Santos Ltd
A.B.N. 80 007 550 923
Level 22, Santos Place
32 Turbot Street
Brisbane QLD 4000
GPO Box 1010
Brisbane QLD 4001
Telephone: (07) 3838 3000
Facsimile: (07) 3838 3350

DATA TRANSMITTAL

	Data Transmittal Ref:
	From: Santos Ltd
	To: Development Assessment Advisory Team, DSDMIP
	Date: 19/12/2018
	Contact No: 3838 5696
	Despatched by: Janelle Twyman
	Method of Despatch: ☐ Mail ☐ Courier ☒ By hand

Quantity	Description
1	Fee payment for Regional Planning Interests Act 2014 Assessment Application – Bearcat 1 well and Bearcat 1 gas flowline; and Jarrar 5 well and Jarrar 5 oil flowline
1	Regional Planning Interests Act 2014 Assessment Application and Support Information. Santos references: EMT294 and EMT293

Received in good order except as noted below:	**RECEIVED BY:** (Print Name)	Duncan Wingfield
	SIGNED:	
	DATE:	19/12/18
This copy of Transmittal is for:	Retention by receiver ☐	Return to Sender ☐

Santos Ltd
ABN 80 007 550 923
60 Flinders Street
Adelaide, South Australia 5000
Telephone: 61 8 8116 5000
Facsimile: 61 8 8116 5050
www.santos.com

19 December 2018

Tim O'Leary
Manager - Development Assessment Advisory Team
Department of State Development, Manufacturing, Infrastructure and Planning
Level 13, 1 William Street
BRISBANE QLD 4000

Dear Tim,

Please find attached an assessment application for regional interests development approval (RIDA) under the *Regional Planning Interests Act 2014* (RPI Act). The application is of an administrative nature. It seeks only to authorise the following activities from within the Channel Country SEA:

- Petroleum 'production' on Lot 1 on Plan SP209773 and Petroleum Lease Application area (portion of ATP1189) from the existing Bearcat 1 petroleum well and associated infrastructure; and
- Operation of the associated Bearcat 1 gas flowline (Petroleum Pipeline Licence under application); and
- Petroleum production on Lot 3 on Plan BI22 and Petroleum Lease Application area (portion of ATP189) from the existing Jarrar 5 petroleum well and associated infrastructure; and
- Operation of the associated Jarrar 5 oil flowline (PPL2039).

The application includes the following information:

- Attachment 1 – Regional Planning Interests Act 2014 Assessment Application Form
- Attachment 2a – Current State Tenure Title Search (Lot 1 on Plan SP209773)
- Attachment 2b – Current State Tenure Title Search (Lot 3 on Plan BI22)
- Attachment 3a – ATP1189 Resource Authority Public Report
- Attachment 3b – PL131 Resource Authority Public Report
- Attachment 3c – PL77 Resource Authority Public Report
- Attachment 3d – PPL2039 Resource Authority Public Report
- Attachment 4a – RIDA Assessment Report – Bearcat 1
- Attachment 4b – RIDA Assessment Report – Jarrar 5
- Attachment 5 – GIS Files

The payment of the application fee of $6,480.00 has been paid upon lodgement of this application.

Please do not hesitate to contact Janelle Twyman on (07) 3838 5696 or janelle.twyman@santos.com should you have any queries in relation to the attached.

Yours sincerely,

Liz Dunlop
Principal Environmental Advisor

ATTACHMENT 1 - REGIONAL PLANNING INTERESTS ACT 2014 ASSESSMENT APPLICATION FORM

Regional Planning Interests Act 2014
Assessment application form

Approved under section 94 of the *Regional Planning Interests Act 2014*.
Version 3.0 is effective from 3 July 2017.

Before lodging your application

1. Read 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*
2. Consider contacting the RPI Act Development Assessment team on 1300 967 433 or email RPIAct@dilgp.qld.gov.au for general queries, or to request a pre-application discussion on the proposed application.

Purpose of application form

This form is to be used when making an assessment application for a regional interests development approval (RIDA) under the *Regional Planning Interests Act 2014* (RPI Act).

Definitions

Expressions highlighted in bold italic type have the same meaning as in the RPI Act or in regulations made under the RPI Act.

How to make the Assessment Application

Section 29 of the RPI Act states:

An assessment application must be:

1. made to the chief executive in the approved form; and
2. accompanied by a report:
   - assessing the resource activity or regulated activity's impact on the area of regional interest; and
   - identifying any constraints on the configuration or operation of the activity; and
3. accompanied by the fee prescribed under a regulation.

The applicant must complete all sections of the form either on the form or as an attachment.

Where to lodge

The preferred method of lodgement is to upload the application form on the electronic registration and login system. Access to the RIDA system is available on the DILGP Planning website.

OR

Provide **1 electronic copy** of the completed application form and the supporting information to the chief executive:

- **Email:** **RPIAct@dilgp.qld.gov.au**
- **Post:** RPI Act Development Assessment Team DILGP
  PO Box 15009
  City East QLD 4002
- **Hand deliver:** RPI Act Development Assessment Team DILGP
  Level 13, 1 William Street, Brisbane
  (For hand deliveries, contact the RIDA Development Assessment team on 1300 967 433).

1. Property description of the land the subject of the application. Identify all lots or parts of lots on which the activity is proposed, and the total area of disturbance. Provide a map.	
Lot on Plan description *(e.g. 1RP12345)*	Lot 1 SP209773 Lot 3 BI22
Street address/suburb/ locality and post code	Naryilco, Naryilco via Tibooburra 'Nockatunga Station' PMB 1 Thargominda QLD 4492
Closest town	Thargomindah, QLD 4492

2. Application details
Attach a map that clearly shows all relevant areas of regional interest on the land the subject of the application and the corresponding proposed location of the proposed activity/ies.

Identify the area/s of regional interest (ARI) in the application area and the area of the ARI to be disturbed

Area of regional interest (ARI)	**Area of disturbance**	**Area of regional interest (ARI)**	**Area of disturbance**
☐ Priority agricultural area	_____ha	☐ Priority living area	_____ha
☐ Strategic cropping area	_____ha	☒ Strategic environmental area	23.18 ha

Identify the resource or regulated activity

☐	Resource activity: mining and other resource activities (not petroleum and gas). (Add the type of mining on this form (e.g. coal, bauxite)
☒	Resource activity: petroleum and gas
☐	Regulated activity - broadacre cropping (Only relevant where the application relates to a strategic environmental area)
☐	Regulated activity - water storage (dam) (Only relevant where the application relates to a strategic environmental area)

Provide a detailed description of the proposed activities
Provide a description of the proposed activities for which approval is sought, location and the surface area of the activities.

Area of regional interest	Activity	Location	Total area of disturbance (ha)
Channel Country Strategic Environment Area	Production from one (1) gas well and operation of a	Lot 1 SP209773	19.53 ha

	petroleum pipeline. Refer to Attachment 4a.		
Channel Country Strategic Environment Area	Production from one (1) oil well and operation of a petroleum pipeline. Refer to Attachment 4b.	Lot 3 BI22	3.65 ha

Provide a description of current land use
Provide a description of what the land is currently being used for (e.g. horticulture, irrigated cropping, dryland grazing, nature conservation, residential, manufacturing and industrial, etc.) and the surrounding land within a 1 kilometre radius.

Attach a map that clearly shows the area and location of all existing land uses and activities on the land the subject of the application, and within a 1 kilometre radius of the boundaries of the land that is the subject of the application.

Refer to assessment report. The proposed activities would be located solely on Lot 2528 PH429 forming part of Orientos Station, a cattle station operated by the Betts family. The existing land use for this cattle station includes grazing from natural vegetation.

3. Supporting information to accompany this application

Report *(addressing matters set out in section 29(b) of the RPI Act)*

Maps, GIS data files, site plans *(proposed activities)*

Other documents *(optional)*

4. Other relevant information to accompany this application
Attach map/s to identify the location of this information and lot on plan details.

Are there any resource authorities or applications for resource authorities over all or part of the land the subject of the application? (e.g. for exploration or resource development)	☒ Yes (Provide the resource authority reference number, a description of the type of authority/approval, the status (i.e. in application stage or approved); date of application or approval; location and dimensions of each resource authority or application)	☐ No
Is there a SCL protection decision over all or part of the land the subject of the application?	☐ Yes (Provide decision number/s)	☒ No
Is there an environmental authority (EA) over all or part of the land the subject of the application?	☒ Yes (Provide environmental authority number/s)	☐ No
Are there any easements over any part of	☐ Yes (Include nature, location and	☒ No

the land the subject of the application?	dimensions of each easement e.g. for access, infrastructure)	
Attach a current title search for each lot or part of a lot the subject of the application (NOTE: the searches must be obtained within 3 business days before application.)	☒ Tick to confirm title searches are attached.	
Attach GIS data files for the proposed activities identified in section 2 above.	☒ Tick to confirm data files are attached.	
Is an exemption from public notification for the assessment application under section 34(3) of the RPI Act sought?	☒ Yes (Attach written request including justification for the exemption)	☐ No

5. Land owner details

Name of all land owner/s	S.Kidman and Co Ltd	
Postal address/s	183 Archer St, North Adelaide, SA 5006	
Telephone/mobile number/email address/s (non-mandatory)		
Is the applicant the owner (as defined in schedule 1 to the RPI Act) of the land the subject of the application?	☐ Yes	☒ No (Identify the land that is not owned by the applicant)
Is it necessary, under section 30 of the RPI Act, to provide a copy of the application to the owner of the land? *(NOTE: proof of delivery will be required.)*	☒ Yes	☐ No
Name of all land owner/s	Cleveland Agriculture	
Postal address/s	“Cleveland”, Mungindi NSW 2406	
Telephone/mobile number/email address/s (non-mandatory)		
Is the applicant the owner (as defined in schedule 1 to the RPI Act) of the land the subject of the application?	☐ Yes	☒ No (Identify the land that is not owned by the applicant)
Is it necessary, under section 30 of the RPI Act, to provide a copy of the application to the owner of the land? *(NOTE: proof of delivery will be required.)*	☒ Yes	☐ No

6. Applicant/authorised person details

Section 28 of the RPI Act prescribes who may be the applicant for a RIDA for a resource activity or regulated activity to be carried out in an area of regional interest. The decision about the application is issued to the applicant. The applicant need not be the owner of the land. The authorised person for a company (if applicable) is the contact person for the applicant and need not be the applicant (for example, director, company secretary or sole director). However, formal documents, such as any requirement notice and the decision about the application, will be sent to the applicant at the address for service stated below.

Applicant/s name (individual or company name in full), include ABN or ACN number if applicable	Santos Limited ABN 80 007 550 923
Applicant's postal address and email address for service	Level 19, 32 Turbot Street Brisbane QLD 4000
Authorised contact person for applicant: name, position and company	Janelle Twyman, Environmental Advisor, Santos Limited
Contact phone number and mobile number	(07) 3838 5696
Contact email address	janelle.twyman@santos.com

7. Electronic documentation	
Where an email address is provided in section 6 above, does the applicant consent to receiving written information relating to this assessment application, required or permitted to be provided under the *Regional Planning Interests Act 2014* or any other State law, in an electronic format pursuant to sections 11 and 12 of the *Electronic Transactions Act 2001?*	☒ Yes ☐ No

8. Application fee (Fees are prescribed in the Regional Planning Interests Regulation 2014)	
Amount payable	$6,480
Reference number (Contact RIDA assessment team for a reference number)	
Payment option (Contact RIDA assessment team for account details)	☐ Direct deposit Date deposited:
	☒ Cheque attached

9. Use and Disclosure of Information Statement

The information is collected in accordance with the RPI Act and will be used by Queensland Government Agencies for the processing and assessment of your assessment application, and may involve the chief executive:

1. and other officers of the DILGP, and any consultants engaged by or on behalf of the chief executive, reviewing the information provided for the purpose of considering and assessing your assessment application
2. providing a copy of the assessment application to relevant Queensland Government Agencies prescribed as assessing agencies for the assessment application (including the local government), the Gasfields Commission or any person asked to provide advice or comment on the assessment application.

The assessment application and the accompanying report will also be made publically available on the DILGP website from the time the assessment application is made until the time it lapses or is withdrawn or, if is decided, until the end of the last period during which an appeal may be made against a decision on the application. However, information will not be made publicly available on the DILGP website to the extent that it is provided by an owner of land (as defined in schedule 1 to the RPI Act) (an owner) who is not the applicant, and is commercial-in-confidence or personal information, and that owner has not consented to its disclosure, or to the extent that it is information which is considered to be sensitive security information.

Where an application proposes a resource or regulated activity in a priority agricultural area (PAA) and the applicant is required to provide information about the productive capacity or operation of a priority agricultural land use to address the prescribed solutions in the Regional Planning Interests Regulation 2014 (schedule 2, part 2), the information is to be provided in a separate document attached as an appendix to the assessment application report and the application must:

- identify the source of the information provided, including whether the information was provided by an owner other than the applicant
- state whether an owner other than the applicant agrees to the information being made publicly available on the DILGP website; and if so:

- provide the express written agreement of that owner to the information being made publicly available on the DILGP website.

If an owner, other than the applicant, does not provide express written agreement, the information will not be made available on the DILGP website with the other application information. You may also be required to publicly notify your application. A notice about the chief executive's decision relating to your application will also be publicly notified.

Your personal details will not be disclosed for a purpose outside this assessment process, except where required by legislation (including the *Right to Information Act 2009*). This information may be stored in a database by DILGP.

The information collected will be retained as required by the *Public Records Act 2002*.

10. Declaration

This declaration needs to be made by the individual applicant or, when the applicant is a company, an authorised person or persons who have the authority to act on behalf of that company in accordance with the *Corporations Act 2001* (Cth).
Where the declaration is made by a person who is authorised in writing to make that declaration on behalf of the company, evidence of that authorisation must accompany the application.

☒ By making this application, I declare that all the information in this application is true and correct and that I have read and understood the '*Use and Disclosure of Information statement*' on this form.

Signature of Applicant

Signature of applicant/authorised person: 

Name and Position: Nick Fox, Head of Environment and Access, Santos Limited

Date: 19 December 2018

Office use only	Date received	
	RIDA reference number	
	Source number	

ATTACHMENT 2a – CURRENT STATE TENURE TITLE SEARCH (Lot 1 on Plan SP209773)

CURRENT STATE TENURE SEARCH

NATURAL RESOURCES, MINES AND ENERGY, QUEENSLAND

Request No: 30253778
Search Date: 18/12/2018 09:58 **Title Reference: 17666223**
Date Created: 21/10/1995

DESCRIPTION OF LAND

Tenure Reference: PDH 15/5320

Lease Type: ROLLING TERM LEASE

LOT 1 SURVEY PLAN 209773
Local Government: BULLOO

Area: 751000.000000 Ha. (ABOUT)

No Land Description

No Forestry Entitlement Area

Purpose for which granted:
NO PURPOSE DEFINED

TERM OF LEASE

Term and day of beginning of lease

Term: 30 years commencing on 01/04/1980

Expiring on 31/03/2010

Extended to 31/03/2060

REGISTERED LESSEE

Dealing No: 706291965 21/01/2003

S. KIDMAN & CO LTD A.C.N. 007 872 317

CONDITIONS

CONDITIONS

A126 SPECIFIED CONDITIONS FOR: Term Lease
PURPOSE: Rolling term lease - Pastoral

STATUTORY CONDITIONS:

Statutory conditions are the general mandatory conditions of a lease and binds the lessee in accordance with Part 2 Division 1 of the Land Act.

1. Permitted Use: The lessee must use the land only for the purpose for which the tenure was issued under the Land Act 1994.
2. Duty of Care: The lessee has the responsibility for a duty of care, for the land under the Land Act 1994.
3. Rent/Instalment: The lessee must pay the annual rent/instalment in accordance with the Land Act 1994 and the Land Regulation 2009.
   For further information on how annual rent is determined, refer to the department's website at www.dnrm.qld.gov.au.
4. Noxious plants: The lessee must keep noxious plants on the land under control. If the lessee does not comply with this condition, the Minister may bring the noxious plants under control, the cost of which will be recovered from the lessee.
5. Information to Minister: The lessee must give the Minister administering the Land Act 1994, information the Minister asks for about the tenure.
6. Monies for Improvements: No money for improvements is payable by the State on the forfeiture, surrender or expiry of this lease but money may be payable if the State receives payment from an incoming lessee or buyer for the improvements on the land. However, the previous lessee may apply to the Minister to remove the improvements that belong to the lessee, within a period of 3 months from the date of the forfeiture, surrender, or expiry of this lease. The lessee may only undertake the removal of the improvements in the presence of an authorised representative of the department, if required by the Minister. The lessee may only remove those improvements if all monies due from the lessee to the department under this lease have been paid.

REGULATORY-CONDITIONS:----------

A regulatory condition relates to a lease , in accordance with the Land Regulation.

1. Indemnity: The lessee indemnifies and agrees to keep indemnified the Minister, and the State of Queensland and its Representatives, (the "Indemnified parties") against all liability, costs, loss and expenses including claims in negligence (including any claims, proceedings or demands bought by any third party, and any legal fees, costs and disbursements on a solicitor and client basis) ("Claim") arising from or incurred in connection with:
   a. the granting of this lease to the lessee;

CONDITIONS

b. the lessee 's use and occupation of the land; or
c. personal injury (including sickness and death) or property damage or loss in connection with the performance (or attempted purported performance or non-performance) of the lease or a breach of the lease by the lessee .

The lessee hereby releases and discharges to the full extent permitted by law, the Indemnified parties from all actions, claims, proceedings or demands and in respect of any loss, death, injury, illness or damage (whether personal or property and whether special, direct, indirect or consequential financial loss) arising out of the use and occupation of the lease.
To the full extent permitted by law, the Minister, the State of Queensland and their Representatives will not be liable to the lessee for any special, indirect or consequential damages, including consequential financial loss arising out of the use and occupation of the lease.

2. Public Liability: The lessee must effect a public liability insurance policy with an insurer authorised under the Insurance Act 1973 (Commonwealth) or, if not so authorised then only with the Minister's approval, which can be given or withheld in the Minister's sole discretion, naming the lessee as the insured covering legal liability for any loss of, or damage to any property and for the injury (including death) to any person arising out of anything done or omitted on or about the land or any improvements thereon and against all claims, demands, proceedings, costs, charges, and expenses whatsoever (including claims in negligence) Such policy must:
   a. be for an amount of not less than $20,000,000.00 and have no per event sublimit or such higher amounts as the Minister may reasonably require.
   b. be effected on a "claims occurring" basis; and
   c. be maintained at all times during the currency of the lease, and upon receipt of any notice of cancellation, the lessee must immediately effect another public insurance policy in accordance with the terms of the lease .

   The lessee must, as soon as practicable, inform the Minister, in writing, of the occurrence of any event that the lessee considers is likely to give rise to a claim under the policy of insurance effected and must ensure that the Minister is kept fully informed of subsequent actions and developments concerning the claim.
   The lessee must renew such policy, at the lessee's expense, each year during the currency of this lease.
   The condition will be satisfied if the lessee is the State of Queensland or a statutory authority eligible for cover under the Queensland Government Insurance Fund and is insured and continues to be insured by the Queensland Government Insurance Fund.
   This condition will be satisfied if the lessee is the Commonwealth of Australia or a statutory authority eligible for cover under the Comcover Insurance Fund and is insured and

CONDITIONS

continues to be insured by Comcover.

3. Access: The provision of access, further access or services to the land will not be the responsibility of the State.
4. Survey Costs: If the land needs to be surveyed or re-surveyed the lessee must do this at their own cost under the Survey and Mapping Infrastructure Act 2003. This survey plan must be lodged in the land registry within the specified time.
5. Extension: The lease is subject to the extensions of rolling term leases provision of the Land Act 1994 and the Minister must grant an extension of the term of a rolling term lease if the lessee makes an application in the approved form. The extension will be for the original term of the lease and may be given subject to condition changes.
6. Jurisdiction: The lessee is subject to the Land Act 1994 and all other relevant Queensland and Commonwealth legislation.
7. Compliance with Laws - the lessee must comply with all lawful requirements of the -
   a. Local Government; and
   b. any department within the Queensland or Commonwealth governments (including the department administering the Land Act 1994), local authority or statutory instrumentality having jurisdiction over the land, or the development, use and occupation of the land, in regard to its use, occupation and development of the land.

SPECIAL-CONDITIONS:----------

These conditions relate to this lease.

Improvements or development on or to the land

1. The lessee must during the whole term of the lease, to the satisfaction of the relevant authorities, maintain all improvements and boundary fencing on the land in a good and substantial state of repair.

Quarry material

1. The lessee must allow any person authorised under the Forestry Act 1959 access to the leased land for the purpose of cutting and removing timber or removing other forest products, or quarry material, or other material from the leased land.
   Except as hereinafter provided the lessee must not interfere with any forest products or remove any quarry material (including any stone, gravel, sand, earth, soil, rock, guano or clay which is not a mineral within the meaning of the Mineral Resources Act 1989) or other material upon the leased land without the permission of the Minister administering the Land Act 1994 except under the authority of and in compliance in every respect with the requirements or a permit, licence, agreement or contract granted or made under the Forestry Act 1959.

