

# Cliff Head Offshore Operations Environment Plan Revision

November 2022

In accordance with the Commonwealth's Offshore Petroleum and Greenhouse Gas Storage (OPGGs) (Environment) Regulations 2009, Triangle Energy (Operations) Pty Ltd (TEO) is required to develop and implement a 5-year revision of its current Environment Plan (EP) for the ongoing offshore operation and maintenance of the Cliff Head Alpha (CHA) platform and subsea pipelines in Commonwealth waters.

## WHO IS TRIANGLE ENERGY?

Triangle Energy, through its subsidiary TEO is an oil exploration and production company based in Perth, Western Australia. The company is the majority owner (78.75%) and registered operator of the Cliff Head Oil Field and Arrowsmith Stabilisation Plant (ASP), which are the only offshore and operating onshore crude oil facilities in the Perth Basin (**Figure 1**).

## WHERE IS THE PROJECT LOCATED?

The Cliff Head Oil Field is located in Commonwealth waters in the Perth Basin, about 270 kilometres (km) north of Perth and 20 km south-southwest off the coast of Dongara, Western Australia (WA; **Figure 2**). The oil field includes production and injection wells, and the CHA unmanned offshore wellhead platform.

The CHA is connected to the onshore ASP via twin 14 km production and injection pipelines, a subsea power and control cable and a chemical supply umbilical strapped to the production pipeline. The pipelines extend from the platform to the shore; crossing beneath the shoreline via a horizontal directionally drilled hole located about 500 m offshore. Approximately 4.9 km of the subsea pipelines lie in Commonwealth waters.

**FIGURE 1. Cliff Head Alpha Offshore Platform**





## WHAT OPERATIONAL ACTIVITIES ARE COVERED BY THE EP?

**Production:** Production will continue from the Cliff Head facilities, which at present produces approximately 95m<sup>3</sup>/d (700 barrels of oil per day) from the Cliff Head field. The oil is heavy and waxy and the reservoir has very low pressure resulting in a very low environmental spill risk. Reservoir fluid, both oil and water, is produced from five production wells using electrical submersible pump (ESP) wells.

**Offshore Platform and Wellhead:** Inspection, maintenance and repair (IMR) will be carried out at regularly as required. Typical inspection activities include visual surveys via a remotely operated vehicle, side scan sonar surveillance, cathodic protection measurements and ultrasonic condition checks. Maintenance of infrastructure is required at regular and/or planned intervals to maintain performance reliability and prevent deterioration or failure of equipment. Repair activities are those required when a subsea system or component is degraded or damaged as defined by design codes. Workover activities will be conducted intermittently as required, e.g. to replace an ESP or production tubing.

**Sidetrack Drilling:** Sidetrack activities are planned for at least one production well, which will include abandonment of the existing production interval. A new sidetrack hole will be drilled to the new reservoir target with a blowout preventer and riser in place. Drilling will use water-based fluids and cuttings will be retrieved to the surface. The well will be completed with an ESP run on production tubing. The well will then be brought online with production managed through the existing Xmas tree and surface pipework and production safety systems.

**Offshore Pipeline:** IMR activities will be undertaken periodically on the pipelines including freespan rectification works, visual inspection by ROV or diver, ultrasonic inspection, inspection and rectification of cathodic protection, emergency clamping and umbilical or subsea repair. Helicopter surveillance of the pipeline is carried out every 21 days.

**Activity Vessels:** Operations support vessels will be used to undertake IMR and support activities. The vessel size and type will be dependent on the work scope. All vessels used in relation to CHA operations will be commercial vessels with a suitable survey class for the activities required.

**Decommissioning:** Ongoing maintenance of the Cliff Head facilities will be continued under the Operations Environment Plan until decommissioning activities commence. An overview of decommissioning planning will be provided in the Operations EP in line with TEO's obligations to maintain and remove structures, equipment and property brought onto the title under Section 572 of the OPGGS Act. TEO notes that alternative options to complete removal may be considered providing equal or better environmental, safety and well integrity outcomes can be demonstrated, and that the alternative approach complies with all other legislative and regulatory requirements. Decommissioning arrangements will be the subject of a separate EP and stakeholder feedback will be sought by TEO during the decommissioning planning process.



## HOW DO THE OFFSHORE OPERATIONS AFFECT FISHING & OTHER VESSEL ACTIVITIES?

The 500 m area around the platform is an exclusion zone and a gazetted Petroleum Safety Zone, which excludes other vessels and fishing activities from occurring in this area. Additionally, the operational area extends 500 m either side of the pipelines. The location of the pipelines are marked on nautical charts available from the Australian Hydrographic Office with the general advice that vessels should not anchor or trawl in the vicinity. However, TEO has a memorandum of understanding (MOU) in place with the Dongara Professional Fisherman's Association that allows traps to be placed along the pipeline for rock lobster fishing.

In addition to a helicopter survey every 3 weeks, a vessel will conduct an inspection along the pipeline every two years. In the unlikely event that any significant maintenance or repair work is required to the pipeline, a vessel may be moored on site. An additional vessel may then be required to transit to and from the site to service the works. Though no formal exclusion zones apply around project vessels, other vessels and fishers may be asked to keep away from the immediate vicinity while the works are taking place. Fishers and other relevant stakeholders will be notified prior to any maintenance or repair activities taking place.

