



Rate of recovery & equipment & procedures

Part 4 of the *Offshore Petroleum and Greenhouse Gas Storage (Resource Management and Administration) Regulations 2011* (RMA Regulations) sets out the requirements for approval of a rate of recovery of petroleum from a petroleum pool within a production licence area.

A breach of a rate of recovery approval is an offence and may be grounds for cancellation of a production licence.

What is a rate of recovery approval?

A petroleum production licensee must obtain written approval from the Joint Authority of the rate of recovery of petroleum from the pool **prior to** undertaking any recovery of petroleum.

In making a decision, the Joint Authority must ensure that the rate is consistent with the accepted field development plan (FDP) for the field that includes the pool.

Licensees should review the accepted FDP for the pool well in advance. If the rate of recovery you wish to propose is inconsistent with the accepted FDP, you should consider first applying for a variation of the FDP. This can take up to 6 months.

What are equipment and procedures?

The Joint Authority must not approve the rate of recovery application unless it includes evidence that the equipment and procedures used to determine the quantity and composition of petroleum and water have been approved:

- i. if the *Offshore Petroleum (Royalty) Act 2006* (Royalty Act) applies—under s 13 of that Act; or
- ii. if that Act does not apply—by the Joint Authority

When should I submit the applications?

Licensees should submit the rate of recovery and equipment and procedures applications as soon as practicable, and a **minimum 12 weeks** prior to the earliest possible start-up date for any petroleum recovery from the pool, including well clean-up and commissioning activities.

If the Royalty Act applies, the equipment and procedures application should be submitted to Western Australia Department of Mines, Industry Regulation and Safety (DMIRS) in a timely manner so that approval is given before the rate of recovery application is submitted.

How do I submit the applications?

If the Royalty Act applies, licensees should submit the equipment and procedures application to DIMRS (via petroleum.titles@dmirs.wa.gov.au) as soon as practicable. Once the application is approved, the licensee can submit the rate of recovery application to NOPTA.

If the Royalty Act does not apply, the rate of recovery and equipment and procedures application can be submitted to NOPTA simultaneously with one application form and fee.

One application is required per production licence. One hard copy and one soft copy must be submitted to NOPTA (in person/via post and to titles@nopta.gov.au). Each submission must contain a correctly executed application form, evidence of payment of the application fee, a copy of the Form 6 Eligible Voluntary Action (if relevant) and the supporting information for the application.

What supporting information is needed?

Content guidance for rate of recovery and equipment and procedures submissions is set out below. This is not an exhaustive list.

If further information is required in order to assess the application, NOPTA may issue a Request for Further Information. This could add additional time to the assessment process.

Rate of recovery submission

The Rate of recovery submission must demonstrate how the proposed rate of recovery is consistent with the accepted FDP.

The submission should include any relevant background information, a location map showing field outlines and Graticular Block information, and a brief summary of the proposed development plan.



Regulation 4.18(2) of the RMA Regulations states that a rate of recovery application must be accompanied by:

Proposed rate of recovery – this should include:

- description of the proposed rate of recovery, with a breakdown of pools and wells (as required) (see Example Table below)
- technical justification for the proposed rates e.g. production strategies, reservoir quality, assumed depletion mechanism and reservoir drive, expected deliverability, etc.
- a discussion to demonstrate how the proposed rate of recovery is consistent with the accepted FDP.

Past performance (if any) of production wells in the licence area – this should include:

- details of any past production, including estimates of well (and pool) performance (including well unloading and clean-up results if available)
- if no historical production data is available, provide details of regional analogues (and how the proposed performance compares).

