph 4, page 102 - Quote: "Black Guillemot breeds on both sides of the Atlantic, north into Arctic waters. It nests in numerous small colonies on coastal headlands and many small rocky islands. Population size estimates are difficult to achieve because nesting occurs in hard to access rock crevices. Black Guillemot is partially migratory but remains as far north as there is open water. Unlike the other members of the Alcidae, it feeds near shore and is rarely found more than a few

kilometres from shore or pack ice. Black Guillemot is a year round resident on the coast of Labrador."

Population numbers for seabird colonies in this report in general and Table 4.7 in particular are in large part from dated sources, and should be updated through the use of the most recent information available. Seabird colony numbers are routinely assessed and updated by EC-CWS and its partners, and data are compiled and stored in the CWS Atlantic Region Colonial Waterbird Database. These data can be obtained by contacting Sabina Wilhelm, EC-CWS colonial seabird biologist, at Sabina.wilhelm@ec.gc.ca.

It is important to highlight in this section that the Nain area of Labrador hosts high concentrations of Black Guillemots. This is in contrast to the generally low densities found along the rest of the coasts of Newfoundland and Labrador.

Section 4.6 Species at Risk, subsection 4.6.1.4 Ivory Gull, page 129, The Ivory Gull recovery strategy has been finalized and is currently available at the Species at Risk Registry (see http://www.sararegistry.gc.ca/species/speciesDetails_e.cfm?sid=50).

Section 5.8.6.1 Vessel Lights, page 188, Change from "migratory bird salvage permit" to "live seabird handling permit".

Section 5.8.6.4 Sound, page 192, Change magnitude of effects from "negligible to low" to "uncertain", to reflect follow-up statements later in this section which indicate that it is uncertain what the effects of sound on seabirds are.

Section 5.8.6.5 Presence of Vessels and Helicopters, page 192
Aircraft, particularly helicopters, have been known to cause significant negative impacts to migratory birds during various life stages (i.e. chick rearing, moulting). Mitigation measures such as timing and adjusting the altitude and pattern of helicopter flight lines can minimize disturbance. Helicopter use near seabird breeding colonies should be avoided from May 1st – August 31st (with an end-date of September 30th for Northern Gannet Colonies).

Section 5.8.6.6 Accidental Releases, page 193 We recommend a commitment to using solid streamers instead of liquid streamers. If liquid streamers are used, a contingency plan for mitigating potential leaks in the streamers must be made. Please consult O'Hara and Morandin (2010; attached) for information regarding the effects that even very small quantities of oil can have on thermoregulatory ability in migratory birds.

Fisheries and Oceans Canada (DFO)

Section 4.3 Fisheries, page 45 - There is a recreational groundfish fishery as well as Aboriginal groundfish fisheries for food, social and ceremonial purposes primarily adjacent to and in nearshore waters of the study area.

Section 4.5, Table 4.10, page 107 - When referring to SARA listed species the population should also be identified. Please note that Schedule 1 of the *Species At Risk Act* is the official list of SARA species. Schedules 2 and 3 identify species to be reassessed by COSEWIC using revised criteria when SARA came into effect. Table 4.10 should be amended to delete the wording "Schedule 3 Special Concern" and "Schedule 2 Threatened" from the *SARA* Status column for Humpback Whale and Harbour Porpoise respectively.

Section 4.6, Table 4.13, pages 125 and 126 - The title of this table should be revised to *"SARA-listed and COSEWIC-assessed Marine Species that May Occur in the Study Area"* as species are assessed by COSEWIC, not listed. When referring to SARA listed species the population should also be identified. Populations of Atlantic salmon should be listed separagraphtely as noted on the *SARA* Registry. Hood Seal and Harp Seal are both high priority candidate species, and Sperm Whale is a mid-priority candidate species under COSEWIC and the applicable sections of Table 4.13 should be amended accordingly.

