

2013 Annual Report of PPL 206, PPL 208 and PPL 215 Joint Venture Operations

This report has been prepared in accordance with the requirements of the Petroleum and Geothermal Energy Act 2000 and the Petroleum and Geothermal Energy Regulations 2013 and covers all of the operations conducted for the PPL 206, PPL 208 and PPL 215 by Santos Ltd as the joint venture operator during the period 1 January 2013 – December 31 2013.

ANNUAL REPORT - 2013

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PPL 206, PPL 208 and PPL 215

1. INTRODUCTION

This report covers the activities conducted in Petroleum Production Licence 206 (PPL 206), Petroleum Production Licence 208 (PPL 208) and Petroleum Production Licence 215 (PPL 215) in the period from 1 January 2013 to 31 December 2013.

PPL 206 was granted on 19 August 2004, following the drilling of Derrilyn 1 in PEL 114, PPL 208 adjoining PPL 206 was granted 12 November 2004 from Stuart Petroleum Pty Ltd PEL 113 and PPL 215 was granted to the joint venture on 24 January 2007, following the drilling of Toporoa 1 in PEL 113 by Stuart Petroleum Pty Ltd.

These areas are located in the South Australian section of the Cooper and Eromanga Basins (SACB) and are operated by Santos Ltd on behalf of the joint venture.

This Annual Report was prepared considering the applicable Statements of Environmental Objectives (SEO).

2. EXECUTIVE SUMMARY

There were no serious incidents reported according to the definitions of the Petroleum and Geothermal Energy Act or Regulations, which resulted in injury or illness to any member of the general public associated with the activities conducted in PPL 206, 208 or 215.

The conduct of all operational activity in PPL 206, PPL 208 and PPL 215 are to the same standards and utilises the systems and procedures in place for Santos Operated activity in the Cooper Basin. There was no activity in PPL 208 during the report period. For specific detail of those, those reading this annual report should also refer to the 2013 Annual Report of South Australian Cooper Basin Joint Venture Operations.

3. SUMMARY OF REGULATED ACTIVITIES

The following *Regulated Activities* were conducted under the petroleum licences:

- Exploration for and appraisal of petroleum.
- Road, track, borrow pit and well lease construction.
- Well drilling operations.
- Operations associated with the production of petroleum, including construction, maintenance, repair and operation of pipelines, facilities and associated infrastructure.

4. PERFORMANCE

The activities covered by this report are administered in accordance with the Petroleum and Geothermal Energy Act 2000, the Petroleum and Geothermal Energy Regulations 2013 and the relevant SEO's.

There was good compliance with the requirements of the Act, the Regulations and the SEO. There were no areas where material non-compliance with the relevant legislation or SEO was identified.

4.1 QUARTERLY PERFORMANCE MEETINGS

Quarterly Performance Meetings between Santos and DMITRE continued during 2013 covering all Santos operational activity in the Cooper Basin. The dates of these meetings are listed in [Appendix 1](#).

5. INCIDENTS

The Petroleum and Geothermal Energy Act 2000 defines all Serious Incidents that are required to be reported promptly to DMITRE. There were no incidents resulting in any injury to any member of the public.

There was one Serious Incident and no immediately reportable Incidents during this reporting period in these areas. This incident occurred in PPL 206.

- (1) On the 26th June 2013, it was reported that a pinhole corrosion leak had been identified on the Derrylin #2 flowline.

5.1 REPORTABLE ENVIRONMENTAL INCIDENTS

Environmental incidents are reported to DMITRE in accordance with the *Petroleum and Geothermal Energy Act 2000* within specified time frames. Incidences are defined as serious or reportable.

Reportable incidents are reported to DMITRE at the Quarterly Performance meetings listed in [Appendix 1](#). A reportable incident is an incident (other than a serious incident) arising from activities conducted under a licence classified under the regulations as a reportable incident. In accordance with Regulation 32(1), the following are classified as reportable incidents:

- an escape of petroleum, a processed substance, a chemical or a fuel that affects an area that has not been specifically designed to contain such an escape; and
- an incident identified as a reportable incident under the relevant statement of environmental objectives.

A serious environmental incident is an incident arising from activities conducted under the licence in which:

- serious environmental damage occurs or an imminent risk of serious environmental damage arises; or
- Some other event or circumstance occurs or arises that results in the incident falling within a classification of serious incidents under the regulations or a relevant statement of environmental objectives.

There were no serious environmental incidents and no reportable environmental incidents recorded during the period.

6. MANAGEMENT SYSTEM

Activities in these PPLs are managed to standards that apply to SACBJV activity. These are fully reported in the 2013 SACBJV annual report and in some cases meaningful data or information are not possible given the low level of activity in these PPLs compared to all SA Cooper Basin activity. A summary of key elements is repeated in this report.

6.1 ENVIRONMENT, HEALTH & SAFETY MANAGEMENT SYSTEM (EHSMS)

The implementation, monitoring and review of the Santos Environment, Health and Safety Management System (EHSMS) continued as an organisational priority during 2013. Implementation was monitored and communicated to DMITRE at quarterly meetings. Management standards performance was further validated by the use of internal auditors to monitor improvement initiatives highlighted by the EHSMS audit and assessment program.

The EHSMS contains both management standards and hazard standards. The management standards provide a framework for the sustainable achievement of acceptable EHS outcomes, whilst the hazard standards provide a clear process for control of hazards that are specific to Santos' business.

6.1.1 Management Standards

Further implementation of management standards continued throughout 2013. Process safety (the prevention of high consequence/low frequency events involving sudden loss process fluids/gasses) standards continue to be embedded into the business. Process Safety data continues to be collected and analysed. Trending information is fed back through the monthly Eastern Australia Leadership EHS Committee.

There were 7 management standards amended and updated in 2013 – EHSMS05 EHS Responsibility & Accountability, EHSMS07 Consultation & Communication, EHSMS09 Managing

EHS Risks, EHSMS10 Contractor Management, EHSMS13 Emergency Preparedness, EHSMS15 Incident Investigation & Response, EHSMS16 EHS Audits & Inspections.

A significant review of Managing EHS Risks was completed during 2013 with some key changes including the introduction of a new Operational Risk Matrix which aligns with the corporate 6x6 risk matrix, the inclusion of process safety consequences in the Operational Risk Matrix, a greater focus on risk control assurance and governance, Stepback and JHA requirement incorporated into the larger Standard and How To Guide, Hazard Studies incorporated in the larger standard.

To support the revised Standard, a new electronic Significant Hazard Risk Register module was also commissioned into EHS Toolbox providing a central data capture and reporting tool, accessible across the organisation.

6.1.2 Hazard Standards

As part of the EHSMS Redesign Project, 5 hazard standards were revised and updated; HSHS02 Land Transportation, HSHS03 Air Transportation, HSHS07 Working at Height, HSHS16 Lifting Equipment and HSHS18 Confined Spaces.

The review of HSHS08 Chemical Management commenced in Sept 2013 to significantly simplify the requirements in accordance with legislation and consolidate all sub standards (HSHS08.1 Asbestos, HSHS08.2 SMF etc.) into the larger standard. HSHS08 is due for release and rollout during Q1/2014.

The Health and Wellbeing Program continued to be a focus for Santos (supported by the HSHS04 Health & Wellbeing) with significant focus on workforce health awareness and work/life balance.

A specific program is in place for high risk individuals, staff who were assessed at having 5 health risks from previous health check (health checks are conducted every 2 years), this included personal health coaching (this commenced in 2010).

Most of our SA sites have on site gym facilities which are manned by lifestyle coordinators and show an increased attendance for our staff over the last few years.

Santos also supports our employees by way of entrance fees into community events such as, Nissan Triathlon (Santos were the winners of the 2012 highest corporate participation), City to Bay and the BUPA challenge (an event in the Santos World Tour Down Under).

The health and wellbeing program also supports our employees with the ups and downs of everyday life through our Employee Assistance Program, whereby employees can seek professional and confidential counselling to help them resolve or better cope with personal or work problems that may be affecting their work or overall wellbeing. Resilience training for employees continued through 2013.

Drug (urine) and alcohol testing continued in 2013 with employees and contractors at all locations being subject to random, for cause and post incident testing.

A fatigue management program was implemented in 2009, including awareness programs, self-management tools and reporting protocols. Fatigue Management Plans continue to be developed and used throughout EABU as required.

In 2013, sites continued to identify and focus on their 'top 5' hazards standards. These standards were aligned with their Significant Hazard Risk Register, to ensure a constant site-based focus on the most significant hazards. During 2013, sites continued to review and update their Significant Hazard Risk Registers and their 'top 10' risks and controls were reported back through the monthly Eastern Australia Leadership EHS Committee.

Work is now underway to transition existing Significant Hazard Risk Registers into the EHS Toolbox module.

6.1.3 Training and Awareness

A new program was launched in 2010 to raise the awareness of high risk safety activities (The Santos Lifesaver Program). Santos developed a number of Santos DVD-s to educate the workforce on the lifesaver topic. The program also contains a toolbox talk, promotional material (displays, posters, sticker, and screen saver), quiz, workplace inspection and audit.

Following the 2012 'break' in the program to rollout the EHS Fundamentals during 2012, the Santos Lifesaver Program was relaunched for 2013 with 9 key topics delivered during 2013; Pressure,

Excavation, Hydrocarbons, Electricity, Driving Vehicles, Working at Heights, Confined Space Entry, Working in the Heat and Lifting / Dropped Objects.

This program continues to be successful in raising the level of awareness and continues to attract a good level of site / activity participation in the associated activities.

It's important to note that the repeatability of this program will, over time, embed a level of awareness to enhance our safety culture and ensure new team members are routinely on-boarded through the process.

6.2 AUDITS, INSPECTIONS AND REVIEW PROCESSES

The following summarises some of the Audit and Review processes used to determine system conformance, effectiveness and fitness for purpose.

Santos effectively mandates a three tiered approach to Audit, Inspection and Review;

1. On site workplace inspections; statutory testing of equipment; work permit and JHA reviews as well as measuring compliance with operating documentation.
2. During 2013 Asset Managers were responsible for ensuring Self EHS Audits were conducted within their area of responsibility (on site). A risk based approach is used to determine the required audits against EHS Management System Standards. These audits are conducted in accordance with AS/NZS ISO 19011:2003.
3. The Internal Corporate Audit Program continued during 2013 and ~20 Audits completed. A balance of internal and external Lead Auditors was responsible for the delivery of the Audits and Progress Reviews.

Results of Inspections, Reviews, Audits and Progress Reviews were tabled at Eastern Australia Leadership and Site EHS Committee Meetings for discussion and tracking of actions. A number of detailed presentations were also made to communicate the learnings from these activities across the business.

Audit findings were also presented at the Environment, Health, Safety and Sustainability Board Meeting.

In 2013, we continued to report, investigate and record any High Potential Incidents (HiPos) that occurred within the company. A HiPo is defined as any incident that had potential to result in a fatality. Tracking and reporting HiPos continues to provide the company with another avenue to learn from incidents and improve our overall safety performance. Results and presentation are reported to senior management on a regular basis.

7. REASONABLY FORESEEABLE THREATS

There were no serious threats identified due to activities conducted in these licence areas during the reportable period.

