

Annual Environmental Performance Report 2023

McArthur Basin Civil and Seismic Program, EP161

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Permit	EP 161
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Approved by	Santos QNT Pty
Date approved	6/9/23

Signature and Certification

I/We hereby declare that the information provided in this annual environment performance report and accompanying documents is to the best of my/our knowledge, true and correct.

Asset/Project Approval


Signature	
Name (print)	Matt Densley
Position	General Manager Regional and New Ventures
Date	6/9/23

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Abbreviations and Units

Acronym / Abbreviation	Description
AAPA	Aboriginal Areas Protection Authority
AEPR	Annual Environmental Performance Report
ALARP	As low as reasonably practicable
Code	Code of Practice
DENR	Department of Environment and Natural Resources
DEPWS	Department of Environment, Parks and Water Security
DITT	Department of Industry, Tourism and Trade
EMP	Environmental Management Plan
EP	Exploration Permit
NT	Northern Territory
NT EPA	Northern Territory Environmental Protection Authority
SMS	Santos Management System

1.0 Introduction

The *Petroleum (Environment) Regulations 2016* (PER) include a requirement for the interest holder to provide a report to the Minister on an annual basis that outlines the environmental performance of the interest holder (the Annual Environmental Performance Report). The report must include sufficient information to allow the Minister to assess whether the interest holder has met the environmental outcomes and environmental performance standards included in the approved Environment Management Plan (EMP). The report is to consider information required to be recorded, monitored or reported under the PER and any other law in force in the Northern Territory related to conduct of the regulated activity.

This Annual Environmental Performance Report (AEPR) applies to the McArthur Basin Civil and Seismic Program that was approved on 6 June 2019. The period covered by this AEPR is from 6 June 2022 until 5 June 2023.

During the reporting period for the regulated activity:

- No seismic surveys were undertaken
- No new clearing of native vegetation was undertaken.

1.1 Background

Santos QNT Pty Ltd (Santos) submitted the *McArthur Basin Civil and Seismic Program EPE 161 EMP, Revision 4, June 2019* (EMP 2019) under the *Petroleum (Environment) Regulations* that came into force 6 July 2016.

EMP 2019 was approved on 6 June 2019. This AEPR has been prepared to report on activities that have occurred under EMP between 6 June 2022 and 5 June 2023. No regulated activities were undertaken during the reporting period.

