APPENDIX B

Disposition Table of Regulatory Information Requests and Responses

Total Comment #	Agency/ Company Comment #	Government Department / Company	Section of EIS	Comment /Information Request	Response
1	1	CNLOPB	General	The EA report does not appear to have undergone appropriate quality control. Inconsistencies appear throughout the report in text, figures and tables.	The EA Report has been revised substantially and has been subject to quality review.
2	2	CNLOPB	Section 1.3 Page 4	Environment Canada has not been identified as a Responsible Authority.	Comment noted and this reference has been removed. Section 1.3 has also been revised to include information on CEAA, 2012.
3	3	CNLOPB	Section 2.6 Page 14	Please provide more detailed information on how this proposed project can be executed in as little as 20 days. Has the time required for Well Testing been included in the overall schedule and included in the assessment of effects on VECs	The estimated project time is from 20 to 50 days. The 20 days refers to drilling time for a 2000 m well. The 20 days does not include rig mobilization and demobilization, non-productive time or any time associated with waiting on weather. The time for well testing has not been included in the 20 to 50 day time period. Currently, testing is not planned to be completed during the drilling of the well; however, depending on approval times and rig availability, testing may be completed immediately after drilling or at a later date.
4	4	CNLOPB	Section 2.6 Page 14	The report touches briefly on the concept of operational windows around ice in the Gulf but it does not elaborate on the concept of establishing the timeframe of a seasonal window of operation and on actually limiting drilling activities within the Gulf to such a seasonal window. It also does not talk to the concept of limiting the drilling season to a timeframe that would also allow relief well drilling within the seasonal window (much the same concept as has been applied for drilling operations off the coast of Labrador). The "confined" nature of the Gulf (as opposed to the "unconfined" nature of other areas such as the Jeanne d'arc Basin) and also the potential for pack ice should be discussed to a greater extent and should probably drive towards at least considering a seasonal window that also allows for drilling of a relief well (if necessary).	The timeframe included in the Environmental Assessment was chosen to allow for any month of the year that might be icefree, taking into account that some years there may not be ice during any of the months that would hinder operations. The spud date for the well would likely be between March and November.
5	5	CNLOPB	Section 2.8 Mobil Offshore Drilling Units, pg 14	Should be Mobile Offshore Drilling Units.	Text has been updated as noted.
6	6	CNLOPB	Section 2.8 page 14	The report makes note of the various Mobile Offshore Drilling Unit (MODU) types (i.e.. Drillship versus Semi-submersible) and of the options of Moored units versus Dynamically Positioned units. However, the report does not talk to the pros and cons of these various options, especially in the context of the water depth for this prospect, and the potential impacts on operational risk and therefore the potential impact on environmental risk. Also, the report does not advise of the preferred option and the associated rationale for such a preferred option.	Both drillship and semi-submersibles in DP or moored mode can operate at the Old Harry location. Criteria for rig selection will be determined by availability and market conditions.
7	7	CNLOPB	Section 2.8 page 15	The OWTG expresses performance targets (OWTG, page 7). The operator's EPP expresses the discharge limits which apply to the project. The operator must submit an EPP, which describes every discharge and the associated limits, with the application for an OA.	Comment noted.
8	8	CNLOPB	Section 2.9.3 page 16 Helicopter Support, pg 16	The EA report does not identify shore-based facilities. This makes it difficult to assess, particularly in terms of assessing potential effects on VECs.	For a single exploration well, the main shorebase will be St. John's, NL. Supply vessels will mobilize from there. There may be minor vessel traffic into Port aux Basques and refuelling in Stephenville. The helicopter base will be in St. John's NL, with potential refueling at a location in Western NL. Text has been updated in Sections 2.91 and 2.93 to reflect this information.
9	9	CNLOPB	Section 2.10.3 Vertical Seismic Profiling, pg 18	The Geophysical, Geological, Environmental and Geotechnical Program Guidelines were revised in January 2012.	Text updated to reflect the new regulations.
10	10	CNLOPB	Section 2.10.4 Well Testing, pg 18	– "A Well Data Acquisition Program will be submitted to the C-NLOPB in support of the well approval at least 21 days prior to the anticipated spud date. There is no regulatory requirement to test the exploration well." Other than declaring a significant discovery, any testing program that involves flowing the well will require its own approval.	Text updated to include the information provided. Other than declaring a significant discovery, any testing program that involves flowing the well will require its own approval.
11	11	CNLOPB	Section 2.10.4 Well Testing, pg 18	"If produced water occurs, it will either be flared or treated in accordance with the Offshore Waste Treatment Guidelines (OWTG) (National Energy Board (NEB) et al. 2010) prior to ocean discharge." Water brought to the surface as part of reservoir fluids during a testing program, and which is not discharged via the flare, is typically transported to shore.	Text has been updated to state that wastewater is typically transported to shore and treated.
12	12	CNLOPB	Section 2.11.1 Drill Mud and Cuttings, pg 20	"Discharged drill cuttings are required to meet the limits outlined in the OWTG for the disposal of drill solids (no limit for WBM cuttings, 6.9 g of mud or less/100 g of cuttings for SBM cuttings overboard discharge)." See general comment on discharge limits. A discussion by Corridor regarding their plans if they cannot achieve this concentration of synthetic-on-cuttings is warranted.	Corridor will use best available technology to meet the requirements of the OWTG. Corridor will follow the practices established by other operators within the juristiction of the C-NLOPB if the conditions of the OWTG cannot be met.

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13	13	CNLOPB	Section 2.11.1.2	Synthetic-based Muds "SBM cuttings may be discharged provided they do not exceed 6.9 g/100 g time weighted average of oil on wet solids (see Section 2.4 of the OWTG)". See general comment on discharge limits. A discussion by Corridor regarding their plans if they cannot achieve this concentration of synthetic-on-cuttings is warranted.	Corridor will use best available technology to meet the requirements of the OWTG. Corridor will follow the practices established by other operators within the juristiction of the C-NLOPB if the conditions of the OWTG cannot be met.
14	14	CNLOPB	Section 2.11.3 Produced Water, pg 23	Water brought to the surface as part of reservoir fluids during a testing program, and which is not discharged via the flare, is typically transported to shore.	Text has been updated to remove the reference to ocean disposal.
15	15	CNLOPB	Section 2.11.5 Machinery Space Discharges, pg 23	If this refers to bilge drainage from machinery spaces then where machinery leaks oil to a dedicated collection system, these discharges are normally collected and sent ashore for disposal.	This section has been updated as suggested.
16	16	CNLOPB	Section 2.11.9 Cooling Water, pg 24	The operator's EPP must describe the proposed biocide system and its management. If any form of biocide (chlorine or other) is to be used, it must be screened through the operator's chemical management system.	Text has been updated to include the commitment to address the management of the biocide system in the EPP and to acknowledge that if any form of biocide (chlorine or other) is to be used, it must be screened through the operator's chemical management system.
17	17	CNLOPB	Section 2.11.12 Miscellaneous, pg 24	The operator's EPP must describe all proposed discharges. Any chemical to be released to the environment must be screened through the operator's chemical management system.	Text has been updated to include commitments as stated by the reviewer.
18	18	CNLOPB	Section 3.6 Issues, Table 3.1, pg 68	please identify the section(s) in SL Ross 2011 Supporting Document that answers the question, "Is the spill model 2-D or 3-D?"	The SL Ross report utilized 2-D modeling. Table 3.1 has been updated with this information.
19	19	CNLOPB	Section §3.6 Issues, Table 3.1, pg 68	please identify the section(s) in SL Ross 2011 Supporting Document and the EA Report, if applicable, that addresses the comment, "The Gulf of Mexico spill occurred during exploration."	Table 3.1 has been updated to direct readers to Section 8.4.2 which addresses Large Spills from Offshore Well Blowouts.
20	20	CNLOPB	Section 7.1.5.3 Biological Effects, sub-section Shellfish, paragraph 1, line 6, pg 327	please explain how "they (shellfish)" produce sound in other ways.	The text has been updated to reflect the following: Shellfish are known to produce anti-predatory sounds. Examples include: lobsters vibrating antennae muscles, crabs stridulating, crayfish squeaking abdomen muscles and shrimp creating rumbling noises using their abdomen (Patek et al. 2009).
21	21	CNLOPB	Section 7.1.5.3 Biological Effects, sub-section Shellfish, Table 7.7, pg 328	The observed response of Iceland scallop (*Acequipecten irradians*) should be 1 of 3, not 14 of 3.	This correction has been made.
22	22	CNLOPB	Section 7.1.7 Well Abandonment/ Suspension, pg 341	Only one exploratory well is proposed and assessed. Production is outside the scope of this project.	Text has been revised to remove references to "wells" and "production" which are not part of the scope of this EA.
23	23	CNLOPB	Section 7.4.2.1 Presence of Platform, paragraph 1, line 2, pg 358	the presence of the drill platform, safety zone, lights and flaring is not discussed in Section 7.4.1. Please address.	The text has been updated to include cross-reference to Section 7.1.1.
24	24	CNLOPB	Section 7.4.2.2 Drill Muds and Cuttings, paragraph 5, line 5, pg 360	please identify the location of Traena Deep.	Traena Deep is located in the deep northeastern Atlantic Ocean off the coast of Norway.
25	25	CNLOPB	Section 7.7.2.1 Presence of Platform, paragraph 2, line 3, pg 376	Is there any research more recently published than Scott and Scott 1988. If so, please use in this section as the reference seems to be dated, 22 years old.	The references were updated to include: DFO (Fisheries and Oceans Canada). 2010n. Assessment of redfish stocks (Sebastes fasciatus and S. mentella) in Units 1 and 2 in 2009. Canadian Science Advisory Secretariat Science Advisory Report, 2010/037: 20 pp. DFO (Fisheries and Oceans Canada). 2011q. Recovery Potential assessment of redfish (Sebates fasciatus and S. mentella) in the northwest Atlantic. DFO Can. Sci. Advis. Sec., Sci. Advis. Rep. 2011/044.
26	26	CNLOPB	Section 7.8.3.1 Commercial Fisheries, 2nd bullet, pg 384	what does section 2(e) say?	This section was updated to reflect the latest version of the Geophysical, Geological, Environmental and Geotechnical Program Guidelines (CNLOPB 2012).

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27	27	CNLOPB	Section 8.1 Relief Well Planning, pg 387	Blow-outs can last for months and in the Newfoundland and Labrador offshore, mobilization of a drilling unit can likely take weeks to arrive and begin drilling. How long it may take to drill a relief well and the time required to mobilize a rig should be considered. If a drill rig is not available locally then the proponent should address the time it would take to secure the rig and for the rig to arrive at location and begin drilling a relief well.	The relief well rig would have to be mobilized from NL, the Gulf of Mexico or the North Sea. If a rig is mobilized from NL, it would take 7 to 14 days for the rig to be ready to drill. A relief well would take a timeframe comparable to the estimate for the drilling of the original well. Therefore, it would take approximately 20 to 45 days to kill the well, in addition to the mobilization time. If a rig had to be mobilized from the North Sea, it would take approximtely 15 to 45 days for mobilization, plus 20 to 45 days to kill the well. Text has been added to Section 8.1 to acknowledge these timeframes.
28	28	CNLOPB	Section 8.2 Well Cap and Containment System, pg 387	The report makes a very high level comment to industry efforts regarding capping and containment; however, it does not articulate the risk mitigation associated with such technology nor does it provide a clear understanding of the current global state of play for availability for such technology. The EA report should have provided better clarity regarding the level of risk mitigation that can be gained from such technology and better clarity on the reality of having access to such technology in the operational timeframe being addressed by the EA. Also, in conjunction with this, the EA report does not provide any real commitment on having access to such technology.	The Subsea Well Response Project (SWRP) is a joint initiative of experts from nine of the world's major oil and gas companies who work together practively and cooperatively to build on existing capabilities and develop enhanced oil response equipment and methods. Oil Spill Response Ltd. (OSRL) and SWRP are collaborating to make the new integrated intervention system available to the industry and to ehance interational capabilities to respond to subsea well incidents. This group makes available, based on a fee structure, equipment to oil and gas companies operating around the world. The equipment includes capping toolboxes, capability for subsea dispersant use, and deployment services. For drilling in the 2014/15 timeframe, Corridor will enter into an arrangement with this group for access to this enhanced spill response equipment. Corridor's first priority, as with all operators, is prevention. In the unlikely event of a uncontrolled blowout, Corridor will have access to the same equipment as all operators active on the Grand Banks. This text has been added to Section 8.2 of the EA Report.
29	29	CNLOPB	Section 8.4.5 Calculated Blowout Frequencies for the Old Harry Project, pg 392–	This should probably be reworded. The impression that the reader is left with is that an extremely large spill probably won't occur for 25,000 years. The following wording should be considered. The likelihood of an extremely large oil spill (>150,000 barrel) from a blowout during drilling of an exploration well, may be calculated as (1 well drilled) x (3.97 x 10-5 spills/well drilled) = 3.97 x 10-5. The likelihood of a very large oil spill (>10,000 barrel) from a blowout during drilling of an exploration well is 7.93 x 10-5. The likelihood of a large oil spill (>1,000 barrel) from a blowout during drilling of an exploration well is 9.91 x 10-5.	Report has since been revised to address this concern.
30	30	CNLOPB	Section 8.4.7 Calculated Blowout Frequencies for the Old Harry Project, pg 395	The most recent analysis indicates 2.8 x 10^{-3} not 2.1 x 10^{-4}.	The more recent analysis of 2.8 x 10-3 refers to the shallow gas blowout frequency, and should not be confused with the deep blowout frequency of 2.1 x 10-4. In this chapter on spill probability, a shallow gas blowout is defined as a release of gas prior to the BOP being set and should not be confused with shallow-water blowouts discussed in the spill behaviour chapter. Shallow gas blowouts are more likely to occur than deep blowouts, but they do not involve a discharge of oil, and are not discussed further in this chapter.
31	31	CNLOPB	Section §8.4.10 Summary of Spill Frequencies, Table 8.1, pg 397	what is the heading of the second column supposed to read?	The table has been formatted to improve readability.
32	32	CNLOPB	Section8.7.1.2 Marine Bird Species at Risk, pg 402	Assuming that the risk of spills from supply vessels is consistent with other shipping, it is still an incremental increase in risk. In addition, since no risk statistics have been provided for marine shipping activity in the Gulf, this statement cannot be assessed in a quantitative manner.	Although an incremental risk is acknowledged, it remains a low risk and a quantitative analysis is not considered necessary for this discussion
33	33	CNLOPB	Section 8.7.2 Marine Ecosystems, pg 405	Since no risk statistics have been provided for marine shipping activity in the Gulf, this statement cannot be assessed in a quantitative manner. Also, "low" has not been defined.	Refer to response provided for CNLOPB-32.

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34	34	CNLOPB	Section 8.7.7 Commercial Fisheries and Other Users, pg 410	"low" has not been defined.	"Low" in this case is referring to the low level of commercial harvesting activities within the Project Area which was defined in Section 5.8.1 by the following text - "there is minimal fishing effort within and surrounding the Project. No harvesting locations were recorded within EL 1105. The closest harvest location to the Project is located just less than 10 km to the southwest of EL 1105, and was recorded for redfish. Between 10 and 12 km from the EL 1105, a couple of harvest locations were recorded for redfish and one for each cod and white hake. However, in general, the fishing effort can be summarized in the immediate vicinity of the Project as low".
35	35	CNLOPB	Section 11.0 Follow-up and Monitoring, pg 421	It is not clear whether they are commitments or not? The bulleted list say "will" but they are introduced as "could".	Text has been revise to remove "could" and replaced with "will".
36	36	CNLOPB	Section 12.1 Potential Effects of the Physical Environment on the Project, para. 1, pg 422	"These effects will be mitigated by using… state-of-the-art forecasting." Details should be provided on the "state-of-the-art" forecasting.	Text has been revised to "monitoring government and industry 24-hour forecasts".
37	37	CNLOPB	Section 13.0 Environmental Management, 7th Bullet, pg 425	The *Drilling and Production Regulations* require an Operator to submit a Safety Plan and an Environmental Protection Plan with the application for an authorization. One document may be used to satisfy the requirements if it meets the requirements laid out in Sections 8 and 9, of the regulation.	Comment noted.
38	38	CNLOPB	Section 14.0 Summary and Conclusion, pg 426	"Significant environmental effects are predicted" however not at a population level.	Text has been updated as indicated.
39	1	DFO	General	The quality of French in the French version of the environmental assessment report is lacking and many sentences are difficult to understand. For example, the French translation is sometimes technically inaccurate, even truncated compared to the English version, making the text incomprehensible. Incomprehensible paragraphs should therefore be reviewed for content or edited by an individual fluent in French and with scientific knowledge.	Translation edits will be addressed as relevant during translation of the revised EA Report.
40	2	DFO	General	Overall, the quality of scientific content presented in the environmental assessment (EA) varies across the sections. While the potential environmental impacts of exploratory drilling regarding drilling fluids and cuttings is well-covered and conclusions are in line with many reviews and individual studies dealing with the effects, much of the preceding content relating to Valued Ecosystem Components (VECs) is inconsistent among the various sections. Substantial inaccuracies and omissions here can threaten the ability to properly assess potential effects.	Comment noted. Significant effort has been made to address reviewer comments and the report has been revised substantially. Although it is recognized, in spite of this additional work, the original impact analysis, mitigation, and conclusions remained valid for environmental assessment and decision-making.
41	3	DFO	General	The environmental assessment does not indicate what time of year the project will occur. While the duration is identified, the season of activity is not. This information is particularly important in terms of assessing potential impacts on the ecosystem and its components.	The Environmental Assessment included the possibility of drilling in any month of the year that is ice free. The spud date of the well would likely be no earlier than March and no later than November.
42	4	DFO	General	In general, modeling pertaining to assessing the behavior and trajectory of oil spills that might occur during exploration drilling activities requires significant reconsideration of many of the inputs (e.g. currents, winds, tides, outflows, timing, etc.), as well as the models in some cases. Scenarios were also often not clearly described (e.g. for blowouts), and overall, modeling results were not clearly presented. Information gained from the Gulf of Mexico spill should also be considered for informing this exercise.	These general concerns are addressed in the specific questions / concerns of DFO below.
43	5	DFO	General	The environmental assessment should undergo appropriate and specialized quality control of content for translation, relevancy, agreement between text and figures and tables, and the appropriate use of up-to-date information and references.	Comment noted. The report has been edited substantially to address reviewers' comments.

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44	6	DFO	General	The Study Area, the area that could be potentially affected by Project activities, has been defined by the furthest extent of the drill cutting deposition modeling, oil spill trajectory modeling results and supply vessel/helicopter activity to coastal Newfoundland. The parameters of these activities limit the spatial scope (i.e. geographical area) of the assessment. For example Cohasset oil (i.e. light oil), was used as a surrogate for spill modeling purposes. This directly impacts the spatial extent of any accidental spill event modeling and in turn the assessment of impacts on the VECs, in particular fish, fisheries, sensitive areas, marine ecosystem and coastal areas. Should the nature of the oil discovered be different (i.e. heavier) than that used in modeling the potential impacts and significance of the impacts to the VECs may be different than what has currently been assessed. It may have been more appropriate to consider other oil heavier types during modeling.	The justification for the selection of Cohassett condensate as a surrogate for the oil likely to be found at this location has been provided in Appendix A of the SL Ross report "Oil Spill Fate and Behaviour Modelling in Support of Corridor Resources Old Harry Exploratory Drilling Environmental Assessment" (SL Ross 2011a, updated 2012). The type of oil selected for oil spill modeling was based upon detailed scientific work completed by a world renowned geochemist with Global Geoenergy Research Ltd. The work involved assessing the organic material in the shale source rocks at the Brion Island No.1 well, the closest well to Old Harry. These studies identified the source rocks to be derived mainly from a mixed lacustrine or fluvial oil prone amorphous lipids or terrestrial liptinite (plant suberin, resin, and cuticle) rich organic matter. These organic rich zones contain oil and gas prone Type II-III kerogen that generate hydrocarbons (mainly oil) at an early stage of thermal maturation. During later stages, they will generate mainly natural gas. Petroleum system modeling was conducted to determine the type of oil likely to be produced from the source rocks; the models predict the presence of hydrocarbons in the liquid (oil) and vapour (natural gas) phases. No oils were identified that were heavier than 50 degrees API. Therefore, Corridor asserts that the selection of a Cohassett-Panuke oil with an API gravity of 47 degrees API is conservative selection of a surrogate oil. Finally, the Carboniferous Magdalen Basin is generally a gas prone basin. Natural gas has been encountered in those wells that contain hydrocarbons. In fact, the only discovery to date in the Gulf of St. Lawrence (East Point E-49) is a natural gas discovery. Based upon a scientific evaluation, Corridor's view is that the Old Harry structure is not likely to contain a heavier oil.
45	7	DFO	1.3 Regulatory Context, p. 4, 1st paragraph	Fisheries and Oceans Canada (DFO) has been identified as a Responsible Authority in this section. Please note DFO is not a Responsible Authority for this environmental assessment as an Authorization under the *Fisheries Act* is not required for this project. Rather DFO is a Federal Authority offering expert specialist advice during the environmental assessment review.	Section 1.3 has been edited substantially and DFO's role has been corrected as a federal authority.
46	8	DFO	2.6	While the anticipated duration of work is indicated (20-50 days) the season is not. This is information is particularly important in terms of assessing potential impacts on the ecosystem and its components (i.e. fish, marine mammals etc…).	The Environmental Assessment included the possibility of drilling in any month of the year that is ice free. The spud date of the well would likely be no earlier than March and no later than November.
47	9	DFO	Section 2.6	It is advised that the proponent should plan the activity around important and sensitive time periods for fish, marine mammals and species at risk.	Drilling will not occur earlier than March or later than November. Specific timing will depend on a variety of variables including but not limited to rig availability and regulatory approvals. Mitigation measures, including wildlife observers and adherence to regulatory guidelines (e.g., Statement of Canadian Practice with respect to the Mitigation of Seismic Sound in the Marine Environment, Offshore Waste Treatment Guidelines) will reduce effects on marine species.
48	10	DFO	2.12.2	The parameters used in the models take into account the seasonal averages of oceanographic and atmospheric conditions recorded for the Gulf of St. Lawrence as well as the properties associated with light hydrocarbons. Should characteristics of the hydrocarbons found differ (i.e. heavier crude oil) from those expected, modeling and assessment of potential impacts may be different.	Corridor Resources experts identified that the oil from this operation would most likely match the Cohassett light oil/condensate product (see response provided for DFO-6). Known physical properties of this oil were used in the spill fate modelling.

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49	11	DFO	3.0 Stakeholder Consultation	A key concern that has been raised repeatedly by stakeholders to DFO is the need for additional consultation with fishery stakeholders including the commercial, recreational, Aboriginal Fisheries and the Aquaculture sector within the Gulf Region. The consultation program focused primarily on the "geographic region", most likely to be affected by the project and included Western Newfoundland and the Magdellan Islands. It should be noted that the proposed exploratory well is near the border of NAFOzones 4R, 4S, 4T and 4VN, where Gulf Region fish harvesters participate in fisheries within close proximity to the proposed well location.	A summary of Corridor's public consultation is included in the Environmental Assessment document. Corridor conducted consultations in NL and the Magdalen Islands with key stakeholders, including fisheries groups. Corridor also obtained fisheries information from DFO. Any information on fisheries data that arose from the consultations conducted by Corridor and its consultants was included in the draft EA document. Consultation appropriate for a screening level EA of a single, short duration exploration well has already been conducted. Additional consultation is unlikely to result in information that would enhance the Old Harry EA or that would substantively change its conclusions. Fisheries effort in the vicinity of the proposed Old Harry well location show that minimal to no fishing activities are conducted within 30 km of the proposed well (see Figures 5.67-5.70 in the EA). In addition, the C-NLOPB has undertaken a public consultation process for the Strategic Environmental Assessment (SEA) update of the Western Newfoundland offshore area and fisheries stakeholders will be able to provide input on their activities in relation to proposed drilling activities in the Gulf of St. Lawrence. The updated regional fisheries information will be included in the SEA Update.
50	12	DFO	3.1, p. 64 par 1	The focus on western Newfoundland and Magdellen Islands implies that fish harvesters from other areas of the Gulf are not participating in fisheries in areas close to the proposed well, which is not the case. The C-NLOPB was provided a list of Gulf and Quebec region stakeholders in April 2011 to assist in consultations.	Consultation appropriate to a screening level EA has been conducted. The Project is one exploration well and it will be completed within 50 days. Fisheries effort in the vicinity of the proposed Old Harry well location show that minimal to no fishing activities are conducted within 30 km of the proposed well (see Figures 5.67-5.70 in the EA).
51	13	DFO	3.4, p. 66, bullet 1	DFO attendees at the meeting included: -A/Regional Manager - Environmental Assessment and Major Projects NL Region - Environmental Assessment Analyst - Environmental Assessment and Major Projects NL Region -Regional Manager - Environmental Assessment and Major Projects Gulf Region -Senior Advisor for Oil and Gas, Ecosystem Management Branch – Gulf Region - Analyste principale, Évaluation environnementale – Québec Région	Section 3.4 has been updated to reflect DFO attendees as indicated.
52	14	DFO	4.1.5	Although the volume measure (3,553 km^3) is from Dufour and Ouellet (2007), it is incorrect. The volume is about 35 000 km^3 (see for example Dufour et al. 2009).	Text revised to include the volume listed as per Dufour et al. 2010.
53	15	DFO	4.1.7	While the EA acknowledges that *"Knowledge of ocean currents is essential to the planning of oil and gas related operations in any area",* the section on ocean currents simply states broad facts and shows maps from different sources without any proper interpretation or comparison. The currents that the EA uses in the report are cited but are never shown (i.e. *Surface water current fields developed by the Ocean Sciences Division, Maritimes Region of DFO (Tang et al. 2008) were used in the spill trajectory modeling*).	The section on ocean currents properly describes the currents of the Gulf. The currents are shown in Figures 4.13, 4.14, and 4.16-4.19 with citations (SLGO 2011; Galbraith et al. 2011; LGL 2005b). Tang et al. 2008 was not referenced in Section 4.1.7. For more information on oil spill modeling, trajectories and the currents used to create these, please refer to the stand alone report conducted by SL Ross.
54	16	DFO	4.1.7	The statement, *"Driven by wave and tidal movement, cold, dense water flows into the Gulf through the Strait of Belle Isle from the Arctic via the Labrador Current."* is incorrect. The inflow through the Strait of Belle Isle is not driven by waves or tides and it isn't from the Arctic (although contains some dilution of Arctic waters) or from the (deep) Labrador Current. It is noted that this text is out of context in the Ocean Currents section.	Comment noted and incorporated into the EA.
55	17	DFO	4.1.7	Figure 4.13 – panels for M2 and K1 are not identified.	Unclear what is being referred to in this comment.
56	18	DFO	4.1.7	Figure 4.19 – surface currents in the Gulf of St. Lawrence (top: February 4, 2011@ 1100 hours and bottom: September 29, 2011 @ 0800 hours) - there is no bottom panel in the EA	The bottom panel has been added to the EA.
57	19	DFO	4.1.7	Figure 4.12 – the caption indicates two panels; only one panel shown (French version).	Translation edits will be addressed as relevant during translation of the revised EA Report.

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58	20	DFO	4.1.8	It is not evident that tides were used in spill trajectory modeling within the EA. If this is the case, why not?	Tides were not used in the modelling because their inclusion would not have significantly altered the overall spatial footprint of the oil from the spill scenarios modelled.
59	21	DFO	4.1.8	Sources of water current estimates are included (p.101) in the EA, but are out of context here. This information should appear in Section 4.1.7 and be compared with other results shown.	The section on Tides (previously 4.18) has been edited in the revised EA Report.
60	22	DFO	4.1.11	Fig. 4.23 – this is unreadable with insufficient resolution.	Figure 4.23 has been split into four different Figures (25-28) to improve resolution.
61	23	DFO	4.1.11	Fig. 4.34 – legend = 2009; figure shows 2010 and not 2009.	Figure 4.34 caption has been updated to 2010.
62	24	DFO	4.1.11	Regarding the statement, "*All sea ice in EL1105 is first-year ice, ranging in its un-deformed thickness from 30 to 120 cm (SLGO 2011; Figure 4.20).*" Figure 4.20 does not actually show ice. It is not obvious what is meant by *un-deformed thickness* here, but ice thickness in the Gulf has been known to exceed 2 m in places by rafting during heavy ice years. Ridges can be much thicker still (> 10 m). As such, these extremes should be mentioned in the assessment rather than showing median quantities such as average thickness. Based on the above, the reader might surmise that since bathymetry, currents and tides are very predictable, then so is ice cover. However, the premise of the initial statement is misleading: the thermodynamics of the ocean surface layer are not even mentioned here. To produce ice, the winter mixed layer must first be cooled to the freezing point over a large layer (a typical thickness of 75 m was mentioned on Page 92).	The section on Ice has been rewritten with reviewer comments in mind.
63	25	DFO	4.1.11	The EA states (p.108), *"The Project Area is located in an area that ranges from 51 to 84 percent 30-Year frequency for the presence of sea ice (green and purple color bands) depending upon the month."* However, Figures 1.27 to 4.28 do not have any green as mentioned. Caution should also be used in interpreting these three figures. For example, the March figure shows the average probability of encountering sea ice over the entire month, and not the probability of encountering ice at least once during the month.	Refer to response provided for DFO-24.
64	26	DFO	4.1.11	The EA states, *"EL1105 is located in the area that has an average ice freeze up date of January 29 (Figure 4.31). The normal ice free period for EL1105 extends from April 9th to February 12th of the following winter…"* However, this seems in contradiction. If the average ice freezup date is January 29, then the area cannot be ice-free after break-up until the following February 12th.	Refer to response provided for DFO-24.
65	27	DFO	4.2	For the circulation subsection, Han et al. (1999, Journal of Physical Oceanography) provided detailed seasonal mean circulation fields in the Gulf of St. Lawrence, especially in terms of the gulf-shelf interactions, including the inflow from the Labrador Shelf through the Strait of Belle Isle, as well as the outflow on to the Scotian Shelf and the inflow from the Newfoundland Shelf, both through Cabot Strait. This paper should be included in the review under 4.2.2 (p.55).	Galbraith 2006, Dufour and Ouellet 2007, Galbraith et al. 2011, Saucier et al. 2003, provide detailed and up-to-date information as seasonal mean circulation fields in the Gulf of St. Lawrence including the inflow from the Labrador Shelf through the Strait of Belle Isle, as well as the outflow onto the Scotian Self and the inflow from the Newfoundland Shelf, both through the Cabot Strait. Figures 4.16-4.18 taken from Galbraith et al. 2011 depict seasonal ocean currents during 2010, which closely mimic the mean currents found in Han et al. 1999 (Figure 11). The description of the circulation found in Section 4.2 of the Environmental Assessment portrays the same message as Han et al. 1999, with more up to date information.
66	28	DFO	4.2.1	Average daily temperatures in the vicinity of EL1105 could be misinterpreted. Those presented are not the true range of observations, but rather the 30-year monthly average temperature minimum and maximum. Far colder and warmer temperatures have been recorded. Therefore variability is missing on the monthly scale, and also at the inter-annual scale.	Comment noted and extreme maximum and minimum temperatures have been added to showcase variability on a monthly scale.
67	29	DFO	4.2.1	Reference in the EA to *"…average monthly air temperatures for several land-based weather stations surrounding the Gulf…"* does not add much long term context. Instead, Galbraith et al (2011) show mean winter air temperatures at these land stations since 1971, which should be used to describe interannual variability.	Interannual variability and historical climate of EL1105 is described in section 4.2.1 in regards to the Port Aux Basques weather station (closest station to EL1105). Galbraith et al. 2011, is used to describe the recent trends in variability and climate compared to historical data for the area.
68	30	DFO	4.2.1	The EA describes (p.114) sea surface temperatures such that *"…the minimum mean temperatures for February and March are approximately -0.8°C."* However, in years of maximum ice year such as 1993, the winter mixed layer was near-freezing at -1.7°C in the area of EL1105. The area also borders the warm waters (T > 0°C) seen in many winters entering the Gulf on the Newfoundland side of Cabot Strait (see Galbraith 2006).	Comment noted. This is logical, in years of maximum ice it would be expected that the surface ocean temperatures would be colder than years with less ice. It is possible to have mean minimum temperatures of -0.8 °C, and years with maximum ice with temperatures of -1.7 °C.