7.1 RISK ASSESSMENT

Risks are managed to as low as reasonably practicable (ALARP). The outcomes of any risk review regarding SACBJV activities are applied to activity in these PPLs.

Santos undertook a number of risk assessments during the period. These risk assessments are aimed at identification of risks and the development of actions designed to reduce the risk to as low as reasonably practicable (ALARP). Risk assessments are undertaken in line with EHSMS09 Managing EHE Risks.

7.1.1 Pipelines

Management of pipeline integrity occurs by targeting pipeline systems and associated equipment which are high risk or near the end of design life (Risk Based Inspection (RBI) approach). Main targets of Pipeline Integrity Management are:

- Redirection of pipeline operating risks to ALARP.
- Address safety risks.
- Maintain integrity of ageing pipeline network.
- Standards compliance.
- AIMS (Asset Integrity Management System) compliance.

8. EMERGENCY RESPONSE

An Emergency Response Plan (ERP) was developed for activities in South Australia, including PPLs covered in this report. In the event of an incident, resources would be mobilised to assist.

8.1 EMERGENCY RESPONSE CAPABILITY

Santos maintains a dedicated emergency response crew at Moomba. This consists of fully trained Emergency Officers (fire crew) and medical response personnel together with a large inventory of emergency response equipment, material and vehicles.

8.2 EMERGENCY RESPONSE PROCEDURES

Santos has developed a Crisis Management Plan that will replace the current Santos Incident Management Plan (SIMP) when the revised EHSMS13 is released as part of the EHSMS Improvement Plan. The SCMP has been developed to reflect the national and international growth of Santos.

Detailed, scenario-based emergency response procedures have been developed and implemented under the Santos Incident Management Plan to guide personnel in emergency incident response.

Emergency response drills are regularly held in order to continuously update plans and maintain a high degree of readiness among personnel.

In the event of the emergency response procedures being used in response to an actual event, a debrief of all relevant parties is conducted in order to ensure learnings are incorporated into the plans.

A Business Impact Assessment has been conducted for Moomba and Adelaide based infrastructure in accordance with new Business Continuity Planning arrangements for Santos..

8.3 EMERGENCY RESPONSE DRILLS

While no specific drills were conducted for the PPLs covered in this report the SACBJV drills cover all activity required to support these with regard emergency response.

8.4 EMERGENCY RESPONSE

There was no event in PPL 206, 208 or 215 requiring emergency response.

9. GENERAL

9.1 LOCAL COMMUNITY INVOLVEMENT

During this reporting period, Santos continued to be actively involved with the local community associated with various events and issues which impact this community. This involvement ranged from facilitating and participating in local sporting and fund-raising events, to active involvement in various local committees and groups.

10. SEISMIC EXPLORATION

During 2013, there was no seismic activity carried out in PPL 206, 208 or 215.

11. DRILLING AND WELL OPERATIONS

11.1 WELLSITE, CAMPSITE, BORROW PIT and ACCESS TRACK CONSTRUCTION & RESTORATION

During this reporting period, 4 wellsite leases were constructed.

No restoration of drilling leases was carried out and no borrow pits were sought by landholders.

Close consultation was maintained with the pastoral lessee to ensure their interests remained high in consideration when conducting petroleum activities.

Disturbance to sites of Aboriginal and European heritage was avoided. Santos trained staff is used to scout sites prior to work commencing on the construction of sites and access. Pre-clearance of projects is conducted in conjunction with representatives of the Yandruwandha/Yawarrawarrka Native Title Claimant Group.

11.2 DRILLING OPERATIONS

There were 4 wells drilled in PPL 206, 208 or 215 during 2013.

11.3 DRILLING ACTIVITY – 2014

No wells are currently planned for 2014.

11.4 WELL COMPLETION, WORKOVER, PRODUCTION, SUSPENSION and ABANDONMENT

There were three work-over operation conducted during 2013.

Well Workover Summary – PPL 206, 208 and 215

#	WELL	START DATE	END DATE	WORKOVER ACTIVITY
1	Derrilyn 1	23/03/2013	29/03/2013	ESP Repair
2	Derrilyn 3	26/11/2013	30/11/2013	PCP Repair
3	Chimmichurri 1	27/12/2013	1/01/2014	Oil Workover

No Fracture Stimulation operations were conducted.

At the end of this reporting period, there were 5 producing wells.

Environmental Objectives and Performance – Drilling and Well Operations SEO

Environmental Objectives	Assessment Criteria	Guide to How Objectives Can Be Achieved	Performance 2013 Report Period
<p>Objective 1: Minimise the risk to public and other third parties.</p>	<ul style="list-style-type: none"> ▪ Reasonable measures implemented to ensure no injuries to the public or third parties. 	<ul style="list-style-type: none"> ▪ All employees and contractor personnel complete a safety induction prior to commencement of work in the field. ▪ All employees and contractor personnel undertake a refresher induction every 2 years. ▪ Signage in place to warn third parties of access restrictions to operational areas, with particular warnings when potentially dangerous operations are being undertaken. ▪ Necessary measures (e.g. signage/fencing) taken to prevent the public accessing the wellhead equipment or waste relating to a given well. ▪ Demobilisation inspections undertaken at random to ensure that backfilling and waste removal requirements are met. ▪ Permit to work systems in place for staff and contractors in dangerous situations. ▪ All appropriate PPE (personnel protective equipment) is issued and available as required in accordance with company operating requirements and applicable standards. ▪ Effective Emergency Response Plan (ERP) and procedures are in place in the event of a fire or explosion; Annual exercise of ERP. ▪ Communication of rig moves and other potential hazards to safety associated with drilling and well operations to potentially affected parties prior to commencement of operations. ▪ Compliance with relevant speed restrictions on access roads and tracks. ▪ Reporting systems for recording injuries and accidents in place, and annual (at minimum) review of records to determine injury trends. ▪ Implementation of appropriate corrective actions. ▪ Ensuring safety management plans are updated and reviewed. ▪ Wastewater disposal in accordance with Objective 11. 	<p>There were no injuries to the public or any third parties arising from Drilling and Well operations in 2013.</p> <p>All Santos and Santos Contract employees attend a compulsory safety induction prior to commencing work. Refresher training is provided at regular intervals.</p> <p>Signs are installed at strategic locations in the operating area to deter the public from accessing drilling and production areas and when potentially hazardous tasks are undertaken.</p> <p>A specific Wellsite Permit-to-Work system is used to manage workplace / worksite safety.</p> <p>Personnel are provided with the relevant, approved PPE when undertaking potentially hazardous tasks.</p> <p>Emergency Response Plans and procedures are in place. These procedures are regularly exercised with identified improvements included into the ERPs.</p> <p>Relevant parties are advised of potentially hazardous operations before they are undertaken.</p> <p>An electronic accident and incident recording system is used to report and monitor accidents, incidents and trends.</p> <p>Safety Management Plans, including KPIs, have been developed and introduced by Santos and its contractors. These are regularly reviewed and updated.</p>

Environmental Objectives	Assessment Criteria	Guide to How Objectives Can Be Achieved	Performance 2013 Report Period
<p>Objective 2: Minimise disturbance and avoid contamination to soil.</p>	<p><u>Well Site and Access Track Construction</u></p> <ul style="list-style-type: none"> ▪ 0, +1 or +2 GAS criteria are attained for “Minimise impacts on soil” objective as listed in and “To minimise the visual impact”. ▪ No unauthorised off-road driving or creation of shortcuts. ▪ No construction activities are carried out on salt lakes or steep tableland slopes (as defined in EIR). <p><u>Borrow pit construction and restoration</u></p> <ul style="list-style-type: none"> ▪ 0, +1 or +2 GAS criteria are attained for “Minimise visual impacts’, and “Minimise impact on soil” objectives <p><u>Production Testing/Well Blowdowns</u></p> <ul style="list-style-type: none"> ▪ No soil contamination as a result of production testing or well blowdown operations. 	<p><u>Well Site and Access Track Construction</u></p> <ul style="list-style-type: none"> ▪ Consider alternate routes during planning phase to minimise environmental impacts. ▪ Use existing routes / disturbed ground where practicable. ▪ Gibber mantle on access tracks and well sites (excluding sumps) is not removed where possible, only rolled, in gibber and tableland land systems. Gibber mantle reinstated where appropriate during restoration. ▪ Topsoil stockpiled (including gibber mantle) from sump construction and respread (and gibber recompacted) on abandonment. ▪ The need to traverse sensitive land systems and the methods of managing the impacts must be justified in accordance with company procedures, recorded and available for auditing. <p><u>Borrow pit construction and restoration</u></p> <ul style="list-style-type: none"> ▪ Existing borrow pits to be re-used where practicable. ▪ Siting of new borrow pits to avoid sloped areas and gibber as far as practicable. ▪ Topsoil stockpiled (including gibber mantle) and respread on abandonment (gibber to be recompacted). <p><u>Production Testing / Well Blowdowns</u></p> <ul style="list-style-type: none"> ▪ If appropriate use: <ul style="list-style-type: none"> - impermeable or clay lined flare pit to flare / contain hydrocarbons. - flare tanks. 	<p>Soil disturbance is minimised wherever possible. Rootstock is left intact and topsoil is stockpiled for respreading during site restoration.</p> <p>Managing off-road driving is done by inductions and regular communications to all Santos related personnel. Alternate routes are considered in planning. Work is restricted to ROW. No construction activity is carried out on salt lakes, steep tablelands or wetland systems during times of flow or inundation. Audits of construction activities are undertaken and there is a high level of confidence in environmental performance.</p> <p>Installation of new borrow pits is minimised by reusing suitable existing borrow pits where practicable.</p> <p>Where borrow pits are exhausted restoration works are undertaken to meet relevant GAS criteria.</p> <p>Gas wells post fracture stimulation activities remained largely steady with dry gas wells typically flowing between 4 to 5 days to atmosphere (flaring where possible). Liquids rich gas wells were flowed for similar periods, however separators were used to capture liquids and flare gas. Various types of separators are being trialled the intention being to capture all produced fluids from completion clean up.</p>