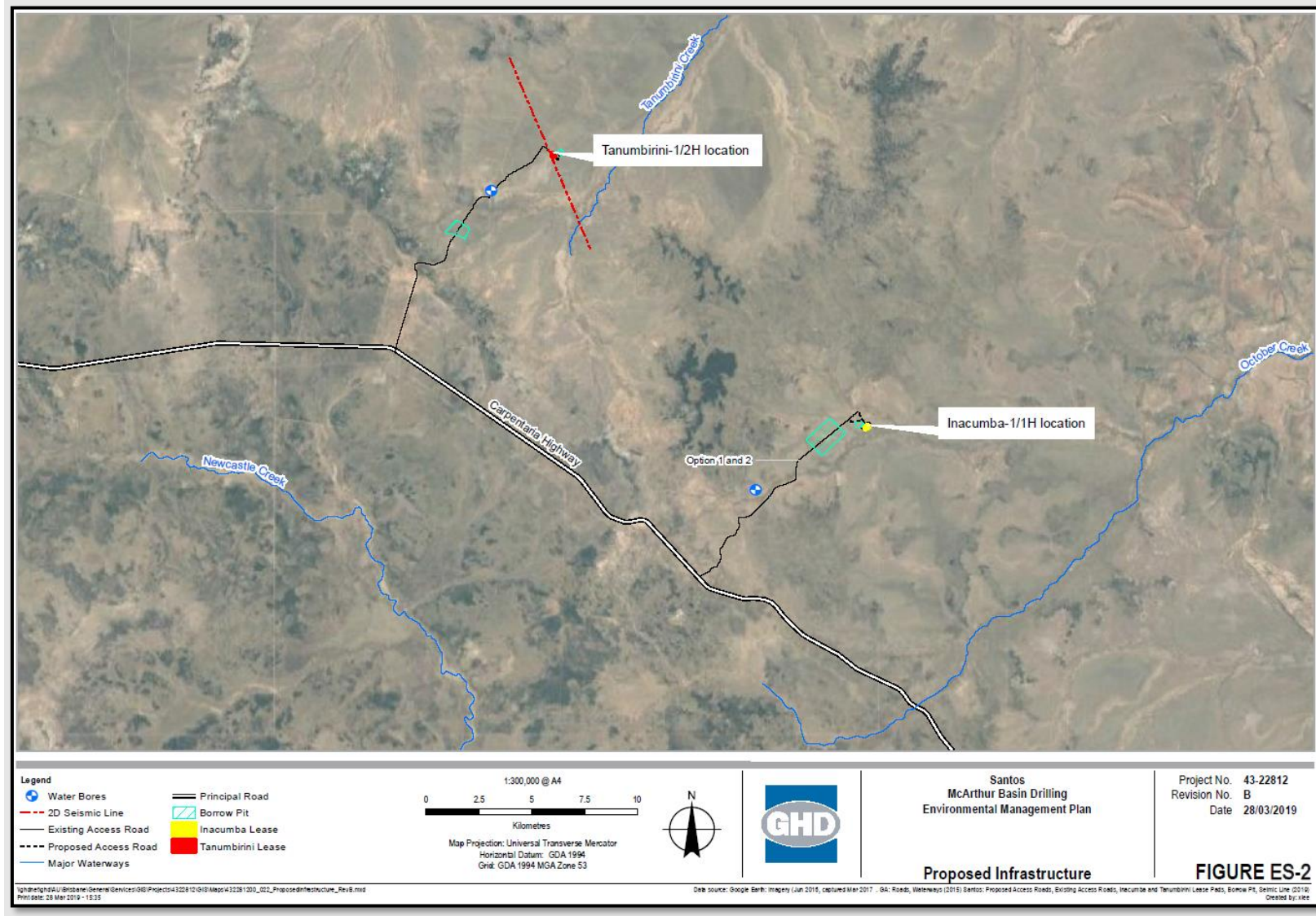


Figure 1 Location of Regulated Activities

1.2 Contents of Performance Report

This AEPR describes the environmental performance of Santos by evaluation of the following:

1. Compliance with Ministerial approval conditions for the EMP 2019.
2. Compliance with each environmental outcome and environmental performance standard within the EMP 2019.
3. Compliance with reporting requirements in accordance with the Code and Regulations.
4. All recordable and reportable incidents, including root cause analysis and related corrective actions to prevent re-occurrence.
5. Findings of all regulatory inspections and audits and related actions to address any findings.

1.3 Assessment of Compliance

Table 1 shows the compliance status indicators used in this AEPR.

Table 1 Compliance Descriptors

Indicator	Description
Compliant	Compliant with requirement for entire 12 month reporting period
Not Compliant	Interest holder did not comply with the requirement during the reporting period
Not Applicable	Requirement not applicable during the reporting period

1.4 Evidence of Compliance

The following sources of evidence are used to demonstrate compliance:

1. Internal tracking of compliance by Santos through:
 - Internal annual audits of compliance, as follows:
 - i. Review of the landholder consultation records.
 - ii. Review of daily reports and daily check lists.
2. Outcomes from regulatory inspections conducted by the Department of Environment, Parks and Water Security (DEPWS), Petroleum Operations.
3. Recordable and reportable incident reports submitted to DEPWS Petroleum Operations
4. Reports provided to DEPWS, the Department of Industry, Tourism and Trade (DITT) and other government agencies.

2.0 Demonstration of Compliance

Table 2 demonstrates Santos' compliance with Ministerial EMP approval conditions.

