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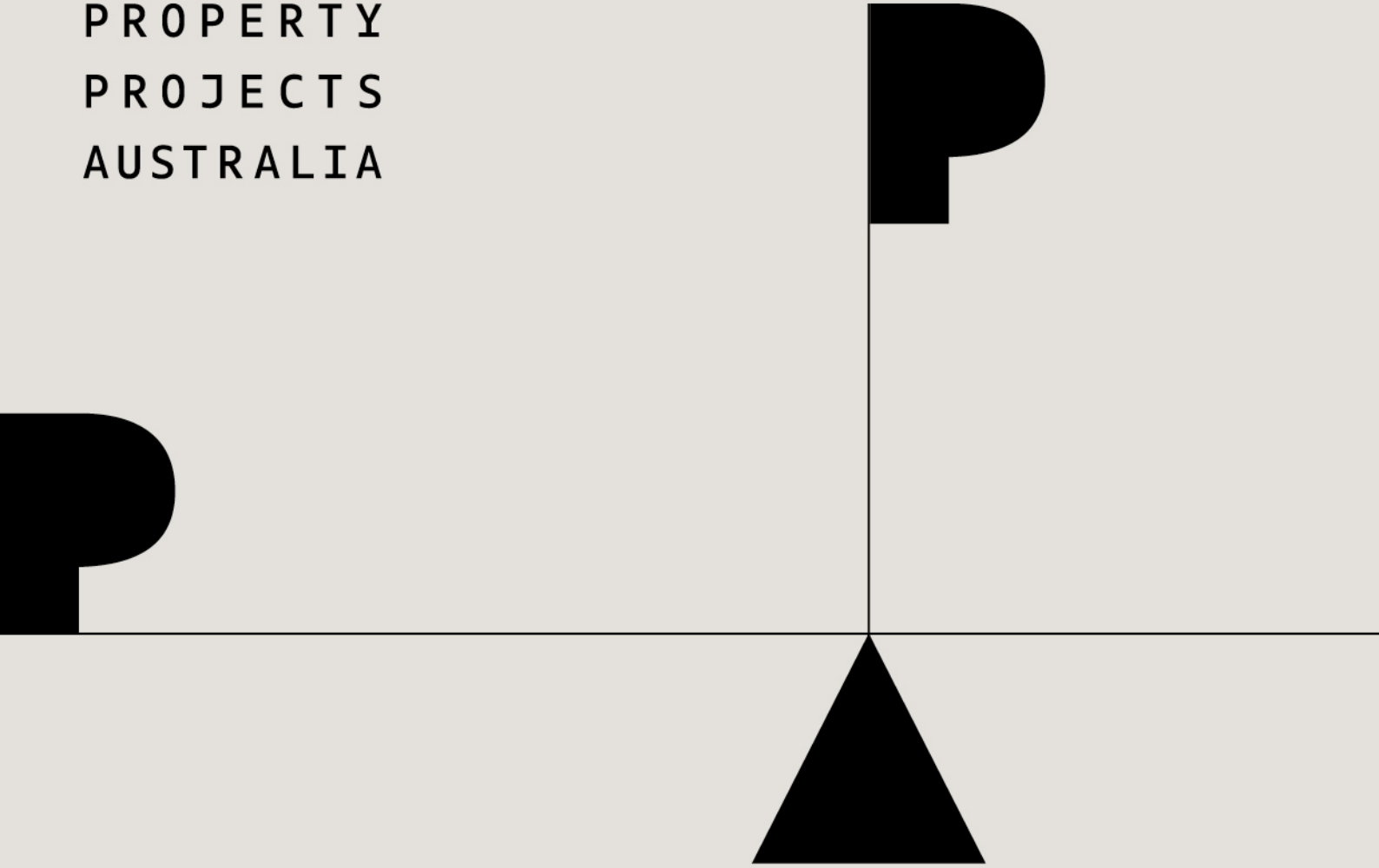

Assessment Report

REGIONAL PLANNING INTERESTS ACT 2014

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PROPERTY PROJECTS AUSTRALIA

Assessment Report

REGIONAL PLANNING INTERESTS ACT 2014

- Assessment Report submitted in support of application for Regional Interests Development Approval for carrying out activities in a Priority Living Area under the Regional Planning Interests Act 2014.

Prepared by Property Projects Australia Pty Ltd
Prepared for Bronco Energy Pty Ltd

3 September 2025

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APPENDICES

1. ABOUT THIS REPORT

Property Projects Australia (PPA) has prepared this report to accompany the assessment application for a Regional Interests Development Approval (RIDA) required under Part 3 Division 2 of the Queensland *Regional Planning Interests Act 2014* (RPI Act). This report is intended to be read in conjunction with the assessment application form provided.

2. BACKGROUND MATERIAL

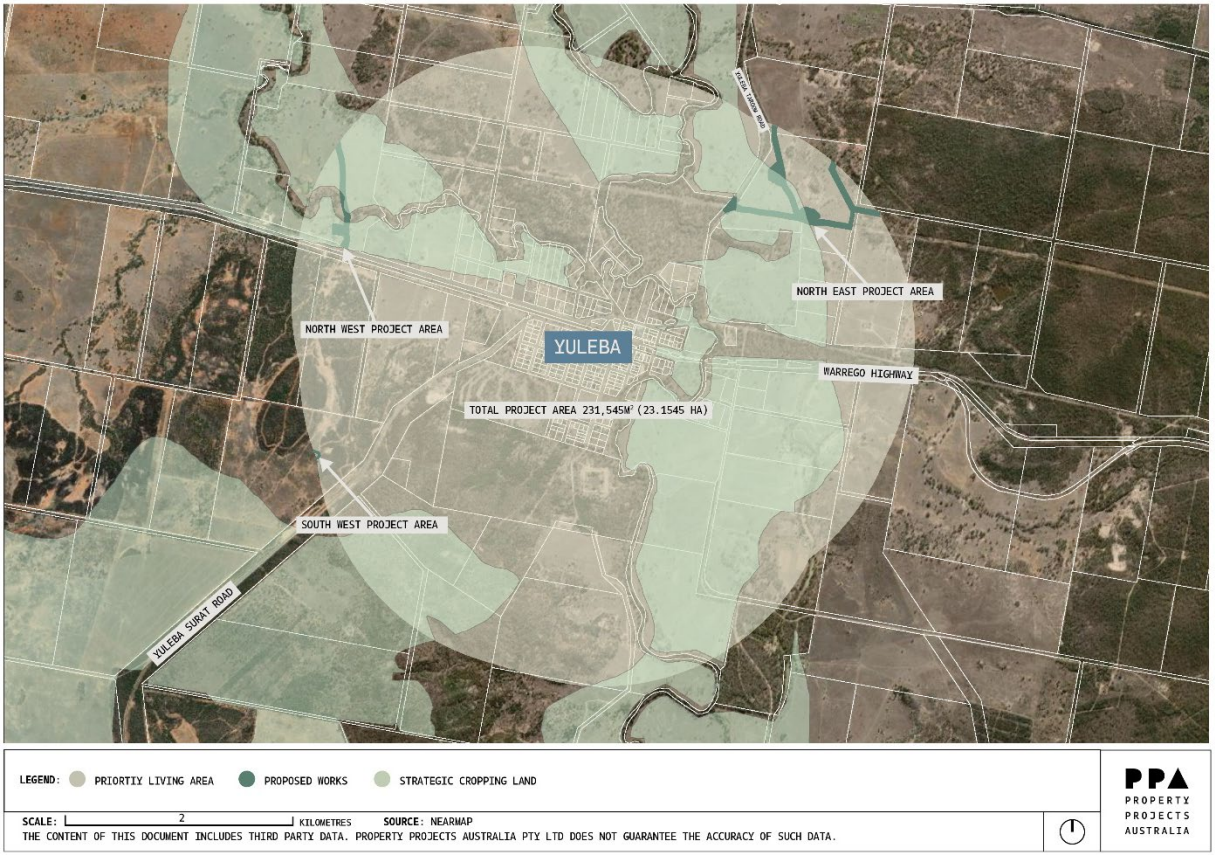
2.1. Priority Living Area

The land subject to this application is located within a Priority Living Area (PLA) (**Figure 1**) as defined by the *Regional Planning Interests Act 2014* (RPI Act). A PLA represents an area of regional interest and is designed to provide certainty for investment in the development of towns and growth areas. The PLA encompasses both towns and the surrounding areas, ensuring the protection of these areas of regional interest.

2.2. Strategic Cropping Land

The land subject to this application is located within a Strategic Cropping Area (SCA) as defined by the RPI Act. Further, areas of mapped Strategic Cropping Land (SCL) as shown on the SCL Trigger Map intersect the land and activities subject to this application.

FIGURE 1: OVERALL PROJECT AREA & STRATEGIC CROPPING LAND MAPPING



No new disturbance (constituting a significant impact or otherwise) is proposed to be undertaken within areas mapped as SCL on the SCL Trigger Map as part of this application.

2.3. Assessment application

The following documents have been considered in the preparation of this report:

- *RPI Act Statutory Guideline 01/14: How to make an assessment application for a regional interests development approval under the Regional Planning Interests Act 2014*;
- *RPI Act Statutory Guideline 04/14: Carrying out resource activities and regulated activities within a Priority Living Area*;
- *RPI Act Statutory Guideline 06/14: Public Notification of assessment applications*; and
- *RPI Act Statutory Guideline 11-16: Companion Guide*.

Having regard to the above documents, this report outlines how the proposed resource activity meets the requirements of the Queensland *Regional Planning Interests Regulation 2014* (RPI Reg).

2.4. Environmental Authority and Resource Authority

All proposed resource activities subject to this application are located in Petroleum Lease (PL) 281 and the Santos Roma Shallow Gas Project Area East (RSGPAE) gas field. Resource (petroleum) activities in PL 281 are authorised under the conditions of the RSGPAE Environmental Authority (EA) EPPG00662213. The RSGPAE EA authorises petroleum activities across PLs 281 and 282, and Authority to Prospect (ATP) 631. The RSGPAE EA currently authorises several hundred Coal Seam Gas (CSG) production wells and associated supporting infrastructure. A copy of the RSGPAE EA and PL 281 tenure report are attached as **Appendix B**.

3. PLA ASSESSMENT CRITERIA

The RPI Reg identifies the required outcome for this application as follows:

> *The location, nature and conduct of the activity is compatible with the planned future for the priority living area stated in a planning instrument under the Planning Act.*

The associated prescribed solution under the RPI Reg is as follows:

> *The application demonstrates each of the following:*
>
> *a) The activity is unlikely to adversely impact on development certainty:*
>
> *i. For land in the immediate vicinity of the activity; and*
>
> *ii. The priority living area generally;*
>
> *b) Carrying out the activity in the priority living area, and in the location stated in the application, is likely to result in community benefits and opportunities, including, for example, financial and social benefits and opportunities.*

The RPI Act Statutory Guideline 04/14 (*Carrying out resource activities and regulated activities within a Priority Living Area*) provides specific guidance on how to address the abovementioned prescribed solution criteria. A response to each of the prescribed criteria as they relate to this application has been provided in **Appendix A**.

4. PROJECT DESCRIPTION

4.1. The Applicant

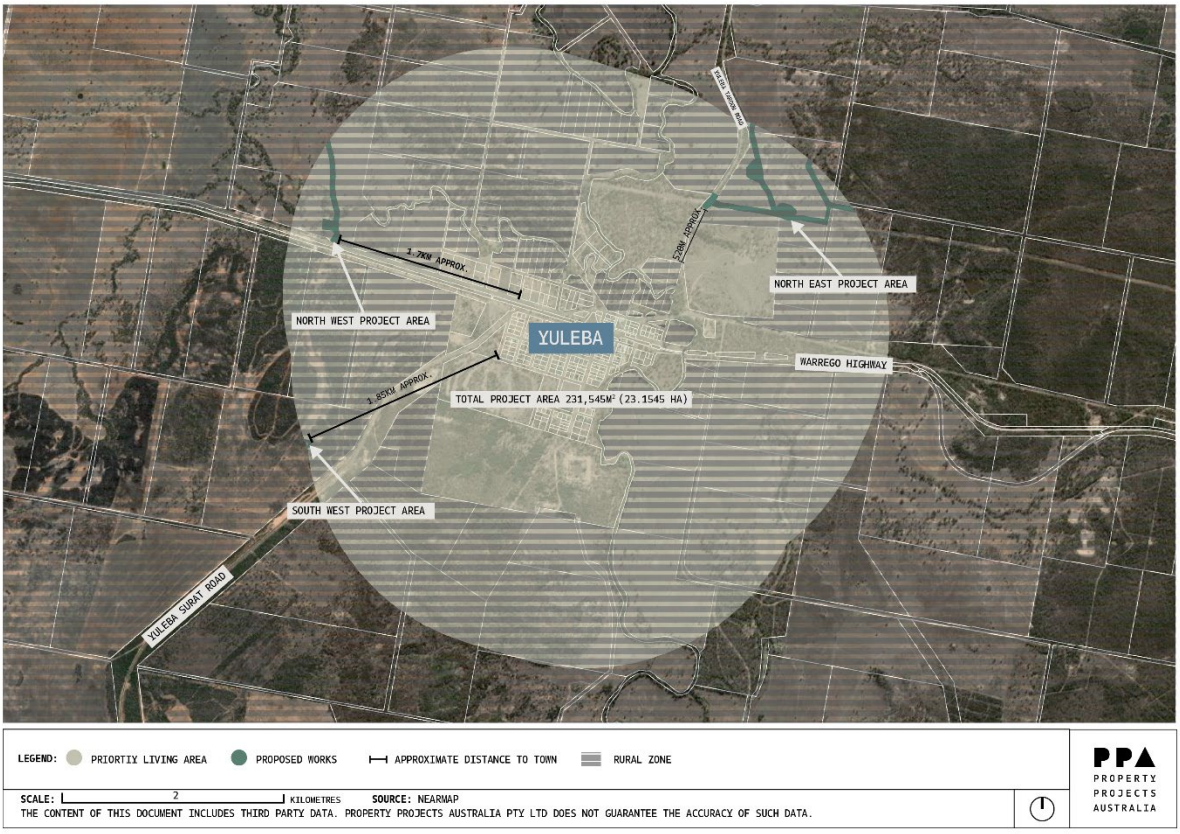
Bronco Energy Pty Ltd (henceforth referred to as 'Santos') on behalf of its joint venture partners Total Energies EP Australia III, PAPL (Upstream II) Pty Limited and KGLNG E&P II Pty Ltd, propose to undertake petroleum resource activities in resource authority PL 281.

4.2. Project Location

The project involves three project sites located on PL 281 in the Santos RSGPAE gas field. Petroleum resource activities are proposed to be undertaken at all three project sites. Further, the project sites are located within a rural area surrounding the township of Yuleba, on the border of the *Yuleba Priority Living Area* (henceforth referred to as the 'PLA') as depicted **in Figure 2**.

Detailed descriptions of each project site are provided in **Section 4.4**.

FIGURE 2: OVERALL PROJECT AREA



4.3. Roma Shallow Gas Project Area East

As discussed in Section 2.4, the RSGPAE gas field is a CSG production activity that consists of several hundred CSG production wells and associated supporting infrastructure. The RSGPAE gas field includes a substantial area of land surrounding the township of Yuleba.

4.4. Proposed Activities

Proposed resource activities to be located within the PLA are ancillary and associated activities to CSG production (**Figure 2**). The following sections outline the activities that are proposed to be undertaken at each of the three project sites. Santos standard access road design and turnout design drawings applicable to the below activities are provided as **Appendix D** and **Appendix E** respectively.

4.4.1 Southwest Project Area – 'Wattle Tee' *(Lot 287 on WV459)*

With reference to **Figure 3**, proposed activities include:

1. construction and use of a new temporary road allowing access to a CSG well (well located outside the PLA). Within the PLA, the temporary road (for the duration of CSG activities) will be approximately 70m in total length and approximately 12m wide (refer to Figure 3); and
2. well pad / lease (the well bore and most of the well pad / lease is located outside of the PLA). The well pad / lease will impact approximately 8m^2 of the PLA (refer to Figure 3).

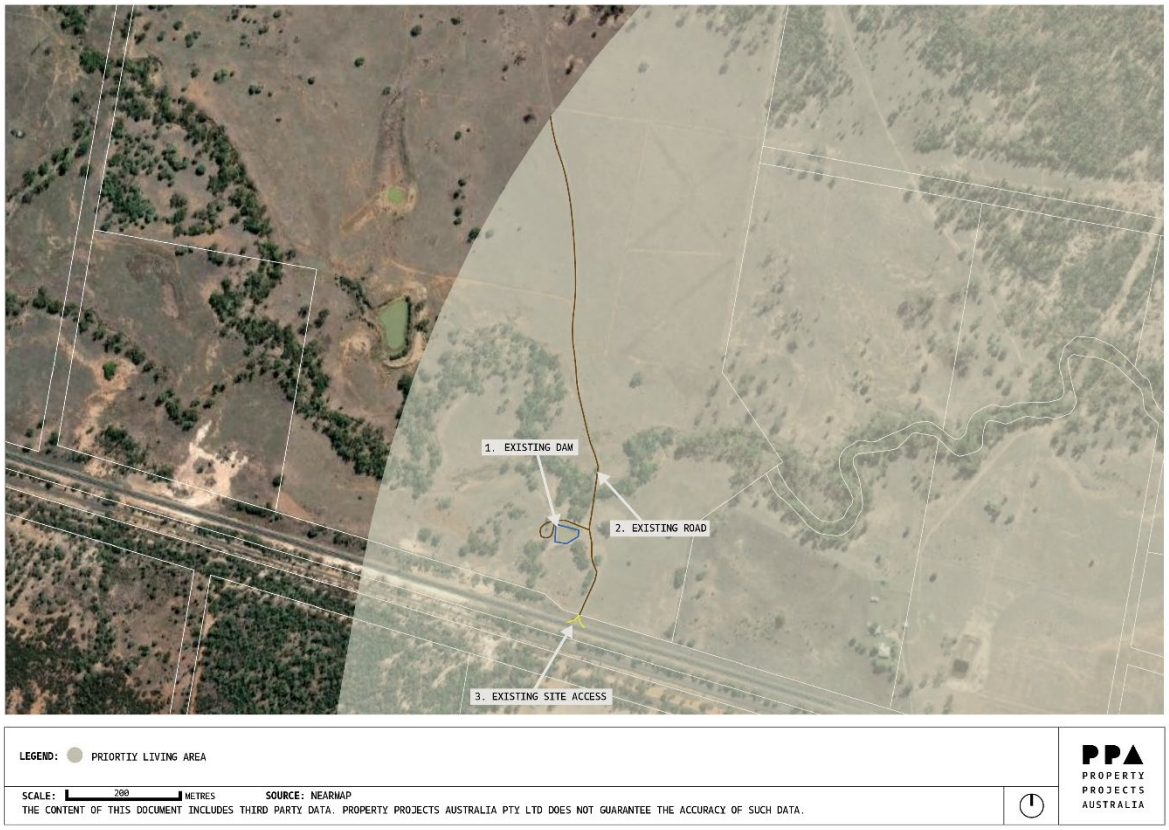
FIGURE 3: SOUTH WEST PROJECT AREA

4.4.2 Northwest Project Area – 'The Lagoons' (Lot 271 on WV1113)

With reference to **Figure 4**, proposed activities include:

1. use of an existing landholder dam for water supply;
2. use of an existing road (approximately 950 m of which is located within the PLA); and
3. use of an existing site access between the project site to the Warrego Highway.

FIGURE 4: NORTH WEST PROJECT AREA



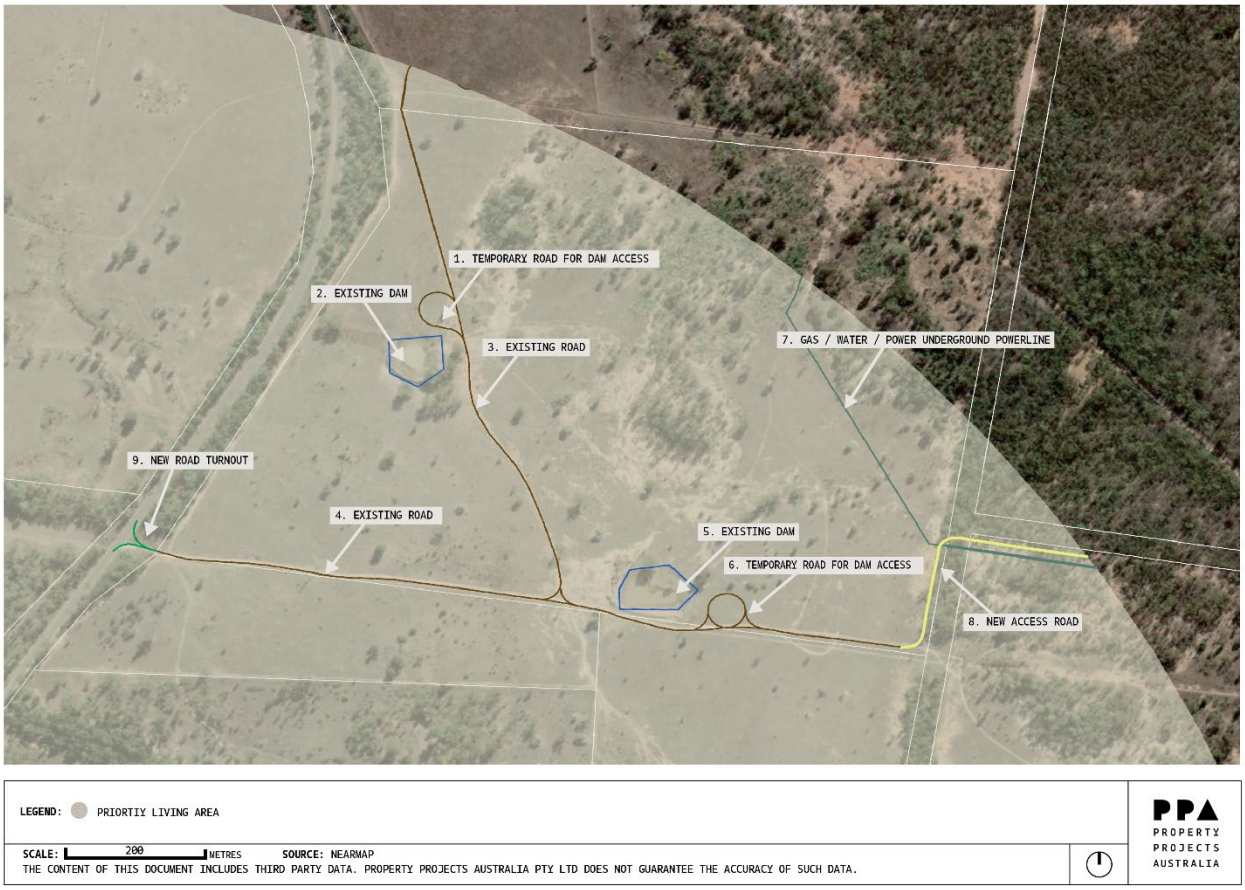
4.4.3 Northeast Project Area – 'Boxgrove' (Lots 109 on WV1081, 50 on WAL53532, 119 on WV237, 65 on WAL53531, Yuleba Taroom Road)

With reference to **Figure 5**, proposed activities include:

1. construction and use of a temporary access road to provide access to an existing dam (total length of approximately 150 m);
2. use of an existing dam;
3. use of an existing road (total length of approximately 770 m);
4. use of an existing road (total length of approximately 1 km);
5. use of a second existing dam;
6. construction and use of a new 150m long temporary access road to an existing dam;
7. construction of co-located gas and water flowlines and a power line, within a single trench approximately 20m wide (total length of approximately 675m within the PLA);
8. construction and use of a new road (total length of approximately 365 m within the PLA) (refer to **Appendix D**); and
9. construction and use of a new road turnout on Yuleba Taroom Road (approximately 50m in length) (refer to **Appendix E**).

The above-mentioned construction, maintenance, and use of new and existing roads will provide access to existing dams and nearby project sites (being located outside of the PLA) to undertake resource activities.

