

Annual Environmental Performance Report 2020

McArthur Basin 2019 Drilling Program EP 161

Date	Rev	Reason for Issue	Author	Checked	Approved
6/11/2020	1	Submitting	MB	PW	AM

Document title	Annual Environmental Performance Report 2020 McArthur Basin 2019 Drilling Program
EMPs Covered	McArthur Basin 2019 Drilling Program, July 2019
Permit	EP 161
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Date approved	6 November 2020

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	
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Date	6 November 2020

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Abbreviations and Units

Acronym / Abbreviation	Description
AEPR	Annual Environmental Performance Report
ALARP	As low as reasonably practicable
Code	Code of Practice
DENR	Department of Environment and Natural Resources
DPIR	Department of Primary Industry and Resources
EMP	Environmental Management Plan
EP	Exploration Permit
NT	Northern Territory
NT EPA	Northern Territory Environmental Protection Authority
SMS	Santos Management System
SSCC	Sacred Site Clearance Certificate

1.0 Introduction

The Petroleum (Environment) Regulations 2016 (NT) 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 Environment 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 Petroleum (Environment) Regulations 2016 (NT) 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 2019 Drilling Program that was approved on 19 July 2019. The period covered by this AEPR is from the 19 July 2019 until 18 July 2020.

1.1 Background

Santos QNT Pty Ltd (Santos) submitted the *McArthur Basin 2019 Drilling Program EP 161 EMP, Revision 5, July 2019* (EMP 2019) under the *Petroleum (Environment) Regulations (PER)* that came into force 11 June 2019. EMP 2019 was submitted to cover the following scope:

- Drilling of Inacumba 1 pilot well
- Plug and abandonment of the deepest section of the Inacumba-1 pilot well
- Drilling of Inacumba 1H horizontal well from the Inacumba 1 pilot well bore
- Acquisition of a diagnostic fracture injectivity test (DFIT) in Tanumbirini 1
- Drilling of Tanumbirini 2H horizontal well
- Well integrity monitoring
- Evaluation of Inacumba 1/1H and Tanumbirini 2H (including: mudlogging, wireline, DFIT, coring)
- Suspension and/or plugging and abandonment of Tanumbirini 2H and Inacumba 1/1H
- Rehabilitation of the Tanumbirini 1, Tanumbirini 2H and Inacumba 1H wells.

EMP 2019 was approved on 19 July 2019, the approval was subject to a number of ministerial conditions, these conditions are summarised in Table 2.

This AEPR has been prepared to report on activities that have occurred under EMP between 19 July 2020 and 18 July 2020.

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 each EMP.
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
Partially Compliant	Compliant with requirement for most of year, short periods of non-compliance
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
2. Outcomes from regulatory inspections conducted by the Department of Environment and Natural Resources (DENR), Petroleum Operations.
3. Recordable and reportable incident reports submitted to DENR Petroleum Operations
4. Reports provided to DENR, the Department of Primary Industry and Resources (DPIR) 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 approval is subject to the following conditions: The interest holder must submit a report to the Department of Environment and Natural Resources (DENR), where there is a non-compliance with an approval condition, within 48 hours of becoming aware of the non-compliance.	Not Applicable	There was no non-compliance with approval condition during the reporting period.
2	The interest holder must submit to the DENR, an updated timetable for the regulated activity prior to the commencement of the activity and provide an updated table to the DENR each month.	Compliant	Initial timetable sent to DENR via the Onshore Petroleum email address on 1 August 2019 showing all 11 days of regulated activities. There were no additional regulated activities conducted under this EMP during the reporting period.
3	The interest holder must submit to DENR: <ul style="list-style-type: none"> from 1 October until work ceases for the remainder of the 2019-2020 wet season, a fortnightly updated weather forecast, informed by meteorological forecasting services within one month of approval of the EMP, a Rapid Response Site Demobilisation and Stabilisation Plan to manage the risk of early termination of the regulated activity in the event of onset of an early wet season daily on-site reports that include daily monitoring of fluid levels within sumps and tanks and assessment of free board availability and five-day activity forecasts for the duration of the regulated activity 	Compliant	Fortnightly reports are sent from the Bureau of Meteorology to the Onshore Petroleum email address. The Rapid Response Site Demobilisation and Stabilisation Plan for EP 161 was sent via email to the Onshore Petroleum email address on the 16 August 2019. Daily on-site reports do include daily monitoring of fluid levels within tanks and assessment of free board availability and five-day activity forecasts for the duration of the regulated activity. However, no drilling activities proposed under this EMP were conducted during the reporting period.

