



Shelburne Basin Venture Exploration Drilling Project

**Executive Summary,
Canadian Environmental Assessment Agency
Closure Report for the Monterey Jack E-43A Well**

Project	Shelburne Basin Venture Exploration Drilling Project
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EXECUTIVE SUMMARY

Shell Canada Limited (Shell) is conducting an exploration drilling project within the area of its offshore Exploration Licences (EL) 2423, 2424, 2425, 2426, 2429 and 2430 in the Nova Scotia Offshore Area. The Shelburne Basin Venture Exploration Drilling Project (the Project) consists of up to seven exploration wells to be drilled over a four-year period from 2015 to 2019. The Project is divided into two separate drilling campaigns: the first drilling campaign consists of drilling two (2) wells, and a second drilling campaign could include up to five (5) additional wells.

An Environmental Impact Statement (EIS) was prepared to fulfill the requirements of the *Canadian Environmental Assessment Act, 2012* (CEAA 2012) as the Project's proposed drilling programs involve activities that are designated by the *Regulations Designating Physical Activities*. The Canadian Minister of Environment issued a Decision Statement on June 15, 2015 concluding that the Project is not likely to cause significant adverse environmental effects.

The Decision Statement established 40 conditions in relation to the environmental effects referred to in subsection 5(2) of CEAA 2012, with which Shell must comply. The conditions cover a broad range of activities and are grouped as per the following themes:

- General Conditions: Conditions 2.1 – 2.6
- Fish (Including Marine Mammals and Sea Turtles) and Fish Habitat: Conditions 3.1 – 3.12
- Migratory Birds: Conditions 4.1 – 4.4
- Aboriginal and Commercial Fishing: Conditions 5.1 – 5.3
- Accidents and Malfunctions: Conditions 6.1 – 6.11
- Implementation Schedule: Conditions 7.1 – 7.2
- Record Keeping: Conditions 8.1 – 8.2

Each of the conditions is applicable to all wells of both campaigns, unless otherwise specified. Each of the conditions are to be implemented either pre-drilling, during drilling, post drilling or over all phases of well activity. Shell commenced drilling the second well of the first campaign, Monterey Jack E-43A (Monterey Jack) on September 26, 2016. Drilling was completed and the well was abandoned in accordance with the applicable regulations on January 21, 2017.

In compliance with Condition 2.4 of the Decision Statement, Shell has prepared this document, *Shelburne Basin Venture Exploration Drilling Project Canadian Environmental Assessment Agency Closure Report for the Monterey Jack E-43A Well (Closure Report)*, to be provided to the Canada-Nova Scotia Offshore Petroleum Board (CNSOPB; the Board) within 90 days of the Monterey Jack well being abandoned. This Closure Report documents:

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- the activities undertaken to demonstrate Project compliance with each condition of the Decision Statement;
- how each condition was informed by the best available information and knowledge, validated methods and models, and undertaken by qualified individuals, where applicable;
- how Shell considered any views and information received for conditions for which consultation is a requirement;
- the results of follow up program requirements, which are attached as appendices within this report; and
- any corrective actions taken or proposed in relation to subsequent wells to be drilled as part of the Project, should the predictions of environmental effects prove to be inaccurate or the mitigation measures prove not to be effective.

Throughout all phases of the drilling activity at Monterey Jack, Shell has implemented all the conditions outlined within the Decision Statement and has achieved compliance with the conditions through the development and implementation of plans, procedures and field programs, engaging with stakeholders, implementing monitoring and mitigation measures, and document control, among others.

Shell has complied with the activities outlined within the conditions throughout the drilling of Monterey Jack with the implementation of quality, fit for purpose and technically and economically feasible programs, procedures and plans.

Compliance with conditions was upheld through early and ongoing engagement and regulatory consultation with First Nations, Aboriginal organizations and fisheries stakeholders. Shell notified these groups about the opportunity for consultation and determined how they would like the consultation to take place. Shell provided all pertinent Project information in a reasonable period of time, provided a reasonable period of time for review, fully and impartially considered any views presented, and provided responses to any questions or comments, and addressed concerns, where appropriate. Shell has also demonstrated transparent and consistent engagement through the development of First Nations and fisheries stakeholder communications plans, the sharing of operational updates and the provision of Project plans including the Well Abandonment and Oil Spill Response Plans.

Shell has demonstrated compliance with conditions through reducing the potential effects of the Project on the marine environment, including:

- Managing all chemicals and treating all operational waste discharges from the drill ship, the Stena IceMAX (IceMAX) and offshore supply vessels (OSV) in compliance with regulatory requirements including the Offshore Waste Treatment Guidelines (OWTG), the Offshores Chemical Selection Guidelines for Drilling and Production

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Activities on Frontier Lands (OCSG), the Fisheries Act, and the Project Environmental Protection Plan (EPP). This includes regular reporting of operational discharges to the CNSOPB, evaluating each chemical and selecting those of lower toxicity, as well as measuring and monitoring discharges to verify limits and address exceedances.

- Developing monitoring programs;
 - A sediment deposition survey methodology and procedure to evaluate seafloor deposition of drill mud and cuttings to verify modelling predictions made during the EIS.
 - A Marine Mammal Observation Program that describes the monitoring and mitigation measures to be implemented during the Vertical Seismic Profile (VSP) survey. Shell committed to the mitigation measures and monitoring requirements as outlined in the *Statement of Canadian Practice with Respect to the Mitigation of Seismic Sound in the Marine Environment* (the Statement) as well as commitments outlined within Shell's EIS and EPP.
 - An Environmental Effects Monitoring (EEM) program for migratory birds, which involved obtaining a permit from the Canadian Wildlife Service (CWS) to authorize the handling of birds onboard the IceMAX and OSVs, and the monitoring and reporting of all bird strandings.
 - A Sound Source Characterization (SSC) program to verify the drilling-related underwater noise levels predicted within the EIS with field measurements.
- Developing and implementing response procedures and contingency plans including an Oil Spill Response Plan and Source Control Contingency Plan.
 - These plans outline measures to prevent accidents and malfunctions and guide response activities should an incident occur.
 - Regular reviews and updates of Project plans were conducted, as required, as part of Shell's focus on continual improvement.
 - Shell conducted emergency response exercises prior to the commencement of drilling operations, to verify response capabilities outlined in Shell's procedures and contingency plans.
 - Shell has also implemented a comprehensive oil spill response (OSR) training program throughout the Project.

Shell has been compliant with the conditions outlined within the Decision Statement. Through the implementation of activities outlined for each condition, the predictions of environmental effects and the mitigation measures presented in the EIS are upheld. No significant adverse environmental effects occurred as a result of the Project during the drilling of Monterey Jack and no corrective actions are required for subsequent wells to be drilled as part of the Project.

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