Table 2 Compliance with Ministerial EMP Approval Conditions

No	Ministerial Condition	Compliance Status	Evidence
1	The interest holder must submit to Department of Environment and Natural Resources (DENR) a detailed timetable and breakdown of all civils works for the regulated activity prior to commencement of the activity and update the timetable each month.	Not Applicable	There were no regulated activities undertaken under this EMP during the reporting period.
2	The interest holder must develop, in consultation with DENR, a rehabilitation plan for each disturbed area appropriate to the nature and scale of the activity.	Not Applicable	Rehabilitation activities are yet to commence. A rehabilitation plan for each disturbed area appropriate to the nature and scale of the activity will be developed in consultation with DEPWS.
3	The regulated activity must be undertaken in compliance with relevant requirements of Part A (Surface Activities) of the Code of Practice: Onshore Petroleum Activities in the Northern Territory.	Not Applicable	There were no regulated activities undertaken under this EMP during the reporting period.

Table 3 provides a systematic overview of Santos' compliance with the environmental outcomes and environmental performance standards within the approved EMP.

Table 3 Compliance with Environmental Outcomes and Environmental Performance Standards McArthur Basin Civil and Seismic Program Rev 4

No	Environmental Outcome	Environmental Performance Standard	Compliance Status	Evidence
1	<p>Majority of the project footprint area preferentially located in previously disturbed areas.</p> <p>Where possible, existing tracks, roads or seismic lines will be used for access.</p> <p>Site selection surveys to be undertaken prior to on-ground disturbance.</p> <p>Mature trees selected for preservation are to be flagged to ensure their protection.</p> <p>Cleared vegetation will be either stockpiled and respread during rehabilitation or mulched and spread as a sediment control technique to reduce erosion.</p> <p>Along the seismic lines, if light grading is necessary, flora rootstock will be left intact to promote regeneration.</p> <p>Hollow timber/trees that may be nesting/roosting sites for fauna will not be cleared.</p> <p>Where possible branches will be pruned in preference to total tree removal</p>	Compliance with Santos Field Clearing Checklist	Not Applicable	There were no regulated activities undertaken under this EMP during the reporting period.
2	<p>For the seismic line blade work will not be undertaken on naturally smooth surfaces or flat easy terrain.</p> <p>Driving is only permitted on designated access roads and seismic lines.</p> <p>Speeds on unsealed roads will be limited – maximum 80 km/hr on unsealed roads, 40 km/hr on seismic lines.</p> <p>Water trucks will be used to manage dust emissions from vehicle movement and civil operations on the site</p>	<p>No off-road driving.</p> <p>Vehicle speeds do not exceed 80 km/hr on unsealed roads, 40 km/hr on seismic lines.</p> <p>Dust control measures implemented</p>	Not Applicable	There were no regulated activities undertaken under this EMP during the reporting period.
3	<p>Engines/Machinery will be maintained as per planned maintenance systems.</p> <p>Engines/machinery will have noise suppression devices</p>	Engines/machinery maintained in accordance with manufacturers	Not Applicable	There were no regulated activities undertaken under this EMP during the reporting period.