No	Ministerial Condition	Compliance Status	Evidence
4	The interest holder must provide to DENR a cementing report for the 13-3/8" steel Conductor casing through the aquifers to DENR as soon as practicable but not more than seven days after completion of the cementing job for Inacumba-1 and Tanumbirini-2 exploration wells.	Not Applicable	The Inacumba-1 and Tanumbirini-2 exploration wells are yet to be drilled and therefore there is no cementing report.
5	The interest holder must provide to DENR: <ul style="list-style-type: none"> results of on-going groundwater monitoring in accordance with the Code of Practice: Onshore Petroleum Activities in the Northern Territory (the Code) and the Preliminary Guideline: Groundwater Monitoring Bores for Exploration Petroleum Wells in the Beetaloo Sub-basin (DENR, 2018) every quarter for three years from the approval date of the EMP for publishing on the DENR website 	Compliant	Groundwater monitoring results have been provided and are published on the DENR website; https://denr.nt.gov.au/onshore-gas/onshore-gas-in-the-northern-territory/industry-compliance-and-reporting/groundwater-monitoring-results
	The interest holder must provide to DENR: <ul style="list-style-type: none"> data from a minimum of seven groundwater quality sampling events to be completed from the control monitoring bores from each proposed well within 3 months of EMP approval 	Compliant	Groundwater monitoring results were provided to DENR on 28 th October 2019 and include a minimum of seven groundwater quality sampling events.
	The interest holder must provide to DENR: <ul style="list-style-type: none"> proposed well-site specific environmental performance standards for groundwater quality. The environmental performance targets must be developed based on the reference dataset for each well site and be submitted to DENR for approval within 3 months of EMP approval. 	Compliant	Well-site specific environmental performance standards for groundwater quality were provided to DENR via email to the Onshore Petroleum email address on 28 October 2019.
	The interest holder must provide to DENR: <ul style="list-style-type: none"> Results of continuous water level monitoring using water level loggers and electrical conductivity loggers installed at the monitoring bores in the 	Compliant	Groundwater monitoring results have been provided and are published on the DENR website;

No	Ministerial Condition	Compliance Status	Evidence
	Gum Ridge Formation at each well site every quarter for three years for publishing on the DENR website.		https://denr.nt.gov.au/onshore-gas/onshore-gas-in-the-northern-territory/industry-compliance-and-reporting/groundwater-monitoring-results
	<p>The interest holder must provide to DENR:</p> <ul style="list-style-type: none"> A report on any exceedance of monitored parameters above established background levels within five days of discovery. 	Compliant	<p>Reports have been provided within five days of receipt of laboratory results of each sampling event. Reports were submitted on the following dates:</p> <ul style="list-style-type: none"> 9 July 2020 30 March 2020 10 March 2020 13 February 2020 24 January 2020 17 January 2020
6	The interest holder must provide to DENR a report on the assessment and leachability testing of drill cuttings and drilling mud to determine final disposal options, within three months of completion of the drilling program.	Not applicable	No drilling activities under this EMP were conducted during the reporting period.
7	<p>The interest holder must provide to DENR:</p> <ul style="list-style-type: none"> an incident report for any fauna observed trapped, injured or deceased attributable to interaction with open cuttings pit or open water storage as a requirement of incident reporting under the Petroleum (Environment) Regulations including the information requirements of regulation 34(3)(b) 	Not applicable	There were no fauna observed trapped, injured or deceased in the open water storages associated with this EMP. No drilling activities under this EMP were conducted during the reporting period, therefore no open cuttings pit were used.
	<p>The interest holder must provide to DENR:</p> <ul style="list-style-type: none"> where incident reporting demonstrates any impacts to fauna, a report on the implementation of additional monitoring and mitigation measures to reduce impacts to fauna, including birds, within 30 days of instruction. These measures should include consideration of additional monitoring (fauna cameras) and/or flagging, netting or screening to deter entry by birds and fauna. 	Not applicable	There were no fauna observed trapped, injured or deceased in the open water storages associated with this EMP. No report was required.