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69	31	DFO	4.2.2	It is unusual that the MSC50 reanalysis shows no winds above 20 m/s (90 km/h) between June and November, and extremely rarely in other months. The EA presents that the highest winds are less than 2% in winter; however winter interpreted as Dec-Jan-Feb is in fact 0.02%, and the highest as occurring in spring (Mar-Apr-May) at less than 0.2%.	Wind speeds over 90 km/h during the summer months would be rare and would still be rare during the winter months. During the months of June to November average wind speeds at Port Aux Basques range from 17.5 km/h to 27.4 km/h. The number of days with winds > = 63 km/h range from 0.2 to 4.1. As a result we can see that wind speeds are relatively low during the summer months as indicated by the MSC50 results.
70	32	DFO	4.2.2, page 100	Habituellement, le mouvement de l'eau suit le détroit de Cabot, coulant dans le sens trigonométrique autour du Golfe […]. Incorrect translation of "counterclockwise"	Translation edits will be addressed as relevant during translation of the revised EA Report.
71	33	DFO	4.2.2, page 100	Incomprehensible translation – French version Le courant de débordement du fleuve Saint-Laurent produit un fort courant côtier qui coule le long de la péninsule gaspésienne (le courant de Gaspésie), en direction de la mer et dispersant l'écoulement de surface du Saint-Laurent en direction nord-ouest et du sud du Golfe (Dufour et Ouellet 2007). This excerpt of the document comes from an article by Dufour and Ouellet 2007, which reads as follows: La caractéristique principale du débit sortant du Saint-Laurent est un courant côtier fort le long de la péninsule gaspésienne (courant de Gaspé) qui disperse l'eau du Saint-Laurent dans le nord-ouest et le sud du golfe. (original text)	Translation edits will be addressed as relevant during translation of the revised EA Report.
72	34	DFO	4.2.2, page 107	*Incorrect Translation – French version* *Les marées se propageant au-dessus des filons-couches à la tête du chenal Laurentien […].* *Incorrect translation of "sill"*	Translation edits will be addressed as relevant during translation of the revised EA Report.
73	35	DFO	4.2.6, page 118	Incomprehensible translation – French version Le PP 1105 est situé dans le secteur dont la date moyenne de congélation de la glace est le 29 janvier (Figure 4.25).	Translation edits will be addressed as relevant during translation of the revised EA Report.
74	36	DFO	5.1, page 131	Incomprehensible translation – French version Cela en raison du fait que le Golfe est séparé partiellement de l'Atlantique Nord, recevant un apport en eau douce de la part de rivières importantes, et aussi par un chenal orienté sur toute sa longueur, une saison des glaces, plusieurs types de masses d'eau, incluant une couche intermédiaire froide, des zones a plateaux et d'eaux peu profondes ainsi qu'une productivité et une diversité biologique élevées (MPO, 2005a). Ces zones biologiques bonifiées sont le résultat de facteurs physiques reliés à la topographie particulière du plancher océanique, des vents et courants océanographiques, laquelle, combinée a des facteurs chimiques tels des eaux riches en nutriment, donne naissance a des processus physiques comme une remontée des eaux de fond, des fronts horizontaux ou verticaux entre deux schémas de circulation distincts et des masses d'eau, ainsi que des zones de convergence et des gyres.	Translation edits will be addressed as relevant during translation of the revised EA Report.
75	37	DFO	5.1	This section indicates that Section 5.2 will cover species at risk from both the St. Lawrence Estuary and the Gulf of St. Lawrence. Section 5.2 states that Table 5.2 covers all species in the Gulf that are designated at risk by COSEWIC. The following Atlantic salmon populations are assessed as at risk by COSEWIC (2010), but are treated neither in the text of Section 5.2 nor in Table 5.2: Quebec Eastern North Shore population - special concern; Quebec Western North Shore population - special concern; Inner St. Lawrence population - special concern. In general, the migration routes of these populations are unlikely to take them close to EL1105 for an extended period of time. However, if it is the intent of the assessment to exclude these populations from consideration, it should be explicitly stated why.	The Quebec Eastern North Shore Atlantic salmon population has been addressed in the text. The Quebec Western North Shore population as well as the Inner St. Lawrence population has been added to Table 5.2.
76	38	DFO	5.2	The data on which many of juvenile/adult fish distribution figures are based is often dated – and only a single or several years of RV data compiled into figures is also common. As such, updated and additional years are required indicate the current distribution of these species as RV surveys referenced are likely stratified-random surveys and any one year may not yield any sets within the Old Harry project area. Figures are also lacking the location of the exploration licenses covering the Old Harry area superimposed on distribution maps for reference. Information on the size and/or age of juvenile fish should be included with figures and descriptions.	Species distribution maps have been extracted from primary and/or secondary literature and without georeferenced digital data files that can be easily manipulated to include the Project Area, the EL1105 area cannot be easily overlaid onto distribution maps. For the purpose of environmental assessment, the level of detail presented is sufficient to make a determination of species presence/absence in the general Study Area.
78	39	DFO	5.2, Table 5.1, p. 122-123	For the 3 wolffish species the table indicates that there is a low potential for occurrence in EL1105, yet in the first paragraph of Section 7.2.2.1, p.343, it is indicated that wolffish are included with the species which have a moderate to high potential to occur in the project area (same as EL1105?). The information presented should be consistent between sections.	The wolffish is indeed a species that has a low potential for occurrence and the two sections have been made consistent.
385	40	DFO	5.2, Table 5.1, p. 122-123	Northern and Spotted Wolffish - "Non-migratory spawning occurs" – based on current information it is unknown if Northern and Spotted wolffish do or do not have spawning migrations. Northern wolfish also occurs in waters shallower than 500m.	Information pertaining to northern and spotted wolffish spawning migrations and depth range has been updated in the EA.
387	41	DFO	5.2, Table 5.1, p. 122-123	Atlantic Wolffish – This species occurs in waters greater than 350m.	Information regarding the depth distribution of the Atlantic wolffish has been updated

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77	42	DFO	5.2, Table 5.1, p. 122-123	White Shark (added to SARA Schedule 1 on July 6, 2011) should be included in the table.	Table 5.1 has been updated to include White Shark.
79	43	DFO	5.2, Table 5.2, p. 124	Requires explanation of how potential for occurrence is defined and calculated and what metric is used.	The criteria for occurrence is based on professional judgment taking into account available catch records, survey maps, habitat type and species behaviour.
386	44	DFO	5.2, Table 5.2, p. 124	Laurentian South Cod : There are problems with this characterization. Should state that there is a high potential for occurrence. Distribution maps exclude September survey information and winter distribution patterns. The statement, "Eggs and larvae may be present in the upper water column May to April" is inaccurate. There are two populations in this designatable unit; the population of concern here is the southern Gulf of St. Lawrence population. This population is distributed throughout the southern Gulf in summer and overwinters along the side of the Laurentian Channel, with dense aggregations typically occurring in the Laurentian Channel north of St. Paul Island. Cod use two migration routes between these overwintering grounds and summer grounds in the southern Gulf, the Cape Breton Trough and the southern slope of the Laurentian Channel (north of the Magdalen Islands). Essentially the entire population moves through this area in proximity to EL1105 each spring and fall.	Additional information regarding the Laurentian South cod population has been updated in the EA .
388	45	DFO	5.2, Table 5.2, p. 124	Striped bass: The statement the "Gulf population is considered extirpated" is incorrect and should state that the St. Lawrence estuary population is considered extirpated; the Gulf population is designated threatened as previously stated in same text block. This should be clear and as it reads now it is confusing.	Information regarding Striped bass populations has been noted and changes have been made to the EA.
80	46	DFO	5.2, Table 5.2, p. 124	The population of Killer Whale being referred to is the Northwest Atlantic/Eastern Arctic population. White Shark should be removed from the table. This species was added to SARA Schedule 1 on July 6, 2011.	Comment noted, changes have been made to the SARA table.
81	47	DFO	5.2, Table 5.2, p. 124	Deepwater Redfish - species name is *Sebastes mentella* (not *mentalla*). Spawning does not occur in fall. Mating between males and females occurs in fall but female extrude larvae (=spawn) from April-July.	Comment noted and details regarding the deepwater redfish have been changed in the EA.
82	48	DFO	5.2, Table 5.2, p. 124	Acadian Redfish (Atlantic) – spawning does not occur in fall. Mating between males and females occurs in fall but female extrude larvae (=spawn) from May-August.	Comment noted and details regarding the Acadian redfish have been changed in the EA.
83	49	DFO	5.2, Table 5.2, p. 124	Winter Skate (Southern Gulf of St. Lawrence population) – the description is inaccurate. This population occurs just within the Gulf (are distinct from populations on the Scotian Shelf and Georges Bank). Winter Skate lay egg cases and emerge as juveniles. The seasonality of "spawning" is not well known.	The description of winter skate has been updated.
84	50	DFO	5.2, Table 5.2, p. 124	American plaice (Maritime population) – the description is inaccurate. This population overwinters in deep water in the Laurentian Channel.	The description of American plaice (Maritime population) has been updated.
85	51	DFO	5.2, Table 5.2, p. 124	Table 5.2 should consider Swain et al. (1998); and Chouinard and Hurlbut (2011) as sources of information.	Comment noted. This data on species distributions in the Gulf (Chouinard and Hurlburt (2011) is only for the month of January during the years from 1994-1997. Although the publication is new the data is not.
86	52	DFO	5.2.1	In this and other sections on fish species (e.g. 5.2 Species at Risk) the EA reproduces a number of juvenile fish distributions from RV surveys. The data on which many of these figures is dated (at least 6 years old) and only a single year of RV data compiled into figures is common. Updated and additional years are required to indicate the distribution of juveniles for these species as RV surveys referenced are likely stratified-random surveys and any one year may not yield any sets within the Old Harry site. It would also be useful for figures to have the location of the exploration licenses covering the Old Harry area superimposed on distribution maps for reference. CSAS Docs are available for porbeagle, mako, basking sharks, spiny dogfish and blue sharks (all can be downloaded from the Publications page of the Shark website) and should be consulted and cited as such within the assessment.	The species distribution maps have been updated with current data where deemed appropriate for many species. Life history information pertaining to porbeagle, mako, basking sharks, spiny dogfish, and blue sharks has been updated using the latest information from CSAS documents.
87	53	DFO	5.2.1.1	References for depth distribution of northern wolffish are not provided – which also contradicts Table 5.1 content. However, for the Newfoundland and Labrador region, the densest concentrations of northern wolffish tend to be found at 400-900 m (Kulka et al. 2004, Simpson et al. 2011). Fecundity/number of eggs and parental care of northern wolffish are not known in Canadian waters, yet the EA states that northern wolffish can lay up to 27,000 eggs and guard their eggs. References are required for this information.	Comment noted and references for depth distributions and fecundity have been added to the EA.
389	54	DFO	5.2.1.1, p. 127, 2nd paragraph 5.2.1.1, p. 131, 2nd line at top of page	There is a reference given as SARA (2010). Does this mean the Species at Risk Public Registry? In the reference section, the Public Registry shows up as Species at Risk Public Registry 2010 and SARA Public Registry 2010. There should be consistency in the use of references within the document and within the reference section itself. It would be preferable to reference the COSEWIC status report or Recovery Strategy documents, rather than the website itself.	SARA (2010) means the Species at Risk Public Registry. Where applicable the COSWEIC status reports have been referenced.
88	57	DFO	5.2, Figure 5.2	Potential for occurrence of northern wolffish is listed as low in Table 5.2, yet based on this figure its distribution in the Gulf is centered on the EL1105 area	Figure 5.2 does not depict that the distribution of the Northern wolffish is centered on the EL1105 area. If one were to overlay the EL1105 area, the maximum relative occurrence of the Northern wolffish would be 0. The wolffish prefers substrate types that are not found within EL1105 and thus the project area is not a suitable habitat for the species in question.

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89	58	DFO	5.2.1.1, p 128	Depth discussion of Spotted wolffish contradicts Table 5.1 content	The depth discussion in Table 5.1 and Section 5.2.1.1 has been made consistent.
90	59	DFO	5.2, Figure 5.2 to 5.11	The information presented here is dated. More recent data exist from the study area. The data from 2003-2011 should be presented to illustrate current distributions - not the distribution from a decade ago.	Although the data is more than 10 years old, the published source from which it was obtained was published in 2010 and it is still considered relevant and appropriate.
390	60	DFO	5.2.1.1	Figures 5.6, 5.7 and 5.8 clearly show that highest densities of both juvenile and adult Atlantic wolffish are observed within 50-100 km of EL1105 (off western Newfoundland); but Table 5.1 indicates a low potential of occurrence in relation to EL1105	Adult and Juvenile Atlantic wolffish can be found from 50-100 km from EL1105. Within EL1105 and within the immediate vicinity of EL1105 the likelihood of encountering an Atlantic wolffish is quite low. The species prefers a habitat consisting of rocks, boulders, and sand where they can find shelter and protection. The area in which EL1105 is located has a muddy and soft bottom substrate which does not coincide with the preferred habitat of the Atlantic wolffish. The preferred depth of the species is 150-350 m. The EL1105 license is located at a depth which is greater than this (400-500 m). As a result the project area is situated in a habitat which is not preferred by the Atlantic wolffish, while the area where the majority of the species is located is favorable habitat. It is unlikely that the species would leave favorable habitat to inhabit less favorable conditions situated in EL1105.
91	61	DFO	5.2.1.2	The seasonal distributions and migrations need to be described for Atlantic Cod. This should use distribution information from summer surveys in both the southern and northern Gulf (i.e., September survey of the southern Gulf and August survey of the northern Gulf; Summer sentinel trawl surveys in both areas). Migration routes and timing and overwintering distributions should also be described.	Seasonal movements and migrations of each of the Atlantic Cod populations has now been described and incorporated into the EA.
92	62	DFO	5.2.1.2	An increasing proportion of the southern Gulf stock occurs on summer grounds in the region between the Magdalen Islands and northwestern Cape Breton, including waters along the southern slope of the Laurentian Channel. The entire stock migrates through the Cape Breton Trough or along the southern slope of the Laurentian Channel (past EL1105) each spring and fall. The entire stock overwinters in dense aggregations along the south side of the Laurentian Channel, in particular north of St. Paul Island.	Information on the Laurentian South Cod migration movements has been updated.
93	63	DFO	5.2.1.2	The EA refers to the four populations identified by COSEWIC in this section. However, there are only two residents (Laurentian North and South). Incursions of two other Atlantic populations are possible, but this should be distinguished.	Comment noted and resident cod populations have been identified
94	64	DFO	5.2.1.2	The legend of Figure 5.10 shows "*Atlantic Cod Distribution in the Gulf of St. Lawrence from 1990 to 2002*," however, only the result of the August survey in the northern Gulf is presented. The results of the September survey in the southern Gulf should be added with the result representing the two cod stocks in the Gulf. This mistake occurs in several maps of other species.	The most up to date maps from the St. Lawrence Global Observatory have been added to the EA.
95	65	DFO	5.2.1.2	The spawning area for cod in the northern Gulf (3Pn, 4RS) that was identified some time ago off St. George's Bay (west coast of Newfoundland) is not mentioned in the EA. This area is closed to all fishing from April to mid-June and occurs approximately thirty miles east of the drilling area. This information is significant as fertilized eggs of cod are at surface and are therefore very vulnerable to any oil spill.	The Laurentian North Population of Atlantic Cod's spawning area has now been incorporated into the EA.
96	66	DFO	5.2.1.2	Some key sources of information include: Swain et al. (1998); Chouinard & Hurlbut (2011); Comeau et al. (2002); Benoît et al. (2003); Darbyson & Benoît (2003); and recent CSAS Science Advisory Reports and Research Documents coming from stock assessments.	Up to date Canadian Science Advisory Reports and research documents coming from stock assessments have been reviewed and incorporated into the EA where deemed appropriate.
97	67	DFO	5.2.1.2, p. 132, par. 4	First sentence is incomplete "Atlantic cod eggs and larvae are planktonic during and are primarily zooplankton feeders…" Needs editing.	The sentence regarding cod eggs and larvae has been completed.
98	68	DFO	5.2.1.3	Only general information is presented in this section; not information focused on winter skate in the Gulf. Information is available from Swain et al. (1998); Chouinard & Hurlbut (2011); Comeau et al. (2002); Benoît et al. (2003); Darbyson & Benoît (2003); and recent CSAS Science Advisory Reports and Research Documents coming from stock assessments, as well as CSAS Res Docs 2006/003; 2006/004; Swain et al. 2009 (and the associated supplementary material).	Up to date Canadian Science Advisory Reports and research documents coming from stock assessments have been reviewed and incorporated into the EA where deemed appropriate.
99	69	DFO	5.2.1.3	It should be noted that winter skate in Gulf are primarily distributed in the southern Gulf, where they are distinct from winter skate elsewhere.	The differences of winter skate in the gulf compared to other populations has been noted.
100	70	DFO	5.1.2, p. 135	The legend does not correspond with the figure; lower panel shows distribution in 2005-2009. RV catch rates are not shown for the Newfoundland and Labrador continental shelves and not for the study area and no units (kg/tow?, number of fish/tow?) are shown in this and other figures (Section 5.2).	The figure title has been updated to reflect the 2005-2009 trawl data. There are no units (kg/tow or number/fish/tow) or references to catch located in the DFO 2010 paper on Roundnose Grenadier. As a result, we cannot assume what it is or put a unit in the legend. The figure is still relevant as it shows relative catch data.

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101	71	DFO	5.2.1.5	The EA notes the Porbeagle shark as having a low potential for occurrence in the study area. However, relative to its overall population size, the likelihood of occurrence is moderate or high, although not in large numbers. As such, Table 2 needs to be amended to reflect this. A distribution map should also be presented.	For this EA, the potential for occurrence was based on the likelihood of encountering an individual from a species, not on the likelihood of occurrence related to species population. As a result, the likelihood of encountering a Porbeagle in relation to EL1105 is low.
102	72	DFO	5.2.1.5	Porbeagle shark mating occurs off southern Newfoundland and at the entrance to the Gulf, between late *August* and November. Pregnant females are present in this area from late *August* through to December and are seldom seen from January through to June (Jensen et al 2002).	Information pertaining to porbeagle shark reproduction has been updated from Campana et al. 2003.
103	73	DFO	5.2.1.6, p. 136	It mentions that White Shark is designated as endangered by COSEWIC. This should be updated to say that it is listed under Schedule 1 of SARA as endangered.	The recent updated Species at Risk status of the White Shark has been updated in the EA.
104	74	DFO	5.2.1.6, p. 136	Criteria for low occurrence need to be stated clearly. A distribution map should also be presented.	The criteria for occurrence is based on professional judgment taking into account available catch records, survey maps, habitat type and fish behaviour. The species has been recorded in Atlantic Canadian waters 32 times in the last 132 years. This would be deemed as having a low probability of occurrence in relation to EL1105.
105	75	DFO	5.2.1.7,	The EA states *"…The deepwater redfish has declined by 98 percent since 1984 and the Acadian redfish has declined by 99 percent…."* References to "declines" should be clarified that declines are in mature abundance as per the COSEWIC criteria.	Declines in redfish abundance have been clarified.
106	76	DFO	5.2.1.7,	The three recent scientific advices on redfish require mentioning in the EA: Stock Discrimination (CSAS SAR 2008/026), Stock Assessment of Units 1 and 2 (CSAS SAR 2010/037) and Recovery Potential Assessment (CSAS SAR 2011 /044).	Recent scientific advances on redfish have been revisited and incorporated into the EA where deemed appropriate.
107	77	DFO	5.2.1.7,	Figure 5.13 The information is dated. More recent data exist from the study area. The data from 2003-2011 should be presented to illustrate current distributions.	Information pertaining to the Magdalen Shallows water temperature has been added to the EA.
108	78	DFO	5.2.1.7, page 147	Incomprehensible translation – French version Ces espèces sont d'apparence similaire et sont associées de leur gestion.	Translation edits will be addressed as relevant during translation of the revised EA Report.
109	79	DFO	5.2.1.8	Criteria for low occurrence need to be stated clearly. A distribution map should also be presented.	The criteria for occurrence is based on a professional judgment taking into account available catch records, survey maps, habitat type and fish behaviour.
110	80	DFO	5.2.1.9	Information on seasonal distributions is lacking (see sources listed under cod for *information*). Winter distribution for plaice that spend the summer on the Magdalen Shallows and move into deep water in the Laurentian Channel is particularly relevant, and is not mentioned within the EA.	The seasonal distribution of American plaice has been added to the EA.
111	81	DFO	5.2.1.10,	The paragraph on Striped bass should be re-edited to reduce confusion. It starts by speaking about extirpated estuary population, and then it states the harvest restrictions put in place in 2000 seem to have assisted in recovery. Confusion exists between Estuary and Gulf populations. Please consult the recovery strategy on the SARA public registry. COSEWIC's (2004) assessment for striped bass is not a good reference nor is it used properly.	The Striped Bass section has been reworded to reduce confusion and update its relevance with the Project area.
112	82	DFO	5.2.1.10,	If indicating spawning in the St. Lawrence estuary, reference should also be made to spawning in the Miramichi. The introduction of these two populations should set up the rest of the text as they pertain to EL1105. Further, mention of St. Lawrence striped bass requires St. Lawrence striped bass be introduced in Table 5.1.	Reference to spawning of the Southern Gulf population has been incorporated into the EA.
113	83	DFO	5.2.1.10,	There is some evidence that there may be more than one striped bass population in the Bay of Fundy. It is relevant that Miramichi bass are genetically isolated from populations further south. However, Fundy striped bass are not relevant to the assessment and therefore it is not necessary to give any information on their biology.	Information pertaining to Bay of Fundy Striped Bass will be limited to introductory information as they are not found within the Gulf.
114	84	DFO	5.2.1.10,	Spawning of Striped Bass does not occur primarily in freshwater. This occurs near the fresh-salt boundary at the head of estuaries.	The spawning of Striped Bass can occur in freshwater or brackish water depending on the location of the population.
115	85	DFO	5.2.1.10,	The Bay of Fundy (Shubenacadie River) does not occur in the southern Gulf.	Refer to response provided for DFO-83.
116	86	DFO	5.2.1.10,	"school to fish" requires clarification. This may refer to predatory schooling behavior, in which case should also be qualified by "CAN cover tens…..	Information pertaining to Striped Bass predatory schooling behaviour has been updated.
117	87a	DFO	5.2.1.10,	Contrary to the EA, striped bass DO currently exist and spawn in the St. Lawrence Estuary. While extirpated there in the 1960s, they were re-introduced in 2002 and have potentially established a successful spawning population (DFO 2010).	Information pertaining to the St. Lawrence Estuary population of Striped Bass has been updated.
391	87b	DFO	5.2.1.10,	Striped bass are highly mobile and range very widely around the edge of the southern Gulf. However, they stay close to land, and hence are very unlikely to be in the area of proposed drilling. Therefore the most obvious omission in the text is the link between the striped bass populations and their 'low potential of occurrence' at EL1105.	Comment noted, low occurrence of Striped Bass and the fact that they area a coastal/estuarine species has been taken into account in the revised EA Report.

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118	88	DFO	5.2.1.10,	At a minimum, coastal behaviour at all life stages should be identified, but could be strengthened within the EA easily for the sGSL population by either COSEWIC's (2004) evaluation of Extent of Occurrence and/or its proposed refinement in Douglas and Chaput (2011).	Behaviour at various life stages has been incorporated into the EA Report.
119	89	DFO	5.2.1.16	Use Salmo (genus) instead of salmo.	Text updated to *Salmo* .
120	90	DFO	5.2.1.16	Much of the material in the 1st paragraph, 1st three sentences is incorrect or only partly correct. Most Atlantic salmon are anadromous, but not all. Many salmon spend two years in fresh water, but many do not. Many salmon migrate to the Labrador Sea, but some also migrate to Greenland. Pertinent literature on Atlantic salmon should be consulted and accurately summarize key points of their life history. In insular NL most Atlantic salmon remain in fresh water for 2 to 5 years. Atlantic salmon over winter in the waters off the Grand Banks, Labrador and west Greenland.	Information pertaining to Atlantic salmon has been updated.
121	91	DFO	5.2.1.16	Atlantic Salmon migration timing and routes need to be reviewed and summarized. Reddin (2006) summarizes the broad pattern of migration routes followed by post-smolts out of the Gulf and returning adults into the Gulf. However, routes are generally not known at a detailed level, which leaves some uncertainty as to how often salmon pass through or near EL1105. Recent unpublished studies using acoustic pingers indicate that post-smolts from a variety of Gulf rivers pass through the Strait of Belle Isle during a short period in early July (http://www.asf.ca/projects.php?id=4)	Updated information pertaining to Atlantic salmon migration patterns has been included in the EA.
122	92	DFO	5.2.1.16	Although the relative importance of the Strait of Belle Isle and Cabot Strait as salmon migration routes is not clearly understood, it seems likely that use of the Belle Isle route would be highest in salmon from the northern Gulf, including those from Anticosti Island.	Refer to response provided for DFO-91
123	93	DFO	5.2.1.16	*"All of these populations are considered to have a low potential for occurrence within EL1105, with any presence being transient in nature"* should be replaced with *"All of these populations are considered to have a moderate potential for occurrence within EL1105 during their post-smolt and returning adult migrations."* "Transient" should not be used to describe these migrations.	The text referring to Atlantic salmon occurrence has been updated
124	94	DFO	5.2.1.17, p. 140	This section requires additional information and revision. Most significantly, the assessment does not include bluefin tuna as a potential species at risk based on COSEWIC's recent determination that the Western Atlantic population is endangered. Accordingly, this species should also be included in Table 6.1., and much more consideration of the possible impacts on this high-profile stock is required in the EA. The western population of Atlantic bluefin tuna relies heavily upon the Gulf of St. Lawrence for critical foraging opportunities; and the largest and oldest individuals, typically comprising breeding adults, are found in the southern Gulf of St. Lawrence.	The Atlantic bluefin tuna is currently not listed under SARA and therefore is not listed in Table 5.1. It is considered endangered by COSEWIC and is listed as such in Table 5.2. Potential or candidate SAR species are not listed in Table 5.1, only officially designated species are listed. Information pertaining to Bluefin tuna life history and biology has been updated to reflect the most recent literature.
125	95	DFO	5.2.1.17, p. 140	It is incorrect (p141) that both the western and eastern populations can occur in the southern Gulf of St. Lawrence. More recent studies have shown convincingly that the fish occupying the southern Gulf of St. Lawrence are almost exclusively western origin fish (Schloesser et al. 2010).	Information pertaining to bluefin tuna stocks in the Gulf has been updated.
126	96	DFO	5.2.1.17, p. 140	Since the new and evolving recreational fishery for bluefin tuna in the southern Gulf has huge potential for economic development, the EA should include this information and completely examine this in the context of recreational fisheries.	Detailed descriptions of recreational and/or commercial fisheries are not discussed in Section 5.2. Please refer to Section 5.8 for commercial and recreational fishery information.
127	97	DFO	5.2.1.17, p. 140	Please refer to the 2011 COSEWIC report and DFO Recovery potential assessment (http://www.dfo-mpo.gc.ca/csas-sccs/Publications/Pro-Cr/2011/2011_049-fra.html).	Information from the 2011 COSEWIC status report and the DFO recovery potential assessment has been referenced where applicable.
128	98	DFO	5.2.3	The EA cites the TNASS 2007 inventory (Lawson and Gosselin, 2009) as the sole source of data to determine the probability of meeting of various species in the study area and the Gulf of St. Lawrence. However, there are other significant sources of information which should be included; Kingsley and Reeves (1998) and Lesage et al. (2007).	Information on blue whales cited in Kingsley and Reeves (1998) and Lesage et al. (2007) is in line with what has been presented in section 5.2.3. Lesage et al. (2007) depicts three combined studies showing no blue whales near or within EL1105.
129	99	DFO	5.2.3	Additionally, the level of information provided on the various marine mammal species is very uneven and inconsistent. The following information should be provided for each species: structure of the stock, seasonal movements, reasons for their presence in the Gulf of St. Lawrence, abundance, probability of meeting in the Gulf and the sector of EL1105, and threats to their recovery identified by COSEWIC or SARA.	A thorough review has been undertaken and text updated as appropriate to improve consistency of the information provided.
130	100	DFO	5.2.3.1	The presentation of current knowledge on distribution of blue whales does not consider the bias in observation effort / sampling of blue whales. Most past effort has been concentrated in the Northwest of the Gulf.	Text has been updated to reflect the bias of observation effort/sampling of blue whales which has been concentrated in the Northwest of the Gulf.

Total Comment #	Agency/ Company Comment #	Government Department / Company	Section of EIS	Comment /Information Request	Response
131	101	DFO	5.2.3.1	A pattern of seasonal migration following a North-South axis is not only unrecognized, but is in fact challenged by recent data. Below is a more accurate description of the state of knowledge on seasonal migration by V. Lesage et al., extracted from a research document in prep: *The agreement that blue whales follow a general north-south movement to warmer and less productive waters is not fully supported by current data (CETAP 1982; Charif and Clark 2009, Mitchell 1991, Reeves et al., 2004, Sears 2002, Sergeant 1977). Recent monitoring studies of whale vocal activity over long periods suggest that blue whales and fin whales are still present in winter (December to Jan or February) in the Davis Strait (Simon et al., 2010: fin), off the Grand Banks (Clark 1995: blue whale), as well as west of the British Isles in the north-east Atlantic (Charif and Clark 2009), but some migrate farther south (Nieukirk et al., 2004: fin and blue whales). The ratio of winter and spring catches of blue whales by whaling station south of Newfoundland from December to May (Dickinson and Sanger 1990), mortality in the ice in March-April in southwestern Newfoundland (Stenson et al., 2003), and anecdotal observations in the lower estuary of the St. Lawrence and Gaspé (Sears and Calambokidis 2002, Archives of www.baleinesendirect.com) confirm that at least part of the population of blue whales remains at our latitude throughout the year.*	Text has been updated to acknowledge uncertainty surrounding migration patterns and to confirm at least part of the population of blue whales remains at our latitude throughout the year.
132	102	DFO	5.2.3.1	It is incorrect to report this population has 250 mature individuals since its size is actually unknown. Sears and Calambokidis (2002) was the source report for designation of the blue whale as endangered by COSEWIC. In this review of the available scientific information, there is no mention of such a figure (250 mature individuals). In fact, a maximum of 250 mature individuals is the COSEWIC assessment threshold for designating a population as endangered.	Text revised to indicate that likely no more than 250 mature blue whales are present in the Northwest Atlantic population (Beauchamp et al. 2009).
	103	DFO	5.2.3.2, page 162	Incomprehensible translation - French Version. Le programme de retablissement de la baleine noir de l'Atlantique Nord de 2009 mentionne que bien que les connaissances soient limitees quant a l'abondance a long terme ne peuvent etre determinees. Cependant l'objectif visant a atteindre une augmentation continue de l'abondance de la population a ete identifie.	Translation edits will be addressed as relevant during translation of the revised EA Report.
133	104	DFO	5.2.3.3	Loggerheads are opportunistic feeders. Therefore, while squid and zooplankton are known prey items, it may be misleading to reference only thoseprey (i.e., maybe preface with “including”). Finfish should also be included as prey as this can contribute to	Text revised to include recent data on beluga whales.
134	105	DFO	5.2.3.5, p. 154	Fin whale – A draft management plan is under review and will be available for public comment in 2012 as part of SARA recovery process.	Text has been updated to acknowledge the preparation of a draft management plan for the fin whale.
135	106	DFO	5.2.3.5, p. 154	The abundance data cited for this species is incorrect. The estimated abundance is 462 individuals (270−791) for the Gulf of St. Lawrence and Scotian Shelf combined (Lawson and Gosselin, 2009, Table 10) or 1,352 individuals (above 821−2226) for the portion of eastern Canada identified during the TNASS (Table 11). The estimate of abundance was 380 individuals (SD = 300) in 1995−1996 (Kingsley and Reeves 1998).	Text has been updated to include the estimated abundance of 380 individuals (Kingsley and Reeves 1998)
136	107	DFO	5.2.3.7, p. 154	The population of Killer Whale being referred to is Northwest Atlantic/Eastern Arctic.	Text has been updated to clarify the specific population of killer whale.
137	108	DFO	5.2	General comment for Section 5.2 – certain subsections refer to the COSEWIC designation and/or SARA status for the species, while other sections do not. It would be good to be consistent among sections.	Text in Section 5.2 has been updated to improve consistency regarding mention of COSEWIC/SARA designations.
138	109	DFO	5.2.4	In general, the EA relies heavily on citing dated literature documents (e.g. COSEWIC report and Recovery Team documents) rather than the available primary scientific literature for sea turtles. The EA contains only slight reference to studies that have specifically focused on leatherback movements in and around the proposed development site and the most recent information available on the biology and distribution of sea turtles in Canadian waters is not integrated into the assessment. Direct consultation of the primary literature is recommended. Notably, the exploration licenses overlap directly with important foraging habitat for leatherbacks – including an area currently being considered critical habitat for the species. Moreover, the exploration site lies directly in line with the route many leatherbacks take in and out of the Gulf of St. Lawrence.	Primary literature has been consulted and Section 5.2.4 has been updated as applicable.
139	110	DFO	5.2.4.1	The COSEWIC document referenced for this section is outdated and precedes most directed research on leatherbacks in Canada. Information of the distribution of leatherbacks in Canadian waters has been published in several articles (e.g., James et al. 2005; James et al. 2006; James et al. 2007).	Section 5.2.4.1 has been updated with primary literature references on the distribution and behavior of, and threats to, leatherbacks in Canadian waters.
140	111	DFO	5.2.4.1	References should include James et al. (2005; for source of mortality in Canadian waters) as well as to recovery documents as posted on the SARA public registry.	Section 5.2.4.1 has been updated with primary literature references on the distribution and behavior of, and threats to, leatherbacks in Canadian waters.
141	112	DFO	5.2.4.1	Specific mention of leatherback sightings in the Bay of Fundy can be misleading – while the species has been recorded there, it is conspicuously rare in this area.	Section 5.2.4.1 has been updated with primary literature references on the distribution of leatherbacks in Canadian waters including the Bay of Fundy.
	113	DFO	5.2.4.1	It is now known that leatherbacks forage in the vicinity of EL1105 – amend “may occur” to “occurs”.	Text has been updated to confirm occurrence of leatherbacks foraging in the Study Area.