## HOW ARE POTENTIAL ENVIRONMENTAL IMPACTS BEING MANAGED?

The environmental risks and impacts from the continued Cliff Head operations in Commonwealth waters are managed in accordance with the Cliff Head Offshore Operations EP. Key control measures include:

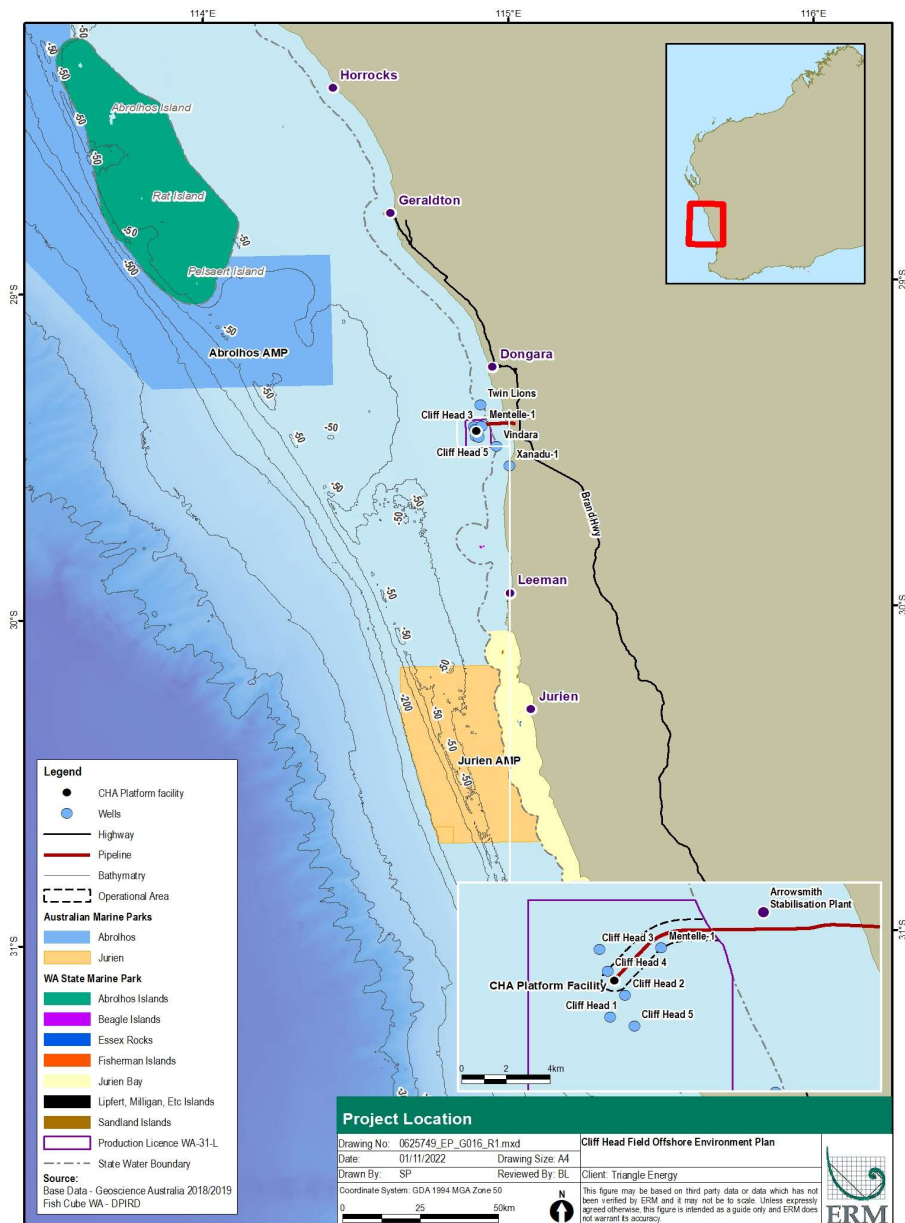
- Maintenance of the Petroleum Safety Zone around the platform to prevent vessel collisions.
- Implementation of the Cliff Head Asset Integrity Management Plan, to ensure the integrity of the Cliff Head assets are maintained.
- Corrosion control system in place to prevent corrosion of pipeline and subsequent leaks.
- Aerial surveys undertaken every 21 days to allow early detection of leaks from pipelines.
- All project vessels managed in accordance with in compliance with the *Navigation Act 2012* and associated Marine Orders.

## WILL THE EP BE PUBLICLY DISCLOSED?

In accordance with regulatory requirements, the revised EP will be publicly available on the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) website.

TEO encourages your feedback and input into the revision of this EP, and is committed to maintaining your confidentiality. All communications will be logged, assessed and acknowledged with a response, and incorporated into the EP. Information determined to be sensitive will not be made public. Stakeholders are advised to inform TEO if any information provided is confidential and not to be published.

**FIGURE 2. Location of the Cliff Head oil field, showing the platform in Commonwealth waters, and the subsea pipelines linking the platform to the onshore Arrowsmith Stabilisation Plant**



If you would like to provide comment or seek further information on the Cliff Head Offshore Operations, please contact Bryce Donaldson:

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