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 2019 Drilling Program

No	Environmental Outcome	Environmental Performance Standard	Compliance Status	Evidence
1	Dust emissions minimised. The risk of impact on terrestrial flora and fauna as a result of vehicle and plant movements generating dust is minimised.	Vehicle speeds do not exceed 60km/hr on unsealed roads. Dust control measures implemented when required due to atmospheric conditions.	Compliant	There were no incidents in the Incident Management System relating to speed limits. Site activities conducted under this EMP extended for a total of 11 days and the camp accommodation was on the lease pad. The risk of impact on terrestrial flora and fauna as a result of vehicle and plant movements generating dust during this period is considered minimal.
2	Noise generation and vibration risks to flora and fauna are minimised The risk of impact from vehicle and plant movements generating noise and vibration is minimised.	Engines/machinery maintained in accordance with manufacturers specifications and frequencies as detailed in the Santos maintenance system. Engines/machinery fitted with noise suppression devices.	Compliant	Civil Works EMP daily checklist confirms maintenance of engines/machinery and noise suppression devices. Service provider engines/machinery maintenance declaration are captured in the Halliburton Safety Management Plan (CMP-AUST-HAL-HSE-009). Activities conducted under this EMP were minimal and site activities conducted under this EMP extended for a total of 11 days. The DFIT pumping of 17 barrels of fluid lasted for approximately 6 minutes. The risk of impact from vehicle and plant movements generating noise and vibration was minimised as the operation was limited to a short period.
3	Risk of disturbance to native fauna minimised through management of light emissions	Task focused lighting employed (only used as required). All camp boundary lighting positioned inwards.	Compliant	Civils EMP daily checklist confirms camp boundary lighting positioned inwards.
4	The risk of disturbance, injury or death to terrestrial fauna	No off-road driving. No driving between 6pm and 6am.	Compliant	Site inductions conducted prior to commencing activity. Induction includes information regarding

No	Environmental Outcome	Environmental Performance Standard	Compliance Status	Evidence
	due to vehicle movements, drilling activities and entrapment in open pits is minimised.	<p>Vehicle speeds do not exceed 60km/hr on unsealed roads.</p> <p>Driving is only permitted on designated access roads and seismic lines.</p> <p>Speeds on unsealed roads will be limited, with to a maximum of 60 km/hr.</p>		<p>speed limits. Civils EMP daily checklist confirms no off-road driving and adherence to speed limits.</p> <p>Site activities conducted under this EMP extended for a total of 11 days during that time the camp was located on the well pad to minimise the need for driving.</p> <p>There were no incidents in the Incident Management System relating to speed limits or driving off permitted access tracks.</p>
		<p>Pits and dams will be fenced</p> <p>Daily checks of excavations, pits, storages during the drilling program</p> <p>Fauna escapes provided in open excavations or pits</p>	Not Applicable	<p>No drilling activities under this EMP were conducted during the reporting period.</p> <p>There were no pits, dams or excavations constructed under this EMP.</p>
5	<p>No introduction of new species of weeds or plant pathogens as a result of project activities;</p> <p>No increase in abundance of existing weed species as a result of project activities.</p>	Compliance with DENR approved weed management plan.	Compliant	<p>A project specific weed management plan was developed in consultation with DENR's weed management officer and attached to the EMP (Appendix E).</p> <p>Weed declarations located at the back of the approved plan were signed for all vehicles and a register of weed declarations is kept.</p> <p>Identification of weed infestations was provided in the annual weed monitoring report sent to DENR's weed management officer on 23 July 2020. No weed treatment was undertaken during the reporting period.</p>
6	Risk of fire ignition sources is managed as a result of project activities.	<p>SDS available and appropriate fire-fighting equipment next to flammable material stores.</p> <p>Vehicles will have portable fire extinguishers and operational VHF or UHF radio transceivers.</p> <p>Petrol motor vehicles and petrol powered pumps will have spark arresters.</p>	Compliant	<p>NT Senior Supervisor - Civil Works appropriately trained in fire-fighting.</p> <p>Civils EMP daily checklist confirms firefighting equipment and personnel, petrol vehicles/pumps fitted with spark arrestors and vehicles fitted with VHF and/or UHF.</p>