ENCUMBRANCES AND INTERESTS

1. Rights and interests reserved to the Crown by
   Lease No. 17666223

2. EASEMENT No 602805810 (A1051) 28/02/1977
   EASEMENT PURSUANT TO NOTICE DATED 9TH SEPTEMBER, 1976, UNDER THE PIPELINE AUTHORITY ACT 1973 (COMMONWEALTH) AND THE LANDS ACQUISITION ACT 1955 (COMMONWEALTH) AS PUBLISHED IN THE AUSTRALIAN GOVERNMENT GAZETTE NO. G.46 AT CANBERRA OVER AN AREA OF 22.5 HECTARES OF THE WITHINDESCRIBED HOLDING FOR THE PURPOSE OF CONSTRUCTION, MAINTENANCE AND OPERATION OF PIPELINES OR PART THEREOF UNDER AND IN ACCORDANCE WITH THE AFORESAID PIPELINE AUTHORITY ACT 1973, ACQUIRED AND VESTED IN THE PIPELINE AUTHORITY AS FROM 9TH SEPTEMBER, 1976. (SECTION 282(3)) (SEC. 284)

3. VESTING No 702016613 04/06/1997 at 15:52
   EASEMENT: 602805810 (A1051)
   COMMONWEALTH OF AUSTRALIA TENANT IN COMMON 1/2
   EAST AUSTRALIAN PIPELINE LIMITED A.C.N. 064 629 009
   TENANT IN COMMON 1/2

4. EASEMENT IN GROSS No 707542558 09/03/2004 at 12:00
   burdening the land
   SANTOS LIMITED A.C.N. 007 550 923
   DELHI PETROLEUM PTY LTD A.C.N. 007 854 686
   SANTOS PETROLEUM PTY LTD A.C.N. 000 146 369
   ORIGIN ENERGY RESOURCES LIMITED A.C.N. 007 845 338
   VAMGAS PTY LTD A.C.N. 006 245 110
   SANTOS AUSTRALIAN HYDROCARBONS PTY LTD A.C.N. 010 850 487
   ORIGIN ENERGY CSG LIMITED A.C.N. 000 051 696
   over
   EASEMENT D ON SP152685

5. TRANSFER No 715191715 09/07/2013 at 11:21
   EASEMENT IN GROSS: 707542558
   SANTOS LIMITED TENANT IN COMMON 3263/10000
   DELHI PETROLEUM PTY LTD TENANT IN COMMON 29/125
   SANTOS PETROLEUM PTY LTD TENANT IN COMMON 117/625
   ORIGIN ENERGY RESOURCES LIMITED TENANT IN COMMON 1339/8000
   VAMGAS PTY LTD TENANT IN COMMON 601/8000
   SANTOS AUSTRALIAN HYDROCARBONS PTY LTD
   TENANT IN COMMON 3/250

ENCUMBRANCES AND INTERESTS

6. EASEMENT IN GROSS No 708042378 09/09/2004 at 12:18
   burdening the land
   SANTOS AUSTRALIAN HYDROCARBONS PTY LTD A.B.N. 83 010 850 487
   SANTOS PETROLEUM PTY LTD A.B.N. 95 000 146 369
   SANTOS LIMITED A.B.N. 80 007 550 923
   DELHI PETROLEUM PTY LTD A.B.N. 65 007 854 686
   ORIGIN ENERGY RESOURCES LIMITED A.B.N. 66 007 845 338
   VAMGAS PTY LTD A.B.N. 76 006 245 110
   ORIGIN ENERGY CSG LIMITED A.B.N. 68 001 646 331
   over
   EASEMENTS E,F,H AND I ON SP157755

7. TRANSFER No 715191588 09/07/2013 at 11:13
   EASEMENT IN GROSS: 708042378
   SANTOS AUSTRALIAN HYDROCARBONS PTY LTD
   TENANT IN COMMON 3/250
   SANTOS PETROLEUM PTY LTD TENANT IN COMMON 117/625
   SANTOS LIMITED TENANT IN COMMON 3263/10000
   DELHI PETROLEUM PTY LTD TENANT IN COMMON 29/125
   ORIGIN ENERGY RESOURCES LIMITED TENANT IN COMMON 1339/8000
   VAMGAS PTY LTD TENANT IN COMMON 601/8000

8. EASEMENT IN GROSS No 708106876 05/10/2004 at 08:51
   burdening the land
   SANTOS LIMITED A.B.N. 80 007 550 923
   DELHI PETROLEUM PTY LTD A.B.N. 65 007 854 686
   SANTOS PETROLEUM A.B.N. 95 000 146 369
   VAMGAS PTY LTD A.B.N. 76 006 245 110
   over
   EASEMENT J ON SP163455

9. EASEMENT IN GROSS No 713743578 04/03/2011 at 11:49
   burdening the land
   SANTOS LIMITED A.B.N. 80 007 550 923
   over
   EASEMENT AA ON SP227736, EASEMENTS AB, AC AND AD
   ON SP227737, AND EASEMENT AG ON SP227739

10. AMENDMENT OF LEASE CONDITIONS No 716063412 09/10/2014 at 05:00
    THE CONDITIONS OF THE WITHIN TENURE ARE HEREBY AMENDED.

ADMINISTRATIVE ADVICES

Dealing	Type	Lodgement Date	Status
717904155	CON COM AGMT MINERAL AND ENERGY RESOURCES (COMMON PROVISIONS) ACT 2014	17/03/2017 10:32	CURRENT
717904156	CON COM AGMT MINERAL AND ENERGY RESOURCES (COMMON PROVISIONS) ACT 2014	17/03/2017 10:33	CURRENT
718076139	NT DETERM NATIVE TITLE ACT 1993 (CTH)	09/06/2017 11:58	CURRENT

CURRENT STATE TENURE SEARCH

NATURAL RESOURCES, MINES AND ENERGY, QUEENSLAND

Request No: 30253778
Search Date: 18/12/2018 09:58

Title Reference: 17666223
Date Created: 21/10/1995

UNREGISTERED DEALINGS - NIL

Caution - Charges do not necessarily appear in order of priority

** End of Current State Tenure Search **

Information provided under section 34 Land Title Act(1994) or
section 281 Land Act(1994)

Requested By: D-ENQ PROPERTY & TITLE SEARCH

ATTACHMENT 2b – CURRENT STATE TENURE TITLE SEARCH (Lot 3 on Plan BI22)

CURRENT STATE TENURE SEARCH

NATURAL RESOURCES, MINES AND ENERGY, QUEENSLAND

Request No: 30253781
Search Date: 18/12/2018 09:58 **Title Reference: 17666161**
Date Created: 21/10/1995

DESCRIPTION OF LAND

Tenure Reference: PH 15/455

Lease Type: ROLLING TERM LEASE

LOT 3 CROWN PLAN BI22
Local Government: BULLOO
Local Government: QUILPIE

Area: 850000.000000 Ha. (ABOUT)

No Land Description

No Forestry Entitlement Area

Purpose for which granted:
NO PURPOSE DEFINED

TERM OF LEASE

Term and day of beginning of lease

Term: 30 years commencing on 01/07/1955

Expiring on 30/06/1985

Extended to 30/06/2063

REGISTERED LESSEE

Dealing No: 719086851 06/11/2018

BOBS FLAT PTY LIMITED A.C.N. 628 954 325

CONDITIONS

CONDITIONS

A126 SPECIFIED CONDITIONS FOR: Term Lease
PURPOSE: Rolling term lease - pastoral

STATUTORY CONDITIONS:

Statutory conditions are the general mandatory conditions of a lease and binds the lessee in accordance with Part 2 Division 1 of the Land Act.

1. Permitted Use: The lessee must use the land only for the purpose for which the tenure was issued under the Land Act 1994.
2. Duty of Care: The lessee has the responsibility for a duty of care, for the land under the Land Act 1994.
3. Rent/Instalment: The lessee must pay the annual rent/instalment in accordance with the Land Act 1994 and the Land Regulation 2009.
   For further information on how annual rent is determined, refer to the department's website at www.dnrm.qld.gov.au.
4. Noxious plants: The lessee must keep noxious plants on the land under control. If the lessee does not comply with this condition, the Minister may bring the noxious plants under control, the cost of which will be recovered from the lessee.
5. Information to Minister: The lessee must give the Minister administering the Land Act 1994, information the Minister asks for about the tenure.
6. Monies for Improvements: No money for improvements is payable by the State on the forfeiture, surrender or expiry of this lease but money may be payable if the State receives payment from an incoming lessee or buyer for the improvements on the land. However, the previous lessee may apply to the Minister to remove the improvements that belong to the lessee, within a period of 3 months from the date of the forfeiture, surrender, or expiry of this lease. The lessee may only undertake the removal of the improvements in the presence of an authorised representative of the department, if required by the Minister. The lessee may only remove those improvements if all monies due from the lessee to the department under this lease have been paid.

REGULATORY-CONDITIONS:----------

A regulatory condition relates to a lease , in accordance with the Land Regulation.

1. Indemnity: The lessee indemnifies and agrees to keep indemnified the Minister, and the State of Queensland and its Representatives, (the "Indemnified parties") against all liability, costs, loss and expenses including claims in negligence (including any claims, proceedings or demands bought by any third party, and any legal fees, costs and disbursements on a solicitor and client basis) ("Claim") arising from or incurred in connection with:
   a. the granting of this lease to the lessee;

CONDITIONS

b. the lessee 's use and occupation of the land; or
c. personal injury (including sickness and death) or property damage or loss in connection with the performance (or attempted purported performance or non-performance) of the lease or a breach of the lease by the lessee .

The lessee hereby releases and discharges to the full extent permitted by law, the Indemnified parties from all actions, claims, proceedings or demands and in respect of any loss, death, injury, illness or damage (whether personal or property and whether special, direct, indirect or consequential financial loss) arising out of the use and occupation of the lease.
To the full extent permitted by law, the Minister, the State of Queensland and their Representatives will not be liable to the lessee for any special, indirect or consequential damages, including consequential financial loss arising out of the use and occupation of the lease.

2. Public Liability: The lessee must effect a public liability insurance policy with an insurer authorised under the Insurance Act 1973 (Commonwealth) or, if not so authorised then only with the Minister's approval, which can be given or withheld in the Minister's sole discretion, naming the lessee as the insured covering legal liability for any loss of, or damage to any property and for the injury (including death) to any person arising out of anything done or omitted on or about the land or any improvements thereon and against all claims, demands, proceedings, costs, charges, and expenses whatsoever (including claims in negligence) Such policy must:
   a. be for an amount of not less than $20,000,000.00 and have no per event sublimit or such higher amounts as the Minister may reasonably require.
   b. be effected on a "claims occurring" basis; and
   c. be maintained at all times during the currency of the lease, and upon receipt of any notice of cancellation, the lessee must immediately effect another public insurance policy in accordance with the terms of the lease .

   The lessee must, as soon as practicable, inform the Minister, in writing, of the occurrence of any event that the lessee considers is likely to give rise to a claim under the policy of insurance effected and must ensure that the Minister is kept fully informed of subsequent actions and developments concerning the claim.
   The lessee must renew such policy, at the lessee's expense, each year during the currency of this lease.
   The condition will be satisfied if the lessee is the State of Queensland or a statutory authority eligible for cover under the Queensland Government Insurance Fund and is insured and continues to be insured by the Queensland Government Insurance Fund.
   This condition will be satisfied if the lessee is the Commonwealth of Australia or a statutory authority eligible for cover under the Comcover Insurance Fund and is insured and

CONDITIONS

continues to be insured by Comcover.

3. Access: The provision of access, further access or services to the land will not be the responsibility of the State.
4. Survey Costs: If the land needs to be surveyed or re-surveyed the lessee must do this at their own cost under the Survey and Mapping Infrastructure Act 2003. This survey plan must be lodged in the land registry within the specified time.
5. Extension: The lease is subject to the extensions of rolling term leases provision of the Land Act 1994 and the Minister must grant an extension of the term of a rolling term lease if the lessee makes an application in the approved form. The extension will be for the original term of the lease and may be given subject to condition changes.
6. Jurisdiction: The lessee is subject to the Land Act 1994 and all other relevant Queensland and Commonwealth legislation.
7. Compliance with Laws - the lessee must comply with all lawful requirements of the -
   a. Local Government; and
   b. any department within the Queensland or Commonwealth governments (including the department administering the Land Act 1994), local authority or statutory instrumentality having jurisdiction over the land, or the development, use and occupation of the land, in regard to its use, occupation and development of the land.

SPECIAL-CONDITIONS:----------

These conditions relate to this lease.

Improvements or development on or to the land

1. The lessee must during the whole term of the lease, to the satisfaction of the relevant authorities, maintain all improvements and boundary fencing on the land in a good and substantial state of repair.

Quarry material

1. The lessee must allow any person authorised under the Forestry Act 1959 access to the leased land for the purpose of cutting and removing timber or removing other forest products, or quarry material, or other material from the leased land.
   Except as hereinafter provided the lessee must not interfere with any forest products or remove any quarry material (including any stone, gravel, sand, earth, soil, rock, guano or clay which is not a mineral within the meaning of the Mineral Resources Act 1989) or other material upon the leased land without the permission of the Minister administering the Land Act 1994 except under the authority of and in compliance in every respect with the requirements or a permit, licence, agreement or contract granted or made under the Forestry Act 1959.

CURRENT STATE TENURE SEARCH

NATURAL RESOURCES, MINES AND ENERGY, QUEENSLAND

Request No: 30253781
Search Date: 18/12/2018 09:58 **Title Reference: 17666161**
Date Created: 21/10/1995

ENCUMBRANCES AND INTERESTS

1. Rights and interests reserved to the Crown by
   Lease No. 17666161

2. EASEMENT No 602805761 (A1917) 27/12/1984
   EASEMENT IN PURSUANCE OF AN AGREEMENT DATED THE 5TH DAY OF OCTOBER, 1984 BETWEEN THE LESSEE OF THE WITHIN-DESCRIBED HOLDING AND SANTOS RESOURCES PTY. LTD. FOR PURPOSES AS DEFINED IN SUCH AGREEMENT.

3. EASEMENT No 602805762 (A1918) 27/12/1984
   EASEMENT IN PURSUANCE OF AN AGREEMENT DATED THE 5TH DAY OF OCTOBER, 1984 BETWEEN THE LESSEE OF THE WITHIN- DESCRIBED HOLDING AND SANTOS RESOURCES PTY. LTD. FOR PURPOSES AS DEFINED IN SUCH AGREEMENT.

4. EASEMENT IN GROSS No 714489523 30/05/2012 at 12:27
   burdening the land
   SANTOS LIMITED A.B.N. 80 007 550 923
   over
   EASEMENTS AE AND AF ON SP227738 AND
   EASEMENTS AH, AI AND AJ ON SP227740

5. AMENDMENT OF LEASE CONDITIONS No 716025731 19/09/2014 at 05:00
   THE CONDITIONS OF THE WITHIN TENURE ARE HEREBY AMENDED.

ADMINISTRATIVE ADVICES

Dealing	Type	Lodgement Date	Status
717904157	CON COM AGMT MINERAL AND ENERGY RESOURCES (COMMON PROVISIONS) ACT 2014	17/03/2017 10:33	CURRENT
717986397	CON COM AGMT MINERAL AND ENERGY RESOURCES (COMMON PROVISIONS) ACT 2014	27/04/2017 13:15	CURRENT
718033092	NT DETERM NATIVE TITLE ACT 1993 (CTH)	19/05/2017 12:02	CURRENT
718076139	NT DETERM NATIVE TITLE ACT 1993 (CTH)	09/06/2017 11:58	CURRENT

UNREGISTERED DEALINGS - NIL

Caution - Charges do not necessarily appear in order of priority

** End of Current State Tenure Search **

Information provided under section 34 Land Title Act(1994) or
section 281 Land Act(1994)

Requested By: D-ENQ PROPERTY & TITLE SEARCH

Santos

ATTACHMENT 3a – ATP1189 RESOURCE AUTHORITY PUBLIC REPORT

ATP 1189 Resource authority public report

Queensland Government

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ATP 1189 Resource authority public report

Queensland Government

Permit details

Permit ID:	ATP 1189
Status:	Granted
Lodged date:	16/10/2014
Grant date:	24/12/2014
Commencement date:	01/01/2015
Expiry date:	31/12/2018
Plan/program expiry date:	31/12/2018
Current term:	4 years
Conditions:	
Locality:	W JACKSON (COOPER/EROMANGA BASINS)
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
*	DELHI PETROLEUM PTY LTD	50.000000000000	Current	16/10/2014		No
*	SANTOS LIMITED	50.000000000000	Current	16/10/2014		Yes

Tenancy type: Tenancy in Common

Area

Location:	View Map
Mining district:	Quilpie
Local authority:	Barcoo Shire Council, Bulloo Shire Council, Quilpie Shire Council
Area:	2995 Sub-blocks
Exclusions:	Excluded Land: Any land subject to native title within the following sub-blocks that is within the Boonthamurra People native title claim (QC2006/015)(QUD435/2006), registered with the National Native Title Tribunal on 30/07/2007. BIM Block(s) Sub-Block(s) COOP 2067 B,C,D,E,G,H,J,K,M,N,O,P,R,S,T,U,W,X,Y,Z COOP 2139 C,D,E,H,J,K,N,O,P,S,T,U,Z COOP 2211 E COOP 2212 A,B,C,D,E,G, H,J, K,N,O,P,U COOP 2285 D,E,K COOP 2286 A, B, F, G, L, M, Y, Z
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
Broken Hill	37	A	B	C	D	E	F	G	H	J	K	L	M	N	O		Q	R	S	T	U	V	W	X	Y	Z
Broken Hill	39	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
Broken Hill	40	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
Broken Hill	41	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
Broken Hill	42	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
Broken Hill	43	A	B	C			F	G	H	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z
Broken Hill	44			C	D	E	F	G	H	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z
Broken Hill	45	A	B	C	D		F	G	H	J		L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z
Broken Hill	46				D	E				J	K				O	P	Q	R	S	T	U	V	W	X	Y	Z
Broken Hill	47	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
Broken Hill	48	A	B				F					L					Q					V	W	X	Y	Z
Broken Hill	109	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
Broken Hill	111	A	B	C	D	E		G	H	J	K		M	N	O	P		R	S	T	U					
Broken Hill	112	A	B	C	D	E	F	G	H	J	K	L	M	N	O	P	Q	R	S	T	U					
Broken Hill	113	A	B	C	D	E	F	G	H	J	K	L	M	N	O	P	Q	R	S	T	U		W	X	Y	Z
Broken Hill	114	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
Broken Hill	115	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
Broken Hill	116	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
Broken Hill	117	A	B	C	D	E			H	J	K			N	O	P	Q	R	S	T	U	V	W	X	Y	Z
Broken Hill	118	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
Broken Hill	120	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
Broken Hill	121	A					F					L					Q					V				
Broken Hill	181	A	B	C	D	E	F				K	L				P	Q				U	V				Z
Broken Hill	182											L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z
Broken Hill	183											L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z
Broken Hill	184											L	M				Q	R	S	T	U	V	W	X	Y	Z
Broken Hill	185			C	D	E			H	J	K			N	O	P	Q	R	S	T	U	V	W	X	Y	Z
Broken Hill	186	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
Broken Hill	187	A	B	C	D	E	F	G	H			L	M	N			Q									
Broken Hill	188	A	B	C	D	E	F	G	H	J	K	L	M	N	O	P		R	S	T	U		W	X	Y	Z

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
Broken Hill	189	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
Broken Hill	253	A	B	C	D	E	F	G	H	J	K					P					U					
Broken Hill	254	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
Broken Hill	255	A	B	C	D		F	G	H	J		L	M	N	O		Q	R	S	T		V	W	X	Y	
Broken Hill	257	A	B	C	D	E	F	G	H	J	K															
Broken Hill	258	A	B	C	D	E	F	G	H	J	K		M	N	O	P		R	S	T	U		W	X	Y	Z
Broken Hill	259	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
Broken Hill	325																				U					Z
Broken Hill	326	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
Broken Hill	327	A	B				F	G				L	M				Q	R	S	T	U	V	W	X	Y	Z
Broken Hill	328														O	P	Q	R	S	T	U	V	W	X	Y	Z
Broken Hill	329											L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z
Broken Hill	330		B	C	D	E	F	G	H	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z
Broken Hill	331	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
Broken Hill	397					E					K	L	M				Q	R	S			V	W	X	Y	
Broken Hill	398	A	B	C	D	E	F	G	H	J	K		M	N	O	P			S	T	U			X	Y	Z
Broken Hill	399	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
Cooper Creek	1777	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
Cooper Creek	1778	A	B	C	D	E	F	G	H	J	K	L	M	N			Q	R	S			V	W	X		
Cooper Creek	1849	A	B	C	D	E	F	G	H	J	K	L	M	N	O		Q	R	S			V	W	X		
Cooper Creek	1919	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
Cooper Creek	1921	A	B	C	D		F	G	H	J	K	L	M	N	O	P		R	S	T	U		W	X		
Cooper Creek	1922								H	J	K	L	M	N	O	P	Q	R	S	T	U		W	X	Y	Z
Cooper Creek	1993											L	M				Q	R				V	W	X	Y	
Cooper Creek	1994				D	E				J	K			N	O	P			S	T	U		W	X	Y	Z
Cooper Creek	2065	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
Cooper Creek	2066	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
Cooper Creek	2067	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
Cooper Creek	2137	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
Cooper Creek	2138	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
Cooper Creek	2139	A	B	C	D	E	F	G	H	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X		Z
Cooper Creek	2210	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
Cooper Creek	2211	A				E					K					P	Q	R	S	T	U	V	W	X	Y	Z
Cooper Creek	2212	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
Cooper Creek	2279	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
Cooper Creek	2280	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
Cooper Creek	2281	A	B	C	D	E	F	G	H	J	K															
Cooper Creek	2282	A	B	C	D	E	F	G				L	M					R	S	T	U		W	X	Y	Z
Cooper Creek	2283	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
Cooper Creek	2284	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