FIGURE 5: NORTH EAST PROJECT AREA



4.5. Affected Land Area

The total land area to be affected by the proposed resource activities is approximately 22.8 ha. This figure includes existing roads and dams within the affected area of the PLA. The distribution of this area across the three sites is summarised in the table below:

Table 1 – Schedule of Affected Areas

Site	Affected Area
North West	Approximately 5.5 ha
North East	Approximately 17.2 ha
South West	Approximately 0.1 ha
Total	22.8 ha

4.6. Application Requirement

The proposed resource activity is to be located within an area of regional interest, specifically the PLA. According to the RPI Act, a resource activity may only be undertaken within a PLA if the individual or entity carrying out the activity holds, or is acting under, a RIDA for the activity, or otherwise where an exemption applies. A RIDA ensures that the resource activity complies with specific criteria designed to manage and mitigate impacts on the PLA, preserving the area's regional interests.

5. TOWNSHIP OF YULEBA

5.1. Characteristics

Yuleba is a small rural town located on the Warrego Highway with a population of approximately 200 residents. The township is characterised by low-density residential development and offers a range of services, including a church, hotel, memorial hall, golf course, and general store. The area surrounding Yuleba is predominantly used for rural activities and includes a combination of cleared land primarily used mainly for grazing and areas of remnant forest. Further away from the township, various activities associated with natural CSG production (including CSG wells and associated activities) are dispersed throughout the landscape.

5.2. Planning Scheme

The *Maranoa Regional Council Planning Scheme* (Planning Scheme) applies to the land subject to the application, which identifies Yuleba as a district centre. All land subject to the application is located within the *Rural Zone* under the Planning Scheme and is substantially separated from land located in any other zone.

The purpose of the Rural Zone is outlined in *Rural Zone Code* – and its purpose is to:

a) *provide for a wide range of rural uses including cropping, intensive horticulture, intensive animal industries, animal husbandry, animal keeping, extractive industry, special industry (explosives manufacturing and storage) and other primary production activities on large lots without affecting urban areas;*
b) *provide opportunities for non-rural uses that are compatible with agriculture, the energy sector, the environment and the landscape character of the rural area where they do not compromise the long-term use of the land for rural purposes;*
c) *protect or manage significant natural features, resources, cropping land, and processes, including the capacity for primary production;*
d) *ensure primary production is maintained by protecting the productive capacity of all rural land. This includes protecting rural land from alienation and fragmentation that may lead to a loss in productivity;*
e) *ensure that development in the zone protects and enhances transport infrastructure; and,*
f) *ensure that development maintains the integrity and water quality of the Murray Darling Basin Catchment.*

The proposed resource activities to be located within the Rural Zone align with the intent of the Rural Zone Code. Although the activities are non-rural in nature, they are ancillary to resource development and are designed to be low-impact, temporary, and co-located with existing rural and resource-based land uses. Activities proposed across the three project sites, such as construction of new temporary access roads, minor well pad encroachment, and the use of existing dams and road infrastructure (refer to **Section 4.4**) are compatible with ongoing and future rural production, given their scale (which is minimal with regard to the overall rural land at each site) and siting.

As the overall impact to the landscape is minimised and works are proposed within open areas, no impacts to significant natural features or rural character will be caused.

Further, as outlined within **Figure 2** above, the proposed resource activities will not affect urban areas given their minimal impact and the substantial distance between the location of the proposed activities and urban areas.

6. CONCLUSIONS AND RECOMMENDATION

This assessment report has been prepared by Property Projects Australia on behalf of Santos in relation to the carrying out of a resource activity under the RPI Act within the PLA.

This assessment report demonstrates the proposed resource activities comply with the relevant assessment criteria under the RPI Act and RPI Reg. Therefore, the application is recommended for approval.

7. REFERENCE LIST

Maranoa Regional Council . (2025). *Planning Schemes and Maps*. Retrieved from Maranoa Regional Council : https://www.maranoa.qld.gov.au/maranoa-planning-scheme

Queensland Government. (2025). *Queensland Globe*. Retrieved from Queensland Globe: https://qldglobe.information.qld.gov.au/

The Department of State Development, Manufacturing, Infrastructure and Planning . (2019, August). *RPI Act Statutory Guideline 06/14.*

The Department of State Development, Manufacturing, Infrastructure and Planning. (2019, August). *RPI Act Statutory Guideline 01/14.* Retrieved from https://dsdmipprd.blob.core.windows.net/general/rpi-guideline-01-14-assessment-application.pdf

The Department of State Development, Manufacturing, Infrastructure and Planning. (2019, August). *RPI Act Statutory Guideline 04/14.* Retrieved from https://dsdmipprd.blob.core.windows.net/general/rpi-guideline-04-14-carrying-out-activities-in-pla.pdf

The Department of State Development, Manufacturing, Infrastructure and Planning. (2019, August). *RPI Act Statutory Guideline 11/16.* Retrieved from https://dsdmipprd.blob.core.windows.net/general/rpi-guideline-11-16-dilgp-companion-guide.pdf

APPENDIX A

Assessment Criteria Tables

Prepared by:

Property Projects Australia Pty Ltd

Table 1: Prescribed solution (a)

Item	Impact criteria	Response to prescribed solution
To understand whether an activity may adversely impact on development certainty, the applicant should undertake and submit an analysis that demonstrates the extent to which the activity would or would not:		
a)	Result in the loss of land available for urban development as identified in a local government planning scheme, development scheme or other applicable statutory planning instrument	All land proposed to be impacted by activities is located within the *Rural Zone,* which does not anticipate the use of the land for urban development. The lots subject to the proposed activities are of a significant scale and do not contain existing urban development. Even if urban development were to be planned in the future, the proposed activities would not prevent this future land use as there will be no permanent loss of land. The proposed extent of disturbance is both minimal and temporary.
b)	Prevent or delay the orderly expansion of planned urban development as identified in a local government planning scheme, development scheme or other applicable statutory planning instrument (for example, the life of the proposed resource activity may delay access to land and preventing its timely development)	For the reasons outlined in the response provided to item (a), the proposal will not prevent any anticipated urban expansion. It is noted that the proposed activities are not located in proximity to the urbanised area of Yuleba and do not represent logical expansion areas for the town. There is no planned urban development identified for the subject land under any statutory instrument.
c)	Result in the discontinuation of an activity that is lawfully in existence under a local government planning scheme, development scheme or other applicable statutory planning instrument	Based on a review of the most recent available aerial imagery (dated 9 April 2024) the land subject to the proposed activities is either vacant or used for low intensity rural activities (i.e. grazing), and the proposal will only affect a small part of the area that is used for rural activities. The activities will not result in the discontinuance of a lawfully operating activity. Importantly, landholders will retain access to and

		continued use of all tracks, dams, and Rights of Way developed under these proposed activities, ensuring that existing rural operations can continue with minimal disruption.
d)	Increase the cost of planned development (for example, changes to the existing landform could make the land more difficult or costly to develop)	The land areas subject to the proposed activities are not planned for development (for example, no works are anticipated for the site under the *Local Government Infrastructure Plan* of the *Maranoa Regional Council Planning Scheme*). No significant impacts on landform will occur because of the proposed development, and no other works are proposed that would make land difficult or costly to develop.
e)	Damage or otherwise affect existing infrastructure (for example, structural damage cause by subsidence)	The proposed activities do not have the potential to damage or otherwise affect any existing infrastructure. It is noted that new and existing access roads that undergo maintenance will be available for handover to the landowner at the end of the proposed activities.
f)	Result in additional demand on existing infrastructure or services (for example, town water)	The proposed activities do not result in any increase in demand on any existing infrastructure or services. It is noted that water for construction will be sourced from landholder dams or elsewhere beyond the *Priority Living Area.* The town water supply will not be utilised.
g)	Negatively impact on the amenity of the PLA in general and on land in the immediate vicinity of the activity	The proposed activities will not have any material impact on the amenity of the PLA in general. These activities are consistent with existing land use practices within the PLA. All activities proposed

		within the PLA are ancillary to resource extraction and include roads and a gathering line (refer to detailed discussion provided in **Section 4.4**), rather than direct extraction activities. As such, the nature, scale, and location of the proposed works are not expected to result in any noticeable change to amenity of the area.
To determine the impact on amenity, the proposed activity should be evaluated against the following factors:		
a)	the compatibility of the activity with surrounding activities	A discussion regarding compatibility with relation to each aspect of the proposed activities is provided below. 1. Southwest: The activities in this area are limited to the construction of a temporary access road, which will be used to provide access to a well, and a small portion of the associated well pad. No proposed activities are to be located in proximity to existing activities other than grazing land. 2. Northwest: Activities in this area include use of an existing road on the site, and an upgrade of the existing crossover from Warrego Highway. No new activities are proposed in proximity to the dwelling house. All other areas are predominantly cleared. No impact on the use of the land for rural activities will arise from the use of the existing infrastructure. 3. Northeast: The land in the northeast is used for grazing activities and is not located in proximity to any sensitive land uses. Overall, the proposed activities occurring within the PLA are consistent with the existing land use of the PLA (which includes

		primarily low intensity rural uses and resource related infrastructure) and are therefore compatible with the established character and function of the area.
b)	the nature and scale of the proposed activity and the extent of its intrusion on the predominant character of the surrounding area	All proposed activities are of a character and scale which is consistent with the existing character of the surrounding locality. New roads will be generally consistent in width with existing roads in the area (approximately 12m), and there will be no intrusion into the predominant rural character of the landscape, as the works are compatible with the current land use practices such as grazing and resource operations. With relation to each activity location: 1. Southwest – The proposed road does not provide any connection further into the PLA, and the activities associated with the well pad are very limited in extent. No material impact on the PLA is likely to occur. 2. Northwest – These activities will utilise an existing property access point from the Warrego Highway. The Warrego Highway is already associated with a higher volume of traffic and the improved access will not direct traffic into the inner areas of the township. 3. Northeast – Activities in this area include upgrades and extensions to the existing access roads on private property. Existing dams and roads will predominantly be utilised. No material impact on the landscape character will be caused.
c)	the extent of change to the volume or nature of traffic on the roads in the PLA	The proposed activities are associated with existing resource operations located outside of the PLA and represent ancillary works

		such as access roads and flowlines. As such, they do not introduce new, intensive uses or permanent infrastructure within the PLA. No noteworthy change in the volume or nature of traffic on roads in the PLA will be caused. Traffic movements generated by the proposal are expected to be low in frequency, short in duration, and primarily associated with construction and occasional maintenance. These movements will occur over a limited period and will utilise existing roads or temporary access tracks designed in a manner consistent with the form and scale of surrounding rural infrastructure. Importantly, access routes have been selected to avoid directing traffic through more sensitive areas, including residential townships or community facilities. Upgrades to existing crossovers will improve safety without increasing traffic volumes in a way that would alter the rural character or amenity of the PLA. As such, there will be no adverse effect on the function of local roads, no increase in through-traffic, and no long-term impact on the amenity of the PLA or its surrounding land uses.
d)	the effect on the existing linkages between various parts of the PLA (for example, between residential areas and employment areas)	The proposed activities will not impact on any linkages between various parts of the PLA. It is noted that all infrastructure utilised or established is located on private property within large rural lots, which are located towards the border of the PLA.
e)	changes to the outlook from key vistas, nearby sensitive uses (for example, residential areas) or public facilities (for example, parks) and tourist attractions	The proposed activities involve a minimal disturbance footprint and are not clearly viewable from any nearby sensitive use, public facilities, or tourist attractions.

f)	the effect on the sense of place, local cultural heritage values and perceptions of safety	The minimal disturbance footprint and activity frequency, along with Santos' Cultural Heritage assessment process, implemented via a Cultural Heritage Management Plan (CHMP), will ensure there are no impacts on sense of place or any local cultural heritage values. The CHMP provides a structured framework for identifying, protecting, and managing cultural heritage values in consultation with relevant Traditional Owner groups, ensuring that all activities respect and preserve culturally significant areas. The proposed activities within the PLA are not associated with any safety risks typically linked to resource activities, except for the gathering line, which may be perceived as a safety risk. However, Santos will construct and operate the gathering line in accordance with best practice Australian Standard AS2885, sufficiently mitigating any potential safety risk to the PLA. It is also noted that no activities are proposed in proximity to existing residences or areas likely to attract public gatherings or regular movement of people, further reducing any potential risk to public safety.
g)	the visual prominence of the site	No significant impacts on the visual prominence of the site will be caused. All proposed activities will have minimal visual impact, are comparable with rural infrastructure improvements, and are not located on land which has a visual significance.
h)	proposed landscaping and enhancements	There are no proposed landscaping or other enhancements in the areas subject to impacts from the proposed development.

Table 2: Prescribed solution (b)

Item	Impact criteria	Response to prescribed solution
The applicant should submit an analysis of:		
a)	The economic and social benefits that will be associated with the additional workforce (during both the construction phase and operation phases)	The proposed activities are minor in scale and will not involve a significant additional workforce. However, they will support the continued operation and efficiency of broader coal seam gas (CSG) activities in the region, particularly those occurring outside the PLA. These activities form part of a larger, established gas production network in the vicinity of Yuleba and will enable the safe and reliable delivery of gas resources. In doing so, they contribute to regional energy supply security and help sustain ongoing employment and contracting opportunities in the area, particularly through local service providers, suppliers, and maintenance personnel. While the direct economic input of these specific works may be limited, their role in supporting wider operations will deliver flow on economic benefits to the local township of Yuleba. The continuation of resource development activity also reinforces the area's economic identity as a hub for rural and resource based industries.
b)	Direct contributions (monetary or in kind) towards:	
	i) the improvement of trunk infrastructure (whether it be the capacity or the quality of the infrastructure)	No improvements to trunk infrastructure are proposed and no direct contributions towards public infrastructure are proposed or warranted in association with the proposed activities within the PLA.

	ii)	Public infrastructure (including public transport, health and education services, and cultural and social infrastructure such as parks, sport and recreation facilities, bikeways and walkways)	
	iii)	A community initiative or facility (for example public artwork, community notice board, community centre)	

APPENDIX B

Resource Authority and Environmental Authority

Permit

Environmental Protection Act 1994

Environmental authority EPPG00662213

This environmental authority is issued by the administering authority under Chapter 5 of the Environmental Protection Act 1994.

Environmental authority number: EPPG00662213

Environmental authority takes effect on 20 May 2024. This is the take effect date.

The anniversary date of this environmental authority is 1 November.

An annual return will be due each year on 01 April.

Environmental authority holder(s)

Name(s)	Registered address
BRONCO ENERGY PTY LIMITED	Ground Floor, Santos Centre 60 Flinders Street ADELAIDE SA 5000
TOTALENERGIES EP AUSTRALIA III	Level 13 BGC Centre 28 The Esplanade PERTH WA 6000
PAPL (UPSTREAM II) PTY LIMITED	Level 12 60 Carrington St SYDNEY NSW 2000
KGLNG E & P II Pty Ltd	Level 36, 32 Turbot Street BRISBANE QLD 4000

Environmentally relevant activity and location details

Environmentally relevant activity/activities	Location(s)
Schedule 3 - 03 - A petroleum activity that is likely to have a significant impact on a category A or B Environmentally Sensitive Area	ATP631, PL281, PL282
Schedule 3 - 06 - A petroleum activity carried out on a site containing a high hazard dam or a significant hazard dam	ATP631, PL281, PL282
Schedule 3 - 07 - A petroleum activity involving injection of a wastefluid into a natural underground reservoir or aquifer	ATP631, PL281, PL282

Environmentally relevant activity/activities	Location(s)
Schedule 3 - 08 - A petroleum or GHG storage activity, other than items 1 to 7, that includes an activity from Schedule 2 with an AES	ATP631, PL281, PL282
Ancillary 08 - Chemical Storage - 3 - Storing more than 500 cubic metres of chemicals of class C1 or C2 combustible liquids under AS 1940 or dangerous goods class 3 under subsection (1)(c)	ATP631, PL281, PL282
Ancillary 55 - Other waste reprocessing or treatment - 2(c) - Operating a facility for receiving and either reprocessing or treating, in a year, the following quantity of category 2 regulated waste - more than 10,000t	ATP631, PL281, PL282
Ancillary 62 - Resource recovery and transfer facility operation - 1(c) - Operating a facility for receiving and sorting, dismantling, baling or temporarily storing category 2 regulated waste	ATP631, PL281, PL282
Ancillary 63 - Sewage Treatment - 1(a-i) - Operating sewage treatment works, other than no-release works, with a total daily peak design capacity of 21 to 100EP - if treated effluent is discharged from the works to an infiltration trench or through an irrigation scheme	ATP631, PL281, PL282
Ancillary 63 - Sewage Treatment - 1(b-i) - Operating sewage treatment works, other than no-release works, with a total daily peak design capacity of more than 100 but not more than 1500EP if treated effluent is discharged from the works to an infiltration trench or through an irrigation scheme	ATP631, PL281, PL282
Ancillary 64 - Water treatment - 3 - Treating 10ML or more raw water in a day	ATP631, PL281, PL282

Additional information for applicants

Environmentally relevant activities

The description of any environmentally relevant activity (ERA) for which an environmental authority (EA) is issued is a restatement of the ERA as defined by legislation at the time the EA is issued. Where there is any inconsistency between that description of an ERA and the conditions stated by an EA as to the scale, intensity or manner of carrying out an ERA, the conditions prevail to the extent of the inconsistency.

An EA authorises the carrying out of an ERA and does not authorise any environmental harm unless a condition stated by the EA specifically authorises environmental harm.

A person carrying out an ERA must also be a registered suitable operator under the *Environmental Protection Act 1994* (EP Act).

Mobile and temporary activities

If you operate a mobile and temporary environmentally relevant activity (ERA), other than regulated waste transport, you are required to maintain a work diary. You must:

- use the approved form for a work diary (ESR/2015/1696);
- keep the work diary records for 2 years after the last entry;
- inform the administering authority within 7 days of the work diary being lost or stolen;
- record the information required in the work diary for each location within 1 day of leaving the location.

Contaminated land

It is a requirement of the EP Act that an owner or occupier of contaminated land give written notice to the administering authority if they become aware of the following:

- the happening of an event involving a hazardous contaminant on the contaminated land (notice must be given within 24 hours); or
- a change in the condition of the contaminated land (notice must be given within 24 hours); or
- a notifiable activity (as defined in Schedule 3) having been carried out, or is being carried out, on the contaminated land (notice must be given within 20 business days)

that is causing, or is reasonably likely to cause, serious or material environmental harm.

For further information, including the form for giving written notice, refer to the Queensland Government website www.qld.gov.au, using the search term 'duty to notify'.

Take effect

Please note that, in accordance with section 200 of the EP Act, an EA has effect:

a) if the authority is for a prescribed ERA and it states that it takes effect on the day nominated by the holder of the authority in a written notice given to the administering authority - on the nominated day; or

b) if the authority states a day or an event for it to take effect-on the stated day or when the stated event happens; or

c) otherwise - on the day the authority is issued.

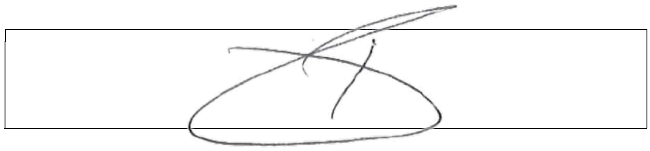
However, if the EA is authorising an activity that requires an additional authorisation (a relevant tenure for a resource activity, a development permit under the *Planning Act 2016* or an SDA Approval under the *State Development and Public Works Organisation Act 1971*), this EA will not take effect until the additional authorisation has taken effect.

If this EA takes effect when the additional authorisation takes effect, you must provide the administering authority written notice within 5 business days of receiving notification of the related additional authorisation taking effect.

The anniversary day of this environmental authority is the same day each year as the effective date. The payment of the annual fee will be due each year on this day. An annual return will be due each year on 01 April.

If you have incorrectly claimed that an additional authorisation is not required, carrying out the ERA without the additional authorisation is not legal and could result in your prosecution for providing false or misleading

information or operating without a valid environmental authority.



Signature

20 May 2024

Date

Tristan Roberts
Department of Environment, Science and Innovation
Delegate of the administering authority
Environmental Protection Act 1994

Enquiries:
Energy and Extractive Resources
GPO Box 2454, BRISBANE QLD 4001
Phone: (07) 3330 5715
Email: EnergyandExtractive@des.qld.gov.au

Obligations under the *Environmental Protection Act 1994*

In addition to the requirements found in the conditions of this environmental authority, the holder must also meet their obligations under the EP Act, and the regulations made under the EP Act. For example, the holder must comply with the following provisions of the Act:

- general environmental duty (section 319)
- duty to notify environmental harm (section 320-320G)
- offence of causing serious or material environmental harm (sections 437-439)
- offence of causing environmental nuisance (section 440)
- offence of depositing prescribed water contaminants in waters and related matters (section 440ZG)
- offence to place contaminant where environmental harm or nuisance may be caused (section 443)

Other permits required

This permit only provides an approval under the *Environmental Protection Act 1994*. In order to lawfully operate you may also require permits / approvals from your local government authority, other business units within the department and other State Government agencies prior to commencing any activity at the site. For example, this may include permits / approvals with your local Council (for planning approval), the Department of Transport and Main Roads (to access State controlled roads), the Department of Resources (to clear vegetation), and the Department of Agriculture and Fisheries (to clear marine plants or to obtain a quarry material allocation).

Obligations under the *Mining and Quarrying Safety and Health Act 1999*

If you are operating a quarry, other than a sand and gravel quarry where there is no crushing capability, you will be required to comply with the *Mining and Quarrying Safety and Health Act 1999*. For more information on your obligations under this legislation contact Mine Safety and Health at www.resources.qld.gov.au, or phone 13 QGOV (13 74 68) or your local Mines Inspectorate Office.

Development Approval

This permit is not a development approval under the *Planning Act 2016*. The conditions of this environmental authority are separate, and in addition to, any conditions that may be on the development approval. If a copy of this environmental authority is attached to a development approval, it is for information only, and may not be current. Please contact the Department of Environment, Science and Innovation to ensure that you have the most current version of the environmental authority relating to this site.

Conditions of environmental authority

SCHEDULE A – GENERAL

A1 This environmental authority authorises the carrying out of the following resource activity(ies):

(a) The petroleum activities listed in *Schedule A, Table 1 – Scale and Intensity for the Activities* to the extent they are carried out in accordance with the activity's corresponding scale and intensity; and

(b) Incidental activities that are not otherwise specified relevant activities.

Schedule A, Table 1 – Scale and Intensity for the Activities

Tenure Numbers	Petroleum Activities	GLNG Project		Gas Field Development Project		
		Scale (number of activities)	Intensity (maximum size in total)	Scale (number of activities)		Intensity (maximum size in total)
ATP 631 PL 281 PL 282	Coal seam gas, exploration, appraisal and development wells[1]	457 wells	686 ha	646 wells		Up to 969 ha
	Stimulation activities	All wells are subject to stimulation activities.				
	Gathering lines/transmission pipelines	N/A		As required		
	Access Roads	N/A		As required		Access road width up to 30m
	Compressor stations	N/A		2		Up to 16 ha
	Regulated structures	N/A		8		Up to 128 ha
	Regulated structures (dams) <400 megalitres	2	32.04 ha	N/A		
	Non-regulated dams	898	225 ha	N/A		
	Water treatment facilities	3	≤17ML/day	2		Up to 20ha
	Sewage treatment plants	N/A		2	>100EP ≤1,500EP	As required
				8	>21EP ≤100EP	As required

	Sewage treatment plant(s) that discharge treated effluent to an infiltration trench or through an irrigation scheme, or to land for dust suppression, construction or operational purposes	1	≤450EP	N/A
		8	≤100EP	N/A

A2 The resource activities in condition (A1) are authorised subject to the conditions of this environmental authority.

A3 A register identifying infrastructure constructed and disturbance incurred under the GFD Project Environmental Impact Statement must be maintained. This register must be provided to the administering authority upon request.

A4 This environmental authority authorises a relevant act[1] to occur only to the extent that:

(a) the relevant act is an ordinary consequence of carrying out the resource activities authorised by this environmental authority in accordance with its conditions; or
(b) the relevant act is specifically authorised by the conditions of this environmental authority and carrying out an activity which results in the relevant act does not contravene the conditions of this authority.

[1]See section 493A of the *Environmental Protection Act 1994*

MONITORING

A5 All monitoring required must be undertaken by a suitably qualified person.