No	Environmental Outcome	Environmental Performance Standard	Compliance Status	Evidence
		Staff trained in use of fire-fighting equipment. Fire-fighting equipment available and serviced as per manufacturer's specifications.		Site inductions conducted prior to commencing activity. The location of fire-fighting equipment is shown on the camp plan and the location of the fire extinguishers is part of the camp induction. Gate 2 check on certification ensures fire-fighting equipment available and serviced as per manufacturer's specifications.
7	Risk of waste storage areas attracting fauna is managed.	All waste segregated and stored Appropriately in accordance with this EMP. Routine inspections of waste storage areas to ensure all waste are in the appropriate place. Only waste from approved wastewater systems and grey water disposed of to land. Licenced waste contractor used for any offsite transfer or disposal.	Compliant	Daily civils checklist confirms that waste was segregated and stored on site and all putrescible waste material will be held in fauna proof containers and appropriately stored. Environment Protection Licence (Pursuant to section 34 of the <i>Waste Management and Pollution Control Act</i>) demonstrates that waste contractors are licenced: <ul style="list-style-type: none"> Licensee RUSCA ENVIRONMENTAL SOLUTIONS PTY. LTD. Licence Number EPL250-01 Wastewater Works Design Approval (Approval Number: WW2019/124) demonstrates that wastewater systems used under this EMP were approved by Department of Health.
8	No disturbance outside designated areas	No off-road driving.	Compliant	There were no incidents in the Incident Management System relating to speed limits or driving off permitted access tracks. Only designated were used. Site activities conducted under this EMP extended for a total of 11 days during that time the camp was located on the well pad to minimise the need for driving.

No	Environmental Outcome	Environmental Performance Standard	Compliance Status	Evidence
9	Storage or handling practices for hazardous substances minimises the likelihood and consequence of spills on the terrestrial environmental quality	<p>Spill containment employed for storage of liquid drilling chemicals and hydraulic fluid.</p> <p>Spill kits, spill containment, and appropriate bunding in all relevant areas.</p> <p>Fuel and other lubricants will be appropriately stored and managed, in accordance with industry standards.</p>	Compliant	Civils EMP daily checklist confirms in-situ spill kits, spill containment, bunding and appropriate management and storage of fuel and lubricants.
		<p>All spills and leaks are remediated as soon as possible.</p> <p>Riser and diverter will be used to prevent mud spills</p> <p>Pre-spud checks / Pre-job checks when transferring mud</p> <p>Drilling fluid system mixed, contained and monitored in engineered fluid storage tanks.</p> <p>Compliance with the Code of Practice: Petroleum Activities in the Northern Territory.</p> <p>Compliance with the Spill Management Plan (Appendix H).</p> <p>The Project will not commence until a WOMP has been approved.</p>	Not Applicable	<p>There were no spills or leaks during the reporting period.</p> <p>No drilling activities under this EMP were conducted during the reporting period.</p>
10	The likelihood and consequence of impacts to soils from overflowing pits is minimised.	<p>Cuttings and flare pit levels monitored for overflow during and after high rainfall at all times while drilling.</p> <p>Cuttings pit will be appropriately designed and constructed with an impermeable containment barrier</p> <p>Daily cuttings pit integrity inspections.</p> <p>Independent environment consultant to provide advice on the in-situ disposal of the drilling cuttings.</p>	Not Applicable	No drilling activities under this EMP were conducted during the reporting period. Therefore there is no activities that could lead to impacts to soils from overflowing pits.

No	Environmental Outcome	Environmental Performance Standard	Compliance Status	Evidence
		<p>Adequate freeboard on all storage tanks and pits is maintained.</p> <p>Environmental hazards assessment completed for drilling cuttings and residual drilling fluids.</p> <p>Compliance with the Code of Practice: Petroleum Activities in the Northern Territory.</p> <p>Compliance with the Spill Management Plan (Appendix H).</p> <p>A WOMP will be developed to cover well activities. The project will not commence until a WOMP has been approved.</p>		
11	<p>The availability and quantity of groundwater has not been effected.</p>	<p>Installation of blow-out prevention equipment systems.</p> <p>A geohazard assessment has been performed to mitigate for subsurface hazards such abnormal pressure zones, shallow gas, lost circulation and potential zones of instability.</p> <p>Drilling of wells off-structures using seismic data for control.</p> <p>Wells are located away from major faults and structures based on seismic data control; further seismic data acquisition planned where “dip” and “strike” line control is not available.</p> <p>Ground water monitoring bores installed on location prior to drilling operations. Baseline monitoring conducted six months prior to and post drilling operations.</p> <p>Only water based drilling fluids used.</p> <p>A WOMP will be developed to cover well activities. The Project will not commence until a WOMP has been approved.</p>	Not Applicable	<p>No drilling activities under this EMP were conducted during the reporting period.</p>