No	Environmental Outcome	Environmental Performance Standard	Compliance Status	Evidence
		specifications and frequencies as detailed in the Santos maintenance system. Engines/machinery fitted with noise suppression devices.		
4	Reduce disturbance to native flora and fauna Minimise light pollution through task focused lighting and positioning camp boundary lighting inwards.	Task focused lighting employed. All camp boundary lighting positioned inwards at all times.	Not Applicable	There were no regulated activities undertaken under this EMP during the reporting period.
5	Speeds on unsealed roads will be limited – maximum 80 km/hr on unsealed roads, 40 km/hr on seismic lines. Driving is only permitted on designated access roads and seismic lines. Pits and dams will be fenced Daily checks of pits and dams once constructed Borrow pit excavations will be backfilled with overburden once borrow removal has been completed.	No off-road driving. Vehicle speeds do not exceed 80 km/hr on unsealed roads, 40 km/hr on seismic lines. Pits and dams fenced and checked daily	Not applicable	There were no regulated activities undertaken under this EMP during the reporting period.
		Borrow pits backfilled upon completion	Not Applicable	The locations remain active, borrow pits not yet backfilled.
6	Weed Management Plan developed	Compliance with DEPWS approved Weed Management Plan.	Compliant	The Weed Management Plan developed and attached to the EMP was endorsed by DEPWS. Post wet season weed surveys were undertaken between 20 June 2023 and 23 June 2023.
7	Fire-fighting equipment and competent fire-fighting personnel will be available. All vehicles will be equipped with portable fire extinguishers. Machinery and vehicles should be parked in areas of low fire risk.	Staff trained in use of fire-fighting equipment. Fire-fighting equipment available and serviced as per manufacturer's specifications. All staff inducted to this EMP.	Not applicable	There were no regulated activities undertaken under this EMP during the reporting period.

No	Environmental Outcome	Environmental Performance Standard	Compliance Status	Evidence
	<p>Any petrol motor vehicles or petrol-powered pumps will be fitted with spark arresters.</p> <p>All vehicles will be equipped with operational VHF and / or UHF radio transceivers.</p> <p>Smoking will only be permitted in areas clear of vegetation and there will be no disposal of butts to land.</p> <p>All personnel will receive information prior to the commencement of the activity relating to:</p> <ul style="list-style-type: none"> • Provisions of the Emergency Response Plan including procedures during a fire emergency • The operation of firefighting equipment and communications • Restricted smoking requirements <p>Toolbox meetings will be conducted to:</p> <ul style="list-style-type: none"> • Alert the workforce of the fire risk level for the day • Discuss any fire risk management breaches and remedial actions. <p>Prior to conducting a controlled burn during a Fire Danger Period, a permit to burn will be obtained from Bushfires NT</p>	<p>Spread, intensity and duration of fires are appropriately controlled.</p>	Not Applicable	<p>There were no regulated activities undertaken under this EMP during the reporting period.</p>
8	<p>Routine inspections of waste storage areas to ensure all waste are in the appropriate place.</p> <p>Waste removed by an approved NT EPA contractor.</p>	<p>All waste segregated and stored Appropriately in accordance with this EMP.</p> <p>Only waste from approved wastewater systems and grey water disposed of to land.</p> <p>Licensed waste contractor used for any offsite transfer or disposal.</p>	Not Applicable	<p>There were no regulated activities undertaken under this EMP during the reporting period.</p>

No	Environmental Outcome	Environmental Performance Standard	Compliance Status	Evidence
9	<p>The project area, including access tracks have been preferentially located in previously disturbed areas.</p> <p>Existing, landholder access tracks have been utilised where possible to minimise soil compaction.</p> <p>Grading will be minimised where feasible.</p> <p>Along the seismic lines, if light grading is necessary, flora rootstock will be left intact to promote regeneration.</p> <p>An ESCP will be developed by a CPESC and approved by DEPWS prior to commencement of the project</p>	<p>Santos Field Clearing Checklist</p> <p>Compliance with DEPWS approved Erosion and Sediment Control Plan</p>	Not Applicable	There were no regulated activities undertaken under this EMP during the reporting period.
10	<p>Spill kits available to treat spills in-situ.</p> <p>Minimise fuel transfer where possible.</p> <p>Use of drip trays for transfers.</p> <p>Any spills contained and remediated.</p> <p>Fuel and other lubricants will be appropriately stored and managed, in accordance with AS1940</p>	<p>Spill kits, spill containment, and appropriate bunding in all relevant areas.</p> <p>All spills and leaks are remediated as soon as possible.</p> <p>Compliance with the Code of Practice for Petroleum Activities in the Northern Territory.</p> <p>Compliance with the Spill Management Plan (Section of 7 of the EMP).</p>	Not Applicable	There were no regulated activities undertaken under this EMP during the reporting period.
11	<p>All major creek crossings and floodways intersected by the access tracks will be subject to rockings to avoid and minimise erosion.</p> <p>Mitre drains and flow control banks (whoa boys) will be installed across access roads where required.</p>	<p>Compliance with DEPWS approved Erosion and Sediment Control Plan.</p>	Not Applicable	There were no regulated activities undertaken under this EMP during the reporting period.