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
Cooper Creek	2285	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
Cooper Creek	2286	A	B				F	G				L	M				Q	R				V	W	X	Y	Z
Cooper Creek	2344					E					K					P					U				Z
Cooper Creek	2345	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
Cooper Creek	2353																Q					V	W	X	Y	Z
Cooper Creek	2356	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
Cooper Creek	2357	A				E					K	L			O	P	Q	R	S	T	U	V	W	X	Y	Z
Cooper Creek	2358	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
Cooper Creek	2415	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
Cooper Creek	2416	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
Cooper Creek	2425	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
Cooper Creek	2429	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
Cooper Creek	2497	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
Cooper Creek	2501	A	B	C	D	E				J	K					P					U			X	Y	Z
Cooper Creek	2564											L	M				Q	R				V	W			
Cooper Creek	2573			C	D	E	F	G	H	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z
Cooper Creek	2574	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
Cooper Creek	2637	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
Cooper Creek	2638																					V				
Cooper Creek	2639		B	C	D	E		G	H	J	K		M	N	O	P		R	S	T	U	V	W	X	Y	Z
Cooper Creek	2645	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
Cooper Creek	2646	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
Cooper Creek	2709	A	B	C	D	E	F	G	H	J	K	L	M	N	O	P	Q	R	S			V	W			
Cooper Creek	2710	A					F					L						R	S	T	U			X	Y	Z
Cooper Creek	2711	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
Cooper Creek	2712	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
Cooper Creek	2716	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
Cooper Creek	2717	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
Cooper Creek	2718	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
Cooper Creek	2782		B	C	D	E		G	H	J	K			N	O	P			S	T	U	V	W	X	Y	Z
Cooper Creek	2783	A	B	C	D	E	F	G	H	J	K	L	M	N	O	P	Q	R				V	W			
Cooper Creek	2784	A	B	C	D	E	F	G	H	J	K	L	M	N	O	P		R	S	T	U		W	X	Y	Z
Cooper Creek	2785	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
Cooper Creek	2786	A	B	C			F	G	H			L	M				Q					V				
Cooper Creek	2790	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
Cooper Creek	2847	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
Cooper Creek	2848	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
Cooper Creek	2851	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
Cooper Creek	2855	A	B				F	G				L					Q					V	W			Z
Cooper Creek	2856		B	C	D	E	F	G	H	J	K	L	M	N	O	P	Q	R	S			V				

BM	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
Cooper Creek	2857	A	B	C	D	E	F	G	H	J		L	M	N	O			R	S	T				X	Y	
Cooper Creek	2858					E					K				O	P				T	U			X	Y	Z
Cooper Creek	2859	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
Cooper Creek	2917	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
Cooper Creek	2918	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
Cooper Creek	2919	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
Cooper Creek	2920	A	B	C	D	E	F				K				O	P				T	U	V	W	X	Y	Z
Cooper Creek	2922	A	B				F	G				L	M	N	O		Q	R	S	T	U	V	W	X	Y	Z
Cooper Creek	2924	A	B	C	D	E	F	G	H	J	K					P										
Cooper Creek	2925	A	B	C	D	E	F	G	H	J	K	L	M	N	O	P	Q	R	S	T				X	Y	
Cooper Creek	2927	A	B	C	D	E	F	G	H	J	K	L	M	N	O		Q	R	S	T		V	W	X		
Cooper Creek	2929			C	D				H	J	K	L	M	N	O	P										
Cooper Creek	2930		B			E	F	G			K														Y	Z
Cooper Creek	2931	A	B	C	D	E	F	G	H	J	K		M	N	O	P		R	S	T	U	V	W	X	Y	Z
Cooper Creek	2932	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
Cooper Creek	2989	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
Cooper Creek	3002	A	B	C	D	E	F	G	H	J	K	L	M	N	O	P										
Cooper Creek	3003	A	B	C	D	E	F	G	H	J	K	L	M	N	O	P					U					
Cooper Creek	3004	A	B	C	D	E	F	G	H	J	K				O	P				T	U		W	X	Y	Z
Cooper Creek	3070	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
Cooper Creek	3071											L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z
Cooper Creek	3072											L					Q	R	S	T	U	V	W	X	Y	Z
Cooper Creek	3076		B	C	D	E					K															
Cooper Creek	3077	A	B	C	D	E	F	G	H	J	K															
Cooper Creek	3145											L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z
Cooper Creek	3146											L	M				Q	R	S	T	U	V	W	X	Y	Z
Cooper Creek	3147																Q	R	S	T	U	V	W	X	Y	Z
Cooper Creek	3148																Q	R	S	T		V	W	X	Y	
Cooper Creek	3217	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
Cooper Creek	3218	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
Cooper Creek	3219	A	B	C	D	E	F	G	H	J		L	M	N	O		Q	R				V	W			
Cooper Creek	3220	A	B	C	D																					
Cooper Creek	3285	A	B	C	D	E	F	G	H	J		L	M	N			Q	R				V				
Cooper Creek	3286	A																								
Cooper Creek	3289	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
Cooper Creek	3357	A					F					L					Q	R	S	T	U	V	W	X	Y	Z
Cooper Creek	3358																Q	R				V	W			
Cooper Creek	3359								H	J	K			N	O	P			S	T	U					Z
Cooper Creek	3360	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
Cooper Creek	3361	A	B	C	D	E	F	G	H	J	K	L	M	N	O	P			S	T	U					Z

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
Cooper Creek	3425	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
Cooper Creek	3426	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
Cooper Creek	3428	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
Cooper Creek	3429	A	B	C	D	E	F	G	H	J	K	L	M				Q	R				V	W	X		
Cooper Creek	3430	A	B				F	G				L	M	N				R	S	T	U		W	X	Y	Z
Cooper Creek	3431					E											Q					V	W			Z
Cooper Creek	3432	A	B	C	D	E				J	K				O	P				T	U	V	W			

Background land

No data available

Survey plans

Plan No.	Description	Date received	Locality	Volume	Folio
MP44850	PWL - BOLAH 2	22/09/2015	DURHAM		
MP44852	PWL Plan of Cocinero #3	07/10/2015	DURHAM		
MP44853	PWL Plan - WHANTO SOUTH WEST 1	03/11/2015	EROMANGA		
MP44855	PWL - WHANTO EAST 1	14/12/2015	EROMANGA		
MP44854	PWL - COUGAR EAST 1	14/12/2015	EROMANGA		
MP44857	PWL - WHANTO WEST 1	23/02/2016	EROMANGA		
MP45345	PWL - Cocinero 2	26/10/2016	DURHAM		
MP45352	PWL - GALLAN 1	17/05/2017	DURHAM		
MP45353	PWL - HECTOR SOUTH 1	23/05/2017	DURHAM		
MP45356	PWL - SNEFRU 1	10/08/2017	DURHAM		
MP45355	PWL - COUGAR 1	11/08/2017	QUILPIE		
MP45358	PWL - OKOTOKO NORTH 1	12/12/2017	DURHAM		
MP45594	PWL OF BANTAM 1	21/06/2018	DURHAM		
MP45593	PWL OF WHANTO 5	21/06/2018	EROMANGA		
MP45592	PWL OF HOBGOBLIN 1	08/08/2018	DURHAM		
MP45595	PWL OF WHANTO 6	08/08/2018	EROMANGA		
MP45598	PWL OF MOUNTAIN GOAT 1	08/08/2018	DURHAM		
MP45597	PWL OF BEARCAT 1	26/09/2018	CAMERON CORNER		
MP45591	PWL OF TIGRIS 1	26/09/2018	CAMERON CORNER		

Relinquishment details

Last relinquishment date:	05/05/2015
Current sub-blocks held:	2995 Sub-blocks

Relinquishment due date	End of year	Sub-blocks to be relinquished
31/12/2018	4	3024

Sub-blocks retained

Years	Period start date	Period end date	Sub-blocks to be retained
1-4	01/01/2015	31/12/2018	3024

ATP 1189 Resource authority public report

Queensland Government

Term history

Term	Date notice issued	Date lodged	Date approved	Date commenced	Date term ends	Term	Act granted under
2015 - 2018		16/10/2014	24/12/2014	01/01/2015	31/12/2018	4 years	Petroleum and Gas (Production and Safety) Act 2004

Native title

Outcome	Process
No registered claimant	Right to Negotiate
Existing private ILUA	Existing Private ILUA

Purpose and minerals

Prescribed minerals
Petroleum

Related permits

Previous permit number:	ATP259
Pre-requisite permits:	ATP 259
Applied from permits:	PL 1013; PL 1016; PL 1046; PL 1047; PL 1056; PL 1055
Dependent permits:	PCA247; PCA248; PPL 2035; PPL 2036; PCA250; PCA251; PCA252; PCA253; PCA254; PCA267

Financial

Rent details

Area units:	2995
Rate/unit area:	$2.90

Activities

Activity name	Activity / Dealing No	Status	Date received	Expected completion	Date completed	Remarks
Add excluded land	119217	Approved	16/01/2015		29/07/2015	MMOL Reference:119217.
Later Work Program		Closed	24/12/2014	24/12/2014	24/12/2014	APPROVED ON 24/12/2014 TO COMMENCE 1/1/2015 FOR 4 YEARS. APPROVED PROGRAM IS GEOLOGICAL AND GEOPHYSICAL STUDIES AND EVALUATION, ACQUIRE 300KM 2D SEISMIC (OR EQUAL 3D SEISMIC),ACQUIRE 400KM2 3D SEISMIC, DRILL 8 WELLS TARGETING JURASSIC / CRETACEOUS AND PERMIAN INTERVALS

ATTACHMENT 3b – PL 131 RESOURCE AUTHORITY PUBLIC REPORT

PL 131 Resource authority public report

Queensland Government

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PL 131 Resource authority public report

Queensland Government

Permit details

Permit ID:	PL 131
Status:	Granted
Lodged date:	02/09/1998
Grant date:	24/06/1999
Commencement date:	24/06/1999
Expiry date:	23/06/2050
Plan/program expiry date:	23/06/2021
Current term:	51 years
Conditions:	
Locality:	BARYULAH,BARYULAH E.,JUNO,HERA,VEGA FIELDS, S OF BALLERA, COOPER BASIN
Remarks:	THIS PL CANNOT BE RENEWED PURSUANT TO THE PETROLEUM ACT 1923. IF THE HOLDER WISHES THE PL TO CONTINUE PAST ITS CURRENT TERM, THE HOLDER MUST APPLY FOR A REPLACEMENT LEASE UNDER THE PETROLEUM AND GAS (PRODUCTION AND SAFETY) ACT 2004.
Act permit granted under:	Petroleum Act 1923
Act now administered under:	Petroleum Act 1923

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
*	LATTICE ENERGY LIMITED 25 Conyngham Street Glenside SA 5065	25.000000000000	Current	12/04/2000		No
*	SANTOS LIMITED	28.125000000000	Current	04/09/1998		Yes
*	DELHI PETROLEUM PTY LTD	22.500000000000	Current	04/09/1998		No
*	SANTOS PETROLEUM PTY LTD	18.750000000000	Current	04/09/1998		No
*	VAMGAS PTY LTD	5.625000000000	Current	04/09/1998		No
	BORAL ENERGY RESOURCES LTD	25.000000000000	Former	04/09/1998	12/04/2000	

Tenancy type: Tenancy in Common

PL 131 Resource authority public report

Queensland Government

Area

Location:	View Map
Mining district:	Quilpie
Local authority:	Bulloo Shire Council
Area:	74 Sub-blocks
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
Cooper Creek	3142										K					P					U					Z
Cooper Creek	3143						F	G	H			L	M	N			Q	R	S			V	W	X		
Cooper Creek	3214			C	D	E			H	J	K		M	N	O	P		R	S	T	U		W	X	Y	Z
Cooper Creek	3215	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
Cooper Creek	3286		B	C	D	E					K															
Cooper Creek	3287	A	B	C	D	E	F	G	H	J	K															

Background land

No data available

Survey plans

Plan No.	Description	Date received	Locality	Volume	Folio
MP37248	PWL - BARYULAH #3	15/01/2001			
MP37310	PWL - VEGA #2	13/08/2001			
MP37313	PWL - BARYULAH #5	13/09/2001			
MP37330	PWL - HERA #2	19/11/2001			
MP37331	PWL - WELLINGTON #1	19/11/2001			
MP37347	PWL - JUNO #3	24/12/2001	DURHAM		
MP37348	PWL - VEGA NTH #1	24/12/2001	DURHAM		
MP37398	PWL - ACRUS #1	24/06/2002	DURHAM DOWNS		
MP37411	PWL - JUNO #5	09/07/2002			
MP37515	PWL - WELLINGTON #2	19/12/2003	DURHAM		
MP37595	PWL - WELLINGTON #3	17/09/2004	DURHAM		
MP37599	PWL - BARYULAH #6	04/10/2004	CAMERON CORNER		
MP37607	PWL - WELLINGTON #4	10/11/2004	CAMERON CORNER		
MP37724	PWL - WELLINGTON #5	22/03/2005	CAMERON CORNER		
MP37816	PWL - BARYULAH #8	08/12/2005	CAMERON CORNER		
MP37812	PWL - BARYULAH #7	08/12/2005	CAMERON CORNER		
MP37846	PWL - JUNO #4	06/03/2006	DURHAM		
MP37854	PWL "Baryulah #9"	20/03/2006	CAMERON CORNER		
MP37861	PWL - BARYULAH #10	06/04/2006	CAMERON CORNER		
MP38030	PWL " Baryulah #11"	10/01/2007	CAMERON CORNER		
MP38031	PWL "Baryulah #12"	10/01/2007	CAMERON CORNER		

Plan No.	Description	Date received	Locality	Volume	Folio
MP38340	PWL - "Wellington #6"	07/02/2008	CAMERON CORNER		
MP38487	PWL - "Vega #3"	24/02/2009	DURHAM		
MP39473	PWL - BARYULAH 14, 15, 16	22/04/2013	CAMERON CORNER		
MP39478	PWL - BARYULAH 13	06/05/2013	CAMERON CORNER		
MP39484	PWL - JUNO 6	08/07/2013	DURHAM		
MP44228	PWL - BARYULAH 17, 18	19/05/2014	CAMERON CORNER		
MP44234	PWL - VEGA 4	23/06/2014	DURHAM		
MP44236	PWL - VEGA 5	11/08/2014	CAMERON CORNER		
MP44442	PWL - HERA 3, 4	22/09/2014	DURHAM		

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
1999 - 2050		02/09/1998	24/06/1999	24/06/1999	23/06/2050	51 years	Petroleum Act 1923

Native title

Outcome	Process
Pre-existing rights based Act	Pre-existing Right Based Act

Purpose and minerals

Purpose
Gas, PETROLEUM

Related permits

Pre-requisite permits:	ATP 259P

Financial

Rent details

Area units:	222
Rate/unit area:	$155.80

PL 131 Resource authority public report

Queensland Government

Activities

Activity name	Activity / Dealing No	Status	Date received	Expected completion	Date completed	Remarks
Change of holder name	214856	Registered	01/08/2017		02/08/2017	MMOL Reference:214856. Changed name from ORIGIN ENERGY RESOURCES LIMITED to LATTICE ENERGY LIMITED .
Later Development Plan Due		Requested	12/06/2014	23/06/2016		LDP DUE 23/06/2016.
Co-Ordination Arrangement		Closed	12/09/2013	10/10/2013	26/09/2013	THIS TENURE IS SUBJECT TO A CO-ORDINATION ARRANGEMENT TAKEN TO EXIST BY OPERATION OF SECTION 924 OF THE P&G ACT.
Sublease	1051527	Closed	28/03/2012	25/04/2012	07/02/2013	TRANSFER OF 0.2375% INTEREST IN SUB-LEASE (DEALING NUMBER 992046) LODGED 28/3/2012 FROM AUSTRALIA PACIFIC LNG PTY LTD TO ORIGIN ENERGY RESOURCES LIMITED. CURRENT SUBLESSEES ARE SANTOS LIMITED (32.6300%), DELHI PETROLEUM PTY.LTD. (23.2000%), SANTOS PETROLEUM PTY LTD (18.7200%), ORIGIN ENERGY RESOURCES LIMITED (16.7375%), VAMGAS PTY LTD (7.5125%) & SANTOS AUSTRALIAN HYDROCARBONS PTY LTD (1.2000%). TAKEN TO BE GRANTED ON 7/02/2013.
Mortgage	1032693	Registered	28/06/2011	10/09/2011	05/09/2011	MORTGAGE OF DELHI PETROLEUM PTY LTD 22.5% INTEREST TO WESTPAC BANKING CORPORATION, LEVEL 3, WESTPAC PLACE, 275 KENT STREET, SYDNEY, NSW, 2000
Later Development Plan		Closed	12/04/2011	23/07/2011	30/05/2011	LDP DUE 23 JUNE 2011. LDP RECEIVED 12/4/11 FOR 5 YEAR PERIOD FROM 24/6/11 TO 23/6/16. FORWARDED TO TAS FOR ASSESSMENT 13/4/11. LDP APPROVED 30/05/2011 FOR A PERIOD OF 5 YEARS TO EXPIRE 23/06/2016. APPROVAL SENT TO HOLDER 31/05/2011.
Later Development Plan		Closed	24/04/2006	01/01/2007	28/05/2007	INITIAL ASSESSMENT COMPLETE - 27/04/06. LDP APPROVED 28/05/2007 AND EXPIRES 23 JUN 2011.
Change of holder name	993091	Closed	12/04/2000	12/04/2000	12/04/2000	Changed name from BORAL ENERGY RESOURCES LTD to ORIGIN ENERGY RESOURCES LIMITED

ATTACHMENT 3c – PL 77 RESOURCE AUTHORITY PUBLIC REPORT

PL 77 Resource authority public report

Queensland Government

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PL 77 Resource authority public report

Queensland Government

Permit details

Permit ID:	PL 77
Status:	Granted
Lodged date:	19/07/1994
Grant date:	24/11/1994
Commencement date:	24/11/1994
Expiry date:	23/11/2028
Plan/program expiry date:	23/11/2020
Current term:	24 years
Conditions:	
Locality:	JARRAR FIELD, SW OF JACKSON, EROMANGA BASIN
Remarks:	
Act permit granted under:	Petroleum Act 1923
Act now administered under:	Petroleum Act 1923

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
*	BOUNTY OIL & GAS NL	2.000000000000	Current	26/09/2013		No
*	BRIDGEPORT (EROMANGA) PTY LTD	2.000000000000	Current	14/05/2013		No
*	MAWSON PETROLEUM PTY LIMITED	6.500000000000	Current	30/07/2003		No
*	AUSTRALIAN GASFIELDS LIMITED	2.000000000000	Current	10/08/1999		No
*	VAMGAS PTY LTD	15.500000000000	Current	30/03/1998		No
*	SANTOS LIMITED	40.000000000000	Current	19/07/1994		Yes
*	DELHI PETROLEUM PTY LTD	32.000000000000	Current	19/07/1994		No
	DRILLSEARCH ENERGY PTY LTD	2.000000000000	Former	28/02/2005	28/02/2005	
	MAWSON PETROLEUM NL	6.500000000000	Former	16/12/2002	30/07/2003	
	DRILLSEARCH ENERGY N.L.	2.000000000000	Former	07/08/2001	28/02/2005	
	OIL COMPANY OF AUSTRALIA LIMITED	0.500000000000	Former	07/08/2001	16/12/2002	
	MAWSON PETROLEUM NL	6.000000000000	Former	01/10/1999	16/12/2002	
	CLAREMONT PETROLEUM NL	6.000000000000	Former	10/08/1999	01/10/1999	
	CLAREMONT PETROLEUM NL	8.000000000000	Former	10/10/1996	10/08/1999	
	INLAND OIL (PRODUCTION) PTY LTD	2.000000000000	Former	10/10/1996	07/05/2013	
	INLAND OIL (PRODUCTION) PTY LTD	2.000000000000	Former	10/10/1996	14/05/2013	
	VAMGAS LIMITED	15.500000000000	Former	19/07/1994	30/03/1998	
	CLAREMONT PETROLEUM NL	10.000000000000	Former	19/07/1994	10/10/1996	
	OIL COMPANY OF AUSTRALIA LIMITED	2.500000000000	Former	19/07/1994	07/08/2001	

Tenancy type: Tenancy in Common

PL 77 Resource authority public report

Queensland Government

Area

Location:	View Map
Mining district:	Quilpie
Local authority:	Bulloo Shire Council
Area:	4 Sub-blocks
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
Cooper Creek	3219																		S	T				X	Y	

Background land

No data available

Survey plans

No data available

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
1994 - 2004		19/07/1994	24/11/1994	24/11/1994	23/11/2004	10 years	Petroleum Act 1923
2004 - 2028		17/08/2004	27/04/2006	24/11/2004	23/11/2028	24 years	Petroleum Act 1923