No	Environmental Outcome	Environmental Performance Standard	Compliance Status	Evidence
		Compliance with the Code of Practice: Petroleum Activities in the Northern Territory. Compliance with the Wastewater Management Plan (Appendix G).		
12	The supply and quantity of water in surface water and groundwater features not impacted from project activities.	Adequate freeboard on all storage tanks and pits is maintained.	Not Applicable	No drilling activities under this EMP were conducted during the reporting period. Therefore storage tanks and pits were not required.
		Daily monitoring of weather and for predicted significant rainfall events will be undertaken. A WOMP will be developed to cover well activities. The project will not commence until a WOMP has been approved. Compliance with the Code of Practice: Petroleum Activities in the Northern Territory. Compliance with the Wastewater Management Plan (Appendix G).	Compliant	The Bureau of Meteorology were engaged to monitor for predicted significant rainfall events. The WOMP was approved by DPIR on 15 August 2019 prior to commencing activities on 16 August 2019. The minor activities conducted over the 11 days were compliant with the Code and the Wastewater Management Plan.
13	No adverse impacts to groundwater resources in the area.	Vehicles and fixed plant maintained as per in accordance with manufacturers specifications and frequencies. Vehicles compliant with Northern Territory Motor Vehicle registry regulation and work health and safety regulations.	Compliant	Halliburton engines/machinery maintenance declaration are captured in the Halliburton Safety Management Plan (CMP-AUST-HAL-HSE-009).
14	No adverse impact to air quality due to loss of fugitive emissions.	Real time monitoring of conditions during drilling including drilling monitoring and gas detection monitoring to ensure no adverse impact to air quality due to fugitive emissions.	Not Applicable	No drilling activities under this EMP were conducted during the reporting period.
15	No public nuisance/visual amenity impacts from dust generated by project activities.	Driving is only permitted on designated access roads Speeds on unsealed roads will be limited to a maximum of 60 km/hr. No dust nuisance to users of adjacent land.	Compliant	Only designated access were used. Stakeholder engagement record shows that there are no complaints regarding injury or death of livestock.

No	Environmental Outcome	Environmental Performance Standard	Compliance Status	Evidence
		<p>Amicable resolution of complaints.</p> <p>No off-road driving.</p> <p>No driving between 6pm and 6am.</p> <p>Vehicle speeds do not exceed 60km/hr on unsealed roads.</p>		<p>There were no incidents in the Incident Management System relating to night driving, speed limits or driving off permitted access tracks.</p> <p>Site activities conducted under this EMP extended for a total of 11 days during that time the camp was located on the well pad to minimise the need for driving.</p> <p>No injury or death to livestock reported in the Incident Management System.</p>
16	<p>Noise complaints from vehicle movements and drilling activities minimised.</p> <p>Amicable resolution of complaints.</p>	<p>No driving between 6pm and 6am.</p> <p>Vehicle speeds do not exceed 60km/hr on unsealed roads.</p> <p>Active stakeholder engagement and complaints management.</p>	Compliant	<p>There were no incidents in the Incident Management System relating to night driving, speed limits or driving off permitted access tracks.</p> <p>Site activities conducted under this EMP extended for a total of 11 days during that time the camp was located on the well pad to minimise the need for driving.</p> <p>Stakeholder engagement record shows that there was active stakeholder engagement and complaints management.</p>
17	<p>Disturbance, injury or death to livestock from vehicle movements and drilling activities minimised through active stakeholder engagement.</p>	<p>No driving between 6pm and 6am.</p> <p>Vehicle speeds do not exceed 60km/hr on unsealed roads.</p> <p>Gates left in the condition in which they were found.</p>	Compliant	<p>There were no incidents in the Incident Management System relating to gates night driving, speed limits or driving off permitted access tracks.</p> <p>Site activities conducted under this EMP extended for a total of 11 days during that time the camp was located on the well pad to minimise the need for driving.</p>
		<p>No livestock access to pits and dams.</p> <p>Routine daily inspection pits and dams to ensure no trapped livestock.</p>	Not Applicable	<p>No pits or dams were used for the activities conducted under this EMP.</p>