No	Environmental Outcome	Environmental Performance Standard	Compliance Status	Evidence
12	No long-term impacts to groundwater resources in the area.	Compliance with groundwater extraction licence approval conditions (i.e. volume limits will not be exceeded).	Not Applicable	There were no regulated activities during the reporting period. There were no regulated activities undertaken under this EMP during the reporting period.
13	Disturbance is restricted to subject land and avoids the restricted work areas as detailed in the AAPA Authority Certificate. Known sites of sacred or cultural significance are identified and avoided. Any new sites identified during the activity will be reported to the NT Heritage Branch. Maintain GIS database of project area and cultural heritage sites including details of any works conditions	Compliance with requirements of AAPA certificate	Not Applicable	There were no regulated activities undertaken under this EMP during the reporting period.
14	Noise complaints from vehicle movements and drilling activities minimised through active stakeholder engagement and complaints management	No noise nuisance to users of adjacent land. Amicable resolution of complaints	Not Applicable	There were no regulated activities undertaken under this EMP during the reporting period.
15	Disturbance, injury or death to livestock from vehicle movements and drilling activities minimised through active stakeholder engagement. Gates left in the condition in which they were found. Speeds on unsealed roads will be limited to a maximum 80 km/hr. Prohibit livestock access by fencing all pits and dams. Routine daily inspection pits and dams to ensure no trapped livestock.	No injury or death to livestock. Amicable resolution of complaints. Vehicle speeds do not exceed 80 km/hr on unsealed roads. No livestock access to pits and dams.	Not Applicable	There were no regulated activities undertaken under this EMP during the reporting period.

No	Environmental Outcome	Environmental Performance Standard	Compliance Status	Evidence
16	No decrease in air quality due to increased inefficient vehicle and plant emissions.	<p>Vehicles and fixed plant maintained as per in accordance with manufacturers specifications and frequencies.</p> <p>Vehicles compliant with Northern Territory Motor Vehicle registry regulation and work health and safety regulations.</p>	Not Applicable	There were no regulated activities undertaken under this EMP during the reporting period.

Table 4 demonstrates Santos' compliance with reporting requirements in the Code of Practice: Onshore Petroleum Activities in the Northern Territory (Code of Practice) and the PER.

Table 4 Compliance with Mandatory Reporting Requirements

No	Reference	Requirement	Compliance Status	Evidence
1	Code cl A.3.5	Geospatial information depicting areas cleared is to be provided to the Minister.	Not Applicable	Not applicable, EMP approved prior to Code being incorporated into Regulations.
2	Code cl A.3.6 (b)	Weed management plan developed as part of the EMP must provide for ongoing weed monitoring.	Not Applicable	Not applicable, EMP approved prior to Code being incorporated into Regulations.
3	Code cl A.3.7(a)vi	The fire management plan developed as part of the EMP must provide for annual fire mapping to monitor changes to fire frequency in the relevant areas.	Not Applicable	Not applicable, EMP approved prior to Code being incorporated into Regulations.
4	Code cl A.3.9(c) Code cl A.3.9(e)	The rehabilitation plan developed as part of the EMP requires progressive rehabilitation of significantly disturbed land which is required to commence no longer than 12 months following the cessation of activities on the land. It also requires regular maintenance and annual monitoring of rehabilitated areas.	Not Applicable	Not applicable, EMP approved prior to Code being incorporated into Regulations.
5	Code cl B.4.13.2(c)	As a minimum, the following must be recorded and reported for each stage (where a stage in this context means all fluids pumped at a particular depth interval): a) total volume of hydraulic fracturing fluid pumped, b) quality of water used (tested for analytes in section C.8 of this Code. Analyses do not need to be repeated if the same water source is used for multiple stages) and c) typical and maximum concentrations of chemicals or other substances used.	Not Applicable	Not applicable, EMP approved prior to Code being incorporated into Regulations.
6	Code cl B.4.13.2(k)iv	Where venting is the only technically feasible option for managing produced gas, the technical considerations preventing the use of the recovered gas must be recorded and included in the operator's annual report.	Not Applicable	Not applicable, EMP approved prior to Code being incorporated into Regulations.

