




**ExxonMobil Canada Ltd.  
2019-2020 Eastern Newfoundland Offshore  
Exploration Drilling Project –  
EL 1165A and EL 1165B**

**EL 1165B Conditions Closure Report Executive  
Summary**

Submitted by:

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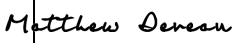
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## 2019-2020 Eastern Newfoundland Offshore Exploration Drilling Project (EL 1165A and EL 1165B)

### EL 1165B (Harp) Conditions Closure Report Executive Summary

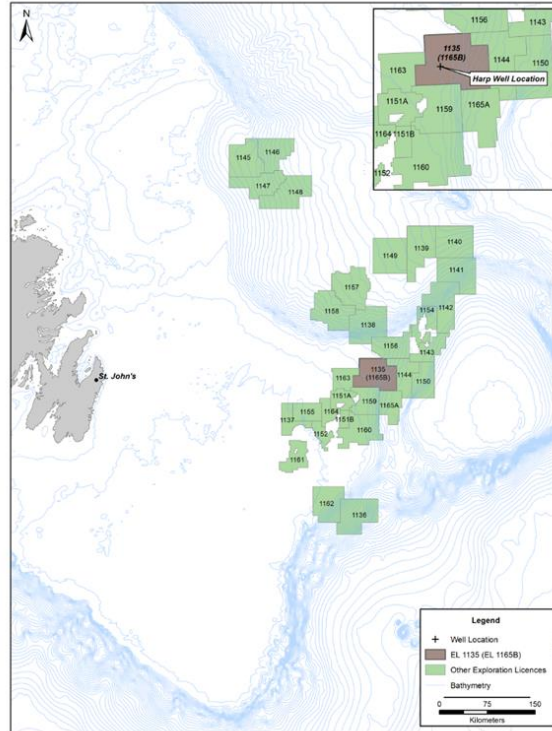
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# 1 EXECUTIVE SUMMARY

ExxonMobil Canada Ltd. (EMCL) undertook an offshore exploration drilling program at Exploration Licence (EL) 1135 (Harp Well) (later referred to as 1165B), to determine the presence, nature and quantities of potential hydrocarbon resource. The Harp well was an undrilled prospect ~400 kilometres east of St John's, Newfoundland and drilled by the Seadrill West Aquarius Mobile Offshore Drilling Unit (MODU) under Operations Authorization (OA) no. 24020-020-OA06 in a water depth of 298 metres. The primary objective of the Harp L-42 well was to evaluate a late tithonian amplitude anomaly.

See Figure 1: Map of Well Location



**Figure 1: Map of Well Location**

In 2016, the Canadian Environmental Assessment Agency (CEAA – herein referred to as the Agency) conducted an environmental assessment of the Designated Project in accordance with the requirements of the Canadian Environmental Assessment Act, 2012. From this assessment a report was submitted to the Minister of Environment and Climate Change Canada. On April 17, 2019, after considering the report of the Agency and the implementation of mitigation measures, a Decision Statement was released, in which the Minister determined that the Designated Project was not likely to cause significant adverse environmental effects referred to in subsection 5(1) of the Canadian Environmental Assessment Act, 2012.

As a Condition in the Decision Statement EMCL was required to submit a close-out report within 90 days of the completion of the well. The 90-Day Closure Report outlines the activities that were undertaken to comply with the conditions outlined in the Decision Statement including;

- Consultations and Communications with Stakeholders
- Fish and Fish Habitat Protection and Monitoring
- Marine Mammal and Sea Turtle Monitoring
- Migratory Bird Monitoring

## 2 CONSULTATIONS AND COMMUNICATION WITH STAKEHOLDERS

As part of its on-going and planned operations off Eastern Newfoundland, EMCL engaged with key stakeholders that had an interest in offshore oil and gas operations. These engagements took place through consultation sessions and regular communication to keep them apprised of offshore oil and gas activity in their areas and to address any concerns they may have.

Specific Communications Plans were developed for communicating with Indigenous groups and commercial fishers. These plans outlined communications protocols and processes to be used leading up to and during the operational period of the drilling program.

In addition to consultation sessions, EMCL provided monthly e-mail operational updates to fishers and Indigenous groups. Email updates included the following information when applicable to operations:

- Mobilization of the rig
- Rig location (coordinates)
- Safety zone – description, location and purpose
- Supply and safety vessels / identification / call signs / routes
- Anticipated vessel traffic schedule
- Commencement of exploration drilling (spud)
- Schedule of activities (e.g. BOP installation, Vertical Seismic Profiling)
- Abandonment of well
- Demobilization / rig movement
- Links to documents and reports: (e.g. CNLOPB website, Company websites)
- Company contact
- Updates on the results of environmental monitoring programs related to birds, marine mammals, fish and fish habitat (when available)

## 3 FISH AND FISH HABITAT PROTECTION AND MONITORING

To aid the protection of fish and fish habitats in, and around, the drill program area EMCL implemented mitigation measures including;

- Pre-drilling coral and sponge surveys
- Synthetic-based fluid on cuttings
- Drill cuttings monitoring
- Discharge monitoring
- Underwater sound monitoring

### 3.1 Pre-Drilling Coral and Sponge Survey

In preparation for regulatory approval, a survey to evaluate the presence and distribution of corals and sponges was undertaken. The survey consisted of the collection of high resolution video of the seabed at the drill site, using an ROV for the purposes of identifying cold water corals (CWC) and sponges. As the MODU would be fully moored during drilling activities at EL1165B, anchor and chain locations were also surveyed.