No	Environmental Outcome	Environmental Performance Standard	Compliance Status	Evidence
18	Disturbance to landholders from vehicle movements and drilling activities minimised. Amicable resolution of complaints.	All gates are left in the condition in which they were found (i.e. open / closed). Damage to station tracks and fences is reported and restored to satisfaction of landowner / managers.	Complaint	There were no incidents in the Incident Management System relating to gates or damage to station tracks. Site activities conducted under this EMP extended for a total of 11 days during that time the camp was located on the well pad to minimise the need for driving. Stakeholder engagement record shows that there was active stakeholder engagement and no complaints received.
19	No public health concerns resulting from ingesting dust.	No off-road driving. No driving between 6pm and 6am. Vehicle speeds do not exceed 60km/hr on unsealed roads. Dust control measures implemented.	Compliant	There were no incidents in the Incident Management System relating to night driving, speed limits or driving off permitted access tracks. Site activities conducted under this EMP extended for a total of 11 days during that time the camp was located on the well pad to minimise the need for driving.

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 Petroleum (Environment) Regulations 2016 (NT).

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	No clearing was undertaken
2	Code cl A.3.6 (b)	Weed management plan developed as part of the EMP must provide for ongoing weed monitoring.	Compliant	<p>Weed Management plan developed and attached to the EMP was endorsed by DENR (Appendix E of approved EMP) contains monitoring requirements. This plan was complied with during the reporting period.</p> <p>Weed declarations located at the back of the approved plan were signed for all vehicles and a register of weed declarations is kept.</p> <p>Ongoing weed monitoring was conducted and the annual weed monitoring report sent to DENR's weed management officer on 23 July 2020. No weed treatment was undertaken during the reporting period.</p>
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.	Compliant	<p>Fire management plan, section 7.2 of approved EMP makes provision for this requirement of the code.</p> <p>In accordance with the fire management plan if 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 DENR.</p> <p>There was not fires in and around the project footprint during the reporting period.</p>

No	Reference	Requirement	Compliance Status	Evidence
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	The Rehabilitation management plan, section 7.3 of approved EMP makes provision for this requirement of the code. No Rehabilitation activities were conducted as part of this EMP.
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	Code cl B.4.13.2 relates to hydraulic fracture stimulation. Activities conducted under this EMP did not include hydraulic fracture stimulation.
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	Activities conducted during the reporting period did not include venting of gas.
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	Activities conducted during the reporting period did not include new barriers or new well operating envelopes.

No	Reference	Requirement	Compliance Status	Evidence
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	The regulated activity conducted during the reporting period did not include any aspects of decommissioning for the reporting period.
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.	Compliant	Reporting and data submission, and groundwater monitoring data standards were in accordance with <i>Preliminary Guideline: Groundwater Monitoring Bores for Exploration Petroleum Wells in the Beetaloo Sub-basin</i>
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	The wastewater management plan, Appendix G and spill management plan Appendix H, of the approved EMP makes provision for this requirement of the code.
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	The regulated activity conducted during the reporting period did not wastewater removal. There is no tracking documentation.
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.	Compliant	The wastewater management plan, Appendix G of the approved EMP makes provision for this requirement of the code.
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	Not Applicable	There were no unusual readings and no methane detected during the 11 days of operations.

No	Reference	Requirement	Compliance Status	Evidence
		significantly higher-level methane event being detected.		
14	Code cl D.5.9.2(c)	Emissions from exploration, well construction (including during flowback) and workovers must be measured and reports submitted.	Not Applicable	This section of the code relates to venting and flaring. The regulated activity did not include and venting or flaring.
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	The regulated activity did not include and venting or flaring.
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	As there was no detectable leaks or emissions generated during the activities conducted under this EMP, the reporting under the Code cl D.6.1 is not required.
17	Code cl D.6.2(a)	Reports of baseline assessments must be submitted at the conclusion of each field campaign.	Compliant	Baseline assessment reports have been submitted in the form of groundwater monitoring reports, ecological assessment reports and weed management plans appended to the approved EMP.
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	The regulated activity did not include and venting or flaring.
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	Compliant	The current EMP remains in force.