Native title

Outcome	Process
{Unknown outcome}	Pre 1996 Grant

Purpose and minerals

Purpose
OIL, PETROLEUM

Related permits

Pre-requisite permits:	ATP 259P

Financial

Rent details

Area units:	13
Rate/unit area:	$155.80

Activities

Activity name	Activity / Dealing No	Status	Date received	Expected completion	Date completed	Remarks
Later Development Plan Due		Closed	12/06/2014	22/11/2015	15/01/2016	LDP DUE 23/11/2015. 18/09/2015 - LDP lodged 15/01/2016 - approved
Co-Ordination Arrangement		Closed	12/09/2013	10/10/2013	26/09/2013	THIS TENURE IS SUBJECT TO A CO-ORDINATION ARRANGEMENT TAKEN TO EXIST BY OPERATION OF SECTION 924 OF THE P&G ACT.
Sublease	1051493	Closed	28/03/2012	25/04/2012	07/02/2013	TRANSFER OF 0.2375% INTEREST IN SUB-LEASE (DEALING NUMBER 991469) LODGED 28/3/2012 FROM AUSTRALIA PACIFIC LNG PTY LTD TO ORIGIN ENERGY RESOURCES LIMITED. CURRENT SUBLESSEES ARE SANTOS LIMITED (32.6300%), DELHI PETROLEUM PTY.LTD. (23.2000%), SANTOS PETROLEUM PTY LTD (18.7200%), ORIGIN ENERGY RESOURCES LIMITED (16.7375%), VAMGAS PTY LTD (7.5125%) & SANTOS AUSTRALIAN HYDROCARBONS PTY LTD (1.2000%). TAKEN TO BE GRANTED ON 7/02/2013.
Mortgage	1032709	Registered	28/06/2011	10/09/2011	05/09/2011	MORTGAGE OF DELHI PETROLEUM PTY LTD 32% INTEREST TO WESTPAC BANKING CORPORATION, LEVEL 3, WESTPAC PLACE, 275 KENT STREET, SYDNEY, NSW, 2000
Later Development Plan		Closed	07/07/2010	04/08/2011	21/04/2011	LDP DUE 23/11/2010. LDP RECEIVED 29/6/10 FOR INCORRECT PERIOD 1/9/10 TO 31/8/2015. UPDATED LDP RECEIVED 17/8/10 FOR CORRECT PERIOD 29/9/10 TO 28/9/2015. *ACTUAL PERIOD 24/11/10 TO 23/11/15.FORWARDED TO TAS 4/3/11. FORWARDED TO E.D. FOR APPROVAL 13/4/11. APROVED BY EXEC DIRECTOR 20/4/11. APPROVAL LETTER SENT 21/4/11.
Later Development Plan		Closed	18/09/2006	31/12/2008	08/11/2010	LDP lodged on 23/11/06 for period of 5 Years from 24/11/05 to 23/11/10. LDP to be lodged by the first anniversary of the original grant of lease that happens after 6 months after 31/12/04 in accordance with s156(2)(b). TAS COMPLETED 31/05/2010. AMMENDED TAS COMPLETED 21/9/2010. LDP CAN PROCEED. LDP APPROVED 7/7/2010 FOR PERIOD 24/11/06 TO 23/11/11. THIS IS FOR AN INCORRECT PERIOD. AMMENDED LDP TO BE APPROVED FOR PERIOD 24/11/05 TO 23/11/10. LDP APPROVED FOR PERIOD 24/11/05 - 23/11/10 ON 8/11/2010.
Change of holder name	1004205	Closed	28/02/2005	28/02/2005	28/02/2005	Changed name from DRILLSEARCH ENERGY N.L. to DRILLSEARCH ENERGY LIMITED
Change of holder name	1000444	Closed	30/07/2003	30/07/2003	30/07/2003	Changed name from MAWSON PETROLEUM NL to MAWSON PETROLEUM PTY LIMITED
Deed Record	992974	Closed	28/03/2000	30/03/2000	30/03/2000	DEED OF RELEASE OF CHARGES, DATED ON OR ABOUT 31-JAN-2000, BETWEEN WESTPAC BANKING CORPORATION AND MAWSON PETROLEUM NL (PREVIOUSLY CLAREMONT PETROLEUM NL) AND BEACH PETROLEUM NL.
Deed Of Charge	992645	Closed	14/02/2000	14/02/2000	14/02/2000	BETWEEN CLAREMONT PETROLEUM NL (NOW MAWSON PETROLEUM NL) AND SANTOS LIMITED AND AUSTRALIAN GASFIELDS LIMITED, DATED 22-APR-1999, OVER THE NACCOWLAH BLOCK. (THIS IS THE SAME DEED OF CHARGE REGISTERED AS DEALING NUMBER 991777 OVER ATP 259P).
Change of holder name	991894	Closed	01/10/1999	01/10/1999	01/10/1999	Changed name from CLAREMONT PETROLEUM NL to MAWSON PETROLEUM NL
Deed Of Charge	992643	Closed	01/09/1999	14/09/2000	14/09/2000	BETWEEN DELHI PETROLEUM PTY LTD AND SANTOS LIMITED AND AUSTRALIAN GASFIELDS LIMITED, DATED 22-APR-1999, OVER THE NACCOWLAH BLOCK. (THIS IS THE SAME DDED OF CHARGE REISTERED AS DEALING NUMBER 991775 OVER ATP 259P).
Deed Of Charge	992642	Closed	01/09/1999	14/02/2000	14/02/2000	BETWEEN SANTOS LIMITED AND AUSTRALIAN GASFIELDS LIMITED, DATED 22-APR-1999, OVER THE NACCOWLAH BLOCK. (THIS IS THE SAME DEED OF CHARGE REGISTERED AS DEALING NUMBER 991774 OVER ATP 259P).

Activity name	Activity / Dealing No	Status	Date received	Expected completion	Date completed	Remarks
Deed Of Charge	992644	Closed	01/09/1999	14/02/2000	14/02/2000	BETWEEN OIL COMPANY OF AUSTRALIA LIMITED AND SANTOS LIMITED AND AUSTRALIAN GASFIELDS LIMITED, DATED 22-APR-1999, OVER THE NACCOWLAH BLOCK. (THIS IS THE SAME DEED OF CHARGE REGISTERED AS DEALING NUMBER 991776 OVER ATP 259P).
Deed Of Charge	992647	Closed	01/09/1999	14/02/2000	14/02/2000	BETWEEN INLAND OIL (PRODUCTION) PTY LTD AND SANTOS LIMITED AND AUSTRALIAN GASFIELDS LIMITED, DATED 22-APR-1999, OVER THE NACCOWLAH BLOCK. (THIS IS THE SAME DEED OF CHARGE REGISTERED AS DEALING NUMBER 991778 OVER ATP 259P).
Deed Of Charge	992648	Closed	01/09/1999	14/02/2000	14/02/2000	BETWEEN VAMGAS PTY LTD AND SANTOS LIMITED AND AUSTRALIAN GASFIELDS LIMITED, DATED 22-APR-2000, OVER THE NACCOWLAH BLOCK. (THIS IS THE SAME DEED OF CHARGE REGISTERED AS DEALING NUMBER 991779 OVER ATP 259P).
Deed Record	992649	Closed	01/09/1999	14/02/2000	14/02/2000	PRIORITY DEED, DATED 22-APR-1999, BETWEEN SANTOS LIMITED AND AUSTRALIAN GASFIELDS LIMITED, OVER THE NACCOWLAH BLOCK. (THIS IS THE SAME PRIORITY DEED REGISTERED AS DEALING NUMBER 991780 OVER ATP 259P).
Deed Record	992650	Closed	01/09/1999	14/02/2000	14/02/2000	PRIORITY DEED, DATED 22-APR-1999, BETWEEN DELHI PETROLEUM PTY LTD AND SANTOS LIMITED AND AUSTRALIAN GASFIELDS LIMITED, OVER THE NACCOWLAH BLOCK. (THIS IS THE SAME PRIORITY DEED REGISTERED AS DEALING NUMBER 991781 ON ATP 259P).
Deed Record	992651	Closed	01/09/1999	14/02/2000	14/02/2000	PRIORITY DEED, DATED 22-APR-1999, BETWEEN OIL COMPANY OF AUSTRALIA LIMITED AND SANTOS LIMITED AND AUSTRALIAN GASFIELDS LIMITED, OVER THE NACCOWLAH BLOCK. (THIS IS THE SAME PRIORITY DEED REGISTERED AS DEALING NUMBER 991782 ON ATP 259P).
Deed Record	992651	Closed	01/09/1999	14/02/2000	14/02/2000	PRIORITY DEED, DATED 22-APR-1999, BETWEEN OIL COMPANY OF AUSTRALIA LIMITED AND SANTOS LIMITED AND AUSTRALIAN GASFIELDS LIMITED, OVER THE NACCOWLAH BLOCK. (THIS IS THE SAME PRIORITY DEED REGISTERED AS DEALING NUMBER 991782 ON ATP 259P).
Deed Record	992652	Closed	01/09/1999	14/02/2000	14/02/2000	PRIORITY DEED, DATED 22-APR-1999, BETWEEN CLAREMONT PETROLEUM NL (NOW MAWSON PETROLEUM NL) & SANTOS LTD AND AUSTRALIAN GASFIELDS LTD, OVER THE NACCOWLAH BLOCK. (THIS IS THE SAME PRIORITY DEED REGISTERED AS DEALING NUMBER 991783 ON ATP 259P)
Deed Record	992653	Closed	01/09/1999	14/02/2000	14/02/2000	PRIORITY DEED, DATED 22-APR-1999, BETWEEN INLAND OIL (PRODUCTION) PTY LTD AND SANTOS LTD AND AUSTRALIAN GASFIELDS LTD, OVER THE NACCOWLAH BLOCK. (THIS IS THE SAME PRIORITY DEED REGISTERED AS DEALING NUMBER 991784 ON ATP 259P).
Deed Record	992654	Closed	01/09/1999	14/02/2000	14/02/2000	PRIORITY DEED, DATED 22-APR-1999, BETWEEN VAMGAS PTY LTD AND SANTOS LIMITED AND AUSTRALIAN GASFIELDS LIMITED, OVER THE NACCOWLAH BLOCK. (THIS IS THE SAME PRIORITY DEED REGISTERED AS DEALING NUMBER 991785 ON ATP 259P).
Deed Of Charge	992655	Closed	01/09/1999	14/02/2000	14/02/2000	DEED OF CROSS CHARGE, DATED 22-APR-1999, BETWEEN SANTOS LTD,DELHI PETROLEUM PL, VAMGAS PL,CLAREMONT (NOW MAWSON) PETROLEUM NL,OIL COY OF AUST. LTD, INLAND OIL (PRODUCTION) PL & AUST. GASFIELDS LTD, OVER NACCOWLAH BLOCK(SEE ATP 259P, 991786)
Change of holder name	980096	Closed	30/03/1998	30/03/1998	30/03/1998	Changed name from VAMGAS LIMITED
Mortgage	970463	Registered	26/03/1997	26/09/1997	19/09/1997	MORTGAGE, DATED 10-SEPT-96,HELD BY CLAREMONT PETROLEUM TO WESTPAC BANKING CORPORATION. (NOW RELEASED. SEE DEALING NUMBER: 992974).

Activity name	Activity / Dealing No	Status	Date received	Expected completion	Date completed	Remarks
Deed Of Assignment Record	960623	Closed	08/07/1996	18/10/1996	10/10/1996	DEED OF ASSIGNMENT, ASSUMPTION & UNDERTAKING DATED 8 MAY 96 BETWEEN SANTOS, DELHI, OCA, VAMGAS, SANTOS PETROLEUM, BORAL ENERGY, AUST HYDROCARBONS, MOONIE PIPELINES, BRIDGEFIELD, CLAREMONT PETROLEUM & INLAND OIL (PRODUCTION) PTY LTD
Deed Of Charge	960624	Closed	08/07/1996	18/10/1996	10/10/1996	DEED OF CHARGE DATED 8 MAY 1996 BETWEEN SANTOS LIMITED AND INLAND OIL (PRODUCTION) PTY LTD
Deed Of Charge	960625	Closed	08/07/1996	18/10/1996	10/10/1996	DEED OF CHARGE DATED 8 MAY 1996 BETWEEN SANTOS LIMITED, INLAND OIL (PRODUCTION) PTY LTD & VAMGAS PTY LTD
Deed Of Charge	960626	Closed	08/07/1996	18/10/1996	10/10/1996	DEED OF CHARGE DATED 8 MAY 1996 BETWEEN SANTOS LIMITED, INLAND OIL (PRODUCTION) PTY LTD & DELHI PETROLEUM PTY LTD
Deed Of Charge	960627	Closed	08/07/1996	18/10/1996	10/10/1996	DEED OF CHARGE DATED 8 MAY 1996 BETWEEN SANTOS LIMITED, INLAND OIL (PRODUCTION) PTY LTD & OIL CO OF AUSTRALIA LTD
Deed Of Charge	960628	Closed	08/07/1996	18/10/1996	10/10/1996	DEED OF CHARGE DATED 8 MAY 1996 BETWEEN SANTOS LIMITED, INLAND OIL (PRODUCTION) PTY LTD AND CLAREMONT PETROLEUM NL
Deed Of Charge	960629	Closed	08/07/1996	18/10/1996	10/10/1996	DEED OF CROSS CHARGE DATED 8 MAY 1996 BETWEEN SANTOS LIMITED, INLAND OIL (PRODUCTION) PTY LTD, VAMGAS PTY LTD, DELHI PETROLEUM PTY LTD, OIL COMPANY OS AUSTRALIA LIMITED & CLAREMONT PETROLEUM NL

ATTACHMENT 3d – PPL 2039 RESOURCE AUTHORITY PUBLIC REPORT

PPL 2039 Resource authority public report

Queensland Government

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PPL 2039 Resource authority public report

Queensland Government

Permit details

Permit ID:	PPL 2039
Status:	Application
Lodged date:	21/11/2018
Grant date:	
Commencement date:	
Expiry date:	
Term sought:	20 years
Conditions:	
Locality:	23km west south west of Jackson
Remarks:	
Act permit granted under:	
Act now administered under:	
Type of pipeline:	Point to point

PPL 2039 Resource authority public report

Queensland Government

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
*	SANTOS LIMITED Team Leader, Tenures and Compliance Level 22, Santos Place 32 Turbot Street Brisbane QLD 4000	40.000000000000	Current	21/11/2018		Yes
*	DELHI PETROLEUM PTY LTD 25 CONYNGHAM STREET GLENSIDE SA 5065	32.000000000000	Current	21/11/2018		No
*	VAMGAS PTY LTD Team Leader, Tenures and Compliance Level 22, Santos Place 32 Turbot Street Brisbane QLD 4000	15.500000000000	Current	21/11/2018		No
*	MAWSON PETROLEUM PTY LIMITED 25 CONYNGHAM STREET GLENSIDE SA 5065	6.500000000000	Current	21/11/2018		No
*	AUSTRALIAN GASFIELDS LIMITED 9A Seaforth Crescent Seaforth NSW 2092	2.000000000000	Current	21/11/2018		No
*	BOUNTY OIL & GAS NL LEVEL 7 283 GEORGE STREET SYDNEY NSW 2000	2.000000000000	Current	21/11/2018		No
*	BRIDGEPORT (EROMANGA) PTY LTD LEVEL 7 111 PACIFIC HIGHWAY NORTH SYDNEY NSW 2000	2.000000000000	Current	21/11/2018		No

Tenancy type: Tenancy in Common

Area

Location:	View Map
Mining district:	Quilpie
Local authority:	Bulloo Shire Council
Area:	1389.0000 kilometres
Exclusions:	
Marked out date:	

Sub-blocks

No data available

Background land

No data available

Survey plans

No data available

Relinquishment details

No data available

Sub-blocks retained

No data available

PPL 2039 Resource authority public report

Queensland Government

Term history

Term	Date notice issued	Date lodged	Date approved	Date commenced	Date term ends	Term	Act granted under
		21/11/2018					

Native title

Outcome	Process
Existing private ILUA	Existing Private ILUA

Purpose and minerals

Entitlements
Petroleum pipeline

Minerals sought
Petroleum

Related permits

No data available

Financial

Rent details

Area units:	1389
Rate/unit area:	

Activities

No data available

Santos

ATTACHMENT 4a – RIDA ASSESSMENT REPORT – Bearcat 1 and Bearcat 1 gas flowline

Santos

Regional Interests Development Application Assessment Report

Bearcat 1 Gas Well and Bearcat 1 gas flowline

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Abbreviations and Units

Acronym	Description
ATP	Authority to Prospect
DEHP	Department of Environment and Heritage Protection, Queensland
DES	Department of Environment and Science, Queensland
DILGP	Department of Infrastructure, Local Government and Planning
DNRM	Department of Natural Resources and Mines
EA	Environmental Authority
ha	Hectares
km	Kilometre
m	Metres
N/A	Not Applicable
PAA	Priority Agricultural Area
P&G Act 2004	*Petroleum and Gas (Production and Safety) Act 2004*
PL	Petroleum Lease
PLA	Priority Living Area
QLD	Queensland
RE	Regional Ecosystem
RIDA	Regional Interests Development Approval
RPI Act	*Regional Planning Interests Act 2014*
RPI Reg	*Regional Planning Interests Regulation 2014*
SCA	Strategic Cropping Area
SEA	Strategic Environmental Areas
SMS	Santos Management System
SPA	*Sustainable Planning Act 2009*
SWQ	South-West Queensland
WR Act	*Wild Rivers Act 2005 (Repealed)*

1.0 Introduction

Santos Limited (Santos) has prepared this assessment report to support an assessment application for a Regional Interests Development Approval (RIDA) as required under s29 of the *Regional Planning Interests Act 2014)* (RPI Act) to be submitted to the Department of State Development, Manufacturing, Infrastructure and Planning (DSDMIP).

The application is of an administrative nature. It seeks only to authorise petroleum 'production' on Lot 1 on Plan SP209773 and the Petroleum Lease Application area (portion of ATP1189, herein referred to as Bearcat 1 PLA) from the existing Bearcat 1 petroleum well and associated infrastructure; and operation of the Bearcat 1 gas flowline (herein referred to a Bearcat 1 PPL) within the Channel Country SEA. This is a result of:

- a proposed change in tenure from Authority to Prospect (ATP) to a Petroleum Lease (PL), and subsequent requirement for an amendment to the existing Environmental Authority (EA); and
- the proposed submission of a Petroleum Pipeline Licence (PPL) application to operate the Bearcat 1 gas flowline and the requirement for a new EA.

The new tenures and EAs are to allow for commercialisation of a petroleum product, following well construction and extended production testing, conducted under Authority to Prospect (ATP) 1189 (EPPG03518215), and pipeline construction under ATP1189 (EPPG03518215) and PL131 (EPPG03517715).

The assessment report has been prepared in accordance with the 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* and the RPI Act *Statutory Guideline 05/14: Carrying out resource activities and regulated activities within a Strategic Environmental Area*.

This assessment report provides the following:

- Description of the proposed activities;
- Identification of the relevant environmental attributes of the land subject to the application;
- Evaluation of the potential impacts on the identified relevant environmental attributes; and
- An assessment of how the proposed activities meet the required outcome for Strategic Environmental Areas (SEA) as detailed in the *Regional Planning Interests Regulation 2014* (RPI Reg).

1.1 Landholder Copy of the Application

Separate regulatory systems are in place that require Santos to notify the landholder of petroleum activities occurring within their properties. Given the pre-existing nature of the activities (refer to Section 2.0); notification to the landholder has already ensued. Notwithstanding, a copy of the application will be given to the landowner within 5 business days after the application is made in accordance with Section 30 of the RPI Act and Schedule 5 of the RPI Reg.

1.2 Non-Notifiable Application

In accordance with Section 34(2) of the RPI Act, and Section 13 of the RPI Reg, notification of the assessment application is not mandatory, as the activities are not proposed to be carried out in an area of regional interest that is a priority living area.

The activities are located solely on Lot 1 on Plan SP209773 forming part of Naryilco Station, a 7,510 km^2 cattle station operated by S Kidman & Co Ltd. Discretionary notification under s34(4) would not be necessary given the pre-existing nature of the activities (refer section 2.0), the very large size of the cattle station relative to the activities and that the landholder will receive a copy of the application as described below.

1.3 Referable Application

In accordance with Section 12(2) and Schedule 1 of the RPI Reg, the application is referrable to the Department of Environment and Science (DES) and the Department of Natural Resources, Mines and Energy (DNRME).

2.0 Proposed Activity

Santos is seeking to undertake 'petroleum production' on Bearcat 1 PLA and to operate Bearcat 1 PPL, within the Channel Country SEA from the infrastructure and disturbances listed in Table 1 and shown in Figure 1:

Table 1: Existing Surface Disturbance

Pre-Existing Infrastructure	Pre-Existing Disturbance	
	Length	Area
Petroleum Well Pad (Bearcat 1)	N/A	1.52 ha
Buried Pipeline (Bearcat 1 gas flowline)	11.50 km	11.50 ha
Access Track	8.05 km	4.83 ha
Borrow Pit	N/A	1.37 ha
Camp		0.32 ha
		19.53 ha

The Bearcat 1 well, access track, borrow pit and camp infrastructure listed in Table 1 is pre-existing infrastructure, constructed and operated as authorised by ATP1189 and EPPG03518215. Santos intends to utilise this infrastructure for the purpose of 'petroleum production'. A Petroleum Lease application is being finalised for submission to DNRME for the Bearcat 1 PLA area. An associated amendment application to the existing environmental authority (EPPG03517715) is to be lodged with DES in the near future to authorise petroleum activities conducted on the Bearcat 1 PLA.