A6 If requested by the administering authority in relation to investigating a complaint, monitoring must be commenced within 10 business days.

A7 The administering authority must be advised in writing of the results of the investigation (including an analysis and interpretation of the monitoring results) and actions proposed or undertaken to resolve the complaint within five (5) business days of completing the complaint investigation, unless a longer time is agreed to by the administering authority.

A8 All laboratory analyses and tests required must be undertaken by a laboratory that has NATA accreditation for such analyses and tests.

A9 Notwithstanding condition (A8), where there are no NATA accredited laboratories for a specific analyte or substance, then duplicate samples must be sent to at least two separate laboratories for independent testing or evaluation.

A10 Monitoring and sampling must be carried out in accordance with the requirements of the following documents (as relevant to the sampling being undertaken), as amended from time to time:

(a) for waters and aquatic environments, the Queensland Government's Monitoring and Sampling Manual Environmental Protection (Water) Policy 2009
(b) for groundwater, the Australian Government's Groundwater Sampling and Analysis - A Field Guide

and any applicable Australian Standard

(c) for noise, the latest Department of Environment and Science Noise Measurement Manual and any applicable Australian Standard
(d) for air, the Queensland Air Quality Sampling Manual and/or Australian Standard 4323.1:1995 Stationary source emissions method 1: Selection of sampling positions, as appropriate for the relevant measurement
(e) for soil, the Guidelines for Surveying Soil and Land Resources, 2nd edition (McKenzie et al. 2008), and/or the Australian Soil and Land Survey Handbook, 3rd edition (National Committee on Soil and Terrain, 2009)
(f) for dust, Australian Standard AS3580.

CONTINGENCY PROCEDURES FOR EMERGENCY ENVIRONMENTAL INCIDENTS

A11 Petroleum activities involving significant disturbance to land cannot commence until the development of written contingency procedures for emergency environmental incidents which include, but are not necessarily limited to:

(a) A clear definition of what constitutes an environmental emergency incident or near miss for the petroleum activity.
(b) Consideration of the risks caused by the petroleum activity including the impact of flooding and other natural events on the petroleum activity.
(c) Response procedures to be implemented to prevent or minimise the risks of environmental harm occurring.
(d) The practices and procedures to be employed to restore the environment or mitigate any environmental harm caused.
(e) Procedures to investigate causes and impacts including impact monitoring programs for releases to waters and/or land.
(f) Training of staff to enable them to effectively respond.
(g) Procedures to notify the administering authority, local government and any potentially impacted landholder.

MAINTENANCE OF PLANT AND EQUIPMENT

A12 All plant and equipment must be maintained and operated in their proper and effective condition.

A13 The following infrastructure must be signed with a unique reference name or number in such a way that it is clearly observable:

(a) regulated dams and low consequence dams
(b) exploration, appraisal and development wells
(c) water treatment facilities
(d) sewage treatment facilities
(e) specifically authorised discharge points to air and waters
(f) any chemical storage facility associated with the environmentally relevant activity of chemical storage
(g) field compressor stations
(h) central compressor stations
(i) gas processing facilities; and
(j) pipeline compressor stations.

A14 Measures to prevent fauna being harmed from entrapment must be implemented during the construction

and operation of well infrastructure, dams and pipeline trenches.

DOCUMENTATION

A15 A certification must be prepared by a suitably qualified person within 30 business days of completing every plan, procedure, program and report required to be developed under this environmental authority, which demonstrates that:

(a) relevant material, including current published guidelines (where available) have been considered in the written document
(b) the content of the written document is accurate and true; and
(c) the document meets the requirements of the relevant conditions of the environmental authority.

A16 All plans, procedures, programs, reports and methodologies required under this environmental authority must be written and implemented.

A17 All documents required to be developed under this environmental authority must be kept for five (5) years.

A18 All documents required to be prepared, held or kept under this environmental authority must be provided to the administering authority upon written request within the requested timeframe.

A19 A record of all complaints must be kept including the date, complaint's details, source, reason for the complaint, description of investigations and actions undertaken in resolving the complaint.

THIRD PARTY AUDIT

A20 A third party auditor, nominated by the holder of this environmental authority and accepted by the administering authority, must audit compliance with the conditions of this environmental authority at a minimum frequency of every three (3) years.

A21 Notwithstanding condition (A20), and prior to undertaking the third party audit, the scope and content of the third party audit can be negotiated with the administering authority.

A22 An audit report must be prepared and certified by the third party auditor presenting the findings of each audit carried out.

A23 Any recommendations arising from the audit report must be acted upon by:

(a) investigating any non-compliance issues identified; and
(b) as soon as reasonably practicable, implementing measures or taking necessary action to ensure compliance with the requirements of this environmental authority.

A24 A written response must be attached to the audit report detailing the actions taken or to be taken on stated dates:

(a) by the holder to ensure compliance with this environmental authority; and
(b) to prevent a recurrence of any non-compliance issues identified.

A25 The audit report required by condition (A22) and the written response to the audit report required by condition (A24) must be submitted with the subsequent annual return.

END OF CONDITIONS FOR SCHEDULE A

SCHEDULE B – WATER

GENERAL

B1 Contaminants must not be directly or indirectly released to any waters except as permitted under this environmental authority.

B2 The extraction of groundwater as part of the petroleum activities from underground aquifers must not directly or indirectly cause environmental harm to any watercourse or wetland.

WORKS IN WATERCOURSES, WETLANDS AND LAKES

B3 Only construction or maintenance of linear infrastructure is permitted in or within a general ecologically significant wetland or in a watercourse.

B4 The construction and/or maintenance of linear infrastructure that will result in significant disturbance in or on the bed and banks of a watercourse or within a general ecologically significant wetland must be conducted in accordance with the following order of preference:

(a) conducting works in times when there is no water present;
(b) conducting works in times of no flow;
(c) conducting works in times of flow but in a way that does not impede low flow.

B5 The construction and maintenance of linear infrastructure authorised under condition (B3) and authorised works specified in Schedule B, Table 1 must comply with the water quality limits specified in *Schedule B, Table 1 – Release Limits for Construction or Maintenance of Linear Infrastructure*

Schedule B, Table 1 – Release Limits for Construction or Maintenance of Linear Infrastructure

Water Quality Parameters	Units	Water Quality Limits
Turbidity	NTU	For a general ecologically significant wetland, if background water turbidity is above 45 NTU, no greater than 25% above background water turbidity measured within a 50m radius of the construction or maintenance activity. For a watercourse, if background water turbidity is above 45 NTU, no greater than 25% above background water turbidity measured within 50m downstream of the construction or maintenance activity.
		For a general ecologically significant wetland, if background water turbidity is equal to, or below 45 NTU, a turbidity limit of no greater than 55 NTU applies, measured within a 50m radius of the construction or maintenance activity. For a watercourse, if background water turbidity is equal to, or below 45 NTU, a turbidity limit of no greater than 55 NTU applies, measured within 50m downstream of the construction or maintenance activity.
Hydrocarbons	-	For a general ecologically significant wetland, or watercourse, no visible sheen or slick

B6 Monitoring must be undertaken at a reasonable frequency to ensure compliance with condition (B5).

B7 A register must be kept of all linear infrastructure construction and maintenance activities in a wetland of other environmental value and watercourses, which must include:

(a) location of the activity (e.g. GPS coordinates (GDA94) and watercourse name)
(b) estimated flow rate or surface water at the time of the activity
(c) duration of work
(d) results of impact monitoring carried out under condition (B6).

B8 Petroleum activities must occur outside a wetland of high ecological significance.

B9 Petroleum activities must not negatively impact a wetland of high ecological significance.

B10 Linear infrastructure activities, other than linear infrastructure construction and/or maintenance activities, must not change the existing surface water hydrological regime of any general ecologically significant wetland.

B11 The construction and/or maintenance of linear infrastructure in any general ecologically significant wetland must not:

(a) prohibit the flow of surface water in or out of the wetland;
(b) impact surface water quality in the wetland unless specifically authorised by this environmental authority;
(c) drain the wetland;
(d) fill the wetland;
(e) impact bank stability; or
(f) result in the clearing of riparian vegetation outside of the required footprint.

FLOODPLAINS

B12 Where the petroleum activity is carried out on floodplains the petroleum activity must be carried out in a way that does not:

(a) concentrate flood flows in a way that will or may cause or threaten an adverse environmental impact; or
(b) divert flood flows from natural drainage paths and alter flow distribution; or
(c) increase the local duration of floods; or
(d) increase the risk of detaining flood flows.

EROSION AND SEDIMENT CONTROL

B13 For activities involving significant disturbance to land, control measures that are commensurate to the site-specific risk of erosion, and risk of sediment release to waters must be implemented to:

(a) preferentially divert stormwater around significantly disturbed land, or allow stormwater to pass through the site in a controlled manner and at non-erosive flow velocities;
(b) minimise soil erosion resulting from wind, rain, and flowing water;
(c) minimise the duration that disturbed soils are exposed to the erosive forces of wind, rain, and flowing water;
(d) minimise work-related soil erosion and sediment runoff; and
(e) minimise negative impacts to land or properties adjacent to the activities (including roads).

WELL TESTING

B14 Subject to condition (B15) and condition (B16), the injection of CSG water or better quality groundwater is authorised in wells that are not exploration, appraisal or development wells, for the purposes of hydraulic testing, where such hydraulic tests are undertaken for no more than two (2) consecutive days.

B15 The maximum volume of CSG water or better quality groundwater injected for the purposes of hydraulic testing identified in condition (B14) must not exceed 1ML per hydraulic test.

B16 Written notification detailing the type and location (GPS coordinates) of any hydraulic testing undertaken in accordance with condition (B14) must be provided to the administering authority at least 10 business days prior to the commencement of the hydraulic test

SEEPAGE MONITORING PROGRAM

B17 A seepage monitoring program must be developed by a suitably qualified person which is commensurate with the site-specific risks of contaminant seepage from containment facilities, and which requires and plans for detection of any seepage of contaminants to groundwater as a result of storing contaminants by no longer than 3 months following the effective date of this environmental authority.

B18 The seepage monitoring program required by condition (B17) must include but not necessarily be limited to:

(a) identification of the containment facilities for which seepage will be monitored
(b) identification of trigger parameters that are associated with the potential or actual contaminants held in the containment facilities as provided for in condition (B19).
(c) identification of trigger concentration levels that are suitable for early detection of contaminant releases at the containment facilities
(d) installation of background seepage monitoring bores where groundwater quality will not have been affected by the petroleum activities authorised under this environmental authority to use as reference sites for determining impacts
(e) installation of seepage monitoring bores that:
    i. are within formations potentially affected by the containment facilities authorised under this environmental authority (i.e. within the potential area of impact)
    ii. provide for the early detection of negative impacts prior to reaching groundwater dependent ecosystems bores, or water supply bores
    iii. provide for the early detection of negative impacts prior to reaching migration pathways to other formations (i.e. faults, areas of unconformities known to connect two or more formations)
(f) monitoring of groundwater at each background and seepage monitoring bore at least annually for the trigger parameters identified in condition (B19)
(g) seepage trigger action response procedures for when trigger parameters and trigger levels identified in conditions (B19) and (B18)(c) trigger the early detection of seepage, or upon becoming aware of any monitoring results that indicate potential groundwater contamination
(h) a rationale detailing the program conceptualisation including assumptions, determinations, monitoring equipment, sampling methods and data analysis; and
(i) provides for annual updates to the program for new containment facilities constructed in each annual return period.

B19 Seepage monitoring bores identified in (B18)(d)&(e) must be monitored annually or the trigger parameter(s) specified in *Schedule B – Table 2 Seepage Monitoring Trigger Parameters*

Schedule B, Table 2 – Seepage Monitoring Trigger Parameters

Parameter	Units	Untreated Coal Seam Water	Permeate	Brine
Static Water Level	m	monitor	monitor	monitor
pH	pH unit	monitor	monitor	monitor
EC	µS/cm	monitor	monitor	monitor
Major Anions (sulphate, chloride)	mg/L	monitor	-	-
Major Cations (calcium, magnesium, sodium and potassium)	mg/L	monitor	-	-

B20 A bore drill log must be completed for each seepage monitoring bore in condition (B18) which must include:

(a) bore identification reference and geographical coordinate location
(b) specific construction information including but not limited to depth of bore, depth and length of casing, depth and length of screening and bore sealing details
(c) standing groundwater level and water quality parameters including physical parameter and results of laboratory analysis for the possible trigger parameters
(d) lithological data, preferably a stratigraphic interpretation to identify the important features including the identification of any aquifers; and
(e) target formation of the bore.

END OF CONDITIONS FOR SCHEDULE B

SCHEDULE BA - FLUID INJECTION - only applicable to GLNG project

BA1 The injection of treated coal seam gas water, treated water or brine into a groundwater aquifer is not authorised under this environmental authority.

WELL INTEGRITY

BA2 Unless otherwise stated in the conditions of this environmental authority, injection wells must be constructed according to the current standards applicable to water bore drilling activities under the *Water Act 2000* (i.e. Minimum Construction Requirements for Water Bores in Australia [National Water Commission, 2012 or subsequent revisions]).

BA3 Fluid injection well(s) authorised by this environmental authority must have appropriate records and documents which support and indicate mechanical integrity and which hold a certificate of mechanical integrity prepared and certified by a suitably qualified person, available for inspection such that:

(a) there is no significant leakage in the casing, tubing, or packer; and
(b) there is no significant fluid movement into a water resource aquifer through vertical channels adjacent to the well bore hole.

BA4 Wells used for untreated coal seam water or brine fluid injection must have:

(a) an annulus packer at the junction of the aquitard and the target formation within the production casing;
(b) injection tubing installed which extends through the packer into the target information;
(c) an inert fluid in the annulus between the injection tubing and the production casing;
(d) a system installed to record any loss of contaminant of the inert fluid.

BA5 For fluid injection:

(a) where injection tubing is required by condition (BA4(b)), injection must only occur through injection tubing;
(b) the injection pressure must not exceed the dry overburden pressure of the base of the overlying aquitard for injection at depth less than 100 m or 90 per cent of the formation fracture pressure for injection at depth greater than 100 m.

INJECTION MANAGEMENT PLAN

BA6 An injection Management Plan must be submitted to the administering authority prior to the carrying out of the fluid injection activity(ies).

BA7 The Injection Management Plan required by Condition (BA6) must include but not necessarily be limited to:

(a) estimated volumes and rates of fluid to be produced and injected;
(b) a description of the physical, chemical and biological components and their concentrations of the fluid to be produced;
(c) details of how and where the fluid will be produced, aggregated, stored and kept separate from waters until it is, treated and injected into the source aquifer;
(d) details of where the fluid is proposed to be treated including a description of the treatment process;
(e) a demonstration that the injection fluid has inconsequential reactivity with the target formation and native groundwater it will come into contact with;
(f) the characteristics of the receiving environment;

(g) identification of the water quality impact zone and the hydraulic impact zone;
(h) identification of all existing bores, lakes, wetlands, environmental assets and watercourses connected to groundwater, faults and other geologic features that occur within the water quality impact zone and the hydraulic impact zone;
(i) identification of proposed fluid injection wells;
(j) identification of the environmental values and water quality objectives of the potential water quality impact zone of the target formation in accordance with the *Environmental Protection Act 1994*, Environmental Protection Regulation 2019, Environmental Protection (Water) Policy 2019 and the Queensland Water Quality Guidelines 2009;
(k) an assessment of the potential impacts on the environmental values of the receiving environment including migration of injection fluid or native groundwater out of the target formation through wells, bores, wetlands, connected watercourses, faults or other geologic features likely to impact on other aquifers;
(l) a risk assessment consistent with the risk framework specified in Australian Guidelines for Water Recycling: Managed Aquifer Recharge identifying potential hazards, their inherent risk, preventative measures for the management of potential hazards and after consideration of the operational monitoring to manage potential hazards identified in the risk assessment including details on sampling and analysis methods including frequency and locations, and quality assurance and control;
(m) verification methods to assess performance of the injection activities;
(n) control measures that will be implemented for fluid storage, treatment and injection to prevent or control the release of a contaminant or waste to the environment;
(o) the indicators or other criteria against which the performance of fluid injection will be assessed;
(p) procedures that will be adopted to regularly review the monitoring program and to report to management and the administering authority should unforeseen or non-compliant monitoring results be recorded;
(q) procedures that will be implemented to prevent unauthorised environmental harm from unforeseen or non-compliant monitoring results;
(r) procedures for dealing with accidents, spills, failure of containment structures, and other incidents that may arise in the course of fluid injection; and
(s) a program to monitor impacts on the environmental values of the receiving environment identified by condition (BA7k)).

END OF CONDITIONS FOR SCHEDULE BA

SCHEDULE C – LAND

GENERAL

C1 Contaminants must not be directly or indirectly released to land except as permitted under this environmental authority.

TOPSOIL MANAGEMENT

C2 Topsoil must be managed in a manner that preserves its biological and chemical properties.

LAND MANAGEMENT

C3 Land that has been significantly disturbed by the pipeline activities must be managed to ensure that gully erosion or subsidence do not occur on that land.

CHEMICAL STORAGE

C4 Chemicals and fuels stored, must be effectively contained and where relevant, meet Australian Standards, where such a standard is applicable.

PIPELINE OPERATION AND MAINTENANCE

C5 Contaminants authorised to be released to land under conditions (C6), (C8), and (C14) must be carried out in a manner that ensures:

(a) vegetation is not damaged;
(b) soil quality is not adversely impacted;
(c) there is no surface ponding or runoff beyond the designated release area;
(d) there is no aerosols or odours;
(e) deep drainage below the root zone of any vegetation is minimised;
(f) the quality of shallow aquifers is not adversely affected.

PIPELINE WASTEWATER

C6 Contaminants that are hydrostatic test water from pipelines and contaminants from low point drains, may be released to land in accordance with condition (C5).

C7 Produced water may be re-used in:

(a) drilling and well hole activities; or
(b) stimulation activities.

C8 Produced water may be released to land for the following purposes:

(a) dust suppression;
(b) construction and operational purposes for the petroleum activity authorised by this environmental authority; and
(c) irrigation.

C9 Produced water irrigated to land must:

(a) not exceed the release limits specified in Schedule C, Table 1a Irrigation water quality monitoring; and

(b) be monitored at the frequency and for the quality characteristics at the monitoring point specified in Schedule C, Table 1a – Irrigation water quality monitoring; or
(c) the process under (C10) has been completed.

Schedule C, Table 1a – Irrigation water quality monitoring

Quality Characteristic	Release Limit	Limit Type	Frequency	Monitoring Point
Electrical conductivity (EC)	<950 µs/cm^3	95th percentile over a one-year period	Fortnightly	At a location following final treatment and prior to release.
Sodium adsorption ratio (SAR) for heavy soils	≤6			
SAR for light soils	≤12			
pH	6.0 - 8.5			
Aluminium	20 mg/L	Maximum	Bi-annually	
Arsenic	2.0 mg/L			
Boron	Refer to table 9.2.18 of ANZECC	Refer to table 9.2.18 of ANZECC		
Cadmium	0.05 mg/L	Maximum		
Chromium	1 mg/L			
Cobalt	0.1 mg/L			
Copper	5 mg/L			
Fluoride	2 mg/L			
Iron	10 mg/L			
Lithium	2.5 mg/L			
Lead	5 mg/L			
Manganese	10 mg/L			
Mercury	0.002 mg/L			
Molybdenum	0.05 mg/L			
Nickel	2 mg/L			
Zinc	5 mg/L			

C10 Produced water for irrigation which does not meet criteria in condition (C9) (a) and (b) may be used for irrigation provided a report has been completed which:

(a) determines soil structure, stability and productive capacity will be maintained or improved;
(b) determines there are no toxic effects to crops;
(c) determines yields and produce quality are maintained or improved;
(d) states water quality criteria, which has been determined in accordance with the assessment procedures outlined in Schedule C, Table 1b Assessment procedures for water quality criteria; and
(e) Includes a water monitoring program to ensure that condition (C10) (a), (b) and (c) are being achieved.

Schedule C, Table 1b Assessment procedures for water quality criteria

Water Quality Criteria	Assessment Procedure
electrical conductivity sodium adsorption ratio pH	Salinity Management Handbook, with reference to Chapter 11; and/or Australian and New Zealand Guidelines for Fresh and Marine Water Quality, with reference to Volume 1 Chapter 4 and Volume 3 Chapter 9. The assessment should consider: • soil properties within the root zone to be irrigated (e.g. clay content, cation exchange capacity, exchangeable sodium percentage) • water quality of the proposed resource (e.g. salinity, sodicity) • climate conditions (e.g. rainfall) • leaching fractions • average root zone salinity (calculated) • crop salt tolerance (e.g. impact threshold and yield decline) • management practices and objectives (e.g. irrigation application rate, amelioration techniques) • broader landscape issues (e.g. land use, depth to groundwater) • any additional modelling and tests undertaken to support the varied water quality parameters.
heavy metals	Australian and New Zealand Guidelines for Fresh and Marine Water Quality, with reference to Volume 1 Chapters 3 and 4 and Volume 3 Chapter 9. The assessment should aim to derive site specific trigger values (e.g. cumulative contaminant loading limit) based on the **methodology** provided in the above mentioned procedure.

C11 Produced water may be used for domestic or stock purposes provided the water quality complies with the criteria specified in the Australian and New Zealand Guidelines for Fresh and Marine Water Quality (ANZECC and ARMCANZ 2000).

C12 Produced water may be transferred to a third party to be used for the following purposes, subject to condition (C13):

(a) dust suppression;
(b) construction and operational purposes; or
(c) domestic or stock purposes provided the water quality complies with criteria specified in the Australian and New Zealand Guidelines for Fresh and Marine Water Quality (ANZECC and ARMCANZ 2000).

C13 If the responsibility of produced water is given or transferred to a third party in accordance with condition (C12), the holder of the environmental authority must ensure:

(a) the responsibility of the produced water is given or transferred in accordance with a written agreement (third party agreement);
(b) the third party is made aware of the General Environmental Duty under section 319 of *the Environmental Protection Act 1994*.

SEWAGE TREATMENT WORKS

C14 Greywater or treated sewage effluent from a treatment system with a daily peak design capacity of up to 450 EP may be:

(a) released to land by sub-surface or spray irrigation provided it is to a fenced and signed contaminant release area that is:
   i. a minimum distance of 50 metres from any watercourse, wetland or protected area; and
   ii. a minimum distance of 100 metres from any potable water supply or stock drinking water supply; and
   iii. kept vegetated with groundcover that is not a prohibited or restricted pest species; or

(b) used for dust suppression and construction purposes subject to condition (C20).

C15 When circumstances prevent the irrigation of treated sewage effluent to land, the contaminants must be directed to on-site storage or lawfully disposed of off-site.

SEWAGE TREATMENT WORKS BETWEEN 100 EP AND 450 EP

C16 Treated sewage effluent released to land must be monitored at the frequency and for the quality characteristics specified in *Schedule C, Table 2 – Treated sewage effluent standards for release to land from sewage treatment works with a daily peak design capacity of greater than 100EP* for each quality characteristic.

Schedule C, Table 2 – Treated sewage effluent standards for release to land from sewage treatment works with a daily peak design capacity of greater than 100EP

Quality Characteristic	Release Limit	Limit Type	Frequency	Monitoring Point
5-day Biochemical oxygen demand (BOD)	20 mg/L	Maximum	Quarterly	Release pipe from sewage treatment works
E. coli	1000 cfu per 100 mL	80th percentile based on at least 5 samples with not less than 30 minutes between samples		
	10,000 cfu per 100 mL	Maximum		
pH	6.0 - 8.5	Range	Monthly	
Dissolved Oxygen	2 mg/L	Minimum		
Electrical Conductivity		Monitor only		

C17 Prior to construction of a sewage treatment works with a daily peak design capacity of greater than 100EP, the minimum area of land and location to be utilised for irrigation of treated sewage effluent, excluding any necessary buffer zones, must be nominated.

C18 All nominated locations and minimum areas of land in condition (C17) for sewage treatment works with a daily peak design capacity of greater than 100EP, must be determined using the Model for Effluent Disposal using Land Irrigation (MEDLI) program or recognised equivalent and use model inputs representative of the activity and release location including but not limited to effluent quality, soil and vegetation types, and climatic conditions.

