

Direction – section 574

Offshore Petroleum and Greenhouse Gas Storage Act 2006

Direction number: 740

Directions

To: Esso Australia Resources Pty Ltd (ABN 62 091 829 819);

Issue of Directions - Section 574 of the *Offshore Petroleum and Greenhouse Gas Storage Act 2006 (Cth)*

Attached is a written notice of directions made under s 574 of the *Offshore Petroleum and Greenhouse Gas Storage Act 2006 (Cth)*.

Please provide written acknowledgement of receipt of this direction.

A person commits an offence if:

- (a) the person is subject to a direction under s 574; and
- (b) the person engages in conduct; and
- (c) the person's conduct breaches the direction.¹

Please provide this office with documented evidence of your compliance with the notice of directions.

If you have any questions relating to the content of the instrument, please contact Dr Christine Lamont on telephone 08 6188 8839.

Yours sincerely

Signed:



Cameron Grebe

Head of Division - Environment

Dated: 21 May 2019

NOTES: (Please see explanatory statement)

¹ Section 576 of the *Offshore Petroleum and Greenhouse Gas Storage Act 2006 (Cth)*

I, Cameron Grebe, Head of Division - Environment of the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA), make this instrument under section 574 of the *Offshore Petroleum and Greenhouse Gas Storage Act 2006* (Cth) pursuant to a CEO instrument of delegation dated 20 August 2018.



Cameron Grebe

Head of Division - Environment

National Offshore Petroleum Safety and Environmental Management Authority

Dated: 21 May 2019

DIRECTION

1. Commencement

This direction takes effect on date of signature.

2. Application

This direction applies to Esso Australia Resources Pty Ltd (ABN 62 091 829 819) (Esso) a registered holder of titles VIC/L3, VIC/L4, VIC/L5, VIC/L7, VIC/L9, VIC/L10, VIC/L11 and VIC/L13.

3. Directions

- (1) The titleholder is given the directions contained in Schedule 1.
- (2) Each direction in Schedule 1 is a separate direction.

Schedule 1 – Directions**Direction 1**

On all Esso offshore production facilities operating in respect of titles VIC/L3, VIC/L4, VIC/L5, VIC/L7, VIC/L9, VIC/L10, VIC/L11 and VIC/L13:

- (i) Within 60 days of the issue of this direction update Esso's measurement and management of produced water discharges as follows:
- Follow the full ASTM D7066-04 (2017) method, including step 9.3 to acidify samples, in the analysis of produced formation water by Spec 21/Infracal, and update Esso's Work Aid Gen 100-701 Rev 2 - Determination of Oil in Formation Water accordingly.
 - Introduce water handling actions to prevent produced water being discharged overboard above regulatory limits i.e. daily average concentrations over 30 mg/L as measured by analysis of produced formation water by Spec 21/Infracal; and update Esso's Work Aid Gen 100-102 Rev 5 - System Monitoring, Recording & Reporting to include this step.
- (ii) From the date of issue of this direction commence recording non-compliances against the environmental performance standard of "Oily water treatment system operational to ensure oil has been removed to below 30mg/L oil in water content before discharge to the sea" to include: measurements of average daily (24 hour period) oil in water as measured by Sigrist online analyser; measurements of average daily (24 hour period) oil in water as measured by Spec 21/InfraCal analysis; and include non-compliances in monthly reports to NOPSEMA.
- (iii) From the date of issue of this direction commence recording against the environmental performance standard of "A stand-alone accredited test is undertaken monthly to assess the performance of the online oil in water monitor. Ensure that the online oil in water monitor is re-calibrated if its performance does not pass the test" where (1) alignment between laboratory, Spec 21/InfraCal and online analysers have not fully been resolved within the same month that the sample has been taken with supporting evidence and/or (2) where laboratory samples show oil in water greater than 30 mg/L. Include non-compliances in monthly reports to NOPSEMA.
- (iv) From the date of issue of this direction commence calculating "total maximum environmental load" in kg/d on a daily basis using the volumes of produced formation water discharged and two methods of calculating oil in water (1) daily Sigrist online analyser results and (2) daily Spec 21/InfraCal analysis results for each of Esso's offshore production facilities. The threshold for adaptive management being greater than 330 kg/d as defined in Esso's Environment Plans should also be considered as the threshold for recordable incidents, and non-compliances should be included in monthly reports to NOPSEMA.