Prediction of future performance of production wells in the licence area – this should include:

- Production forecasts:
 - pool profiles (Low, Mid and High cases), including cumulative production over time
 - details of the latest static and dynamic modelling used to predict performance (discuss assumptions and uncertainties)

- individual well (production and injection) profiles (Low, Mid and High cases)
 - hydrocarbon and water rates (initial, plateau and anticipated maximum rates)
- production well modelling, including (where appropriate):
 - position of wells within the pool(s)
 - perforated intervals and target reservoirs
 - standoff distance(s) from underlying fluid contact(s); and
 - details of sand/inflow control.
- technical and operational constraints
- sensitivity analysis on production rates
- project schedule impacts on production, including possible tie-ins; compression/water handling timing; deployment of enhanced recovery technology, etc.

Estimate of the ultimate recovery from the pool – this should include:

- estimated hydrocarbons in place and ultimate recovery
- impacts of proposed rate on ultimate recovery and proposed reservoir management strategies.

Equipment and procedures – this should include:

- evidence that the equipment and procedures used to determine the quantity and composition of petroleum and water have been approved:
 - if the Royalty Act applies—under s13 of that Act; or
 - if that Act does not apply—by the Joint Authority.

Pool Name	Well Name	Proposed Rate of Recovery							
		Oil		Gas		Condensate		Water	
		Metric units/day	Field units/day	Metric units/day	Field units/day	Metric units/day	Field units/day	Metric units/day	Field units/day
XYZ	XYZ - 1	1.2	1,234	1.2	1,234				
	XYZ - 2			12.3	2,345	123.4	23,456		
XYZ Pool Table		X	X	X	X	X	X	X	X
ABC	ABC-1	12.3	2,345					123.4	34,567
ABC Pool Total		X	X	X	X	X	X	X	X

Table 1. Proposed rate of recovery of petroleum for the XYZ and ABC pools. Note that proposed pool totals should indicate anticipated pool offtake rates (as determined by reservoir deliverability, production capacity, facility constraints and production forecasts considerations) and are not expected to be summations of individual well rates.



Equipment and procedures submissions

Sub regulation 4.18(2)(d) of the RMA Regulations requires that a rate of recovery application must be accompanied by evidence that the equipment and procedures used to determine the quantity and composition of petroleum and water have been approved.

The submission(s) should provide relevant details that include:

- the standards and codes of practice used
- description of the production pathway (including sizes and flow capacity) and how metering is performed at each relevant stage i.e. from wellheads to manifolds, flowlines, processing facilities, separations, disposal, etc.
- flow and/or block diagrams showing the location of relevant meters along this production pathway
- details of data monitoring equipment and reporting systems for production data
- details of how operational data is gathered:
 - production rates, water-cut, hydrocarbon ratios, flowing temperatures and pressures.
- details of meters used to measure the content of hydrocarbons and water in unprocessed well stream:
 - pressure, temperature and phase fractions.
- description of metering within processing facility, for example:
 - inlet metering (including meter type)
 - Fiscal/Custody Transfer metering (including meter type), and the frequency of accuracy verification tests of these meters
 - produced formation water
 - sand detection
 - flaring; and
 - additional discharge (if any).
- summary of meters used, their accuracy and operating range (see example table below)
- details of how daily production volumes are allocated to each well
- net total produced hydrocarbons calculation methodology.

Meter	Operating Range		Meter Accuracy
XX Brand phase measurement	e.g.2000-4000 bbl/d	e.g. 318 – 6360 m ³ /d	±2.5%
XX Brand gas flare, ultrasonic	e.g.0 – 25 MMscf/d	e.g. 0 – 0.7 Mm ³ /d	±2.0%

Table 2. Metering descriptions, including accuracy and operating range

More information

Application forms are published on the NOPTA website under '[Forms & templates](#)'. Application fees are in the Schedule of Fees on the NOPTA website under '[Cost recovery and fees](#)'. If you have any questions for NOPTA, please contact titles@nopta.gov.au.

Please note: this document is intended as a guide only and should not be relied on as legal advice or regarded as a substitute for legal advice in individual cases.

Version History

Version	Date	Comment
2.0	30/07/2019	Update to layout, format and links.