Environmental Objectives	Assessment Criteria	Guide to How Objectives Can Be Achieved	Performance 2013 Report Period
<p>Objective 2 cont: Minimise disturbance and avoid contamination to soil.</p>	<p><u>Fuel and Chemical Storage and Handling</u></p> <ul style="list-style-type: none"> ▪ No spills/leaks outside of areas designed to contain them. ▪ Level of hydrocarbon continually decreasing for in situ remediation of spills. ▪ Soils remediated to a level as determined by the SHI process. ▪ Also refer to Objective 12. <p><u>Waste Disposal (domestic, sewage and sludges)</u></p> <ul style="list-style-type: none"> ▪ All domestic wastes are disposed of in accordance with EPA licensing requirements. ▪ 0, +1 or +2 GAS criteria are attained for "Site to be left in a clean and tidy condition" objective ▪ No spills or leaks from sewage treatment processing. ▪ Refer to Assessment Criteria for Objective 11. 	<p><u>Fuel and Chemical Storage and Handling</u></p> <ul style="list-style-type: none"> ▪ All fuel, oil and chemical storages banded in accordance with the appropriate standards and guidelines e.g. EPA guideline <i>080/07 Bunding and Spill Management</i>. ▪ Records of spill events and corrective actions maintained in accordance with company procedures. ▪ Spills or leaks are immediately reported and clean up actions initiated. ▪ Logged incidents are reviewed annually to determine areas that may require corrective action in order to reduce spill volumes in subsequent years (and drive continual improvement). ▪ Chemical and fuel storage procedures, including signage, are reviewed and monitored in audit process. <p><u>Spill Response / Contingency Planning</u></p> <ul style="list-style-type: none"> ▪ Results of emergency response procedures carried out in accordance with Regulation 31 show that an oil spill contingency plan in place in the event of a spill is adequate and any necessary remedial action needed to the plan is undertaken promptly. ▪ Oil spill contingency plan (reviewed annually) is up to date with specific scenarios relating to spills to creeks and floodplain areas. ▪ Spill response equipment is audited annually. ▪ Annual spill response training exercise / rehearsal is undertaken. ▪ Spills or leaks are immediately reported and clean up actions initiated. <p><u>Waste Disposal (domestic, sewage and sludges)</u></p> <ul style="list-style-type: none"> ▪ Covered bins are provided for the collection and storage of wastes. ▪ All loads of rubbish are covered during transport to the central waste facility. ▪ Approved transportable Aerated Wastewater Treatment Plants (AWTPs) used for rigs/camps (once approved AWTPs are available from a supplier suitable to Santos¹). Interim controls for management of sewage effluent (developed in consultation with the Department of Health) implemented¹. ▪ Use of permanent septic systems with camps where possible ▪ Refer to Objective 11. 	<p>No spills occurred outside areas designed to contain them.</p> <p>SACBJV learnings from Incidents were reviewed to enable improvement strategies to be identified and are applied to other Santos operated PEL and PPLs.</p> <p>No impacts to shallow groundwater were identified.</p> <p>Records of spills are maintained.</p> <p>Spills are reported in accordance with legislative and company requirements.</p> <p>Incident registers are reviewed to determine areas requiring improvement and to ensure ongoing improvement.</p> <p>Domestic wastes are disposed of in accordance with EPA License Requirements. Audits indicate good waste management practice.</p> <p>All waste containers are covered during Transport.</p> <p>New landfill cell completed and approved by EPA.</p> <p>Landfill cells are located only at Authorised facilities and are fenced to prohibit stock and wildlife access.</p> <p>There were no reportable incidents associated with sewage management equipment or facilities.</p>

Environmental Objectives	Assessment Criteria	Guide to How Objectives Can Be Achieved	Performance 2013 Report Period
<p>Objective 3: Avoid the introduction or spread of pest plants and animals and implement control measures as necessary.</p>	<ul style="list-style-type: none"> ▪ No weeds or feral animals are introduced to, or spread in, operational areas as a consequence of activities. 	<ul style="list-style-type: none"> ▪ Where appropriate a weed and feral animal management strategy is in place (avoidance and control strategies). ▪ Rig and vehicle wash downs are initiated in accordance with the management strategy. 	<p>Weed and feral animal strategies are in place. There is limited evidence of the introduction of weeds or feral animals.</p> <p>Vehicles and rig equipment is managed in accordance with site specific pest plant management strategy.</p>
<p>Objective 4: Minimise disturbance to drainage patterns and avoid contamination of surface waters and shallow ground water resources.</p>	<p><u>Well Lease and Access Track Construction</u></p> <ul style="list-style-type: none"> ▪ Well sites and access tracks are located and constructed to maintain pre-existing water flows (i.e. channel contours are maintained on floodplains and at creek crossings). <p><u>Drilling Mud Sumps and Flare Pits</u></p> <ul style="list-style-type: none"> ▪ No overflow of drill cuttings, muds and other drilling fluids from mud sumps. ▪ No waste material disposal to sumps and flare pits. <p><u>Well Heads (Oil and Gas Systems)</u></p> <ul style="list-style-type: none"> ▪ No leaks/spills outside of areas designed to contain them. 	<p><u>Well Lease and Access Track Construction</u></p> <ul style="list-style-type: none"> ▪ Sensitive land systems (e.g. wetlands) avoided wherever possible. Where activities are undertaken in or near these areas, appropriate review, assessment and mitigation measures are in place to ensure that surface water flows are maintained and contamination of surface water and groundwater is avoided. <p><u>Drilling Mud Sumps and Flare Pits</u></p> <ul style="list-style-type: none"> ▪ All drill cuttings, muds and non toxic drill fluids are contained within the designated mud sumps with adequate freeboard at the completion of operations to allow for a 1m cover of clean fill at remediation. <p><u>Well Heads (Oil and Gas Systems)</u></p> <ul style="list-style-type: none"> ▪ Where appropriate, imperviously lined well cellars are installed on oil wells. ▪ Bunds / containment devices are installed on gas well skids. ▪ Well heads shut in and chemicals removed prior to flood events. ▪ Jet pumps are installed within containment device with an adequately sized containment sump. 	<p>Drainage channels are maintained and or diverted to minimise impacts to natural drainage patterns associated with well leases, access tracks and road construction.</p> <p>Work programs are modified to avoid periods of flooding and other seasonal influences and variations.</p> <p>No overflow of drilling mud sumps occurred. No waste material is disposed of in drilling mud sumps or flare pits.</p> <p>Automatic shutdown of wellhead pumps investigated and devices continue to be progressively fitted to all beam pumps to shutdown pump if Polished rod packer fails. Hi-Lo devices are fitted to all new gas well completions for automatic shutdown, and existing wells are under review with retrofitting of hi-lo devices as required.</p> <p>Jet-pumps are installed with 9M3 sumps.</p>

Environmental Objectives	Assessment Criteria	Guide to How Objectives Can Be Achieved	Performance 2013 Report Period
<p>Objective 4 cont Minimise disturbance to drainage patterns and avoid contamination of surface waters and shallow ground water resources.</p>	<p><u>Well Blowdown/Production Testing</u></p> <ul style="list-style-type: none"> ▪ No water (surface or groundwater) contamination as a result of production testing or well blowdown operations. <p><u>Fuel/Chemical Storage and Handling</u></p> <ul style="list-style-type: none"> ▪ No water (surface or groundwater) contamination as a result of fuel or chemical storage and handling. 	<p><u>Well Blowdown/Production Testing</u></p> <ul style="list-style-type: none"> ▪ Activity is conducted in accordance with accepted industry standards / good oilfield practice. ▪ If appropriate use: <ul style="list-style-type: none"> - impermeable / clay lined flare pit - flare tanks - separators - supervision <p><u>Fuel and Chemical Storage and Handling</u></p> <ul style="list-style-type: none"> ▪ All fuel, oil and chemical storages banded in accordance with the appropriate standards (e.g. AS 1940 and EPA guideline <i>080/07 Bunding and Spill Management</i>). ▪ Records of spill events and corrective actions maintained in accordance with company procedures. ▪ Spills or leaks are immediately reported and clean up actions initiated. ▪ Logged incidents are reviewed annually to determine areas that may require corrective action in order to reduce spill volumes in subsequent years (and drive continual improvement). ▪ Chemical and fuel storage procedures, including signage, are reviewed and monitored in audit process. <p><u>Waste Management</u></p> <ul style="list-style-type: none"> ▪ Refer to Objective 11. <p><u>Spill Response / Contingency Planning</u></p> <ul style="list-style-type: none"> ▪ Results of emergency response procedures carried out in accord with Regulation 31 show that oil spill contingency plan in place in the event of a spill is adequate and any necessary remedial action needed to the plan is undertaken promptly. ▪ Oil spill contingency plan (reviewed annually) is up to date with specific scenarios relating to spills to creeks and floodplain areas. ▪ Spill response equipment is audited annually. ▪ Annual spill response training exercise / rehearsal is undertaken. 	<p><u>See Objective 2 above.</u></p> <p>Records of spills are maintained.</p> <p>Spills which occurred outside areas designed to contain them are reported at quarterly meetings.</p> <p>Spills are reported in accordance with legislative requirements.</p> <p>Incident registers are reviewed to determine areas requiring improvement and to ensure ongoing improvement.</p> <p>Hydrocarbon contaminated soils were removed to authorised Cooper Basin temporary land farms. No impacts to shallow groundwater were identified.</p> <p>Emergency response procedures for spill response are in place and regularly exercised. Learnings from exercises and actual events are included in Plans.</p> <p>Oil Spill Plans are up-to-date. Spill response equipment and procedures are checked as part of everyday operations and are included in the audit schedule.</p>

Environmental Objectives	Assessment Criteria	Guide to How Objectives Can Be Achieved	Performance 2013 Report Period
<p>Objective 5: Avoid disturbance to sites of cultural and heritage significance.</p>	<ul style="list-style-type: none"> ▪ Proposed well sites and access tracks have been surveyed and any sites of Aboriginal and non-Aboriginal heritage identified. ▪ Any identified cultural and heritage sites have been avoided. 	<ul style="list-style-type: none"> ▪ Consultation with stakeholders (i.e. government agencies, landholders etc) in relation to the possible existence of heritage sites, as necessary. ▪ Heritage report forms completed for any sites or artefacts identified, and report forms forwarded to the Aboriginal Heritage Branch, Aboriginal Affairs and Reconciliation Division (AARD). ▪ Survey records are kept and are available for auditing. ▪ Areas requiring remediation which lie outside previously surveyed sites should be surveyed in accordance with company heritage clearance procedures. ▪ A procedure is in place for the appropriate response to any sites discovered during drilling activities. <p><u>Note:</u> Where a negotiated agreement or determination for heritage clearance is in place, compliance with the negotiated agreement or determination takes precedence over the above criteria.</p>	<p>Construction sites are inspected for cultural heritage sites. Identified sites are avoided. Significant sites are fenced.</p> <p>Identified sites are avoided.</p>
<p>Objective 6: Minimise loss of aquifer pressures and avoid aquifer contamination.</p>	<p><u>Drilling & Completion Activities</u></p> <ul style="list-style-type: none"> ▪ There is no uncontrolled flow to surface (blow out). ▪ Sufficient barriers exist in casing annulus to prevent crossflow between separate aquifers or hydrocarbon reservoirs. ▪ Relevant government approval obtained for abandonment of any radioactive tool left downhole. 	<p><u>Drilling & Completion Activities</u></p> <ul style="list-style-type: none"> ▪ A competent cement bond between aquifer and hydrocarbon reservoirs is demonstrated. ▪ For cases where isolation of these formations is not established, a risk assessment incorporating the use of pressure / permeability / salinity data is undertaken in consultation with DLWBC & SAALNRM Board to determine if lack of cement or poor bond will cause or has caused damaging crossflow which needs to be remediated. 	<p>There were no well bore failures reported in 2013.</p>