The Bearcat 1 PPL will be constructed in early 2019. Construction will be undertaken in accordance with the existing authorities - ATP1189, PL131, EPPG03518215 and EPPG03517715. This application seeks only to authorise the 'operation' of the PPL given the existing authorisations to construct the infrastructure under the above listed authorities. A PPL application for the Bearcat 1 gas flowline is being finalised for submission to DNRME. Similarly, an application for an environmental authority for the Bearcat 1 PPL is being finalised for submission with DES.

The activity of petroleum production will not change the nature of the activities already authorised and/or conducted at these locations. 'Production' primarily refers to the commercialisation of the petroleum product generated from the Bearcat 1 petroleum well and operation of the petroleum pipeline (Bearcat 1 gas flowline) to transport the product to processing facilities and to market. No new surface disturbance to land will be required as part of the production / operation activity at this location. Activities will be limited to 'production' related operational maintenance and restoration at the end-of-life. Descriptions of the activities are provided in Section 2.0.

Bearcat 1 and associated infrastructure; and Bearcat 1 gas flowline is located on Naryilco Station (Lot 1 on Plan SP209773). Naryilco is a pastoral lease that operates as a cattle station with a capacity of up to 12,000 head of cattle1. The primary land uses are cattle grazing and petroleum activities.

[1] https://en.wikipedia.org/wiki/Naryilco

2.1 Existing Conventional Petroleum Well and Lease

The existing Bearcat 1 well currently extracts petroleum for exploration and production testing purposes via surface facilities including a well head, which comprises of equipment on the surface that supports the various pipe strings, seals off the well and controls the paths and flow of reservoir fluids.

A flare pit is required for well control and testing operations for production from the Bearcat 1 well and is in place for the life of the production operations. The flare pit is likely to contain produced formation water.

The flare pit is clay lined on the base and sides to contain any hydrocarbons within the blowdown water. A minimum freeboard of 300mm is maintained within the pit to ensure overtopping does not occur. In addition, a bund around the pit perimeter minimises surface flow entering the pit. At the end of life of the flare pit, a contaminated land assessment will be undertaken to identify any contaminated soils requiring removal. The pit will be backfilled to a contoured finish as required by the relevant EA conditions.

It is feasible that workover operations will be required for the Bearcat 1 well in the future. Workover operations include activities such as, cleaning out of production conduits and replacing tubing, retrieving or drilling out obstructions in the well, and well bore decommissioning. For some workovers, a workover rig and associated infrastructure (i.e. a drilling fluids sump) would need to be set up within the existing disturbance footprint for a temporary duration. Workover activities would be scheduled to be completed outside of the wet season.

Extracting petroleum for ‘production’ will not change the nature of the activities already conducted at this location. The authorisation of Bearcat 1 PLA is to enable the commercialisation of the petroleum product only. No new surface disturbance to land outside of the existing disturbance footprint is required at this location to facilitate ongoing production. The well will be restored at end-of-life in accordance with the P&G Act 2004 and the relevant EA conditions.

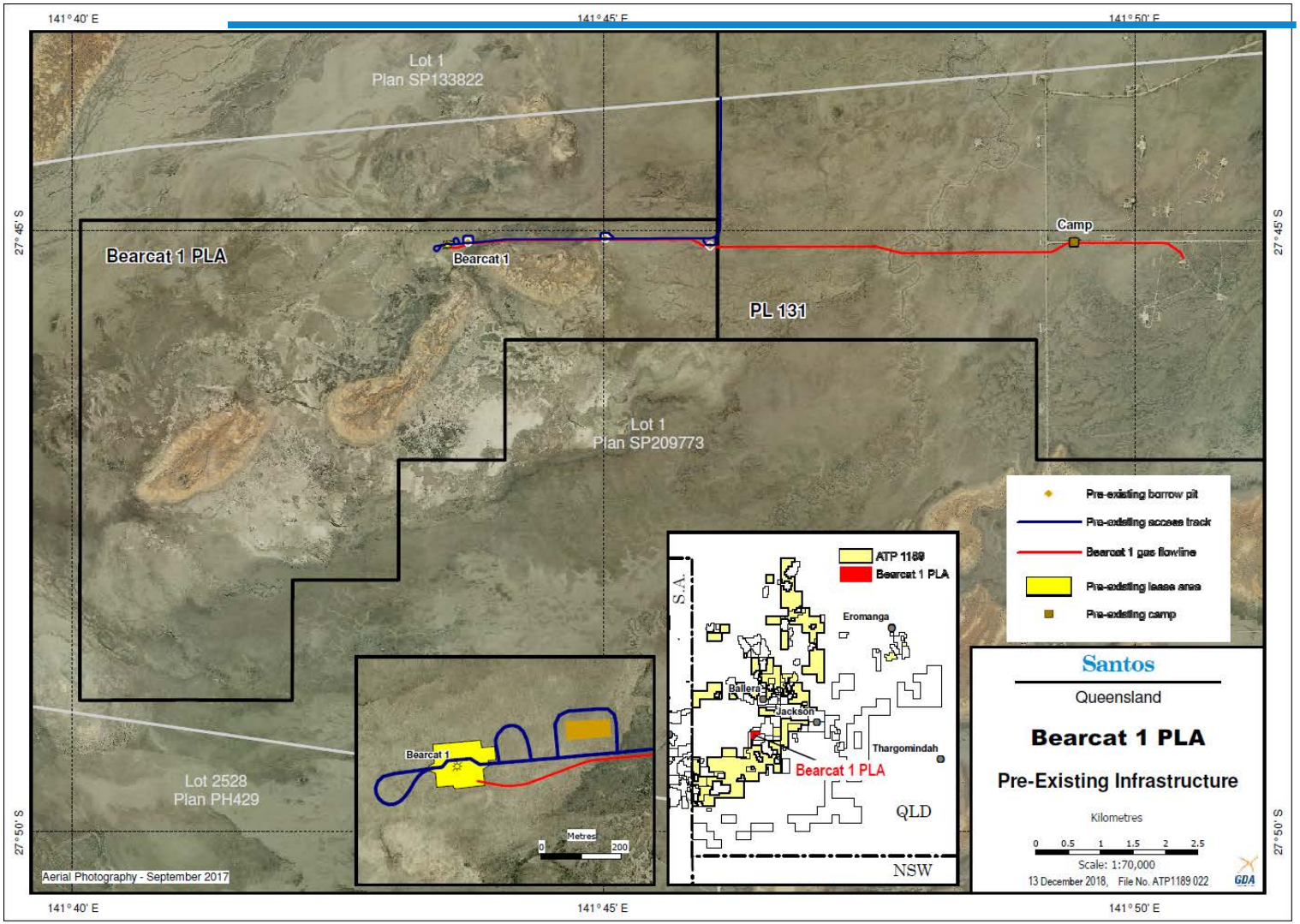

Figure 1: Location of Existing Infrastructure

2.2 Existing Access tracks

Access tracks are proposed to be used for ongoing access to the Bearcat 1 well and to carry out surveillance and maintenance on the Bearcat 1 flowline. No new access tracks are proposed. Pre-existing access tracks are not designed to be used during wet weather conditions, and therefore have not been constructed to any flood immunity, and will facilitate the passage of water keeping with existing hydrology. Maintenance of the tracks may be required over time (e.g. light grade). The access tracks will be restored at end-of-life in accordance with the *Petroleum and Gas (Production and Safety) Act 2004* (P&G Act 2004) and the relevant EA conditions.

2.3 Existing Borrow Pit

Borrow pits are proposed to be used to provide a source of material required for ongoing well lease, access track and pipeline maintenance. The existing side batters of borrow pits are maintained at a slope of approximately 3:1, and the batters of the entrance / exit are maintained at a slope of approximately 7:1. Borrow pits will be progressively restored by ripping the floor and sides to a minimum depth of 300 mm generally along the contour (Figure 2). Stockpiled topsoil and vegetation is re-spread to a uniform depth over the entire area from which it was removed. The sides and floor of the pits are graded to give a contoured finish, as required by the relevant EA conditions.

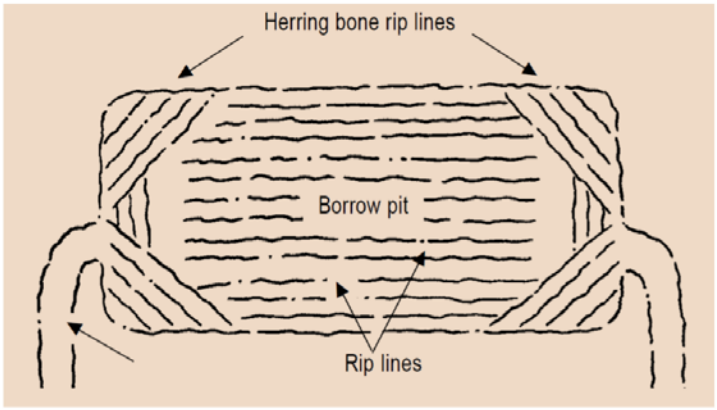

Figure 2: Example Borrow Pit Ripping for Rehabilitation

2.4 Buried Pipeline

The Bearcat 1 PPL is to be constructed in early 2019, however, this application seeks only to authorise the operation of the pipeline. Construction will be undertaken in accordance with the existing authorities. The pipeline is proposed to be operated to transport extracted petroleum for production. The pipeline will be buried underground and the surface rehabilitated to reinstate existing drainage. It is connected to Baryulah Gas. No new surface disturbance to land is required for the purposes of operation. The pipeline will be restored at end-of-life in accordance with the relevant EA conditions.

3.0 Environmental Attributes and Potential Impacts

Section 7 of the RPI Reg prescribes the following environmental attributes relevant to the Channel Country SEA:

> *(a) the natural hydrologic processes of the area characterised by—*
>
> *(i) natural, unrestricted flows in and along stream channels and the channel network in the area; and*
>
> *(ii) overflow from stream channels and the channel network onto the flood plains of the area, or the other way; and*
>
> *(iii) natural flow paths of water across flood plains connecting waterholes, lakes and wetlands in the area; and*
>
> *(iv) groundwater sources, including the Great Artesian Basin and springs, that support waterhole persistence and ecosystems in the area;*
>
> *(b) the natural water quality in the stream channels and aquifers and on flood plains in the area;*
>
> *(c) the beneficial flooding of land that supports flood plain grazing and ecological processes in the area.*

DSDMIP's RPI Act *Statutory Guideline 05/14: Carrying out resource activities and regulated activities within a Strategic Environmental Area* summarises the above attributes to broadly relate to:

- Riparian process;
- Wildlife corridors;
- Water quality;
- Hydrologic processes;
- Geomorphic processes; and
- Beneficial flooding.

As discussed in section 2.0, the proposed activity of petroleum production will not change the nature of the activities conducted from existing infrastructure. The proposed activity is limited to production, operational maintenance and restoration of authorised infrastructure at end-of-life. Notwithstanding, the relevance of the above environmental attributes to the activity is described below.

3.1 Riparian Process

The activity would be undertaken within Regional Ecosystems (REs) 5.3.19, 5.6.1 and 5.3.18b/5.3.18a (refer Figure 3). These REs are listed as No Concern at Present (NCAP), are known to include riparian vegetation and are subject to long-term grazing from the operation of Naryilco pastoral lease. They consist of *Variable sparse to open herbland on frequently flooded alluvial plains (5.3.19); Crotalaria eremaea +/- Eragrostis eriopoda sparse to open herbland on isolated and/or deflated sand dunes on alluvium (5.6.1) and Braided channel complex of major alluvial plains, includes Chenopodium auricomum open shrubland and variable sparse to open-herbland (5.3.18).*

The braided channels associated with the Cooper Creek surround the proposed activity; at its closest point, the Cooper Creek is located approximately 3km to the south for Bearcat 1 well.

3.1.1 Potential Impacts

The activities will be located within the existing infrastructure footprint. No new surface disturbance to land, such as clearing vegetation in or near streams, lakes, floodplains or wetlands, is required as part of the proposed activity. Access to and from the proposed activity will occur along the existing access tracks only.

Following cessation of petroleum production, infrastructure would be rehabilitated to promote the natural re-establishment of vegetation consistent with the surrounding undisturbed land in accordance with the relevant EA conditions. As such, there will be no new disturbance or change to riparian corridors along streams and lakes and within floodplains and wetlands as a part of this activity. Accordingly, the proposed activities would not cause a widespread or irreversible impact on riparian processes within the Channel Country SEA.

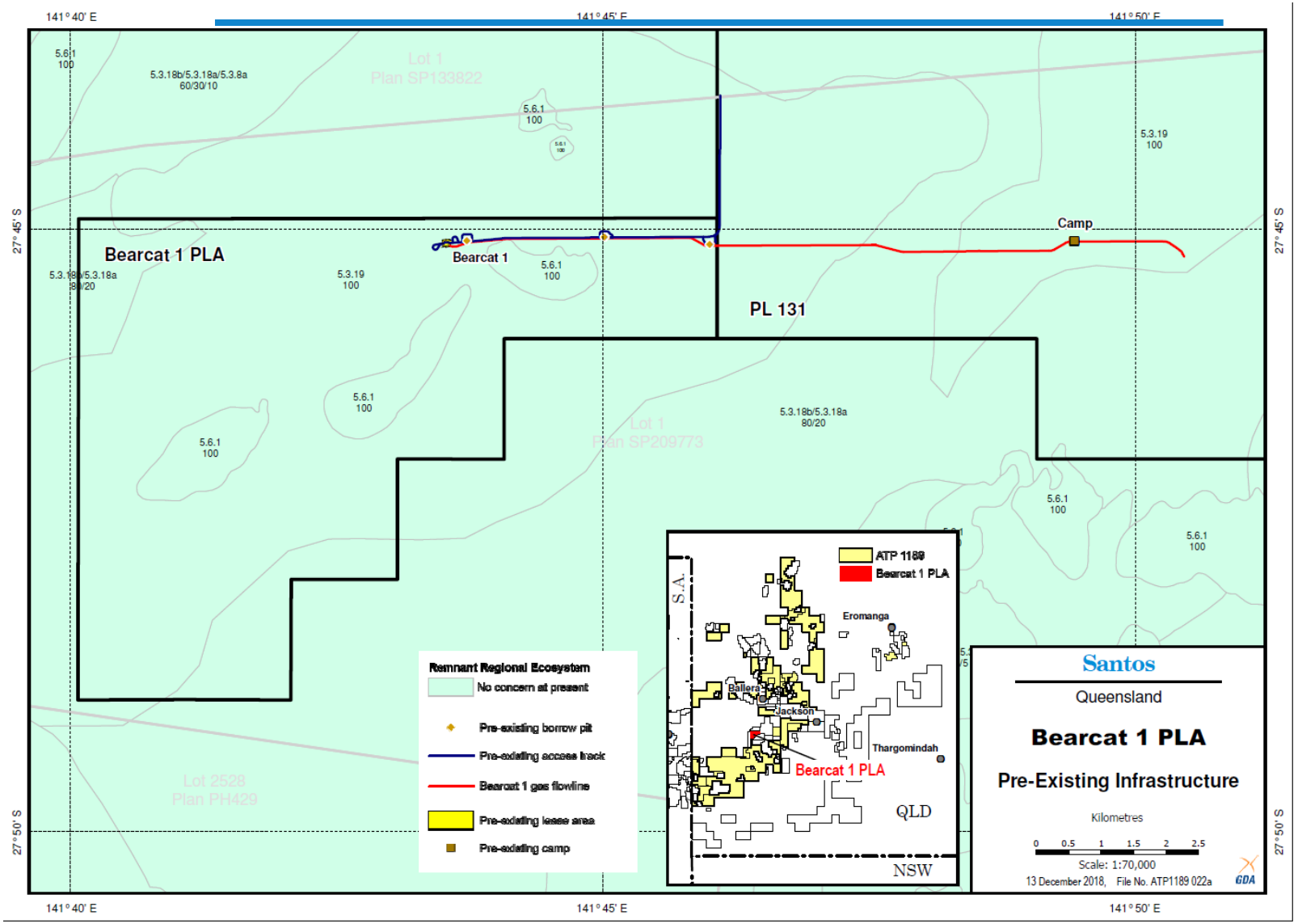

Figure 3: Regional Ecosystems

3.2 Wildlife Corridors

The proposed activities will be located within a pre-disturbed area of an existing vegetated corridor. The infrastructure area has been extensively overgrazed from the operation of the Naryilco pastoral lease. The REs surrounding the location (REs 5.3.19, 5.6.1 and 5.3.18b/5.3.18a) may provide suitable general habitat for the yellow chat (gulf) (*Epthianura crocea crocea*) (Vulnerable) and for the dusky hopping-mouse (*Notomys fuscus*) (Endangered). There are no mapped Environmentally Sensitive Areas (ESA) near the Bearcat 1 well or Bearcat 1 gas flowline; the closest ESA, Category C ESA Essential Habitat, is located approximately 15 km to the south east of the Bearcat 1 well and approximately 8.5km to the south east of the Bearcat 1 gas flowline at the termination point of the flowline.

3.2.1 Potential Impacts

No new disturbance(s) to aquatic and terrestrial fauna or wildlife corridors is to be undertaken as part of these activities. Measures will be adopted to prevent fauna entrapment within operational areas, and hygiene protocols will be implemented as appropriate to minimise the introduction, spread and persistence of weed species, in accordance with relevant EA conditions. Access to and from the proposed activity will occur along the existing access tracks only. Following cessation of petroleum production, existing infrastructure would be rehabilitated to promote the natural re-establishment of vegetation consistent with the surrounding undisturbed land, in accordance with relevant EA conditions. As such, there is no disturbance or change to wildlife corridors as a part of this activity and therefore the proposed activities would not cause a widespread or irreversible impact on wildlife corridors within the Channel Country SEA.

3.3 Water Quality

Surface Water

The proposed activities are located within an area of the Cooper Creek basin that is not typically flowing and is subject to intermittent flows associated with Cooper Creek flood events; which have occurred five times since 1989 (using Landsat data). Historical (1965-2016) water quality data from the QLD Government's Cooper Creek gauging station 003103A, located approximately 60km north west, is summarised in Table 2.

Table 2: Cooper Creek Surface Water Quality (1956-2016)

Parameter	Average Value
Conductivity @ 25°C	345 µS/cm
Turbidity	512 NTU
pH	7.4
Total Nitrogen	1.4 mg/L
Total Phosphorus as P	0.4 mg/L
Sodium as Na	44.6 mg/L
Magnesium as Mg	7.4 mg/L
Chloride as Cl	62.6 mg/L
Fluoride as F	0.2 mg/L

Groundwater

Groundwater information in this section has been derived from the Underground Water Impact Report (UWIR) for Santos Cooper Basin Oil and Gas Fields in South-West Queensland (Santos, 2016). The UWIR was prepared in accordance with the *Queensland Water Act 2000* (the Water Act) and the Guideline for Underground Water Impact Reports and Final Reports (the Guideline). The intent of the UWIR is to describe, make predictions about, and manage the impacts of extraction of underground water by petroleum tenure holders in South-Western Queensland where production testing or production is taking place.

The main GAB aquifers (i.e. in the Eromanga Basin stratigraphy) in relation to Bearcat 1 PLA are the Winton Formation, Cadna-owie Formation, Hooray Sandstone, Hutton Sandstone and Poolowanna Formation (Precipice Sandstone equivalent). The aquifers of the Eromanga Basin are considered highly productive aquifers over most of the GAB. Shallow groundwater is generally found within the Quaternary and Tertiary alluvium formations associated with the very flat structures of flood plains and is absent where the Winton Formation occasionally outcrops. Groundwater from Tertiary sediments and the Winton Formation are characterised by a higher proportion of sodium and magnesium ranging in EC values from 3,000 to 13,000 µS/cm[2].

The aquifers of the Cooper Basin, which underlies the GAB sediments of the Eromanga Basin, are not considered sandstone aquifers of the GAB. Groundwater yields from the Cooper Basin may be feasible from the Wimma Sandstone, Toolachee Formation, Epsilon Formation, Patchawarra Formation and Tirrawarra Formation.

The Bearcat 1 well primarily targets the Toolachee and Patchawarra Formations. These formations are the main gas reservoirs within the Cooper Basin and are located at depths of 2000 m or more.

Within the Santos Cooper Basin tenements, only the upper aquifers of the Eromanga Basin sequence are of economic interest to the local community. This is due to the significant depth of the water bearing formations in the Cooper Basin and the general unreliability of the groundwater quality that may be encountered (i.e. it may have a high salinity and contain free and dissolved hydrocarbons).

No registered groundwater bores are located nearby to the proposed activities. There are no known groundwater dependent ecosystems, including Great Artesian Basin springs, which support permanent waterholes or aquatic ecosystems in the area. The closest Great Artesian Basin discharge / recharge springs are located approximately 200km from Bearcat 1 well.

3.3.1 Potential Impacts

The activities do not involve any new surface disturbance to land, such as clearing vegetation in or near streams, lakes, floodplains or wetlands. No activities proposed involve the discharges of water (point or diffuse sources) or the construction or operation of regulated dams and other major infrastructure (i.e. separation ponds, permanent camps).

Any fuels / chemicals used on site would be stored and handled in accordance with Australian Standards and spill kits will be located onsite where required to contain any spills should they occur. All waste materials and non-essential infrastructure will be removed at the end of the petroleum activities as soon as reasonably practicable, minimising risks associated with contamination, or a reduction in water quality, in accordance with EA conditions.