Total Comment #	Agency/ Company Comment #	Government Department / Company	Section of EIS	Comment /Information Request	Response
142	114	DFO	5.2.4.1	A long lifespan does NOT contribute to species decline as stated in the EA.	COSEWIC (2001) cites long lifespan as one of the factors leading to the leatherback's vulnerability. The sentence has been revised to cite "a number of factors contributing to their vulnerability…".
143	115	DFO	5.2.4.2	More recent references exist and are available for loggerhead population size – see recent NMFS Loggerhead Turtle Expert Working Group stock assessment.	Text has been updated to incorporate population estimates for loggerhead turtles in the North Atlantic waters.
144	116	DFO	5.2.4.2	Most loggerhead nesting in the North Atlantic does *not* occur at "near-equatorial nesting areas", and instead occurs in the states of Florida, Georgia, and, to a lesser extent, the Carolinas.	Text has been updated to reflect up to date information on nesting locations.
145	117	DFO	5.2.4.2	The size distribution (and therefore life history stage) of loggerheads in Canadian waters has not been reported, although sampling in adjacent areas suggests those that forage in Canada are mainly juveniles.	Text has been updated to describe known population distribution in Atlantic Canada waters.
147	118	DFO	5.2.4.2	Loggerheads are opportunistic feeders. Therefore, while squid and zooplankton are known prey items, it may be misleading to reference only thoseprey (i.e., maybe preface with "including"). Finfish should also be included as prey as this can contribute to vulnerability of loggerheads hooking in pelagic longline fisheries.	Text has been updated to reflect the variety of prey that loggerheads consume.
148	119	DFO	5.3	It is not accurate that "...fish habitat is divided into two areas, the shelf areas and the deep channels. The shallow waters along the shelf areas are characterized by warm, high productivity waters in the summer..." In fact, the bottom over much of the Magdalen Shallows is within the Cold Intermediate Layer (CIL), so that bottom waters are colder than those in the deeper waters of the channels.	Information pertaining to the Magdalen Shallows water temperature has been added to the EA.
149	120	DFO	5.3	DFO 2007a is cited but is not listed in the References.	The DFO 2007a is listed in the references.
150	121	DFO	5.3 p. 156; par.2.	The western Newfoundland SEA (LGL 2005b) and the amended SEA (LGL 2007) cited in this paragraph only cover the NAFO sub-division 4R portion of the Gulf. Given that this project has implications for the entire Gulf of St. Lawrence, this EA should reference SEA documentation for other parts of the Gulf as well. For example, the SEAs for the Baie des Chaleurs, Anticosti and Magdalen basins (see http://www.ees.gouv.qc.ca/english/documents/chapter/sea2_information.pdf).	The scope of the Old Harry Prospect Exploration Drilling Program EA is to assess a specific Project in a specific study area which has been defined as the likely extent of potential Project-environment interactions from the Old Harry Project which is covered adequately by the western Newfoundland SEA (LGL 2005b) and the amended SEA (LGL 2007).
151	122	DFO	5.3.1	Rocky shores do not characterize the whole Gulf of St. Lawrence. Both PEI and New Brunswick shorelines are characterized by highly erodible shorelines including barrier beaches, salt marshes and other geographical features.	The shoreline information of PEI and New Brunswick has been updated, although there is no predicted Project interation with these shorelines.
152	123	DFO	5.3.1.1	Tables 5.3 and 5.4 are based upon a book by G.R. South entitled 'Benthic Marine Algae'. However, the taxonomy of seaweeds has changed since that publication in 1983[1]. There are also many more species of algae found in western Newfoundland than are listed in the associated tables. A more appropriate and up to date listing can be found in 'NEAS Keys to Benthic Marine Algae of the Northeastern Coast of North America from Long Island Sound to the Strait of Belle Isle' (Sears 2002). [1] For example, Saccharina is now the genus name for a number of species of kelps formerly associated with the genus Laminaria.	This level of detail is not necessary for the EA Report, therefore these tables have been removed from the text and a reference to the Sears 2002 report has been added.
153	124	DFO	5.3.1.1	Table 5.3 and 5.4 – some of these species are not algae (maritime lichens, *cyanophyta?, Balanus, Mytilus, Zostera marina, Spartina sp., Plantago sp.).* Add *Laminaria digitata*.	Refer to response provided for DFO-123.
154	125	DFO	5.3.1.1	Table 5.4 – *Ascophyllum* , *Fucus* , *Ahnfeltia* and *Chaetomorpha* are not typically found associated with sand or mud. The listing infers that they may be common on this substrate.	Refer to response provided for DFO-123.
155	126	DFO	5.3.1.1	Note: *Agarum cribropsum* (in the french version) should be *Agarum cribrosum* (correct in the English version), but is now called *Agarum clathratum. Lamninaria longicruris* is now called *Saccharina longicruris* Pophyra should be Porphyra	Refer to response provided for DFO-123.
156	127	DFO	5.3.1.2;	It should be noted in the text that, Eelgrass (*Zostera marina*) in eastern Canada has characteristics which meet the criteria of an Ecologically Significant Species. This means that if the species were to be perturbed severely, the ecological consequences would be substantially greater than an equal perturbation of most other species associated with this community (see DFO 2009d).	Section 5.3.1.2 has been updated to include reviewer's text.
157	128	DFO	5.3.1.2;	This section states that "eel grass is also protected by law under the *Fisheries Act."* While eel grass is characterized as an important type of fish habitat it is important to note that all fish habitat is protected under the *Fisheries Act.*	Comment noted.
158	129	DFO	5.3.1.2;	The eelgrass beds described in this section are large and dominate soft bottoms in the shallow subtidal – they are considered extremely important habitat for the region.	Comment noted.
159	130	DFO	5.3.1.2;	Add sea urchin to the list at the end of the first paragraph (p.157).	Text updated to include sea urchin.
160	131	DFO	5.3.1.3	The high and low salt marsh communities described are also extensive and important habitat for the region. Should an oil spill reach coastlines salt marshes are likely to be impacted.	Oil spill modeling has been conducted to describe and depict worst case scenarios. None of these scenarios are predicted to affect salt marsh communities. The closest salt marshes are located on the Magdalen Islands and the western tip of Newfoundland which are located well outside of the impact zone. Refer to Figures 2.12-2.24 for spill modeling.
161	132	DFO	5.3.2; Page 160; Para 2	It should be noted in the text that, Cabot Strait is an important migratory corridor for marine mammals moving in and out of the Gulf of St. Lawrence (see http://www.dfo-mpo.gc.ca/CSAS/Csas/DocREC/2001/RES2001_115e.pdf).	Hammill et al. (2001) has been cited to acknowledge the importance of the Cabot Strait for migration of marine mammals.

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162	133	DFO	5.3.2; Page 160; Para 2	It should also be noted that, the Esquiman Channel is the main migration corridor for entire populations of ground fish, including cod and redfish (see DFO 2007b).	Comment on fish migration has been noted and incorporated in the EA.
163	134	DFO	5.3.3	In general, the main source of information for the corals and sponges section of the EA is Cogswell et al (2009), which focuses on the Maritimes region. Additional important data that is available on coral and sponge distributions has not been included in the report – this includes 2010 and 2011 data from the Gulf (mostly for sea pens) and some of the more recent NL records. As a result, the conclusions that EL1105 location is likely not suitable habitat for corals and sponges (p.155) may not be the case. Kenchington et al. (2010) show significant abundances of sea pens in the Gulf and Laurentian channel that could be considered near EL1105. Sponges also require further consideration and relevance somewhere in this general section of this report.	The main source of information has been updated with information and mapping from Kenchington et al. 2010. Significant locations of corals do occur within the Gulf; however they occur outside of EL1105 on the western Laurentian Channel slope. Information and updated mapping relating to the most recent literature on Sponges has been added to the EA.
164	135	DFO	5.3.3	The following is offered as an opening paragraph for this section: Deep-water corals are sessile or sedentary, largely colonial animals that can occur individually at low density or in significant concentrations, depending on the taxa considered and ecological conditions. They are generally slow growing, and may represent decades or centuries of growth. They are considered suspension feeders, but not a lot of attention has been given to food and feeding in the scientific literature. Numerous species of deep-water coral are present in the Gulf of St. Lawrence, with significant areas of coral concentrations occurring in the Gulf and Laurentian Channel (Cogswell et al. 2009; Kenchington et al. 2010). At least six species of sea pen occur (*Pennatula borealis*, *Pennatula borealis*, *Anthoptilum grandiflorum*, *Crassophyllum* spp., *Funiculina* quadrangularis, *Halipterus finmarchica*), including significant concentrations located adjacent to EL1105, on the western flank of the Laurentian Channel (Cogswell et al. 2009; Kenchington et al. 2010). Soft corals, especially *Gersemia rubiformis*, but also including *Duva Florida* and *Anthomastus grandiflorus*, are also common, especially in the western Gulf. However, they are not considered as vulnerable to disturbance as other types of corals, including sea pens (Fuller et al. 2008; Kenchington et al. 2010). At least two species of large gorgonian corals occur, *Primnoa resedaeformis* and *Paramuricea* spp., as well as the solitary stony cup coral, *Flabellum alabastrum*, but these do not appear to be nearly as common or abundant in the Gulf as either of the other types of coral.	The information presented by the reviewer has been incorporated into the EA where appropriate.
165	136	DFO	5.3.3	Orders Stolonifera and Heliporacea are not present in Canadian waters – as such this reference is irrelevant.	Orders Stolonifera and Heliporacea were not referenced as being present in Canadian waters. The two orders were being referenced as part of the Octocorallia subclass for background information. As such reference to the two orders is deemed appropriate to the subject matter.
166	137	DFO	5.3.3	The EA comments on sea pens hundreds of km away off Baffin Island, but ignores other significant records in the Gulf.	The EA has been updated to reflect sea pens in the Gulf.
167	138	DFO	5.3.3	It is incorrect that *Pennatula phosphora* is not observed near the Project - Pennatula phosphorea has been observed “near” the project in great numbers (Kenchington et al. 2010). The EA also needs to define “near”.	Areas of significant sea pen concentrations have been updated in the EA.
168	139	DFO	5.3.3	The October 2010 geohazard survey does not identify the presence of any deep-water corals or sponges – however, sea pens are corals.	Sea pens belong to the Class Anthozoa and to the Octocorallia Subclass and as such share some similar morphological, feeding and reproductive characteristics to true stony and soft corals and therefore are grouped with corals, but are not corals per se and do diverge with respect to some morphological features and growth forms. For example, sea pens have a peduncle at its base to anchor themselves in sandy or muddy substrate, with the exposed portion that may rise up to 2 m in some species and which is atypical of corals. However, it is recognized that sea pens can be present alongside deep water corals and share the same vulnerability as corals towards anthropogenic impacts. Therefore sea pens and corals are grouped into the same vulnerable marine ecosystem of an environmentally sensitive deep-water coral community.
169	140	DFO	5.3.3	It is incorrect that there are no data on presence / absence of corals and sponges within the Laurentian Channel outside the Gulf – data are figured in Cogswell et al. (2009).	Comment noted and correction has been made regarding no data on corals outside the Gulf.
170	141	DFO	5.3.3	The statement that “water depth may not be a limiting factor in their distribution” is misleading since factors determining distribution include depth, and most others are typically correlated with depth, therefore responding quite clearly to depth, even though it is not just depth itself.	The sentence is depicting that water depth is not the limiting factor when talking about coral distribution. Since these corals do not require light, depth does not limit their distribution. Substrate type, current speed, and prey availability limit the distribution of cold-water corals.

Total Comment #	Agency/ Company Comment #	Government Department / Company	Section of EIS	Comment /Information Request	Response
171	142	DFO	5.3.3	Many forms and species of deep water coral are not generally found on hard substrate as inferred in the EA.	Research into recent literature tells us that generally cold water corals are found on hard substrate as this serves as an important structure for larval settlement (Campbell and Simms 2009). Nonetheless, corals benefit from areas of relatively high current to deliver food items and the area in EL1105 has relatively slow current speeds. This fact is supported by the lack of dense aggregations of corals or sponges in the Project area. Refer to Figures 5.21-5.24 of the EA Report.
172	143	DFO	5.3.3	The report by LGL (2007) indicates that "*In general, the low abundance of corals in the Laurentian Channel (other than the Stone Fence at the southern end of the Laurentian Channel) probably reflects the low cover of cobble and boulder in the area (Mortensen 2006).*" This is out of context (refers to large gorgonians only or is or outdated) See Kenchington et al. (2010).	Kenchington et al. 2010 has been referred to in the revised EA Report.
173	144	DFO	5.3.3	Deep-water corals may benefit from rather than require higher water current speeds. It's also not clear exactly what they feed on, though plankton is probably an important source for some if not many species, at least at shallow to relatively moderate depths. Occurrence along continental slopes and shelves may also be more to do with the availability of food or increased substrate variability at the appropriate depths rather than currents.	Comment noted, refer to response provided for DFO-142.
174	145	DFO	5.3.3	The commentary around favorable habitat for deep-water corals and sea pens in reference to EL1105 is confusing.	Coral habitat and abundance has been clarified in the EA.
175	146	DFO	5.3.3	Coral and sponge data from NL and the eastern Canadian Arctic is overemphasized, while ignoring or minimizing other relevant information actually from within the Gulf of St. Lawrence and Laurentian Channel. The most recent, peer reviewed, published information is not referenced (e.g. Kenchington et al. 2010). This information is the definitive culmination and summary of all quantitative data concerning coral and sponge from the eastern Arctic to the U.S. border, and should not be ignored. Data is presented within that clearly demonstrates significant concentrations of both coral and sponge in the Gulf, and must at least be presented and considered as being near the proposed development.	Refer to response provided for DFO-134.
176	147	DFO	5.3.3	There is apparent ambiguity with classifying sea pens as being corals. Sea pens are considered corals, phylogenetically, biologically/ecologically and by policy makers, including DFO. Sea pens are octocorals, belonging to the subclass Octocorallia, along with gorgonian corals and soft corals. Ambiguously framing sea pens in any way confuses the assessment.	Refer to response provided for DFO-139.
177	148	DFO	5.3.3	The term "near" is used often, and proximity is used as potential factor implying mitigation of any impacts. Therefore a clearer definition of "near" should be provided. It is potentially misleading to simply state that corals and sponge are not concentrated "near" the development. Actual distance would be more useful in this context.	The proximity of corals and sponges to EL1105 has been outlined in the EA.
178	149	DFO	5.3.3	Kenchington et al. (2010) report that the highest abundances (trawl catch data) of seapens in eastern Canada occur in the Gulf region. The area is certainly suitable habitat for seapens which are found on unconsolidated sediments (p.154). The EA should review Kenchington et al. (2010) and current information on the classification and conservation considerations for sea pens below, including the geo-referenced map summarizing data on the concentrations of sea pens and sponge near the proposed Old Harry development (see attached).	Refer to response provided for DFO-134.
179	150	DFO	5.3.3	Figures 5.22 and 5.23 – (coral and sponge records) show high coverage on the Scotian shelf and Gulf regions with almost no occurrences in the Newfoundland region. This is attributable to NL data not being included in the assessment.	Refer to response provided for DFO-134.
180	151	DFO	5.3.3	The EA states (p.155), *"These factors suggest that the area for which the Project is planned is not a favourable habitat for deep-water corals and likely for sponges as well, since they too depend on plankton for food."* The term 'plankton' as used here is too general. We know that corals and sponges represent a diverse range of trophic groups including carnivores (feeding on zooplankton) and suspension feeders (feeding on suspended organic particulate matter). Their food sources include organisms and detritus resident near the seabed surface and organic matter sinking from surface layers which is why they can survive at deep depths below the photic zone.	The term plankton covers both phytoplankton and zooplankton. Detritus and other organic matter has been added as a food source.
181	152	DFO	5.3.3	Inconsistency exists in the spelling of *Anthoptilum grandiflorum* . This is the correct spelling.	Text updated and consistencies in spelling *Anthoptilum grandiflorum* corrected.
182	153	DFO	5.3.3	It would be useful to the EA to recognize that various NAFO working groups concluded that for corals the following taxa formed the conservation units (from Kenchington et al. 2010): Sea pen fields (Pennatulaceans); Small gorgonians (*Acanella arbuscula* was the only species in the NAFO Regulatory Area within this group); Large gorgonians (Sea fans: genera: *Primnoa* , *Paragorgia* , *Keratoisis* , *Paramuricea* ; *Radicipes,* etc.); Cerianthid anemone fields; Antipatharians (black corals), and Reef-building corals (e.g., *Lophelia pertusa*).	Comment noted, From Kenchington et al. 2010, the location of significant concentrations of sea pens in the Gulf of Saint Laurence is located within the Study Area and to the South-West of EL 1105.
183	154	DFO	5.3.3	Table 5.9 – the record of *Littorina littorea* from a grab sample (GS-02) from a depth of > 400 m is remarkable given that this is primarily an intertidal species extending into the shallow subtidal (< 20 m). This may have been an empty shell that had been transported to deep water.	Comment noted and incorporated into the EA

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184	155	DFO	5.3.4	The statement (p.165), "The transect line across Cabot Strait (identified as TDC in the AZMP program) is of most relevance because it spans across the Laurentian Channel between Newfoundland and Cape Breton Island and is situated approximately 70 km southeast of EL1105. General water flow through EL1105 and water properties would likely resemble those at Cabot Strait.", requires second consideration. The continental shelf waters entering the Cabot Strait do not point directly to the EL1105 site. In terms of plankton communities, AZMP transect within the Gulf (especially the center transects - at the eastern tip of Anticosti Island) would be more appropriate in this case.	Based on the water current data, the plankton along the Cabot strait transect of the AZMP is more likely to intercept the Old Harry platform than the plankton from the transect of Anticosti Island to Magdalen Islands shelf in the Southern Gulf of St. Lawrence. This is because the currents entering the Gulf of St. Lawrence, which is across the majority of the Cabot Strait, occurs along most of the Laurentian Channel and Newfoundland coast, and exit along a narrower area of the western Cabot Strait (and away from Old Harry) on the Cape Breton side and along the shelf (see also attached image). Section 4.2.2 shows most of the seasonal currents are flowing northward. So it would not be unreasonable to include plankton data from only the Cabot Strait transect of the AZMP and more likely to be affected by the Project.
	156	DFO	5.3.4.2	Incorrect translation - French Version. En retour, plusieurs organismes sous des tropiques eleves, tels des poissons et des mammiferes marins incluent le zooplancton dans leur diete. Incorrect translation of "higher trophic levels".	Translation edits will be addressed as relevant during translation of the revised EA Report.
185	157	DFO	5.4.1	The magnitude of the photographic coverage of the sea floor seems low and mainly located in western margin of the area for which the license is applied (Figure 5.26). The determination of animal biodiversity of soft bottoms, particularly the macro-and mega-benthic fauna, must be based on the use of a variety of sampling tools (grab, drag, epi-and supra-benthic sled, beam trawl). One cannot determine the nature of macro and mega-benthic communities simply based on a number of photos and some samples or grab sampler (three, according to Table 5.9).	Comment noted and incorporated into the EA.
186	158	DFO	5.4.1	Legend of Figure 5.27 should refer to Figure 5.26 for the position of the stations, NOT to Figure 5.23. In the legend of Figure 5.26 and elsewhere in the text, it refers to the "ocean floor".	The typo on Figure 4.27 has been updated to reference Figure 4.26.
187	159	DFO	5.4.1	Table 5.9 – this table does not reflect the extent of benthic biodiversity in the targeted region (see previous comment). At a minimum, the EA report should include an inventory of many benthic species listed in the bilingual document written by Brunel et al. (1998). The study area is included in LCI, historically less well sampled for benthos that LCH, but both areas could have a rather similar fauna.	The Brunel et al. 1998 reference contains every recorded invertebrate species in the Gulf of St. Lawrence which is approximately 2,214 records. The samples collected from the site give a representation of the benthic fauna and not the complete community structure. Information on regional benthic communities can be found in Brunel et al. 1998 or the CNLOPB Western Newfoundland SEA.
188	160	DFO	5.4.1	Table 5.9 – *Limacina helicina* is a pteropod (mollusc) epipelagic, not a benthic species. *Littorina littorea* is a coastal species that likes the intertidal and subtidal: although one may occasionally find it in bathyal environment, it is very rare and certainly not representative of the bathyal fauna. Finally, Brunel et al. (1998) and the virtual catalog WoRMS do not report the presence of *Spio limicola* in the Gulf of St. Lawrence. This species is found further south along the coast of North America.	Comment noted and incorporated into the EA
189	161	DFO	5.4.2	The structure of the introduction may suggest that the species of shellfish listed in the following sentence (e.g. lobster, rock crab ...) are found in the area of EL1105.	Comment noted and incorporated into the EA
190	162	DFO	5.4.2	The document refers to "giant snow crab". This is not a species.	Text has been updated to omit "giant".
191	163	DFO	5.4.2	The list of other commercially important species in coastal areas around EL1105 does not include the Iceland scallop (*Chlamys islandicus*), sea cucumber (*Cucumaria frondosa*) and sea urchins (*Strongylocentrotus droebachiensis*) which also support established or emerging fisheries in the area.	While licenses for fishing Iceland scallop have been granted in NAFO Division 4R since 1969 the location of the fishery is not within the study area. The identified fishing areas in Division 4R occur in the Strait of Belle Isle north of the project area (DFO 2001, GNL 2002, NAFO 2009, CSAS 2009). The Project Area encompasses coastal sea urchin habitats in NAFO division 4Rd. There were no reported landings of sea urchins within that division from 2004 to 2010 (EA). Sea urchin landings were reported within division 4Vn though the Project is not anticipated to interact with the coastal habitats within that area. Exploratory harvest of sea cucumbers have been initiated along the southern coast of Newfoundland, the Strait of Belle Isle and the southern coast of Labrador (DFO 2007) as well as a commercial fishery on St. Pierre Bank (DFO 2009) neither of these regions are located within the Project Area and as such will not be affected by the Project.
192	164	DFO	5.4.2	Northern Stone Crab (*Lithodes maja*) is not mentioned in this assessment. It is not a commercially important species but is present near Old Harry.	Comment noted. As described within the EA methods, life histories of non-commercially viable species were omitted.
193	165	DFO	5.4.2	The Atlantic razor is not *Siliqua costata* but *Ensis directus*, caught in eastern Canada.	Text updated to include the proper species name.

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194	166	DFO	5.4.2.1	The first paragraph contains inaccuracies and should be re-written. The following is proposed: American lobsters are distributed in localized reefs in nearshore areas around the four Atlantic Provinces and eastern Quebec. The spring fishing season removes individuals from the population prior to moulting and spawning. Adult female moulting and mating occurs during one summer, whereas the second summer is dedicated to laying the eggs. With proper conditions, some young females could moult, spawn and lay eggs in the same summer (DFO 2003).	Comment noted and incorporated into the EA.
195	167	DFO	5.4.2.1	"Courtship" is not a term that should be applied to Lobsters and crab – *mating* is the appropriate term.	Comment noted and incorporated into the EA.
	168	DFO	5.4.2.1	The last sentence of the 2nd paragraph of p192 is incorrect - may be bad translation (French Version)	Translation edits will be addressed as relevant during translation of the revised EA Report.
196	169	DFO	5.4.2.1	The statement that one in ten fertilized eggs will grow to become adults is likely incorrect. Also stages I II and III are not at the surface and are next to impossible to find.	Comment noted and incorporated into the EA.
197	170	DFO	5.4.2.1	The diet of juvenile lobsters is significantly different from that of adult lobsters (see Sainte-Marie and Chabot 2002)	Comment noted and incorporated into the EA.
198	171	DFO	5.4.2.1	Referring to "the coastal zone between the outer Port au Port Bay and Island Shag", these localities are in Newfoundland and Îles-de-la-Madeleine respectively. It is the Laurentian Channel, which separates them, where there are no lobsters, and it is not a 'spawning' area.	Shag Islands are a small group of islands in the southern part of Coppett Harbour off the south coast of Newfoundland.The text has been updated to clarify the reference to Shag Island as one of the Shag Islands off the coast of Newfoundland and not off of the Magdalen Islands.
200	172	DFO	5.4.2.2	Some descriptions of snow crab are not correct. In the southern Gulf of St. Lawrence, snow crab does not move to shallower water to mate. They do not migrate to shallower waters for speeding up embryonic development. Mating does occur for pubescent females after the terminal molt but multiparous females (terminally molted) do not molt before mating. Females can use stored sperm to fertilize oocytes but it is not a general event. When mating partners are present they mate again. The statement *"Males continue to molt into adulthood and only a portion will recruit into the fishery"* has to be rewritten as it is ambiguous. Adult is the terminally molted crabs and a portion of terminally molted crab larger than the minimum size limit will recruit to the fishery when they harden their carapace in a following year. The description of snow crab life cycle/biology has to be re-written.	Comment noted and incorporated into the EA.
201	173	DFO	5.4.2.2	Snow crab distribution is also available from September multispecies survey as well as snow crab annual survey from Gulf Region. A snow crab fishing area (CFA) map in the southern Gulf of St. Lawrence, Eastern Nova Scotia and southwestern NL can be displayed here as it was done for lobster, particularly CFA 12F, 19, 4Vn, and 12A-C which are very close to Old Harry.	Comment noted though the mapping described was not available at the time of publication.
202	174	DFO	5.4.2.2	Regarding stock structure, Atlantic snow crab have recently been identified as a single stock complex ranging from Labrador to Gulf of Maine and encompassing the Gulf of St. Lawrence (see recent paper by Puebla et al.). This information should be amended in the text.	Comment noted and incorporated into the EA.
203	175	DFO	5.4.2.2	In reference to presence of green crab *in "the waters off Newfoundland…"* does this mean that green crab is in the area EL1105? Green crab (*Carcinus maenas*) is also present around Cape Breton Island and Prince Edward Island. Reference search should be done to include the recent distribution records of this species in the southern Gulf and northern Cape Breton.	Comment noted and incorporated into the EA though discussion on green crab populations in Cape Breton and PEI were not included as the areas are outside the geographic scope of the EA.
204	176	DFO	5.4.2.2	Spermatophores are stored in the *spermathecae*.	Comment noted and incorporated into the EA.
205	177	DFO	5.4.2.2	Smaller crabs are *not* found *"within the interstitial spaces of harder substrates."* The first benthic stages are furtive and live hidden among woody debris, biogenic structures or buried in the fine silt.	Comment noted and partially incorporated into the EA, woody debris is likely not present on the seafloor within EL 1105.
206	178	DFO	5.4.2.3	The following is text is proposed to describe Rock Crab: Rock crabs are decapods crustaceans that congregate in waters typically less than 20 m deep and occupy different substrates from sandy bottom to rocky habitats. There is a sexual dimorphism in the size of rock crab, with males growing to bigger sizes (140 mm) than females (100 mm). Sexual maturity is generally attained at carapace widths of 57 and 75 mm for females and males respectively. Molting peak period for males usually happen in the late winter months to allow carapace hardening before mating with soft-shell females in late summer-early fall. Fertilized eggs are extruded soon after mating and are stored under the female's abdomen for up to 10 months. Larval hatching occurs in the late spring / summer months, with the free-swimming larvae aggregating near the surface. The larvae go through six stages which can take up to three months in total before settling to the seafloor as a benthic crab. Rock crab larvae are omnivorous planktivores.	Comment noted and incorporated into the EA.
207	179	DFO	5.4.2.3	Rock crabs play an important ecological role in northern subtidal communities, mainly because of their wide abundance. Their diet includes bivalves, snails, green sea urchins, sea stars, amphipods, sand shrimp, and polychaetes. Rock crab is an important prey item for lobster of all sizes. Adult male rock crabs will reach commercial size (102 mm) at about six years of age.	Comment noted and incorporated into the EA.

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208	180	DFO	5.4.2.5	Several statements regarding whelk are incomplete or incorrect. Females lay capsules that contain numerous eggs – it is the capsules which are attached to hard substrates, and juveniles emerge from these capsules, not "young larvae".	Comment noted and incorporated into the EA.
209	181	DFO	5.4.2.6	It is stated that shrimp are usually hermaphroditic. However, this species is always hermaphroditic.	Comment noted and incorporated into the EA.
210	182	DFO	5.4.3	The EA needs to be clear in which species are/are not being presented with species-specific distribution and life history information and why. For example, Thorny skate are presented within the assessment and not Smooth skate. Accordingly, the entire section following table 5.10 should be amended for clarification.	Comment noted and a better explanation of the reasoning behind the inclusion of specific species in the discussion has been provided.
212	183	DFO	5.4.3	Atlantic hagfish (also Table 5.10), Thorny skate, Smooth skate, and Black Dogfish are not pelagic species as stated in the text – they are groundfish species.	Comment noted and incorporated into the EA.
213	184	DFO	5.4.3	Contrary to that stated in the EA, there are currently moratoria on directed fishing for cod in the Laurentian South DU.	Comment noted and incorporated into the EA.
214	185	DFO	5.4.3.1	Overall, the information presented on pelagic fish is incomplete. The most recent DFO CSAS Research documents and Science Advisory Reports pertaining to pelagic fish should be consulted for this assessment. Notably, a section on capelin should be added here.	CSAS research documents and Science Advisory Reports have been reviewed and incorporated as relevant. A section has been added for capelin.
215	186	DFO	5.4.3.1	Table 5.10 – for herring, add “spring spawning”; for mackerel, it is not present all year round, but from May to November, and there are also eggs and larvae, not only adults; for capelin, there is also immature. Also, the text mentions spring spawning which is not presented in Table 5.10.	Comment noted and incorporated into the EA.
216	187	DFO	5.4.3.1	Table 5.11 – add April to July for herring; and add capelin to the table.	Comment noted and incorporated into the EA.
217	188	DFO	5.4.3.1	Figure 5.32 – data from the southern Gulf survey (the southern Gulf is presented for some species) should be added.	There were four criteria that were pursued for obtaining figures outlining fish distribution for inclusion in the EA. These criteria are listed below in order of priority. • The figures must have distributional data to include EL 1105 or the Project Area. • Primary source data collected by DFO, EC, academia, or consultants, for example, must be used to create the figures. • The data should have been collected recently (i.e., within the previous 10 years) and allow for the identification of current distributional patterns to include EL 1105 or the Project Area. • The data should encompass as much of the temporal and spatial boundaries as possible (i.e., large, broad datasets collected over longer durations were preferred). Using these criteria, Figure 5.32 was retained. While it is agreed that this figure does not include the southern Gulf of Saint Lawrence, this area of the Gulf is outside EL1105 and the Project Area boundaries.
218	189	DFO	5.4.3.1	Figure 5.33 – the distribution presented for Atlantic mackerel in the Estuary and northern Gulf is incorrect. For pelagic fish such as herring, mackerel, capelin, using data from bottom trawl catches does not provide the distribution of these species as shown here. Other techniques are required to establish such a distribution.	Distribution data on pelagic species is limited. While it is agreed that DFO trawl data is not an efficient means of determining abundance or distribution. The 12 years of trawl data do indicate that Atlantic Mackerel are located throughout the Gulf and within the Project Area.
219	190	DFO	5.4.3.1	Figure 5.33 – this should be replaced by maps of eggs and catches from commercial fishing (purse seine) (the fishing positions of herring and capelin catches should also be included).	Maps of fish catches and records of weights are provided in Section 5.8.1 Commercial Fisheries.
	191	DFO	5.4.3.1 p. 201	Incorrect - French version. Pendant cette periode les larves survivent sur la vesicule ombillicale […] incorrect translation of "yolk sac"	Translation edits will be addressed as relevant during translation of the revised EA Report.

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220	192	DFO	5.4.3.2	Figure 5.40 – information is dated. More recent data exists for the study area. The data from 2003-2011 should be presented to illustrate current distributions as opposed to the distribution from a decade ago. Criteria for low occurrence need to be stated clearly.	There were four criteria that were pursued for obtaining figures outlining fish distribution for inclusion in the EA. These criteria are listed below in order of priority. • The figures must have distributional data to include EL 1105 or the Project Area. • Primary source data collected by DFO, EC, academia, or consultants, for example, must be used to create the figures. • The data should have been collected recently (i.e., within the previous 10 years) and allow for the identification of current distributional patterns to include EL 1105 or the Project Area. • The data should encompass as much of the temporal and spatial boundaries as possible (i.e., large, broad datasets collected over longer durations were preferred). Using these criteria, Figure 5.40 was retained. While it is agreed that more recent data may presently exist. At the time of the report no distributional data was identified which better matched the aforementioned criteria.
221	193	DFO	5.4.3.2	Figures 5.42, 5.43, 5.48 – only present one year of data. This should be expanded to illustrate current distribution.	The figures illustrating the 2005 distribution of fish species were meant to be used in conjunction with the figures illustrating the 2009 and 2010 catch data from the summer trawl surveys to provide a recent description of fish species presence within the Project Area.
222	194	DFO	5.4.3.2	It is stated (p.156) *"Yellowtail flounder is a demersal flatfish found in the waters from Chesapeake Bay to Labrador..."* However, Yellowtail flounder are at the northern extension of their range on the northern Grand Bank in 3L off eastern Newfoundland.	Comment noted and incorporated into the EA.
223	195	DFO	5.4.3.2	Atlantic Halibut – information on distribution is restricted to data from the 2009 and 2010 August surveys of the northern Gulf. There is much additional information available on summer distribution from the sources listed below, including areas not covered or poorly covered by the August survey (information from the 2010 survey appears incomplete, or survey coverage was incomplete). Information on distribution in other seasons should also be presented. Swain et al. (1998); Chouinard & Hurlbut (2011); Comeau et al. (2002); Benoît et al. (2003); Darbyson & Benoît (2003); and recent CSAS Science Advisory Reports and Research Documents coming from stock assessments.	Comment noted and a new figure showing Atlantic Halibut January Distribution in the Estuary and Northern Gulf of St. Lawrence was added. There were four criteria that were used for obtaining figures outlining fish distribution for inclusion in the EA. These criteria are listed below: • The figures must have distributional data to include EL 1105 or the Project Area. • Primary source data collected by DFO, EC, academia, or consultants, for example, must be used to create the figures. • The data should have been collected recently (i.e., within the previous 10 years) and allow for the identification of current distributional patterns to include EL 1105 or the Project Area. • The data should encompass as much of the temporal and spatial boundaries as possible (i.e., large, broad datasets collected over longer durations were preferred). While it is agreed the data collection coverage in 2010 was poor within the lease site, the 2009 data illustrates that Atlantic Halibut are present within EL1105. Further both the 2009 and 2010 data sets illustrate that Atlantic Halibut are present within the project area predominantly located within the offshore habitats.
224	196	DFO	5.4.3.2	Haddock – information on distribution is limited to an old ECNASAP map. A considerable amount of more current information is available from the sources above.	Figure 5.32 was changed to include a more recent figure from Environment Canada. No suitable substitution could be identified from the sources provided in the comment. These sources of data from 1986-1992 (Darbyson and Benoit 2003), 1994-1997 (Chouinard and Hurlbut 2011) and sources of data collected prior to 2002 (Swain et al. (1998); Comeau et al. (2002) and Benoit et al. (2003)) were relegated to sources of background information as the information contained was not as complete or recent as the Environment Canada figure.