C19 Treated sewage effluent must only be released to the nominated locations and minimum areas of land determined by the MEDLI program or recognised equivalent identified in condition (C18).

TREATED SEWAGE EFFLUENT USE FOR DUST SUPPRESSION, CONSTRUCTION AND OPERATIONAL PURPOSES

C20 Treated sewage effluent may only be used for dust suppression, construction and operational purposes provided that:

(a) the treated sewage effluent has not been stored in a dam or tank prior to use;
(b) on local government controlled roads, written approval from the relevant Local Government has been given to the holder of this environmental authority; and
(c) the treated sewage effluent quality:
    i. is monitored at the location and frequency specified in Schedule C, Table 3 Treated Sewage Effluent Standards for Dust Suppression, Construction and Operational Purposes; and
    ii. meets the release limits for each quality characteristic specified in Schedule C, *Table 3 Treated Sewage Effluent Standards for Dust Suppression, Construction and Operational Purposes*.

Schedule C, Table 3 Treated Sewage Effluent Standards for Dust Suppression, Construction and Operational Purposes (refer to proposed table in Appendix C).

Quality Characteristic	**Sampling and *In situ* Measurement Point Location**	**Limit type**	**Release Limit**	**Frequency**
pH	Treated sewage effluent storage	Range	6.0 to 8.5	Weekly until 12 months of monitoring demonstrates no exceedances of the release limits. Monthly monitoring can occur thereafter.
5-day Biochemical Oxygen Demand (BOD)		Median	20 mg/L	
Electrical Conductivity		Maximum	1600 uS/cm	
Turbidity		95%ile (max)	2 (5) NTU	
Total Suspended Solids		Median	5 mg/L	
E. coli		Median	<10 cfu per 100 mL	Weekly

END OF CONDITIONS FOR SCHEDULE C

SCHEDULE D – BIODIVERSITY VALUES

CONFIRMING BIODIVERSITY VALUES

D1 Prior to undertaking activities that result in significant disturbance to land in areas of native vegetation, confirmation of on-the-ground environmentally sensitive areas and wetlands at that location must be undertaken by a suitably qualified person.

D2 A suitably qualified person must develop and certify a methodology so that condition (D1) can be complied with and which is appropriate to confirm on-the-ground environmentally sensitive areas and wetlands.

D3 Where areas mapped as environmentally sensitive areas and wetlands differ from those confirmed under conditions (D1) and (D2), petroleum activities may proceed in accordance with the conditions of the environmental authority based on the confirmed on the- ground values.

D4 All documentation survey information photographs, field data or any material associated with the field validation requirements in (D1) must be maintained for the life of the environmental authority to demonstrate to the administering authority that surveys were conducted in a manner consistent with requirements contained in (D2).

D5 The location of the petroleum activity must be selected in accordance with the following site planning principles:

(a) maximise the use of areas of pre-existing disturbance
(b) in order of preference, avoid, minimise or mitigate any impacts, including cumulative impacts, on areas of native vegetation or other areas of ecological value
(c) minimise disturbance to land that may result in land degradation
(d) in order of preference, avoid then minimise isolation, fragmentation, edge effects or dissection of tracts of native vegetation; and
(e) in order of preference, avoid then minimise clearing of native mature trees.

DISTURBANCE TO LAND - ENVIRONMENTALLY SENSITIVE AREAS

D6 Petroleum activities must be carried out in accordance with *Schedule D, Table 1 Petroleum Activities in Environmentally Sensitive Areas*, and any other relevant conditions of this environmental authority.

Schedule D, Table 1 – Petroleum Activities in Environmentally Sensitive Areas

ESA Category	Within the ESA	Primary Protection Zone of the ESA	Secondary Protection of the ESA
Category A ESAs	No petroleum activities permitted	Only low impact petroleum activities permitted.	Limited petroleum activities permitted subject to condition (D10) Limited impact camps permitted subject to condition (D10) Limited impact petroleum activities subject to condition (D10)

ESA Category	Within the ESA	Primary Protection Zone of the ESA	Secondary Protection of the ESA
Category B ESAs excluding 'Endangered' Regional Ecosystems	Only low impact petroleum activities permitted	Limited petroleum activities permitted subject to condition (D10) Limited impact camps permitted subject to condition (D10) Limited impact petroleum activities permitted subject to condition (D10)	N/A
Category C ESAs that are Nature Refuges, Koala Habitat and/or Declared Catchment Areas	Only low impact petroleum activities permitted	Limited petroleum activities permitted subject to condition (D10) Limited impact camps permitted subject to conditions (D7) and (D10) Limited impact petroleum activities subject to condition (D10)	N/A
Category B ESAs that are 'Endangered' Regional Ecosystems	Only limited petroleum activities permitted subject to condition (D11)	Limited petroleum activities permitted subject to condition (D10) Limited impact camps permitted subject to condition (D10) Limited impact petroleum activities subject to condition (D10)	N/A
Category C ESAs that are Essential Habitat, Essential Regrowth Habitat and/or 'Of Concern' Regional Ecosystems	Only limited petroleum activities permitted subject to condition (D11)	Limited petroleum activities permitted subject to condition (D10) Limited impact camps permitted subject to	N/A

ESA Category	Within the ESA	Primary Protection Zone of the ESA	Secondary Protection of the ESA
		conditions (D7) and (D10) Limited impact petroleum activities subject to condition (D10)	
Category C ESAs that are Regional Parks (Resource Use Area)	Only limited petroleum activities permitted subject to condition (D11)	Limited petroleum activities permitted subject to condition (D10) Limited impact camps permitted subject to condition (D10) Limited impact petroleum activities subject to condition (D10)	N/A
Category C ESAs that are State Forests and/or Timber Reserves	Only limited petroleum activities permitted subject to condition (D11) Limited impact camps permitted Limited impact petroleum activities subject to condition (D8) and (D11)	N/A	N/A

Note: Approvals may be required under the Forestry Act 1959 *where the petroleum activity(ies) is proposed to be carried out in ESAs that are State Forests or Timber Reserves.*

D7 Limited impact camps must not be located within a primary protection zone of Category C ESA (Essential Habitat) or Category C ESA (Nature Refuges).

D8 Limited impact petroleum activities must not be located within areas that contain commercial species.

D9 Despite condition (D6) decommissioning petroleum activities are authorised within all ESAs other than Category A ESAs, and within all ESA protection zones when conducted in accordance with the land disturbance planning principles provided in condition (D5).

D10 Limited petroleum activities, limited impact camps or limited impact petroleum activities located within a primary protection zone or secondary protection zone of an environmentally sensitive area in accordance with Schedule D, Table 1 – Petroleum Activities in Environmentally Sensitive Areas, must not negatively affect the adjacent environmentally sensitive area.

D11 Prior to carrying out limited petroleum activities or limited impact petroleum activities undertaken within environmentally sensitive areas in accordance with *Schedule D, Table 1 – Petroleum Activities in Environmentally Sensitive Areas*, it must be demonstrated, in the following order of preference that:

(a) no reasonable or practicable alternative exists for carrying out the limited petroleum activities within the environmentally sensitive area;
(b) the limited petroleum activities are preferentially located in pre-existing areas of clearing or significant disturbance;
(c) clearance widths for linear infrastructure is minimised to the maximum extent possible, taking into account the following matters:
    i. safe vehicle movement;
    ii. drainage devices installed are of a type that is appropriate for the track type and location;
    iii. erosion and sediment control measures installed are in accordance condition (B2); and
    iv. power line stays have been preferentially located within the pipeline right of way where possible.
(d) the maximum clearance widths specified in *Schedule D, Table 2 Authorised Disturbance for Linear Infrastructure* are not exceeded.

Schedule D, Table 2 – Authorised Disturbance for Linear Infrastructure

Type of Linear Infrastructure	**Clearance width (m)**
(A) Access track(s) not associated with a pipeline(s), communication lines(s) or power line(s):	
(a) single carriage access tracks	18
(b) dual carriage access tracks	21
(c) single or dual carriage access track and associated turnaround bay	35
(B) Access track(s) associated with a pipeline(s), communication line(s) or power line(s):	
(a) single carriage access tracks with a single pipeline, communication line or power	24
(b) dual carriage access track with a single pipeline, communication line or power	27
(c) single or dual carriage access track and associated turnaround bay with a single pipeline, communication line or power line.	41
(d) additional clearing for any additional parallel pipeline, communication line or power line associated with (B)(a), (b) or (c)	7[1]
(C) Additional clearing for take-off drains, power line stays or turnaround bays or other work areas:	
(a) Additional clearing for power line stays associated with (B)	10
(b) additional clearing for take-off drains associated with (A) or (B)	10

[1]*Maximum total disturbance for (B) is 62m.*

OFFSET DELIVERY

D12 An Offset Plan must be prepared in accordance with section 5 of the Offset Strategy at Appendix AB of the final environmental impact statement (EIS) decided by the Coordinator-General on 3 September 2015. After a decision under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) and three (3) months prior to any construction activities, the proponent must submit the Offset Plan to the Department of Environment, Science and Innovation. The Offset Plan must consider offsets for any significant residual impacts to the following prescribed environmental matters:

i. remnant regional ecosystems listed as endangered (*Vegetation Management Act 1999* [VM Act] Class)

ii. remnant regional ecosystems listed as of concern (VM Act Class)

iii. essential habitat for the species listed in Schedule D, Table 3
iv. wetlands of general ecological significance.

The Offset Plan must:

(a) detail how the specific offset requirements conditioned by the commonwealth minister for the Environment in any approval for the project under the EPBC Act will be delivered
(b) detail proposed offsets to address any significant residual impacts for the prescribed environmental matters at condition (D12) (i)-(iv)
(c) include, but not necessarily be limited to:
    i. a detailed description of the land to which the plan relates, the values affected and the extent and likely timing of impact on each value
    ii. evidence that impacts to the prescribed environmental matters in D12(i)-(iv) can be offset
    iii. for the prescribed environmental matters listed in D12 (i)-(iv), the method for delivering the offset, including consideration of land-based offsets in accordance with the *Environmental Offsets Act 2014*, direct benefit management plans, offset transfers and/or offset payments and other tenure activities
(d) ensure a legally binding mechanism to protect and manage offset areas
(e) include a staging plan to demonstrate how offsets will be delivered and managed over the life of the project
(f) consider existing, proposed and future offsets prepared and/or planned under the existing environmental authorities pertaining to the project area.

MAXIMUM DISTURBANCE

D13 Disturbance to ecological receptors listed in *Schedule D, Table 3 – Maximum disturbance limits*, must not exceed the relevant maximum disturbance limits.

Schedule D, Table 3 – Maximum disturbance limits

Ecological Receptor	**Maximum disturbance area for Roma East Project Area (ha)**
Environmental Matter	
Endangered Regional Ecosystems (remnant and high value regrowth) (VM Act Class)	46.3
Of-concern Regional Ecosystems (remnant and high value regrowth) (VM Act Class)	156.9
Essential habitat	0
Wetlands (general ecological significance)	4
Protected Areas	
Resource reserves	0
State forest and timber reserves	262.9

D14 No Significant Residual Impacts are authorised to occur on the Short-beaked Echidna (*Tachyglossus aculeatus*) or the Platypus (*Ornithorhynchus anatinus*).

D15 An environmental offset made in accordance with the *Environmental Offsets Act 2014* and *Queensland Environmental Offsets Policy*, as amended from time to time, must be undertaken for the maximum disturbance limits detailed in *Schedule D, Table 3 Maximum disturbance limits*, for each of the following prescribed environmental matters unless a lesser extent of the impact has been approved in accordance with condition D17 for staged offsets:

(i) remnant regional ecosystems listed as endangered (VM Act Class);
(ii) remnant regional ecosystems listed as of concern (VM Act Class);
(iii) essential habitat for the species listed in schedule D, Table 3; and
(iv) wetlands of general ecological significance.

D16 Environmental offsets required by condition D15 may be carried out in stages. An environmental offset can be delivered for each stage of the impacts to prescribed environmental matters.

D17 A notice of election for the staged environmental offset referred to in condition D16, if applicable, must be provided to the administering authority no less than three months before the proposed commencement of that stage, unless a lesser timeframe has been agreed to by the administering authority.

D18 Conditions D12 to D17 apply only to disturbances associated with the GFD project.

END OF CONDITIONS FOR SCHEDULE D

SCHEDULE E – WASTE

GENERAL WASTE MANAGEMENT

E1 Measures must be implemented so that waste is managed in accordance with the waste and resource management hierarchy and the waste and resource management principles.

E2 Waste, including waste fluids, but excluding waste used in closed-loop systems, must be transported off-site for lawful re-use, remediation, recycling or disposal, unless the waste is specifically authorised by conditions (BA2), (BA3), (C5), (C6), (C7), (C8), (C9), (C10), (C11), (C12), (C14), (C20), (E3) and (E7), to be disposed of or used on site.

E3 All regulated waste removed from the site must be undertaken by a person who holds a current authority to transport such waste under the provisions of the *Environmental Protection Act 1994*.

E4 Unless otherwise authorised by the conditions of this EA to be released to land, Waste fluids, other than flare precipitant stored in flare pits, or residual drilling material, or drilling fluids stored in sumps, must be contained in either:

(a) an above ground container; or
(b) a structure which contains the wetting front.

E5 Vegetation waste may be burned if it relates to a state forest, timber reserve or forest entitlement area administered by the *Forestry Act 1959* and a permit has been obtained under the *Fire and Rescue Service Act 1990*.

BRINE AND SALT MANAGEMENT

E6 Following the completion of the petroleum activity(ies), any residual brine and / or solid salt present in any structure must be removed and transported to a facility that can lawfully reuse, recycle or dispose of such waste under the *Environmental Protection Act 1994*.

RESIDUAL DRILLING MATERIALS

E7 If sumps are used to store residual drilling material or drilling fluids, they must only be used for the duration of drilling activities.

E8 Residual drilling material can only be disposed of on-site:

(a) by mix-bury-cover method if the residual drilling material meets the approved quality criteria; or
(b) if it is certified by a suitably qualified third party as being of acceptable quality for disposal to land by the proposed method and that environmental harm will not result from the proposed disposal.

E9 Records must be kept to demonstrate compliance with condition (E7) and condition (E8).

END OF CONDITIONS FOR SCHEDULE E

SCHEDULE F – NOISE

F1 Petroleum activities must not cause environmental nuisance at a sensitive place, other than where an alternative arrangement is in place.

F2 Notwithstanding condition (F1), emission of noise from the petroleum activity at levels less than those specified in *Schedule F, Table 1 – Noise nuisance limits* are not considered to be environmental nuisance.

Schedule F, Table 1 – Noise nuisance limits

Time period	Metric	Short term noise event	Medium term noise event	Long term noise event
7:00am 6:00pm	$L_{Aeq,adj,15\ min}$	45 dBA	43 dBA	40 dBA
6:00pm 10:00pm	$L_{Aeq,adj,15\ min}$	40 dBA	38 dBA	35 dBA
10:00pm 6:00am	$L_{Aeq,adj,15\ min}$	28 dBA	28 dBA	28 dBA
	Max $L_{pA,15\ min}$	55 dBA	55 dBA	55 dBA
6:00am 7:00am	$L_{Aeq,adj,15\ min}$	40 dBA	38 dBA	35 dBA

Note: The noise limits in Table 1 have been set based on the following deemed background noise levels (L_{ABG}):
7:00am - 6:00 pm: 35 dBA
6:00pm - 10:00 pm: 30 dBA
10:00pm - 6:00 am: 25 dBA
6:00am - 7:00 am: 30 dBA

F3 If the noise subject to a valid complaint is tonal or impulsive, the adjustments detailed in *Schedule F, Table 2 – Adjustments to be added to noise levels at sensitive receptors* are to be added to the measured noise level(s) to derive LAeq, adj, 15 min.

Schedule F, Table 2 – Adjustments to be added to noise levels at sensitive receptors

Noise characteristic	Adjustment to noise
Tonal characteristic is just audible	+ 2 dBA
Tonal characteristic is clearly audible	+ 5 dBA
Impulsive characteristic is detectable	+ 2 to + 5 dBA

F4 Notwithstanding condition (F2), emission of any low frequency noise must not exceed either (F4 (a)) and (F4 (b)), or (F4 (c)) and (F4 (d)) in the event of a valid complaint about low frequency noise being made to the administering authority:

(a) 60 dB(C) measured outside the sensitive receptor; and
(b) the difference between the external A-weighted and C-weighted noise levels is no greater than 20 dB; or
(c) 50 dB(Z) measured inside the sensitive receptor; and
(d) the difference between the internal A-weighted and Z-weighted (Max LpZ, 15 min) noise levels is no greater than 15 dB.

F5 A Blast Management Plan must be developed for each blasting activity in accordance with Australian Standard 2187.

F6 Blasting operations must be designed to not exceed an airblast overpressure level of 120 dB (linear peak)

at any time, when measured at or extrapolated to any sensitive place.

F7 Blasting operations must be designed to not exceed a ground-borne vibration peak particle velocity of 10mm/s at any time, when measured at or extrapolated to any sensitive place.

END OF CONDITIONS FOR SCHEDULE F

SCHEDULE G – AIR

VENTING AND FLARING

G1 Unless venting is authorised under the *Petroleum and Gas (Production and Safety) Act 2004* or the *Petroleum Act 1923*, waste gas must be flared in a manner that complies with all of (G1(a)) and (G1(b)) and (G1(c)), or with (G1(d)):

(a) an automatic ignition system is used, and
(b) a flame is visible at all times while the waste gas is being flared, and
(c) there are no visible smoke emissions other than for a total period of no more than 5 minutes in any 2 hours, or
(d) it uses an enclosed flare.

END OF CONDITIONS FOR SCHEDULE G

SCHEDULE H - REGULATED STRUCTURES

ASSESSMENT OF CONSEQUENCE CATEGORY

H1 The consequence category of any structure must be assessed by a suitably qualified and experienced person in accordance with the Manual for assessing consequence categories and hydraulic performance of structures (ESR/2016/1933)[1] at the following times:

(a) prior to the design and construction of the structure; or
(b) prior to any change in its purpose or the nature of its stored contents.

[1]This is the publication number, which can be used as a search term to find the latest version of the publication at www.des.qld.gov.au.

H2 A consequence assessment report and certification must be prepared for each structure assessed and the report may include a consequence assessment for more than one structure.

H3 Certification must be provided by the suitably qualified and experienced person who undertook the assessment, in the form set out in the *Manual for assessing consequence categories and hydraulic performance of structure*s (ESR/2016/1933).

DESIGN AND CONSTRUCTION OF A REGULATED STRUCTURE

H4 All regulated structures must be designed by, and constructed[2] under the supervision of, a suitably qualified and experienced person in accordance with the requirements of the Manual for assessing consequence categories and hydraulic performance of structures (ESR/2016/1933).

[2]Certification of design and construction may be undertaken by different persons.

H5 Construction of a regulated structure is prohibited unless:

(a) the holder has submitted a consequence category assessment report and certification to the administering authority; and
(b) certification for the design, design plan and the associated operating procedures has been certified by a suitably qualified and experienced person in compliance with the relevant condition of this authority.

H6 Certification must be provided by the suitably qualified and experienced person who oversees the preparation of the design plan in the form set out in the *Manual for assessing consequence categories and hydraulic performance of structures* (ESR/2016/1933) and must be recorded in the Register of Regulated Structures.

H7 Regulated structures must:

(a) be designed and constructed in compliance with the Manual for assessing consequence categories and hydraulic performance of structures (ESR/2016/1933);
(b) be designed and constructed with due consideration given to ensuring that the design integrity would not be compromised on account of:
    i. floodwaters from entering the regulated dam from any watercourse or drainage line; and
    ii. wall failure due to erosion by floodwaters arising from any watercourse or drainage line.
(c) have the floor and sides of the dam designed and constructed to prevent or minimise the passage of the wetting front and any entrained contaminants through either the floor or sides of the dam during the operational life of the dam and for any period of decommissioning and rehabilitation of the dam.

H8 Certification by the suitably qualified and experienced person who supervises the construction must be submitted to the administering authority on the completion of construction of the regulated structure, and

state that:

(a) the 'as constructed' drawings and specifications meet the original intent of the design plan for that regulated structure
(b) construction of the regulated structure is in accordance with the design plan.

NOTIFICATION OF AFFECTED PERSONS

H9 All affected persons must be provided with a copy of the emergency action plan in place for each regulated structure:

(a) prior to the operation of the new regulated structure; and
(b) if the emergency action plan is amended, within 5 business days of it being amended.

OPERATION OF A REGULATED STRUCTURE

H10 Operation of a regulated structure, is prohibited unless the holder has submitted to the administering authority in respect of regulated structure, all of the following:

(a) one paper copy and one electronic copy of the design plan and certification of the 'design plan' in accordance with condition H6;
(b) a set of 'as constructed' drawings and specifications;
(c) certification of the 'as constructed drawings and specifications' in accordance with condition H9;
(d) where the regulated structure is to be managed as part of an integrated containment system for the purpose of sharing the DSA volume across the system, a copy of the certified system design plan;
(e) the requirements of this authority relating to the construction of the regulated structure have been met;
(f) the holder has entered the details required under this authority, into a Register of Regulated Structures; and
(g) there is a current operational plan for the regulated structure.

H11 Each regulated structure must be maintained and operated, for the duration of its operational life until decommissioned and rehabilitated, in compliance with the current operational plan and, if applicable, the current design plan and associated certified 'as constructed' drawings.

MANDATORY REPORTING LEVEL

H12 Conditions H14 to H16 inclusive only apply to Regulated Structures which have not been certified as low consequence category for 'failure to contain – overtopping'.

H13 The Mandatory Reporting Level (MRL) must be marked on a regulated dam in such a way that during routine inspections of that dam, it is clearly observable.

H14 The holder must, immediately on becoming aware that the MRL has been reached, act to prevent the occurrence of any unauthorised discharge from the regulated dam.

H15 The holder must record any changes to the MRL in the Register of Regulated Structures.

DESIGN STORAGE ALLOWANCE

H16 The holder must assess the performance of each regulated dam or linked containment system over the preceding November to May period based on actual observations of the available storage in each regulated dam or linked containment system taken prior to 1 July of each year.

H17 By 1 November of each year, storage capacity must be available in each regulated dam (or network of

linked containment systems with a shared DSA volume), to meet the Design Storage Allowance (DSA) volume for the dam (or network of linked containment systems).

H18 The holder must, immediately on becoming aware that a regulated dam (or network of linked containment systems) will not have the available storage to meet the DSA volume on 1 November of any year, act to prevent the occurrence of any unauthorised discharge from the regulated dam or linked containment systems.

ANNUAL INSPECTION REPORT

H19 Each regulated structure must be inspected each calendar year by a suitably qualified and experienced person.

H20 At each annual inspection, the condition and adequacy of all components of the regulated structure must be assessed and a suitably qualified and experienced person must prepare an annual inspection report containing details of the assessment and include a recommendations section, with any recommended actions to ensure the integrity of the regulated structure or a positive statement that no recommendations are required.

H21 The suitably qualified and experienced person who prepared the annual inspection report must certify the report in accordance with the *Manual for assessing consequence categories and hydraulic performance of structures* (ESR/2016/1933).

H22 The holder must within 20 business days of receipt of the annual inspection report, provide to the administering authority:

(a) The recommendations section of the annual inspection report; and
(b) If applicable, any actions being taken in response to those recommendations; and
(c) If, following receipt of the recommendations and (if applicable) recommended actions, the administering authority requests a copy of the annual inspection report from the holder, provide this to the administering authority within 10 business days of receipt of the request.

TRANSFER ARRANGEMENTS

H23 The holder must provide a copy of any reports, documentation and certifications prepared under this authority, including but not limited to any Register of Regulated Structures, consequence assessment, design plan and other supporting documentation, to a new holder on transfer of this authority.

DECOMMISSIONING AND REHABILITATION

H24 Regulated structures must not be abandoned but be either:

(a) decommissioned and rehabilitated to achieve compliance with condition H26; or
(b) be left in-situ for a use by the landholder provided that:
    i. it no longer contains contaminants that will migrate into the environment; and
    ii. it contains water of a quality that is demonstrated to be suitable for its intended use(s); and
(c) the holder of the environmental authority and the landholder agree in writing that the;
    i. dam will be used by the landholder following the cessation of the environmentally relevant activity(ies); and
    ii. landholder is responsible for the dam, on and from an agreed date.