No	Reference	Requirement	Compliance Status	Evidence
		the notice is accepted and the plan ceases to be in force.		
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 been undertaken.
21	EMP Section 8.8 Incident Reporting Reg 33	DENR 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 reportable incidents during this period.
22	EMP Section 8.8 Incident Reporting Reg 34	Reports on reportable incidents are to be provided to DENR as soon as practicable and within 72 hours of the event occurring. A final report must be provided to DENR within 30 days after remediation/cleanup of the affected area.	Not Applicable	There were no reportable incidents during this period.
23	EMP Section 8.8 Incident Reporting Reg 35	A written report of all recordable incidents must be provided to DENR not later than 15 days after the 90 day reporting period (unless otherwise agreed).	Partially Compliant	Reports on all recordable incidents were provided: <ul style="list-style-type: none"> • 11 November 2019, 10 days late • 31 January 2020, met timeframe • 30 April 2020, met timeframe • 27 July 2020, met timeframe
24	Reg 37A	A report about flowback fluid from hydraulic fracturing must be provided to the Minister within 6 months of the flowback occurring.	Not Applicable	The regulated activity did not include flowback.
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 produced water.

No	Reference	Requirement	Compliance Status	Evidence
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.	Compliant	<ul style="list-style-type: none"> • EMP approved on 19 July 2019 • Works commenced on 16 August 2019 • DIPR notified on 8 August 2019 via email of intentions to commence operations • LAA in place with landholder to allow DFIT activities. • Occupier of land – NOE for DFIT activity on date 4 July 2019, via email.
30	EMP Section 8.9.1	Groundwater monitoring consistent with the Northern Territory Government guidelines for groundwater monitoring for petroleum operations.	Compliant	<p>Groundwater monitoring results have been provided and are published on the DENR website;</p> <p>https://denr.nt.gov.au/onshore-gas/onshore-gas-in-the-northern-territory/industry-compliance-and-reporting/groundwater-monitoring-results</p>
31	EMP Section 8.9.1	Rehabilitation Monitoring - Photo points established and revisited, annual report.	Not applicable	The site remains an active operation. No rehabilitation activities were undertaken during the reporting period.
32	EMP Section 8.9.1	Weed monitoring – ongoing during drilling program and an annual report to coincide with the end of the wet season.	Compliant	The post-wet annual weed monitoring report sent to DENR's weed management officer on 23 July 2020.

3.0 Summary of Compliance

3.1 Overview of Compliance

Table 5 provides a summary of the results of the compliance assessment against the 64 total compliance items.

Table 5: Compliance Summary

Compliance Indicator	Number	Percentage
Compliant	33	51.6
Partially Compliant	1	1.6
Not Compliant	0	0
Not Applicable	30	46.9

3.2 Overview of Items Found Not Compliant or Partially Compliant

The following sections describe:

- the specific compliance requirements not met for the reporting period
- an analysis of the possible potential environmental harm or impact to environmental values resulting from non-compliance or partial compliance, using multiple lines of evidence
- a summary of the corrective actions already implemented, and further actions still required, as applicable, to ensure compliance is fully achieved in the future.

3.2.1 Regulatory Reporting

3.2.1.1 Description

Recordable Incidents Summary Reports were not logged within 15 days of the reporting period.

3.2.1.2 Analysis of Potential Environmental Harm or Impact

There was no potential for environmental harm or impact.

3.2.1.3 Corrective Actions

Santos will submit recordable incident reports for this EMP at 90 day intervals as required. The requirements to submit these recordable incident reports for this EMP has been added to Santos' compliance tracking system. No recordable incident reports for this EMP or any other EMPs have been late in 2020

3.3 Application of Lessons Learned Across Santos' Onshore Interests

The project's central document storage could be better set up at the beginning of the project to allow us to easily locate documents that provide evidence of compliance. This has improved as the project as a whole has become more mature.

Santos will submit recordable incident reports for this EMP at 90 day intervals as required. The requirements to submit these recordable incident reports for this EMP has been added to Santos' compliance tracking system.