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225	197	DFO	5.4.3.2	Turbot and longfin hake – information on distribution is restricted to data from the 2009 and 2010 August surveys of the northern Gulf. This is a particular error since survey coverage was incomplete in 2010 and with the area of greatest interest for this report (the area around EL1105) not sampled.	While it is agreed the data collection coverage in 2010 was poor within the lease site, the 2009 data illustrates that turbot and longfin hake are present within EL1105. Further, both the 2009 and 2010 data sets illustrate that both fish species are present within the Project Area predominantly located within the offshore habitats.
226	198	DFO	5.4.3.2	Greenland Halibut –important information, while only recently published, should be included in this assessment. Ouellet et al (2012) present evidence that the project area corresponds to the main site of the spawning population of Greenland halibut in the Gulf of St. Lawrence. The species lays bathypelagic eggs (which grow in deep water) and eggs and larvae will be therefore abundant in the work area at the time of breeding (February-May). Greenland halibut is a major fish species for fisheries in the Gulf of St. Lawrence.	Comment noted and information which became available after the EA document was submitted has been incorporated into the EA.
227	199	DFO	5.4.3.2	Monkfish – the text refers to monkfish outside of the Gulf in NAFO areas 3LNOPs. It is likely incorrect that "the Gulf provides habitat for an abundant population [of monkfish] within the warmer shelf waters."	Comment noted and incorporated into the EA.
228	200	DFO	5.4.3.2	Pollock – the text refers to Pollock outside of the Gulf.	The data contained within the life history section on Pollock includes data on stocks from NAFO Area 4V, which includes the Cabot Strait. There is a paucity of Pollock data within the Gulf of Saint Lawrence as the majority of data available on Pollock stocks is due to the localized fisheries on the Scotian Slope and Grand Banks.
229	201	DFO	5.4.3.2	White Hake – this section is inadequate. Information from southern Gulf surveys, noting that hake are distributed in either shallow inshore waters or in deep water along the Laurentian Channel in summer, migrating to overwintering grounds in deep waters of the Laurentian Channel should be included in the assessment. Please see: Swain et al. (1998); Chouinard & Hurlbut (2011); Comeau et al. (2002); Benoît et al. (2003); Darbyson & Benoît (2003); and recent CSAS Science Advisory Reports and Research Documents coming from stock assessments.	This pre-spawning aggregation is included in the EA "Witch flounder aggregate in deep channel waters like those found in the Laurentian Channel, just southwest of St. Georges Bay, from January to February prior to spawning".
230	202	DFO	5.4.3.2	Witch Flounder – this section is inadequate. Much of the text is only general in descriptions of species range outside of the Gulf. It should be emphasized that in winter pre-spawning adults appear to be aggregated in the area of EL1105 (Bowering and Brodie 1984).	Upon analysis of the catch data it was determined that witch flounder is not a key commercial fishery within the Project Area and the section has therefore been removed.
231	203	DFO	5.4.3.2	The pre-spawning aggregation of witch flounder located within or near EL1105 should be considered as a sensitive/significant area. The overwintering aggregations of southern Gulf cod, and their migration route along the Laurentian Channel, represent other sensitive/significant areas near EL1105.	Refer to response provided for DFO-203.
232	204	DFO	5.4.3.2	Thorny Skate – this section is inadequate. Much of the text is only general in descriptions of species range outside of the Gulf (e.g., the Grand Banks). See the above sources for information on the seasonal distribution of thorny skate within the Gulf. See Swain and Benoît (2006) for a description of recent changes in summer distribution, with an increasing concentration in deep water along the south side of the Laurentian Channel. Note: Thorny Skate (p.158) has under gone declines and is being considered by COSEWIC as a species at Risk.	Thorny skate is not a key commercial fishery within the Project Area and the section has therefore been removed.
233	205	DFO	5.6	Table 5.16 – The conclusion that the potential occurrence of blue whale in relation to the Project is uncommon is incorrect. This probability of occurrence is unknown, and may be higher in the spring and autumn when the blue whales migrate via the Cabot Strait, or in autumn through the area. Moreover, according to table 5.17 and DFO data presented therein, blue whale is a species that would be at least as common as the fin whale. The text should therefore be reviewed, as well as information at the beginning of p. 216	Text in Table 5.16 has updated to "seasonally common".
235	206	DFO	5.6	The frequency of occurrence of belugas is probably very occasional. However, considering the high numbers recently reported along the West coast of Newfoundland (J. Lawson, DFO, Newfoundland, unpublished data), the characterization of rare does not do justice to their possible exposure to activities related to the project. The text of p. 219 should therefore also be edited.	Text in Table 5.16 and the applicable paragraph has been updated to "uncommon".
236	207	DFO	5.6	Is Ocean Biogeographic Information System(OBIS) appropriate to establish such an inventory? What proportion of existing data does OBIS include? Does it include inventories mentioned earlier in the section on endangered species?	OBIS is a database based on observation data collected from various data providers worldwide. Although it is not likely a complete database, it provides complementary data for assessing what species of marine mammals and sea turtles have been observed in a given area of interest, such as the Study Area for the Project. Further, it is believed that this database has beneficial use over much larger regional databases that generally provide range of species distribution and used for the section on endangered species. It should be noted that in Table 5.17, DFO recorded data are provided in addition to OBIS data, which together is intended to provide an overall indication of the presence of marine mammals and sea turtles in the vicinity of the Project.

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237	208	DFO	5.6.1	Evaluation of abundance and potential presence of species in the study area should be carried out taking into account not only the study of Lawson and Gosselin (2009), but also that of Kingsley and Reeves (1998). Lawson and Gosselin (2009) estimates of abundance (with standard deviation) differ substantially from those obtained by Kingsley and Reeves (1998) very likely due to a delay in entry of animals into the Gulf. This hypothesis is substantiated by observations made on the Scotian Shelf and in U.S. waters during the survey period (see discussion of the paper). Estimates of distribution and abundance of Kingsley and Reeves (1998) are therefore also relevant and cover the area of the EL 1105.	Text has been updated to include abundance and potential presence using Kingsley and Reeves 1998.
238	209	DFO	5.6.3	It is incorrect to state that the four species of seals are hunted commercially in the Atlantic. Harbour seals, hunted to very low levels in the 1960s and 70s, are no longer included on personal sealing licenses. There is no commercial hunt for them anywhere in Canada.	Text has been updated to exclude harbour seal from the commercial hunting reference.
239	210	DFO	5.6.3	Harp seal diet data requires updating. Capelin and not Arctic cod now appears its main source of food.	Text has been modified to acknowledge new information on harp seal diet.
240	211	DFO	5.6.3	It should be noted that the area of the EL 1105 is part of the highly preferred hooded seal habitat, particularly males, when present in the Gulf of St. Lawrence (Lesage et al. 2007, Fig. 22; Bajzak et al. 2009)	It has been noted that the area of EL1105 is part of the highly preferred hooded seal habitat.
241	212	DFO	5.6.3, page 241	Incorrect translation – French version On observe le phoque commun et le phoque gris au même endroit, cependant la répartition est telle que le phoque commun est régulièrement vu dans le Golfe tandis que la population du phoque gris est concentrée au sud (LGL 2005b). In the English version, the sentence formulated below does not present the same information: Both the harbour and grey seals are likely to be common in the western Newfoundland offshore regions, with the distribution of the harbour seal being continuous in the Gulf and that of the grey seal to be more concentrated in the south (LGL 2005b).	Translation edits will be addressed as relevant during translation of the revised EA Report.
242	213	DFO	5.6.4	The leatherback is found in the vicinity of EL1105. Therefore “potentially” should be removed within the text.	Text has been updated in Section 5.2.4 to reflect known presence of leatherbacks in the Study Area. Text in Section 5.6.4 has been updated to include discussion of green sea turtle and the sentence in question modified to include Kemp’s ridley and green turtle. Therefore, the reference to “potential” occurrence remains valid since the presence of Kemp’s ridley and green turtle is less likely.
243	214	DFO	5.6.4	There are actually four (not three) species of sea turtles that may be found in the area – need to add green turtle (*Chelonia mydas*) to list.	Green turtle (Chelonia mydas) added to the list.
244	215	DFO	5.6.4	Include primary publication reference for Kemp’s Ridleys preferring shallow water, and remove “apparently” and repetition of shallow water preference.	Text revised to remove redundancies and a primary reference for shallow water preference provided (Ogren 1989).
245	216	DFO	5.7; Page 224; Fig. 5.57	It should be stated in the text that, while the boundary lines depicted on the map represent areas, EBSAs (and species) that are considered, above others, to contribute significantly to the Gulf of St. Lawrence ecosystem, these lines should not be taken as the absolute limits of that particular biological activity or ecological significance which may vary both spatially and temporally over the course of the year. *"The fact that a significant ecosystem component is not included or partially included in an EBSA cannot be considered as an ecologically significant absence. Sensitive populations as well as certain exceptional areas were not – or not entirely/always – included in the EBSA" DFO (2007b).*	Text has been updated as indicated to acknowledge that EBSA boundaries do not signify absolute boundaries in terms of sensitivities or ecological importance.
246	217	DFO	5.7; Page 224; Fig. 5.57	Figure should also include the pre-spawning aggregation of witch flounder in EL1105. Although mentioned somewhat in the text of the EA, the overwintering aggregation of cod north of St. Paul Island and the migration paths of southern Gulf cod (and other demersal fish) should also be emphasized, as should the fact that most large demersal fishes in the southern Gulf overwinter in the Laurentian Channel.	This is discussed within the SAR section on Atlantic cod.
247	218	DFO	Title of Table 5.11, page 216	Incorrect translation – French version Résumé des périodes de frai et d’éclosion des principales espèces faisant l’objet d’une pêche commerciale avec le potentiel de survenance dans la zone visée par le PP 1105 Incorrect translation of "occurrence"	Translation edits will be addressed as relevant during translation of the revised EA Report.
248	219	DFO	5.7.1, p. 225	The title should be Ecologically and Biologically SIGNIFICANT Areas if this is what is meant. Otherwise, EBSAs should not be used as an acronym as it is more commonly associated with SIGNIFICANT areas within the context of ecosystem based management.	Text has been edited to “Significant”.
249	220	DFO	5.7.1, p. 225	Considering the extremely complex and dynamic nature of the Estuary and Gulf of St. Lawrence (EGSL), EBSAs and their boundaries are meant to be presented only as a reference. It should also be recognized that EBSAs require re-evaluation over time (DFO 2011). Analyses leading to the identification of the ten potential EBSAs were based on the best scientific data available at the time – in this, several data sets were not included due to either of lack of geo-referencing or suitable electronic versions as well as large areas of the Gulf being poorly sampled. Therefore it should be noted that EBSAs for the ESGL do not cover all the areas or species that contribute in a significant way to the dynamic of the system. For example, only a small proportion (approximately 0.02%) of the benthic invertebrate species known to be present in the EGSL were considered in the EBSA process (Chabot et al., 2007).	Comment noted. Text updated to include information that EBSAs will be re-evaluated over time.

Total Comment #	Agency/ Company Comment #	Government Department / Company	Section of EIS	Comment /Information Request	Response
250	221	DFO	5.7.1, p. 225	The EA correctly identifies that EL1105 is within several identified important areas – including a wintering area for many demersal fish species; and an area important for marine mammals. However, EL1105 is within an area where the number of overlapping Important Areas (IAs) across thematic layers and dimensions was high (see Figure 17 in Savenkoff et al., 2007). The EA also does not mention the area of interest for the marine protected area surrounding the Les-de-la Madeleine (project under study by Parks Canada).	The AOI surrounding the Magdalen Islands was announced in December 2011. The revised EA now mentions this new AOI. The EA focused on the EBSAs identified in DFO 2007 which are delineated areas of significance. EL 1105 does not fall within any EBSAs.
251	222	DFO	5.7.1, p. 225	The EA should also specify that there is a co-occurrence of several marine mammals in the area in winter for feeding – including deep-divers and blue whale (listed as endangered under the Species at Risk Act in 2005; northwest Atlantic population).	Marine mammals use of the area around EL 1105 (including the endangered Blue Whale) is discussed in Sections 5.2.3 and 5.6.
252	223	DFO	5.7.1, p. 225	The EA should include that this region is one of the rare significant areas for soft corals and the only area where certain deep water shrimp species are found (Pasiphaea tarda, Sergestes arcticus, Atlantopandalus propinqvus, Acanthephyra pelagica) (Chabot et al., 2007).	Section 5.71 is Ecological and Biologically Significant Areas (EBSAs). Soft corals are discussed specific to the Project area in Section 5.3.3.
253	224	DFO	5.7.2 (& in Section 6.2 page 226)	There should be more consideration given to sensitive coastal areas throughout the Gulf. For example, with the exception of seabird nesting sites in section 5.7.3, there is no consideration of sensitive coastal areas of southwestern Newfoundland. Significant coastal and marine Areas, based on traditional knowledge, have been mapped for the Bay St. George/Port au Port area [see http://www.longrange.ca/pages/coastal.html]. Other documentation exists for Bay of Islands and the Northern Peninsula.	The only potential interaction with routine Project related effects would be from supply vessel traffic to and from the Project site. Vessels will follow existing shipping routes and will adhere to Annex 1 of the International Convention for the Prevention of Pollution from Ships (MARPOL 73/78) and pollution prevention regulations of the Canada Shipping Act. Any interaction with the coastal environment is limited in nature and as a result, sensitive coastal areas have not been assessed in the EA.
254	225	DFO	5.8 French Version	To avoid any confusion, we recommend adhering to the official terminology used by Fisheries and Oceans Canada for the names of the following fish species: "Flétan de l'Atlantique" (Atlantic halibut) rather than "Flétan" (halibut) "Flétan du Groenland" (Greenland halibut) rather than "Flétan noir" (black turbot or black halibut) "Chaboisseau" (sculpin) rather than "Chabots" (sculpin) Crabe araignée or "crabe hyas" (toad crab) rather than "crabe lyre" (toad crab or lyre crab)	Translation edits will be addressed as relevant during translation of the revised EA Report.
255	226	DFO	5.8, Page 230	Fisheries catch data appear to have been collected independently from the 4 Gulf Regions: Newfoundland and Labrador, Maritimes, Gulf and Quebec. DFO National Headquarters (Ottawa) maintains a compiled database of fishing activity from each region and this may be a more complete source of data. Furthermore, regional data systems capture information on landings only for the respective region. Fish may be caught in a NAFO unit area and landed in another unit area. Please contact Rowena Orok DFO HQ (613) 881-6114 to inquire about the appropriateness of "ZIFF" data for this project.	It is presumed that information collected from the four Gulf Regions would be the same information that Ottawa would collect from the four regions. It is believed that the data collected is complete and accurate. However, updated data (2011) was obtained for the revised EA Report from DFO National Headquarters.
256	227	DFO	5.8, Page 230	Inshore fleets are not required to report geocoded landings by latitude and longitude. However, they are required to indicate unit area of their catch. As the fisheries catch information is presented by NAFO unit area it would be prudent to capture all commercial fishing activity, including inshore sectors.	All available catch data from DFO has been requested and has been included in the Assessment. Routine operations will not have any effect on inshore areas. The only effect on nearshore areas will be a slight increase in vessel traffic. All worst case scenario oil spills will remain confined to EL1105.
257	228	DFO	5.8.1, Page 230	St. Pierre does have fishing rights in 3Ps. Please revise accordingly.	The text has been updated to include Saint Pierre and Miquelon.
258	229	DFO	5.8.1, Page 231	It would appear that the species listed reflect both directed and by-catch. It would be useful have a separate list for directed and by-catch species.	Directed and by-catch fisheries have been have been separated in the revised EA Report.
259	230	DFO	Figure 5.58, Page 232	The boundaries for 4Rd and 4Ss are not correct and should be revised. (i.e. 4Rc and 4Sx have been omitted)	The boundaries for 4Ss and 4Rd have been inadvertently extended to include those for 4Sx and 4Rc, respectively. The boundaries have been revised on Figure 5.58, and where required on other figures, to only include 4Ss and 4Rd and which are of relevance to the Study Area for NAFO areas 4S and 4R, respectively.
260	231	DFO	Table 5.19 to 5.23	Source should be included in the tables.	The data for the tables were provided by DFO Regions Statistical officers and the source has been updated as personal communications.
261	232	DFO	5.8.1, Page 235 & 237	The commercial fisheries data for 4Rd & 3Pn are not consistent with NL Region's Catch and Effort data. For example the Landings (kg) and Landed Value ($) for 4Rd lobster outlined in the EA document are the same value for each year in the series. *See attached NL data (February 2012).*	The commercial fisheries data for 4Rd and 3Pn has been updated to reflect accurate information.
262	233	DFO	Figure 5.59 to 5.62	Source should be included in the tables.	The data for the figures were provided by DFO Regions Statistical officers. In the text the information has been updated as personal communcations.

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263	234	DFO	5.8.2.1, Page 270	This section is titled Aboriginal Fisheries Newfoundland but it includes content for the entire Gulf region. Suggest that this section be titled “Aboriginal Fisheries.” Note that as of 26 Sept 2011, the FNI achieved Landless Band Status and changed their legal name. They are now the Qalipu Mi’kmaq First Nation Band (www.qalipu.ca). They are the sole owner of that firm. The QMFNB have a number of licenses with DFO. In total, 8 of their communal commercial licenses are held in the name of the QMFNB and 1 is held in the name of Mi’kmaq Commercial Fisheries. They hold 7 licenses in 4R. Please contact DFO for more up-to-date information.	The title of the Aboriginal Fisheries Newfoundland has been changed. FNI has been changed to QMFNB.
264	235	DFO	5.8.1.3	Historical fisheries should include a section on redfish.	A section on redfish has been added to the Historical Fisheries Section.
265	236	DFO	5.8.2.2, Page 272	The text references Salmon fishing on the West Coast only (SFA 13 and 14A). As commercial fisheries data are for portions of the south coast and west coast (4Rd and 3Pn) we suggest that to be consistent, information on SFA 12 should also be included.	Information pertaining to Salmon Fishing Area 12 has been updated.
266	237	DFO	5.8.2.2 French version of EA Report	The title should be "Utilization militaire" rather than "Les militaires emploient."	Translation edits will be addressed as relevant during translation of the revised EA Report.
267	238	DFO	5.8.2.2 French version of EA Report	"Pinfold (2009) a étudié l’estimation de la participation" should read "Pinfold (2009) a estimé la participation."	Translation edits will be addressed as relevant during translation of the revised EA Report.
268	239	DFO	5.8.2.7, p. 278	The Port of Belledune is a major commercial port in Northern New Brunswick operating within a highly industrialized area. The proponent should be aware that the traffic separation scheme is voluntary. Vessels may therefore be directed toward the drilling area if required by the route recommended in winter (open water area in the middle of the ice).	Comment noted. Corridor intends to drill when there is no ice in the Gulf.
269	240	DFO	5.8.2.7, p. 278	The VHF coverage available in the Magdalen Islands does not cover this sector. The Newfoundland and Labrador region probably has better coverage starting at Port-aux-Basques and at the Table Mountain site. In this case, tests should be required or provisions be made at the very least for an HF installation (2182).	Comment noted. Based on the nature and duration of the project, testing and provisions of an HF installation is not required.
270	241	DFO	5.8.2.7, p. 278	This sector is well covered by the Cape Ray DGPS. However, since the AIS signal coming from vessels is not always received by the Magdalen Islands site, we would suggest that the drilling site have its own AIS site or receiving beacon connected to the shipping traffic management system (Innav).	Corridor will take this recommendation into consideration.
271	242	DFO	5.8.2.7, p. 278	The document seems to downplay the impact of shipping traffic in the Old Harry region by indicating that between four and eight vessels, mainly container vessels, pass through this sector daily. Given an average of six vessels per day, that nevertheless equals 2,190 vessels annually, concentrated during the summer and fall. This part would have deserved better documentation.	Comment noted. Based on the duration and nature of the project, we feel the section adequately assesses potential effects on shipping traffic.
272	243	DFO	6.2; Page 282	The Marine Ecosystem VEC should have a broader focus than just corals and plankton. These two ecosystem components may represent VECs but do not constitute an assessment of the environmental effects at the marine ecosystem level. The marine ecosystem, in this case, is the entire Gulf of St. Lawrence and could be represented in the EA by the 10 Ecologically and Biologically Significant Areas (EBSAs) identified in DFO 2007b plus any other species or areas considered important at the ecosystem level. EBSAs were identified by DFO as a tool for assessing and managing ecosystem level effects of human activities. Therefore, it is suggested they be used as a way to assess ecosystem level environmental effects in this EA.	The Marine Ecosystem VEC encompasses plankton (water) and benthic communities (corals) as these two factors are the basis for marine life in the ocean. Without plankton abundance, the majority of life in the ocean would cease. As a result, we have assessed how Project activities will affect the health of both plankton and the benthic communities in the Study Area. Outside of this VEC, Species at Risk, Marine Fish, Shellfish, and Habitat, Marine Birds, Marine Mammals and Sea Turtles, Sensitive Areas, and Commercial Fisheries and Other Uses have been assessed. It can be concluded that after assessing these key indicators the entire marine ecosystem and all of its major components have been assessed and taken into account in a Project context. The marine ecosystem in the case of this Project is the Study area. A broader scale Strategic Environmental Assessment (SEA) is currently ongoing to encompass Western Newfoundland. This Assessment will likely take into account the 10 Ecologically and Biologically Significant Areas (EBSAs) identified in DFO2007b plus any other areas considered important at the ecosystem level.
273	244	DFO	6.2; Page 282	Coastal systems should be treated as a separate VEC in this EA because the project is situated in a unique ecological area that is almost entirely surrounded by land.	The only potential interaction with routine Project related effects would be from supply vessel traffic to and from the Project site. Vessels will follow existing shipping routes and will adhere to Annex 1 of the International Convention for the Prevention of Pollution from Ships (MARPOL 73/78) and pollution prevention regulations of the *Canada Shipping Act*. Any interaction with the coastal environment is limited in nature and as a result, Coastal Systems will not be added as a stand-alone VEC.

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274	245	DFO	7	Literature on the potential environmental impacts of exploratory drilling is covered quite well and conclusions are in line with many reviews and individual studies dealing with the effects of drilling fluids and cuttings (e.g. MMS2000; CAPP 2001; NEB et al 2002; Buchanan et al 2003; Hurley and Ellis 2004; Neff 2005; Mathieu et al. 2005). Discharges associated with the drilling of a single exploratory well would normally be expected to disturb/impact habitat within a few to tens of meters from a drilling site.	Comment noted.
275	246	DFO	7.1.1	The EA notes that, *"Such a study has not been done for leatherback turtles; however, this species is recognized as being the fastest reptile 35.2 km/hr (19 knots) when frightened (McFarlan 1992) and might be expected to be better able to avoid a strike."* This is an inappropriate and misleading suggestion, as it is not necessarily the potential top speed of a marine vertebrate which influences its susceptibility to ship strikes. More relevant variables include whether or not the animal is in foraging "mode" versus transiting, as foraging animals are particularly vulnerable. EL1105 is located in key leatherback foraging habitat. It would be prudent to remove this argument from the assessment.	Section 7.1.1 has been updated to highlight the difference between foraging and transiting animals.
276	247	DFO	7.1.2	Barium is the main metal in OBM and WBM. Questions have been raised about the potential for chronic toxicological effects in fish. A recent publication reported no health effects as assessed by a variety of indices, in fish chronically exposed to barite for several months (Payne et al 2011).	Comment noted. Section 7.1.2 discuses barium as a dominant component in drill muds and considers health effects associated with barite.
277	248	DFO	7.1.4; Page 318	The approximate number of supply vessels that might be used during exploratory drilling operations should be given.	There will be 2 to 3 support vessels for this project - 1 standby vessel and 1 to 2 supply vessels.
278	249	DFO	7.1.4; Page 318	Ship strikes and noise and are among the most frequently identified stressors of marine mammals in the Gulf of St. Lawrence.	Comment noted. This is acknowledged in the cumulative effects assessment of marine mammals (Section 9.5).
279	250	DFO	7.1.5	For the impact of noise generated by the work, no modeling of the affected area by the different sources of noise, continuous and impulse, is done to provide realistic estimates of noise levels at different frequencies and to map them on vertical and horizontal plane.	The scoping document doesn't require quantification/modeling of noise. Based on the duration and the location of the project, the qualitative assessment further confirms that a quantitative approach is not required. However, Section 7.1.5 has been substantially revised.
280	251	DFO	7.1.5	· The exploration well is in relatively deep water (~470m). Sound in deep water will propagate to ranges of kilometers to tens of kilometers with less attenuation than characteristic of shallower more typical areas of the Grand Banks or Scotian Shelf – this would be especially so for sound propagating along the axis of the Laurentian Channel.	Comment noted. Section 7.1.5 has been substantially revised.
281	252	DFO	7.1.5	Considerable seasonable variation might also be expected in the amplitude of long-range propagated sound. In summer near-surface originating sound, as from air guns, will tend to be generally refracted downward by the prevailing sound speed stratification leading to substantial interaction with the bottom and rapid attenuation with range. In winter and spring the conditions in the deep water of the Laurentian Channel may be upward refractive (at least this is the case on the Scotian Shelf) and near-surface sound can be trapped in sound channels in the upper water column leading to substantially reduced sound attenuation at long range. While these effects are probably negligible close to a surface sound source at short range where acute effects on organisms might be expected, they could be of some consequence at long ranges where low levels of sound might, for example, exert behavioral effects on marine mammals such as influencing their movement. This would be especially relevant to the time of year the activities are taking place.	The influence of seasonal variation on the propagation of sound and extent of biological effects is acknowledged.
282	253	DFO	7.1.5.1	There appears to be some confusion in the EA in referring to VSP and "well site" surveys. For example, within the text, *"A typical well site survey (VSP survey) could..." - However, the "well site survey"* discussed in the quoted reference (Davis et al. 1998) is a conventional 2-D seismic survey conducted using a smaller, higher frequency air gun array to gather detailed geological/geotechnical info on shallow sediment structures around the well in order to plan well initiation and placement of any necessary equipment on bottom. The VSP survey generally looks at deeper geological structures and requires placing the receiving array down the well bore – and appears to be the type of survey proposed for Old Harry given the quoted source level of 242 dB re 1µPa @ 1m is typical for a true VSP survey. This information requires clarification.	Reference to the well site survey has been removed from the section. The Project at Old Harry will be using a VSP survey.
283	254	DFO	7.1.5.1	The intent of the sentence *"The energy levels emitted from the VSP will be considerably less in source (760 in ^{3})."* is unclear. Lower source energy normally implies a lower total volume airgun array. The key point should be that VSP sources have a sound pressure level intermediate between sources intended for shallow, local geotechnical type surveys and sources typically used for deep 2 or 3-D exploration seismic surveys.	Section 7.1.5.1 has been extensively revised and these reviewer comments have been taken into consideration during this rewrite.
284	255	DFO	7.1.5.1	It has been identified that either a semi-submersible or a drill ship platform may eventually be chosen for the Old Harry exploratory well. As per Table 7.5, semi-submersibles are generally significantly quieter than drill ships. Noise levels emitted by a drill ship are roughly comparable to those emitted by other vessels of similar size; however, a drill ship represents a stationary, long duration noise source (20 – 50 days as per project scheduling) as opposed to a temporary noise source of a passing vessel.	Section 7.1.5.1 has been extensively revised and these reviewer comments have been taken into consideration during this rewrite.

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285	256	DFO	7.1.5.1	The statement *"...low frequency noise from a drilling platform might be detectable no more than 2 km away near a shelf break.."* may be best case scenario given that Table 7.5 identifies noise from a moored drill ship will attenuate to 115 to 120 dB (well above quiet ambient noise levels) at distances of 1 to 10 km. This 2 km detection range for drilling is also mentioned (p. 350) in the context of the avoidance of drill platforms by baleen whales.	Section 7.1.5.1 has been extensively revised and Table 7.5 has been updated.
286	257	DFO	7.1.5.1	Accurate estimates are required. Also, essential measures are not included here: i.e., the levels of ambient noise, noise from the source at the frequencies considered and the estimated losses by propagation. Moreover, to what depths of the water column do we refer?	Section 7.1.5.1 has been extensively revised and these reviewer comments have been taken into consideration during this rewrite.
287	258	DFO	7.1.5.1	Table 7.5 – the "Noise Level (dB re 1µPa)" column contains some error in presentation. Two, and possibly three, quite different acoustic measures are presented in this column without distinction. As such they are misleading for use in making determinations. For example, based on how they are labeled, it is natural to believe these numbers refer to broadband acoustic pressure level measurements at a point in space. However, a numeric level of 60 for "calm seas" appears much too low for a broadband pressure measurement – although is reasonably consistent with a typical power spectral level reported over a 1 Hz bandwidth in the frequency range 10 – 1000 Hz under calm conditions (and the correct units being dB re 1 µPa/Hz$^{1/2}$. The quantity for "Moderate (not 'Modern' sic) Waves/surf" (100 – 700 Hz) seems to be properly labeled as broadband and 102 dB re 1µPa is not unreasonable. The quantity for "Pile-driving" appears to revert to the originally labeled point measurement of broadband noise (given the observation distance of "1 km"). The original literature should be checked to determine how "Fin whale" (probably source level), island drill rigs, or helicopter levels were measured or defined also. This becomes more important if these numbers are used elsewhere in the report to arrive at conclusions about the Old Harry drilling environmental impacts. For example, the EA notes bad weather ambient noise levels are stated in the range 90 to 100 dB re 1µPa – actually less than the moderate wave and surf levels of Table 7.5	Section 7.1.5.1 has been extensively revised and these reviewer comments have been taken into consideration during this rewrite.
288	259	DFO	7.1.5.1	It should be understood and noted that broadband levels are quite dependent on how "broadband" is defined. The "jack-up", "semi-submersible", "moored drill ships", and various specialized vessel noise levels would appear to be acoustic source levels where the broadband acoustic noise levels expected from these devices if measured at a (mathematical only) reference distance of 1 m, the correct acoustic units in this case being dB re 1 µPa @ 1m.	Section 7.1.5.1 has been extrensively revised and these reviewer comments have been taken into consideration during this rewrite.
289	260	DFO	7.1.5.1	Table 7.5 – the EA presents the frequency at which the intensity of the sound is observed. However, none of the sources presented is limited to a single frequency; the energy spreads on a band of frequencies, which may be more or less wide according to the sources. A presentation of the SPL with frequencies for each of the sources would have been much more informative to evaluate the impacts of each.	Section 7.1.5.1 has been extrensively revised and these reviewer comments have been taken into consideration during this rewrite.
290	261	DFO	7.1.5.1	Table 7.5 – this should specify whether the levels @ 1 m are for discrete sources or other distances (e.g., fin whales, drilling platform)	Section 7.1.5.1 has been extrensively revised and these reviewer comments have been taken into consideration during this rewrite.
291	262	DFO	7.1.5.1	Table 7.5 – the statement *"Overall broadband sound level did not exceed ambient beyond about 1 km…received levels at 100 m would be approximately 114 dB re 1 µPA."* is inconsistent. How can the overall broadband sound level at 1 km be less than ambient levels beyond 1 km, while it is still as high as 114 dB re 1 µPa at 110 km? This reference is probably not applicable here. In the St. Lawrence, the median broadband in the waterway is approximately 112 dB re 1 µPa (Simard et al. 2010).	Section 7.1.5.1 has been extrensively revised and these reviewer comments have been taken into consideration during this rewrite.
306	263	DFO	7.1.5.2	The exploration well will be drilled in the Laurentian Channel, a major shipping channel, which is already subject to frequent high level ship noise. Therefore, near the well, on a long term average, the incremental noise level increase from support vessel activity as a fraction of the pre-existing ambient background should be less than if similar operations were conducted in other areas further removed from shipping lanes.	Section 7.1.5.2 has been updated to acknowledge pre-existing ambient noise levels from shipping.
307	264	DFO	7.1.5.2	Figure 7.5 – there is error in the Y axis and legend. The indication of the Y axis is perplexing. From the English version (OB = octave band), one can deduce that these noise levels in third octave. The English legend indicates 1 m, the French 10 km.	Translation edits will be addressed as relevant during translation of the revised EA Report.
308	265	DFO	7.1.5.3	The statement, *"The seismic signals are typically in the range of 10 to 200 Hz (Turnpenny and Nedwell 1994)"* is incorrect. Studies since that time showed that the sounds of airguns are on a broader band (e.g. see Potter et al. 2007).	Section 7.1.5.3 has been updated to correct the acoustic range of seismic signals
309	266	DFO	7.1.5.3	The EA uses conclusions of Turpenny et al. (1994). These are questioned in the expert review of Popper and Hastings (2009) who note: Turnpenny et al. (1994) examined the behaviour of three species of fish in a pool in response to different sounds, but results are not useable due to lack of calibration of the sound field at different frequencies and depths and many other problems with experimental design. In enclosed chambers that have an interface with air, such as tanks and pools used by Turnpenny et al., the sound field is known to be very complex and will change significantly with frequency and depth (Parvulescu, 1967; Blackstock, 2000; Akamatsu et al., 2002). As a consequence, responses of the animals in the Turnpenny et al. (1994) study cannot be correlated with any aspect of the acoustic signal, and the findings are highly questionable.	Conclusions from Turnpenny et al. (1994) have been removed from the EA Report
310	267	DFO	7.1.5.3	"250 to 255 dB re 1 µPa" is incomplete in units – lacking "a ... @1m".	Text has been updated to include the unit "@ 1m".