No	Reference	Requirement	Compliance Status	Evidence
7	Code cl B.4.14.2(c)	All new barriers or new well operating envelopes must be verified and clearly documented and reported by submission of an updated well barrier integrity validation (WBIV) report to DPIR.	Not Applicable	Not applicable, EMP approved prior to Code being incorporated into Regulations.
8	Code cl B.4.15.2(j)	Complete and accurate records of the entire decommissioning procedure must be kept, with these records submitted as part of the legislative reporting requirements for the decommissioning of petroleum wells.	Not Applicable	Not applicable, EMP approved prior to Code being incorporated into Regulations.
9	Code cl B.4.17.2(d)	Any guidelines published by the Northern Territory Government from time to time relating to reporting and data submission, and groundwater monitoring data standards must be followed.	Not Applicable	Not applicable, EMP approved prior to Code being incorporated into Regulations.
10	Code cl C.3(e)	The components of the wastewater management framework, include: Monitor, manage and report in accordance with the Wastewater Management Plan and Spill Management Plan.	Not Applicable	Not applicable, EMP approved prior to Code being incorporated into Regulations.
11	Code cl C.6.1(d)	Wastewater tracking documentation must be reported to the Minister at least annually in accordance with the framework (Spill Management Plan and Wastewater Management Plan) outlined in the EMP	Not Applicable	Not applicable, EMP approved prior to Code being incorporated into Regulations.
12	Code cl C.7.1(d)ii	Wastewater Management Plan must include a program for monitoring and reporting against the effectiveness of the measures for the mitigation of interaction with wildlife, stock and human receptors with wastewater.	Not Applicable	Not applicable, EMP approved prior to Code being incorporated into Regulations.
13	Code cl D.4.3.2(f)	A written report detailing the levels of methane measured, the duration of the unusual readings and the results of the investigation (including remedial actions) must be submitted within one month of the significantly higher-level methane event being detected.	Not Applicable	Not applicable, EMP approved prior to Code being incorporated into Regulations.
14	Code cl D.5.9.2(c)	Emissions from exploration, well construction (including during flow back) and workovers must be measured and reports submitted.	Not Applicable	Not applicable, EMP approved prior to Code being incorporated into Regulations.