Seabed video transects of the EL1165B survey area revealed a single species of cold-water soft coral -*Gersemia sp.* – ranging in height from 5 – 25 centimetres. These corals were typically observed as solitary individuals and occurred primarily along transects in the drill cuttings dispersal area. C-NLOPB guidelines prohibit drilling activity within 100 metres of a “coral colony”, defined either as a – *Lophelia pertusa* reef complex; or 5 or more large corals (larger than 30 centimetres in height or width) within a 100 square metre area (C-NLOPB Remarks to National Advisory Panel on Marine Protected Area Standards). There were no cold-water corals greater than 30 cm found at densities of more than 5 per 10 m<sup>2</sup> within the survey area. There were no sponges greater than 30 cm found at densities of more than 5 per 10 m<sup>2</sup> within the survey area.

### 3.2 Synthetic-Based Fluid on Cuttings Monitoring

EMCL was required to measure the concentration of synthetic-based drilling fluids retained on discharged drill cuttings. The Environmental Compliance Monitoring Plan outlined the monitoring and reporting actions that EMCL put in place to meet this requirement. As outlined in the plan, the SOC and mass of cuttings drilled and released were collected and recorded.

In addition to monitoring SOC when discharging drill cuttings, during mud tank cleaning when changing from Synthetic Based Mud (SBM) to Water Based Mud (WBM), the synthetic oil mass of the remaining material in the tank bottom was included in the SOC calculations.

EMCL had a performance target for SOC discharged to sea based on the Offshore Waste Treatment Guidelines of not exceeding 6.9g/100g oil on wet solid. This target was maintained for the duration of the campaign with 4.02g/100g of wet solids being the highest level reached. EMCL reported the discharged SOC results to the C-NLOPB on a monthly basis.

### 3.3 Drill Cuttings Monitoring

A post-drill survey was conducted at the EL 1165B well location, to visually assess the areal extent of the discharge of muds and cuttings from the exploration program for comparison within the drill cuttings modelling deposition area. In addition to visual analysis, the drill cuttings extent was further quantified and supplemented by depth penetration measurements and sediment cores.

The model results were compared to in situ results and found that cuttings were within the extent of the model's predictions and typically closer to the wellhead than what was originally predicted, visual survey and other measurements (depth penetration and chemistry) gave no indication that the drill cuttings went further than what was predicted by the model.

### 3.4 Discharge Monitoring

The Environmental Compliance Monitoring Plan (ECMP) identified the waste streams and sampling, analysis and reporting requirements for regulated wastes discharged during routine operation. The requirements outlined in the plan were aligned with the Offshore Waste Treatment Guidelines (OWTG) as set out by the National Energy Board (NEB), the C-NLOPB and the Canada-Nova Scotia Offshore Petroleum Board (CNSOPB).

### 3.5 Underwater Sound Monitoring

An acoustic monitoring program was conducted to further measure baseline sound levels, marine mammal presence and changes to the baseline resulting from the Harp drilling program. During consultation with DFO it was decided that the acoustic monitoring program would be most effective and provide more valuable information on potential regional impacts if the receivers were deployed to allow simultaneous collection of data from both planned exploration well locations. This combination of recording locations allowed determination of how sound levels and marine mammal presence vary with distance to the drilling operations.

The sound levels from the drilling operations of the West Aquarius MODU measured at the seabed in the Flemish Pass were well below the sound levels considered during the Environmental Assessment. Those sound levels were based on the modeling performed off Nova Scotia for the Scotian Basin Exploration Project. The measured sound levels closely matched the prediction for a MODU and support vessels operating in the Flemish Pass.

## **4 MARINE MAMMAL AND SEA TURTLE MONITORING**

A Marine Mammal Monitoring Plan (MMMP) was developed to minimize any risk to marine mammals and sea turtles as a result of exposure to air gun pulses during Vertical Seismic Profile (VSP) activity.

In February 2020 EMCL received a dispensation to not perform VSP at Harp L-42A. This dispensation was granted by the C-NLOPB based on 1) drilled tops at all target intervals were encountered within +/-20m of prognosed depths, and 2) weather / sea state operational limitations prevented safe VSP deployment. Based on this, visual monitoring and passive acoustic monitoring were not required to be performed.

In addition to requirements for monitoring during VSP activities, the MMMP also addressed the requirements for reporting injured, dead or stranded marine mammals or sea turtles. During the program there were no sightings of injured, dead or stranded species.

## **5 MIGRATORY BIRD MONITORING**

The Eastern Newfoundland Offshore Exploration Drilling Project Environmental Impact Statement (EIS) assessed the potential effects to marine and migratory birds within the project area and predicted that the project was not likely to result in significant adverse environmental effects on marine and migratory birds, including Species at Risk (SAR); this conclusion was determined with a moderate to high level of certainty based on current understanding of the effects of similar projects on marine and migratory birds.

Monitoring measures were implemented in order to reduce potential environmental effects as they pertain to migratory birds. These consisted of daily surveys of the MODU by a trained individual to determine the presence of stranded birds, with checks being logged and any encounter of a stranded bird, live or dead, documented on a Stranded Bird Encounter datasheet. This datasheet was sent weekly to the onshore Environmental Advisor. At the conclusion of the Project, it was submitted to the C-NLOPB and posted to the exploration website. As required by seabird handling permit SC4039 all original data was submitted to the Canadian Wildlife Services within the specified reporting timelines. Daily seabird monitoring during the Harp (EL 1165B) exploration program was limited to stranded seabird searches and did not include daily live bird monitoring.