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311	268	DFO	7.1.5.3	The statement, *"The limited studies available suggest that anthropogenic sounds, even from very high intensity sources, might have no effect in some cases …"* is incorrect and incomplete. This statement does not match current knowledge. See more references from Hastings, Fay and Popper on the effects of noise on fish.	The statement in question was intended to comment on the varying responses of fish to anthropogenic sounds from various studies and has been edited to provide clarity.
312	269	DFO	7.1.5.3	The statement, *"There are numerous anecdotal observations of fish under noisy bridges or near noisy vessels indicating that adverse effects are not necessarily overt and obvious, but anecdotal observations are unable to indicate whether fish experience any negative consequences related to the noise (Slabbekoorn et al. 2010)."* is an opposite interpretation of the Slabbekoorn et al. 2010 conclusion, and other information that follows (p.325) that show with references to support it the different ways in which anthropogenic noise can significantly affect fish, including: *"(1) Noise-dependent fish distributions…(2) Reproductive consequences of noisy conditions…(3) Masking effects on communicative sounds…impact the ability of fish to communicate acoustically or use the acoustic 'soundscape' … (4) Masking effects on predator–prey relationships…ability of fish to find prey (get food) or detect the presence of predators…"*	The opposing comment from Slabbekoorn et al. 2010 has been removed from the EA Report.
313	270	DFO	7.1.5.3	The statements, "*Available data suggest that they are capable of detecting vibrations but they do not appear to be capable of detecting pressure fluctuations." and "Crustaceans appear to be most sensitive to sounds of low frequencies (i.e., <10,000 Hz)."* require explanation. How does one distinguish the vibrations of pressure fluctuations? These are contradictory. Also, low frequencies are referred to in reference to frequencies up to 10 000 Hz, which is well beyond the usual range of low frequencies.	In water, only those animals can perceive the pressure component of sound which are equipped with pressure to displacement converters. Many species of fish pick up pressure waves with their swim bladder. The pulsation of the swim bladder in the sound pressure field causes a displacement and stimulation of the otocysts, and thus the perception of a sound wave. Most aquatic crustaceans lack any air filled chambers and therefore cannot perceive pressure variation in a sound field. Instead they perceive sound through vibration of mechanorecptors including setae (hair-like) cells on the surface of the body (Wiese 2002). Text in 7.1.5.3 has been clarified.
314	271	DFO	7.1.5.3	The statement, "*The rate of injury experienced by macroinvertebrates due to the passage of a seismic survey should be less than indicated for planktonic organisms and fish. Lobsters are similar to crab in that they are thought to be resilient to seismic activity because decapods lack the gas-filled voids that would make them sensitive to changes in pressure."* is speculative and must be supported by references or removed. The differences in density and sound velocity of various tissues of crabs and lobsters (hepatopancreas, gonad, muscle, eggs, etc.) do not support this speculation that they are insensitive to pressure changes.	A reference for this has been provided (Pearson et al. 1994, Payne et al. 2007). Similar studies (Payne et al. 2007) have supported this reference in that crustaceans are less sensitive to pressure changes than fish.
292	272	DFO	7.1.5.3	The developer assumes that *the discontinuous, short duration nature of these pulses is expected to result in limited masking of baleen whale calls.* This is true for short distances. However, periods of silence are reduced as one moves away from the source by the reflection of sound, which increases the potential for masking. Several studies have shown that the propagation effects by multipath have the effect of producing multiple replicas of the pulses, thus increasing the risk of masking over long distances. (e.g. Madsen et al. 2006)	The text has been changed to reflect the masking of sounds over long distances.
293	273	DFO	7.1.5.3	Figure 7.7 and 7.8 – a source is required for these figures.	Sources have been added for Figures 7.7 and 7.8.
294	274	DFO	7.1.5.3	The statement (p.333), *"Whistles have a fundamental frequency below 20 to 30 kHz plus higher harmonics…plus higher harmonics."* is inaccurate here; a reference is required and the list of species which have been shown *"…whistling harmonics above 30 kHz "*	For a species list of mammals with whistling frequencies above 30 KHz please refer to Figure 7.8
295	275	DFO	7.1.5.3	The statement (p.333), *"Baleen whales communicate using low frequency sounds (generally between 25 Hz…"* is incorrect. This lower limit of 25 Hz excludes the most frequent vocalizations of blue whales and fin whales.	The lower limit of baleen whale communication has been reduced to 10 Hz to reflect those vocalizations produced by blue and fin whales.
296	276	DFO	7.1.5.3	The EA notes that "Several species of baleen whales have been observed to continue calling in the presence of seismic pulses, including bowhead whales (Richardson et al. 1986), blue whales and fin whales (McDonald et al. 1995)." Continuation of vocal activity during seismic surveys does not imply a lack of masking as proponents claim (see previous sentence of the EA). Animals that vocalize likely cannot be heard by their conspecifics due to noise generated by the project activities. Masking of vocalizations during a period where the voice activity is used for functions such as the search for partners for reproduction may have non-negligible effects on individuals and these life history patterns. This can be particularly significant during the fall for large whales, when an increase in social activity has been documented in species such as the blue whale (Doniol-Valcroze et al. 2011).	Text has been added to acknowledge that continuation of vocalization during seismic sounds does not necessarily mean masking does not occur.
299	277	DFO	7.1.5.3	The effects of seismic surveys on echolocation are discussed for the odontocetes within the project. However, the more likely issue will arise due to the masking of vocalizations for communication, which are broadcast in some odontocetes such as beluga, at much lower frequencies (between 0. 5−16 kHz) than discussed in the EA (Sjare et al. 1986; Lesage et al. 1999), and where the beluga's signal components could be obscured by the higher frequencies of seismic pulses.	The topic of masking has been discussed in the EA. The peak pressure from seismic sounds is in the 5-300 Hz range, with some energy in the 500 – 1000 Hz range. The frequencies of beluga vocalizations (0.5 – 16 KHz) falls outside of the main energy emitted during VSPs.

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342	278	DFO	7.1.5.3	The statements (p.335 and 337), *"…masking effects are expected to be negligible for toothed whales."* and *"The sounds produced by seismic air guns are in the frequency range of low hearing sensitivity for toothed whales."* are incorrect. Madsen et al. 2006 shows that the sounds received by the animals reach frequencies of several kHz, audible by odontocetes.	Madsen et al. 2006 reports that the sounds received by odontocetes can reach frequencies of up to 150 KHz. It is also noted that odontocetes produced echolocation and communication in the frequencies from 1 – 150 KHz. Due to the fact that the majority of the energy emitted from seismic sources is in the range of 5 – 300 Hz, with some energy in the range of 500 – 1000 Hz (Low frequency), it is unlikely that odontocetes will be highly affected (both by masking or injury due to hearing) by VSP sound sources.
343	279	DFO	7.1.5.3	The EA notes, *"The impact of both natural and man-made noise is less severe when it is intermittent rather than continuous (NRC 2003)*." However, this conclusion is not obviously stated within this reference – therefore it must be qualified within the EA. This assertion is probably true in the context where the intermittent nature of noise is likely better communication during periods of silence between the pulses. However, to conclude that intermittent noise essentially has less impact on marine mammals is probably not a generality, since a strong impulse noise can have major impacts on an animal rather than a lesser intensity continuous noise.	In the context of our assessment intermittent noise caused by VSP would be much less severe than a constant output of the same pressure level.
344	280	DFO	7.1.5.3	Richardson et al. 1995 are cited for *"…limited documented situations…"* This should be updated as it dates back 15 years, and several studies have been conducted since, for many species.	Richardson et al. 1995 are indeed cited for "…limited documented situations…" This is taken out of context as the entire citation is Richardson et al. 1995; Gordon et al. 2004; Nowacek et al. 2007; and Southall et al. 2007. One can see that the statement made by Richardson et al. 1995 is supported by several recent scientific advances from peer reviewed academic journals.
345	281	DFO	7.1.5.3	The statement (p.338) *"In addition, baleen whales have often been seen well within distances where seismic sounds would be audible and yet show no obvious reaction to those sounds (LGL 2005b)…"* is incomplete and requires updated references (e.g. Nieukirk, et al. 2012; Castellote, et al. in press; Yavenko et al. 2007).	This text has been removed and new text added acknowledging various avoidance radii depending on species, locations, whale activities, and oceanographic conditions affecting sound propagation.
346	282	DFO	7.1.5.3	The EA notes, *"The sound emission associated with the VSP and drilling noise would result in avoidance or temporary displacement, negating any potential positive effect. The Project Area does not represent any known critical habitat for any of the species that may pass through the area... The residual adverse environmental effects are therefore assessed as not significant."* The EA uses the project area as the area of influence. However, in the case of seismic surveys, the area of influence is likely much larger than this. The proponent assumes that avoidance of the area insonified (by drilling activity, dynamic repositioning jets of the platform, or seismic surveys) for a period up to 2 months (50 days) in the case of the drilling, has no impact on the use of the area as migration or feeding area. It is actually likely that, at certain times of the year as in the fall and in the spring, this area is a migration route for blue whales in particular. The use of this area for feeding by turtles or large whales is presumed low, whereas in fact, recent data indicate it is used as a foraging area by leatherback turtles.	It is acknowledged that the area of influence extends beyond EL 1105 and that leatherback turtles have been recorded in the Study Area, although it is still maintained that temporary avoidance of this area by the Leatherback would not result in significant adverse effects as the species has been shown to forage over a much larger area in the Gulf and Scotian Shelf.
347	283	DFO	7.1.5.3	The following statements in the EA are misleading: "Avoidance of the Project Area by sea turtles as a result of sound is also not expected to cause any adverse biological effects given that the area is not known to congregate jellyfish, a primary prey item. Jellyfish are transitory, with distributions changing within and between years, so there is no more reason to expect jellyfish within the Project Area than any other area of the Gulf." Also, "The Project Area offers no unique habitat or feeding areas for sea turtles." The area corresponding to EL1105 is part of a broader high-use foraging area for leatherback turtles, as demonstrated through satellite telemetry (see James et al., 2005). As leatherback presence in this area is well documented, spanning multiple years of data collection, etc., there is good evidence that jellyfish are concentrated in this areas and that there is a predictable concentration of leatherback prey in the Project Area. At this time, it cannot be concluded that the area of EL1105 does not provide unique habitat or feeding areas for leatherbacks.	Refer to response to DFO-282.
348	284	DFO	7.1.5.3	Ketten and Bartol (2005) and other more recent references included in the topic of sea turtle hearing would be useful inclusions in this assessment.	Ketten and Bartol 2005 has been added to the EA Report to provide a reference on the hearing range of sea turtles.
328	285	DFO	Section 7.1.5.3, page 359	Incorrect translation – French version […] bien que certaines espèces, en particulier les phoques à oreilles, n'aient pas un aussi vaste champ d'audibilité. Incorrect translation of "otaries"	Translation edits will be addressed as relevant during translation of the revised EA Report.
349	286	DFO	7.2, p. 342, 1st paragraph	The statement about Section 32 of SARA is not correct – it is not linked to critical habitat protection. Rather, critical habitat destruction is prohibited under Section 58. Section 32 relates to protection of individuals of listed extirpated, endangered or threatened species.	The statement regarding Section 32 of the *Species at Risk Act* has been updated to remove discussion on habitat as this is covered under Section 58 of the Act.

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350	287	DFO	7.2.2	The statement (p.343), *"As many Project-related activities are limited to the Project Area, they would only interact with species likely to occur in EL1105."* is unproven. No simulated noise fields have been performed and it is likely they will extend beyond EL1105. Impacts can also spread beyond the area, for example by pushing organisms outside, modifying, interrupting their migrations, as it is repeated several times that the animals avoid the area because of the noise that will be generated.	The statement has been modified to convey that the zone of influence of most Project-related effects (VSP and drilling) are limited to and within close proximity to EL1105. The effects of VSP and drilling are not expected to impact nearshore species located several kilometres away from the source of disturbance (See Section 7.1.5).
351	288	DFO	7.2.4	Table 7.8 – Suggests that mortality resulting in collision with vessel is reversible? Please be advised that it is unlawful to kill harm, harass, capture or take an individual of a species that is listed as Endangered or Threatened under SARA unless permitted. This measure assists in protecting species, as the loss of an individual could be significant for a certain species (e.g. blue whale).	The results of mortality from a vessel collision have been changed to irreversible due to the fact that the loss of an individual from certain species could lead to negative population level effects .
352	289	DFO	7.2.2.5	The potential impacts of drilling noise and duration should also be discussed in this section.	The potential impacts of drilling noise and duration on fish, marine mammals, sea turtles and birds are addressed in Section 7.2.2.5 and Section 7.1.5.
353	290	DFO	7.3; Page 352	Corals and plankton are identified even though "deepwater corals and sponges are not considered likely in the area"(see last line on pg 352). Kelp was also identified but eel grass was not although there are significant eelgrass beds in the adjacent coastal areas (see attached) and its importance was noted in section 5.3. Eel grass has been identified by DFO as an Ecologically Significant Species and their sensitivity to oil pollution is well documented, therefore eel grass should be included in the Marine Ecosystem assessment.	The only potential routine effects to eel grass would be from supply vessel traffic to and from the Project site. Vessels will follow existing shipping routes and will adhere to the Annex 1 of the International Convention for the Prevention of Pollution from Ships (MARPOL 73/78) and Pollution Prevention Regulations of the *Canada Shipping Act* . Therefore, any routine interactions between supply vessels and eel grass would be limited in nature and have not been assessed in the Marine Ecosystem Assessment. Corals and Sponges have been identified because there is the slight possibility that they may be found in the area, although highly unlikely. Eel grass would not be found in the potentially affected area offshore.
354	291	DFO	7.1.1 and 7.3.2.1	The total impact of light is not considered in the EA. The effect of light that has not been considered is that on the circadian cycle of diel vertical migrations of pelagic organisms, rising to the surface to feed during the night, and take refuge deep to escape predation by visual predators (e.g., fish, birds). The presence of light around the platform at night will change local dynamics.	The effect of light has been addressed in Section 7.3.2.1 and 7.4.2.1. The effect on pelagic organisms has been added to the assessment and the effect of light on these organisms would be similar to plankton and fish which was previously assessed and concluded that the effects would be localized and temporary, reversing once the drilling period has ceased (20-50 day period).
355	292	DFO	7.4.2.1	Regarding the statement (p.330), *"Several benthic sessile species have a very long generation time (e.g. Corals)."* Sea urchins and brittle stars are not sessile.	The text has been edited to acknowledge effects on sessile and slow-moving organisms.
356	293	DFO	7.4.2.1	There is a lack of references to support recovery in 3-5 years. This is recognizably much longer for corals and sponges.	Additional references have been added to support the statement that the benthic environment will recover within 3-5 years.
337	294	DFO	Section 7.4.2.2, page 389	Incorrect translation – French version Les organismes sédentaires qui ont des capacités motrices nulles ou très limitées, comme le pouce-pied et la moule […]. Incorrect translation of "barnacle" L'endofaune, comme la plupart des polychètes, amphipodes et palourdes, emprunte des espèces […]. Incorrect translation of "burrowing organisms"	Translation edits will be addressed as relevant during translation of the revised EA Report.
338	295	DFO	Section 7.4.2.2, page 390	Incomprehensible translation- French version Plusieurs études de terrain et en laboratoire ont été menées sur les effets possibles de la sédimentation et de la boue dans les coraux de forage.	Translation edits will be addressed as relevant during translation of the revised EA Report.
357	296	DFO	7.4.2.5	References or examples are required for *"Most available literature indicates…"*, as well as all other statements of fact contained in this section regarding effects on fish and shellfish.	The preceding paragraph in Section 7.4.2.5 refers the reader to Section 7.1.5.3 where additional information and references can be found on the biological effects of sound on fish and shellfish.

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358	297	DFO	7.6.3	While this section lists the mitigation to be implemented, details of these mitigations should be detailed. (i.e. details on implementation marine mammal observer, mitigations included in the Statement of Canadian Practice on Mitigation of Seismic Noise in the Marine Environment)	Mitigations measures have been listed; however reference has been made to key documents that are readily available to the public, where it was deemed appropriate as to reduce the length of the document. The Statement of Canadian Practice on Mitigations of Seismic Noise in the Marine Environment and other references documents can be easily obtained from their respected Federal Agencies and have been left out to discourage redundancy. Any additional mitigation requirements beyond those discussed in the EA are expected to be developed in coordination with applicable agencies and outlined in work authorizations and the EPP document.
359	298	DFO	7.8.2.1, p. 381	The authority to enforce the exclusion zones must be specified.	The Offshore Installation Manager (OIM) has the authority, granted by the *Canada-Nova Scotia Offshore Petroleum Resources Accord Implementation Act* , to enforce the exclusion zones. In accordance with the Offshore Petroleum Drilling and Production Regulations, all reasonable measures will be taken to warn persons who are in charge of vessels and aircraft of the safety/exclusion zone boundaries, of the facilities within the safety zone and of any related potential hazards.
360	299	DFO	8.7.1.1	First bullet, second paragraph – the text states that pelagic and benthic fish have low exposure risk because they are highly mobile and able to avoid oiled areas. Larval and early juvenile fish are less mobile than older fish and so may be at greater risk. American eels at the glass eel stage migrate through the EL1105 area. Glass eels may not be able to avoid oiled areas because they cannot swim as rapidly as older eels.	Comment noted. The ability of larval and juvenile fish species to avoid oil slicked areas has been changed.
361	300	DFO	8.7.1.1	There is no mention in this section about the potential impact of spilled oil drifting towards adjacent areas where marine fish species at risk are found in high densities. For example, residual surface and deep water currents in the project and adjacent areas tend to move from east to west around the southwest and west coasts of Newfoundland (Figs. 4.6-4.7, 4.9-4.11) where high concentrations of juvenile and/or adult fish occur (e.g. Figs. 5.5 through 5.10).	The potential effect of spilled oil drifting towards adjacent areas where marine species at risk are found in high densities is minor if not non-existent. The worst case scenario for an oil spill (Refer to Figures 2.12-2.24) will not affect areas of high densities of marine species at risk either adult or juveniles.
362	301	DFO	8.7.1.1	The EA states (p.402) *"…Perhaps the species of greatest concern would be redfish as the Project Area overlaps a potential redfish mating area. Redfish typically mate in the fall; however, eggs are hatched within the female and are not extruded until the following April to July (Section 5.2.1.7). An oil spill would not affect redfish larvae, as the potential larvae extrusion area is outside (to the north, in the Cabot Strait) of the Study Area (Figure 5.56)."* However, this paragraph suggests the project area overlaps a potential redfish mating area, then goes on to suggest a potential larval extrusion area is outside the Study area. Is this speculation or is there a publication to reference for these claims? It is also possible that the project area is also a potential larval extrusion area.	A reference has been added to support the redfish larval extrusio
364	302	DFO	8.7.1.3	Sea turtles should be specifically referenced in the title as there is discussion of them in the corresponding text.	The title of Section 8.7.1.3 has been updated to include Sea Turtles at risk.
365	303	DFO	Section 8.7.2; Page 405	Eelgrass is addressed, but the likelihood of direct oiling is minimized due to the distance of the project from shore, although it is well known that direct oiling of coastlines is a frequent result of a large oil spill, with surface slicks moving considerable distances. In addition calm, sheltered shorelines, marshes and river estuaries where eelgrass beds thrive are among the most sensitive areas to oil, providing quiet zones where oils can accumulate and bind to suspended particles, forming dense tar mats. Oil pollution can cause acute mortality of eelgrass beds, and other sea grass and seaweed beds by physically coating the plants, blocking sunlight and preventing photosynthesis. In addition, structural habitat provided by eelgrass can be compromised by the accumulation of toxic components of oil. Clean-up operations can also damage eelgrass beds.	The sensitivity of eelgrass is acknowledged, although Corridor Resources maintains that oiling of coastlines from a spill is not likely based on predictive modeling.

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366	304	DFO	8.7.5	There is evidence following the recent well blow-out in the Gulf of Mexico (Deepwater Horizon) that hydrocarbon spills can be debilitating and lethal for sea turtles. Suggest including technical reports from NOAA, other sources here, as the impact is not negligible and should be recognized within the assessment.	The reviewer's comment is noted in that the environmental effects on sea turtles from oil exposure is not negligible and which is noted in Section 8.7.1.3. Unlike the circumstances of the Deepwater Horizion blow-out and the existing conditions in the Gulf of Mexico where sea turtles are likely more prevalent over the course of a year, the occurrence of sea turtles in the Project Area or Study Area is limited to feeding during the warmer months of the year in the Gulf of St. Lawrence. Therefore the probability of a high risk of exposure from a blow-out combined with the presence of sea turtles at the same time would be much lower than that in the Gulf of Mexico.
367	305	DFO	8.7.7, Page 410	The text does not reference seafood market price impacts associated with an oil spill – spills have led to food safety concerns and loss of reputation – these in turn have had negative market impacts.	Section 8.7.7 has been updated to include reference to food safety concerns and loss of reputation.
368	306	DFO	9.5	The statement (p.416), *"Richardson et al. (1995) predicted a radius response to noise during development and production activities for baleen and ondontocetes to be less than 100 m."* is erroneous and requires correction. This general source, which contains several hundred pages should not be cited. The authors did not predict a "radious response." The effects of changing the behavior of animals can spread over very large distances (e.g. Risch et al. (2012).	This statement has been removed.
369	307	DFO	9.5	Regarding the statement (p.416), *"Limited data suggest that vessels speeds below 26 km/hr (14 knots) may be beneficial in reducing marine mammal vessel collisions (Laist et al. 2001)."* See also: Vanderlaan et al. (2008); and Vanderlaan and Taggart (2007).	Text updated to include the Vanderlann et al 2008 reference which states that vessel traffic should be limited to 10 knots.
370	308	DFO	Section 9.6; Page 417	Should consider eelgrass under sensitive areas: Low oxygen levels, typical of sheltered sea grass habitat, limit the biodegradation of oil and result in extremely slow degradation, with oil persisting for as much as ten years or more, depending on the amount and type of oil spilled. Recovery begins rapidly in rocky shorelines, but oil can persist for 6 to 12 years or more in protected soft sediments. When significant eelgrass areas are lost, they can be extremely difficult (or impossible) to re-establish, even with interventions such as transplants or seeding.	Under the worst case scenario for an oil spill/blow-out, oil would not reach any areas where eelgrass would be located. As a result, there is no potential effects on eelgrass and it has not been included under the Sensitive Areas Section.
371	309	DFO	Supporting Document - Modeling in Support of Corridor Resources Old Harry Exploratory Drilling Environmental Assessment	In general, the scenarios in this document were not clearly described. The subsurface transport of dispersed oil (majority of the total oil) was not sufficiently modeled. The model only considered the re-entrained oil from surface in a 30m layer and did not consider the dispersion into water column during the rise of oil while oil was released from 470m. Overall, the results were not clearly presented. Notably, the document did not take the expertise gained from the oil spill in the Gulf of Mexico into consideration for the Gulf of St. Lawrence which shares a good deal of similarities. We do not have the specific oil category that is to be extracted in the Gulf of St. Lawrence. However, the indications show that we expect it to be on the lighter side of the crude, close to the category of the one in the Gulf of Mexico. In short, the nature of the crude and the physical setting of both areas, a semi-enclosed sea, make it appropriate to use the expertise gained in the Gulf of Mexico to project the potential risks in the Gulf of St. Lawrence. As such, it is recommended to project the potential risks in the Gulf of St. Lawrence using the results of the oil spill in the Gulf of Mexico.	See Section 2.1.2 in the SL Ross report (SL Ross 2011a, updated 2012) for a description of the behaviour of the oil and gas from a shallow water subsea blowout. In general, significant entrainment of oil in the water column is unlikely during its rise to the surface in the gas bubble driven plume. The behaviour of a shallow water blowout (minimal hydrate formation) will be different from a deep water event (extensive hydrate formation) such as the Deep Water Horizon event in the Gulf of Mexico. The formation of gas hydrates depletes the hydrocarbon plume of the high energy natural gas and the driving buoyancy of the plume is essentially lost. In the case of a shallow water blowout, the gas is preserved in the plume and the high energy bouyancy effect is maintained. The overall impact is that the hydrocarbon plume travels very rapidly to the sea surface with little or no oil dispersed into the water column during its rise to the surface. The expected oil to be encountered at Old Harry is a very light 45-56 degree API oil/condensate (see response for DFO-06), in contrast to the much heavier oil encountered at Macondo (~35 degree API oil). The Old Harry site is located in 470 m water depth, which is much shallower that the 1520 m of water depth at the Macondo site. A subsea blowout at the Old Harry site is expected to behave like a shallow water event with minimal hydrate formation whereas hydrate formation at Macondo was likely extensive.

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372	310	DFO	2. OIL SPILL SCENARIOS AND MODELING INPUTS	Regarding the trajectories of the oil spill, the trajectories presented in the document are unrealistic and do not serve the purpose. They should be redone with realistic winds and surface currents. The model used to generate the surface current fields (Tang et al. 2008) is a good one. However, the oil-spill trajectories are calculated using seasonal mean surface water velocities (2.3.3. Water Currents on page 16). This choice of currents is completely unrealistic. There are no tides, no wind induced currents, and no influence of the surface outflow from fresh water runoff. The latter part is surprising given that the seasonal mean surface currents were used. Since in a typical oil spill, all of these components are present, the trajectories should be calculated with the hourly outputs of the model driven with realistic winds from Meteorological Service of Canada outputs. Within this section, a blow out from the surface is illustrated. However, a blowout from the bottom is not illustrated. The Gulf of Mexico spill did not behave as a text book spill as the blow out was from the bottom; it was not at the surface. Some of the oil did not reach the surface, and a good portion of it stayed near the bottom. There is a need to determine where that oil would go using the hourly bottom currents of the ocean model. The document should therefore track the oil spills using near bottom currents.	The surface water current data utilized provides the seasonal average trends in water movement in the region. When this is combined with the 52 years of MSC50 wind data used in the trajectory assessments the variation in trajectories possible from the drilling location are well represented for the purposes of environmental impact assessment, especially for a spill of non-persistent light oil/condensate. Tidal variations would also not significantly alter the probable footprint of the oil spills. With respect to the wind data used, the MSC50 hind cast wind set used in the modeling is a long term data set with good spatial resolution over the entire Atlantic region. The data was developed by the Climate Research Division of Environment Canada and the Federal Program of Energy Research and Development. In the research paper describing the data set, the authors state that “The wind and wave data are considered to be of sufficiently high quality to be used in the analysis of long return period statistics, and other engineering applications”. As such, we contend that this data set is the best available for offshore spill trajectory and behavior modeling. The use of land-based weather data from a single weather station, suggested by the reviewer, does not necessarily accurately portray the winds offshore. Sub-surface water currents were not considered in the subsea oil release because the strong, buoyant gas-bubble plume that would result from a shallow subsea release (see response to DFO-309) would overwhelm such currents and result in minimal deflection of the developed plume (see page 8 and 9 of full spill modeling report for additional description of the models used). For example, a sea bottom current of 3 kts (~0.15 m/s) is significantly weaker than the vertical velocities that can be
373	311	DFO	2.1.2 Subsea Blowouts 5	The name of the model for this study is given here, but a description of the formulation, capability, and limitation of the model is not provided. It is unclear if the processes described in section 2.1.2 have been fully or partially included in SLROSM. Justifications need to be provided on why this model (SLROSM) was used instead of other models (published and probably more advanced models, such as Deep Blow by SINTEF, OILMAPDEEP by ASA, or CDOG by Clarkson University). It is important to demonstrate that the selected model is technically sound for the proposed modeling work. Figure 3 – the illustration of vertical profile is inaccurate. With the presence of currents, the plume will be deflected rather than straight upwards.	SLROSM utilizes the algorithms developed by Fannelop and Sjoen for shallow subsea blowouts as identified in the report on page 10. These are the same algorithms used by SINTEF in their shallow water discharge model and this approach has been validated against the IXTOC blowout event, a more representative blowout for this spill scenario than the Deep Water Horizon event. Supplementary modelling completed by ASA (submitted to C-NLOPB on September 21, 2012) to compare the oil mass balance for surface, evaporated and entrained oil for two different oil specifications (Cohasset crude and diesel) shows that oils with similar properties have similar on-water persistence predictions when using SLROSM and OILMAP. With respect to Figure 3, because of the strong gas bubble plume, the oil would rise to the surface very quickly, and there would be minimal deflection of the plume by subsea cross-currents. Any potential minimal deflection would not result in a significant change in the surface oil footprint (a few hundreds of metres at most).
374	312	DFO	*2.3.2 Discharge Volumes and Flow Rates 15*	Blowout scenarios were not clearly described in this section or in Table 3. Only the flow rate was provided but did not state the blowout period (10 days, or 3 months, etc.). Such information is key to the extent of oil covered area.	Descriptions of surface and subsea blowout behaviour are provided in Sections 2.1.2 and 2.1.3 in the SL Ross Report (SL Ross 2011a, updated 2012). These descriptions in the SL Ross report have been expanded upon since the DFO review. The blowout periods modelled are for one month (30 days).

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375	313	DFO	*2.3.3 Water Currents*	It was stated that surface water current was used in the modeling. The surface only case is fine for the surface spill scenarios, but it is insufficient in modeling subsurface blowout. Although the 470m depth was classified as shallow in terms of hydrate formation it is deep enough that the subsurface current can play an important role to deflect and affect the plume behaviors. The deep/subsurface currents are particularly important for the study of dispersed oil transport process in the water column. The deep current is important considering the drill site is in a channel.	The extensive experience of SL Ross with oil spill modelling over 25 years indicates that the strong gas bubble plume will bring oil to the surface quickly and there would be minimal deflection of the plume by subsea cross-currents (a few hundreds of metres at most). Any minor deflection of the gas bubble plume by cross-currents will result in only minor changes in the surface foot print of oil. Because of the strong gas bubble plume, the oil would rise to the surface very quickly and there would be little loss of oil to the surrounding waters.
376	314	DFO	*3. MODELING RESULTS*	The duration of the trajectories presented in the document is unrealistic. The choice to stop the trajectories at a given level of ppm concentration is not documented. It is implied that all oil spills will be dispersed and absorbed in the environment at that level. In fact, a greater spill would make the oil go further and eventually reach a coastline. The document did not consider this issue which is a serious flaw. It is recommended to use the results from the ocean model under the proper conditions and ensure that the duration is long enough to show the coastline potentially at risk.	The reviewers indicated that the choice to stop the trajectories at a given level of concentration in the water column was not documented. The extent of the sub-surface dispersed oil plumes was stopped at 0.1 ppm (the concentration considered no longer harmful to marine life) as indicated on page 24 along with references for justification. For the batch diesel spills of fixed volume (1000 and 10,000 litres), the dispersed oil in the upper 30 m of the water column was tracked until the oil concentration dropped to 0.1 ppm. For the subsea and surface blowouts, the models were run for one month (30 days) and the dispersed oil in the upper 30 m of the water column was tracked until the oil concentration dropped to 0.1 ppm. The light Cohasset crude oil/condensate will evaporate or disperse to a concentration of 0.1 ppm before impacting any coastline no matter how long the models are run.
377	315	DFO	3.1 Batch Diesel Spill Fate Modeling	The modeling was conducted in average wind conditions, what about under worst case scenarios without wind? This scenario is missing. It is stated that “The subsurface oil also diffuses laterally as it is moved away from the spill site by the prevailing surface water currents”. Again, this is very confusing that subsurface oil is dispersed by surface current. It is stated that “It has been assumed that the oil will mix in the upper 30 m of water as this is the minimum surface water mixing depth reported in the literature for the region (Drinkwater & Gilbert 2004)”. Why assume the mixing depth while there are models available to simulate the 3D (including vertical) transport behaviors? This simplification (30m mixing) may cause overestimate of concentration in some areas and underestimations in other areas.	Statistical wind data was used for Environmental Assessment purposes. Average weather conditions were modelled to provide the most likely behavior of these small diesel spills to meet the requirements of the EA. As the dispersed oil cloud moves with the prevailing currents, it also diffuses and dilutes as it moves with the water body. The 30 m mixing depth provides a reasonable estimate of in-water oil concentration for Environmental Assessment purposes.