Direction 2

- (i) Supply records to NOPSEMA to show compliance with Direction 1 within 7 days of actioning Direction 1(i).
- (ii) Esso must adjust Work Aids for Direction 1 to address any amendments identified by NOPSEMA within 7 days of receiving NOPSEMA's comments resulting from Direction 2(i).
- (iii) Continue measurement and management of produced formation water management arrangements as per Direction 1 until the outcomes from Direction 3 and 4 are finalised or until NOPSEMA has accepted five-year Environment Plan revisions for all Esso offshore production facilities when revised produced formation water management arrangements will come into effect.

- (iv) Continue reporting as per Direction 1 until NOPSEMA has accepted five-year Environment Plan revisions for all Esso offshore production facilities when revised produced formation water management arrangements will come into effect.

Direction 3

- (i) Commission an independent and suitably qualified body to: provide a quantitative estimate of the difference between measured (Sigrist and Spec21/InfraCal) and actual (onshore laboratory) oil in water results for each of Esso's offshore production facilities prior to the issuing of this direction. Esso must confirm NOPSEMA's agreement with the independent body commissioned to undertake the work and the scope of work for the contract, before it is undertaken.
- (ii) Commission an independent and suitably qualified body to summarise the production process in relation to oil in water; undertake a critical review identifying improvements that could be made to offshore measurement methods; and propose measures that will improve the calibration between offshore measurement methods and the onshore laboratory within appropriate time frames and therefore the accuracy and reliability of offshore measurement methods. Esso must confirm NOPSEMA's agreement with the independent body commissioned to undertake the work and the scope of work for the contract, before it is undertaken.
- (iii) Commission an independent and suitably qualified body to critically review current procedures and provide advice on updated and improved procedures for data recording, reporting and compliance summaries generated in relation to produced formation water management for each of Esso's offshore production facilities. This should also include all evidence that oil in water readings are within regulatory limits and that corrective calibration actions have been fully completed in appropriate time frames. Esso must confirm NOPSEMA's agreement with the independent body commissioned to undertake the work and to the scope of the contract, before it is undertaken.

Direction 4

- (i) Esso must provide NOPSEMA with the proposed contractor and scopes of work for Direction 3 within 14 days of the date of issue of the direction. Esso must adjust scopes of work for the suitably qualified body to address amendments identified by NOPSEMA prior to commencing work.
- (ii) Supply completed estimates and critical reviews for Direction 3 to NOPSEMA within 90 days of the date of issue of the direction and provide records to NOPSEMA demonstrating that the proposed improvement measures are implemented by the end of 150 days after the date of issue of these directions.

Direction 5

Commission an independent and suitably qualified body, based on the results of Direction 3, to provide an accurate quantitative estimate of oil loads discharged to the environment by each of Esso's production facilities in produced water since acceptance of all of Esso's Bass Strait production facilities with in-force Environment Plans as required by regulation 14 (7) of the Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009. The record should include oil in water concentrations (mg/L), volumes of water (ML/d) and environmental loads (kg/d). Esso must confirm NOPSEMA's agreement with the independent body commissioned to undertake the work and to the scope of the contract, before it is undertaken.

Direction 6

- (i) Esso must confirm NOPSEMA's agreement on the proposed contractor and scopes of work for Direction 5 to NOPSEMA within 21 days of the issue of the direction. Esso must adjust scopes of work for the suitably qualified body to address amendments identified by NOPSEMA prior to commencing work.
- (ii) Supply the quantitative record discharges as described in Direction 5 to NOPSEMA within 150 days of the issue of the direction.

Direction 7

Esso must place a copy of these directions in a prominent place accessible to the workforce on each facility to which these directions relate.

*Offshore Petroleum and Greenhouse Gas Storage Act 2006***Explanatory Statement****Background**

In all of Esso's EPs covering all of their offshore facilities, as accepted by NOPSEMA, Esso has committed to environmental performance standards related to the discharge of produced water from these offshore facilities that include the following (Table 9-1 RA 29):

- *Oily water treatment system operational to ensure oil has been removed to below 30mg/L oil in water content before discharge to the sea*
- *A stand-alone accredited test is undertaken monthly to assess the performance of the online oil in water monitor. The online oil in water monitor is re-calibrated if its performance does not pass the test*
- *The following level of performance is required of OIMS System 6-6: Separator low oil-water interface level instrumentation, oil phase detectors and online OIW monitors are maintained in accordance with the equipment strategy, which defines criticality of the equipment, and the corrective and preventative maintenance program; the corrective and preventative maintenance program is loaded into a computer-based maintenance system, which generates a monthly exception report.*