H25 Before surrendering this environmental authority the site must be rehabilitated to achieve a safe, stable, non-polluting landform and be suitable for the relevant final land use.

REGISTER OF REGULATED STRUCTURES

H26 A Register of Regulated Structures must be established and maintained by the holder for each regulated structure.

H27 The holder must provisionally enter the required information in the Register of Regulated Structures when a design plan for a regulated dam is submitted to the administering authority.

H28 The holder must make a final entry of the required information in the Register of Regulated Structures once compliance with condition H11 has been achieved.

H29 The holder must ensure that the information contained in the Register of Regulated Structures is current and complete on any given day.

H30 All entries in the Register of Regulated Structures must be approved by the chief executive officer for the holder of this authority, or their delegate, as being accurate and correct.

MONITORING

H31 Each regulated structure not on the register referred to in condition A3 must be monitored for the water quality characteristics and at the monitoring location and frequency specified in Schedule C, Table 1 – Regulated Structure Contaminant Monitoring as follows:

Schedule C, Table 1 – Regulated Structure Contaminant Monitoring

Quality Characteristic (units)	Monitoring Location	Frequency of Monitoring
pH (pH unit)	At a depth of 0.3 m to 1.0 and be taken as far as practicable from the edge of the **regulated structure**	No earlier than August and no later than October inclusive, every year.
Electrical Conductivity (µS/m)		
Turbidity (NTU)		
Temperature		
Dissolved Oxygen (mg/L)		
Sodium adsorption ratio (SAR)		
Aluminium (mg/L)		
Arsenic (mg/L)		
Barium (mg/L)		
Boron (mg/L)		
Cadmium (mg/L)		
Chromium (CrVI) (mg/L)		
Copper (mg/L)		
Iron (mg/L)		
Fluoride (mg/L)		
Lead (mg/L)		
Manganese (mg/L)		
Mercury (ng/L)		
Nickel (mg/L)		
Selenium (mg/L)		
Silver (mg/L)		
Strontium (mg/L)		
Tin (mg/L)		
Zinc(mg/L)		
Total phosphorus (mg/L)		
Total Nitrogen (mg/L)		
Total petroleum hydrocarbons (µg/L)		
BTEX (µg/L)		
Polycyclic aromatic hydrocarbons (µg/L)		
Gross alpha + gross b radionuclides by gamma eta or spectroscopy (Bq/L)		

END OF CONDITIONS FOR SCHEDULE H

SCHEDULE I - WELL CONSTRUCTION, MAINTENANCE AND STIMULATION ACTIVITIES

DRILLING ACTIVITIES

I1 Oil based or synthetic based drilling muds must not be used in the carrying out of the petroleum activity(ies).

I2 Drilling activities must not result in the connection of the target gas producing formation and another aquifer.

I3 Practices and procedures must be in place to detect, as soon as practicable, any fractures that have or may result in the connection of a target gas producing formation and another aquifer as a result of drilling activities.

STIMULATION ACTIVITIES

I4 Polycyclic aromatic hydrocarbons or products that contain polycyclic aromatic hydrocarbons must not be used in stimulation fluids in concentrations above the reporting limit.

I5 Stimulation activities must not negatively affect water quality, other than that within the stimulation impact zone of the target gas producing formation.

I6 Stimulation activities must not cause the connection of the target gas producing formation and another aquifer.

I7 The internal and external mechanical integrity of the well system prior to and during well stimulation must be ensured such that there is:

(a) no significant leakage in the casing, tubing, or packer; and
(b) there is no significant fluid movement into another aquifer through vertical channels adjacent to the well bore hole.

I8 Practices and procedures must be in place to detect, as soon as practicable, any fractures that cause the connection of a target gas producing formation and another aquifer.

STIMULATION RISK ASSESSMENT

I9 Prior to undertaking well stimulation activities, a risk assessment must be developed to ensure that stimulation activities are managed to prevent environmental harm.

I10 The stimulation risk assessment must be carried out for every well to be stimulated prior to stimulation activities being carried out at that well and address issues at a relevant geospatial scale such that changes to features and attributes are adequately described and must include, but not necessarily be limited to:

(a) a process description of the stimulation activity to be applied, including equipment and a comparison to best international practice;
(b) provide details of where, when and how often stimulation is to be undertaken on the tenures covered by this environmental authority;
(c) a geological model of the field to be stimulated including geological names, descriptions and depths of the target gas producing formation(s);
(d) naturally occurring geological faults;
(e) seismic history of the region (e.g. earth tremors, earthquakes);
(f) proximity of overlying and underlying aquifers;
(g) above and below the target gas producing formation.

(h) identification and proximity of landholders' active groundwater bores in the area where stimulation activities are to be carried out;
(i) the environmental values of groundwater in the area;
(j) an assessment of the appropriate limits of reporting for all water quality indicators relevant to stimulation monitoring in order to accurately assess the risks to environmental values of groundwater;
(k) description of overlying and underlying formations in respect of porosity, permeability, hydraulic conductivity, faulting and fracture propensity;
(l) consideration of barriers or known direct connections between the target gas producing formation and the overlying and underlying aquifers;
(m) a description of the well mechanical integrity testing program;
(n) process control and assessment techniques to be applied for determining extent of stimulation activities (e.g. microseismic measurements, modelling etc);
(o) practices and procedures to ensure that the stimulation activities are designed to be contained within the target gas producing formation;
(p) groundwater transmissivity, flow rate, hydraulic conductivity and direction(s) of flow;
(q) a description of the chemicals used in stimulation activities (including estimated total mass, estimated composition, chemical abstract service numbers and properties), their mixtures and the resultant compounds that are formed after stimulation;
(r) a mass balance estimating the concentrations and absolute masses of chemicals that will be reacted, returned to the surface or left in the target gas producing formation subsequent to stimulation;
(s) an environmental hazard assessment of the chemicals used including their mixtures and the resultant chemicals that are formed after stimulation including:
    i. toxicological and ecotoxicological information of chemicals used;
    ii. information on the persistence and bioaccumulation potential of the chemicals used;
    iii. identification of the stimulation fluid chemicals of potential concern derived from the risk assessment;
(t) an environmental hazard assessment of use, formation of, and detection of polycyclic aromatic hydrocarbons in stimulation activities;
(u) if used, identification and an environmental hazard assessment of using radioactive tracer beads in stimulation activities
(v) an environmental hazard assessment of leaving stimulation chemicals in the target gas producing formation for extended periods subsequent to stimulation;
(w) human health exposure pathways to operators and the regional population;
(x) risk characterisation of environmental impacts based on the environmental hazard assessment;
(y) potential impacts to landholder bores as a result of stimulation activities;
(z) the determination of the likelihood of causing interconnectivity and/or negative water quality as a result of stimulation activities undertaken in close proximity or each other; and
(aa) potential environmental or health impacts which may result from stimulation activities including but not limited to water quality, air quality (including suppression of dust and other airborne contaminants), noise and vibration.

WATER QUALITY BASELINE MONITORING

I11 Prior to undertaking any stimulation activity, a baseline bore assessment must be undertaken of the water quality of:

(a) all landholders' active groundwater bores (subject to access being permitted by the landholder) that are spatially within a two (2) kilometre horizontal radius from the location of the stimulation initiation point within the target gas producing formation; and
(b) all landholders' active groundwater bores (subject to access being permitted by the landholder) in any

aquifer that is within 200 metres above or below the target gas producing formation and is spatially located with a two (2) kilometre radius from the location of the stimulation initiation point; and

(c) any other bore that could potentially be adversely impacted by the stimulation activity(ies) in accordance with the findings of the risk assessment required by conditions (I9) and (I10).

I12 Prior to undertaking stimulation activities at a well, there must have sufficient water quality data to accurately represent the water quality in the well to be stimulated. The data must include, as a minimum, the results of analyses for the parameters in condition (I13).

I13 Baseline bore and well assessments must include relevant analytes and physicochemical parameters to be monitored in order to establish baseline water quality and must include, but not necessarily be limited to:

(a) pH
(b) electrical conductivity [µS/m]
(c) turbidity [NTU]
(d) total dissolved solids [mg/L]
(e) temperature [°C]
(f) dissolved oxygen [mg/L]
(g) dissolved gases (methane, chlorine, carbon dioxide, hydrogen sulfide) [mg/L]
(h) alkalinity (bicarbonate, carbonate, hydroxide and total as CaCO3) [mg/L]
(i) sodium adsorption ratio (SAR)
(j) anions (bicarbonate, carbonate, hydroxide, chloride, sulphate) [mg/L]
(k) cations (aluminium, calcium, magnesium, potassium, sodium) [mg/L]
(l) dissolved and total metals and metalloids (including but not necessarily being limited to: aluminium, arsenic, barium, borate (boron), cadmium, total chromium, copper, iron, fluoride, lead, manganese, mercury, nickel, selenium, silver, strontium, tin and zinc) [µg/L]
(m) total petroleum hydrocarbons [µg/L]
(n) BTEX (as benzene, toluene, ethylbenzene, ortho-xylene, para- and meta-xylene, and total xylene) [µg/L]
(o) polycyclic aromatic hydrocarbons (including but not necessarily being limited to: naphthalene, phenanthrene, benzo[a]pyrene) [µg/L]
(p) sodium hypochlorite [mg/L]
(q) sodium hydroxide [mg/L]
(r) formaldehyde [mg/L]
(s) ethanol [mg/L]; and
(t) gross alpha + gross beta or radionuclides by gamma spectroscopy [Bq/L].

I14 Despite condition I13, baseline bore and well assessment undertaken prior to 20 January 2023 must include the minimum water quality analytes and physico-chemical parameters identified in the Baseline Assessment Guideline (EHP) and any restricted stimulation fluids as defined in the *Environmental Protection Act 1994*, as amended from time to time, in order to establish baseline water quality.

STIMULATION MONITORING PROGRAM

I15 A Stimulation Impact Monitoring Program must be developed prior to the carrying out of stimulation activities which must be able to detect adverse impacts to water quality from stimulation activities and must consider the findings of the risk assessment required by conditions (I9) and (I10) that relate to stimulation activities and must include, as a minimum, monitoring of:

(a) the stimulation fluids to be used in stimulation activities at sufficient frequency and which sufficiently represents the quantity and quality of the fluids used; and
(b) flow back waters from stimulation activities at sufficient frequency and which sufficiently represents the quality of that flow back water; and
(c) flow back waters from stimulation activities at sufficient frequency and accuracy to demonstrate that

150 per cent of the volume used in stimulation activities has been extracted from the stimulated well; and

(d) all bores in accordance with condition (I11) at the following minimum frequency:
   i. monthly for the first six (6) months subsequent to the stimulation activities being undertaken; then
   ii. annually for the first five (5) years subsequent to the stimulation activities being undertaken or until analytes and physico-chemical parameters listed in condition (I13) are not detected in concentrations above baseline bore monitoring data on two (2) consecutive monitoring occasions.

I16 The Stimulation Impact Monitoring Program must provide for monitoring of:

(a) analytes and physico-chemical parameters relevant to baseline bore and well assessments to enable data referencing and comparison including, but not necessarily being limited to the analytes and physico-chemical parameters in condition (I13); and
(b) any other analyte or physico-chemical parameters that will enable detection of adverse water quality impacts and the inter-connection with a non-target aquifer as a result of stimulation activities including chemical compounds that are actually or potentially formed by chemical reactions with each other or coal seam materials during stimulation activities.

I17 The results of the Stimulation Impact Monitoring Program must be made available to any potentially affected landholders upon request by that landholder.

END OF CONDITIONS FOR SCHEDULE I

SCHEDULE J – REHABILITATION

REHABILITATION PLANNING

J1 A Rehabilitation Plan must be developed by a suitably qualified person and must include the:

(a) rehabilitation goals; and
(b) procedures to be undertaken for rehabilitation that will:
    i. achieve the requirements of conditions (J2) to (J6) inclusive; and
    ii. provide for appropriate monitoring and maintenance.

TRANSITIONAL REHABILITATION

J2 Significantly disturbed areas that are no longer required for the on-going petroleum activities, must be rehabilitated within 12 months (unless an exceptional circumstance in the area to be rehabilitated (e.g. a flood event) prevents this timeframe being met) and be maintained to meet the following acceptance criteria:

(a) contaminated land resulting from petroleum activities is remediated and rehabilitated;
(b) the areas are:
    i. non-polluting;
    ii. a stable landform;
(c) re-profiled to contours consistent with the surrounding landform
(d) surface drainage lines are re-established;
(e) top soil is reinstated; and
(f) either:
    i. groundcover, that is not prohibited or restricted pest species, is growing; or
    ii. an alternative soil stabilisation methodology that achieves effective stabilisation is implemented and maintained.

REMAINING DAMS

J3 Where there is a dam, (including a low consequence dam) that is being or intended to be used by the landholder or overlapping tenure holder, the dam must be decommissioned to no longer accept inflow from the petroleum activity(ies) and the contained water must be of a quality suitable for the intended on-going uses(s) by the landholder or overlapping tenure holder.

PIPELINE ACTIVITIES

J4 Pipeline trenches must be backfilled and topsoils reinstated within three months after pipe laying.

J5 Reinstatement and revegetation of the pipeline right of way must commence within 6 months after cessation of petroleum activities for the purpose of pipeline construction.

J6 Backfilled, reinstated and revegetated pipeline trenches and right of ways must be:

(a) a stable landform
(b) re-profiled to a level consistent with surrounding soils
(c) re-profiled to original contours and established drainage lines; and
(d) vegetated with groundcover which is not a prohibited or restricted pest species , and which is established and growing.

FINAL REHABILITATION ACCEPTANCE CRITERIA

J7 All significantly disturbed areas caused by petroleum activities which are not being or intended to be

utilised by the landholder or overlapping tenure holder, must be rehabilitated to meet the following final acceptance criteria measured either against the highest ecological value adjacent land use or the pre-disturbed land use:

(a) greater than or equal to 70 per cent of native ground cover species richness
(b) greater than or equal to the total per cent ground cover
(c) less than or equal to the per cent species richness of prohibited or restricted pest species
(d) where the adjacent land use contains, or the pre-clearing land use contained, one or more regional ecosystem(s), then:
    i. at least one Regional Ecosystem(s) from the same broad vegetation group, as demonstrated by the predominant species in the ecologically dominant layer, must be present; and,
    ii. the Regional Ecosystem present in (J7)(d)(i) must possess an equivalent or higher conservation value (biodiversity status) than the Regional ecosystem(s) in either the adjacent land or pre-disturbed land.

FINAL REHABILITATION ACCEPTANCE CRITERIA IN ENVIRONMENTALLY SENSITIVE AREAS

J8 Where significant disturbance to land has occurred in an environmentally sensitive area, the following final rehabilitation criteria as measured against the pre- disturbance biodiversity values assessment (required by conditions (J1) and (J2)) must be met:

(a) greater than or equal to 70% of native ground cover species richness
(b) greater than or equal to the total per cent ground cover
(c) less than or equal to the per cent species richness of Prohibited or restricted pest species
(d) greater than or equal to 50% of organic litter cover
(e) greater than or equal to 50% of total density of coarse woody material; and
(f) all predominant species in the ecologically dominant layer, that define the pre-disturbance regional ecosystem(s) are present.

END OF CONDITIONS FOR SCHEDULE J

SCHEDULE K - NOTIFICATION

K1 The administering authority must be notified through the Pollution Hotline as soon as reasonably practicable, but within 48 hours after becoming aware of:

(a) any unauthorised significant disturbance to land; or
(b) any unauthorised release of contaminants greater than:
    i. 200 L of hydrocarbons; or
    ii. 200 L of stimulation additives; or
    iii. 500 L of stimulation fluids; or (iv).
    iv. 1,000 L of brine; or
    v. 5,000 L of coal seam gas water; or (vi).
    vi. 10,000 L of sewage effluent;
    vii. 100,000 L of irrigation-quality coal seam gas water, released inside a designated irrigation area authorised by condition (C8)(c).
(c) a potential or actual loss of structural or hydraulic integrity of a dam; or
(d) when the level of the contents of any regulated dam reaches the mandatory reporting level; or
(e) when a regulated dam will not have available storage to meet the design storage allowance on the 1 November of any year; or
(f) any incident where there is a potential or actual loss of well integrity (e.g. when the annulus pressure during stimulation increases by more than 3.5 MPa from the pressure immediately preceding stimulation); or
(g) any detection of restricted stimulation fluids from stimulation fluid monitoring; or
(h) any analyses result from baseline bore, well or stimulation impact monitoring that exceeds a water quality objective for the protection of an environmental value of that water resource; or
(i) any analyses result from groundwater monitoring that exceeds trigger action investigation levels, if provided in this environmental authority.

K2 The notification of emergencies or incidents as required by condition (K1) must include but not be limited to the following information:

(a) the environmental authority number and name of the holder;
(b) the tenure type and number where the emergency or incident occurred;
(c) the name and telephone number of the designated contact person;
(d) the location of the emergency or incident (GDA94);
(e) the date and time that the emergency or incident occurred;
(f) the date and time the holder of this environmental authority became aware of the emergency or incident;
(g) details of the nature of the event and the circumstances in which it occurred;
(h) the estimated quantity and type of any contaminants involved in the incident;
(i) the actual or potential suspected cause of the emergency or incident;
(j) a description of the land use at the site of the emergency or incident (e.g. environmentally sensitive features;
(k) a description of the possible impacts from the emergency or incident;
(l) a description of whether stock and/or wildlife were exposed to any contaminants released and measures taken to prevent access for the duration of the emergency or incident;
(m) any sampling conducted or proposed, relevant to the emergency or incident;
(n) landholder details and details of landholder consultation;
(o) immediate actions taken to control the impacts of the emergency or incident and how environmental harm was mitigated at the time of the emergency or incident; and
(p) whether further examination/root cause analysis is required and if so, the expected date by when this

examination will be completed and reported to the administering authority.

K3 Within 10 business days following the initial notification under conditions (K1) and (K2) unless a longer time is agreed to by the administering authority, a written report must be provided to the administering authority, including the following (where relevant to the emergency or incident):

(a) the root cause of the emergency or incident;
(b) the confirmed quantities and types of any contaminants involved in the incident;
(c) results and interpretation of any analysis of samples taken at the time of the emergency or incident (including the analysis results of any impact monitoring);
(d) a final assessment of the impacts from the emergency or incident including any actual or potential environmental harm that has occurred or may occur in the longer term as a result of the release;
(e) the success or otherwise of actions taken at the time of the incident to prevent or minimise environmental harm;
(f) results and current status of landholder consultation, including commitment to resolve any outstanding issues / concerns; and
(g) actions and / or procedural changes to prevent a recurrence of the emergency or incident.

END OF CONDITIONS FOR SCHEDULE K

SCHEDULE L – DEFINITIONS

Key terms and/or phrases used in this document are defined in this section. Where a term is not defined, the definition in the *Environmental Protection Act 1994*, its regulations or environmental protection policies must be used. If a word remains undefined it has its ordinary meaning.

"**Adjacent Land Use**" means the **ecosystem function** adjacent to an area of significant disturbance, or where there is no ecosystem function, the use of the land. An **adjacent land use** does not include an adjacent area that shows evidence of edge effect.

"Administering Authority" means:

(a) for a matter, the administration and enforcement of which has been devolved to a local government under section 514 of the *Environmental Protection Act 1994* – the local government; or
(b) for all other matters – the Chief Executive of the Department of Environment and Heritage Protection; or
(c) another State Government Department, Authority, Storage Operator, Board or Trust, whose role is to administer provisions under other enacted legislation.

"Affected Person" is someone whose drinking water can potentially be impacted as a result of discharges from a dam or their life or property can be put at risk due to dwellings or workplaces being in the path of a dam break flood.

"AHD" means Australian Height Datum and is the datum used for the determination of elevations in Australia. The determination uses a national network of benchmarks and tide gauges and sets mean sea level at zero elevation.

"Alternative Arrangement" means a written agreement between the holder of this environmental authority and an affected or potentially affected person at a sensitive receptor for a defined noise nuisance impact and may include an agreed period of time for which the arrangement is in place. An agreement for alternative arrangements may include, but not necessarily be limited to a range of noise abatement measures to be installed at a sensitive receptor and / or provision of alternative accommodation for the duration of the defined noise nuisance impact.

"Analogue Site" means an area of land which contains values and characteristics representative of an area to be rehabilitated prior to disturbance. Such values must encompass land use, topographic, soil, vegetation, vegetation community attributes and other ecological characteristics. Analogue sites can be the pre-disturbed site of interest where significant surveying effort has been undertaken to establish benchmark parameters.

"Analytes" means a chemical parameter determined by either physical measurement in the field or by laboratory analysis.

"Annual Exceedance Probability or AEP" is the probability that *a given rainfall total accumulated over a given duration will be exceeded in any one year.*

"Annual Inspection Report" means an assessment prepared by a suitably qualified and experienced person containing details of the assessment against the most recent consequence assessment report and design plan (or system design plan):

(a) against recommendations contained in previous annual inspections reports;
(b) against recognised dam safety deficiency indicators;
(c) for changes in circumstances potentially leading to a change in consequence category;
(d) for conformance with the conditions of this authority;
(e) for conformance with the 'as constructed' drawings;

(f) for the adequacy of the available storage in each regulated dam, based on an actual observation or observations taken after 31 May each year but prior to 1 November of that year of accumulated sediment, state of the containment barrier and the level of liquids in the dam (or network of linked containment systems);
(g) for evidence of conformance with the current operational plan.

"Appraisal Well" means a petroleum well to test the potential of one (1) or more natural underground reservoirs for producing or storing petroleum.

For clarity, an **appraisal well** does not include an **exploration well**.

"Approved Quality Criteria" for the purposes of residual drilling materials, means the **residual drilling material** meet the following quality standards:

Part A in all cases:

Parameter	Maximum Concentration
pH	6 – 10.5 (range)
Electrical Conductivity	20 dS/m (20,000 µS/cm)
Chloride*	8000 mg/L

***** Chloride analysis is only required if an additive containing chloride was used in the drilling process
The limits in Part A must be measured in the clarified filtrate of oversaturated solids prior to mixing.
Part B if any of the following metals are a component of the drilling fluids, then for that metal:

Parameter	Maximum Concentration (mg/kg)
Arsenic	20
Selenium	5
Boron	100
Cadmium	3
Chromium (total)	400
Copper	100
Lead	600

The limits in Part B and Part C refer to the post soil/by-product mix.

Part C If a hydrocarbon sheen is visible, the following hydrocarbon fractions:

TPH	Maximum Concentration (mg/kg)
C6-C10	170
C10-C16	150
C16-C34	1300
C34-C40	5600
Total Polycyclic Aromatic Hydrocarbons (PAHs)	20
Phenols (halogenated)	1
Phenols (non-halogenated)	60
Monocyclic aromatic hydrocarbons (Total sum of benzene, toluene, ethyl benzene, xylenes (includes ortho, para and meta xylenes) and styrene)	7
Benzene	1

"areas of pre-disturbance" means areas where environmental values have been negatively impacted as a result of anthropogenic activity and these impacts are still evident. **Areas of pre-disturbance** may include areas where legal **clearing**, logging, timber harvesting, or grazing activities have previously occurred, where high densities of weed or **pest** species are present which have inhibited re-colonisation of native regrowth, or where there is existing **infrastructure** (regardless of whether the **infrastructure** is associated with the authorised petroleum

activities). The term '**areas of pre-disturbance**' does not include areas that have been impacted by wildfire/s, controlled burning, flood or natural vegetation die-back.

"Assessed or Assessment" by a suitably qualified and experienced person in relation to a consequence assessment of a dam, means that a statutory declaration has been made by that person and, when taken together with any attached or appended documents referenced in that declaration, all of the following aspects are addressed and are sufficient to allow an independent audit of the assessment:

(a) exactly what has been assessed and the precise nature of that determination;
(b) the relevant legislative, regulatory and technical criteria on which the assessment has been based;
(c) the relevant data and facts on which the assessment has been based, the source of that material, and the efforts made to obtain all relevant data and facts; and
(d) the reasoning on which the assessment has been based using the relevant data and facts, and the relevant criteria.