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378	316	DFO	3.2 Subsea Blowout Fate and Behaviour Modeling	Without knowing the blowout period, it is difficult to interpret the results. It was stated that between 16 and 29% will evaporate and the remainder will disperse, but the associated time step was not given as the mass balance will continue to change with continuous blowout (maybe month long). Therefore the results in Table 7 only represent the condition at a given time point but the evolution with time is missing. Furthermore, very little has been presented here about the fate of dispersed oil (84 to 71% of total oil, majority), including the vertical distribution. A contour plot of horizontal and vertical area should be provided, as should the depths where 0.1 ppm concentrations are found. Also, without the use of deep currents, the distances in Table 7 are questionable as the deflection of plumes was not considered. The bathymetry around the site is not provided, which may also affect the behaviors of dispersed oil, but there is no discussion on this subject. One important factor that affects the fate of dispersed oil is the droplet size distribution. What distribution was used and how was it calculated?	The blowout period modelled was one month, or 30 days, and oil was 'released' at 6 hour time steps. Note that releasing the volume of 6 hours of oil flow at one instant will take longer to evaporate and disperse than a continuous flow of oil for 6 hours. The dispersed oil plume will diffuse and dilute as it moves away from the spill site and the zones of influence in Table 7 represent the maximum likely extent of significant surface and sub-surface oiling with a continuous release of oil under average environmental conditions. Therefore, the model does provide for the evolution of a potential spill with time. The dispersed oil was tracked in the upper 30 m of the water column until the concentration dropped to 0.1 ppm. Table 7 shows the maximum likely distance from source for the dispersed oil. Other sections in the SL Ross report describe how the oil footprints may vary considering historical wind data. Deep currents will not affect the dispersed oil in the upper 30 m of the water column. Further, the gas bubble plume will move the oil to the surface very rapidly (as with any other shallow water subsea event) with minimal deflection of the plume and little loss of oil to the water column (see response provided for DFO-309 and DFO-313). The oil was moved to the surface by a gas bubble plume not by oil drop buoyancy so the oil drop size distribution is not required (see response for DFO-309).
379	317	DFO	*3.3 Surface Blowout Fate and Behaviour Modeling*	The document refers to “throughout the blowout period”. How long is the period? This is not provided anywhere. Section (4) provides this information for surface oil trajectory, but it was stated there that “This does not represent a scenario that would actually occur in a continuous blowout situation but rather provides a reasonable worst-case assessment of spill behaviour”, it is unclear if this “every 6-hour batch for a month” release case used in section 4 was also used in section 3.	The blowout period modelled was one month, or 30 days. Additional text has been provided in Section 4.0 to add clarity to that section.
380	318	DFO	*4.2 Typical Monthly Surface Oil Slick Trajectories*	The document states, *“Each one of these six-hour quantities of oil has been tracked until the surface oil is completely evaporated and dispersed from the surface.”* However, have the emulsification process been modeled? Although this may not be important in summer conditions, it cannot be neglected in winter conditions as a fraction of emulsion may stay on surface much long and transport far beyond the modeled 3-4 km radii (Fig 5).	The light oil/condensate being modelled does not form a water-in-oil emulsion, based on the data in the Environment Canada oil database and previously conducted tests on the Cohassett-Panuke oil. Condensates in general are not susceptible to water-in oil-emulsion formation.
381	319	DFO	*5.1 Introduction*	The title is “dispersed oil plume trajectories”, however, this section only covers the re-entrained oil from above surface release as mentioned in page 33 “In these simulations, the quantity of oil that would be released from six hours of a continuous above sea blowout has been introduced on the surface at the exploration site as a batch spill every six hours over month-long periods” The behaviour of near bottom release and mass in the water column will be entirely different and are not covered here.	As described in the response to DFO-311, all oil released at the seabed for a shallow water, subsea blowout will travel quickly to the surface with the strong gas/water/oil plume (that is driven by the rising gas bubbles) to the surface (i.e. it is likely that no oil would trapped near the bottom or in the water column). All of the oil would rise to the surface and either evaporate or disperse. The dispersed plume trajectories were tracked until the concentration dropped to 0.1 ppm.
382	320	DFO	*5.2 Typical Monthly Dispersed Oil Plume Trajectories*	The document states, *“The initial movement of the dispersed oil plume is assumed to be due to a combination of winds and surface water currents. The prevailing surface water currents alone are assumed to drive the dispersed oil plume once the surface slick is depleted.”* As discussed before, once the oil is entrained into water column, surface current should not be used, as the high amplitude of surface current may cause over flushing/dilution and underestimate oil concentration.	Oil concentration estimates based on a completely mixed, upper ocean mixing region provide adequate estimates of in-water oil concentration for Environmental Assessment purposes. Any additional resolution, either temporally or spatially, would be of limited use given the spatial and temporal knowlege of the resources that the dispersed oil could impact.
383	321	DFO	5.2, Table 5.1	White shark should be included on this list. Scientific Name:*Carcharodon carcharias* Taxonomy Group:Fishes Range:Atlantic Ocean Last COSEWIC Assessment: April 2006 Last COSEWIC Designation:Endangered SARA Status: Schedule 1, Endangered	Text updated to include White Shark.
384	322	DFO		Regarding the statement (p.94), “Tidal mixing is also a permanent and dominant modifier of the intermediate and deeper waters near the head of Jacques Cartier Strait and in the Strait of Belle Isle (Lu et al. 2001; Saucier et al. 2003).”, Lu et al (2001) showed that where bathymetry was sufficiently shallow that tidal mixing should be strong enough to mix the layer (typically around 50 m depth), and therefore should not by cited in relation to modifying deep water masses.	Comment noted and corrected.

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392	1	DND	General	The mitigation section of the EA report should note that should any suspected unexploded ordinates be encountered during the course of the proponent's operations, it should not be disturbed/manipulated. The proponent should mark the location and immediately inform the Coast Guard. Additional information is available in the 2011 Annual Edition – Notices to Mariners, Section F, No. 37.	DND specific mitigation regarding unexploded ordnances has been added to Section 11.0.
393	2	DND	5.8.2.6 Military Use, line 1, pg 277	the first part of this sentence is inaccurate. DND may use the general area.	Text has been updated to indicate that DND may use the general area.
394	3	DND	5.8.2.6 Military Use, Figure 5.92, pg 277	the context in which this figure is referred to in the text is not accurate, i.e. the figure does not indicate "military use", it indicates unexploded ordinates.	Text has been updated to clarify the context of Figure 5.9.2.
395	4	DND 5.8.2.6 Military Use, Figure 5.92, pg 277	5.8.2.6 Military Use, Figure 5.92, pg 277	DND's Formation Safety and Environment does not have a record of providing this figure for this project, therefore; its proper source should be referenced.	The figure was provided to Stantec by Fugro Geophysics Inc. who received it from Defence Construction Canada (DCC). The text has been updated to reflect this.
396	1	EC	2.11.13 Air Emissions	There are unlikely to be an air issues resulting from normal operations of the exploratory drilling for this proposal. On page 24, the proponent commits to reporting in accordance with the OWTG and the National Pollution Release Inventory. This commitment is redundant as there are no reporting requirements for exploratory drilling under these initiatives. On page 25, the proponent makes reference to Environment Canada's authority to regulate emissions from marine diesel engines of less than 37 kW. It is unclear if this authority relates to the proposed project.	Section 2.11.12 has been updated to remove extraneous and erroneous information on reporting requirements.
397	2	EC	4.1.11 Ice	Page 103, 1st paragraph, sentence 6: *"All sea ice in EL 1105 is first-year ice, ranging in its un-deformed thickness from 30 to 120 cm (SLGO 2011; Figure 4.20).* Comment: Not all sea ice in EL1105 is greater than 30cm (first-year ice), especially at the start of the winter season. Also, your reference to Figure 4.20 is in error … Figure 4.20 in the EA report is a tide map. Rephrase this sentence. Say something like "All sea ice in EL 1105 is seasonal ice, with undeformed thicknesses normally not reaching the thin first-year ice category (30-70cm) until March. Predominant ice thicknesses greater than 70cm are generally not observed until mid-April, towards the very end of the ice season in the Gulf." Also – cite the 1981-2010 CIS Atlas for the information. See your own description at the bottom of p.108, where this is correctly described.	The paragraph was updated to reflect the updated Figure 4.24 (now Figure 4.29) with information from the 1981-2010 CIS Atlas and referenced accordingly.
398	3	EC	4.1.11 Ice	Insert a new figure to replace the erroneous reference to Figure 4.20. Use a figure from the CIS online atlas, for example: http://www.ec.gc.ca/glaces-ice/default.asp?lang=En&n=AE4A459A-1&wsdoc=C3DAE7C6-0C7E-11E0-9694-185EF62D62D6	The Figure 4.20 reference now refers to Figure 4.24 (now Figure 4.29) as intended which has been updated in accordance with EC-367.
399	4	EC	4.1.11 Ice	Page 103, 1st paragraph, sentence 7: *"Daily graphs such as depicted in Figure 4.24 are available as a seasonal service from http://slgo.ca/en/ocean/data/ice-concentration.html, starting in December / January through May / June."* *Comment: The charts (not graphs, unless you meant to say graphics) published on the SLGO website are forecasts produced by a computer model. This computer model uses CIS analysis data for input. Real CIS analysis charts, NOT model forecast graphics, should be used here, where describing climatological sea ice conditions in the Gulf of St. Lawrence* *• Replace Figure 4.24. Use either the corresponding Ice Stage chart for 31 Jan 2011, found on the CIS web site archive:* *http://ice-glaces.ec.gc.ca/www_archive/AOI_12/Charts/sc_a12_20110131_WIS57SD.gif* *or the one for 07 Feb 2011:* *http://ice-glaces.ec.gc.ca/www_archive/AOI_12/Charts/sc_a12_20110207_WIS57SD.gif* *• In these charts, note that ice stage relates to ice thickness according to last (bottom) table on the following webpage: http://www.ec.gc.ca/glaces-ice/default.asp?lang=En&n=4FF82CBD-1&wsdoc=19CDA64E-10E4-4BFF-B188-D69A612A0322* *• Also - Replace the reference to SLGO with the appropriate reference to the CIS web page.*	Figure 4.24 (now Figure 4.29) has been changed to the Ice Stage chart for 31 Jan 2011 from the CIS Online Atlas. References have been updated to reflect this.
400	5	EC	4.1.11 Ice	Comment: The paragraphs on these pages were copied nearly verbatim from the CIS 1971-2000 sea ice climatic Atlas. Passages and phrases copied word-for-word should be in quotation marks, followed by the appropriate reference. No quotation marks are used and no references are given for the copied sentences until the end of each paragraph, making it appear that the information was paraphrased from this source or that only the last sentence is from this source. The above is plagiarism and needs to be corrected. Simply changing a word in the copied sentence (e.g. replacing significant with substantive so that the sentence has not been copied verbatim in its entirety) is not sufficient.	Paragraphs have been paraphrased where necessary and referenced correctly.

Total Comment #	Agency/ Company Comment #	Government Department / Company	Section of EIS	Comment /Information Request	Response
401	6	EC	4.1.11 Ice	Also, note that there are two editions of the Atlas. The first is for 1971-2000 and was published in 2002. The second is for 1981-2010 and was published online in 2011. The reference given on pages 104-106 is Environment Canada 2011, but the reference at the end of the report (p. 447) says this is for the 1971-2010 Atlas. Please change the reference on p.447 to say "Sea Ice Climatic Atlas for the East Coast 1981-2010". Also correct the web link if necessary.	The references on p.447 were updated to correct citation of "Sea Ice Climatic Atlas for the East Coast 1981-2010". The web link was also updated.
402	7	EC	4.1.11 Ice	Also, p.104, 2nd paragraph, sentence *3 "Typical rates of motion over the Madeleine of 3 to 5 nm per day."* makes no sense as it is written. This sentence was mis-copied and needs to be corrected (and correctly referenced, with quotation marks).	Sentence was identified, paraphrased, and referenced correctly.
403	8	EC	4.1.11 Ice	Page 107, Figure 4.27: This figure is captioned *"Maximum pack ice extent in March"* but shows the chart for the end of March when sea ice retreat has already begun. Maximum ice extents occur in the first half of March, not at the end of March. Comment: Either replace the ice chart shown with one from either the 12th or 19th of March, or change the caption to read "Maximum pack ice extent at the end of March".	March 26 Frequency of Presence of Sea Ice chart was replaced with the March 12th chart as requested.
404	9	EC	4.1.11 Ice	Page 108, Figure 4.28: The caption for this figure says it is the *"Maximum pack ice extent in April",* yet the chart shown is that of February 19 (identical to that in Figure 4.26). Comment: Replace this chart with one that is actually from April.	The incorrect chart was replaced with the Frequency of Presence of Sea Ice chart from April 16th.
405	10	EC	4.1.11 Ice	P.108, 1st paragraph, sentence 1 reads: "The Project Area is located in an area that ranges from 51 to 84 percent 30-Year frequency for the presence of sea ice (green and purple color bands) depending upon the month." Comment: Because the chart used in Figure 4.28 was wrong, this sentence is wrong. The 30-year frequency of presence of sea ice in the project area ranges from 51 to 84% during the peak of the season (late February and early March), then drops to 16-50% in early April and to less than 15% by the end of April. This sentence needs to be corrected as indicated.	The paragraph was changed to reflect the corrected Maximum Pack Ice Extent chart.
406	11	EC	4.1.11 Ice	P.108, 1st paragraph, sentences 2-5 + P.109, Figures 4.29 and 4.30 (4.31) reads: "Ice formation for the 2010/2011 year (Environment Canada 2011) is presented in Figure 4.29. Based on the average and median data for percentage ice coverage, the 2010/2011 season would be considered a "below average" ice coverage year. The maximum ice coverage year was March 1, 1993 (Figure 4.30) and the minimum ice coverage year was March 1, 2010 (Figure 4.31). EL 1105 is located in the area that has an average ice freeze up date of January 29 (Figure 4.31)." Comment: Figure 4.29 is missing as described in the text. The actual Figures 4.29 and 4.30 on p.109 actually correspond to Figures 4.30 and 4.31 as described in the text. "Figure 4.31" is referred to in relation to 2 different charts in the text: 1) what is actually Figure 4.30 on p.109, and 2) the dates of freeze-up chart, labeled Figure 4.31 on p.110. • Insert a new Figure 4.29 (the chart for the ice formation for the year 2010/2011). • Correct the figure numbers for Figures 4.29, 4.30 and 4.31, so that 4.29 becomes 4.30, and 4.30 becomes 4.31, and 4.31 becomes 4.32 … to match what is described in the text. • Correct the Figure numbers (captions and in the text) by adding 1 to their numbers, for the rest of the figures in all of Section 4.	A new Figure 4.29 (now 4.34) was added to the text and all figure numbers were corrected to reflect this in the captions as well as the text.
407	12	EC	4.1.11 Ice	P.108, 1st paragraph, sentence 5 reads*: "EL 1105 is located in the area that has an average ice freeze up date of January 29 (Figure 4.31)."* *Comment: From the Freeze-up chart, the average freeze-up date is February 12, not January 29.* *Correct the date given in sentence 5 from January 29 to February 12.*	The sentence was updated to include the correct February 12th date.
499	13	EC	4.1.11 Ice	P.110, 1st, 2nd and 3rd paragraphs: Comment: See plagiarism notes for P.104-106. Use quotation marks and correctly reference sections copied verbatim or nearly verbatim from the CIS Atlases.	Paragraphs have been paraphrased where necessary and referenced correctly.

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500	14	EC	4.1.11 Ice	P.110, 3rd paragraph, sentence 1: Comment: The CIS Atlas makes clear the jump between this paragraph and the one before it by adding a section title "Ice Features in the Area". In this environmental assessment, the lack of section header leads to a confusing disjoint between the two paragraphs. Modify the first sentence of this paragraph to make clear that ice dispersal is no longer being discussed and that the topic has changed to Ice Features. Suggestion: -- During the peak of the ice season, "ice in the central part of the Gulf produces an ice cover of large floes of thick ice, combined with new ice formation, from Gaspé Passage to Cape Breton Island" (Environment Canada, 2011). -- Again, as indicated, use correct quotations and referencing of text copied word-for-word from the CIS Atlas to avoid plagiarism.	The lead in sentence was modified to better identify the change of subject. Paragraphs have been paraphrased where necessary and referenced correctly.
501	15	EC	4.1.11 Ice	P.111, 1st paragraph: Comment: See plagiarism notes for P.104-106, P.110. Use quotation marks and correctly reference sections copied verbatim or nearly verbatim from the CIS Atlases.	Paragraphs have been paraphrased where necessary and referenced correctly.
502	16	EC	4.1.11 Ice	p.111, 2nd paragraph: Comment: Most of the text in this paragraph was copied from a paragraph which exists in the older 1971-2000 CIS Atlas (published 2002) but which was removed from the more recent 1981-2010 CIS Atlas (published 2011). Thus, in addition to plagiarizing much of the text, you have also used the wrong reference. Use quotation marks and correctly reference sections copied verbatim or nearly verbatim from the CIS Atlases. Correct the reference to Environment Canada (2002) and add a second reference to the list on page 447 to include this second, earlier version of the Alas.	Paragraphs have been paraphrased where necessary and referenced correctly.
514	17	EC	4.1.12 Icebergs	The report's short paragraph on iceberg describes typical iceberg motions from the Strait of Belle Isle and along the Québec shore in the Gulf of St-Lawrence; their graphics does not portray this motion. Although this iceberg preferred trajectory is correct, the study makes no attempt to describe iceberg climatology. The following statements are derived from the CIS archive of iceberg reconnaissance from 1987 to today. 1- Icebergs have been spotted in the Strait of Belle Isle during every month of the year during the past 25 years. 2- Deeper intrusion of icebergs in the Gulf of St-Lawrence and along the west coast of Newfoundland can only occur after the pack ice becomes increasingly mobile during the spring months; this typically occurs in April, May and June. 3- No icebergs have ever been spotted south of 48°30' N in the Gulf of St-Lawrence. 4- Icebergs sighted south of Newfoundland were never seen west of 59° W. 5- The primary water current flow in the Laurentian Channel would prevent icebergs from approaching this area from the east. 6- For any iceberg to approach the drill site from the west would mean the iceberg would first have to drift west of Anticosti Island and out through the Onguedo Passage (south of Anticosti Island). 7- Few icebergs have been spotted west of Anticosti Island (back in April of 1987). 8- No icebergs have ever been sighted south of Anticosti Island.	Section 4.1.12 was updated to include more iceberg climatology as it pertains to the Project Area.
515	18	EC	12.1 Potential Effects of the Physical Environment on the Project	Page 422, section 12.1, 3rd paragraph, sentence 3 reads: "The effects of ice on the Project will be minimal because most of the Project Area is often free of sea ice and subject to relatively few icebergs most of the year." Comment: The effects of ice on the project will be minimal because the drilling, as indicated in the second bullet after the first paragraph on this page, will be conducted during ice-free periods and because the area is free of sea ice for most of the year. This could be made clearer.	The paragraph was updated to improve its clarity as requested.
516	19	EC	Physical Environment (4.0)	There seem to be errors in the numbering of sections in Chapter 4.0 Physical Environment. Section 4.1 titled Geology includes several subsections that do not belong there, on physical oceanography, currents, tides, waves, and storm tracks.	The text has been formatted so that Physical Oceanography is its own major heading.
534	20	EC	Waves (4.1.9)	This section relies entirely on the statistical summary of waves at one point within the Project area, based on the MSC50 Wind and Wave Hindcast Dataset. Measurements from scientific buoys in other parts of the Gulf of Lawrence may be useful (link below). The definition of peak wave period and significant wave height should be provided.	Definitions for peak wave period and significant wave height were added to the text. However, with respect to using scientific buoys in other parts of the Gulf, the scope of the Old Harry Prospect Exploration Drilling Program EA is to assess a specific Project in a specific study area which has been defined as the likely extent of potential Project-environment interactions from the Old Harry Project. It is suggested that this regional information request is more appropriate to be addressed in a regional study such as the updated Western Newfoundland Strategic Environmental Assessment, scheduled for completion in summer 2013, which has a much broader scope.

Total Comment #	Agency/ Company Comment #	Government Department / Company	Section of EIS	Comment /Information Request	Response
535	21	EC	Waves (4.1.9)	The column and row headings for Tables 4.2 – 4.5, showing the percent occurrence of peak wave period against significant wave height (SWH), are reversed. This error is repeated in the text which states that the majority of significant wave heights are 7 to 9 m, when those values apply to wave periods. Similarly the values for the typical peak period correspond to wave heights. Imagine a 7 m wave every 2 seconds, as the text would suggest.	The table headings and text associated with Tables 4.2 - 4.5 were updated to reflect the correct values for the percent occurrence of peak wave period against significant wave height.
297	22	EC	Waves (4.1.9)	The percentages are given to the 2nd decimal place, insufficient to indicate the occurrence of the most extreme values. Table 4.1 shows that significant wave heights of 7.0 m or more occur in each of the 4 seasons but this is not evident the tables for MAM or JJA. Table 4.1 shows that significant wave heights of 9.0 m or more occur in the fall and winter seasons, but this is not evident in the table for the fall (OND).	Tables have been changed to show that percentages are less than 0.01 percent and not 0. Since the data for these tables was generated through Hindcast modeling, the percentages were kept to two decimal places as it is more reflective of the source data's precision.
298	23	EC	Waves (4.1.9)	The last paragraph of this section seems misplaced.	The misplaced paragraph in Section 4.1.9 was removed from the text. The paragraph duplicated one found in Section 2.12.2.
300	24	EC	Storm Tracks in the Gulf of St. Lawrence (4.1.10)	This section contains 3 figures that inadequately describe the intended subject. Figures 4.21 and 4.22 barely cover the Gulf of St Lawrence and thus cannot show Figure 4.23 is very hard to read. It is missing the panel for the winter season (DJF); the summer panel (JJA) is repeated twice. major storm tracks for both extra-tropical and tropical cyclones that approach from the south or southwest and track northeastwards over the Gulf of St Lawrence and the Atlantic Provinces. Tropical cyclones/transitioning tropical cyclones need to be considered (ref. below)	Figures 4.21 and 4.22 were replaced with 4 figures more relevant to storm tracks in the Gulf of St. Lawrence. Figure 4.23 was separated into four figures for readability with the winter panel being corrected to show the proper season.
301	25	EC	Climate (4.2.1)	The caption for Table 4.6 should indicate that the monthly precipitation values are means. The monthly extremes were not included, even though that is part of the standard description of station climate normals from EC.	Table 4.6 updated to show that precipitation values are means and the monthly extremes were added.
302	26	EC	Climate (4.2.1)	occurrence of freezing precipitation and freezing spray should be explicitly described in Ch 4; their effects are discussed in the Effects of the Environment on the Project, 12.1 12.1.	Freezing spray and freezing rain have now been added to the Climate section (4.2.1).
303	27	EC	Climate (4.2.1)	Since the project includes helicopter operations, climatology relevant for aviation should be included for the project area from the drilling platform to any shore-based facilities. That includes information on hazards such as low level turbulence and icing, and information on the frequency of low cloud ceilings (as well as visibility).	Information on hazards such as low-level turbulence, icing, and the frequency of low cloud ceilings has been added to the EA.
304	28	EC	Wind Climate (4.2.2)	The wind climate was described solely from the MSC50 dataset for a single point in the Project area. This is insufficient to give a full picture of the conditions over the entire Project and Study Area. The analysis should include hourly mean and gust wind speeds from land/island stations in the surrounding area. Local effects and elevation differences need to be considered.	The MSC50 Data point gives a central data point with regards to unimpeded wind conditions. As such this point was chosen to give an overall picture of the wind characteristics in the Project and Study Area.
305	29	EC	Wind Climate (4.2.2)	Tables 4.6 to 4.10, percent occurrence of winds by speed and direction, give values only to the 2nd decimal, insufficient to show the occurrence of the most extreme winds.	Tables 4.6 – 4.10 give values to the 2nd decimal, which does show the occurrence of the most extreme wind speeds during those seasons where one would expect to see them (winter and spring). In the summer and fall months these extreme wind conditions are much less likely as is shown in the MSC50 Data Set.
315	30	EC	Wind Climate (4.2.2)	There should be some discussion/description of local effects including mountain or lee waves, known locally as Wreckhouse Winds (in NL) and Les Suetes Winds (in NS) that can be hurricane force (measured by the Wreckhouse and Grand Etang autostations).	For a description of Wreckhouse winds refer to section 4.2.1. Les Suetes Winds occur in Nova Scotia, which is outside the Project and Study Area.
316	31	EC	Visibility and Fog (4.2.3)	This section gives information for Port-aux-basques that may under-represent the frequency of low visibiliies over the Project area or along the west coast of Newfoundland. Other station data should be used as well, including Les Iles de la Madeleine. Statistical summaries and marine weather observations archived in the ICOADS (International Comprehensive Ocean Atmosphere Dataset) based on ship reports, would provide information on visibility over the water.	Environment Canada's Les Iles de la Madeleine Weather station does not keep records on visibility. Port Aux Basques is the closest weather station to record this data, and as such it was used to characterize the visibility in the Project and Study Area.
317	32	EC	Visibility and Fog (4.2.3)	The text incorrectly states that visibility in an earlier report was assessed using the AES40 dataset. The AES40 includes only wind and wave information.	The text has been clarified to indicate that visibility information was taken from near AES40 and not directly from the dataset.
318	33	EC	Visibility and Fog (4.2.3)	The caption for Table 4.11 does not adequately describe the values reported.	The caption for Table 4.11 has been revised to better reflect its contents.
319	34	EC	Climate Change (4.3)	This section includes discussion only of sea-level change. This section should describe changes in ice frequency that have occurred over the last few decades, and the effect of reductions in ice cover (longer fetch allowing higher waves to build, and more frequent occurrence of adverse weather)	Observations over the last few decades show an increase in ice cover in the Gulf, and has not supported predictions that the area will be ice free year round. "Observations of the past decades do not support this prediction, with sea ice getting more severe in the Gulf" (Dufour and Ouelette 2007). As a result, it would not be justified to say that the Gulf has seen reductions in ice cover, allowing for increased fetch for wave propagation.

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320	35	EC	Marine Transportation	There is very little consideration of the effects of the project on marine traffic, or vice versa, even though the drilling location overlaps with the main shipping lane from the Cabot Strait through the Gulf of St. Lawrence to Montreal. The material is hard to find, being included Ch 5, Biological Environment, or in sub-sub-sections titled Commercial Fisheries and Other Users, or neglected altogether.	Comment noted. Based on the duration and nature of the drilling program, we feel that the effects to marine traffic have been adequately addressed. The Project will be short term and outside of ice conditions.
321	36	EC	Potential Effects of the Physical Environment on the Project (12.1)	delays in aviation operations due to adverse flying weather could be significant but was not mentioned	Section 12.1 has been updated to include delays in aviation due to adverse flying conditions.
322	37	EC	Additional Source of Information	NOAA Historical Hurricane Tracks, at NOAA Coastal Services Center http://www.csc.noaa.gov/digitalcoast/tools/hurricanes/index.html · Hart, R.E. and Evans, J.L., 2001. A Climatology of the Extratropical Transition of Atlantic Tropical Cyclones, Journal of Climate, 14, pp. 546-564. · Meteorological Service of Canada (Atlantic). 2005. A Climatology of Hurricanes for Canada – Improving our Awareness of the Threat, available on CD-ROM from Environment Canada. · Scientific Buoy Data, St Lawrence Global Observatory (SLGO); Maurice Lamontagne Institute: http://ogsl.ca/app-sgdo/en/accueil.html and http://slgo.ca/en/buoys/data.html · Nav Canada Local Area Weather Manuals: http://www.navcanada.ca/NavCanada.asp?Content=contentdefinitionfiles%5Cpublications%5Clak%5Cdefault.xml	Corridor Resources will take these sources of data under consideration.
324	38	EC	Migratory Birds	An issue throughout the EA report is the standard formatting of the species names and guild names of migratory birds. The standard formatting is that common bird names should be capitalized except after a hyphen (*i.e.* Harlequin Duck, White-winged Crossbill), except where the last two words are hyphenated (*i.e.* Wilson's Storm-Petrel). Additionally, groups or guilds of birds should not be capitalized where a specific species is not mentioned (*i.e.* alcids, phalaropes, waterfowl, cormorants, *etc.*). Quotes from the environmental assessment have been corrected in this review to fit the standard formatting rule.	The EA Report has been reviewed and formatting updated to capitalize common bird names as appropriate.
326	39	EC	5.2 Species at Risk	Tables 5.1 and 5.2 do not take into account the Yellow Rail (*Species at Risk Act* (SARA)-listed species of special concern) and the Red Knot (*rufa* subspecies; proposed as endangered by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC)). Yellow Rails can be found at the upper levels (drier margins) of estuarine and salt marshes. In winter, the rails are known to use coastal wetlands. Currently, among the most important areas for migrating Red Knots in eastern Canada is along the North Shore of the Gulf of St. Lawrence in Quebec, and some also stage among the Magdalen Islands. Avian species listed under the "*Espece menacee ou vulnerable du Quebec act"* should be included in this list to reflect birds present on the Magdalen Islands.	Table 5.1 has been updated to include consideration of Yellow Rail and Red Knot although both are considered unlikely to be encountered in EL 1105. In order to focus the assessment, only federally assessed species are included (SARA, COSEWIC) in Tables 5.1 and 5.2; although where applicable, provincial designations are discussed in species' descriptions.
329	40	EC	5.2 Species at Risk	A section should be added here concerning shorebirds and their habitats used during migration. Aubry and Cotter (2007) provide valuable information on shorebirds and areas used as stopover sites (feeding and resting) during migration. Stopover sites can be crucial for shorebirds because of their migration behaviour, which often consists of long stops to substantially increase energy reserves before taking off for long, uninterrupted flights. These feeding grounds are vulnerable to oil spills and impacts should be assessed. See also Fradette (1992) and Mousseau *et al*. (1976) for more information on the subject.	Section 5.2 addresses federally designated Species at Risk, including shorebirds (e.g., Red Knot, Piping Plover), and specific migratory information is discussed for these species where relevant in Table 5.1 and Section 5.2.2. Additional information on shorebirds is provided in Section 5.5, including information on the importance of stop-over sites during migration.
331	41	EC	5.2.2 Bird Species at Risk	Red Knot should be discussed in this section.	Subsections have been added in Section 5.2.2 to discuss Red Knot (5.2.2.4) and Yellow Rail (5.2.2.6).
333	42	EC	Table 5.2 Species at Risk	Migratory birds such as Red Knot may occur throughout the Gulf coastal areas (beaches and intertidal flats) during migration, and should be added to this table.	Red Knot has been added to Table 5.1.
335	43	EC	5.2.2.3 Piping Plover	"A census in Newfoundland in 2006 identified 48 nesting adult Piping Plovers, an increase from 39 birds in 2001." 2011 was also a census year for Piping Plover (PIPL). As an update, 51 Piping Plovers (21 pairs, 9 singles) were recorded on 16 beaches in Newfoundland during 2011	Section 5.2.2.2 has been updated to reflect Environment Canada's updates from the 2011 International Piping Plover Census.
339	44	EC	5.2.2.3 Piping Plover	"Piping Plovers have not been found on the northeast coast since 1987." A single Piping Plover was recorded on the northeast coast during the 2011 International Piping Plover Census.	Section 5.2.2.2 has been updated to reflect Environment Canada's updates from the 2011 International Piping Plover Census.
340	45	EC	5.2.2.3 Piping Plover	"In 2009, a pair of nesting Piping Plovers was identified in Gros Morne National Park for the first time since 1975 (Newfoundland and Labrador Department of Environment and Conservation 2010)." Additionally, a pair of Piping Plovers has nested in Gros Morne National Park in 2010 and 2011.	Section 5.2.2.2 has been updated to reflect Environment Canada's updates from the 2011 International Piping Plover Census.

Total Comment #	Agency/ Company Comment #	Government Department / Company	Section of EIS	Comment /Information Request	Response
341	46	EC	5.2.2.3 Piping Plover	"Piping Plover habitat is protected under SARA, which provides a residence description of the melodus (and circumcinctus) subspecies (SARA 2010)." Piping Plover, as well as other 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). Most of these birds are specifically named in the Environment Canada publication, Birds Protected in Canada under the Migratory Birds Convention Act, Canadian Wildlife Service Occasional Paper No. 1. 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 bird 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." Piping Plover critical habitat is identified in the draft Recovery Strategy for Piping Plover, which is open for public consultation until April 2012 (currently accessible at http://www.registrelep-sararegistry.gc.ca/document/default_e.cfm?documentID=923). Under SARA, the general prohibitions and critical habitat protection prohibitions only apply on federal land, in the exclusive economic zone of Canada, or on the continental shelf of Canada unless otherwise stipulated by an Order. However, the expectation is that provinces will ensure that effective protection is put in place for critical habitat on non-federal lands.	Section 5.2 has been revised to include reference to the Migratory Birds Regulations. Additionally, Section 5.2.2.2 has been updated to acknowledge the identification of critical habitat for Piping Plover, as identified by the Recovery Strategy for this species (Environment Canada 2012).
				Applicable prohibitions under SARA include: "32 (1) No person shall kill, harm, harass, capture or take an individual of a wildlife species that is listed as an extirpated species, an endangered species or a threatened species"; and "33. No person shall damage or destroy the residence of one or more individuals of a wildlife species that is listed as an endangered species or a threatened species, or that is listed as an extirpated species if a recovery strategy has recommended the reintroduction of the species into the wild in Canada." "This species is not expected to occur in offshore areas of the Gulf, such as within the Study Area…" It should be noted that the migration patterns, migration routes, migration height, and other aspects of migration are unknown for this species. The Piping Plover also nests on the Magdalen Islands, where approximately 40 pairs are present each year. It is important to note that critical habitat for this species has been identified in the draft Recovery Strategy.	
345	47	EC	5.2.2.4 Roseate Tern	Please remove "peripheral" from "small peripheral colonies of Roseate Terns nesting on Sable Island and the Magdalen Islands".	The term "peripheral" has been removed.
401	48	EC	5.2.2.4 Roseate Tern	Critical habitat has been identified for Roseate Terns on Sable Island and the Magdalen Islands. (see http://www.sararegistry.gc.ca/document/default_e.cfm?documentID=913). It is important to note, however that Roseate Terns are often difficult to identify, as they can breed in the same locations as other tern species. Hence, numbers could be underestimated.	Text has been updated to acknowledge designation of critical habitat on Sable Island and the Magdalen Islands.
402	49	EC	5.2.2.5 Horned Grebe	The factors limiting Horned Grebe populations in Canada are not known, but several possible causes for the decline have been identified, including oil spills on their wintering grounds.	Text has been added to recognize potential limiting factors such as loss of wetlands and spills on wintering grounds.
403	50	EC	5.2.2.6 Harlequin Duck	Harlequin Duck can be found offshore of the Magdalen Islands (near île Brion and Rocher-aux-Oiseaux) during migration periods.	Text has been added to include presence offshore Magdalen Islands during migration periods.