NOPSEMA has collected evidence through multiple inspections that indicate that Esso Australia Resources Pty Ltd's (Esso) offshore methods of measuring oil in water on Esso's production facilities are inaccurate and unreliable, and are underestimating oil in water content of produced water discharged to the environment. Subsequently, Esso is unable to determine whether oil in water discharges meet levels accepted in the in force Environment Plans (EPs). This is due to the current methods of measuring oil in water and lack of mitigation measures to avoid discharge of oil in water above regulatory limits. NOPSEMA provided these conclusions in written reports to Esso and made numerous inspection recommendations for Esso to rectify this issue. While some actions have been taken by Esso in response to NOPSEMA inspection recommendations in an attempt to rectify the issues, these actions have failed to fully address inaccuracies in oil in water measurements and as a result this enforcement action is being taken.

Esso failed to address an inspection recommendation in relation to produced water management made during an inspection of the Tuna facility in February 2017. Subsequently, NOPSEMA collected evidence in two inspections in February and March 2019 that Esso had been discharging produced formation water with oil in water concentrations above regulatory limits from multiple platforms on a regular basis. Esso have not been reporting these discharges to NOPSEMA as recordable incidents as they are required to under the commitments they have made in the relevant Environment Plan.

NOPSEMA also collected evidence indicating that Esso have been aware of inaccuracies in the method used to measure oil in water concentration for some time and that this method underestimates the amount of oil in water. Esso have not implemented recommendations made in Esso's internal reports to resolve these inaccuracies.

NOPSEMA's inspection findings are that the oil in water discharge concentrations being recorded at offshore facilities cannot be relied upon as accurate, due to deviation from the measurement standard used to measure oil in water offshore, frequent failure to meet the required monthly laboratory calibration tests and lack of evidence to demonstrate that maintenance tasks to resolve these inaccuracies had been completed. As a result of inadequate confidence in the measured oil in water discharge concentrations, it is concluded that Esso have not been maintaining an accurate quantitative record of oil in water discharges and have not been implementing management measures to prevent produced water being discharged with oil in water concentrations above standard industry and international practice limits set in the in force EPs.

The Bass Strait marine ecosystem provides habitat for a range of species including fish, sharks and rays, marine reptiles, birds and marine mammals including species listed under the *Environment Protection and Biodiversity Conservation Act 1999* and species that are important for state and commonwealth fisheries. Impacts from Esso produced formation water discharges to Bass Strait water quality and environmental receptors are currently uncertain.

Legislation

Part 6.9 of the *Offshore Petroleum and Greenhouse Gas Storage Act 2006* (Cth) (the Act) provides that NOPSEMA has functions in relation to the occupational health and safety of persons engaged in offshore petroleum operations or offshore greenhouse gas storage operations; the structural integrity of facilities, wells and well-related equipment; and environmental management.

Under subsection 574(2) of the Act, NOPSEMA may issue a direction about any matter in relation to which regulations may be made.

Section 666(2) of the Act gives the CEO of NOPSEMA the power to issue a direction under section 574 of the Act. The power may be delegated by the CEO under section 675 of the Act.

Under sub section 576(1) of the Act, if a person is subject to a direction under section 574 and the person engages in conduct that breaches that direction, the person commits an offence:

- **Fault-based offence** – 5 years imprisonment or 2,000 penalty units, or both (10,000 penalty units for a body corporate).
- **Strict liability offence** – 100 penalty units (500 penalty units for a body corporate).
- **Civil penalty provision** – 525 penalty units (2,625 penalty units for a body corporate).
- **Continuing offences** – a person who commits a fault-based or strict liability offence commits a separate offence in respect for each day during which the offence continues. The maximum penalty for each day that the offence continues is 10% of the maximum penalty that can be imposed in respect to that offence.
- **Continuing contraventions of civil penalty provisions** – a person who contravenes the civil penalty provision commits a separate contravention in respect for each day during which the contravention continues. The maximum civil penalty for each day that the contravention continues is 10% of the maximum civil penalty that can be imposed in respect to that contravention.

Note: the value of one penalty unit is \$210 pursuant to section 4AA(1) of the *Crimes Act 1914* (current as of 6 September 2017).