[2] Golder Associates 2013 *Underground Water Impact Report For Santos Cooper Basin Oil & Gas Fields, SW QLD*

A flare pit freeboard will be maintained with routine inspections and repairs undertaken to ensure overtopping does not occur. Weather conditions are monitored including Cooper Creek gauging stations during periods of high rainfall for preparation of shutdown due to inundation/flooding and the removal of fluids from the flare pit where floodwater pose a site inundation risk.

Contingency measures for unplanned releases of discharges of contaminants will be implemented in accordance with EA conditions. The rate of infiltration of surface spilt contaminants or leakage from flare pits is likely to be low based on the presence of low permeability clay lenses, the clay lining of the flare pit, low rainfall and high rates of evaporation. Any potential impacts are likely to be confined to a localised area.

Moreover, due to the slow nature of the encroachment of flood waters in the Cooper Creek, sufficient time is generally available to prepare operational areas for potential flood impacts e.g. in these situations all non-essential materials present on site at the time (e.g. hydrocarbons, chemicals, infrastructure) shall be removed from operational areas prior to the arrival of floodwaters. The petroleum well has been completed with steel surface casing, steel production casing, and cement to isolate the well from aquifers, including the Great Artesian Basin, and other geological units.

Given the scope of proposed activities, combined with the above management measures, petroleum production from pre-existing infrastructure is unlikely to disturb or alter the physical, chemical and biological quality of water in the watercourse channels and on floodplains that support and maintain the natural aquatic and terrestrial ecosystems. Accordingly, the proposed activities would not cause a widespread or irreversible impact on water quality within the Channel Country SEA.

3.4 Hydrological Processes

Regional

Topography is limited to low undulating topography between the drainage channel system. The Channel Country is characterised by vast flat-lying, braided, flood and alluvial plains surrounded by gravel or gibber plains, dunefields and low ranges. The low resistant hills and tablelands are remnants of the flat-lying Cretaceous sediments.

The drainage system is dominated by the Cooper Creek Basin draining towards Lake Eyre. During periods of high rainfall, the flat topography and drainage channel system becomes a largely flooded plain with water flow concentrating where Cooper Creek crosses the QLD-SA border. The Cooper Creek system catchment covers an area of approximately 300,000 km^2. Generally, Cooper Creek streamflow is confined to the main channels, but every 3-4 years, flows are sufficient to inundate parts of the Cooper floodplain via a network of tributary channels. During extended periods of no flow, the Cooper Creek contracts to a series of waterholes. Very large Cooper Creek flood events with the potential to inundate the broader Channel Country region, and flow water into the lower Cooper Creek in South Australia, occur on average once every 10 years, reaching Lake Eyre North in an estimated 1 in every 20 years

Local

The braided channels associated with the Cooper Creek surround the proposed activities; at its closest point, the Cooper Creek is located approximately 3km south of Bearcat 1 (Figure 4) crossing Bearcat 1 PLA from east to west. Bearcat 1 PPL crosses Cooper Creek (non-perennial stream order (SO) 8)) from west to east (Figure 4) within PL131 approximately 4km from the pipeline termination point.

There are no mapped wetlands within the vicinity of the activities (Figure 4).

3.4.1 Potential Impacts

The proposed activities are located within the existing infrastructure footprint. The access tracks have not been constructed to any flood immunity, and will facilitate the passage of water keeping with existing hydrology. The pipeline will be buried underground and the surface rehabilitated to reinstate existing drainage. Any surface infrastructure required as a part of future workover activities (i.e. a drilling sump) and well control and testing operations (i.e. flare pit), may result in diversion or interception of a negligible amount of overland flow, when considering the small footprint of the activity relative to the sub-catchment area. A typical drilling sump has an operating volume of approximately 300kL, whilst a flare pit has an operating volume of approximately 350kL. Both are designed to exclude surface flow. A flare pit freeboard will be maintained with routine inspections and repairs undertaken to ensure overtopping does not occur. Weather conditions are monitored including Cooper Creek gauging stations during periods of high rainfall for preparation of shutdown due to inundation/flooding and the removal of fluids from the flare pit where floodwater pose a site inundation risk.

Workover activities will be temporary in nature and would be scheduled to be completed outside of the wet season (infrastructure removed prior to Cooper Creek flood events) therefore diversion or interception of overland flow is not expected. No new surface disturbance to land, such as clearing vegetation in or near streams, lakes, floodplains or wetlands, is required as part of the proposed activities. Given the nature of the proposed activities, and the implementation of the above design and management measures, there would be no widespread or irreversible impact on hydrological processes within the Channel Country SEA.

3.5 Geomorphic Processes

Regional

Surface geology is dominated by Quaternary alluvium deposits associated with flood plains, with consolidated Tertiary sediments or Winton Formation on the higher ground. Cooper Creek is a large sedimentary sump accreting over a vast floodplain[3].

Local

Land systems mapped at the location of the proposed activities are consistent with the regional ecosystem landzone descriptions. The location of the proposed activities is entirely mapped as flat alluvial plans occasional flooding. The area is associated with the irregularly flooded Cooper Creek main channel area[4]. The land system present within proposed activity location is summarised in Table 3. Soils are entirely mapped as brown and grey clays (Map Code: 503)[5].

Table 3: Land System at Proposed Activity Location

Map Code	Land System Description	Agricultural Land Class

[3] Maroulis, J (undated) *Channel Country landforms and the processes that shape them*. University of Southern QLD Faculty of Education/Australian Centre for Sustainable Catchments.
[4] DES (2018). Land systems – western arid region land use study – part 1 – AWA2 (spatial dataset), Accessed 14/05/2018. Available online at: gldspatial.information.qld.gov.au
[5] ASRIS (2018). Atlas of Australian Soils (spatial dataset), Australian Soil Resource Information System (CSIRO), Accessed 14/05/2018. Available online at: http://www.asris.csiro.au/downloads/Atlas/soilAtlas2M.zip

C2A3	Flat alluvial plains with the frequently flooding channels dissecting the more stable plains. Isolated sand dunes.	C2 - Pasture Land - native pastures

3.5.1 Potential Impacts

The proposed activities are located within the existing infrastructure footprint. No new surface disturbance to land, such as excavation, clearing or realigning the beds and banks of watercourse, cultivating soil or excavating on floodplains, are required as part of the proposed activity. No new structures are proposed to be placed in a watercourse, lake or spring or on floodplains as a part of this activity.

The proposed activities are located away from the sources / areas of significant geomorphic processes, the Cooper Creek is located approximately 3km to the south. The access tracks have not been constructed to any flood immunity, and will facilitate the passage of water keeping with existing hydrology. The pipeline will be buried underground and the surface rehabilitated to reinstate existing drainage. Any surface infrastructure required as a part of future workover activities (i.e. a drilling sump) and well control and testing operations (i.e. flare pit), may result in diversion or interception of a negligible amount of overland flow, when considering the small footprint of the activity relative to the sub-catchment area. A typical drilling sump has an operating volume of approximately 300kL, whilst a flare pit has an operating volume of approximately 350kL. Both are designed to exclude surface flow. A flare pit freeboard will be maintained with routine inspections and repairs undertaken to ensure overtopping does not occur. Weather conditions are monitored including Cooper Creek gauging stations during periods of high rainfall for preparation of shutdown due to inundation/flooding and the removal of fluids from the flare pit where floodwater pose a site inundation risk.

Workover activities will be temporary in nature and would be scheduled to be completed outside of the wet season (infrastructure removed prior to Cooper Creek flood events) therefore diversion or interception of overland flow is not expected.

Following cessation of petroleum production, existing infrastructure would be rehabilitated to promote the natural re-establishment of vegetation consistent with the surrounding undisturbed land. As such, the proposed activity would not alter the delivery of sediment to the river system from adjacent lands and the natural erosion of the bed, banks and floodplains. Accordingly, it is not envisaged that the proposed activity would not cause a widespread or irreversible impact on geomorphic processes within the Channel Country SEA.

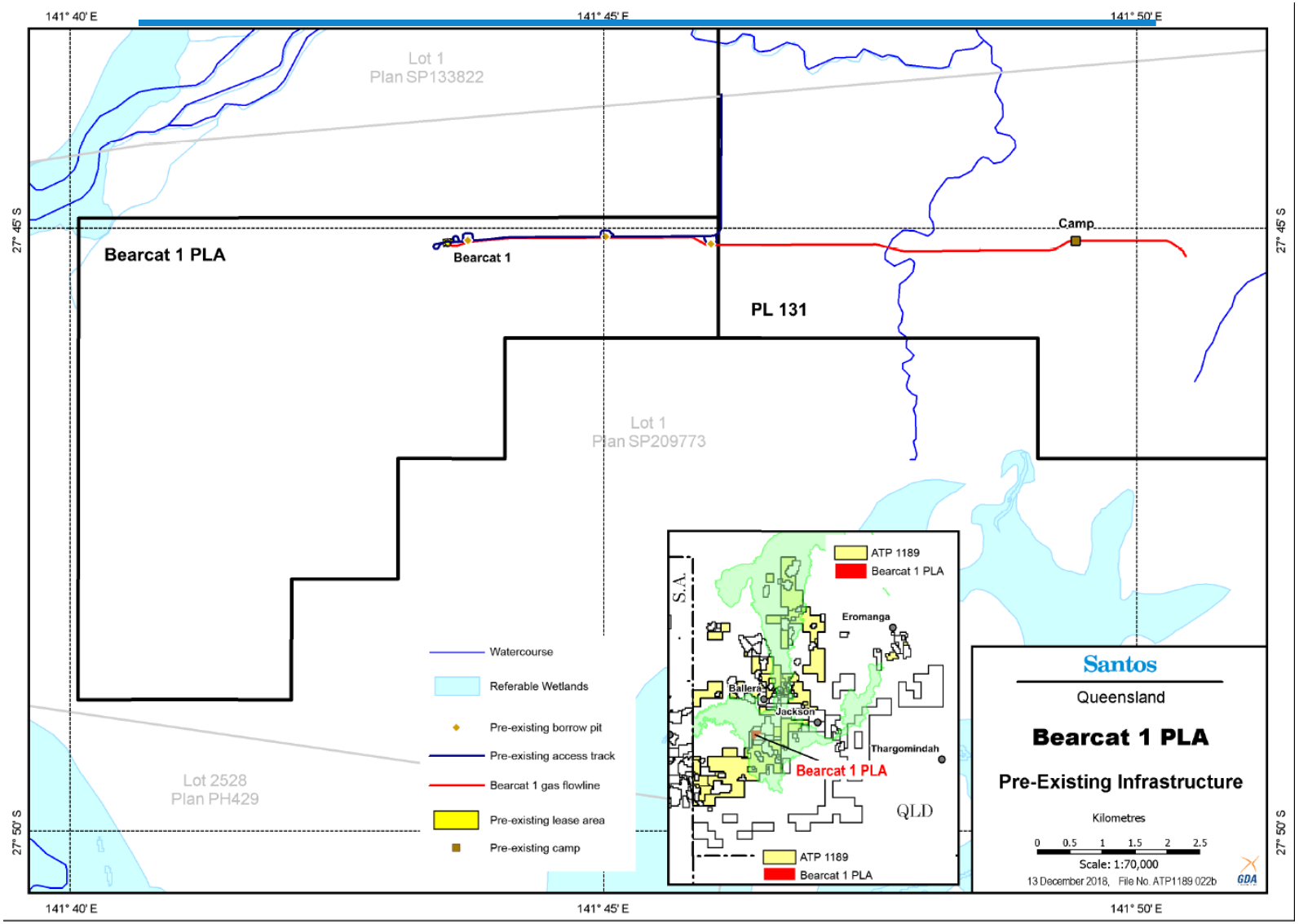

Figure 4: Watercourses, Wetlands and Strategic Environmental Areas

3.6 Beneficial Flooding

The braided channels associated with the Cooper Creek surround the proposed activities; at its closest point, the Cooper Creek is located approximately 3km to the south. The area of the proposed activities would experience intermittent surface water flows during storm events, causing localised ponding of surface water (occurring on average once every 10 years).

Generally, the surrounding Cooper Creek streamflow is confined to the main channels, but every 3-4 years, flows are sufficient to inundate parts of the Cooper floodplain via a network of tributary channels. During extended periods of no flow, the Cooper Creek contracts to a series of waterholes. Very large Cooper Creek flood events with the potential to inundate the broader Channel Country region, and flow water into the lower Cooper Creek in South Australia, occur on average once every 10 years, reaching Lake Eyre North in an estimated 1 in every 20 years.

3.6.1 Potential Impacts

The proposed activities are located within the existing infrastructure footprint. No new surface disturbance activities, including placing new infrastructure within SEA, are proposed as part of these activities. Weather conditions are monitored including Cooper Creek gauging stations during periods of high rainfall for preparation of shutdown due to inundation/flooding.

Following cessation of petroleum production or pipeline operation, existing infrastructure would be rehabilitated to promote the natural re-establishment of vegetation consistent to the surrounding undisturbed land. Given no new disturbance or activities other than ‘production’ or ‘operation’ from existing authorised infrastructure is proposed (as described in Section 2.0), altered natural flow paths and natural extent of flooding across floodplains will not occur. Accordingly, the proposed activities would not cause a widespread or irreversible impact on beneficial flooding within the Channel Country SEA.

4.0 Required Outcome Assessment

Schedule 2, Part 5 of the RPI Reg provides criteria for assessment by agencies. In accordance with Section 14(3) of the RPI Reg, if the application demonstrates compliance with either of the prescribed solutions stated in Part 5, Schedule 2, the proposed activities will meet the required outcome for the regional interest. Critically, the application demonstrates that the prescribed solution provided in s15(1)(a) will be met as the proposed activity, 'petroleum production' from pre-existing disturbances and infrastructure will not impact on an environmental attribute of the Channel Country SEA. The application also demonstrates the prescribed solution provided in s15(1)(b) will also be met (Table 4).

Table 4: Schedule 2, Part 5 RPI Reg

Schedule 2, Part 5 RPI Reg		Relevance To Application
14 Required outcome *The activity will not result in a widespread or irreversible impact on an environmental attribute of a strategic environmental area.*	✓	The petroleum activities would not result in a widespread or irreversible impact on each of the environmental attributes as provided in Section 3.0.
15 Prescribed solution *(1) The application demonstrates either—* *(a) the activity will not, and is not likely to, have a direct or indirect impact on an environmental attribute of the strategic environmental area; or*	✓	Refer to Section 3.0.
(b) all of the following— *(i) if the activity is being carried out in a designated precinct in the strategic environmental area—the activity is not an unacceptable use for the precinct;*	✓	The proposed activities do not include any of the unacceptable uses prescribed by Section 15(2) of the RPI Act.
(ii) the construction and operation footprint of the activity on the environmental attribute is minimised to the greatest extent possible;	✓	Existing operational footprint will be utilised entirely. No new disturbance footprint is proposed within this application.
(iii) the activity does not compromise the preservation of the environmental attribute within the strategic environmental area;	✓	Refer to Section 3.0.
(iv) if the activity is to be carried out in a strategic environmental area identified in a regional plan—the activity will contribute to the regional outcomes, and be consistent with the regional policies, stated in the regional plan.	✓	The South West Regional Plan does not identify the Channel Country SEA.

As discussed within Section 2.1, a flare pit is required for well control and testing operations for production from the Bearcat 1 well and a drilling fluids sump may be required as a part of future temporary workover activities. The application also demonstrates the proposed use of the flare pit and drilling sump does not constitute a regulated activity as defined by the RPI Act.

s11(3) of the Regional Planning Interests Regulation 2014		Relevance To Application
Water storage (dam) is storing water using a dam, other than storing water on land to be used only for any or all of the following purposes— *(a) to meet the domestic water needs of the occupants of the land;* *(b) to water the stock that is usually grazed on the land;* *(c) to water stock that is travelling on a stock route on or near the land.*	✓	N/A – the application does not propose to store water in a dam. The application proposes the storing of produced formation water in a flare pit and drilling fluids in a drill sump. Santos flare pits and drilling sumps are designed to exclude surface flow and avoid the impounding of surface water. In addition, workover activities would be scheduled to be completed outside of the wet season, therefore all surface infrastructure, including a drill sump, would be removed prior to Cooper Creek flood events. Fluids will be removed from the flare pit where floodwater pose a site inundation risk.
Schedule 6 of the Regional Planning Interests Regulation 2014		**Relevance to the application**
dam— *(a) means the following—* *(i) a barrier, whether permanent or temporary, that does, could or would impound water;*	✓	N/A – the flare pit and drilling sump will not impound water. Santos flare pits and drilling sumps are designed to exclude surface water and avoid the impounding of surface water. Workover activities would be scheduled to be completed outside of the wet season, therefore all surface infrastructure, including a drill sump, would be removed prior to Cooper Creek flood events. Fluids will be removed from the flare pit where floodwater pose a site inundation risk.
(ii) the storage area created by the barrier; *(iii) an embankment or other structure that is associated with the barrier and controls the flow of water; but*	✓	N/A – the flare pit and drilling sump would not constitute a barrier for the storage of water.
(b) does not include a water tank, including a rainwater tank, constructed of steel, concrete, fibreglass, plastic or similar material.	✓	N/A – the flare pit and drilling sump do not constitute a water tank.

ATTACHMENT 4b – RIDA ASSESSMENT REPORT – Jarrar 5 and Jarrar 5 oil flowline

Santos

Regional Interests Development Application Assessment Report

Jarrar 5 Oil Well and Jarrar 5 Oil Flowline

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Abbreviations and Units

Acronym	Description
ATP	Authority to Prospect
DEHP	Department of Environment and Heritage Protection, Queensland
DES	Department of Environment and Science, Queensland
DILGP	Department of Infrastructure, Local Government and Planning
DNRM	Department of Natural Resources and Mines
EA	Environmental Authority
ha	Hectares
km	Kilometre
m	Metres
N/A	Not Applicable
PAA	Priority Agricultural Area
P&G Act 2004	*Petroleum and Gas (Production and Safety) Act 2004*
PL	Petroleum Lease
PLA	Priority Living Area
QLD	Queensland
RE	Regional Ecosystem
RIDA	Regional Interests Development Approval
RPI Act	*Regional Planning Interests Act 2014*
RPI Reg	*Regional Planning Interests Regulation 2014*
SCA	Strategic Cropping Area
SEA	Strategic Environmental Areas
SMS	Santos Management System
SPA	*Sustainable Planning Act 2009*
SWQ	South-West Queensland
WR Act	*Wild Rivers Act 2005 (Repealed)*

1.0 Introduction

Santos Limited (Santos) has prepared this assessment report to support an assessment application for a Regional Interests Development Approval (RIDA) as required under s29 of the *Regional Planning Interests Act 2014)* (RPI Act) to be submitted to the Department of State Development, Manufacturing, Infrastructure and Planning (DSDMIP).

The application is of an administrative nature. It seeks only to authorise petroleum 'production' on Lot 3 on Plan BI22 and the Petroleum Lease Application area (portion of ATP1189, herein referred to as Jarrar 5 PLA) from the existing Jarrar 5 petroleum well and associated infrastructure; and operation of the Jarrar 5 oil flowline (PPL2039) within the Channel Country SEA. This is a result of:

- a proposed change in tenure from Authority to Prospect (ATP) to a Petroleum Lease (PL), and subsequent requirement for an amendment to the existing Environmental Authority (EA); and
- the submission of a Petroleum Pipeline Licence (PPL) application to operate the Jarrar 5 oil flowline and the requirement for a new EA.

The new tenures and EAs are to allow for commercialisation of a petroleum product, following well construction and extended production testing, conducted under Authority to Prospect (ATP) 1189 (EPPG03518215), and pipeline construction under ATP1189 (EPPG03518215) and PL77 (EPPG03518115).

The assessment report has been prepared in accordance with the 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* and the RPI Act *Statutory Guideline 05/14: Carrying out resource activities and regulated activities within a Strategic Environmental Area*.

This assessment report provides the following:

- Description of the proposed activities;
- Identification of the relevant environmental attributes of the land subject to the application;
- Evaluation of the potential impacts on the identified relevant environmental attributes; and
- An assessment of how the proposed activities meet the required outcome for Strategic Environmental Areas (SEA) as detailed in the *Regional Planning Interests Regulation 2014* (RPI Reg).

1.1 Landholder Copy of the Application

Separate regulatory systems are in place that require Santos to notify the landholder of petroleum activities occurring within their properties. Given the pre-existing nature of the activities (refer to 2.0) notification to the landholder has already ensued. Notwithstanding, a copy of the application will be given to the landowner within 5 business days after the application is made in accordance with Section 30 of the RPI Act and Schedule 5 of the RPI Reg.

1.2 Non-Notifiable Application

In accordance with Section 34(2) of the RPI Act, and Section 13 of the RPI Reg, notification of the assessment application is not mandatory, as the activities are not proposed to be carried out in an area of regional interest that is a priority living area.

The activities are located solely on Lot 3 on Plan BI22 forming part of Nockatunga Station, a 8,959 km^2 cattle station operated by Consolidated Pastoral Company.

Discretionary notification under s34(4) would not be necessary given the pre-existing nature of the activities (refer section 2.0), the very large size of the cattle station relative to the activities and that the landholder will receive a copy of the application as described below.

1.3 Referable Application

In accordance with Section 12(2) and Schedule 1 of the RPI Reg, the application is referrable to the Department of Environment and Science (DES) and the Department of Natural Resources, Mines and Energy (DNRME).