Environmental Objectives	Assessment Criteria	Guide to How Objectives Can Be Achieved	Performance 2013 Report Period
<p>Objective 6 Cont: Minimise loss of aquifer pressures and avoid aquifer contamination</p>	<p><u>Producing, Injection, Inactive and Abandoned Wells</u> No cross-flow behind casing between aquifers, and between aquifers and hydrocarbon reservoirs unless approved by DWLBC.</p>	<p><u>Producing, Injection and Inactive Wells</u></p> <ul style="list-style-type: none"> ▪ Monitoring programs implemented (e.g. through well logs, pressure measurements, casing integrity measurements and corrosion monitoring programs) to assess condition of casing and cross-flow behind casing. ▪ Casing annulus pressures are monitored every 2 years. ▪ The condition of the primary casing barrier is adequate. ▪ For cases where crossflow is detected, a risk assessment incorporating the use of pressure / permeability / salinity data is undertaken in consultation with DLWBC & SAALNRM Board to determine if lack of cement or poor bond will cause or has caused damaging crossflow which needs to be remediated. <p><u>Well Abandonment Activities</u></p> <ul style="list-style-type: none"> ▪ Isolation barriers are set in place to ensure that crossflow, contamination or pressure reduction will not occur. ▪ Barriers will be set to meet or exceed the requirements of applicable standards for the decommissioning and abandonment of water bores and abandonment of petroleum wells. ▪ The placement of isolation barriers will in general be to isolate the groups of formations as listed under comments. The number and placement of barriers may be varied from this standard approach on a case-by-case basis by Santos personnel using relevant available data and the SA Cooper Basin Water Pressure and Salinity Module Report (2002), and in consultation with DWLBC. 	<p>Corrosion monitoring, pressure measurements and casing integrity monitoring programs are undertaken in accordance with industry best practice and Santos operational procedures to determine competency and condition of well containment barriers. Wells are prioritised for workover or rig-less intervention based on condition of well barriers. Cement bond logs are run on new wells for baseline assessment of cement bond integrity.</p>

Environmental Objectives	Assessment Criteria	Guide to How Objectives Can Be Achieved	Performance 2013 Report Period
<p>Objective 7: Minimise disturbance to native vegetation and native fauna.</p>	<p><u>Well Lease and Access Track Construction and Restoration</u></p> <ul style="list-style-type: none"> ▪ Any sites with rare, vulnerable and endangered flora and fauna have been identified and avoided. ▪ 0, +1 or +2 GAS criteria are attained for “Minimise impact on vegetation” objective and “The revegetation of indigenous species” objective during well lease and access track site selection and construction and restoration. <p><u>Borrow Pit Construction and Restoration</u></p> <ul style="list-style-type: none"> ▪ 0, +1 or +2 GAS criteria are attained for “Minimise impacts on vegetation” objectives during borrow pit site selection, construction, and restoration. <p><u>Waste Management</u></p> <ul style="list-style-type: none"> ▪ Refer to assessment criteria for Objective 11. <p><u>Fuel and Chemical Storage and Handling</u></p> <ul style="list-style-type: none"> ▪ Refer to assessment criteria for Objectives 2 and 4. 	<p><u>Well Lease and Access Track Construction and Restoration</u></p> <ul style="list-style-type: none"> ▪ Proposed well sites, camp sites, access tracks and borrow pit sites have been assessed for rare, vulnerable and endangered flora and fauna species before the commencement of construction. ▪ Consider alternate routes during planning phase to minimise environmental impacts. ▪ Sensitive land systems (e.g. wetlands) avoided wherever possible. Where activities are undertaken in these areas (i.e. no practicable alternative), appropriate review, assessment and mitigation measures are in place. ▪ Facilities (e.g. borrow pits, well cellars) are designed and constructed as far as practicable to minimise fauna entrapment. ▪ Sumps and mud pits are fenced as appropriate to minimise wildlife access. ▪ Assessment records are kept and are available for auditing. ▪ In recognised conservation reserves (i.e. Innamincka Regional Reserve) excavations are left in a state as agreed with the responsible statutory body. ▪ Borrow pits are restored to minimise water holding capacity, where agreements are not in place with stakeholders. <p><u>Waste Management</u></p> <ul style="list-style-type: none"> ▪ Covered bins are provided for the collection and storage of putrescible wastes. ▪ All loads of rubbish are covered during transport to the central waste facility. ▪ Refer to Objective 11. <p><u>Fuel and Chemical Storage and Handling</u></p> <ul style="list-style-type: none"> ▪ Refer to Objectives 2 & 4. <p><u>Fauna Management</u></p> <ul style="list-style-type: none"> ▪ No domestic pets allowed at camps or worksites. ▪ Feeding of wildlife (e.g. dingoes) is not permitted. 	<p>Prior to all new lease builds, an ecological assessment is undertaken to evaluate the environmental sensitivity of the proposed lease site as well as access roads and borrow pits.</p> <p>Where borrow pits are exhausted, restoration works are undertaken to meet relevant GAS criteria.</p>

Environmental Objectives	Assessment Criteria	Guide to Objectives Achievement	Performance 2013 Report Period
<p>Objective 8: Minimise air pollution and greenhouse gas emissions.</p>	<ul style="list-style-type: none"> ▪ Performance to EPA requirements. 	<p><u>Well Testing</u></p> <ul style="list-style-type: none"> ▪ Conduct well testing in accordance with appropriate industry accepted standards. ▪ Continually review and improve operations. ▪ Appropriate emergency response procedures are in place for the case of a gas leak. <p><u>Well Blowdown</u></p> <ul style="list-style-type: none"> ▪ Blowdown carried out in accordance with industry accepted standards / good production practice. ▪ Any well that is consistently blown down is identified for a small ID tubing or plunger lift installation to minimise blow downs on that well. 	<p>Well testing activities are continuously reviewed for opportunities to minimise air pollution and greenhouse gas emissions.</p> <p>Emergency response procedures are in place, are regularly tested and improvements identified are incorporated in existing plans.</p>
<p>Objective 9: Maintain and enhance partnerships with the Cooper Basin community.</p>	<ul style="list-style-type: none"> ▪ No unresolved reasonable complaints from the community. 	<ul style="list-style-type: none"> ▪ Relevant affected parties are notified and consulted on proposed activities. ▪ Forward development plans are presented to the local community. ▪ Local community projects and events are sponsored and supported where appropriate. ▪ Industry membership of appropriate regional land management committees and boards. 	<p>Relevant parties are notified and consulted on proposed activities. There were no complaints, concerns or issues left unresolved.</p> <p>Local community events and activities are actively supported. Membership and active participation is made to regional management committees and Boards.</p>

Environmental Objectives	Assessment Criteria	Guide to How Objectives Can Be Achieved	Performance 2013 Report Period
<p>Objective 10: Avoid or minimise disturbance to stakeholders and/or associated infrastructure.</p>	<ul style="list-style-type: none"> ▪ No reasonable stakeholder complaints left unresolved. 	<ul style="list-style-type: none"> ▪ Induction for all employees and contractors covers pastoral, conservation, tourism, legislation and infrastructure issues. ▪ Relevant stakeholders are notified prior to survey and construction of well sites, camp sites and access tracks and undertaking of operations (pursuant to Regulations). Borrow pits left open (unrestored) if requested by landholder and upon receipt of letter of transfer of responsibility to landholder. ▪ Gates or cattle grids are installed to a standard, consistent with pastoral infrastructure in fences where crossings are required for access. ▪ All gates left in the condition in which they were found (ie. open/closed). ▪ Potential sources of contamination are fenced as appropriate to prevent stock access. ▪ Excavations are located and managed so as not to pose an unacceptable hazard to stock or wildlife. ▪ System is in place for logging landholder complaints to ensure that issues are addressed as appropriate. ▪ Requirements of the Cattle Care and Organic Beef accreditation programs are complied with. ▪ In recognised conservation reserves (e.g. Innamincka Regional Reserve) excavations are left in a state as agreed with the responsible statutory body (e.g. DEH). 	<p>The importance of developing and maintaining good relationships with landholders is stressed to all employees and contractors. Relevant stakeholders are notified of and consulted about projects and are provided with information, maps etc.</p> <p>No Borrow pits were formally transferred to landholders.</p> <p>Grids, fences, gates installed are to a standard acceptable to the landholder.</p> <p>All gates are left "as found". In response to concerns regarding potential for contamination of cattle an extensive fencing of facilities program was completed in 2005 and continues to be installed and repaired as required</p> <p>Landholder complaints and requests are logged to ensure closeout. There were no complaints lodged. Cattle management systems (cattle care) are recognised and complied with.</p>

Environmental Objectives	Assessment Criteria	Guide to How Objectives Can Be Achieved	Performance 203 Report Period
<p>Objective 11: Optimise waste reduction and recovery.</p>	<ul style="list-style-type: none"> ▪ All wastes to be disposed of at an EPA licensed facility in accordance with EPA Licence conditions, with the exception of drilling fluids, drill cuttings, other fluids disposed during well clean-up and wastewater (see below). ▪ Wastewater (sewage and grey water) disposed of in accordance with the <i>Public and Environmental Health (Waste Control) Regulations 1995</i> or to the Department of Health's satisfaction. ▪ Attainment of GAS criteria for "Site to be left in clean, tidy and safe condition" objective during well site restoration ▪ Attainment of GAS criteria for "Site left in clean and tidy condition" objective during borrow pit restoration. 	<ul style="list-style-type: none"> ▪ Chemicals and oil are purchased in bulk. "Bulki bins" or other storage tanks are in place for large volume items. ▪ Covered bins are provided for the collection and storage of putrescible wastes. All loads of rubbish are covered during transport to a licensed waste facility. ▪ Waste streams are segregated on site to maximise opportunities for waste recovery, reuse and recycling. ▪ Coordinate covered waste transportation on backload. ▪ Production of waste is minimised by purchasing specifying reusable, biodegradable or recyclable materials in procurement, where practical. ▪ Drilling fluids, drill cuttings and other fluids are disposed of to sump on the Act licence area. ▪ Waste water (sewage) disposal is where possible in accordance with the <i>Public and Environmental Health (Waste Control) Regulations 1995</i> (which require that the waste water disposal system must either comply with the <i>Standard for the Construction, Installation and Operation of Septic Tank Systems in SA</i> or be operated to the satisfaction of the Department of Health) and the <i>Environment Protection (Water Quality) Policy 2003</i>. ▪ Grey water is disposed of to the sewage treatment system. ▪ Secondary treated sewage wastewater is disposed of onto land well away from any place from which it is reasonably likely to enter any waters, and to minimise spray drift and ponding, in accordance with clause 11 of the <i>Environment Protection (Water Quality) Policy 2003</i>. 	<p>Wastes area segregated on- site in compartmentalised bins.</p> <p>Chemicals, cement & inhibitors are purchased in bulk containers.</p> <p>All waste is managed in accordance with EPA requirements and disposed of to an approved facility.</p>

Environmental Objectives	Assessment Criteria	Guide to How Objectives Can Be Achieved	Performance 2013 Report Period
<p>Objective 12: Remediate and rehabilitate operational areas to agreed standards.</p>	<ul style="list-style-type: none"> ▪ No unresolved reasonable stakeholder complaints. <p><u>Contaminated Site Remediation</u></p> <ul style="list-style-type: none"> ▪ Contaminated sites are remediated in accordance with criteria developed with the principles of the National Environment Protection Measure for Contaminated sites and in consultation with the EPA. <p><u>Well Site and Access Track Restoration</u></p> <ul style="list-style-type: none"> ▪ The attainment of 0, +1 or +2 GAS criteria for: <ul style="list-style-type: none"> - “minimise visual impact of abandoned well sites” - “minimise visual impact of abandoned access tracks” - “re-establish natural vegetation on abandoned well sites and access tracks”. <p><u>Borrow Pit Restoration</u></p> <ul style="list-style-type: none"> ▪ The attainment of 0, +1 or +2 GAS criteria for: <ul style="list-style-type: none"> - “minimise impact on vegetation” - “minimise impact on soil” - “Minimise visual impacts”. <ul style="list-style-type: none"> ▪ <u>Note:</u> Well abandonment issues addressed under objective 6. 	<ul style="list-style-type: none"> ▪ Rehabilitation/ abandonment plans for surface activities will be developed in consultation with relevant stakeholders. <p><u>Well Site and Access Track Restoration</u></p> <ul style="list-style-type: none"> ▪ Compacted soil areas have been ripped (except on gibber and tablelands) and soil profile and contours are reinstated following completion of operations. 	<p>No complaints raised by stakeholders.</p>

12. PRODUCTION & PROCESSING FACILITY OPERATIONS

Production includes both PPL 206 and PPL 215.