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404	51	EC	5.2.2.7 Barrow's Goldeneye	More recent information suggests slightly more Barrow's Goldeneye wintering in the Gulf of St. Lawrence and Estuary than identified in the environmental assessment. Mid-winter surveys conducted in waters of Quebec, Prince Edward Island, Nova Scotia and New Brunswick in February / March 2009 tallied 6,800 wintering Barrow's Goldeneye, most of which (approximately 6,250) were in Quebec, with the remainder in the Gulf of St. Lawrence zone of the Maritime Provinces (surveys were not conducted in Newfoundland and Labrador, or along the Atlantic coast of Nova Scotia). Please contact EC-CWS for more information concerning this unpublished data.	Recent survey information regarding Barrow's Goldeneye wintering population in the Gulf of St. Lawrence, as provided by Environment Canada, has been incorporated into Section 5.2.2.8.
405	52	EC	5.5 Marine Birds (Waterfowl Paragraph)	Geese should be discussed in the "waterfowl" paragraph.	Discussion on geese, particularly Canada Goose, has been added to "waterfowl" paragraph of Section 5.5.
406	53	EC	5.5 Marine Birds (Waterfowl Paragraph)	"Eiders typically nest on coastal islands and raise their broods in coastal waters" Eiders tend to nest on islands where fresh water is available. During incubation, eider females leave the nest site to drink fresh water. Ducklings may benefit significantly from access to fresh water prior to departure from colonies.	Text has been added to include reference to required availability of fresh water on coastal islands for eider nesting.
407	54	EC	5.5 Marine Birds (Waterfowl Paragraph)	*"Outside of the breeding season, sea ducks are found only on coastal waters."* *Sea ducks can also be found over reefs and banks at depths where benthic prey are accessible. They are additionally known to migrate across large ocean expanses and over land.*	Text has been added to acknowledge potential foraging of sea ducks over reefs and banks as well as migration over large ocean expanses or land.
408	55	EC	5.5 Marine Birds (Waterfowl Paragraph)	It should be noted that Bufflehead, Common Goldeneye and Red-breasted Merganser are sea ducks, not bay ducks.	Text has been updated to include these species as sea ducks, not bay ducks.
409	56	EC	5.5 Marine Birds (Shorebird Paragraph)	Purple Sandpiper needs to be mentioned in this section. Purple Sandpiper regularly overwinter in the Gulf of St. Lawrence, and mainly use rocky coastal habitats. It thus differs somewhat from other shorebirds mentioned. See the "*Québec Shorebird Conservation Plan* " for more details (available at www.ec.gc.ca/Publications/default.asp?lang=En&xml=03F99E30-EFBE-42C3-ABA9-90F2A0CC57EB).	Text on Purple Sandpiper's preference for rocky coastlines during migration and overwintering has been incorporated into Section 5.5.
410	57	EC	5.5 Marine Birds (Shorebird Paragraph)	"Outside of the breeding season, most shorebirds forage along coastal beaches, mud flats or salt marshes," The words "exposed and estuarine" should be added as adjectives to "mud flats or salt marshes". The statement should be more precise and should indicate that shorebirds concentrate in coastal areas (mud/sandflats, barachois, saltmarshes, etc.) in western Newfoundland during fall migration (July to October) and on rocky ledges, shorelines and islands in winter (e.g. Purple Sandpiper).	"Exposed" has been added to the work "mudflats". Although many estuarine habitats do provide important foraging habitat during the non-breeding season, "estuarine" has not been added as a habitat qualifier in the statement because non-estuarine salt marsh systems are also used. Additional text has been added to discuss use of coastal environments as stopover sites during migration, and for overwintering by Purple Sandpipers.
411	58	EC	5.5 Marine Birds (Shorebird Paragraph)	*"Some of the more abundant shorebird species found in the Gulf include Semipalmated Sandpiper, Semipalmated Plover, Greater Yellowlegs and Blackbellied Plover."* *It should be noted that in addition to consideration of overall abundance, the proportion of a species' continental population is important.*	Text has been added to acknowledge that the proportion of species's continental population supported by the Gulf is important.
412	59	EC	5.5 Marine Birds (Shorebird Paragraph)	The shorebird list should be completed: Shorebirds that occur off western Newfoundland include Semipalmated Plover (in list), Piping Plover (in list), Killdeer (to be added), Black-bellied Plover (in list), American Golden-plover (to be added), Ruddy Turnstone (to be added), Whimbrel (to be added), Spotted Sandpiper (to be added), Willet (in list), Greater Yellowlegs (in list), Lesser Yellowlegs (to be added), Red Knot (to be added), Pectoral Sandpiper (to be added), White-rumped Sandpiper (to be added), Least Sandpiper (to be added), Dunlin (to be added), Short-billed Dowitcher (to be added), Semipalmated Sandpiper (in list), Sanderling (to be added), Stilt Sandpiper (to be added), American Oystercatcher (to be added), Purple Sandpiper (to be added).	The listed shorebird species have been added to Table 5.12 with the exception of Stilt Sandpiper and American Oystercatcher which are only known as vagrants to the area and are unlikely to occur in the immediate vicinity of Exploration License 1105, or off Western Newfoundland.
413	60	EC	5.5 Marine Birds (Seabird Paragraph)	"Pelagic seabirds feed at sea over deep waters". This should be replaced with "Pelagic seabirds typically feed at sea over deep waters".	Text has been updated to include "typically".
414	61	EC	5.5 Marine Birds (Seabird Paragraph)	Greater Shearwater should be replaced with "Great Shearwater" throughout the document.	Greater Shearwater" has been changed to "Great Shearwater".
415	62	EC	5.5 Marine Birds (Seabird Paragraph)	Wilson's Storm-Petrel should be added to the list of common pelagic seabird species found in the Gulf.	Wilson's Storm Petrel is listed in Table 5.12 and has been added to the text of Section 5.5.
416	63	EC	5.5 Marine Birds (Meritic and Pelagic Seabirds Paragraph)	An inclusive interpretation of the term 'seabird' is fine, but is not reflected in the tally of "18 different species" breeding in the Gulf of St. Lawrence. A list of these species would be useful to include. It should be noted that the Gulf is also important to pelagic seabirds that do not breed in the Gulf. These should be listed as well and treated here.	Text has modified to clarify that the Gulf is important to both breeding and non-breeding seabirds.
417	64	EC	5.5 Marine Birds (Meritic and Pelagic Seabirds Paragraph)	"To this end, seabirds can be classified into two groups based on their vulnerability to oil pollution." Species vulnerability more likely represents a continuum from 'least vulnerable' to 'most vulnerable'. Also, here only direct effects are presented. Knowledge of indirect effects (such as effects of oil pollution via food-chain) should be provided as well.	Text has been modified to reflect a continuum of vulnerability from "most vulnerable" to "least vulnerable". Additionally, text has been added to acknowledge the indirect effects of oil spills to seabirds.

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418	65	EC	5.5 Marine Birds (Meritic and Pelagic Seabirds Paragraph)	*"Highly vulnerable species also have low reproductive rates such that…"* *These seabirds thus rely on correspondingly high rates of adult survival. These traits are among the general characteristics of seabirds and apply to less vulnerable species as well.*	Comment noted; text has been modified to accommodate.
419	66	EC	5.5 Marine Birds (Meritic and Pelagic Seabirds Paragraph)	*"Some species such as cormorants and sea ducks are highly susceptible to oiling but have relatively high reproductive rates and are able to recover from mortality events more rapidly."* *Some sea ducks, such as eiders, also have lower annual reproductive rates and correspondingly higher adult survival rates.*	Comment noted. Section 5.5 acknowledges that a lower reproductive rate increases species' vulnerability.
420	67	EC	5.5 Marine Birds (Meritic and Pelagic Seabirds Paragraph)	"Pelagic seabirds considered to be highly vulnerable to oil pollution include…" The phalaropes should be included in this list.	Phalaropes have been added to the list of vulnerable birds.
421	68	EC	5.5 Marine Birds (Meritic and Pelagic Seabirds Paragraph)	"Seabirds such as storm-petrels, terns and gulls that spend relatively little time on the water are not considered to be vulnerable." "not considered to be vulnerable" should be changed to "are considered to be less vulnerable"	Edit has been made as requested.
422	69	EC	5.5 Marine Birds (Meritic and Pelagic Seabirds Paragraph)	Table 5.12 Marine Birds that Could Occur in the Vicinity of Exploration License 1105 and off Western Newfoundland Purple Sandpiper and Red Knot should be added to the list of shorebirds. Loons and grebes are mentioned above, but not in this list. The area for which this list applies should be better defined.	Purple Sandpiper, Red Knot, and Common Loon have been added to the list of shorebirds. Based on available species distribution maps, grebes are unlikely to be present in the vicinity of Exploration License 1105 or off Western Newfoundland. Table 5.12 has been modified to reference Figure 6.1 for information on the spatial area to which the list applies.
423	70	EC	5.5.1.1 Seabirds	*The figures (5.49 to 5.56) require refinement. Data for the 'Gulf' (versus 'Vicinity of EL1105') include a broad combination of sites, including sites near colonies and other physical features that contribute to concentrating marine bird densities at sea. This would tend to bias figures in a way that overestimates abundance measures for 'Gulf', underemphasizing the relative value of 'Vicinity of 1105'. Use of averages is also problematic given the distribution of count data. Maps would serve far better to contrast the relative importance of 'Vicinity of EL 1105' within the Gulf and beyond, across species. This suite of figures uses only Programme intégré pour le recherche des oiseaux pélagiques (PIROP) data, but should include significant amounts of newer Environment Canada's Eastern Canadian Seabirds at Sea (ECSAS) data for the Gulf.* *Fifield et al. 2009, cited as the source of estimates of avian density of the area, includes only Gulf of St. Lawrence data from the Cabot Strait, north to Belle-Isle Strait. As such, densities presented in table 5.13 are derived from observations in the eastern Gulf only and may not well represent the rest of the Gulf. Additional data for much of the Gulf, within ECSAS, are now available through EC-CWS. It should also be noted that the database can be queried across spatial scales.*	ECSAS and PIROP data have been obtained for the Gulf region from CWS and integrated into maps. Separate figures have been prepared for common species as well as for guilds / taxonomic groups to convey the relative distribution and abundance of seabirds. Maps have also been produced to convey information on the seasonal and temporal variability of ECSAS and PIROP data collection.
424	71	EC	5.5.1.1 Seabirds	Figure 5.49 Monthly Seabird Abundance of Black-legged Kittiwake in the Gulf of St. Lawrence and in the Vicinity of Exploration License 1105 Vicinity should be defined, so as to know what distance from EL 1105 data were included. Y-axis - Count data are not normally distributed. Also, many seabird species have a patchy distribution. These factors make the use of averages problematic. Use of maxima is more informative. X-axis - Breeding season months should be shown. Birds may be absent from areas where ship-based surveys occur, but be present at colonies and their seaward extensions (foraging range from colonies) during the breeding season.	ECSAS and PIROP data have been obtained for the Gulf region from CWS and integrated into maps to convey information on the relative distribution and abundance of seabirds. Maps have also been produced to convey information on the seasonal and temporal variability of ECSAS and PIROP data collection.

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425	72	EC	5.5.1.1 Seabirds	Black-legged Kittiwake breed in the Gulf of St. Lawrence; the breeding season should be considered across species. For example, how might breeding behaviour affect patterns of distribution and abundance at sea? How might congregation of individuals at breeding colonies affect their relative vulnerability?	Information on the breeding season for species in the Gulf is integrated throughout the document. For example, text associated with Figure 5.12 discusses how the abundance of Black-legged Kittiwakes observed at sea (as obtained from ship-based surveys) varies with regards proximity to major colonies. Furthermore, additional baseline information on the congregation of individuals at breeding colonies is provided in Section 5.5.1.1 (Seabird Colinies), with a discussion on the exposure of these sites to Project activities being provided in Section 7.
426	73	EC	5.5.1.1 Seabirds	It should be noted that this table shows abundance as detected during offshore ship-based surveys only, as opposed to additional consideration of colony counts for breeding species.	The preamble to Figures 5.1 to 5.16 states the ECSAS and PIROP data plotted on the maps has been obtained from ship-based surveys. Additional information on colony counts is provided in Section 5.5.1.3 (Seabird Colonies) for the coastal portions of the Gulf that are in closest proximity to EL 1105 (i.e., Magdalen Islands, western Newfoundland, southern Newfoundland, Cape Breton Island, and the southern Portion of Anticosti Island.
427	74	EC	5.5.1.1 Seabirds	Figure 5.50 Monthly Seabird Abundance of Large Auks in the Gulf of St. Lawrence and in the Vicinity of Exploration License 1105 Large auks breed in the Gulf of St. Lawrence.	Section 5.5.1.1 and 5.5.1.3 acknowledge the presence of breeding auks in the Gulf.
428	75	EC	5.5.1.1 Seabirds	Figure 5.51 Monthly Seabird Abundance of Northern Fulmars in the Gulf of St. Lawrence and in the Vicinity of Exploration License 1105 Northern Fulmar do not breed in the Gulf of St. Lawrence in significant numbers.	Text has been added to acknowledge Northern Fulmar do not breed in the Gulf of St. Lawrence in significant numbers.
429	76	EC	5.5.1.1 Seabirds	Figure 5.5.2 Monthly Seabird Abundance of Greater Shearwater in the Gulf of St. Lawrence and in the Vicinity of Exploration License 1105 Great Shearwater are not known to breed in the Northern Hemisphere.	Section 5.5.1.1 states that Great Shearwater breed in the South Atlantic Ocean.
430	77	EC	5.5.1.1 Seabirds	*Figure 5.53 Monthly Seabird Abundance of Dovekie in the Gulf of St. Lawrence and in the Vicinity of Exploration License 1105* *Dovekie do not breed in Canada in significant numbers.*	Text has been added to acknowledge Dovekies do not breed in Canada in significant numbers.
431	78	EC	5.5.1.1 Seabirds	Figure 5.54 Monthly Seabird Abundance of Storm-Petrels in the Gulf of St. Lawrence and in the Vicinity of Exploration License 1105 Leach's Storm-Petrel do breed in the Gulf of St. Lawrence, but Wilson's Storm-Petrel do not breed in the Northern Hemisphere. Both species are confounded in this figure.	Text has been added to differentiate between Leach's Storm-Petrel which breeds in the Gulf of St. Lawrence and Wilson's Storm-Petrel which breeds in the southern hemisphere.
432	79	EC	5.5.1.1 Seabirds	Figure 5.55 Monthly Seabird Abundance of Northern Gannets in the Gulf of St. Lawrence and in the Vicinity of Exploration License 1105 It should be noted that 69% of entire North American population of Northern Gannet occurs in and/or is associated with three colony locations within Gulf of St. Lawrence. See http://bna.birds.cornell.edu/bna/species/693/articles/demography for further details.	Text has been added to reference the occurrence of approximately 69% of the total North American population in the Gulf of St. Lawrence.
433	80	EC	5.5.1.1 Seabirds	Figure 5.56 Monthly Abundance of Total Seabirds in the Gulf of St. Lawrence and in the Vicinity of Exploration License 1105 This figure suggests a total, but it should be specified that this applies only to linear densities quantified using offshore ship-based surveys, as opposed to consideration of birds at colonies or using migratory corridors potentially segregated from at-sea survey data.	Previous figures have been replaced with Figures 5.1 to 5.16 to convey information on the relative abundance and distribution of seabird, as observed during ship-based surveys (i.e., ECSAS and PIROP). Additional information on colony counts is provided in Section 5.5.1.3 (Seabird Colonies) for the coastal portions of the Gulf that are in closest proximity to EL 1105 (i.e., Magdalen Islands, western Newfoundland, southern Newfoundland, Cape Breton Island, and the southern Portion of Anticosti Island.
434	81	EC	5.5.1.1 Seabirds (page 206; Black-legged Kittiwakes)	"Black-legged Kittiwakes are the most abundant species" This should be changed to "Black-legged Kittiwake is the most abundant species"	Text has been adjusted.

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435	82	EC	5.5.1.1 Seabirds (page 206; Black-legged Kittiwakes)	"Black-legged Kittiwake abundance decreases" It should be stated if this is absolute or relative abundance.	The discussion on Black-legged Kittiwake abundance and distribution has been re-written to reflect the PIROP and ECSAS data recently obtained from the CWS.
436	83	EC	5.5.1.1 Seabirds (page 206; Auks)	"From March through May, the large auks are the most abundant seabird species in the Gulf. Large auk abundance peaks in April then decreases until September, when very few large auks are present." Numbers of auks for the Gulf of St. Lawrence may still be high in the fall, as birds may congregate at colonies.	Discussion on the abundance and distribution of large auks has been re-written to reflect the PIROP and ECSAS data recently obtained from the CWS.
437	84	EC	5.5.1.1 Seabirds (page 206; Northern Fulmar)	"In June, Northern Fulmar is the most abundant pelagic seabird in the Gulf." This may suggest that the area is of particular importance to this species, as Northern Fulmar is not known to nest in significant numbers anywhere in the Gulf of St. Lawrence or Newfoundland and Labrador. Large North American colonies are located in the Arctic.	Discussion on the abundance and distribution of Northern Fulmar has been re-written to reflect the PIROP and ECSAS data recently obtained from the CWS. Text has been edited to acknowledge that Northern Fulmar does not nest in significant numbers in the Gulf of St. Lawrence and that large colonies are located in the Arctic.
438	85	EC	5.5.1.1 Seabirds (page 206; Great Shearwater)	"Greater Shearwater are the most abundant pelagic…" This should be changed to "Great Shearwater is". Throughout this paragraph there is a confusing use of plural versus singular species names, and associated verb conjugations.	Discussion on the abundance and distribution of shearwaters has been re-written to reflect the PIROP and ECSAS data recently obtained from the CWS. Edits have been made to improve the use of verb conjugations.
439	86	EC	5.5.1.1 Seabirds (page 206; Dovekie)	It should be noted that the vast majority of Dovekie do not breed in Canada	Text has been added to acknowledge Dovekies do not breed in Canada in significant numbers.
440	87	EC	5.5.1.1 Seabirds (page 206; Leach's Storm-Petrel and Wilson's Storm-Petrel)	Given the concentration of Leach's Storm-Petrel at breeding colonies, some treatment of the relative abundance of Wilson's Storm-Petrel seems warranted.	The discussion on storm-petrel abundance and distribution has been re-written to reflect the PIROP and ECSAS data recently obtained from the CWS and includes a treatment of the relative abundance of these two species.
441	88	EC	5.5.1.1 Seabirds (page 206; Northern Gannet)	It should be noted that small numbers of Northern Gannet are detected during Christmas Bird Counts into December. The comment concerning densities is only accurate in the case of birds detected during offshore ship-based surveys. Total numbers for the Gulf essentially should be stable and increase as young of the year are added to the total population at sea, following departure from colonies. It is unclear whether or not the density numbers have been calculated from colony counts. Note also that small numbers of Northern Gannets are present into December, rather than until December.	Discussion on the abundance and and distribution of Northern Gannets in Section 5.5.1.1 has been re-written to reflect the PIROP and ECSAS data recently obtained from the CWS. Additional information on colony counts is provided in Section 5.5.1.3 (Seabird Colonies) for the coastal portions of the Gulf that are in closest proximity to EL 1105 (i.e., Magdalen Islands, western Newfoundland, southern Newfoundland, Cape Breton Island, and the southern Portion of Anticosti Island. Text has been modified to reflect the presence of small numbers of Northern Gannets in the Gulf into December, as evidenced by Christmas Bird Count surveys.
442	89	EC	5.5.1.1 Seabirds (page 206; Seasonal Abundance)	*The effort map from Fifield et al. 2009 (Figure 5) would be appropriate to show here. "Seasonal distributions" should be "seasonal distribution". The reference of summary of data by seabird group is presented as being in Table 5.12, but is actually in Table 5.13.*	ECSAS and PIROP data have been obtained for the Gulf region from CWS and integrated into maps. Separate figures have been prepared for common species as well as for guilds / taxonomic groups to convey the relative distribution and abundance of seabirds. Maps have also been produced to convey information on the seasonal and temporal variability of ECSAS and PIROP survey effort. Fifield et al. (2009) survey data for the Gulf is encompassed in the ECSAS database.
443	90	EC	5.5.1.1 Seabirds (page 207; Seasonal Abundance)	*"Seabird abundance in the Gulf was highest in the fall (September and October)"* *This statement should only concern the far eastern and north-eastern Gulf of St. Lawrence; densities for the remainder of the Gulf should not be inferred from these data. A clear caveat should be presented for this section.*	Data from Fifield et al. (2009) are no longer present in table format but maps have been produced to convey information on the seasonal and temporal variability of ECSAS survey effort (which contains those observations used in the Fifield ate al. (2009) report). Fifield et al. (2009) continues to be referenced for comparing seabird densities in the eastern portion of the Gulf and other parts of the Atlantic. The spatial extent of the data presented by Fifield et al. (2009) is clearly outline in Section 5.5.

Total Comment #	Agency/ Company Comment #	Government Department / Company	Section of EIS	Comment /Information Request	Response
444	91	EC	5.5.1.1 Seabirds (page 207; Seasonal Abundance)	"This is likely attributable to the presence of large numbers of newly fledged young from local seabird colony sites, as well as an influx of wintering Greater Shearwater from the South Atlantic." This is possible, but there may be other plausible explanations, such as higher productivity, prey availability, migration, and others.	The statement has been modified to acknowledge other potential contributions to higher seabird abundance in the Gulf of St. Lawrence in the fall.
445	92	EC	5.5.1.1 Seabirds (page 207; Seasonal Abundance)	"Comparatively, some of the lowest seabird abundances were observed in the fall in both the Scotian Shelf-Gulf of Maine and the Newfoundland and Labrador Shelf." Given the ranges presented, it is difficult to make this statement with certainty. Acknowledgement of the variance should be included here.	The sentence has been modified to read as a general statement on comparative abundance based on the seasonal weighted median presented in Fifield et al. (2009).
446	93	EC	5.5.1.1 Seabirds (page 207; Seasonal Abundance)	"The data indicate that this is largely attributable to the fact that large numbers of Northern Gannet are not present in these areas during the fall and higher concentrations of Greater Shearwater are present in the Gulf during the fall than in either the Scotian Shelf or the Grand Banks." The relative distribution and abundance of the most abundant species would tend to drive the "all waterbirds" patterns discussed. A species-by-species treatment may be more appropriate.	Along with summarized data for all waterbirds, more specific data on the abundances of particular seabirds in the Gulf are provided in Figures 5.3 to 5.16. Separate figures have been prepared for common species as well as for guilds / taxonomic groups to convey the relative distribution and abundance of seabirds.
447	94	EC	5.5.1.1 Seabirds (page 207; Seasonal Abundance)	*Table 5.13 Seasonal Weighted Median (and range) of Densities (birds/km2) by Seabird Group in Each of the Three Ocean Regions in Atlantic Canada* *Phalaropes should be included in this table. It is also not clear where the weighted medians (and range) were obtained (i.e. Fifield et al. 2009?). Additionally, "Ocean Regions" should be referred to as Marine Biogeographic Units. See DFO 2009 for more information.*	Although no longer presented, Table 5.13 was derived from Fifield et al. 2009 (as noted below the table) and the presentation of data therein followed that source.
448	95	EC	5.5.1.1 Seabirds (page 208; Overall seabird abundance)	"Overall seabird abundance in the Gulf was lowest during the summer months (May through August)." It should be noted that this was measured offshore via ship-based surveys, without considering proportion of populations at colonies and their seaward extensions.	Text has been modified to acknowledge the limitations of the ship-based surveys to capture colonies and seaward extensions and that observations will naturally be lower in the summer due to nesting populations.
449	96	EC	5.5.1.1 Seabirds (page 208; Overall seabird abundance)	"Seabird abundance in both the Scotian Shelf-Gulf of Maine and the Newfoundland and Labrador Shelf were also relatively low in the summer months." This statement is contrary to data shown in Table 5.13 that shows measures (maxima) being greatest for 'All Waterbirds' during summer months, despite a large proportion of birds being constrained to colonies and their seaward extensions (foraging range of breeding adults). These varying statements need to be reconciled.	Text has been modified to clarify.
450	97	EC	5.5.1.1 Seabirds (page 208; ECSAS data for spring)	"The ECSAS data indicate that Northern Fulmar, Northern Gannet and murres (spp.) are the most abundant seabirds in the Gulf during the spring (March and April)." It should be noted that this data concerns the far eastern and north-eastern Gulf of St. Lawrence only.	Information on the relative seasonal distribution and abundance of seabirds has been updated based on recently obtained ECSAS and PIROP data. Although data from Fifield et al. (2009) continues to be referenced, it is no longer present in table format and the spatial extent of the data is clearly outlined in Section 5.5.
451	98	EC	5.5.1.1 Seabirds (page 208; ECSAS data for spring)	"However, Northern Gannet are not abundant in these regions, probably due to the fact that 70 percent of the Northern Gannet in Canadian waters nest in the Gulf." It should be noted that 69% of the total North American population of this species is associated with colonies located within the Gulf.	Text has been corrected to reference the Chardine (2000) estimate of 69% of the North American population of Northern Gannet associated with colonies in the Gulf.
452	99	EC	5.5.1.1 Seabirds (page 208; ECSAS data for summer)	"The ECSAS data indicate that murres (spp.), Northern Fulmar and Northern Gannet are the most abundant seabirds in the Gulf during the summer months" This should be further specified that these are the most abundant seabirds "observed at sea".	Text has been modified to clarify that ECSAS and PIROP data reflect ship-based "at sea" observations, and not colony counts.
453	100	EC	5.5.1.1 Seabirds (page 209; ECSAS data for fall)	There is no mention of winter distribution; potential effects of ice extent and occurrence of ice-associated species would be appropriate.	The discussion of relative seabird abundance and distribution during the winter months has been modied to reflect the ECSAS and PIROP data, which have been recently obtained from CWS.

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454	101	EC	5.5.1.1 Seabirds (page 209; ECSAS data for fall)	"It should be noted that large gulls are not one of the seabird guilds presented in the PIROP data." Herring Gull, Great Black-backed Gull, Iceland Gull, and Glaucous Gull data for the Gulf of St. Lawrence all are available within PIROP.	Data on the relative abundance and distribution of gulls has been obtained from the ECSAS and PIROP databases and integrated into Figure 5.15, along with accompanying text.
455	102	EC	5.5.1.1 Seabirds (page 209; ECSAS data for fall)	*"The seasonal abundance patterns for the two data sets are similar but not identical."* *It is not clear which data sets are being referred to.*	The previous statement had referred to the PIROP and ECSAS datasets. ECSAS data was derived from Fifield et al. (2009) but is no longer presented.
456	103	EC	5.5.1.1 Seabirds (page 209; ECSAS data for fall)	"It is not possible to determine with certainty whether the differences between the two data sets are attributable to changes in the relative abundance of seabird species or are attributable to differences in the way the data were collected or processed." It is possible to query and merge PIROP and ECSAS datasets to generate data that can be mapped to illustrate relative distribution and abundance for the Gulf. Survey effort also can be mapped (spatially and temporally), and further considered. EC-CWS should be contacted for assistance with accessing the relevant data from these databases.	ECSAS and PIROP data have been obtained for the Gulf region from CWS and integrated into maps to convey information on the seasonal and temporal distribution and abundance of seabirds, as well as survey effort.
457	104	EC	5.5.1.2 Coastal Waterfowl	Maps should be presented to illustrate relative abundance and distribution. As contrasts were made with adjacent Marine Biogeographic Units for seabirds, the same could be done here to show the relative importance of sites within Atlantic Canada.	ECSAS and PIROP data have been obtained for the Gulf region from CWS and integrated into maps to convey information on the relative abundance and distribution of seabirds.
458	105	EC	5.5.1.2 Coastal Waterfowl	"Other areas with relatively high concentrations of eider breeding pairs include the eastern tip of the Gaspé Peninsula, the New Brunswick coast and the portion of the North Shore of Québec extending from the Mingan Archipelago to Sept-Îles." It should be noted that there are large colonies of eider in the St. Lawrence estuary. Maps with locations of these colonies can be found in the Quebec Management Plan for the Common Eider Somateria mollissima dresseri (The Joint Working Group on the Management of the Common Eider 2004). Discussion of eider colonies should extend to these colonies as well. It should additionally be noted that there are large eider colonies in western Newfoundland; EC-CWS should be contacted for further information on the Newfoundland and Labrador eider colonies.	Text has been modified to refer to the presence of large eider colonies in the St. Lawrence Estuary. Section 5.5.1.2 acknowledges the presence of eider colonies along western Newfoundland, based on available information. EC-CWS has been contacted for further information on eider colonies in Newfoundland and Labrador but this information has not yet been received.
459	106	EC	5.5.1.2 Coastal Waterfowl	*"In general, during the winter months, large concentrations of coastal waterfowl can occur along the North Shore of Québec between Sept-Îles and the Mingan Archipelago, along the shores of Anticosti Island and along the eastern tip of the Gaspé Peninsula."* *During the summer, very large numbers of eider can be found moulting along the southern shore of Anticosti Island and the North Shore of Québec (Rail and Savard 2003; EC-CWS Unpublished data). About 12,000 eiders have been observed wintering offshore of the Magdelan Islands (mostly close to île Brion and Rochers-aux-Oiseaux) (EC-CWS Unpublished data). Numerous scoters can also be found during the spring (migration) and summer (moulting period) on the North Shore of Québec between Sept-Îles and Natashquan (Rail and Savard 2003). Please contact EC-CWS for access to the aforementioned unpublished data concerning eiders.*	Information provided on eider and scoter distribution and abundance has been integrated into the discussion of seasonal patterns of coastal waterfowl. Access to unpublished data concerning eiders has been requested from EC-CWS but has not yet been made available.
460	107	EC	5.5.1.2 Coastal Waterfowl	It is stated that there are relatively high concentrations of eider breeding pairs found in New Brunswick. These high concentrations are likely referring to birds nesting on the Fundy coast of New Brunswick; it should be noted that there are relatively low concentrations of eider breeding pairs found on the Northumberland coast of New Brunswick, which is the coast that is affected by this project.	Data from Lock et al. (1994) indicate that relatively high amounts of breeding eiders are present in association with the Northumberland Coast of New Brunswick. For example, 1,014 breeding pairs of Common Eiders were estimated for the area between Miscou Island and Escuminac Point, and 1,949 pairs between Escuminac Point and Cape Tormentine. As such, the statement has been left intact.
461	108	EC	5.5.1.2 Coastal Waterfowl	*The environmental assessment identifies that "coastal waterfowl (all species)" use the Gulf, Estuary and the Bay du Chaleur during spring migration. Specific reference should be made to the importance of these areas to migrating Scoters (refer to the Sea Duck Joint Venture website for more information: http://seaduckjv.org/index.html)*	Text has been modified to make specific reference to the importance of the Gulf to migrating scoters.