2.0 Proposed Activity

Santos is seeking to undertake 'petroleum production' on Jarrar 5 PLA and to operate Jarrar 5 PPL, within the Channel Country SEA from the infrastructure and disturbances listed in Table 1 and shown in Figure 1:

Table 1: Existing Surface Disturbance

Pre-Existing Infrastructure	Pre-Existing Disturbance	
	Length	Area
Petroleum Well Pad (Jarrar 5)	N/A	0.73 ha
Aboveground Pipeline (Jarrar 5 oil flowline)	1.39 km	1.39 ha
Access Track	1.91 km	1.15 ha
Borrow Pit	N/A	0.38 ha
		3.65 ha

The infrastructure listed in Table 1 is pre-existing infrastructure, constructed and operated as authorised by ATP1189, PL77, EPPG03518215 and EPPG03518115. Santos intends to utilise this infrastructure for the purpose of 'petroleum production'. A Petroleum Lease application is being finalised for submission to DNRME for the Jarrar 5 PLA area. An associated amendment application to the existing environmental authority (EPPG03518115) is to be lodged with DES in the near future to authorise petroleum activities conducted on Jarrar 5 PLA. The operation of the Jarrar 5 oil flowline has been sought through an application for petroleum pipeline licence (PPL2039) which was lodged with DNRME on 21 November 2018. An application for environmental authority for the Jarrar 5 oil flowline (PPL2039) is being finalised for submission with DES.

The activity of petroleum production will not change the nature of the activities already conducted at these locations. 'Production' primarily refers to the commercialisation of the petroleum product generated from the Jarrar 5 petroleum well and operation of the petroleum pipeline (Jarrar 5 oil flowline) to transport the product to processing facilities and to market. No new surface disturbance to land is required as part of the activity at this location. Activities will be limited to 'production' related operational maintenance and restoration at the end-of-life. Descriptions of the activities are provided in Section 2.0.

Jarrar 5 well and associated infrastructure; and Jarrar 5 oil flowline is located on Nockatunga Station (Lot 3 on Plan BI22). Nockatunga is a pastoral lease that operates as a cattle station with a capacity of up to 27,000 head of cattle[1]. The primary land uses are cattle grazing and petroleum activities.

2.1 Existing Conventional Petroleum Well and Lease

The existing Jarrar 5 well currently extracts petroleum for exploration and production testing purposes via surface facilities including a well head, which comprises of equipment on the surface that supports the various pipe strings, seals off the well and controls the paths and flow of reservoir fluids. Additional surface infrastructure includes a diesel generator, well control panel and fencing surrounding the infrastructure to exclude livestock.

[1] https://en.wikipedia.org/wiki/Nockatunga_Station

It is feasible that workover operations will be required for the Jarrar 5 well in the future. Workover operations include activities such as, cleaning out of production conduits and replacing tubing, retrieving or drilling out obstructions in the well, and well bore decommissioning. For some workovers, a workover rig and associated infrastructure (i.e. a drilling fluids sump) would need to be set up within the existing disturbance footprint for a temporary duration. Workover activities would be scheduled to be completed outside of the wet season.

Extracting petroleum for 'production' will not change the nature of the activities already conducted at this location. The authorisation of Jarrar 5 PLA is to enable the commercialisation of the petroleum product only. No new surface disturbance to land outside of the existing disturbance footprint is required at this location to facilitate ongoing production. The well will be restored at end-of-life in accordance with the P&G Act 2004 and the relevant EA conditions.

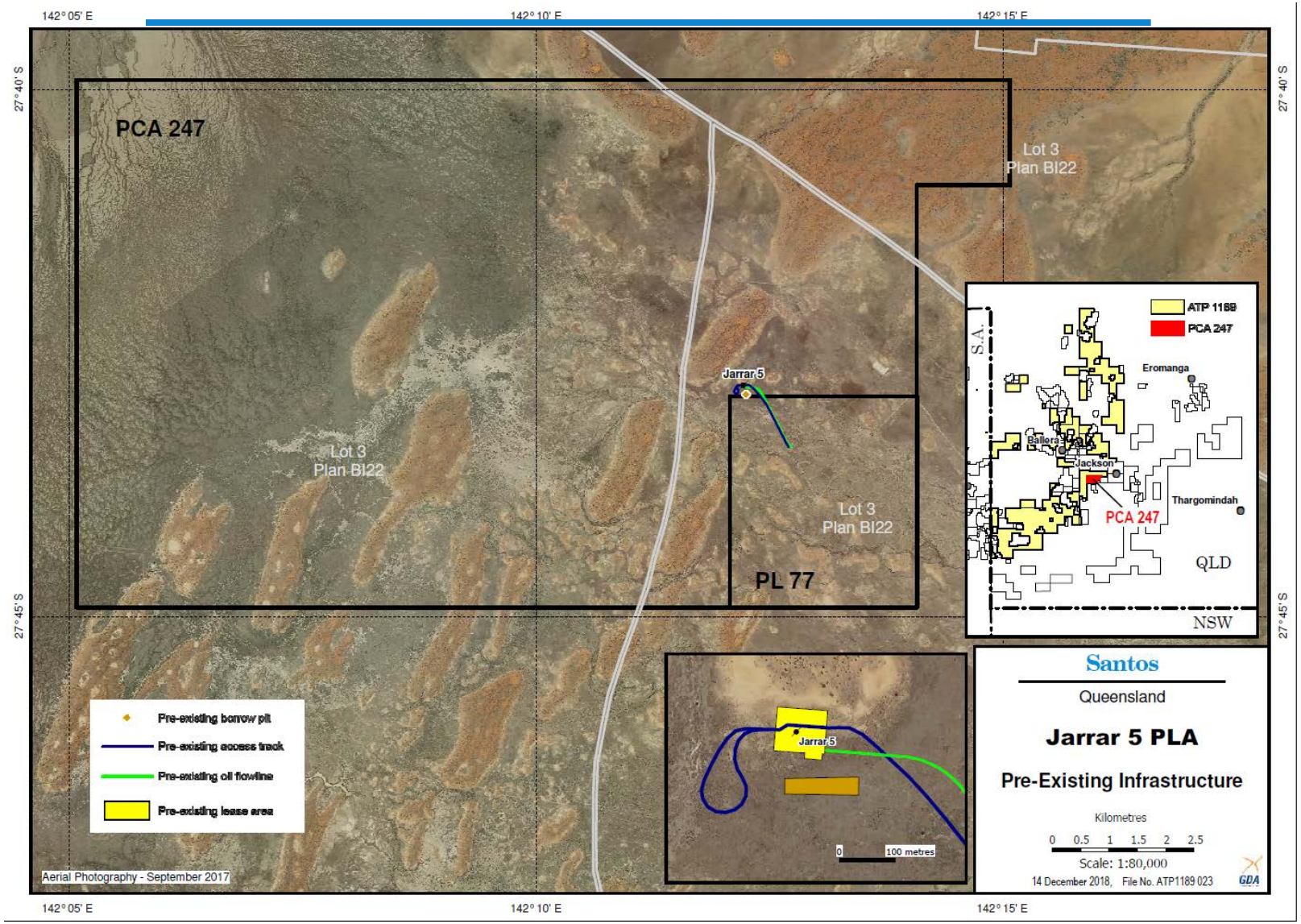


Figure 1: Location of Existing Infrastructure

2.2 Existing Access tracks

Access tracks are proposed to be used for ongoing access to the Jarrar 5 well and to carry out surveillance and maintenance on the Jarrar 5 flowline. No new access tracks are proposed. Pre-existing access tracks are not designed to be used during wet weather conditions, and therefore have not been constructed to any flood immunity, and will facilitate the passage of water keeping with existing hydrology. Maintenance of the tracks may be required over time (e.g. light grade). The access tracks will be restored at end-of-life in accordance with the *Petroleum and Gas (Production and Safety) Act 2004* (P&G Act 2004) and the relevant EA conditions.

2.3 Existing Borrow Pit

Borrow pits are proposed to be used to provide a source of material required for ongoing well lease, access track and pipeline maintenance. The existing side batters of borrow pits are maintained at a slope of approximately 3:1, and the batters of the entrance / exit are maintained at a slope of approximately 7:1. Borrow pits will be progressively restored by ripping the floor and sides to a minimum depth of 300 mm generally along the contour (Figure 2). Stockpiled topsoil and vegetation is re-spread to a uniform depth over the entire area from which it was removed. The sides and floor of the pits are graded to give a contoured finish, as required by the relevant EA conditions.

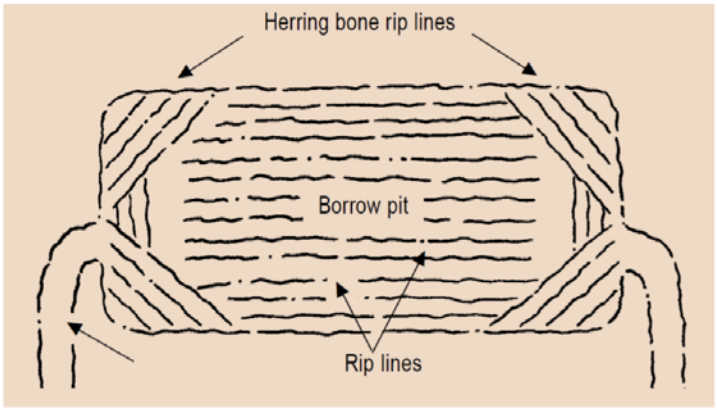


Figure 2: Example Borrow Pit Ripping for Rehabilitation

2.4 Existing Aboveground Pipeline

The pipeline is proposed to be utilised to transport extracted petroleum for production. It is connected to the existing authorised Jarrar Production Oil Spineline. The pipeline is constructed of 100mm diameter above-ground steel pipeline sections which are raised approximately 200 mm above ground level on prefabricated supports located along the pipeline route. Details of the prefabricated supports are provided in Appendix A. No new surface disturbance to land is required. The pipeline will be restored at end-of-life in accordance with the relevant EA conditions.

3.0 Environmental Attributes and Potential Impacts

Section 7 of the RPI Reg prescribes the following environmental attributes relevant to the Channel Country SEA:

> *(a) the natural hydrologic processes of the area characterised by—*
>
> *(i) natural, unrestricted flows in and along stream channels and the channel network in the area; and*
>
> *(ii) overflow from stream channels and the channel network onto the flood plains of the area, or the other way; and*
>
> *(iii) natural flow paths of water across flood plains connecting waterholes, lakes and wetlands in the area; and*
>
> *(iv) groundwater sources, including the Great Artesian Basin and springs, that support waterhole persistence and ecosystems in the area;*
>
> *(b) the natural water quality in the stream channels and aquifers and on flood plains in the area;*
>
> *(c) the beneficial flooding of land that supports flood plain grazing and ecological processes in the area.*

DSDMIP's RPI Act *Statutory Guideline 05/14: Carrying out resource activities and regulated activities within a Strategic Environmental Area* summarises the above attributes to broadly relate to:

- Riparian process;
- Wildlife corridors;
- Water quality;
- Hydrologic processes;
- Geomorphic processes; and
- Beneficial flooding.

As discussed in section 2.0, the proposed activity of petroleum production will not change the nature of the activities already conducted from existing infrastructure. The proposed activity is limited to production, operational maintenance and restoration of existing infrastructure at end-of-life. Notwithstanding, the relevance of the above environmental attributes to the activity is described below.

3.1 Riparian Process

The activities will be undertaken within Regional Ecosystems (REs) 5.3.18a/5.3.16a/5.6.4 (refer Figure 3). These REs are listed as No Concern at Present (NCAP), are known to include riparian vegetation and are subject to long-term grazing from the operation of Nockatunga pastoral lease. They consist of *Braided channel complex of major alluvial plains, includes Chenopodium auricomum open shrubland and variable sparse to open-herbland (5.3.18), Eragrostis australasica sparse tussock grassland on intermittently inundated depressions on flood plains, interdune flats, clay pans and clay plains (5.3.16a), and Atalaya hemiglauca +/- Acacia aneura +/- Acacia spp. +/- Corymbia terminalis low open woodland on reticulate sand dunes (5.6.4).*

The braided channels associated with Cooroo Creek and the Wilson River surround the proposed activity; at its closest point, the Wilson River is located approximately 5.4 km south of the termination point of PPL2039.

3.1.1 Potential Impacts

The activities will be located within the existing infrastructure footprint. No new surface disturbance to land, such as clearing vegetation in or near streams, lakes, floodplains or wetlands, is required as part of the proposed activity. Access to and from the proposed activity will occur along the existing access tracks only.

Following cessation of petroleum production, existing infrastructure would be rehabilitated to promote the natural re-establishment of vegetation consistent with the surrounding undisturbed land in accordance with the relevant EA conditions. As such, there will be no new disturbance or change to riparian corridors along streams and lakes and within floodplains and wetlands as a part of this activity. Accordingly, the proposed activities would not cause a widespread or irreversible impact on riparian processes within the Channel Country SEA.

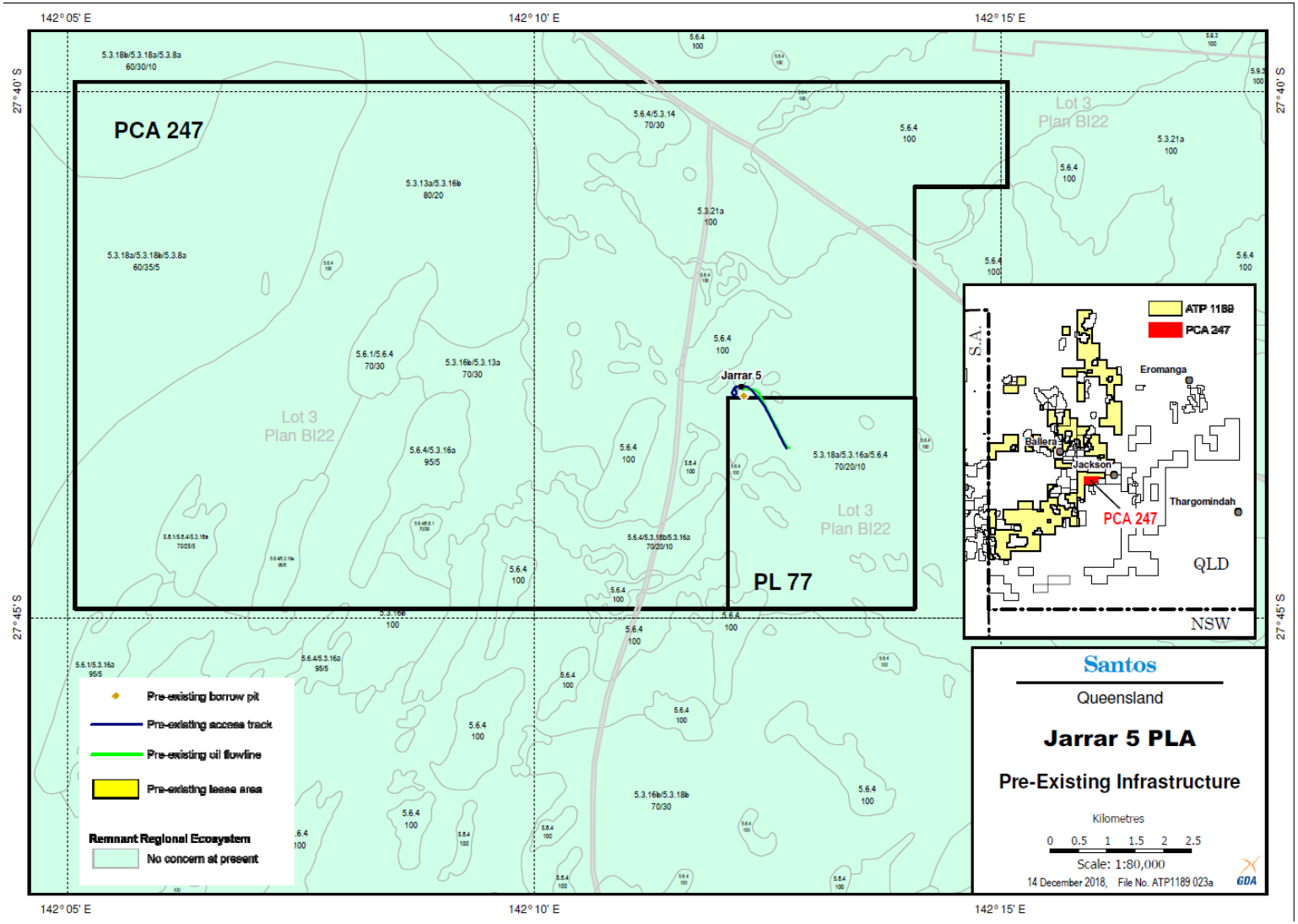


Figure 3: Regional Ecosystems

3.2 Wildlife Corridors

The proposed activities will be located within a pre-disturbed area of an existing vegetated corridor. The area where the Jarrar 5 well and Jarrar 5 oil flowline is located has been extensively overgrazed from operation of the Nockatunga pastoral lease. The REs surrounding the location (REs 5.3.18a, 5.3.16a and 5.6.4) may provide suitable general habitat for the dusky hopping-mouse (*Notomys fuscus*) (Endangered). There are no mapped Environmentally Sensitive Areas (ESA) near the Jarrar 5 well or Jarrar 5 oil flowline; the closest ESA, Category C ESA Essential Habitat, is located approximately 34 km to the south west of the Jarrar 5 well and Jarrar 5 oil flowline at the termination point of the flowline.

3.2.1 Potential Impacts

No new disturbance(s) to aquatic and terrestrial fauna or wildlife corridors is to be undertaken as part of these activities. Measures will be adopted to prevent fauna entrapment within operational areas, and hygiene protocols will be implemented as appropriate to minimise the introduction, spread and persistence of weed species, in accordance with relevant EA conditions. Access to and from the proposed activity will occur along the existing access tracks only. Following cessation of petroleum production, existing infrastructure would be rehabilitated to promote the natural re-establishment of vegetation consistent with the surrounding undisturbed land, in accordance with relevant EA conditions. As such, there is no disturbance or change to wildlife corridors as a part of this activity and therefore the proposed activities would not cause a widespread or irreversible impact on wildlife corridors within the Channel Country SEA.

3.3 Water Quality

Surface Water

The proposed activities are located within an area of the Cooper Creek basin that is not typically flowing and is subject to intermittent flows associated with Cooper Creek flood events; which have occurred five times since 1989 (using Landsat data). Historical (1965-2016) water quality data from the QLD Government's Cooper Creek gauging station 003103A, located approximately 110km north west, is summarised in Table 2.

Table 2: Cooper Creek Surface Water Quality (1956-2016)

Parameter	Average Value
Conductivity @ 25°C	345 µS/cm
Turbidity	512 NTU
pH	7.4
Total Nitrogen	1.4 mg/L
Total Phosphorus as P	0.4 mg/L
Sodium as Na	44.6 mg/L
Magnesium as Mg	7.4 mg/L
Chloride as Cl	62.6 mg/L
Fluoride as F	0.2 mg/L

Groundwater

Groundwater information in this section has been derived from the Underground Water Impact Report (UWIR) for Santos Cooper Basin Oil and Gas Fields in South-West Queensland (Santos, 2016). The UWIR was prepared in accordance with the *Queensland Water Act 2000* (the Water Act) and the Guideline for Underground Water Impact Reports and Final Reports (the Guideline). The intent of the UWIR is to describe, make predictions about, and manage the impacts of extraction of underground water by petroleum tenure holders in South-Western Queensland where production testing or production is taking place.

The main GAB aquifers (i.e. in the Eromanga Basin stratigraphy) in relation to Jarrar 5 PLA are the Winton Formation, Cadna-owie Formation, Hooray Sandstone, Hutton Sandstone and Poolowanna Formation (Precipice Sandstone equivalent). The aquifers of the Eromanga Basin are considered highly productive aquifers over most of the GAB. Shallow groundwater is generally found within the Quaternary and Tertiary alluvium formations associated with the very flat structures of flood plains and is absent where the Winton Formation occasionally outcrops. Groundwater from Tertiary sediments and the Winton Formation are characterised by a higher proportion of sodium and magnesium ranging in EC values from 3,000 to 13,000 µS/cm[2].

The aquifers of the Cooper Basin, which underlies the GAB sediments of the Eromanga Basin, are not considered sandstone aquifers of the GAB. Groundwater yields from the Cooper Basin may be feasible from the Wimma Sandstone, Toolachee Formation, Epsilon Formation, Patchawarra Formation and Tirrawarra Formation.

The Jarrar 5 well primarily targets the Birkhead Formation. This formation is one of the main hydrocarbon producing reservoirs within the Cooper Basin and is located at a depth of 1720 m.

Within the Santos Cooper Basin tenements, only the upper aquifers of the Eromanga Basin sequence are of economic interest to the local community. This is due to the significant depth of the water bearing formations in the Cooper Basin and the general unreliability of the groundwater quality that may be encountered (i.e. it may have a high salinity and contain free and dissolved hydrocarbons).

No registered groundwater bores are located nearby to the proposed activities. There are no known groundwater dependent ecosystems, including Great Artesian Basin springs, which support permanent waterholes or aquatic ecosystems in the area. The closest Great Artesian Basin discharge / recharge springs are located approximately 160km east from Jarrar 5 well.

3.3.1 Potential Impacts

The activities do not involve any new surface disturbance to land, such as clearing vegetation in or near streams, lakes, floodplains or wetlands. No activities proposed involve the discharges of water (point or diffuse sources) or the construction or operation of regulated dams and other major infrastructure (i.e. separation ponds, permanent camps).