12.1 PRODUCTION – 2013

Production from the JV covering PPL 206 and PPL 215 was 0.040mm BBLs

12.2 PRODUCTION FORECAST – 2014

The estimated Crude Oil production for 2014 is 0.058 (mm BBLs).

12.3 ROAD AND WELLSITE LEASE AND ACCESS CONSTRUCTION AND RESTORATION

There were 17 borrow pits constructed during 2013.

No additional restoration work was completed in 2013.

Performance against the Production and Processing SEO is described in the following Table.

12.4 PIPELINE CONSTRUCTION, OPERATION AND MONITORING

There was 1 flowline constructed during 2013:

Pipeline	Diam. (mm)	Pipeline Material	Const. Finish	Length (m)	Total (m)
CHORIZO 1 OIL FLOWLINE	69	GRE	6-Aug-13	2371	2371

Environmental Objectives and Performance – Production and Processing SEO

Environmental Objectives	Assessment Criteria	Guide to How Objectives Can Be Achieved	Performance 2013 Report Period
<p>Objective 1: Minimise any safety risk to public and other third parties.</p>	<ul style="list-style-type: none"> ▪ Reasonable measures implemented to ensure no injuries to the public or third parties. 	<ul style="list-style-type: none"> ▪ All employees and contractor personnel complete a safety induction prior to commencement of work in the field. ▪ All employees and contractor personnel undertake a refresher induction every 2 years. ▪ Signage in place to warn third parties of access restrictions to operational areas, with particular warnings when potentially dangerous operations are being undertaken. ▪ Necessary measures (e.g. signage/fencing) taken to prevent the public accessing the wellhead equipment or waste relating to a given well. ▪ Demobilisation inspections undertaken at random to ensure that backfilling and waste removal requirements are met. ▪ Permit to work systems in place for staff and contractors in dangerous situations. ▪ All appropriate PPE (personnel protective equipment) is issued and available as required in accordance with company operating requirements and applicable standards. ▪ Effective Emergency Response Plan (ERP) and procedures are in place in the event of a fire or explosion; Annual exercise of ERP. ▪ Communication of rig moves and other potential hazards to safety associated with drilling and well operations to potentially affected parties prior to commencement of operations. ▪ Compliance with relevant speed restrictions on access roads and tracks. ▪ Reporting systems for recording injuries and accidents in place, and annual (at minimum) review of records to determine injury trends. ▪ Implementation of appropriate corrective actions. ▪ Ensuring safety management plans are updated and reviewed. ▪ Wastewater disposal in accordance with Objective 11. 	<p>There were no injuries to the public or any third parties Induction training is provided to all Santos and contractor Employees. Refresher training is provided. Signs are placed to warn the public about the hazards associated with accessing production areas.</p> <p>A Work Permit System is in place and is regularly audited. Santos and Contractor personnel are provided the appropriate PPE.</p> <p>Effective emergency response plans are in place and are regularly tested. Regular emergency exercises are conducted. Potentially hazardous or unusual tasks are communicated to affected parties prior to being undertaken. Injury and incident recording and reporting systems are maintained and interrogated for trend analysis and improvement opportunities. Safety management plans are reviewed and updated regularly.</p>

Environmental Objectives	Assessment Criteria	Guide to How Objectives Can Be Achieved	Performance 2013 Report Period
<p>Objective 2: Minimise disturbance and avoid contamination to soil.</p>	<p><u>Construction Activities (e.g. pipelines and roads)</u></p> <ul style="list-style-type: none"> ▪ No evidence of significant subsoil on surface (colour) on the pipeline ROW following construction. ▪ No subsidence is evident over pipeline trench. ▪ At pipeline dune crossings, dune profiles have been restored consistent with surrounding dune profiles. ▪ No visual evidence of soil compaction following remediation of the pipeline easement (e.g. hard soil, local water pooling). ▪ The extent of erosion on the ROW is consistent with surrounding land. ▪ No unauthorised off-road driving or creation of shortcuts. ▪ No construction activities are carried out on salt lakes or steep tableland slopes (as defined in EIR). ▪ 0, +1 or +2 GAS criteria are attained for goals related to this objective 	<p><u>Construction Activities (e.g. pipelines and roads)</u></p> <ul style="list-style-type: none"> ▪ Santos operational procedures and guidelines are in place and will be followed for construction activities, for example to conserve soil resources: <ul style="list-style-type: none"> ▪ topsoil is stockpiled separately from subsoil and respread during reinstatement ▪ no windrows remain after pipeline construction (except on dunes where some windrows are inevitable after re-profiling but will quickly disappear ▪ if a crown over the pipeline trench is left to alleviate subsidence, periodic breaches are left to avoid channelling water flows down the ROW <ul style="list-style-type: none"> ▪ areas of compacted soil are ripped ▪ Consider alternate routes during planning phase to minimise environmental impacts. ▪ Works are restricted to construction ROW. ▪ The need to traverse sensitive land systems and the method of managing the impacts must be justified in accordance with company procedures, recorded and available for auditing. ▪ Annual audit of construction practices. <p><u>Spill Response / Contingency Planning</u></p> <ul style="list-style-type: none"> ▪ Results of emergency response procedures carried out in accordance with Regulation 31 show that an oil spill contingency plan in place in the event of a spill is adequate and any necessary remedial action needed to the plan is undertaken promptly. ▪ Oil spill contingency plan (reviewed annually) is up to date with specific scenarios relating to spills to creeks and floodplain areas. ▪ Spill response equipment is audited annually. ▪ Annual spill response training exercise is undertaken. ▪ Refer to Section 3 “Reporting” for clarification of incident reporting requirements 	<p>Soil disturbance is minimised wherever possible. Rootstock is left intact and top soil is stockpiled for resspreading. This is resspread during site restoration.</p> <p>Off-road driving is actively discouraged. Alternate routes are considered in planning. Work is restricted to ROW.</p> <p>There were no reported incidents involving off-road or off-lease driving during the reporting period.</p> <p>No construction activity is carried out on salt Lakes or steep tablelands. Construction activity within wetland systems is avoided where possible. If unavoidable, internal environmental approval conditions that reflect the sensitivity of the area are placed on the activity.</p> <p>Borrow pit construction is minimised by reuse of any suitable existing borrow pit(s). Borrow pits are restored on an ongoing basis to ensure the most time efficient restoration.</p> <p>Four borrow pits were assessed against the GAS criteria in Table 6.1 of the SEO and were considered restored in 2013 in all Santos operations.</p>

Environmental Objectives	Assessment Criteria	Guide to How Objectives Can Be Achieved	Performance 2013 Report Period
<p>Objective 2 cont: Minimise disturbance and avoid contamination to soil</p>	<p><u>Fuel and Chemical Storage, Handling and Transportation</u></p> <ul style="list-style-type: none"> ▪ No spills/leaks outside of areas designed to contain them. ▪ Soils remediated to a level as determined by the SHI Decision Framework. ▪ Also refer to Objective 12. <p><u>Oil/Condensate Spills (Pipeline/Road Transport)</u></p> <ul style="list-style-type: none"> ▪ No spills/leaks outside of areas designed to contain them. ▪ Level of hydrocarbon continually decreasing for in situ remediation of spills. ▪ Soils remediated to a level as determined by the SHI Decision Framework. <p><u>Produced Formation Water (PFW)</u></p> <ul style="list-style-type: none"> • 0, +1 or +2 GAS criteria are attained for goals related to produced formation water impacts on soil. • PFW EMP developed and objectives achieved. 	<p><u>Fuel and Chemical Storage, Handling and Transportation</u></p> <ul style="list-style-type: none"> ▪ All fuel, oil and chemicals are stored, handled and transported in accordance with appropriate standards and guidelines e.g. Australian Standard AS 1940, Australian Dangerous Goods (ADG) Code, EPA guidelines <i>080/07 Bunding and Spill Management</i>. ▪ Fuel and chemical storage, handling and transport procedures are reviewed and monitored in audit process. ▪ Records of spill events and corrective actions are maintained in accordance with company procedures. ▪ Spills or leaks are immediately reported and clean up actions initiated. ▪ Logged incidents are reviewed annually to determine areas that may require corrective action to reduce spill volumes in subsequent years (and drive continual improvement). ▪ Audit against EHSMS standards for underground storage tanks and bunds on a four yearly minimum frequency. <p><u>Oil/Condensate Spills (Pipeline/Road Transport)</u></p> <ul style="list-style-type: none"> ▪ Pipelines are compliant with AS2885 pipeline standards ▪ Pipeline Management System is reviewed annually. ▪ Pipelines are inspected and maintained in accordance with Pipeline Integrity Management System ▪ Spills or leaks are immediately reported and clean up actions initiated. ▪ Records of spill events and corrective actions are maintained in accordance with company procedures. <p><u>Produced Formation Water (PFW)</u></p> <p>Develop (in consultation with PIRSA and the EPA) and implement Environmental Management Plan (EMP) following the PFW facility status review that has been conducted.</p>	<p>Spills that occurred outside areas designed to contain them are reported at quarterly meetings.</p> <p>Records of spills are maintained within Santos' Incident Management System, in accordance with the internal EHS management system.</p> <p>Spills are reported in accordance with legislative and company requirements.</p> <p>Incident report databases are reviewed to assess areas requiring improvement and to implement ongoing improvement.</p> <p>No new incidences of impact to groundwater identified in the reporting period.</p> <p>PFW management, current and future requirements continue to be assessed.</p>