"Associated Water" means underground water taken or interfered with, if the taking or interference happens during the course of, or results from, the carrying out of another authorised activity under a petroleum authority, such as a petroleum well, and includes waters also known as produced formation water. The term includes all contaminants suspended or dissolved within the water.

"Associated Works" in relation to a dam, means:

- any kind and all things associated with the construction and operation of a dam; and
- any land used for those operations.

"Australian Standard 2187" means Australian Standard 2187.0:1998 Explosives—Storage, transport and use, Part 0, Australian Standard 2187.1:1998 Explosives—Storage, transport and use Part 1 and Australian Standard 2187.2:2006 Explosives—Storage and use, Part 2 or any updated versions that becomes available from time to time.

"Australian Standard 3580" means any of the following publications:

- AS3580.10.1 Methods for sampling and analysis of ambient air - Determination of particulate matter - Deposited matter - Gravimetric method.
- AS3580.9.6 Methods for sampling and analysis of ambient air Determination of suspended particulate matter PM10 high volume sampler with size-selective inlet Gravimetric method
- AS3580.9.9 Methods for sampling and analysis of ambient air Determination of suspended particulate matter PM10 low volume sampler Gravimetric sampler.

"Australian Standard 4323" means Australian Standard 4323.1:1995 Stationary source emissions method 1: Selection of sampling positions.

"Authority" means an environmental authority.

"Background Noise Level" means the sound pressure level, measured in the absence of the noise under investigation, as the L A90,T being the A-weighted sound pressure level exceeded for 90 percent of the measurement time period T of not less than 15 minutes, using Fast response.

"Bed and Banks" for a watercourse or wetland means land over which the water of the watercourse or wetland normally flows or that is normally covered by the water, whether permanently or intermittently; but does not include land adjoining or adjacent to the bed or banks that is from time to time covered by floodwater.

"**Being or Intended to be Utilised by the Landholder or Overlapping Tenure Holder**" for significantly disturbed land, means there is a written agreement (e.g. land and compensation agreement) between the landholder or the overlapping tenure holder and the holder of the environmental authority identifying that the landholder or the

overlapping tenure holder has a preferred use of the land such that **rehabilitation** standards for revegetation by the holder of the environmental authority are not required.

For dams, means there is a written agreement (e.g. land and compensation agreement) between the landholder or the overlapping tenure holder and the environmental authority holder identifying that the landholder or the overlapping tenure holder has a preferred use for the dam such that **rehabilitation** standards for revegetation by the holder of the environmental authority are not required.

"Beneficial Use" means

- with respect to dams, that the current or proposed owner of the land on which a dam stands, has found a use for that dam that is:
  - of benefit to that owner in that it adds real value to their business or to the general community,
  - in accordance with relevant provisions of the *Waste Reduction and Recycling Act 2011*,
  - sustainable by virtue of written undertakings given by that owner to maintain that dam, and
  - the transfer and use have been approved or authorised under any relevant legislation. Or
- with respect to coal seam gas water, refer to the Department of Environment and Heritage Protection's *Guideline – Approval of Coal Seam Gas Water for Beneficial Use.**

"Bore" means a water observation bore or a water supply bore that is either sub-artesian or artesian.

"Brine Dam" means a regulated dam that is designed to receive, contain or evaporate brine.

"Brine" means saline water with a total dissolved solid concentration greater than 40 000 mg/l. **"brine dam"** means a regulated dam that is designed to receive, contain or evaporate **brine**.

"BTEX" means benzene, toluene, ethylbenzene, ortho-xylene, paraxylene, meta-xylene and total xylene.

"Bund or Bunded" in relation to spill containment systems for fabricated or manufactured tanks or containers designed to a recognised standard means an embankment or wall of brick, stone, concrete or other impervious material which may form part or all of the perimeter of a compound and provides a barrier to retain liquid. Since the bund is the main part of a spill containment system, the whole system (or bunded area) is sometimes colloquially referred to within industry as the bund. The bund is designed to contain spillages and leaks from liquids used, stored or processed above ground and to facilitate clean-up operations. As well as being used to prevent pollution of the receiving environment, bunds are also used for fire protection, product recovery and process isolation.

"BTEX" means benzene, toluene, ethylbenzene, ortho-xylene, para-xylene, meta-xylene and total xylene.

"Business Day" has the meaning in the *Acts Interpretation Act 1954* and means a day that is not—

- a Saturday or Sunday; or
- a public holiday, special holiday or bank holiday in the place in which any relevant act is to be or may be done.
- a business day that occurs during the period starting on 20 December in a year and ending on 5 January in the following year.

"Category A Environmentally Sensitive Area" means any area listed in Schedule 12, part 1, section 1 of the *Environmental Protection Regulation 2008*.

"Category B Environmentally Sensitive Area" means any area listed in Schedule 12, part 1, section 2 of the *Environmental Protection Regulation 2008*.

"Category C Environmentally Sensitive Area" means any of the following areas:

- Nature Refuges as defined under the *Nature Conservation Act 1992*;

- Koala Habitat Areas as defined under the *Nature Conservation (Koala) Conservation Plan 2006*;
- State Forests or Timber Reserves as defined under the *Forestry Act 1959*;
- Regional parks (resource use area) under the *Nature Conservation Act 1992*;
- An area validated as "Essential Habitat" ground-truthing surveys in accordance with the *Vegetation Management Act 1999* for a species of wildlife listed as endangered or vulnerable under the *Nature Conservation Act 1992*;
- Of Concern Regional Ecosystems that are remnant vegetation identified in the database called 'RE description database' containing Regional Ecosystem numbers and descriptions.

"Certifying or Certify or Certified or Certification" in relation to a dam, means assessment and approval must be undertaken by a suitably qualified and experienced person in relation to any assessment or documentation required by this Manual, including design plans, 'as constructed' drawings and specifications, construction, operation or an annual report regarding regulated structures, undertaken in accordance with the Board of Professional Engineers of Queensland Policy Certification by RPEQs (ID: 1.4 (2A))

"Certify" or "Certification" or "Certified" in relation to any matter other than a design plan, 'as constructed' drawings or an annual report regarding dams in this environmental authority means a Statutory Declaration by a suitably qualified person accompanying the written document stating that:

(a) all relevant material has been considered in the written document; and
(b) that the content of the written document is accurate and true; and
(c) that the written document meets the requirements of the relevant conditions of the environmental authority.

"Clearing" for vegetation means removing, cutting down, ringbarking, pushing over, poisoning or destroying in any way including by burning, flooding or draining; but does not include destroying standing vegetation by stock, or **lopping** a tree.

"Closed-Loop Systems" means using waste on site in a way that does not release waste or contaminants in the waste to the environment.

"Coal Seam Gas Water" means underground water brought to the surface of the earth, or otherwise interfered with, in connection with exploring for or producing coal seam gas. Coal seam gas water is a waste defined under section 13 of the *Environmental Protection Act 1994.*

"Commercial Species" means species as listed in parts 1, 2 and 3 of Schedule 6 of the Vegetation Management Regulation 2012, which are above the diameters / sizes specified in this Schedule for each listed species.

"Consequence Category" means a category, either low, significant or high, into which a dam is assessed as a result of the application of tables and other criteria in the Manual for assessing consequence categories and hydraulic performance of structures (ESR/2016/1933).

"Consequence" in relation to a structure as defined, means the potential for environmental harm resulting from the collapse or failure of the structure to perform its primary purpose of containing, diverting or controlling flowable substances.

"Construction or Constructed" in relation to a dam includes building a new dam and modifying or lifting an existing dam, but does not include investigations and testing necessary for the purpose of preparing a design plan.

"Control Measure" has the meaning in section 47 of the *Environmental Protection Regulation 2008* and means a device, equipment, structure, or management strategy used to prevent or control the release of a contaminant or waste to the environment.

"Daily Peak Design Capacity" for sewage treatment works, has the meaning in Schedule 2, section 63(4) of the

Environmental Protection Regulation 2019 as the higher equivalent person (EP) for the works calculated using each of the formulae found in the definition for EP

"Dam" means a land-based structure or a void that is designed to contains, diverts or controls flowable substances, and includes any substances that are thereby contained, diverted or controlled by that land-based structure or void and **associated works**. A dam does *not* mean a fabricated or manufactured tank or container, designed and constructed to an Australian Standard that deals with strength and structural integrity of that tank or container.

"Dam Crest Volume" means the volume of material that could be within the walls of a dam at any time when the upper level of that material is at the crest level of that dam. That is, the instantaneous maximum volume within the walls without regard to flows entering or leaving (e.g. via a spillway).

"**Declared Pest Species**" has the meaning in the Land Protection (Pest and Stock Route Management) Regulation 2003 and is a live animal or plant declared to be a declared pest under section 36 (Declaring Pests by Regulation) or section 37(2) (Declaring Pest under Emergency Pest Notice) of that Act and includes reproductive material of the animal or plant.

"Design Plan" is the documentation required to describe the physical dimensions of the dam, the materials and standards to be used for construction of the dam, and the criteria to be used for operating the dam. The documents must include design and investigation reports, specifications and **certifications**, together with the planned decommissioning and rehabilitation works and outcomes. A **design plan** may include 'as constructed' drawings.

"Design Storage Allowance or DSA" means an available volume, estimated in accordance with the *Manual for Assessing Hazard Categories and Hydraulic Performance of Dams*, prepared by the Department of Environment and Heritage Protection , as amended from time to time, that must be provided in a dam to an annual exceedance probability specified in that Manual.

"Development Well" means a petroleum well which produces or stores petroleum. For clarity, a development well does not include an appraisal well.

"Document" has the meaning in the *Acts Interpretation Act 1954* and means:

- any paper or other material on which there is writing; and
- any paper or other material on which there are marks; and
- figures, symbols or perforations having a meaning for a person qualified to interpret them; and
- any disc, tape or other article or any material from which sounds, images, writings or messages are capable of being produced or reproduced (with or without the aid of another article or device).

"**Ecologically Dominant Layer**" has the meaning in the Methodology for Surveying and Mapping of Regional Ecosystems and Vegetation Communities in Queensland (Version 3.2 August 2012) and means the layer making the greatest contribution to the overall biomass of the site and the vegetation community (NLWRA 2001). This is also referred to as the ecologically dominant stratum or the predominant canopy in woody ecosystems.

"Ecosystem Function" means the interactions between and within living and nonliving components of an ecosystem and generally correlates with the size, shape and location of the vegetation community.

"Emergency Action Plan" means documentation forming part of the operational plan held by the holder or a nominated responsible officer, that identifies emergency conditions that sets out procedures and actions that will be followed and taken by the dam owner and operating personnel in the event of an emergency. The actions are to minimise the risk and consequences of failure, and ensure timely warning to affected persons and the implementation of protection measures. The plan must require dam owners to annually review and update contact information where required.

"Enclosed Flare" means a device where the residual gas is burned in a cylindrical or rectangular enclosure that

includes a burning system and a damper where air for the combustion reaction is admitted.

"Environmental Harm" has the meaning in section 14 of the *Environmental Protection Act 1994* and means any adverse effect, or potential adverse effect (whether temporary or permanent and of whatever magnitude, duration or frequency) on an environmental value, and includes environmental nuisance.

Environmental harm may be caused by an activity:

(a) whether the harm is a direct or indirect result of the activity; or
(b) whether the harm results from the activity alone or from the combined effects of the activity and other activities or factors.

"Environmental Nuisance" has the meaning in section 15 of the *Environmental Protection Act 1994* and means unreasonable interference or likely interference with an environmental value caused by

(a) aerosols, fumes, light, noise, odour, particles or smoke; or
(b) an unhealthy, offensive or unsightly condition because of contamination; or
(c) another way prescribed by regulation.

"Equivalent Person or EP" means an equivalent person under volume 1, section 2 of the *Guidelines for Planning and Design of Sewerage Schemes*, October 1991, published by the Water Resources Commission, Department of Primary Industries, Fisheries and Forestry.

"Essential Habitat" for EA Conditions D12 to D17 means vegetation in which a species that is listed under the *Nature Conservation Act 1992* (QLD) as Endangered or Vulnerable has been known to occur. Essential habitat for the GFD project for EA Conditions D12 to D17 is limited to areas mapped in version 3.1 of the Essential Habitat map as provided in Chapter 18 of the Environmental Impact Statement for the Santos Gas Fields Development Project. For all other Conditions under this EA

"**Essential Habitat"** has the same meaning as defined in the VM Act.

"Exploration Well" means a petroleum well that is drilled to:

- explore for the presence of petroleum or natural underground reservoirs suitable for storing petroleum; or
- obtain stratigraphic information for the purpose of **exploring for petroleum**.

For clarity, an **exploration well** does not include an appraisal or **development well**.

"Exploring for Petroleum" means carrying out an activity for the purpose of finding petroleum or natural underground reservoirs as per section 14 of the *Petroleum and Gas (Production and Safety) Act 2004* for example including:

- conducting a geochemical, geological or geophysical survey;
- drilling a well;
- carrying out testing in relation to a well;
- taking a sample for chemical or other analysis.

"Existing Structure" means a structure that prior to the activation of the GFD conditions meets any or both of the following, a structure:*

(a) with a design that is in accordance with the April 2019 version 9.00 Manual for Assessing Consequence Categories and Hydraulic Performance of Structures and that is considerably in progress;
(b) that is under considerable construction or that is constructed.

"Fill" means any kind of material in solid form (whether or not naturally occurring) capable of being deposited at a place but does not include material that forms a part of, or is associated with, a structure constructed in a watercourse or wetland including a bridge, road, causeway, pipeline, rock revetment, drain outlet works, erosion

prevention structure or fence.

"Flare Pit" has the meaning in the Manual for Assessing Consequence Categories and Hydraulic Performance of Structures (ESR/2016/1933), and means containment area where any hydrocarbon that is discovered in an over-pressured reservoir during a drilling operation is diverted t

"Flare Precipitant" means waste fluids which result from the operation of a flare.

"Floodplain" has the meaning in the *Water Act 2000* and means an area of reasonably flat land adjacent to a watercourse that—

- is covered from time to time by floodwater overflowing from the watercourse; and
- does not, other than in an upper valley reach, confine floodwater to generally follow the path of the watercourse; and
- has finer sediment deposits than the sediment deposits of any bench, bar or in-stream island in the watercourse.

"Flowable Substance" means matter or a mixture of materials which can flow under any conditions potentially affecting that substance. Constituents of a flowable substance can include water, other liquids fluids or solids, or a mixture that includes water and any other liquids fluids or solids either in solution or suspension.

"GDA" means Geocentric Datum of Australia.

"Great Artesian Basin (GAB) spring" means an area protected under the *Environment Protection and Biodiversity Conservation Act 1999* because it is considered to be a Matter of National Environmental Significance and identified as a:

- community of native species dependent on natural discharge of groundwater from the Great Artesian Basin; or
- Great Artesian Basin spring; or
- Great Artesian Basin discharge spring wetland.

A GAB spring includes a spring vent, spring complex or watercourse spring and includes the land to which water rises naturally from below the ground and the land over which the water then flows.

Note: The Australian Government's Protected Matters Search Tool should be used to get an indication of whether the area of interest may contain an MNES spring.

Note: The GAB springs dataset can be requested from the Queensland Government Herbarium

"Greywater" means wastewater generated from domestic activities such as laundry, dishwashing, and bathing. Greywater does not include sewage.

"Groundwater Dependent Ecosystems (GDE)" means ecosystems which require access to groundwater on a permanent or intermittent basis to meet all or some of their water requirements so as to maintain their communities of plants and animals, ecological processes and ecosystem services.

For the purposes of the environmental authority, groundwater dependent ecosystems do not include those mapped as "unknown".

"Growing" means to increase by natural development, as any living organism or part thereof by assimilation of nutriment; increase in size or substance.

"High Value Regrowth" vegetation means

- any of the following:
  - an endangered regional ecosystem;
  - an of concern regional ecosystem;

- a least concern regional ecosystem; and
- have not been cleared since 31 December 1989; and
- is shown on a **regrowth vegetation map**.

"Holder" means any person who is the holder of, or is acting under, that environmental authority.

"Hydraulic Fracturing" means a technique used to create cracks in underground coal seams to increase the flow and recovery of gas or oil out of a well. It involves pumping a fluid, comprised largely of water and sand, under pressure, into a coal seam. This action fractures the coal seam which provides a pathway that increases the ability for gas to flow through the coal.

"Hydraulic Performance" means the capacity of a regulated dam to contain or safely pass flowable substances based on a probability (AEP) of performance failure specified for the relevant hazard category *Manual for Assessing Hazard Categories and Hydraulic Performance of Dams*, prepared by the Department of Environment and Heritage Protection, as amended from time to time.

"Hydraulic Testing" means the testing of a geological formation to evaluate the hydrogeological characteristics of the formation.

"Impulsive Noise" means sound characterised by brief excursions of sound pressure (acoustic impulses) that significantly exceed the background sound pressure. The duration of a single impulsive sound is usually less than one second.

"Incidental Activity" for this environmental authority means an activity that is not a specified relevant activity and is necessary to carry out the activities listed in *Schedule A, Table 1 – Scale and Intensity for the Activities.*

"Infrastructure" means plant or works including for example, communication systems, compressors, powerlines, pumping stations, reservoirs, roads and tracks, water storage dams, evaporation or storage ponds and tanks, equipment, buildings and other structures built for the purpose and duration of the conduct of the petroleum activities) including temporary structures or structures of an industrial or technical nature, including, for example, mobile and temporary camps.

Infrastructure does not include other facilities required for the long term management of the impact of those petroleum activities or the protection of potential resources. Such other facilities include dams other than water storage dams (e.g. evaporation dams), pipelines and assets, that have been decommissioned, rehabilitated, and lawfully recognised as being subject to subsequent transfer with ownership of the land.

"LAeq, adj, 15 mins" means the A-weighted sound pressure level of a continuous steady sound, adjusted for tonal character that within any 15 minute period has the same square sound pressure as a sound level that varies with time.

"Lake" means:

- a lagoon, swamp or other natural collection of water, whether permanent or intermittent; and
- the **bed and banks** and any other element confining or containing the water.

"Land Degradation" has the meaning in the *Vegetation Management Act 1999* and means the following:

- soil erosion
- rising water tables
- the expression of salinity
- mass movement by gravity of soil or rock
- stream bank instability
- a process that results in declining water quality.

"Landholders' Active Groundwater Bores" for the purposes of stimulation baseline and impact monitoring in

this environmental authority means bores that are able to continue to provide a reasonable yield of water in terms of quantity for the bores authorised purpose or use. This term does not include monitoring bores owned by the administering authority of the *Water Act 2000*.

"Levee" means a dyke or **bund** that is designed only to provide for the containment and diversion of stormwater or flood flows from a contributing catchment, or containment and diversion of flowable materials resulting from unplanned releases from other works of infrastructure, during the progress of those stormwater or flood flows or those unplanned releases; and does not store any significant volume of water or flowable substances at any other times.

"Limited Impact Camps" mean accommodation camps that:

- are temporary (no more than 6 months);
- are located within pre-existing areas of **clearing** or significant disturbance;
- are up to 2 ha or located within well sites; and
- may involve sewage treatment works that are no release works or release works that involve an irrigation release within pre-existing areas of **clearing** or significant disturbance.

"Limited Impact Petroleum Activities" means petroleum activities that are located within areas that are not a regional ecosystem and:

- are single well sites (includes observation, pilot, injection and production wells) or multi-well sites greater than 1ha; and
- may involve construction of new access tracks that are required as part of the construction or servicing a petroleum activity that can be lawfully carried out within an ESA or its protection zone; and
- may involve upgrading or maintenance of existing roads or tracks; and
- may include power and communication lines; and
- may include gas gathering lines from a well site to the initial compression facility; and
- may include water gathering lines from a well site to the initial water storage or **dam**.

"Limited Petroleum Activities" mean any low impact petroleum activity, and:

- single well sites (includes observation, pilot, injection and production wells) up to 1 ha and associated infrastructure (water pumps and generators, sumps, flare pits or dams) located on the well site or up to 1.25 ha if the well pad includes the use of a tank (minimum 1 ML) for above ground fluid storage,
- multi-well sites up to an additional (in addition to single well site above) 0.25 ha per additional well and associated infrastructure (water pumps and generators, sumps, flare pits, dams or tanks) located on the well site to a maximum of 3 ha,
- construction of new access tracks that are required as part of the construction or servicing a petroleum activity that can be lawfully carried out within an ESA or its protection zone
- upgrading or maintenance of existing roads or tracks,
- power and communication lines,
- gas gathering lines from a well site to the initial compression facility,
- water gathering lines from a well site to the initial water storage or dam,
- camps within well site that may involve sewage treatment works that are a no release works.

"Linear Infrastructure" means powerlines, communication, pipelines, roads and access tracks.

"Long Term Noise Event" is a noise exposure, when perceived at a sensitive receptor, persists for a period of greater than five (5) days, even when there are respite periods when the noise is inaudible within those five (5) days.

"Lopping" a tree, means cutting or pruning its branches, but does not include —

- removing its trunk; and
- cutting or pruning its branches so severely that it is likely to die.

"Low Flow" means flow up to the one month average recurrence interval.

"Low Consequence Dam" means any dam that is not a high or significant consequence category as assessed using the Manual for assessing consequence categories and hydraulic performance of structures (ESR/2016/1933).

"Low Impact Petroleum Activities" means petroleum activities which do not result in the **clearing** of native vegetation, earthworks or excavation work that cause either, a significant disruption to the soil profile or permanent damage to vegetation that cannot be easily rehabilitated immediately after the activity is completed. Examples of such activities include but are not necessarily limited to:

- chipholes
- coreholes
- geophysical surveys
- seismic surveys
- soil surveys
- topographic surveys
- cadastral surveys
- ecological surveys
- installation of environmental monitoring equipment (including surface water)

"Mandatory Reporting Level" or "MRL" means a warning and reporting level determined in accordance with the criteria in the "Manual for Assessing Hazard Categories and Hydraulic Performance of Dams" prepared by the Department of Environment and Heritage Protection, as amended from time to time.

"Manual" in reference to dams means the Manual for assessing consequence categories and hydraulic performance of structures (ESR/2016/1933) published by the administering authority, as amended from time to time.

"Map of Queensland wetland environmental values" means the statutory map under the Environmental Protection (Water and Wetland Biodiversity) Policy 2019. It identifies wetlands of high ecological significance (HES) and general ecological significance (GES) across the state.

"Max LpZ, 15 min" means the maximum value of the Z-weighted sound pressure level measured over 15 minutes.

"Max LpA, 15 min" means the absolute maximum instantaneous A-weighted sound pressure level, measured over 15 minutes.

"medium term noise event" is a noise exposure, when perceived at a sensitive receptor, persists for an aggregate period not greater than five (5) days and does not re-occur for a period of at least four (4) weeks. Re-occurrence is deemed to apply where a noise of comparable level is observed at the same receptor location for a period of one hour or more, even if it originates from a difference source or source location.

"Methodology" means the science of method, especially dealing with the logical principles underlying the organisation of the various special sciences, and the conduct of scientific inquiry.

"Mix-Bury-Cover Method" means the stabilisation of residual drilling solids in the bottom of a sump by mixing with subsoil and which occurs in accordance with the following methodology:

- the base of the subsoil and residual solid mixture must be separated from the groundwater table by at least one metre of a continuous layer of impermeable subsoil material (kw = 10–8 m/s) or subsoil with a

clay content of greater than 20 per cent; and
- the residual solids is mixed with subsoil in the **sump** and cover; and
- the subsoil and residual solids is mixed at least three parts subsoil to one part waste (v/v); and
- a minimum of one metre of clean subsoil must be placed over the subsoil and residual solids mixture; and
- topsoil is replaced.

"Month" has the meaning in the *Acts Interpretation Act 1954* and means a calendar month and is a period starting at the beginning of any day of one (1) of the 12 named months and ending:

- immediately before the beginning of the corresponding day of the next named month; or
- if there is no such corresponding day—at the end of the next named month.

"NATA accreditation" means accreditation by the National Association of Testing Authorities Australia. **"oil based drilling mud"** means mud where the base fluid is a petroleum product such as diesel fuel.

"Operational Plan" includes:

(a) normal operating procedures and rules (including clear documentation and definition of process inputs in the DSA);
(b) contingency and emergency action plans including operating procedures designed to avoid and/or minimise environmental impacts including threats to human life resulting from any overtopping or loss of structural integrity of the regulated structure.