Any fuels / chemicals used on site would be stored and handled in accordance with Australian Standards and spill kits will be located onsite where required to contain any spills should they occur. All waste materials and non-essential infrastructure will be removed at the end of the petroleum activities as soon as reasonably practicable, minimising risks associated with contamination, or a reduction in water quality, in accordance with EA conditions.

[2] Golder Associates 2013 *Underground Water Impact Report For Santos Cooper Basin Oil & Gas Fields, SW QLD*

Contingency measures for unplanned releases of discharges of contaminants will be implemented in accordance with EA conditions. Moreover, due to the slow nature of the encroachment of flood waters in the Cooper Creek, sufficient time is generally available to prepare operational areas for potential flood impacts e.g. in these situations all non-essential materials present on site at the time (e.g. hydrocarbons, chemicals, infrastructure) shall be removed from operational areas prior to the arrival of floodwaters. The petroleum well has been completed with steel surface casing, steel production casing, and cement to isolate the well from aquifers, including the Great Artesian Basin, and other geological units.

Given the scope of proposed activities, combined with the above management measures, petroleum production from pre-existing infrastructure is unlikely to disturb or alter the physical, chemical and biological quality of water in the watercourse channels and on floodplains that support and maintain the natural aquatic and terrestrial ecosystems. Accordingly, the proposed activities would not cause a widespread or irreversible impact on water quality within the Channel Country SEA.

3.4 Hydrological Processes

Regional

Topography is limited to low undulating topography between the drainage channel system. The Channel Country is characterised by vast flat-lying, braided, flood and alluvial plains surrounded by gravel or gibber plains, dunefields and low ranges. The low resistant hills and tablelands are remnants of the flat-lying Cretaceous sediments.

The Cooper Creek Basin drains towards Lake Eyre. During periods of high rainfall, the flat topography and drainage channel system becomes a largely flooded plain with water flow concentrating where Cooper Creek crosses the QLD-SA border. The Cooper Creek system catchment covers an area of approximately 300,000 km^2. Generally, Cooper Creek streamflow is confined to the main channels, but every 3-4 years, flows are sufficient to inundate parts of the Cooper floodplain via a network of tributary channels. During extended periods of no flow, the Cooper Creek contracts to a series of waterholes. Very large Cooper Creek flood events with the potential to inundate the broader Channel Country region, and flow water into the lower Cooper Creek in South Australia, occur on average once every 10 years, reaching Lake Eyre North in an estimated 1 in every 20 years.

The Wilson River is a tributary of Cooper Creek with a catchment area of approximately 25,000km^2. The Wilson River is a part of the Cooper Creek Basin and broader Lake Eyre Basin. The Wilson River flows generally northwest through Noccundra and is joined by two minor tributaries before reaching its confluence with the Cooper Creek at Depot Camp.

Local

The braided channels associated with Cooroo Creek and the Wilson River surround the proposed activities; at its closest point, the Wilson River is located approximately 5.4km south of the termination point of PPL2039. The Cooper Creek is located approximately 30km west outside of Jarrar 5 PLA (Figure 4). No major watercourses are located within Jarrar 5 PLA within the vicinity of the activity. Cooroo Creek is located approximately 1.8km north of Jarrar 5 well crossing the Jarrar 5 PLA from east to west. An unnamed watercourse (non-perennial, stream order (SO) 4) crosses Jarrar 5 PLA from east to west approximately 250m to the north of Jarrar 5 well. A second unnamed watercourse (non-perennial, stream order (SO) 4) crosses Jarrar 5 PLA from east to west approximately 820m to the south of Jarrar 5 well. PPL2039 also crosses this watercourse within PL77 from north to south approximately 780m from the pipeline termination point (Figure 4). PPL2039 crosses a second unnamed watercourse (non-perennial, stream order (SO) 1) within PL77 from north to south approximately 50m from the pipeline termination point (Figure 4).

There are no mapped wetlands within the vicinity of the activities (Figure 4).

3.4.1 Potential Impacts

The proposed activities are located within the existing infrastructure footprint. The access tracks have not been constructed to any flood immunity, and will facilitate the passage of water keeping with existing hydrology. The pipeline is raised approximately 200mm above ground on prefabricated supports to avoid impacts to the surface hydrology. The pipeline will be restored at end-of-life in accordance with the relevant EA conditions.

Any surface infrastructure required as a part of future workover activities (i.e. a drilling sump) may result in diversion or interception of a negligible amount of overland flow, when considering the small footprint of the activity relative to the sub-catchment area. A typical drilling sump has an operating volume of approximately 300 kL and is designed to exclude surface flow. Weather conditions are monitored including Cooper Creek gauging stations during periods of high rainfall for preparation of shutdown due to inundation/flooding.

Workover activities will be temporary in nature and would be scheduled to be completed outside of the wet season (infrastructure removed prior to Cooper Creek flood events) therefore diversion or interception of overland flow is not expected. No new surface disturbance to land, such as clearing vegetation in or near streams, lakes, floodplains or wetlands, is required as part of the proposed activities. Given the nature of the proposed activities, and the implementation of the above design and management measures, there would be no widespread or irreversible impact on hydrological processes within the Channel Country SEA.

3.5 Geomorphic Processes

Regional

Surface geology is dominated by Quaternary alluvium deposits associated with flood plains, with consolidated Tertiary sediments or Winton Formation on the higher ground. Cooper Creek is a large sedimentary sump accreting over a vast floodplain[3].

Local

Land systems mapped at the location of the proposed activities are consistent with the regional ecosystem landzone descriptions. The location of the proposed activities is entirely mapped as occasionally flooded alluvial plans. The area is associated with the irregularly flooded Cooper Creek main channel area[4]. The land system present within proposed activity location is summarised in Table 3. Soils are entirely mapped as brown, red and grey clays with scalded (Map Code: 503)[5].

Table 3: Land System at Proposed Activity Location

Map Code	Land System Description	Agricultural Land Class
A2W4	Flat alluvial plains subject to occasional flooding interspersed with frequently flooded braided streams and "channel country".	C2 - Pasture Land - native pastures

[3] Maroulis, J (undated) *Channel Country landforms and the processes that shape them*. University of Southern QLD Faculty of Education/Australian Centre for Sustainable Catchments.
[4] DES (2018). Land systems – western arid region land use study – part 1 – AWA2 (spatial dataset), Accessed 14/05/2018. Available online at: gldspatial.information.qld.gov.au
[5] ASRIS (2018). Atlas of Australian Soils (spatial dataset), Australian Soil Resource Information System (CSIRO), Accessed 14/05/2018. Available online at: http://www.asris.csiro.au/downloads/Atlas/soilAtlas2M.zip

3.5.1 Potential Impacts

The proposed activities are located within the existing infrastructure footprint. No new surface disturbance to land, such as excavation, clearing or realigning the beds and banks of watercourse, cultivating soil or excavating on floodplains, are required as part of the proposed activity. No new structures are proposed to be placed in a watercourse, lake or spring or on floodplains as a part of this activity.

The proposed activities are located away from the sources / areas of significant geomorphic processes, the Cooper Creek is located approximately 30km to the west. The access tracks have not been constructed to any flood immunity, and will facilitate the passage of water keeping with existing hydrology. The pipeline is raised approximately 200mm above ground on prefabricated supports to avoid impacts to the surface hydrology. The pipeline will be restored at end-of-life in accordance with the relevant EA conditions.

Any surface infrastructure required as a part of future workover activities (i.e. a drilling sump) may result in diversion or interception of a negligible amount of overland flow, when considering the small footprint of the activity relative to the sub-catchment area. A typical drilling sump has an operating volume of approximately 300kL, designed to exclude surface flow. Weather conditions are monitored including Cooper Creek gauging stations during periods of high rainfall for preparation of shutdown due to inundation/flooding.

Workover activities will be temporary in nature and would be scheduled to be completed outside of the wet season (infrastructure removed prior to Cooper Creek flood events) therefore diversion or interception of overland flow is not expected.

Following cessation of petroleum production, existing infrastructure would be rehabilitated to promote the natural re-establishment of vegetation consistent with the surrounding undisturbed land. As such, the proposed activity would not alter the delivery of sediment to the river system from adjacent lands and the natural erosion of the bed, banks and floodplains. Accordingly, it is not envisaged that the proposed activity would not cause a widespread or irreversible impact on geomorphic processes within the Channel Country SEA.

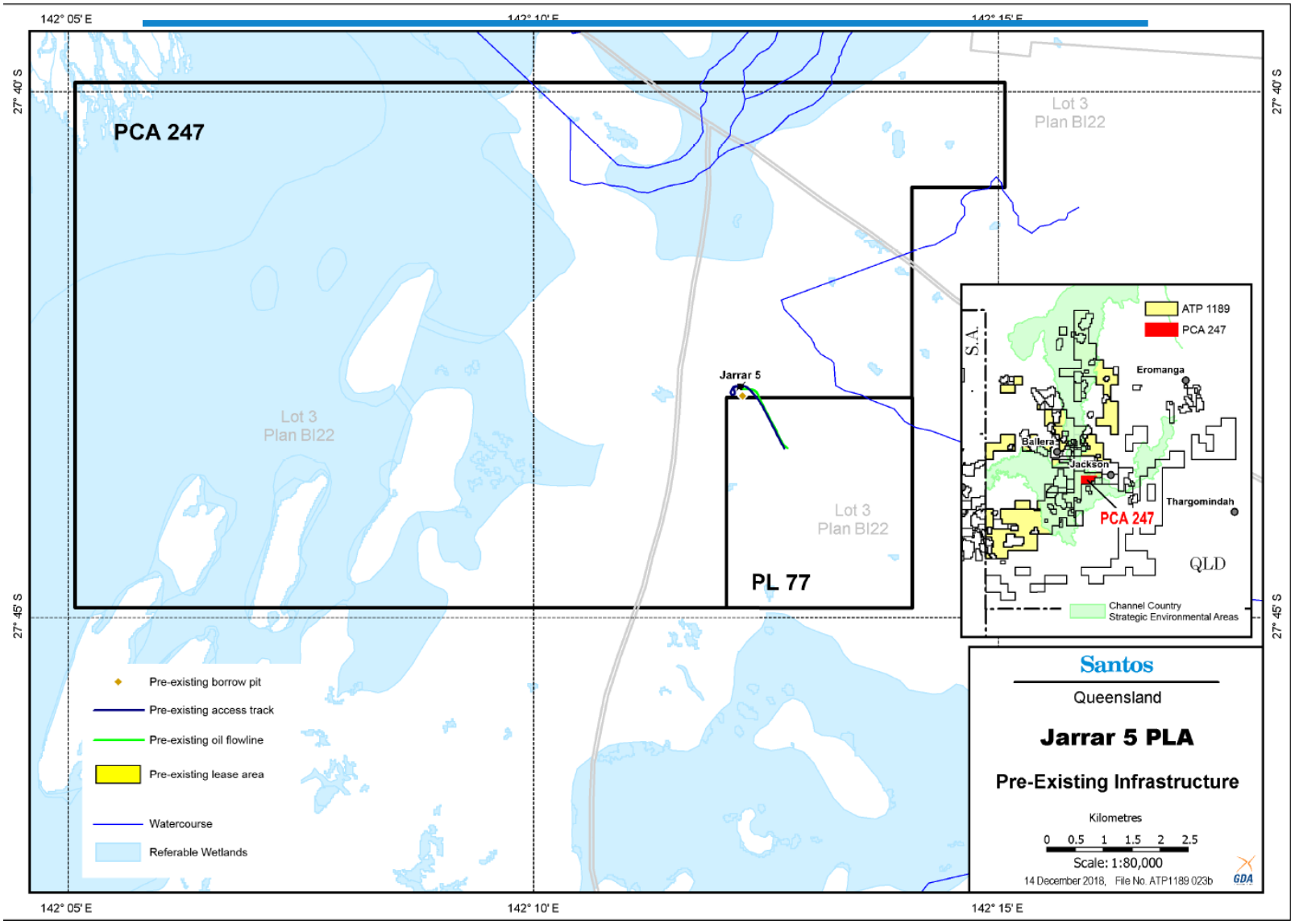


Figure 4: Watercourses, Wetlands and Strategic Environmental Areas

3.6 Beneficial Flooding

The braided channels associated with Cooroo Creek and the Wilson River surround the proposed activities; at its closest point, the Wilson River is located approximately 5.4km south of the termination point of PPL2039. The area of the proposed activity would experience intermittent surface water flows during storm events, causing localised ponding of surface water (occurring on average once every 10 years).

Generally, the surrounding Cooper Creek streamflow is confined to the main channels, but every 3-4 years, flows are sufficient to inundate parts of the Cooper floodplain via a network of tributary channels. During extended periods of no flow, the Cooper Creek contracts to a series of waterholes. Very large Cooper Creek flood events with the potential to inundate the broader Channel Country region, and flow water into the lower Cooper Creek in South Australia, occur on average once every 10 years, reaching Lake Eyre North in an estimated 1 in every 20 years.

3.6.1 Potential Impacts

The proposed activities are located within the existing infrastructure footprint. No new surface disturbance activities, including placing new infrastructure within SEA, are proposed as part of these activities. Weather conditions are monitored including Cooper Creek gauging stations during periods of high rainfall for preparation of shutdown due to inundation/flooding.

Following cessation of petroleum production or pipeline operation, existing infrastructure would be rehabilitated to promote the natural re-establishment of vegetation consistent to the surrounding undisturbed land. Given no new disturbance or activities other than ‘production’ or ‘operation’ from existing authorised infrastructure is proposed (as described in Section 2.0), altered natural flow paths and natural extent of flooding across floodplains will not occur. Accordingly, the proposed activities would not cause a widespread or irreversible impact on beneficial flooding within the Channel Country SEA.

4.0 Required Outcome Assessment

Schedule 2, Part 5 of the RPI Reg provides criteria for assessment by agencies. In accordance with Section 14(3) of the RPI Reg, if the application demonstrates compliance with either of the prescribed solutions stated in Part 5, Schedule 2, the proposed activities will meet the required outcome for the regional interest. Critically, the application demonstrates that the prescribed solution provided in s15(1)(a) will be met as the proposed activity, 'petroleum production' from pre-existing disturbances and infrastructure will not impact on an environmental attribute of the Channel Country SEA. The application also demonstrates the prescribed solution provided in s15(1)(b) will also be met (Table 4).

Table 4: Schedule 2, Part 5 RPI Reg

Schedule 2, Part 5 RPI Reg		Relevance To Application
14 Required outcome *The activity will not result in a widespread or irreversible impact on an environmental attribute of a strategic environmental area.*	✓	The petroleum activities would not result in a widespread or irreversible impact on each of the environmental attributes as provided in Section 3.0.
15 Prescribed solution *(1) The application demonstrates either—* *(a) the activity will not, and is not likely to, have a direct or indirect impact on an environmental attribute of the strategic environmental area; or*	✓	Refer to Section 3.0.
(b) all of the following— *(i) if the activity is being carried out in a designated precinct in the strategic environmental area—the activity is not an unacceptable use for the precinct;*	✓	The proposed activities do not include any of the unacceptable uses prescribed by Section 15(2) of the RPI Act.
(ii) the construction and operation footprint of the activity on the environmental attribute is minimised to the greatest extent possible;	✓	Existing operational footprint will be utilised entirely. No new disturbance footprint is proposed within this application.
(iii) the activity does not compromise the preservation of the environmental attribute within the strategic environmental area;	✓	Refer to Section 3.0.
(iv) if the activity is to be carried out in a strategic environmental area identified in a regional plan—the activity will contribute to the regional outcomes, and be consistent with the regional policies, stated in the regional plan.	✓	The South West Regional Plan does not identify the Channel Country SEA.

As discussed within Section 2.1, a drilling fluids sump may be required as a part of future temporary workover activities. The application also demonstrates the proposed use of the drilling sump does not constitute a regulated activity as defined by the RPI Act.

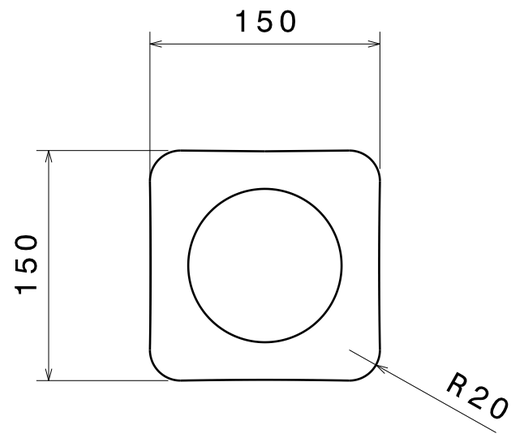
s11(3) of the Regional Planning Interests Regulation 2014		Relevance To Application
Water storage (dam) is storing water using a dam, other than storing water on land to be used only for any or all of the following purposes— *(a) to meet the domestic water needs of the occupants of the land;* *(b) to water the stock that is usually grazed on the land;* *(c) to water stock that is travelling on a stock route on or near the land.*	✓	N/A – the application does not propose to store water in a dam. The application proposes the storing of drilling fluids in a drill sump. Santos drilling sumps are designed to exclude surface flow and avoid the impounding of surface water. In addition, workover activities would be scheduled to be completed outside of the wet season, therefore all surface infrastructure, including a drill sump, would be removed prior to Cooper Creek flood events.
Schedule 6 of the Regional Planning Interests Regulation 2014		**Relevance to the application**
dam— *(a) means the following—* *(i) a barrier, whether permanent or temporary, that does, could or would impound water;*	✓	N/A – the drilling sump will not impound water. Santos drilling sumps are designed to exclude surface water and avoid the impounding of surface water. Workover activities would be scheduled to be completed outside of the wet season, therefore all surface infrastructure, including a drill sump, would be removed prior to Cooper Creek flood events.
(ii) the storage area created by the barrier; *(iii) an embankment or other structure that is associated with the barrier and controls the flow of water; but*	✓	N/A – the drilling sump would not constitute a barrier for the storage of water.
(b) does not include a water tank, including a rainwater tank, constructed of steel, concrete, fibreglass, plastic or similar material.	✓	N/A – the drilling sump does not constitute a water tank.

APPENDIX A – Aboveground pipeline supports

IF IN DOUBT ASK

ISO9001:2015
QUALITY ASSURED

ISSUE	DESCRIPTION	T/O No.	DRAWN	DATE	APPROVED	DATE
A	RELEASE FOR CUSTOMER APPROVAL	tba	E.C	12-7-18	–	–



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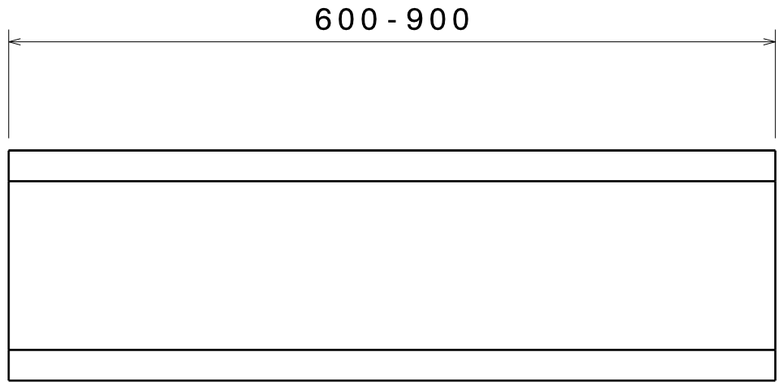

Side view
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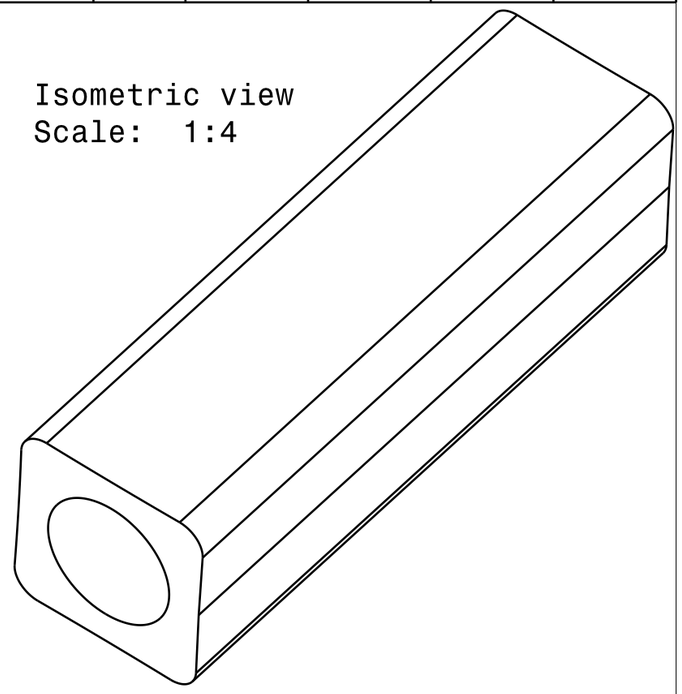

Isometric view
Scale: 1:4

Recycled

Environmental

Sustainable

Safe

APR manufactures utilising recycled and reclaimed materials

APR products are manufactured to our standard quality control processes

APR manufactures to various lengths

Santos

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DESIGNED E.C	SCALE AS SHOWN	MATERIAL A.P.R - W.P.C
DRAWN E.C	© DATE 12-07-2018	SHEET SIZE A3
CHECKED K.C	APPROVED C.L	A3 SHEET 1 OF 1
PART NAME 150x150 Hollow		PART NO. tba

ATTACHMENT 5 – GIS FILES