Environmental Objectives	Assessment Criteria	Guide to How Objectives Can Be Achieved	Performance 2013 Report Period
<p>Objective 2 cont: Minimise disturbance and avoid contamination to soil</p>	<p><u>Waste Disposal (domestic, sewage and sludges)</u></p> <ul style="list-style-type: none"> ▪ All domestic wastes are disposed of in accordance with EPA licensing requirements. ▪ No evidence of rubbish or litter on ROW or at campsites / facilities. ▪ No spills or leaks from sludge treatment process and sludge pits. ▪ No increase in contamination at LTUs designated treatment area. Refer to assessment criteria for Objective 11. 	<p><u>Waste Disposal (domestic, sewage and sludges)</u></p> <ul style="list-style-type: none"> ▪ Site activities to be audited against EPA licence for Waste Depot on a minimum two years schedule. ▪ EHS04 Waste Management is adhered to. ▪ Audit against EHS04 Waste Management – 4 yearly minimum. ▪ Covered bins are provided for the collection and storage of wastes. ▪ All loads of rubbish are covered during transport to the central waste facility. ▪ Disposal areas are not established in locations which pose an unacceptable hazard to stock or wildlife. ▪ Sewage treatment facilities to be operated in accordance with design criteria. Refer to Objective 11. 	<p>Domestic wastes are disposed of in accordance with EPA Licence Requirements.</p> <p>EPA conducted an audit of the Moomba Waste Management Facility in 2013.</p> <p>Waste bins and containers are covered during transport and in dedicated, fenced laydown yards at the major satellites.</p> <p>New landfill cell in operation and is operated as per EPA licence 2569.</p> <p>Landfill cells are located only at authorised facilities and are fenced to exclude stock and wildlife.</p> <p>There were no incidents at installed sewage disposal facilities.</p>
<p>Objective 3: Avoid the introduction or spread of pest plants and animals and implement control measures as necessary.</p>	<ul style="list-style-type: none"> ▪ No weeds or feral animals are introduced to, or spread in, operational areas as a consequence of activities. ▪ Weed management plans are implemented where priority weed species are identified. 	<ul style="list-style-type: none"> ▪ Where appropriate, weed and feral animal management strategy is in place (avoidance and control strategies). ▪ Vehicle and equipment wash downs to be initiated in accordance with the management strategy. 	<p>Weed and feral animal strategies are in place.</p> <p>There is no evidence of the introduction of feral animals.</p> <p>Buffel grass management steps have been implemented to control the spread of buffel grass within Santos' operational areas.</p>

Environmental Objectives	Assessment Criteria	Guide to How Objectives Can Be Achieved	Performance 2013 Report Period
<p>Objective 4: Minimise disturbance to drainage patterns and avoid contamination of surface waters and shallow ground water resources.</p>	<p><u>Construction Activities (e.g. pipelines and roads)</u></p> <ul style="list-style-type: none"> ▪ 0, +1 or +2 GAS criteria are attained for goals related to this objective as listed in Appendix 1 and 2. ▪ Construction activities (e.g. access tracks or pipelines) are located and constructed to maintain pre-existing water flows (i.e. channel contours are maintained on floodplains and at creek crossings). ▪ No water (surface or groundwater) contamination as a result of construction activities. <p><u>Produced Formation Water (PFW)</u></p> <ul style="list-style-type: none"> ▪ Refer to assessment criteria for Objective 2. ▪ No unlicensed discharge of water to a creek, river or lake. <p><u>PFW Waterflood</u></p> <ul style="list-style-type: none"> ▪ No significant change in surface or groundwater contamination as a result of waterflood activities. 	<p><u>Construction Activities (e.g. pipelines and roads)</u></p> <ul style="list-style-type: none"> • Constructed activities undertaken are designed and managed to avoid diversion of water flows. • Sensitive land systems (e.g. wetlands) avoided wherever possible. Where activities are undertaken in or near these areas, appropriate review, assessment and mitigation measures are in place to ensure that surface water flows are maintained and contamination of surface water and groundwater is avoided. <p><u>Produced Formation Water (PFW)</u></p> <ul style="list-style-type: none"> ▪ Refer to Objective 2. ▪ Water disposal ponds are located away from areas which are inundated during floods where possible (preferably above the 100-year flood level). ▪ Interceptor pits are not located in areas prone to inundation by flooding. <p><u>PFW Waterflood</u></p> <ul style="list-style-type: none"> ▪ Pumps and associated equipment installed within containment device with an adequately sized containment sump (e.g. at least 9m³). ▪ Refer to Objective 2. 	<p>Drainage channels and patterns are maintained or restored, so as to minimise impeding or changing natural drainage patterns associated with well leases, access tracks and roads and at creek crossings.</p> <p>Work programs are modified to avoid periods of flooding and other seasonal influences and variations.</p> <p>Assessment of PFW facilities against the GAS criteria in Table 6.2 of the SEO is conducted and improvement actions implemented as required.</p> <p>There was no report of produced formation water discharged to a creek, river or lake during the reporting period.</p> <p>There has been no identified change in surface or groundwater contamination, as a result waterflood activities, during the reporting period.</p>

Environmental Objectives	Assessment Criteria	Guide to How Objectives Can Be Achieved	Performance 2013 Report Period
<p>Objective 4 cont Minimise disturbance to drainage patterns and avoid contamination of surface waters and shallow ground water resources.</p>	<p><u>Fuel and Chemical Storage, Handling and Transportation</u></p> <ul style="list-style-type: none"> ▪ Soils remediated to a level as determined by the SHI Decision Framework. Also refer to Objective 12. ▪ No water (surface or groundwater) contamination as a result of these activities. <p><u>Cooper Creek Water Extraction</u></p> <p>No significant change in flow or contamination as a result of extraction activities.</p>	<p><u>Fuel and Chemical Storage, Handling and Transportation</u></p> <ul style="list-style-type: none"> ▪ All fuel, oil and chemicals are stored, handled and transported in accordance with appropriate standards e.g. Australian Standard AS 1940, Australian Dangerous Goods (ADG) Code, EPA guideline <i>080/07 Bunding and Spill Management</i>. ▪ Fuel and chemical storage, handling and transport procedures are reviewed and monitored in an audit process. ▪ Records of spill events and corrective actions are maintained in accordance with company procedures. ▪ Spills or leaks are immediately reported and clean up actions initiated. ▪ Logged incidents are reviewed annually to determine areas that may require corrective action to reduce spill volumes in subsequent years (and drive continual improvement). ▪ Implementation of the SHI Decision Making Framework approved in January 2010. <p><u>Cooper Creek Water Extraction</u></p> <p>Approval to conduct surfacewater extraction from Cooper Creek is subject to the following conditions:</p> <ul style="list-style-type: none"> ▪ An approvals request for any proposed extraction is raised internally. This request will include estimated total volume required. ▪ The above request must demonstrate that PFW and Borewater of an acceptable quality cannot be sourced within an economically viable haulage distance (maximum 2 hour return journey). ▪ Any approved extraction occurs where water flow at Callamurra is $\geq 2.15\text{m}$ ($\geq 0.1\text{m}$ flow at Innamincka Causeway) and rising, and never at permanent water refuges (e.g Callamurra). Maps of approved surfacewater extraction points at Innamincka, Kudrieke and Mitchie Crossings are included in Appendix 2 of the EIR Addendum (Santos, 2010). ▪ Cumulative extraction volume to be capped at 15 ML per year. ▪ Cumulative extraction volumes to be recorded in monitoring database and included in annual PIRSA reporting. ▪ Non-conformance with the above is a reportable incident - see Section 3 "Reporting" for incident definitions 	<p>Records of spills are maintained within Santos' Incident Management System, in accordance with the internal EHS management system.</p> <p>Spills are reported in accordance with legislative and internal reporting requirements.</p> <p>Incident report databases are reviewed to assess areas requiring improvement and to implement ongoing improvement.</p> <p>Santos took no water from the Cooper Creek in South Australia under this allocation during the reporting period.</p>

Environmental Objectives	Assessment Criteria	Guide to How Objectives Can Be Achieved	Performance 2013 Report Period
<p><u>Objective 4 cont</u></p>	<p><u>Waste Disposal (domestic, sewage and sludges)</u></p> <ul style="list-style-type: none"> ▪ Refer to assessment criteria for Waste Disposal for Objective 2. ▪ Refer to assessment criteria for Objective 11. <p><u>Oil/Condensate Spills (Pipeline/Road Transport)</u></p> <ul style="list-style-type: none"> ▪ No spills/leaks outside of areas designed to contain them. ▪ Level of hydrocarbon continually decreasing for in situ remediation of spills. <p>Soils remediated to a level as determined by the SHI Decision Framework.</p>	<p><u>Waste Disposal (domestic, sewage and sludges)</u></p> <ul style="list-style-type: none"> ▪ Site activities to be audited against EPA licence for waste depot on a minimum of every two years. ▪ Audit against EHS04 Waste Management – 4 yearly minimum. ▪ Covered bins are provided for the collection and storage of wastes. ▪ All loads of rubbish are covered during transport to the central waste facility. ▪ Pits are not established in locations which pose an unacceptable hazard to stock or wildlife. ▪ Sewage treatment facilities to be operated in accordance with design criteria. <p><u>Oil/Condensate Spills (Pipeline/Road Transport)</u></p> <ul style="list-style-type: none"> ▪ Pipelines are compliant with AS2885 pipeline standards. ▪ Pipeline Management System is reviewed annually. ▪ Pipelines are inspected and maintained in accordance with Pipeline Integrity Management System. ▪ Spills or leaks are immediately reported and clean up actions initiated. ▪ Records of spill events and corrective actions are maintained in accordance with company procedures. ▪ Refer to Section 3 “Reporting” for clarification of incident reporting requirements <p><u>Spill Response / Contingency Planning</u></p> <ul style="list-style-type: none"> ▪ Results of emergency response procedures, carried out in accord with Regulation 31, show that the oil spill contingency plan in place in the event of a spill is adequate and any necessary remedial action needed to the plan is undertaken promptly. ▪ Oil spill contingency plan (reviewed annually) is up to date with specific scenarios relating to spills to creeks and floodplain areas. ▪ Spill response equipment is audited annually. <p>Annual spill response training exercise is undertaken.</p>	<p>Oil/condensate spills outside of areas designed to contain them are reported externally in accordance with the incident reporting requirements under the SEO.</p> <p>Emergency response procedures for spill response are in place and regularly tested. Emergency response plans are updated to reflect learnings from exercises and actual events.</p>

Environmental Objectives	Assessment Criteria	Guide to How Objectives Can Be Achieved	Performance 2013 Report Period
<p>Objective 5: Avoid disturbance to sites of cultural and heritage significance.</p>	<ul style="list-style-type: none"> ▪ Proposed well sites and access tracks have been surveyed and any sites of Aboriginal and non-Aboriginal heritage identified. ▪ Any identified cultural and heritage sites have been avoided. 	<ul style="list-style-type: none"> ▪ Consultation with stakeholders (i.e. government agencies, landholders etc) in relation to the possible existence of heritage sites, as necessary. ▪ Heritage report forms completed for any sites or artefacts identified, and report forms forwarded to the Aboriginal Heritage Branch, Aboriginal Affairs and Reconciliation Division (AARD). ▪ Survey records are kept and are available for auditing. ▪ Areas requiring remediation which lie outside previously surveyed sites should be surveyed in accordance with company heritage clearance procedures. ▪ A procedure is in place for the appropriate response to any sites discovered during drilling activities. <p><u>Note:</u> Where a negotiated agreement or determination for heritage clearance is in place, compliance with the negotiated agreement or determination takes precedence over the above criteria.</p>	<p>Internal environmental standards indicate when there is a need for cultural heritage clearance and if required, cultural heritage approval is received prior to works commencing.</p> <p>Identified cultural heritage sites are avoided. Significant sites are fenced.</p>
<p>Objective 6: Minimise loss of aquifer pressure and avoid aquifer contamination.</p>	<ul style="list-style-type: none"> ▪ There is no uncontrolled flow to the surface (i.e. no free flowing bores). <p><u>Produced Formation Water (PFW) Waterflood Injection Wells</u></p> <p>No significant change in water quality from the injection aquifer</p>	<ul style="list-style-type: none"> ▪ The volume/flow of water used by the Moomba Plant is continuously monitored to ensure appropriate management. ▪ Water usage is monitored, reviewed and management strategies implemented to minimise wastage. ▪ Review water licensing requirements and allocation plans. <p><u>Produced Formation Water (PFW) Waterflood Injection Wells</u></p> <ul style="list-style-type: none"> ▪ Aquifer water quality monitored where appropriate through testing carried out during Waterflood activities. 	<p>There were no well failures reported during 2013.</p> <p>Santos is in compliance with water licence requirements and allocation plans.</p>