No	Reference	Requirement	Compliance Status	Evidence
15	Code cl D.5.9.3(a)	Where natural gas is vented or flared at a gas processing or other downstream facility, emissions must be estimated and reported.	Not Applicable	Not applicable, EMP approved prior to Code being incorporated into Regulations.
16	Code cl D.6.1	All mandated government reporting is complied with; and all detectable leaks and emissions are reported on an annual basis.	Not Applicable	Not applicable, EMP approved prior to Code being incorporated into Regulations.
17	Code cl D.6.2(a)	Reports of baseline assessments must be submitted at the conclusion of each field campaign.	Not Applicable	Not applicable, EMP approved prior to Code being incorporated into Regulations.
18	Code cl D.6.2(b)	Emissions reporting must be in accordance with Section D.5.6. Emissions associated with venting and flaring as described in Section D.5.9 must be provided separately to the Northern Territory Government in accordance with this Code.	Not Applicable	Not applicable, EMP approved prior to Code being incorporated into Regulations.
19	Reg 14	A current EMP remains in force until the interest holder notifies the Minister the activity is no longer being carried out and all of the environmental outcomes and obligations under the plan have been met, and the Minister advises the interest holder the notice is accepted and the plan ceases to be in force.	Compliant	The current EMP remains in force to cover final rehabilitation assessments and any additional restoration of 2D seismic lines that may be required.
20	EMP s 9.4 Ongoing Consultation Schedule 1, item 9(2)	Interest holders are required to conduct future engagement with stakeholders, in accordance with the description in the EMP.	Compliant	Stakeholder engagement logs indicate that engagement with stakeholders has continued and is ongoing.
21	EMP Section 8.6 Incident Reporting Reg 33	DEPWS is notified of reportable incidents within 2 hours of the interest holder becoming aware of the incident, or within 2 hours of the incident occurring. A written report must be provided within 24 hours if the initial report was made orally.	Not Applicable	There were no regulated activities undertaken under this EMP during the reporting period. There were no reportable incidents during the reporting period.
22	EMP Section 8.6 Incident Reporting Reg 34	Reports on reportable incidents are to be provided to DEPWS as soon as practicable and within 72 hours of the event occurring. A final report must be provided to DEPWS within 30 days after remediation/clean-up of the affected area.	Not Applicable	There were no regulated activities undertaken under this EMP during the reporting period. There were no reportable incidents during the reporting period.

No	Reference	Requirement	Compliance Status	Evidence
23	EMP Section 8.6 Incident Reporting Reg 35	A written report of all recordable incidents must be provided to DEPWS not later than 15 days after the 90 day reporting period (unless otherwise agreed).	Not Applicable	There were no regulated activities during the reporting period and no recordable incidents. Nonetheless, reports were provided to DEPWS each quarter indicating Nil recordable events during the respective period.
24	Reg 37A	A report about flow back fluid from hydraulic fracturing must be provided to the Minister within 6 months of the flow back occurring.	Not Applicable	The regulated activity did not include hydraulic fracturing.
25	Reg 37B	A report about produced water from hydraulic fracturing must be provided to the Minister within 6 months of the produced water being extracted.	Not Applicable	The regulated activity did not include hydraulic fracturing.
26	Schedule 1, item 12	Interest holder must notify the Minister, occupier of the land and owner of the land on which the activity is to be carried out before commencement of activity.	Not Applicable	There were no regulated activities during the reporting period.
27	EMP Section 7.3.3	Annual Fire Mapping If during the proposed exploration works a fire has occurred in and around the project footprint, Santos in consultation with the landholder and with the landholders approval endeavour to map the extent of the fire and provide that information to DEPWS.	Not Applicable	No fires occurred in and around the project footprint during the reporting period
28	EMP Section 7.4.2	Final Rehabilitation Report Following completion of the rehabilitation works, final photo point revisit and any required additional rehabilitation, Santos will submit the final Environmental Reports to DITT and DEPWS along with the application to release the long-term Rehabilitation Security.	Not Applicable	The well pads and seismic line covered by this EMP remain in use. Final rehabilitation inspections and reporting will be undertaken once all proposed activity at these locations has been completed.

3.0 Summary of Compliance

3.1 Overview of Compliance

Table 5 provides a summary of the results of the compliance assessment against the 47 total compliance items.

Table 5 Compliance Summary

Compliance Indicator	Number	Percentage
Compliant	3	6.4
Not Compliant	-	-
Not Applicable	44	93.6

3.2 Overview of Items Found Not Compliant or Partially Compliant

3.2.1 Ministerial Approval Conditions

3.2.1.1 Description

Nil non or partially compliant

3.2.2 Environmental Performance Standards

3.2.2.1 Description

Nil non or partially compliant

3.2.3 Regulatory Reporting

3.2.3.1 Description

Nil non or partially compliant