"Overburden Pressure" means the pressure or stress imposed on a layer of soil or rock by the weight of overlying material. The overburden pressure at a depth z is given by $p(z) = p0 + g \int 0 \approx p(z)\, dz$ where p(z) is the density of the overlying rock at depth z and g is the acceleration due to gravity. p0 is the datum pressure, like the pressure at the surface.

"Pipeline Waste Water" means hydrostatic testing water, flush water or water from low point drains.

"Pre-Disturbed Land Use" means the function or use of the land as documented prior to significant disturbance occurring at that location.

"Predominant Species" has the meaning in the Methodology for Surveying and Mapping of Regional Ecosystems and Vegetation Communities in Queensland (Version 3.2 August 2012) and means a species that contributes most to the overall above-ground biomass of a particular stratum.

"Prescribed Environmental Matter" has the meaning in section 10 of the *Environmental Offsets Act 2014*. Prescribed Environmental Matters for the GFD project are limited to the following Matters of State Environmental Significance:

a) remnant regional ecosystems listed as endangered (VM Act Class)
b) remnant regional ecosystems listed as of concern (VM Act Class)
c) essential habitat for the species listed in Schedule D, Table 3;
d) wetlands of general ecological significance.

"Primary Protection Zone" means an area within 200m from the boundary of any Category A, B or C Environmentally Sensitive Area.

"Produced Water" has the meaning in Section 15A of the *Petroleum and Gas (Production and Safety) Act 2004* and means CSG water or **associated water** for a petroleum tenure

"Prohibited or Restricted Pest Species" means any pest that is:

(a) a plant or animal, other than a native species of plant or animal, that is
    i. invasive biosecurity matter under the *Biosecurity Act 2014* (Qld); or
    ii. controlled biosecurity matter or regulated biosecurity matter under the *Biosecurity Act 2014* (Qld)

iii. tramp ants listed in schedule 1 and schedule 2 of the Biosecurity Act 2014 (Qld)

(b) a pest declared under a local law by the local government for the Land to be a pest because the pest is causing, or has the potential to cause, an adverse environmental, economic or social impact in all or part of the local government area.

Notes-

1 See the *Biosecurity Act 2014*, schedule 1, part 3 or 4 or schedule 2, part 2; and

2 See the note to the *Biosecurity Act 2014,* schedules 1 and 2**.**

"**Regional Ecosystem(s)"** has the meaning in the Methodology for Surveying and Mapping of Regional Ecosystems and Vegetation Communities in Queensland (Version 3.2 August 2012) and means a vegetation community in a bioregion that is consistently associated with a particular combination geology, landform and soil. Regional ecosystems of Queensland were originally described in Sattler and Williams (1999). The Regional Ecosystems Description Database (Queensland Herbarium 2013) is maintained by Queensland Herbarium and contains the current descriptions of regional ecosystems.

"Register of Regulated Structures" includes:

(a) Date of entry in the register;
(b) Name of the structure, its purpose and intended/actual contents;
(c) The consequence category of the dam as assessed using the *Manual for assessing consequence categories and hydraulic performance of structures* (ESR/2016/1933);
(d) Dates, names, and reference for the design plan plus dates, names, and reference numbers of all document(s) lodged as part of a design plan for the dam;
(e) Name and qualifications of the suitably qualified and experienced person who certified the design plan and 'as constructed' drawings;
(f) For the regulated dam, other than in relation to any **levees** –
    i. The dimensions (metres) and surface area (hectares) of the dam measured at the footprint of the dam;
    ii. Coordinates (latitude and longitude in GDA94) within five metres at any point from the outside of the dam including its storage area
    iii. **Dam crest volume** (megalitres);
    iv. Spillway crest level (metres AHD).
    v. Maximum operating level (metres AHD);
    vi. Storage rating table of stored volume versus level (metres AHD);
    vii. Design storage allowance (megalitres) and associated level of the dam (metres AHD);
    viii. Mandatory reporting level (metres AHD);
(g) The design plan title and reference relevant to the dam;
(h) The date construction was certified as compliant with the design plan;
(i) name and details of the suitably qualified and experienced person who certified that the constructed dam was compliant with the design plan;
(j) Details of the composition and construction of any liner;
(k) The system for the detection of any leakage through the floor and sides of the dam;
(l) Dates when the regulated dam underwent an annual inspection for structural and operational adequacy, and to ascertain the available storage volume for 1 November of any year;
(m) Dates when recommendations and actions arising from the annual inspection were provided to the administering authority;
(n) Dam water quality as obtained from any monitoring required under this authority as at 1 November of each year.

"Regulated Structure" means any structure in the significant or high consequence category as assessed using the Manual for assessing consequence categories and hydraulic performance of structures (ESR/2016/1933) published by the administering authority. A regulated structure does not include:

- a fabricated or manufactured tank or container, designed and constructed to an Australian Standard that deals with strength and structural integrity of that tank or container;
- a sump or earthen pit used to store residual drilling material and drilling fluid only for the duration of drilling and well completion activities;
- a flare pit.

"Rehabilitation or Rehabilitated" means the process of reshaping and revegetating land to restore it to a stable landform and in accordance with the acceptance criteria and, where relevant, includes remediation of contaminated land. For the purposes of pipeline rehabilitation, rehabilitation includes reinstatement, revegetation and **restoration**.

"**Reinstate or Reinstatement**" for pipelines, means the process of bulk earth works and structural replacement of pre-existing conditions of a site (i.e. soil surface typography, watercourses, culverts, fences and gates and other landscape(d) features) and is detailed in the Australian Pipeline Industry Association (APIA) Code of Environmental Practice: Onshore Pipelines (2013).

"Remnant Vegetation" means vegetation, part of which forms the predominant canopy of the vegetation:

- covering more than 50 per cent of the undisturbed predominant canopy; and
- averaging more than 70 per cent of the vegetation's undisturbed height; and
- composed of species characteristic of the vegetation's undisturbed predominant canopy cover.

"Reporting Limit" means the lowest concentration that can be reliably measured within specified limits of precision and accuracy during routine laboratory operating conditions. For many **analytes**, the reporting limit is selected as the lowest non-zero standard in the calibration curve. Results that fall below the reporting limit will be reported as "less than" the value of the reporting limit. The reporting limit is also referred to as the practical quantitation limit or the limit of quantitation. For polycyclic aromatic hydrocarbons, the reporting limit must be based on super-ultra trace methods and, depending on the specific polycyclic aromatic hydrocarbon, will range between 0.005 ug/L – 0.02 ug/L.

"Residual Drilling Material" means waste drilling materials including muds and cuttings or cement returns from well holes and which have been left behind after the drilling fluids are pumped out.

"Restricted Stimulation Fluids" means fluids used for the purpose of stimulation, including fracturing, that contain the following chemicals in more than the maximum amounts prescribed under section 81B of the *Environmental Protection Regulation 2008*:

- petroleum hydrocarbons containing benzene, ethylbenzene, toluene or xylene; or
- chemicals that produce, or are likely to produce, benzene, ethylbenzene, toluene or xylene as the chemical breaks down in the environment.

The amount of any chemical is not measured in relation to water included in the restricted **stimulation fluid**. For clarity, the term restricted stimulation fluids only applies to fluids injected down well post-perforation.

"**Revegetation or Revegetating or Revegetate**" means to actively re-establish vegetation through seeding or planting techniques in accordance with site specific management plans.

"Secondary Protection Zone" in relation to a Category A, B or C Environmentally Sensitive Area means an area within an 100 metre buffer from the boundary of a **primary protection zone**.

"Sensitive Place" means:

- a dwelling (including residential allotment, mobile home or caravan park, residential marina or other residential premises, motel, hotel or hostel; or
- a library, childcare centre, kindergarten, school, university or other educational institution;
- a medical centre, surgery or hospital; or
- a protected area; or
- a public park or garden that is open to the public (whether or not on payment of money) for use other than for sport or organised entertainment; or
- a work place used as an office or for business or commercial purposes, which is not part of the petroleum activity(ies) and does not include employees accommodation or public roads.

"Sensitive Receptor" is defined in Schedule 2 of the Environmental Protection (Noise) Policy 2019, and means an area or place where noise is measured.

"Short Term Noise Event" is a noise exposure, when perceived at a sensitive receptor, persists for an aggregate period not greater than eight hours and does not re-occur for a period of at least seven (7) days. Reoccurrence is deemed to apply where a noise of comparable level is observed at the same receptor location for a period of one hour or more, even if it originates from a different source or source location.

"Significantly Disturbed or Significant Disturbance or Significant Disturbance to Land or Areas" has the meaning in Schedule 12, section 4 of the *Environmental Protection Regulation 2008*. Land is significantly disturbed if:

(a) it is contaminated land; or
(b) it has been disturbed and human intervention is needed to rehabilitate it:
    i. to a condition required under the relevant environmental authority; or
    ii. if the environmental authority does not require the land to a particular conditions – to the condition it was in immediately before the disturbance

"Site" means the relevant petroleum activity(ies) to which the environmental authority relates.

"Species Richness" means the number of different species in a given area.

"Specified Relevant Activities" for this environmental activity means an activity that:

(a) but for being carried out as a resource activity, would otherwise be an activity prescribed under section 19 of the *Environmental Protection Act 1994* as an environmentally relevant activity; or
(b) stimulation activities; or
(c) extracting material other than by dredging.

"Spillway" means a weir, channel, conduit, tunnel, gate or other structure designed to permit discharges from the dam, normally under flood conditions or in anticipation of flood conditions.

"Stable" has the meaning in Schedule 5 of the *Environmental Protection Regulation 2008* and for a site, means the rehabilitation and **restoration** of the site is enduring or permanent so that the site is unlikely to collapse, erode or subside.

"Stimulation" means a technique used to increase the permeability of a natural underground reservoir, including for example, hydraulic fracturing / hydrofracking, fracture acidizing and the use of proppant treatments.

"Stimulation Fluid" means the fluid injected into an aquifer to increase the permeability of a natural underground reservoir. For clarity, the term stimulation fluid only applies to fluids injected down well post-perforation.

"Stimulation Impact Zone" means a 100 metre maximum radial distance from the stimulation target location within a gas producing formation.

"Structure" for the purposes of Schedule C means a dam or levee.

"Suitably Qualified And Experienced Person" in relation to regulated structures means one who is a Registered Professional Engineer of Queensland (RPEQ) under the provisions of the *Professional Engineers Act 1988*, and has demonstrated competency and relevant experience:

- for regulated dams, an RPEQ who is a civil engineer with the required qualifications in dam safety and dam design for regulated levees, an RPEQ who is a civil engineer with the required qualifications in the design of flood protection embankments.

It is permissible that a suitably qualified and experienced person obtain subsidiary **certification** from an RPEQ who has demonstrated competence and relevant experience in either geomechanics, hydraulic design or engineering hydrology.

"Suitably Qualified Person" means a person who has professional qualifications, training, skills or experience relevant to the nominated subject matter and can give authoritative assessment, advice and analysis to performance relative to the subject matter using the relevant protocols, standards, methods or literature.

"Suitably Qualified Third Party" means a person who:

(a) has qualifications and experience relevant to performing the function including but not limited to:
    (i) a bachelor's degree in science or engineering; and
    (ii) 3 years' experience in undertaking soil contamination assessments; and
(b) is a member of at least one organisation prescribed in Schedule 8 of the *Environmental Protection Regulation 2008*; and
(c) not be an employee of, nor have a financial interest or any involvement which would lead to a conflict of interest with the holder(s) of the environmental authority.

"Sump" means a pit in which waste residual drilling material or drilling fluids are stored only for the duration of drilling activities.

"Synthetic Based Drilling Mud" means a mud where the base fluid is a synthetic oil, consisting of chemical compounds which are artificially made or synthesised by chemically modifying petroleum components or other raw materials rather than the whole crude oil.

"System Design Plan" means a plan that manages an integrated containment system that shares the required DSA and/or ESS volume across the integrated containment system.

"Third Party Auditor" means a suitably qualified person who is either a certified third party auditor or an internal auditor employed by the holder of the environmental authority and the person is independent of the day to day management and operation of the petroleum activity(ies) covered by this environmental authority.

"Topsoil" means the surface (top) layer of a soil profile, which is more fertile, darker in colour, better structured and supports greater biological activity than underlying layers. The surface layer may vary in depth depending on soil forming factors, including parent material, location and slope, but generally is not greater than about 300 mm in depth from the natural surface.

"**Total Density of Coarse Woody Material**" means the total length of logs on the ground greater than or equal to 10cm diameter per hectare and number of logs on the ground greater than or equal to 10cm diameter per hectare.

"Transmissivity" means the rate of flow of water through a vertical strip of aquifer which is one unit wide and which extends the full saturated depth of the aquifer.

"Trenchless Methods" means construction methods for the installation of pipelines and cables below the ground with minimal excavation. Trenchless methods can include, but not necessarily be limited to:

- moling
- pipe ramming method

- horizontal directional drilling
- utility tunnelling, pipe jacking, auger boring
- microtunnelling and pipe jacking
- on-line replacement.

"Valid Complaint" means a complaint the administering authority considers is not frivolous, nor vexatious, nor based on mistaken belief.

"***Vegetation Management Act 1999* (VM Act) Class**" has the meaning provided in Division 7A of the *Vegetation Management Act 1999*. The VM Act class for each Regional Ecosystem is provided in the *Vegetation Management Regulation 2012*.

"Void" means any man-made, open excavation in the ground (includes borrow pits, drill sumps, frac pits, flare pits, cavitation pits and trenches).

"Waste and Resource Management Hierarchy" has the meaning provided in section 9 of the *Waste Reduction and Recycling Act 2011* and is the following precepts, listed in the preferred order in which waste and resource management options should be considered:

- AVOID unnecessary resource consumption;
- REDUCE waste generation and disposal
- RE-USE waste resources without further manufacturing
- RECYCLE waste resources to make the same or different products
- RECOVER waste resources, including the recovery of energy
- TREAT waste before disposal, including reducing the hazardous nature of waste
- DISPOSE of waste only if there is no viable alternative

"Waste and Resource Management Principles" has the meaning provided in section 4(2)(b) of the *Waste Reduction and Recycling Act 2011* and means the:

- polluter pays principle
- user pays principle
- proximity principle
- product stewardship principle.

"Waste Fluids" has the meaning in section 13 of the *Environmental Protection Act 1994* in conjunction with the common meaning of "fluid" which is "a substance which is capable of flowing and offers no permanent resistance to changes of shape". Accordingly, to be a waste fluid, the waste must be a substance which is capable of flowing and offers no permanent resistance to changes of shape.

"Water monitoring" means all water quality parameters and samples, discharge flow rates, volume of discharge per event, duration of discharge event, flow rate of receiving water for surface water and groundwater level required under conditions (B7), (B26), (B27), (B36), (B41), (B42), (B45-B48) and (I11-I13).

"Watercourse" has the meaning in Schedule 4 of the *Environmental Protection Act 1994* and means:

- a river, creek or stream in which water flows permanently or intermittently:
  - in a natural channel, whether artificially improved or not; or
  - in an artificial channel that has changed the course of the watercourse.
- Watercourse includes the bed and banks and any other element of a river, creek or stream confining or containing water.

"Waters" includes all or any part of a creek, river, stream, lake, lagoon, swamp, wetland, unconfined surface

water, unconfined water in natural or artificial watercourses, bed and bank of any waters, non-tidal or tidal waters (including the sea), stormwater channel, stormwater drain, roadside gutter, stormwater run-off, and underground water.

"Well Infrastructure" means infrastructure required for the construction and completion of a well including but not limited to cellar pits, dams and drill sumps.

"Well Integrity" means the ability of a well to contain the substances flowing through it.

"Well Site" means a maximum area of land disturbance for the purposes of constructing, installing and operating an exploration, appraisal or development well or such wells as part of a multi-well arrangement and includes well lease infrastructure.

"Wet Season" means the time of year, covering one or more months, when most of the average annual rainfall in a region occurs. For the purposes of DSA determination this time of year is deemed to extend from 1 November in one year to 31 May in the following year inclusive.

"Wetland" for the purpose of this environmental authority means:

- areas shown on the Map of Referable Wetlands which is a document approved by the chief executive on 4 November 2011 and published by the department, as amended from time to time by the chief executive under section 144D of the *Environmental Protection Regulation 2008*; and
- are wetlands as defined under the Queensland Wetlands Program as areas of permanent or periodic / intermittent inundation, with water that is static or flowing fresh, brackish or salt, including areas of marine water, the depth of which at low tide does not exceed six (6) metres, and possess one or more of the following attributes:
    - at least periodically, the land supports plants or animals that are adapted to and dependent on living in wet conditions for at least part of their life cycle, or
    - the substratum is predominantly undrained soils that are saturated, flooded or ponded long enough to develop anaerobic conditions in the upper layers, or
    - the substratum is not soil and is saturated with water or covered by water at some time.

"Wetland of General Ecological Significance or general ecologically significant wetland" is a wetland that meets the definition of a wetland and that is shown as a wetland of 'general ecological significance' on the Map of Queensland wetland environmental values.

"Wetland of High Ecological Significance" otherwise known as a "high conservation value wetland", is a wetland that meets the definition of a wetland and that is shown as a wetland of high ecological significance or high conservation value wetland on the map of referable wetlands.

"Year" means a period of 12 months.

"80th Percentile" in relation to release limits means that not more than one (1) of the measured values is to exceed the stated release limit for any five (5) consecutive samples where:

- the consecutive samples are taken over a five (5) month period; and
- the consecutive samples are taken at approximately equal periods.

"95th Percentile" in relation to release limits means calculating the 95th percentile of all samples recorded over each 24 hour period for the duration of the release the result of which cannot exceed release limits.

END OF ENVIRONMENTAL AUTHORITY

PL 281 Resource authority public report

Table of Contents

PL 281 Resource authority public report

Queensland Government

Permit details

Permit ID:	PL 281
Type:	Petroleum Lease
Status:	Granted
Lodged date:	02/10/2008
Grant date:	15/09/2017
Commencement date:	15/09/2017
Expiry date:	14/09/2038
Plan/program expiry date:	24/09/2025
Current term:	21 years
Work program type:	
Conditions:	
Locality:	EASTERN FLANK OF ROMA HIGH 24.6KM FROM COXON CREEK
Remarks:	
Act permit granted under:	Petroleum and Gas (Production and Safety) Act 2004
Act now administered under:	Petroleum and Gas (Production and Safety) Act 2004

Holders

Authorised holder representative (AHR)

Santos Limited
Team Leader Tenures Compliance Level 22, Santos Place 32 Turbot Street BRISBANE QLD 4000

Holders

	Holder name	Share %	Status	Held from	Held to	Authorised holder
*	TOTALENERGIES EP AUSTRALIA III	22.523462500000	Current	08/09/2022		No
*	BRONCO ENERGY PTY LIMITED Level 22, Santos Place 32 Turbot Street BRISBANE QLD 4000	42.667550000000	Current	15/09/2017		Yes
*	PAPL (UPSTREAM II) PTY LIMITED Team Leader Tenures Compliance Level 22 Santos Place 32 Turbot Street BRISBANE QLD 4000	22.523462500000	Current	15/09/2017		No
*	KGLNG E&P II PTY LTD Level 11, 28 The Esplanade PERTH WA 6000	12.285525000000	Current	15/09/2017		No
	TOTAL E&P AUSTRALIA III	22.523462500000	Former	15/09/2017	08/09/2022	
	BRONCO ENERGY PTY LIMITED	100.000000000000	Former	02/10/2008	28/04/2014	

Tenancy type: Tenancy in Common

PL 281 Resource authority public report

Queensland Government

Area

Location:	View Map
Mining district:	Dalby
Local authority:	Maranoa Regional Council
Area:	22991.6500 Hectares
Exclusions:	
Marked out date:	

Sub-blocks

BIM	Block	A	B	C	D	E	F	G	H	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z
Charleville	2225	A	B	C	D	E	F	G	H	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z
Charleville	2296	A	B	C	D	E	F	G	H	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z
Charleville	2297	A	B	C	D	E	F	G	H	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z

Background land

No data available

Survey plans

Plan No.	Description	Date received	Locality	Volume	Folio
MP43369	PETROLEUM LEASE 281 PWL - LILYVALE 4,AUTHORITY TO PROSPECT 631 PWL - LILYVALE 4	08/01/2014	YULEBA SOUTH		
MP45424	PETROLEUM LEASE 281 PWL - BXGGWUJ 01	24/04/2017	DALBY		
MP45880	PETROLEUM LEASE 281 PWL OF RM40-145 1, RM40-149 1, RM40-150 1, RM40-146 1, RM40-143 1, RM40-144 1, RM40-147 1, RM40-151 1, RM40-152 1, RM40-148 1	12/09/2019	YULEBA NORTH		
MP46064	PWL OF RM40-04 1, RM40-05 1, RM40-06 1, RM40-07 1, RM40-08 1, RM40-09 1, RM40-10 1, RM40-11 1, RM40-12 1, RM40-17 1, RM40-18 1, RM40-19 1, RM40-19 2, RM40-20 1, RM40-27 1, RM40-28 1, RM40-29 1, RM50-148 1, RM50-149 1 & RM50-150 1	31/08/2020			
MP46073	PWL OF RM40-14 1, RM40-14 1A & RM40-16 1	30/09/2020			
MP46202	PWL OF REUBEN DOWNS 1	17/10/2022			
MP46389	PWL OF RM42-07 1, RM42-10 1, RM42-11 1, RM42-12 1 & RM42-14 1	03/12/2022			
MP46743	PWL OF RM90-93-1, RM90-94-1, RM90-95-1, RM90-84-1, RM90-73-1, RM90-74-1, RM40-45-1, RM40-155-1, RM90-63-1, RM90-62-1, RM90-72-1, RM90-82-1, RM90-71-1 & RM90-61-1	30/01/2024			

Relinquishment details

No data available

Sub-blocks retained

No data available

Term history

Term	Date notice issued	Date lodged	Date approved	Date commenced	Date term ends	Term	Act granted under
2017 - 2038		02/10/2008	15/09/2017	15/09/2017	14/09/2038	21 years	Petroleum and Gas (Production and Safety) Act 2004

Native title

Outcome	Process
Section 31 Agreement	Right to Negotiate

Purpose and minerals

Prescribed Purpose
PETROLEUM

Prescribed minerals
Coal Seam Gas

Related permits

Pre-requisite permits:	ATP 631 - PL TO BE GRANTED UNDER THE P&G ACT 2004.

Financial

Rent details

Area units:	230
Rate/unit area:	$171.72

Activities

Activity name	Activity / Dealing No	Status	Date received	Expected completion	Date completed	Remarks
Change of holder name	387558	Registered	30/08/2022		08/09/2022	MMOL Reference:387558. Changed name from TOTAL E&P AUSTRALIA III to TOTALENERGIES EP AUSTRALIA III .
Coordination arrangement	245802	Approved	06/06/2018		28/09/2020	Approved 25 September 2020.