Environmental Objectives	Assessment Criteria	Guide to How Objectives Can Be Achieved	Performance 2013 Report Period
<p>Objective 7: Minimise disturbance to native vegetation and native fauna.</p>	<p><u>Construction Activities</u></p> <ul style="list-style-type: none"> ▪ Any sites of rare, vulnerable and endangered flora and fauna have been identified, flagged and subsequently avoided. ▪ No removal of trees / vegetation of priority 1, 2 or 3 in Field Guide¹ in areas where removal could have been avoided. ▪ No removal of trees at campsites. ▪ No evidence of tree removal where trimming appropriate. ▪ The type and density of vegetation on the rehabilitated ROW is consistent with the surrounding landscape, but less mature. Note: assessment will take into account that regrowth is a time and rainfall dependent process. ▪ 0, +1 or +2 GAS criteria are attained for goals related to this objective as listed in Appendix 6.1 and 6.2. 	<p><u>Construction Activities</u></p> <ul style="list-style-type: none"> ▪ Proposed construction areas have been assessed for rare, vulnerable and endangered flora and fauna species before the commencement of construction. ▪ Consider alternate routes during planning phase to minimise environmental impacts. ▪ Sensitive land systems (e.g. wetlands) avoided wherever possible. Where activities are undertaken in these areas (i.e. no practicable alternative), appropriate review, assessment and mitigation measures are in place. ▪ Assessment records are kept and are available for auditing. ▪ Optimised ROW widths are identified and implemented. ▪ Trees are trimmed rather than cleared where possible. ▪ Root stock is not removed beyond 3m of trenchline and ROW is either only lightly graded or not graded. Where vegetation is removed, it is respread over the full width of the ROW (excluding the access track). 	<p>Ecological assessments and site scoutings are undertaken to assess habitats for rare, vulnerable and endangered species prior to construction activities. Environmentally sensitive areas identified are avoided.</p> <p>Vegetation impacts are minimised during well lease access and construction by scouting surveys prior to the entry of construction machinery.</p> <p>Flowline construction procedures involve site scouting and ecological assessment. Wherever possible, significant vegetation is avoided by altering the proposed flowline route.</p>

¹ Field Guide refers to the *Field Guide to the Common Plants of the Cooper Basin – South Australia and Queensland* (Wiltshire and Schmidt 2003)

Environmental Objectives	Assessment Criteria	Guide to How Objectives Can Be Achieved	Performance 2013 Report Period
<p><u>Objective 7 Cont</u></p>	<p><u>Borrow Pits</u></p> <ul style="list-style-type: none"> ▪ 0, +1 or +2 GAS criteria for goals related to this objective, as listed in Appendix 1 are attained during site selection and construction. <p><u>Fuel and Chemical Storage and Management</u></p> <ul style="list-style-type: none"> ▪ Refer to assessment criteria for objectives 2 and 4. <p><u>Waste Management</u></p> <ul style="list-style-type: none"> ▪ Refer to assessment criteria for Objective 2, 4 and 11. 	<p><u>Borrow Pits</u></p> <ul style="list-style-type: none"> ▪ Pits are not established in locations which pose an unacceptable hazard to stock or wildlife (i.e. not within 50m of any roads or access tracks, well leases or other plant and equipment). ▪ Sensitive land systems (e.g. wetlands) avoided wherever possible. Where activities are undertaken in these areas (i.e. no practicable alternative), appropriate review, assessment and mitigation measures are in place. ▪ Borrow pits are restored as soon as practicable after material extraction is complete to a standard consistent with the surrounding land use. ▪ Borrow pits are restored to minimise water holding capacity, where agreements are not in place with stakeholders ▪ In recognised conservation reserves (i.e. Innamincka Regional Reserve) excavations are left in a state as agreed with the responsible statutory body. <p><u>Fuel and Chemical Storage and Management</u></p> <p>Refer to Objectives 2 & 4.</p> <p><u>Waste Management</u></p> <ul style="list-style-type: none"> ▪ Covered bins are provided for the collection and storage of putrescible wastes. ▪ All loads of rubbish are covered during transport to the central waste facility. ▪ Pits are not established in locations which pose an unacceptable hazard to stock or wildlife. ▪ Sewage treatment facilities to be operated in accordance with design criteria. ▪ PFW pits are fenced as appropriate to minimise wildlife access. 	<p>Borrow pit site selection provides for the avoidance of vegetation impacts. Borrow pits are restored on an ongoing basis.</p> <p>Borrow pits are re-accessed in preference to new disturbance to minimise vegetation impacts and reduce ground disturbance footprint.</p>

Environmental Objectives	Assessment Criteria	Guide to How Objectives Can Be Achieved	Performance 2013 Report Period
<p><u>Objective 7 Cont</u></p>	<p><u>Native Vegetation Act SEB</u></p> <ul style="list-style-type: none"> ▪ Significant Environmental Benefit (SEB) for native vegetation clearance approved by PIRSA (where delegated authority applies) or Native Vegetation Council (NVC). ▪ Significant environmental benefit obligation is ultimately satisfied / implemented. <p><u>Fauna Management</u></p> <ul style="list-style-type: none"> ▪ Native fauna casualties associated with construction ▪ Activities restricted to as low as reasonably practical (ALARP). 	<p><u>Native Vegetation Act SEB</u></p> <ul style="list-style-type: none"> ▪ Work (or payment to Native Vegetation Fund) undertaken to achieve an SEB for native vegetation clearance. ▪ SEB requirement either: <ul style="list-style-type: none"> - determined using the Guidelines (DWLBC 2005) or - negotiated with PIRSA or the Native Vegetation Council where SEB calculation differs from the standard methodology in the Guidelines. <p><u>Fauna Management</u></p> <ul style="list-style-type: none"> ▪ No domestic pets allowed at camps or worksites. ▪ Feeding of wildlife (e.g. dingoes) is not permitted. ▪ Where possible, provision of fauna exit ramps every 500m in open trenches, with other mechanisms for fauna exit (branches, mesh etc.) at more regular intervals in between. ▪ Inspection of trenches and removal of trapped fauna, where appropriate. ▪ Minimise length of time trench is open where practicable. 	<p>Santos' SEB contribution has been accepted for the 2013 reporting period.</p> <p>Internal environmental approvals provide conditions for the monitoring of open excavations for the presence of fauna.</p> <p>Some instances of native fauna casualties occurred during construction activities in 2013, despite the implementation of controls such as fauna egress ramps, inspections and limiting the time trenches were open. This outcome is considered as low as reasonably practical.</p>

Environmental Objectives	Assessment Criteria	Guide to Objectives Achievement	Performance 2013 Report Period
<p>Objective 8: Minimise air pollution and greenhouse gas emissions.</p>	<p><u>Gathering Systems/Satellite Facilities/Moomba Plant</u></p> <ul style="list-style-type: none"> ▪ Compliance with EPA requirements. 	<p><u>Gathering Systems/Satellite Facilities/Moomba Plant</u></p> <ul style="list-style-type: none"> ▪ Conduct production operations in accordance with appropriate industry accepted standards. ▪ Continually review and improve operations. ▪ Appropriate Emergency Response Procedures are in place in case of a gas leak. 	<p>Flares and emissions are conducted, monitored and/or reported in accordance with EPA requirements.</p>
<p>Objective 9: Maintain and enhance partnerships with the Cooper Basin community.</p>	<ul style="list-style-type: none"> ▪ No reasonable stakeholder complaints left unresolved. 	<ul style="list-style-type: none"> ▪ Relevant affected parties are notified and consulted on proposed activities. ▪ Forward development plans are presented to the local community. ▪ Local community projects and events are sponsored and supported where appropriate. ▪ Industry membership of appropriate regional land management committees and boards 	<p>Relevant parties are notified and consulted on proposed activities. There were no complaints, concerns or issues left unresolved.</p> <p>Local community events and activities are actively supported. Examples include the Cooper Cup, Innamincka races and access for the local community to Santos facilities.</p> <p>Membership and active participation is made to regional management committees and Boards.</p>

Environmental Objectives	Assessment Criteria	Guide to How Objectives Can Be Achieved	Performance 2013 Report Period
<p>Objective 10: Avoid or minimise disturbance to stakeholders and/or associated infrastructure</p>	<ul style="list-style-type: none"> ▪ No reasonable stakeholder complaints left unresolved. <p><u>Cooper Creek Water Extraction</u></p> <ul style="list-style-type: none"> ▪ No impacts on local stakeholders from the extraction of water from the creek system. ▪ Refer to Objective 4. 	<ul style="list-style-type: none"> ▪ Induction for all employees and contractors covers pastoral, conservation, tourism, legislation and infrastructure issues. ▪ Relevant stakeholders are notified prior to survey and construction of well sites, camp sites and access tracks and undertaking of operations (pursuant to the Regulations). Borrow pits left open (unrestored) if requested by stakeholder and upon receipt of letter of transfer of responsibility to stakeholder. ▪ Gates or cattle grids are installed to a standard, consistent with pastoral infrastructure instead of fences where crossings are required for access. ▪ All gates left in the condition in which they were found (i.e. open/closed). ▪ Fences repaired to 'as before' standard following pipeline construction. ▪ Potential sources of contamination (e.g. formation water ponds) are fenced as appropriate to prevent stock access. ▪ Written evidence that stakeholder is satisfied with water disposal arrangements. ▪ System is in place for logging stakeholder complaints to ensure that issues are addressed as appropriate. ▪ Requirements of the Cattle Care and Organic Beef accreditation programs are complied with. ▪ In recognised conservation reserves (i.e. Innamincka Regional Reserve) excavations are left in a state as agreed <p><u>Cooper Creek Water Extraction</u> Refer to Objective 4.</p>	<p>Santos employees and contractors understand the importance of developing and maintaining good relationships with landholders.</p> <p>Relevant stakeholders are notified of and consulted about projects, and are provided with information and maps, where a Notice of Entry is required.</p> <p>No Borrow pits were formally transferred to landholders.</p> <p>Grids, fences, gates installed are to a standard acceptable to the landholder.</p> <p>All gates are left "as found".</p> <p>Production facility fencing continues to be installed and repaired as required.</p> <p>Landholder complaints and requests are logged to ensure closeout. There were no complaints lodged in the reporting period.</p> <p>Cattle management systems (cattle care) are recognised and complied with.</p>