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462	109	EC	5.5.2.1 Seabirds (Page 209)	Figures 5.49 to 5.56" Data derived from ECSAS, PIROP or both need to be presented as maps, then interpreted. Please contact EC-CWS for assistance.	ECSAS and PIROP data have been obtained for the Gulf region from CWS and integrated into maps. Separate figures have been prepared for common species as well as for guilds / taxonomic groups to convey the relative distribution and abundance of seabirds. Maps have also been produced to convey information on the seasonal and temporal variability of ECSAS and PIROP data collection.
463	110	EC	5.5.2.1 Seabirds (Page 209)	"Compiled in survey blocks" Maps are needed in this section in order to properly and intuitively interpret the data. The current presentation inadequately contrasts the value (to marine birds) of EL 1105 with other areas in the Gulf.	ECSAS and PIROP data have been obtained for the Gulf region from CWS and integrated into maps. Separate figures have been prepared for common species as well as for guilds / taxonomic groups to convey the relative distribution and abundance of seabirds. Maps have also been produced to convey information on the seasonal and temporal variability of ECSAS and PIROP data collection.
464	111	EC	5.5.2.1 Seabirds (Page 209)	"Black-legged Kittiwake and Northern Fulmar (Figures 5.49 and 5.51, respectively) are the most abundant species at this time of the year and the only pelagic seabirds recorded in the area." Dovekie is not mentioned in this section, but was mentioned in statements made previously in the document. Dovekie should be discussed here as well.	Text has been modified to reflect the ECSAS and PIROP data that have been obtained for the Gulf region from CWS, including the discussion on Dovekie.
465	112	EC	5.5.2.1 Seabirds (Page 210)	"Seabirds that breed in the Gulf would already have arrived and begun nesting." As such, abundance measures for the Gulf of St. Lawrence derived from at-sea distribution would be underestimated, given that large proportions of populations are concentrated at colonies (incubating birds) and their seaward extensions.	Text has been modified to clarify the caution that should be applied when interpreting the abundance of at-sea observations of colonial nesters during the breeding season.
466	113	EC	5.5.2.1 Seabirds (Page 210)	"Pelagic seabird abundance decreases substantially in July, as does the number of seabird species present (Figure 5.56)." Abundance decreases at sea, as measured during ship-based surveys.	Text has been modified throughout section 5.5.1.1 to clarify that PIROP and ECSAS data were obtained from ship-based surveys and are not necessarily indicative of a species abundance and distribution throughout the Gulf at all times of year.
467	114	EC	5.5.2.1 Seabirds (Page 210)	"Many seabirds are feeding nestlings in July and adults may tend to forage more frequently in areas adjacent to colony sites." Change to "Many seabirds are feeding nestlings in July and adults tend to forage more frequently in seaward extensions of colonies."	Edit has been made as suggested.
468	115	EC	5.5.2.1 Seabirds (Page 210)	"Storm-Petrels are also the most abundant pelagic seabird guild in August (Figure 5.54). Pelagic seabird abundance increases substantially in August; however, species richness remains low." It is difficult to quantify species richness when species are often (appropriately) lumped within guilds.	Comment noted. Text has been altered to not infer species richness based on guilds.
469	116	EC	5.5.2.1 Seabirds (Page 210)	"..influx of wintering Greater Shearwater and the cessation of nesting activity at seabird colonies," This should be changed to "influx of wintering Great Shearwater and the departure of adults and young from seabird colonies,"	Text has been modified to reflect the influence of the arrival of wintering species and the departure of adults and young from seabird colonies on the abundance of seabird observations made during ship-based surveys.
470	117	EC	5.5.2.1 Seabirds (Page 210)	"The Cabot Strait would provide a migration corridor for seabirds moving out of the Gulf and into the Atlantic Ocean, increasing the number of seabirds present." It should be stated as to how many potential migration corridors exist.	It is unclear as to what the reviewer is requesting with regards to "how many potential migration corridors exist", as these would be dependent on the numbers and identifies of species and / or guilds considered and the spatial scale of the inquiry. However, the text has been modified to acknowledge the potential for species which breed in more northern latitudes to be concentrated in the vicinity of the Strait of Belle Isle during their fall migration to the Gulf (i.e. in addition to the Cabot Strait being a likely migration pathway for pelagic seabirds moving to and from more southern localities).

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471	118	EC	5.5.2.1 Seabirds (Page 210)	"In addition, the level of effort in the PIROP sampling program also decreases at this time, resulting in fewer seabirds being detected." Further discussion of effort and related impacts on interpretation of data and maps would be appropriate in this section.	Additional discussion on effort and related impacts to interpretation of data has been integrated into Section 5.5.
472	119	EC	5.5.3 Long Term Trends for Nesting Seabirds (page 213)	"In each of the census periods, three species accounted for over 75 percent of the total seabird population – Northern Gannet, Black-legged Kittiwake and Common Murre." It is not clear if this refers to the breeding population, migrating population, or other. This would not include species migrating through the Gulf or wintering within the Gulf.	Surveys conducted by CWS (Cotter and Rail 2007) were performed in June and early July and therefore are best considered an estimate of breeding bird populations. The discussion provided was under the heading "Long Term Trends for Nesting Seabirds" and several references to "breeding" are made in the preamble to the statement in question to clarify that it is the breeding population that is being referred to. Note, however that this section has been removed from the EA.
473	120	EC	5.5.3 Long Term Trends for Nesting Seabirds (page 213)	Figure 5.57 Sensitive Areas Located near Exploration License 1105 This map should also include locations of important seabird colonies (Rocher aux oiseaux, Pointe de l'est, Île Bonaventure, Refuge des îles Sainte-Marie, Refuge de la baie des Loups, etc.). This map should also include locations for colonies that host important proportions of Eastern Canadian populations of certain species (e.g., Northern Gannet, Horned Grebe). Additionally, Piping Plover critical habitat should be identified on this map.	The intention of Figure 5.57 is to provide an overview of sensitive areas relative to EL 1105, and not a species-specific account of important habitat throughout the Gulf. Important Bird Areas have been presented in Figure 5.57 and encompass many important seabird colonies (including that of Northern Gannet) as well as habitat for specific Species at Risk (including Piping Plover and Horned Grebe). Table 5.18 provides more detailed information on the bird species represented in the IBA's and is cross-referenced with Figure 5.57 to facilitate interpretation. Additional information on the distribution of specific Species at Risk is provided in Section 5.2.2. Section 5.5.1.3 provides more detailed information on the locations of seabird colonies in the vicinity f EL 1105 and the types and abundances of species they support.
474	121	EC	5.7.1 Ecological and Biologically Sensitive Areas	There is no mention of the proposed National Marine Conservation Area (NMCA) around the Magdalen Islands. NMCA are under Canada's National Parks Act. Please contact M. Nelson Boisvert (Parks Canada; nelson.boisvert@pc.gc.ca; 418-649-8213) to obtain more information on this proposed protected area (e.g. maps).	The proposed NMCA around the Magdalen Islands has been referenced. There is no predicted Project interaction with this NMCA.
475	122	EC	5.7.1 Ecological and Biologically Sensitive Areas	There are many provincial wildlife habitats (designated under the Conservation et mise en valeur de la faune act) on the Magdalen Islands, some of which are included in the different Important Bird Areas (IBA), National Wildlife Areas (NWA), or Migratory Bird Sanctuaries (MBS): • Aire de concentration d'oiseaux aquatiques de l'Île de l'Est. • Refuge faunique de la Pointe-de-l'Est. • Colonie d'oiseaux sur une île ou une presqu'île de l'étang de l'Est # 2,# 3. • Colonie d'oiseaux sur une île ou une presqu'île de l'Île Shag (Havre-aux-Maisons). • Colonie d'oiseaux sur une île ou une presqu'île de l'Île Rouge, Havre-Aux-Maisons. • Colonie d'oiseaux en falaise de l'Île aux Goélands, Étang-du-Nord. • Aire de concentration d'oiseaux aquatiques de la Plage de l'ouest #2 20-12-04. • Aire de concentration d'oiseaux aquatiques de la Plage de l'Ouest # 1 20-12-03. • Colonie d'oiseaux en falaise du Sud du Havre-Aux-Basques # 3-Colonie 2D. • Colonie d'oiseaux sur une île ou une presqu'île du Sud du Havre-Aux-Basques # 1,# 2. Please contact the Ministère des Ressources naturelles et de la Faune du Québec for more information (e.g. georeferenced maps) : services.clientele@mrnf.gouv.qc.ca	Text has been modified to acknowledge the presence of provincial wildlife habitats on the Magdalen Islands.
476	123	EC	5.7.3 Vulnerable Seabird Nesting Sites	"Lock et al. (1994) list 136 known colonies of vulnerable seabirds in the Gulf. Seabird colonies are patchily distributed around the Gulf." These could be presented as a list, though such a list would not address the 'continuum' of vulnerability across species. Lock et al. 1994 is in large part out of date; EC-CWS has more up-to-date information and should be contacted to provide as required.	A map and table has been added to Section 5.5.1.3 to show the locations of known seabird breeding sites in the portion of the Gulf surrounding EL 1105, and to provide more detailed information on the types and abundances of species which are supported at each of these locations. The information that is provided is based on the most recent survey data available.

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477	124	EC	5.7.3 Vulnerable Seabird Nesting Sites	"There are only six colonies along the western shore of Newfoundland." This statement requires a reference, as it is unclear if the source is Lock et al. 1994.	The statement was based on Lock et al. (1994) but has been revised to reflect more recent colony data obtained from the CWS (i.e., the Atlantic Canada Colonial Waterbird database)
478	125	EC	5.7.3 Vulnerable Seabird Nesting Sites	"Four of the six colonies are found at the mouth of the Humber River. The lack of seabird colonies on the west coast of Newfoundland is attributable to a general lack of suitable nesting sites and the relatively low productivity of the waters along this coast. Seabird species breeding in these colonies include Black-legged Kittiwake, Great Cormorant, Double-crested Cormorant and Black Guillemots, with Black-legged Kittiwake the most abundant species." The wording should be revised to emphasize that it is seabirds vulnerable to oil pollution which are being discussed; there are numerous additional seabird colonies along the southwest coast of Newfoundland and Labrador, namely those of Herring Gull, Great Black-backed Gull and Ring- billed Gull, which should also be mentioned.	Text has been revised to reflect more recent information within the Atlantic Canada Colonial Waterbird database (obtained from the CWS) which includes gull colonies.
479	126	EC	5.7.3 Vulnerable Seabird Nesting Sites	"The southern portion of the Gulf is not an important area for nesting vulnerable seabirds. Only 13 colonies of vulnerable seabirds are found along the portion of the Gulf that borders Nova Scotia. Fourteen colonies are present in Prince Edward Island and five colonies are present in New Brunswick. All of these colonies are occupied primarily by Double-crested Cormorants and Great Cormorants. The paucity of seabird colonies in the southeastern part of the Gulf is believed to be attributable to oceanographic conditions rather than a lack of suitable nesting habitat." This paragraph should be revised to properly reflect the high importance of this area for breeding seabirds, especially the Great Cormorant. The North American breeding and wintering range for this species is centered in the eastern part of the Gulf (e.g., Magdalen Islands, southwest Newfoundland, Prince Edward Island) with the largest concentrations occurring on Cape Breton Island (see "Birds of North America"), including the largest North American colony located in IBA NS001 (this IBA also hosts various breeding alcids, kittiwakes, and Leach's Storm-Petrel, and should be included in the list of IBAs below). If an oil spill occurred at the proposed study site, it would likely have a significant impact on the North American Great Cormorant population.	The paragraph has been revised to reflect the high importance of the Gulf for breeding Great Cormorants. Table 5.18 has been updated to include the Bird Islands IBA (although it is outside of the Gulf), and other IBAs located in the vicinity of the Gulf which support marine birds. Figure 5.57 has been updated to accommodate additional IBAs.
480	127	EC	5.7.3 Vulnerable Seabird Nesting Sites	The text should be changed to best to present both (1) number of colonies and (2) estimated breeding pairs for a region; i.e. stating "only 13 colonies" can be unintentionally misleading and can downplay the importance of an individual colony, as some colonies can host several thousand breeding pairs. Recent data exists which has been collected by EC-CWS (and summarized in reports), which show that seabird populations have increased in the Maritime portion of the Gulf, particularly in New Brunswick, which now also hosts Black-legged Kittiwake colonies. Cape Breton also hosts important Great Black-backed and Herring Gull populations. Please contact EC-CWS for this information.	A map and table has been added to Section 5.5.1.3 to show the locations of known seabird breeding sites in the portion of the Gulf surrounding EL 1105, and to provide more detailed information on the types and abundances of species which are supported at each of these locations. Additionally, text has been modified to include information on the number of seabirds in colonies along the western coast of Newfoundland (i.e., the portion of the Gulf which has potential to be affected by the Project).
481	128	EC	5.7.3 Vulnerable Seabird Nesting Sites	"Refuge des Isle Ste-Marie" This should be Refuge des îles Ste-Marie.	Text has been corrected.
482	129	EC	5.7.3 Vulnerable Seabird Nesting Sites	"…each of which supports more than 10,000 pairs of seabirds." Other sites (including groupings of neighbouring islands) that have hosted and potentially could host 10,000 pairs of seabirds include: Île du Corossol, Archipel Mingan, Refuge de la Baie des loups, and Refuge de la Baie de Brador. Other St. Lawrence estuary sites include: Île Blanche, Île Bicquette, Île aux Pommes, Battures aux Loups-Marins, Québec. Tabusintac, in New Brunswick, has hosted and potentially could host 10,000 pairs.	Text has been updated to acknowledge the locations of other areas known to support large congregations of seabirds along the Quebec coastline.
483	130	EC	5.7.3 Vulnerable Seabird Nesting Sites	"Each of these IBAs lies more than 75 km away from the Project." The size of the IBAs (Important Bird Areas) should be noted.	The size of each of the IBAs has been incorporated into Table 5.18.

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484	131	EC	5.7.3 Vulnerable Seabird Nesting Sites	"A number of Piping Plover habitat locations, though not designated as IBAs, were also identified on the coast of Newfoundland (Stephenville Crossing, Sandy Point, Flat Pay Peninsula, Searston, Little Codroy, East of Windsor Point, J.T. Cheeseman Provincial Park, Jerret Point-Windsor Point, Big Barrachois, Second) (LGL 2007)." There is a Piping Plover breeding beach on the Magdalen Islands that should be added to this paragraph. Additionally, the overall Gulf of St. Lawrence population of Piping Plover as a proportion of the Canadian population should be noted. These areas should be added to Figure 5.57.	Text has been modified to acknowledge the presence of critical habitat for Piping Plover on the Magdalen Islands. Although the intent of Figure 5.57 is to provide an overview of sensitive areas relative to EL 1105, and not a species-specific account of important habitat throughout the Gulf, many of the Important Bird Areas presented in Figure 5.57 are known to provide habitat for Piping Plover (see Table 5.18). Additional information on the eastern population of Piping Plover is provided in Section 5.2.2.3.
485	132	EC	5.7.3 Vulnerable Seabird Nesting Sites	"The nearest vulnerable seabird colony to EL 1105 is the large seabird colony on Rocher aux Oiseaux" Perhaps reword as 'colony of vulnerable seabirds'. It is unclear if the intended meaning is that the colony itself is vulnerable. If the colony itself is vulnerable, it should be explained why other Magdalen Island colonies would not also be vulnerable. The following text should be corrected accordingly.	Text has been modified to clarify that it is the colony of "vulnerable" species that is being referred to, rather than being the colony itself which is vulnerable.
486	133	EC	5.7.3 Vulnerable Seabird Nesting Sites	There are many other seabird colonies on Magdalen Islands. See Chapdelaine and Rail (2004), or contact EC-CWS for a list of Magdalen Island seabird colonies. Data can also be extracted from the Banque informatisée des oiseaux de mer du Québec (BIOMQ). See also Fradette (1992) and Mousseau et al. (1976) for more information on the subject.	A map and table has been added to Section 5.5.1.3 to show the locations of known seabird breeding sites in the portion of the Gulf surrounding EL 1105 (including the Magdalen Islands), and to provide more detailed information on the types and abundances of species which are supported at each of these locations. Data from the *Banque informatisée des oiseaux de mer du Québec* has been obtained from CWS and along with information provided in *Colonial and sea birds of the Magdalen Islands* (Rail 2009) has been used to summarize seabird colony information for Quebec. Information on the location and of seabird colonies along the coasts of the Atlantic provinces has been obtained from CWS's *Atlantic Canada Colonial Waterbird database* .
487	134	EC	5.7.3 Vulnerable Seabird Nesting Sites	Table 5.18 Important Bird Areas for Marine Birds An additional IBA site for Nova Scotia is NS055, located at the same latitude as NS057 but on the other side of the peninsula; this site is important for Great Cormorants.	Although outside the Gulf, NS055 has been added to Table 5.18.
488	135	EC	5.7.3 Vulnerable Seabird Nesting Sites	Table 7.1 Routine Project Activity Interactions with Valued Ecosystem Components Direct and indirect effects of light attraction on marine fauna (e.g., migratory birds, fish) should be added to this table.	Effects of light attraction on marine fauna are captured under the "Support vessels (supply boat and helicopter)" item of Table 7.1 and discussed in Section 7.1.4.
489	136	EC	5.8.2.5 Bird Hunting	Summaries of the Regulations for Migratory Game Bird Hunting season dates, bag and possession limits are set by the Federal government, and while proposals for hunting of migratory game birds may be published in the Newfoundland and Labrador Hunting Guide, these should be accessed via the Environment Canada website, as the information contained in the Guide may not be accurate (not available at the time of publications of the guide). The link to these regulations is as follows: http://www.ec.gc.ca/rcom-mbhr/default.asp?lang=En&n=8FAC341C-1	Text updated to include corrected information regarding Migratory Game Bird Hunting.
490	137	EC	5.8.2.5 Bird Hunting	It should be specified that "There is no open season for Harlequin Ducks in Atlantic Canada or in Quebec", as such seasons do exist elsewhere in Canada.	Text updated to specify that there is no open season for Harlequin Ducks in Atlantic Canada or Quebec.
491	138	EC	7.1.1 Presence of the Drill Platform	"Tasker et al. (1986) observed that bird density (birds/km2) was seven times greater within a 500-m radius of a platform than in the surrounding area." Higher densities around platforms can be the result of direct (light attraction) and indirect (reef effect or light attraction of prey) effects. Hence, such a finding is not surprising.	Comment Noted.
492	139	EC	7.1.1 Presence of the Drill Platform	"During exploration drilling, vessel traffic and the drill rig may affect seabirds by attracting them to lighting." Migrating landbirds are also sometimes attracted to lighting (e.g. Blackpoll Warbler).	Text updated to include migrating birds are attracted to drill rig lighting.
493	140	EC	7.1.1 Presence of the Drill Platform	"Seabirds primarily navigate by sight, and lights can be an eye-catching visual cue (Wiese et al. 2001)." Procellariiform seabirds also use olfactory cues to navigate (Nevitt and Bonadonna 2005). For example, dimethyl sulfide is known as an attractant.	Text has been updated to acknowledge potential attraction from olfactory cues.

Total Comment #	Agency/ Company Comment #	Government Department / Company	Section of EIS	Comment /Information Request	Response
494	141	EC	7.1.1 Presence of the Drill Platform	"However, 52 Leach's storm petrels were recovered and released with no mortality observed during monitoring on board a Terra Nova vessel over a three-week period during the summer of 1998 (Husky Oil 2000)." Given certain environmental conditions (e.g., wind speed and direction), characteristics of Leach's Storm-Petrels (e.g., relatively low mass), and quantified occurrence of known predators of this species (e.g., Great Black-backed Gull) at and in the vicinity of platforms (EC-CWS unpublished data), it is likely that some unknown proportion of individuals entering into contact with the flare or otherwise negatively affected by the flare would not be recovered during monitoring. This expectation would apply more so to injured and dead birds that had fallen directly into the water. An analogous fate could be expected for migratory passerines similarly affected by flares, and/or lights (Dryson M. unpublished study). See Wiese et al. 2001 and De Groot 1996 for further information, and please contact EC-CWS for more information concerning the unpublished data and studies.	Text has been modified to acknowledge findings documented in Wiese et al. (2001) and to accommodate potential difficultly in documenting bird mortality as a result of interaction with flaring and / or lights.
495	142	EC	7.1.1 Presence of the Drill Platform	"Therefore, the effects of discharges of these fluids on marine birds (including Species at Rick) will be negligible." "Species at Rick" should be "Species at Risk."	Text has been corrected in Section 7.1.3.
496	143	EC	7.1.5.3 Biological Effects - Marine Birds (page 329)	"The lack of data regarding seabirds and seismic activity (as well as sounds associated with other offshore oil and gas activities) may be a reflection of the fact that there is little evidence that problems occur (Davis et al. 1998) or maybe as a result of the paucity of data." Dedicated studies are required to elucidate potential effects and generate relevant data.	Comment noted. Text has been modified to acknowledge the need for dedicated studies.
497	144	EC	7.2.2.1 Presence of the Drill Platform- Marine Bird Species at Risk (page 344)	"All other marine birds considered within this VEC would occur in nearshore / coastal waters of the Study Area and would therefore not interact with the presence of the drilling platform." An exception could possibly be during migratory movements over ocean expanses. Spatial patterns during migration remain poorly understood for avian Species at Risk (and most other avian species).	Text has been modified to acknowledge potential for interaction during migration.
498	145	EC	7.2.2.4 Supply Vessels – Marine Bird Species at Risk	"Helicopters servicing the Project will avoid major colonies and will fly at a minimum of 600 m above sea surface whenever possible, limiting potential for disturbance." Helicopters should also avoid nesting areas for Species at Risk.	Text has been modified to accommodate new mitigation regarding the avoidance of known Species at Risk nesting sites during helicopter activities. Note: New mitigation.
503	146	EC	7.5 Marine Birds	"The following families of marine birds occur within the Study Area and could potentially be affected: Procellariidae (fulmars and shearwaters), Hydrobaridae (storm-petrels), Sulidae (gannets), Phalaropodinae (phararopes), Laridae (gulls, terns, kittiwakes, jaegers, skuas) and Alcidae (dovekie, murres, razorbills, puffins)." Depending on project timing, migratory landbirds could also be affected.	Text has been modified to acknowledge the potential for certain migratory land birds to be affected, depending on the timing of Project activities.
504	147	EC	7.5 Marine Birds	"The zones of influence of other routine Project activities are generally limited to the Project Area." It should be noted that birds nesting at colonies on the Magdalen Islands could be expected to forage within the project area.	Text has been modified to acknowledge that seabird colonies located outside of the Project Area (e.g., in association with the Magdalen Islands) have potential to interact with Project activities if their members forage in the area or pass through during migration. Additionally, it is noted in Section 8.7.4 that birds nesting at colonies on the Magdalen Islands could forage within the Project Area and could be exposed to effects from routine Project activities.
505	148	EC	7.5 Marine Birds	"Due to a general lack of suitable nesting sites along the west coast of Newfoundland, there are only six colonies along the western shore of Newfoundland, four of which are found at the mouth of the Humber River." See comments in section 5.7.3 related to the importance of this area to breeding birds, and note that gull colonies have not been included in this tally.	Text has been revised to reflect more recent information within the Atlantic Canada Colonial Waterbird database (obtained from the CWS) which includes gull colonies.
506	149	EC	7.5.2.1 Effects Assessment – Presence of Platform	"Existing knowledge related to marine birds and lighting on the platform is provided in Section 7.1.1" Landbirds should be considered in this section.	Text has been modified in Sections 7.1.1 and 7.5.2 to acknowledge the potential for interaction with migrating land birds.

Total Comment #	Agency/ Company Comment #	Government Department / Company	Section of EIS	Comment /Information Request	Response
507	150	EC	7.5.2.1 Effects Assessment – Presence of Platform	"Marine birds attracted to flares may result in mortalities, but while gas flaring produces light that may attract birds, heat and noise generated by the flare may also deter birds from the immediate area, minimizing potential effects." This point requires further investigation, and should be elaborated upon.	Text has been modified to clarify the paucity of information regarding the potential for heat and noise generated by flaring activities to deter birds.
508	151	EC	7.5.2.5 Drilling Noise / Vertical Seismic Profiles	"Exiting knowledge indicates that marine birds diving in close proximity to a loud underwater sound could be injured." "Exiting" should be "existing"	Text updated to correct the spelling mistake.
509	152	EC	7.5.3 Mitigation	"a pelagic marine bird monitoring program will be implemented according to the protocols developed by EC-CWS and Corridor will include a trained observer among their staff" This should be rephrased as "a pelagic marine bird monitoring program with EC-CWS (ECSAS) protocols will be implemented and Corridor will include trained observer(s) among their staff."	Text rephrased as suggested.
510	153	EC	7.5.3 Mitigation	"Corridor will have a Bird Handling Permit and will comply with the requirements for documenting and reporting any stranded birds (or bird mortalities) to the CWS during the 20 to 50 day drilling program." There should additionally be a requirement for training to differentiate Leach's Storm-Petrel from Wilson's Storm-Petrel, so that proper species' identification can be attained when handling storm-petrels.	Photographs will be used to differentiate between Wilson's Storm-Petrel and Leach's Storm-Petrel and will be provided to trained observers.
511	154	EC	8.7.1.2 Marine Bird Species at Risk	The Magdalen Islands Horned Grebe should be discussed here.	As outlined in Section 5.2.2.6, Horned Grebe is not expected to occur offshore in the vicinity of EL 1105 or elsewhere along the west coast of Newfoundland. Results of the oil spill modeling, as presented in Section 2.12 do not suggest that any spill would reach the Magdalen Islands. As such, Horned Grebe is not discussed in Section 8.7.1.2.
512	155	EC	8.7.1.2 Marine Bird Species at Risk	"and survival (Vangilder and Peterle 1980; Trivelpiece et al. 1984)" It should be noted that reduced survival is of adults as well as offspring.	Text has been modified to recognize reduced survival of adults as well as offspring.
513	156	EC	8.7.1.2 Marine Bird Species at Risk	"Although oil spills at sea have the potential to kill tens of thousands of seabirds (Clark 1984; Piatt et al. 1990), some studies suggest that even very large spills may not have long-term effects on seabird populations (Clark 1984; Wiens 1995)." The veracity of this statement depends on how 'populations' are defined, especially for Species at Risk.	Comment noted. Text has been modified to accommodate.
517	157	EC	8.7.1.2 Marine Bird Species at Risk	"Piping plover are known to breed in western Newfoundland." Piping Plover are also known to breed in the Magdalen Islands, and elsewhere in the Gulf of St. Lawrence.	Text has been modified to acknowledge breeding in the Magdalen Islands and elsewhere in the Gulf of St. Lawrence.
518	158	EC	8.7.1.2 Marine Bird Species at Risk	Harlequin Duck would be present (if at all) in very low densities along the west coast of Newfoundland. Cape St. Mary's would represent the largest wintering area in Newfoundland for the eastern population, but should not be affected by a localized spill of diesel fuel. See Souliere and Thomas 2009 for further details and maps concerning Harlequin Duck occurrences.	As discussed in Section 8.7.1.2, Harlequin Ducks would be present in very low densities off western Newfoundland. More detailed information on the distribution of Harlequin Ducks is provided in Section 5.2.2.8.
519	159	EC	8.7.1.2 Marine Bird Species at Risk	The largest proportion of eastern population Barrow's Goldeneye winters in a few localized areas some distance west of the proposed drill site along the Quebec North Shore, the St. Lawrence Estuary, Anticosti Island, and the Bay du Chaleur. During the breeding season these birds are nesting on interior lakes adjacent to the Quebec North Shore, and so would not be exposed to potential oil spills. An oil spill adjacent to these primary wintering areas could have very significant implications in terms of population sustainability. This potential occurrence has been flagged as a primary concern in the "Management Plan for the Barrow's Goldeneye (Bucephala islandica), Eastern Population, in Canada" (found at http://www.sararegistry.gc.ca/document/default_e.cfm?documentID=1566). There exists a chance an oil spill could occur from any supply or other vessel using the shipping lane, however the risk is relatively small assuming the oil spill modeling for this project (Section 2.12.3) is accurate.	Comments noted. Section 8.7.1.2 discusses the low risk that potential oil spills associated with the Project have on Barrow's Goldeneye.

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520	160	EC	8.7.2 Marine Ecosystems	"Based on modeling conducted by SL Ross (2011; see Section 2.12 for summary), there will be no interaction between a spill at the wellsite and coastal ecosystems (algal, eelgrass and saltmarsh communities) (Figure 2.20). A diesel spill from a vessel accident could potentially affect the coastline and this is discussed below." Several marine bird species are strongly associated with eelgrass habitat and saltmarsh habitat. The residual (long-term) presence of hydrocarbons from a spill could directly (through oiling) and or indirectly (through effects on prey or shelter) impact marine birds in aforementioned habitats outside the immediate time frame of the accident itself.	Comment noted.
521	161	EC	8.7.2 Marine Ecosystems	"As condensate product from a surface spill would form a thin slick on the ocean surface and only disperse into the top 30 m of the water column (Section 2.12.2.4), it is unlikely that there would be an interaction between a surface spill and deep-water corals and sponges." It should be noted that this is where the highest proportion of available prey for marine birds is concentrated.	Text has been added to acknowledge that highest proportion of available prey for marine birds is concentrated in the upper zone of the water column.
522	162	EC	8.7.4 Marine Birds	"Diving species such as Black Guillemot, murre (spp.), Atlantic Puffin, Dovekie, eider (spp.), Long-tailed Duck, scoters, Red-breasted Merganser (Mergus serrator), and loons (spp.) are considered to be the most susceptible to the immediate effects of surface slicks (Leighton et al. 1985; Chardine 1995; Wiese and Ryan 1999; Irons et al. 2000)." Grebes should be included in this list.	Grebes have been added to the list of birds considered to be the most susceptible to the immediate effects of surface slicks.
523	163	EC	8.7.4 Marine Birds	"There also appears to be a strong seasonal effect, as significantly higher proportions of alcids (along with other seabird groups) are oiled in winter versus summer (Wiese and Ryan 1999)." This is necessarily a function of the location, size and importance (percentage of a population) of bird congregations (colonies, seaward extensions, migration staging areas, wintering areas).	Text has been modified to acknowledge factors (i.e., location, size, and importance of congregations) influencing oiling rates.
524	164	EC	8.7.4 Marine Birds	"Other species such as Northern Fulmar, shearwaters (spp.), storm-petrels (spp.), gulls (spp.), and terns (spp.) are vulnerable to contact with oil because they feed over wide areas and make frequent contact with the water's surface. They are also vulnerable to the disturbance and habitat damage associated with oil spill cleanup (Lock et al. 1994)." Phalaropes should be added to this list.	Phalaropes have been added to the list of birds that are vulnerable to contact with oil.
525	165	EC	8.7.4 Marine Birds	"Shorebirds may be more affected by oil spills than has been suggested by carcass counts." Phalaropes and other coastal species should be added to this list.	Text has been modified to accommodate Phalaropes.
526	166	EC	8.7.4 Marine Birds	"The west coast of Newfoundland supports six vulnerable seabird colonies, with four of the six found at the mouth of the Humber River, the waterway leading to the Port of Corner Brook." The large and important marine bird colonies in the Magdalen Islands should be mentioned here. The known or expected foraging range of species nesting at these (and other) Gulf colonies should be added as well.	Text has been updated to provide information on the potential foraging range for species associated with the Magdalen Island colonies. However, as outlined in Section 2.12, results of the oil spill modeling do not suggest that any spilled material would reach the Magdalen Islands themselves.
527	167	EC	8.7.4 Marine Birds	"A survey of an extensive area around the well after the well was capped (11 days after the blow-out) observed a total of seven oiled marine birds (three Dovekies and four murres), with no obvious oiling of gulls, kittiwakes and fulmars (Martec Ltd. 1984, in Hurley and Ellis 2004)." It is also important to report that most oiled birds are never recovered, and that oiled carcasses can disappear very quickly in the marine environment, especially in light of this study having been conducted after the well was capped, rather than during the release of the oil. See Wiese 2002, Hlady and Burger 1993, Page et al. 1990, and Ford et al. 1987 for further details.	Text has been modified to provide context in the interpretation of findings by Martec Ltd. (1984).
528	168	EC	8.7.4 Marine Birds	"Some studies have suggested that oil pollution is unlikely to have major long-term effects on bird productivity or population dynamics (Clark 1984; Butler et al. 1988; Boersma et al. 1995; Erikson 1995; Stubblefield et al. 1995; White et al. 1995; Wiens 1995, 1996; Seiser et al. 2000)." Some studies (such as Harvey et al. 1981 and Leighton 1993) do show long-term effects of oil pollution on birds (e.g., birds having ingested oil no longer contribute to the reproductive output of a species); the different aspects of this issue concerning long-term effects of oil pollution on birds should be included and discussed.	Text has been modified to acknowledge the different aspects of the long-term effects of oil pollution on birds.

Total Comment #	Agency/ Company Comment #	Government Department / Company	Section of EIS	Comment /Information Request	Response
529	169	EC	8.7.4 Marine Birds	"The west coast of Newfoundland supports six vulnerable seabird colonies, with four of the six found at the mouth of the Humber River, the waterway leading to the Port of Corner Brook. The lack of seabird colonies is attributable to a general lack of suitable nesting sites and the relatively low productivity of the waters along this coast. There are also some relatively large tern colonies present along the west coast of Newfoundland." See comments in section 5.7.3 regarding: 1) underestimation of the number of seabird colonies (i.e. gull colonies are not accounted for here), 2) underestimating the importance of this area to seabirds by not presenting the number of breeding pairs; there are thousands of pairs of kittiwakes, gulls, cormorants and terns breeding in the southwest part of insular Newfoundland, and 3) the importance of this area to Great Cormorant, who have a restricted breeding range in North America.	Text has been modified to acknowledge the presence of gull colonies along the western shore of Newfoundland and provide information on the number of breeding pairs supported by the colonies along the western shore of Newfoundland (including cormorants), and which have potential to be affected by the Project. Although based on spill modelling results, there is no prediction interaction with coastal ecosystems if a spill were to occur at the drill site.
530	170	EC	8.7.4 Marine Birds	"… it is unlikely that an accidental spill would affect a large number of birds or that the effects would be measurable at a population level." An exception to this statement would be the Great Cormorant.	Information on the predicted extent of accidental spills (based on the modeling results presented in Section 2.12) and data on the abundance of Great Cormorant along the western shore of Newfoundland do not indicate that an accidental spill would have a measurable effect on the North American population of Great Cormorant. For example, data from Lock et al. (1994) indicate that the western coast of Newfoundland was known to support approximately 39 Great Cormorant breeding pairs, while the same reference identifies approximately 2,540 breeding pairs in the Gulf, with many more being found outside this region. More recnt data obtained from the CWS, (i.e. from the Atlantic Canada Colonial Waterbird database) indicate that cormorants (species unidentified) are present at five of the colonies, with four of these being estimated to contain less than a hundred pairs.
531	171	EC	11.0 Follow-up and Monitoring	"Routine checks will be done for stranded birds that may have been attracted to vessel lighting." Documentation should include photographs, following a pre-determined protocol, established with EC-CWS.	Text revised to include the commitment that a pre-determined protocol will be established with EC-CWS.
532	172	EC	11.0 Follow-up and Monitoring	"Corridor will use a Marine Mammal Observer during the drilling program." The aforementioned seabird observer(s) should be listed here as well.	Text updated to include the seabird observer.