



OVERVIEW

Encana Corporation is the owner and operator of the Deep Panuke natural gas development, located in the marine environment approximately 175 kilometres offshore Nova Scotia. The development includes facilities required to produce natural gas from the Deep Panuke field, such as the offshore production platform, subsea wells, flowlines, control umbilicals and protection structures for subsea equipment. Natural gas is processed offshore and transported via a subsea pipeline to shore near Goldboro, Nova Scotia for further transport to markets using the Maritimes & Northeast Pipeline. Encana permanently ceased production from Deep Panuke on May 7, 2018 and has begun the work required for decommissioning activities.

DECOMMISSIONING PROCESS

It is currently Encana's plan to generally complete the decommissioning of the Deep Panuke development as follows:

- Decommissioning of the offshore production platform, subsea structures, flowlines, umbilicals, gas pipeline, and onshore facilities
- Well plugging and abandonment and subsea structure removal
- Offshore platform removal and final field survey



Deep Panuke Information Update | July 2019

Wells

- Plug and abandon four production wells
- Plug and abandon one disposal well

Subsea Facilities

 Remove wellhead protection structures

Flush and clean

 Disconnect flowlines and umbilicals; abandon in place

flowlines

 Remove subsea production trees

Production Well Production Wel

Gas Pipeline

- Flush and clean gas pipeline
- Remove subsea isolation valve
- Remove above ground onshore facilities
- Abandon gas pipeline in place

Production Platform

- Flush and clean
- Remove

2019 GAS PIPELINE FLUSHING

Encana completed the gas pipeline flushing program between the end of June and the middle of July. The gas pipeline (175 km long, 560 mm outer diameter) connects the offshore platform to the onshore metering station in Goldboro. The gas pipeline was flushed with water to remove the sales-quality gas it contained.

Pipeline pigs (devices inserted into the pipeline to create a seal) were propelled with freshwater and nearshore filtered seawater from onshore to offshore. The flush water received at the platform did not contain any liquid hydrocarbons or require treatment since the pipeline has never been exposed to liquid hydrocarbons, only natural gas. Recovered flush water was tested to confirm that it met regulatory requirements. Only a small volume of flush water received on the platform was injected into a disposal well. The remaining flush water was discharged overboard. It took seven days to flush the entire pipeline and the offshore pipeline is now filled with seawater. The onshore section of the pipeline has been dewatered.

To support the pipeline flushing program, equipment was mobilized onshore at both the pipeline terminus site and landfall. The landfall site (including the previous gravel pad and fence, no-anchor sign, as well as temporary laydown areas created to store water pumping/storage equipment) has been restored and re-vegetated. Additional environmental site inspections will be conducted in August and September to verify the stability of reclaimed areas. The gas export pipeline terminus site will be restored in 2020.





Onshore Section of the Deep Panuke Gas Pipeline





Gravel pad, fence and no-anchor sign at Beach Valve Station before the pipeline flushing program



Pumping equipment for the pipeline flushing program at Beach Valve Station



Restored site (after seeding) at Beach Valve Station following completion of the pipeline flushing program



PROCUREMENT AND CONTRACTING

Encana is committed to providing full and fair opportunities for Nova Scotians and Canadian companies, and first consideration to Nova Scotians where competitive on a best value basis. SBM Nova Scotia Contractors Inc. (SBM) operates the production platform on behalf of Encana Corporation, and is also committed to providing opportunities for Nova Scotian and Canadian companies through procurement and contracting on an internationally competitive basis.

Information on procurement and contracting opportunities, including expressions of interest, bidders lists, and contract awards, are posted on the Encana's Atlantic Canada webpage www.encana.com/deeppanuke, in addition to being published in the Maritimes Energy Association bulletin and on www.bids.ca. Contact information is provided with all notifications for interested parties who wish to contact Encana, SBM and potential and successful bidders.