Section 4.7 Sensitive Areas, page 136 - This section makes no reference to the recent delineation of Ecologically and Biologically Significant Areas (EBSAs) in the NL Shelves Bioregion as described in Canadian Science Advisory Secretariat (CSAS) Document *"DFO. 2013. Identification of Additional Ecologically and Biologically Significant Areas (EBSAs)within the Newfoundland and Labrador Shelves Bioregion. DFO Can. Sci.Advis. Sec.Sci. Advis. Rep. 2013/048."* Some of the is EBSAs described in this document lie in part within the Project / Study area and should be included in the listing and/or description of Sensitive Areas presented within Section 4.7 and Section 5.8.9 of the EA report.

Section 4.7, Table 4.14, page 139-140 -The description of Hamilton Inlet Candidate NMCA presented in Table 4.14 is the same as that provided for the Nain Bight candidate NMCA. It is recommended that the proponent contact Parks Canada Agency *for* clarification on the description and status of candidate NMCA sites and amend Table 4.14 accordingly.

Section 5.6 Mitigations, page 150 - The proponent should be required to adhere to all relevant minimum mitigations outlined in the SOCP including the Planning Seismic Surveys, Safety Zone and Start-up, Shut-down of Air Source Array(s), Line Changes and Maintenance Shut-downs, Operations in Low Visibility and Additional Mitigative Measures and Modifications sections of the SOCP. The measures proposed to avoid interference with fisheries science surveys appear adequate. DFO did not specifically prescribe the temporal and spatial separation measures outlined in section 5.6 (3).

Section 5.8.8 Species at Risk VEC, page 209 - The document, *"Recovery Strategy for Northern Wolfish (Anarhichas denticulatus) and Spotted Wolfish (Anarhichas minor), and Management Plan for Atlantic Wolfish (Anarhichas lupus) in Canada'* should be referenced in this section.

Fish, Food and Allied Workers (FFAW)

Section 4.2.2.1 Macroinvertebrate and Fish Species Harvested during Commercial Fisheries, subsection Snow Crab, page 31 - In recent commentary from the DFO, it has been indicated that there is greater confidence in the Industry-DFO Collaborative Post-Season Trap Survey for Snow Crab than there is in the Trawl Surveys.

Section 4.2.2.1 Macroinvertebrate and Fish Species Harvested during Commercial Fisheries, subsection Atlantic Cod, page 36 - Separately identified cod stocks in Newfoundland and Labrador are also found in 3Ps, 3Pn and 4RS. In light of the discussion already including stocks that are outside the purview of the project area, all others should be included.

Section 4.3.3.1 Historical Fisheries, page 48 - In the context of the changing composition of the commercially harvested species, it is worth to note how there have been changes to the environmental regime that impacts the species composition, independent of the harvesting activity.

Section 4.3.3.2 Study Area 2005 to 2010 Catch Analysis, subsection Harvest Timing, page 56 - It is worth noting that consideration should be given to the fact that weather and ice conditions impact the timing of harvesting activity.

Section 4.3.3.2 Study Area 2005 to 2010 Catch Analysis, subsection Northern Shrimp, page 56 (and all subsequent fisheries discussions) - There is no specific rationale given for only using May-November data. Northern Shrimp is harvested in the area 12 months of the year, be it by inshore vessels or offshore factory freezer trawlers.

Table 4.5, page 89 - There is no qualifier for what measurement is used for the "Mean Catch Depth Range".

Section 4.3.8 Industry and DFO Science Surveys, page 90 - By the wording of the last paragraph it appears that the Industry-DFO Collaborative Post-Season Trap Survey for Snow Crab is a relatively new undertaking – "…past few years, such …". The truth is that this is a long standing survey that has been conducted for more than 10 years.

Section 6 Cumulative Effects, page 216 - Although the last paragraph on the page may hold true historically, in recent years there has been an increase in the Seismic Programs operating in Newfoundland & Labrador waters in a given year.

Appendix 1 Consultation Report, page A1-9 - In the context of stakeholder groups FFAW|Unifor and One Ocean, John Christian is not a contact for either of these organizations, rather he was in as a consultant for the proponent.