Environmental Objectives	Assessment Criteria	Guide to How Objectives Can Be Achieved	Performance 2013 Report Period
<p>Objective 11: Optimise (in order of most to least preferable) waste avoidance, reduction, reuse, recycling, treatment and disposal</p>	<ul style="list-style-type: none"> ▪ Domestic wastes are disposed of in accordance with EPA licensing requirements. ▪ Wastewater (sewage and grey water) disposed of in accordance with the <i>Public and Environmental Health (Waste Control) Regulations 1995</i> or to the Department of Health's satisfaction. ▪ No spills or leaks from sludge treatment process and sludge pits. ▪ No increase in contamination at LTUs designated treatment area 	<ul style="list-style-type: none"> ▪ Chemicals and oil are purchased in bulk. 'Bulki bins' or other storage tanks are in place for large volume items. ▪ Fencing around waste disposal facility is regularly inspected and maintained. ▪ Waste streams are segregated on site to maximise opportunities for waste recovery, reuse and recycling. ▪ Evidence/records are maintained showing that recyclable material has been returned to Moomba Waste Management Depot. ▪ Production of waste is minimised by specifying reusable, biodegradable or recyclable materials in procurement, where practical. ▪ Waste audit conducted at 5 year minimum interval. ▪ Waste water (sewage) disposal is where possible in accordance with the <i>Public and Environmental Health (Waste Control) Regulations 1995</i> (which require that the waste water disposal system must either comply with the <i>Standard for the Construction, Installation and Operation of Septic Tank Systems in SA</i> or be operated to the satisfaction of the Department of Health) and the <i>Environment Protection (Water Quality) Policy 2003</i>. ▪ Evidence/records maintained to show that appropriately designed sewage facilities have been constructed. 	<p>Chemicals, cement & inhibitors are purchased in bulk containers and stored appropriately.</p> <p>Waste material is disposed of at EPA Approved facilities.</p>

Environmental Objectives	Assessment Criteria	Guide to How Objectives Can Be Achieved	Performance 2013 Report Period
<p>Objective 12: Remediate and rehabilitate operational areas to agreed standards.</p>	<p><u>Contaminated Site Remediation</u></p> <ul style="list-style-type: none"> ▪ Contaminated sites are remediated to a level as determined by the approved SHI Decision Framework. <p><u>Construction Site and Access Track Restoration</u></p> <ul style="list-style-type: none"> ▪ Refer to assessment criteria for Objectives 2, 4, 7 and 11. ▪ 0, +1 or +2 GAS criteria are attained for 'minimise the visual impact' and 'revegetation of indigenous species' as listed in Appendix 4. <p><u>Borrow Pit Restoration</u></p> <ul style="list-style-type: none"> ▪ The attainment of 0, +1 or +2 GAS criteria as in Appendix 1. <p><u>Production Facility Abandonment</u></p> <ul style="list-style-type: none"> ▪ Surface structures are removed and the ground surface re-contoured to approximate pre-existing contours unless alternative agreement is reached with the regulator and stakeholders. ▪ 0, +1 or +2 GAS criteria are attained for 'minimise the visual impact' and 'revegetation of indigenous species' as listed in Appendix 4, unless alternative agreement is reached with the regulator and stakeholders. ▪ Refer to criteria for contaminated site remediation under this objective (above). ▪ Refer to the assessment criteria for Objective 11. 	<ul style="list-style-type: none"> ▪ Rehabilitation/abandonment plans for regulated activities will be developed in consultation with relevant stakeholders. <p><u>Construction Site and Access Track Restoration</u></p> <p>Compacted soil areas have been ripped (except on gibber and tablelands) and soil profile and contours are reinstated following completion of operations.</p> <p><u>Production Facility Abandonment</u></p> <p>The following steps will typically be undertaken unless otherwise agreed with the regulator and stakeholders:</p> <ul style="list-style-type: none"> ▪ hydrocarbon and contaminants will be reduced to an acceptable level in buried structures (e.g. pipelines, tanks, pits) as determined by the approved SHI Decision Framework. ▪ hazardous materials will be stabilised or removed including ground decontamination. ▪ hazardous material dumps will be clearly marked and a monitoring plan developed and implemented. ▪ surface structures will be removed and re-used / recycled where appropriate ▪ waste will be removed and recycled where appropriate (refer to Objective 11). ▪ foundations will be levelled and covered (the standard to which they will be restored will be defined as a result of stakeholder consultations). ▪ disturbed areas will be re-contoured to approximate pre-existing contours, natural drainage restored and compaction relieved (e.g. by scarification or ripping where appropriate) to promote rainwater infiltration and enhance seed capture and germination. ▪ contour banks and energy dissipating structures will be constructed where necessary to protect disturbed areas from erosion prior to stabilisation 	<p>No sites assessed as requiring remediation in 2013.</p> <p>Access tracks are restored in accordance with restoration guidelines.</p> <p>No production facilities were abandoned during the reporting period.</p>

Environmental Objectives	Assessment Criteria	Guide to How Objectives Can Be Achieved	Performance 2013 Report Period
<p><u>Objective 12 Cont:</u></p>	<p><u>Pipeline Abandonment</u> Attainment of the following (unless otherwise agreed with stakeholders and approved by the regulatory authority):</p> <ul style="list-style-type: none"> ▪ No evidence of waste, redundant equipment / infrastructure or signs and markers on abandoned pipelines. ▪ Refer to criteria for contaminated site remediation under this objective (above). ▪ Refer to the assessment criteria for Objective 11. 	<p><u>Pipeline Abandonment</u> The following steps will typically be undertaken unless otherwise agreed with the regulator and stakeholders:</p> <ul style="list-style-type: none"> ▪ all aboveground pipes and supports will be assessed for the condition of the pipe for either salvage or for dismantling and re-use. ▪ all underground pipe work will be cut-off (at a minimum depth of 750mm below the natural surface or at pipeline depth, removed and blinded below the surface. ▪ all aboveground signs and markers will be removed. ▪ all pipeline protection systems will be removed to allow the pipeline to degrade in-situ. ▪ monitoring and auditing of abandoned pipelines will be undertaken. ▪ all pipelines which are partially or wholly left in-situ will be accurately mapped and recorded. Records will be prepared and submitted to the appropriate authority. 	<p>The following flowlines and trunklines were abandoned, or had abandonment and rehabilitation works commence, during the reporting period:</p> <ul style="list-style-type: none"> • Derrilyn #2 flowline <p>Flowlines/trunklines were abandoned and rehabilitated in accordance with AS 2885 and their respective Abandonment and Rehabilitation Plans.</p>
<p><u>Objective 13:</u> Minimise as far as reasonably practicable interruptions to natural gas supply.</p>	<ul style="list-style-type: none"> ▪ No interruptions to natural gas supply that cause significant social disruption. 	<ul style="list-style-type: none"> ▪ Adequate contingencies are in place which seek to address a prudent level of security of supply in the case of short and unforeseen interruption events (e.g. adequate gas storage). ▪ Pipelines are designed, operated and maintained in accordance with AS 2885. ▪ Plant and equipment are designed, operated and maintained in accordance with appropriate industry accepted standards. ▪ Emergency Response Plan (ERP) and associated procedures are in place and exercised. ▪ Results and recommendations of plant and facility hazard reviews, including the five (5) yearly Fitness for Purpose assessment, are appropriately addressed. ▪ Significant operations-specific hazards and risks are summarised in the Significant Hazard Risk Register (SHRR). 	<p>There were no gas supply reduction events from the Moomba Plant during 2013.</p>

13. STATEMENT OF ACTUAL AND PROPOSED EXPENDITURE

2013/2014

Derrilyn (PPL 206, PPL 208, PPL 215)

Confidential

14. GLOSSARY OF TERMS

AIMS	Asset Integrity Management System
ALARP	As Low As Reasonably Practicable
BBLS	Barrels
BP	Beam Pump
DFW	Department for Water (previously DWLBC)
DMITRE	Department for Manufacturing, Innovation, Trade, Resources and Energy (previously PIRSA)
EHS	Environment, Health and Safety
EHSMS	Environment, Health and Safety Management System
EIR	Environmental Impact report
EPA	Environment Protection Authority
ERP	Emergency Response Plan
GAS	Goal Attainment Scaling
GRE	Glass Reinforced Epoxy
HiPo's	High Potential Incidents
IMP	Integrity Management Plan
KPI	Key Performance Indicator
Kbbls	Kilo barrels (1,000 barrels)
LTU	Land Treatment Unit
mm BBLS	Million barrels
PCP	Progressing Cavity Pump
PEL	Petroleum Exploration License
PL	Pipeline Licence
PFW	Produced Formation Water
PPL	Petroleum Production License
PPE	Personal Protective Equipment
RFDS	Royal Flying Doctor Service
ROW	Right of Way (for pipelines)
SACB	South Australian Cooper Basin
SACBJV	South Australian Cooper Basin Joint Venture
SCMP	Santos Crisis Management Plan
SEO	Statement of Environmental Objectives
SHI	Soil Health Index
SIMP	Santos Incident Management Plan

APPENDICES

[Appendix 1](#) DMITRE Meetings - 2013

[Appendix 2](#) List of geological reports and data

Appendix 1 DMITRE Meetings – 2013

Over and above the significant reporting requirement to DMITRE associated with the conduct of operations in the Cooper Basin under the Petroleum and Geothermal Energy Act 2000 and Petroleum and Geothermal Energy Regulations (2000), a series of regular meeting are held with DMITRE at quarterly intervals, to review performance.

These meetings included the following:

Quarterly Santos / DMITRE Performance Meeting

4 th Quarter, 2012	-	8 February 2013
1 st Quarter, 2013	-	10 May 2013
2 nd Quarter, 2013	-	8 August 2013
3 rd Quarter, 2013	-	15 November 2013
4 th Quarter, 2013	-	14 February 2014

Appendix 2 2013 Reports, including Geological and Reserves Reports

Reg #	Routine Yes / No	Report Title	Comment
33	Yes	Annual Report – 2012	
33 (2) e	Yes	Proved + Probable Reserves Data, YE 2012.	
38	Yes	Daily Drilling Reports	
39	Yes	Wireline Logs – Drilling	
	Yes	Wireline Logs – completions	
40	Yes	Well Completion Reports	
41	Yes	Quarterly Cased Hole report	
42	Yes	Well Test Analysis Report	
43	Yes	Petroleum Reservoir Fluid Analysis Report	
44	Yes	Downhole Diagrams	
45	Yes	Production Reports	

2013 Reports In Accordance With Reg 33 (2) (e)

Reg #	Routine Yes / No	Report Title	Comment
33 (2) e	Yes	Proved + Probable Reserves Data, YE 2012.	

PIRSA will be satisfied that Regulation 33 (2) (e) has been complied with if a list of all technical geological reports and data (including those reports required by Regulations 34 to 45) is submitted. This list should include all interpretive geological and reserve reports. This arrangement may be reviewed at any time by PIRSA, but no change will be required unless at least 2 months notice has been given prior to the required submission date for the Annual Report. A copy of this Statement indicating the limitation to the listing should be included in the relevant section of the Annual Report. (From PIRSA correspondence dated 16.8.02).