The table below lists contracts awarded by Encana and SBM for decommissioning activities.

| Decommissioning Contracts Awarded | Awarded to | |
|--|--|--|
| Supply of Marine Gas Oil and Low Sulphur Diesel | Irving Oil | |
| Tubular Running and Fishing and Milling Services | FI Oilfield Services | |
| | Baker Hughes Canada | |
| Onshore Civil Works (Goldboro) | MacLane & Bernard Construction | |
| Removal of Subsea Structures, Transport and Disposal DOF Subsea Canada | | |
| Mechanical Isolation Plugs and Services | Interwell | |
| Purchase of Pipeline Pigs | Propipe Limited | |
| | Turbulent Research | |
| Fluids, Cement, Swarf Management and Storm Packers | Halliburton Group Canada | |
| Bleed-off Package and Landing String | Expro Group Canada | |
| Intervention and Workover Equipment and Services | Halliburton Group Canada | |
| Gas Pipeline Flushing and Pigging Services | IKM Testing (Canada) | |
| High-Pressure Riser & Conductor Cutting Services | Claxton Engineering Services | |
| Subsea Flow Lines Flushing and Cleaning Services | Halliburton Group Canada | |
| Waste Disposal | EnviroSystems | |
| Harsh Environment Jack-Up Mobile Offshore Drilling Unit | Noble Drilling Services (Canada) | |
| | AMEC Black & MacDonald | |
| | Avara Solutions | |
| Engineering and Technical Support Services | Eastpoint Engineering | |
| garatang and recommender production | HEDSA Project Management | |
| | Stantec Consulting Ltd. Waterford Energy Services Inc. | |
| Regulatory and Environmental Support Services | Stantec Consulting Ltd. | |
| Gas Pipeline Flushing Piping & Support Fabrication | AECON Atlantic | |
| Platform De-Installation | Kvaerner Canada Ltd. | |
| | TTL Supply Ltd. | |
| Piping Bulks | PJ Piping | |
| | Amec Black & McDonald Limited | |
| Platform Decommissioning Services | EM&I Stantec Ltd. | |
| Owner and Manager all Landley (Owner b) | Atlantic Towing Ltd. | |
| Support Vessels (Anchor Handler & Supply) | Secunda Canada LP | |
| Remote Operated Vehicle (ROV) Services | DOF Subsea Canada | |
| Marine Warranty Surveyor | London Offshore Consultants | |
| • | Interocean Marine Services (Canada) | |
| Third Party and Rig Inspection Services | Killick Group Ltd. | |
| <u> </u> | Waterford Energy Services Inc. | |
| Rig Positioning / Survey Services | DOF Subsea Canada | |
| Refurbishment of Temporary Hydraulic Power Units | Pennecon Hydraulic Systems | |



SCHEDULE

| Activity | Target | Estimated Duration | |
|--|--|-----------------------|--|
| Gas Pipeline and Onshore | | | |
| Gas pipeline flushing and pigging | Completed (June-July 2020) | 1 month | |
| Gas pipeline disconnects | August 2020 | 1 week | |
| Onshore facilities removal and restoration | 2020 | 1 month | |
| Subsea | | | |
| Flowline flushing and cleaning | Q3 2019 | 3 weeks | |
| Flowline disconnects at wells | Q3 2019 | 2-3 weeks | |
| Flowline disconnects at platform | 2020 | 2-3 weeks | |
| Subsea structures removal | 2020 | 1-2 weeks | |
| Well Plugging and Abandonment | | | |
| Offshore execution | Beginning in late 2019 - early 2020 | 4-5 months | |
| Production Platform | | | |
| Platform decommissioning | Ongoing | - | |
| Platform de-install | July-August 2020 | 1 week | |

CONTACTS

A key component of this information update is to provide up-to-date information on key activities. Encana is available to meet with interested groups that would like to discuss potential effects, concerns, and interests related to the decommissioning activities so that these may be considered in the decommissioning planning process.

For additional information, please feel free to contact:

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Also visit Encana's Atlantic Canada website for more information, including business opportunities: https://www.encana.com/communities/canada/atlantic/