APPENDIX C

Title Searches

Prepared by:

Property Projects Australia

Current Title Search

Queensland Titles Registry Pty Ltd
ABN 23 648 568 101

Title Reference:	**16201212**	**Search Date:**	12/06/2024 14:41
Date Title Created:	16/12/1981	**Request No:**	48321789
Creating Dealing:			

ESTATE AND LAND

Estate in Fee Simple

LOT 287 CROWN PLAN WV459
Local Government: MARANOA

REGISTERED OWNER

Dealing No: 722886837 17/11/2023

QAM PTY LTD A.C.N. 655 784 740 TRUSTEE
UNDER INSTRUMENT 722886837

EASEMENTS, ENCUMBRANCES AND INTERESTS

1. Rights and interests reserved to the Crown by
Deed of Grant No. 16201212 (POR 287)

2. LEASE No 713640998 22/12/2010 at 10:08
OPTUS MOBILE PTY LIMITED A.C.N. 054 365 696
OF LEASE A ON SP235136
TERM: 24/05/2020 TO 23/05/2030 OPTION NIL

3. TRANSFER No 722371728 24/03/2023 at 16:12
LEASE: 713640998
AUSTRALIA TOWER NETWORK PTY LIMITED A.C.N. 643 875 165

ADMINISTRATIVE ADVICES

NIL

UNREGISTERED DEALINGS

NIL

Caution - Charges do not necessarily appear in order of priority

** End of Current Title Search **

Requested by: D-ENQ CITEC CONFIRM

Current Title Search

Queensland Titles Registry Pty Ltd
ABN 23 648 568 101

Title Reference:	**12990017**	**Search Date:**	12/06/2024 14:44
Date Title Created:	28/09/1956	**Request No:**	48321843
Creating Dealing:			

ESTATE AND LAND

Estate in Fee Simple

LOT 271 CROWN PLAN WV1113
Local Government: MARANOA

REGISTERED OWNER

Dealing No: 706713578 19/06/2003

JASON DEAN BELL
TAMARA JANE BELL JOINT TENANTS

EASEMENTS, ENCUMBRANCES AND INTERESTS

1. Rights and interests reserved to the Crown by
Deed of Grant No. 12356152 (POR 271)

2. EASEMENT IN GROSS No 602742290 (H652654) 23/07/1985
BURDENING THE LAND
TO THE SOUTH WEST QUEENSLAND ELECTRICITY BOARD
OVER EASEMENT D ON AP14693

3. TRANSFER No 703665089 01/11/1999 at 10:25
EASEMENT IN GROSS: 602742290 (H652654)
SOUTH WEST QUEENSLAND ELECTRICITY CORPORATION LIMITED

4. MORTGAGE No 714265842 17/01/2012 at 10:40
AUSTRALIA AND NEW ZEALAND BANKING GROUP LIMITED A.B.N. 11 005 357 522

ADMINISTRATIVE ADVICES

Dealing	Type	Lodgement Date	Status
713043425	VEG NOTICE VEGETATION MANAGEMENT ACT 1999	09/02/2010 10:08	CURRENT
721887139	CON COM AGMT MINERAL AND ENERGY RESOURCES (COMMON PROVISIONS) ACT 2014	08/08/2022 10:05	CURRENT

UNREGISTERED DEALINGS

NIL

Corrections have occurred - Refer to Historical Search

Caution - Charges do not necessarily appear in order of priority

** End of Current Title Search **

Requested by: D-ENQ CITEC CONFIRM

Current Title Search

Queensland Titles Registry Pty Ltd
ABN 23 648 568 101

Title Reference:	**10949072**	**Search Date:**	12/06/2024 14:47
Date Title Created:	18/07/1899	**Request No:**	48321986
Creating Dealing:			

ESTATE AND LAND

Estate in Fee Simple

LOT 65 CROWN PLAN WAL53531
Local Government: MARANOA

REGISTERED OWNER

Dealing No: 710422627 15/03/2007

TROY MICHAEL HARLAND

EASEMENTS, ENCUMBRANCES AND INTERESTS

1. Rights and interests reserved to the Crown by
Deed of Grant No. 10949072 (POR 65V)

2. EASEMENT IN GROSS No 602451382 (H624859) 20/06/1985
BURDENING THE LAND
TO THE SOUTH WEST QUEENSLAND ELECTRICITY BOARD
OVER EASEMENT J ON AP14684

3. TRANSFER No 703665089 01/11/1999 at 10:25
EASEMENT IN GROSS: 602451382 (H624859)
SOUTH WEST QUEENSLAND ELECTRICITY CORPORATION LIMITED

4. MORTGAGE No 712050976 17/11/2008 at 13:29
COMMONWEALTH BANK OF AUSTRALIA A.B.N. 48 123 123 124

ADMINISTRATIVE ADVICES

NIL

UNREGISTERED DEALINGS

NIL

Corrections have occurred - Refer to Historical Search

Caution - Charges do not necessarily appear in order of priority

** End of Current Title Search **

Requested by: D-ENQ CITEC CONFIRM

Current Title Search

Queensland Titles Registry Pty Ltd
ABN 23 648 568 101

Title Reference:	**14592011**	**Search Date:**	12/06/2024 14:50
Date Title Created:	15/06/1971	**Request No:**	48322086
Creating Dealing:			

ESTATE AND LAND

Estate in Fee Simple

LOT 119 CROWN PLAN WV237
Local Government: MARANOA

LOT 267 CROWN PLAN WV237
Local Government: MARANOA

LOT 274 CROWN PLAN WV237
Local Government: MARANOA

REGISTERED OWNER

Dealing No: 701299467 09/05/1996

TONY MAXWELL HARLAND

EASEMENTS, ENCUMBRANCES AND INTERESTS

1. Rights and interests reserved to the Crown by
Deed of Grant No. 14592011 (POR 119)
(POR 267)
(POR 274)

2. EASEMENT IN GROSS No 602451382 (H624859) 20/06/1985
BURDENING THE LAND
TO THE SOUTH WEST QUEENSLAND ELECTRICITY BOARD
OVER EASEMENT L IN POR 119 ON AP14684

3. TRANSFER No 703665089 01/11/1999 at 10:25
EASEMENT IN GROSS: 602451382 (H624859)
SOUTH WEST QUEENSLAND ELECTRICITY CORPORATION LIMITED

ADMINISTRATIVE ADVICES

NIL

UNREGISTERED DEALINGS

NIL

Corrections have occurred - Refer to Historical Search

Caution - Charges do not necessarily appear in order of priority

** End of Current Title Search **

Requested by: D-ENQ CITEC CONFIRM

Current Title Search

Queensland Titles Registry Pty Ltd
ABN 23 648 568 101

Title Reference:	**14024137**	**Search Date:**	12/06/2024 14:53
Date Title Created:	11/05/1967	**Request No:**	48322165
Previous Title:	10953126		

ESTATE AND LAND

Estate in Fee Simple

LOT 50 CROWN PLAN WAL53532
Local Government: MARANOA

REGISTERED OWNER

Dealing No: 701299467 09/05/1996

TONY MAXWELL HARLAND

EASEMENTS, ENCUMBRANCES AND INTERESTS

1. Rights and interests reserved to the Crown by
Deed of Grant No. 10953126 (POR 50V)

2. EASEMENT IN GROSS No 602451382 (H624859) 20/06/1985
BURDENING THE LAND
TO THE SOUTH WEST QUEENSLAND ELECTRICITY BOARD
OVER EASEMENT K ON AP14684

3. TRANSFER No 703665089 01/11/1999 at 10:25
EASEMENT IN GROSS: 602451382 (H624859)
SOUTH WEST QUEENSLAND ELECTRICITY CORPORATION LIMITED

ADMINISTRATIVE ADVICES

Dealing	Type	Lodgement Date	Status
717931655	CON COM AGMT MINERAL AND ENERGY RESOURCES (COMMON PROVISIONS) ACT 2014	29/03/2017 14:21	CURRENT
717931657	CON COM AGMT MINERAL AND ENERGY RESOURCES (COMMON PROVISIONS) ACT 2014	29/03/2017 14:22	CURRENT
717931659	CON COM AGMT MINERAL AND ENERGY RESOURCES (COMMON PROVISIONS) ACT 2014	29/03/2017 14:22	CURRENT

UNREGISTERED DEALINGS

NIL

Corrections have occurred - Refer to Historical Search

Caution - Charges do not necessarily appear in order of priority

** End of Current Title Search **

Requested by: D-ENQ CITEC CONFIRM

Current Title Search

Queensland Titles Registry Pty Ltd
ABN 23 648 568 101

Title Reference:	**14325088**	**Search Date:**	12/06/2024 14:57
Date Title Created:	16/07/1969	**Request No:**	48322264
Creating Dealing:			

ESTATE AND LAND

Estate in Fee Simple

LOT 109 CROWN PLAN WV1081
Local Government: MARANOA

REGISTERED OWNER

Dealing No: 701299467 09/05/1996

TONY MAXWELL HARLAND

EASEMENTS, ENCUMBRANCES AND INTERESTS

1. Rights and interests reserved to the Crown by
Deed of Grant No. 10953011 (POR 49V)

ADMINISTRATIVE ADVICES

NIL

UNREGISTERED DEALINGS

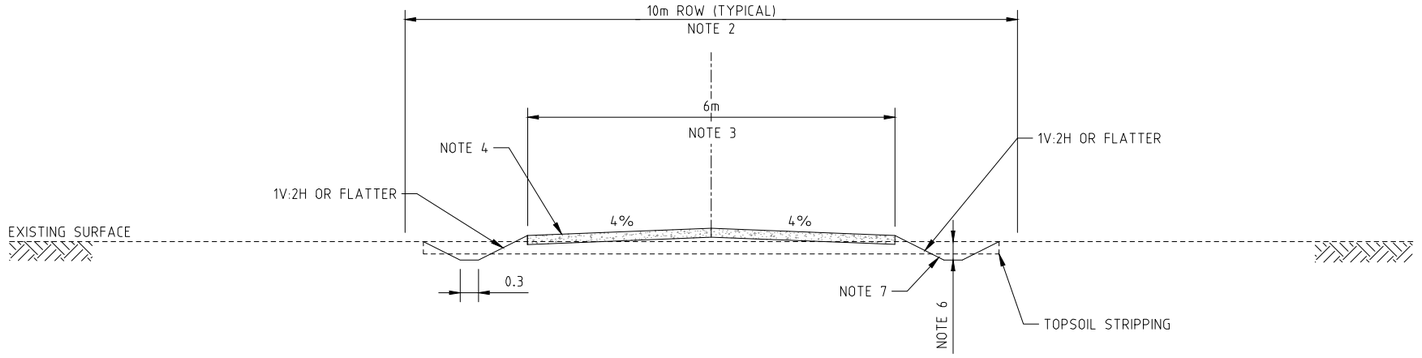
NIL

** End of Current Title Search **

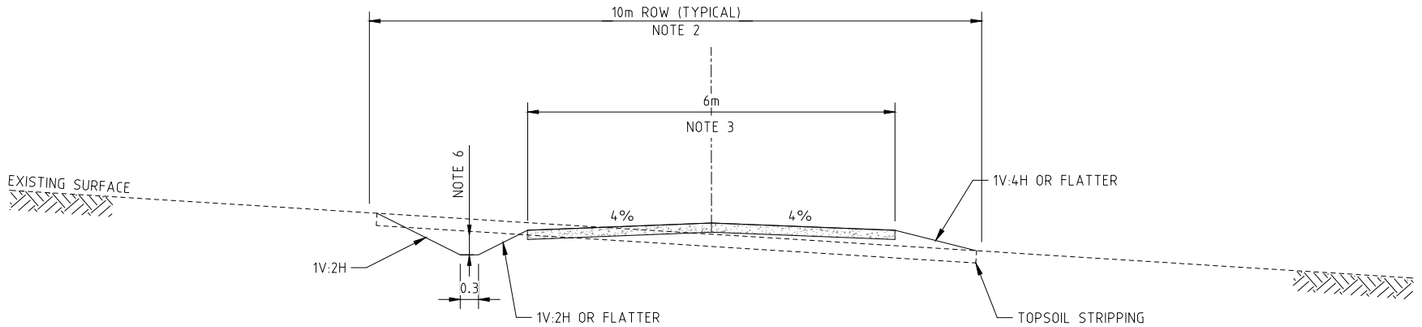
Requested by: D-ENQ CITEC CONFIRM

APPENDIX D

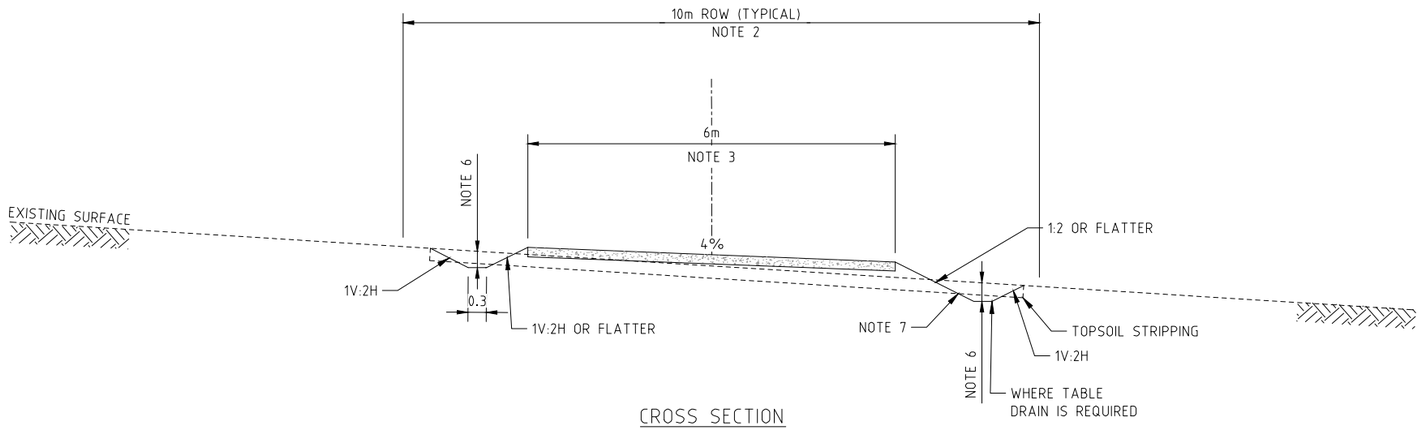
Santos Standard Access Road Design (0007-040-GAR-0040_3)



CROSS SECTION
FOR EXISTING FLAT SURFACE



CROSS SECTION
FOR EXISTING SLOPED SURFACE



CROSS SECTION
SUPERELEVATED (ON CURVES)

NOTES:

1. ROADWORKS SHALL BE CONSTRUCTED IN ACCORDANCE WITH SANTOS SPECIFICATION 1540-120-SPC-0001.
2. ROAD RIGHT OF WAY (ROW) CLEARING WIDTH SHALL BE 10m (UNLESS NOTED OTHERWISE) WITH ADDITIONAL CLEARING ON CORNERS AS REQUIRED AND PERMITTED. NO WORKS SHALL BE DONE OUTSIDE THE ROW.
3. TYPICAL ROAD WIDTH IS 6m. ADDITIONAL WIDTH IS REQUIRED FOR VEHICLE SWEPT PATH ON CURVES.
4. PAVEMENT THICKNESS TO CONSIST OF COMPACTED NOMINAL 150mm UNBOUND BEST AVAILABLE LOCAL MATERIAL AS SPECIFIED IN THE CIVIL SCOPE OR MATERIAL APPROVED BY SANTOS.
5. ROAD CROSS SECTION MAY BE EITHER SINGLE CROSSFALL OR CROWNED TO ACHIEVE BEST DRAINAGE BASED ON TOPOGRAPHY AND OVERLAND FLOW.
6. TABLE DRAIN DEPTH SHOULD BE 300mm TO 500mm AS REQUIRED.
7. TABLE DRAIN TO BE CONSTRUCTED ON TWO SIDES ONLY WHERE REQUIRED DEPENDING ON SITE TOPOGRAPHY AND OVERLAND FLOW PATH
8. WHERE ROAD IS CONSTRUCTED ADJACENT OR WITHIN THE GATHERING ROW (TOTAL ROW >10m), TABLE DRAIN SIDE SLOPE SHOULD BE 1V:4H OR FLATTER UNLESS NOTED OTHERWISE.
9. TOPSOIL TO BE STRIPPED PRIOR TO ROAD CONSTRUCTION AND STORED AS PER SEP.
10. ALL BATTER SLOPES SHALL BE 1(V):4(H) UNLESS NOTED OTHERWISE.
11. CONDUCT ANY ADDITIONAL MEASURES TO ENSURE THAT THE ENVIRONMENTAL MANAGEMENT REQUIREMENTS OF APPLICABLE AUTHORITIES, SITE SPECIFIC SOIL MANAGEMENT PLANS AND ANY OTHER RELEVANT MANAGEMENT PLANS ARE COMPLIED WITH.
12. SEEK APPROPRIATE ADVICE FOR STABILISATION WITH TABLE DRAINS WHERE SLOPES ARE >3%.
13. STABILISE CUT AND FILL BATTERS AS PER RECOMMENDATIONS WITH SEP.

No	DATE	DRN	CHKD	ENG	SANTOS Q.A.	PROJ NO.	RE NAME	RE NO.	RE COMPANY	DESCRIPTION
			JPO	GHL			GHL			
3	12/09/23	FYF	VDS	JAL	MDG		J. LEONCIO	21541	FYFE	ISSUED FOR CONSTRUCTION
2	08/09/23	FYF	VDS	JAL	MDG		JAL	21541	FYFE	ISSUED FOR CONSTRUCTION
1	27/05/22	ARC	DC	DC	DC					ISSUED FOR CONSTRUCTION (SUPERSEDED BY 0007-040-GAR-0064)
0	16/11/17	FYF	BR	BR	BR					ISSUED FOR CONSTRUCTION

REVISIONS

DRG No.	SUBJECT

REFERENCE DRAWINGS

DRN:	FYF	SANTOS Q.A.:	BR
DATE:	16/11/17	PROJ NO.:	
SCALE:	NTS	RE NAME:	
CHKD:	BR	RE NO.:	
ENG:	BR	RE COMPANY:	

A.B.N. 12 131 271 648

AREA 0007 - STANDARD DRAWING
WELLPAD FIELD ACCESS ROAD (MODIFIED CLASS E)
TYPICAL CROSS SECTION

Santos GLNG

DRAWING No. 0007-040-GAR-0040

REV 3

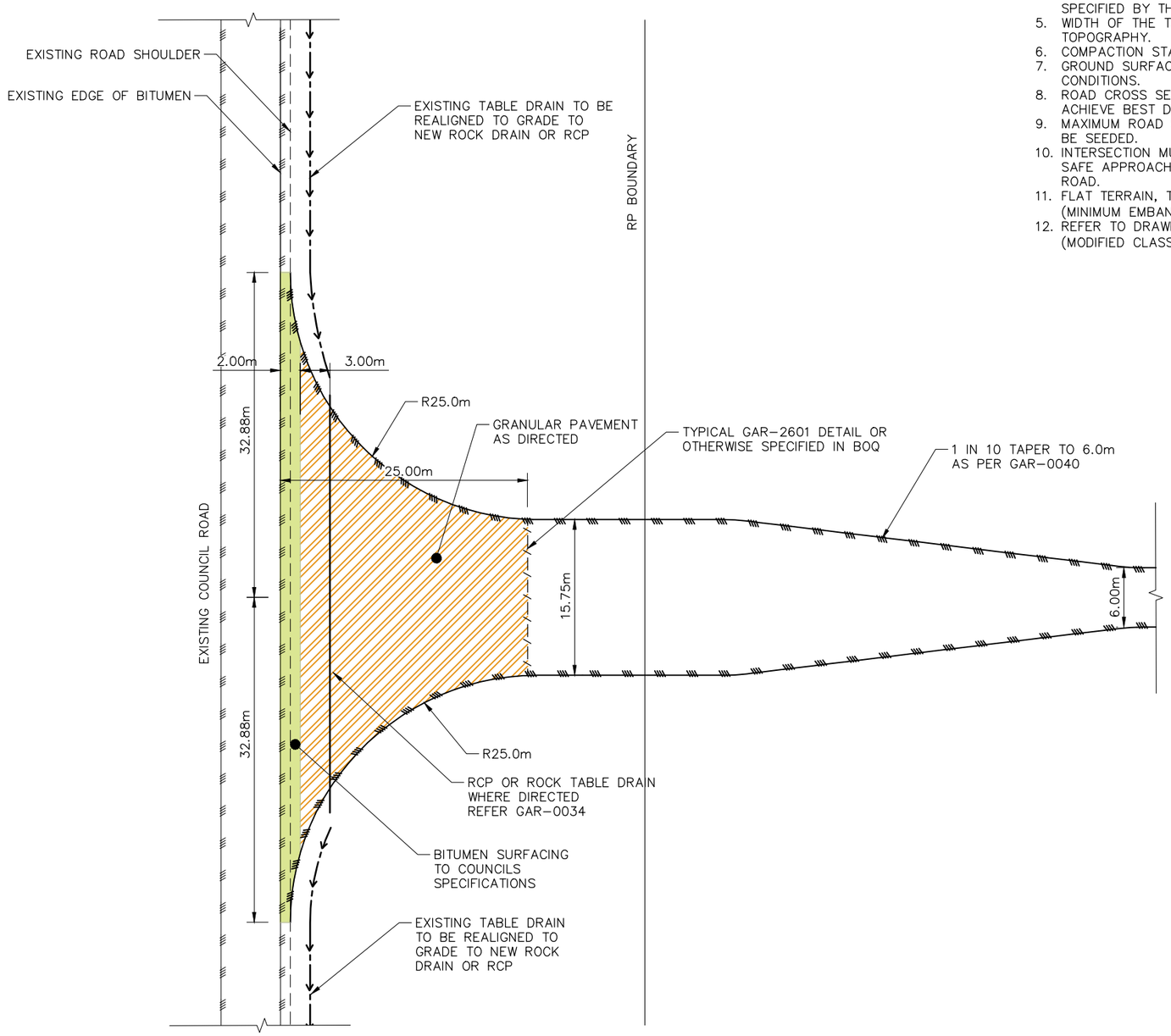
CADFILE No. -

AUTOCAD

WELLPAD FIELD ACCESS ROAD (MODIFIED CLASS E) A1SHEET

APPENDIX E

Santos Standard Turnout Drawing (0007-040-GAR-0072)



NOTES:

1. TABLE DRAIN DEPTH 0.3m TO 0.5m WHERE POSSIBLE, TABLE DRAIN TO BE KEPT BELOW ROAD SURFACE.
2. FLAT BOTTOM/TRAPEZOIDAL DRAINS IN ALL LOCATIONS PREFERRED TO V-DRAINS IN EROSION PRONE AREAS.
3. TYPICAL FORMATION WIDTH IS TO BE 15.75m WIDE. ADDITIONAL WIDTHS ON CREST AND CURVES AS REQUIRED.
4. GRANULAR PAVEMENT DEPTH TO CONSIST OF COMPACTED NOMINAL 150mm UNBOUND MATERIAL AS SPECIFIED IN THE SCOPE. ELEVATION REQUIRED WHERE SPECIFIED BY THE SCOPE (INCLUDING AREAS ON INUNDATION).
5. WIDTH OF THE TABLE DRAIN DEPENDENT ON DRAIN SLOPE REQUIREMENT AND SITE TOPOGRAPHY.
6. COMPACTION STANDARD TO BE PROOF ROLLED TO SUPERVISORS SATISFACTION.
7. GROUND SURFACE TREATMENT TO BE MINIMUM 150mm DEPENDING ON IN-SITU CONDITIONS.
8. ROAD CROSS SECTION MAY BE EITHER SINGLE CROSS FALL OR CROWNED TO ACHIEVE BEST DRAINAGE BASED ON TOPOGRAPHY.
9. MAXIMUM ROAD SIDE BATTER SLOPE IS TO BE 1 IN 4. BATTER IS NOT REQUIRED TO BE SEEDED.
10. INTERSECTION MUST BE LOCATED TO ENSURE SAFE INTERSECTION SIGHT DISTANCE, SAFE APPROACH AND ENTERING SIGHT DISTANCE FOR THE DESIGN SPEED OF THE ROAD.
11. FLAT TERRAIN, TABLE DRAINS CAN BE EXCLUDED AND PROVIDE EMBANKMENT (MINIMUM EMBANKMENT HEIGHT SHOULD BE 300mm).
12. REFER TO DRAWING 0007-040-GAR-0040 FOR WELLPAD FIELD ACCESS ROAD (MODIFIED CLASS E) DETAILS.

No	DATE	DRN	CHKD	ENG	SANTOS Q.A.	PROJ NO.	RE NAME	RE NO.	RE COMPANY	DESCRIPTION
1	07/07/23	ARC	SANT	SANT	SANTOS					ISSUED FOR REVIEW
0	19/04/23	ARC	SANT	SANT	SANTOS					ISSUED FOR REVIEW

REVISIONS

DRG No.	SUBJECT

REFERENCE DRAWINGS

DRN:	ARC	SANTOS Q.A.:	SANTOS
DATE:	19/04/23	PROJ NO.:	
SCALE:	NTS	RE NAME:	
CHKD:	SANTOS	RE NO.:	
ENG:	SANTOS	RE COMPANY:	

A.B.N. 12 131 271 648

STANDARD DRAWING
INTERSECTION

Santos GLNG

DRAWING No. 0007-040-GAR-0072

REV 1

INTERSECTION STANDARD A1SHEET

CADFILE No. -

AUTOCAD