



Beach Petroleum



Addendum to the Environmental Impact Report: Cooper Basin Petroleum Production Operations

Five Year Review of the Statement of Environmental
Objectives

November 2009

Prepared for:

Beach Petroleum Ltd
25 Conyngham Street
GLENSIDE
South Australia 5065

ph: (08) 8338 2833
fax: (08) 8338 2336

Prepared by:

RPS Ecos Pty Ltd
ABN 57 081 918 194
26 Greenhill Road
WAYVILLE
South Australia 5034

ph: (08) 8357 0400
fax: (08) 8357 0411

DOCUMENT CONTROL SHEET						
ENV 823 – Addendum to Cooper Basin Petroleum Production Operations EIR						
Reference	Rev	Date	Prepared	Reviewed	Approved	Comment
823-Beach EIR Addendum	A	12Sep08	ZB/SM	SM	ZB	Issued to Beach for review
	B	29Sep08	ZB	SM	Beach	Incorporation of Beach edits Issued to PIRSA for review
	C	23Nov09	ZB	SM	Beach	Issued to PIRSA for review

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Appendix A: Beach Petroleum Environmental Policy

1 Introduction

The Beach Petroleum (Beach) *Statement of Environmental Objectives Cooper Basin Petroleum Production Operations, November 2003* (SEO) was prepared and approved in 2003 to meet the requirements of the *Petroleum and Geothermal Energy Act 2000* and to cover Beach's petroleum production activities in the Cooper Basin.

Regulation 14 of the *Petroleum and Geothermal Energy Regulations 2000* requires that an approved SEO must be reviewed at least once in every five years. Consequently, Beach has undertaken a review of the SEO in accordance with Regulation 14. This document provides a summary of the review process and the proposed updates to the SEO.

The original SEO was produced on the basis of an Environmental Impact Report (EIR) (Beach 2003b). This document builds on the information provided in the EIR and has therefore been formulated as an *Addendum to the EIR*.

1.1 Scope and Methodology

The scope of the SEO review was based on the requirements of regulation 14(2) of the *Petroleum and Geothermal Energy Regulations 2000*, which states that a review must take into account, or address:

- (a) changes in information or knowledge in relevant areas
- (b) community expectations in relation to relevant environmental issues
- (c) changes in the use of land
- (d) changes in operational practices
- (e) other matters determined to be relevant by the Minister.

The following steps were undertaken in the review:

- a brief review of the information provided in the *Environmental Impact Report: Cooper Basin Petroleum Production Operations, November 2003* (EIR) was undertaken, with particular reference to items (a), (c) and (d) above
- discussions were held with PIRSA to discuss the review process and any key issues with the SEO
- an audit of current Beach production operations was conducted to compare current activities against the SEO and identify any discrepancies or required changes to the SEO
- the information in the SEO was reviewed to assess whether it was current, relevant and adequate
- the SEO was updated where appropriate based on the above information
- following internal Beach review, the revised SEO was submitted to PIRSA.

When considering revisions for the SEO, the reviewers were mindful that the SEO is in continual use, and its objectives are reflected throughout other documentation (e.g. in procedures and environmental management system documents). For this reason, all potential revisions were scrutinised to ensure that they were clearly necessary or beneficial, rather than representing slightly different wording that would achieve the same end result.

2 Information in the EIR

A brief review of the Environmental Impact Report was undertaken to determine whether there were any areas of relevance to the SEO where information required updating, with particular reference to the matters listed in Section 1.1.

In general, the information in the EIR was considered to provide an adequate basis for the preparation of the revised SEO. Only relatively minor updates would be required to ensure

currency of information relevant to the SEO. Consequently, a full revision of the EIR was not undertaken.

The updates to information of relevance to the SEO are discussed below.

2.1 Updates

2.1.1 Environmental Management

The Beach Environmental Policy was revised in May 2006. A copy of the revised policy is provided in Appendix 1.

2.1.2 Regulatory Framework

Legislation

There have been a number of changes to the agencies and legislation that govern any additional environmental approvals that may be required for an activity. An amended summary table of additional environmental approvals is provided below.

Table 1: EIR Addendum – Additional Environmental Approvals

Agency	Legislation	Issue
Commonwealth		
Department of the Environment, Water, Heritage and the Arts	<i>Environment Protection and Biodiversity Conservation Act 1999</i> (EPBC Act)	Assessment and approval required if activities will significantly impact matters of national environmental significance, including: <ul style="list-style-type: none"> ▪ wetlands of international importance (Ramsar wetlands) ▪ listed threatened species and communities, and ▪ listed migratory species (for example JAMBA and CAMBA).
South Australia		
Department for Environment and Heritage (DEH)	<i>Heritage Places Act 1993</i>	Permission required if listed heritage places or related objects are to be destroyed / disturbed.
Aboriginal Affairs and Reconciliation Division, Dept of the Premier and Cabinet	<i>Aboriginal Heritage Act 1988</i>	Permission required if Aboriginal relics are to be destroyed. (Refer to report on work area clearance).

Agency	Legislation	Issue
Department for Water, Land and Biodiversity Conservation (DWLBC)	<i>Native Vegetation Act 1991</i>	The <i>Native Vegetation Act</i> provides an exemption for operations authorised under the Petroleum and Geothermal Energy Act (Regulation 5 (1) (zd)) and vegetation clearance is permitted, provided that: <ul style="list-style-type: none"> ▪ the clearance is undertaken in accordance with a SEO and the Native Vegetation Council has signified that, as a result of work undertaken in accordance with the SEO, there will be a 'significant environmental benefit' (SEB) at the site of the operations or within the same region of the State, or ▪ the person undertaking the clearance makes a payment into the Native Vegetation Fund of an amount considered by the Native Vegetation Council to be sufficient to achieve a 'significant environmental benefit'.
DEH	<i>National Parks & Wildlife Act 1972</i>	'Taking' of protected plant and animal species. Undertaking regulated activities in Regional Reserves.
DWLBC	<i>Natural Resources Management Act 2004</i>	Water sourcing.
PIRSA	<i>Mining Act 1971</i>	Borrow pits.

Native Vegetation Act and Regulations

The South Australian *Native Vegetation Act 1991* and the *Native Vegetation Regulations 2003* apply to vegetation clearance for petroleum operations. Under Regulation 5(1)(zd), petroleum operations are permitted to clear native vegetation, provided that either:

- the clearance is undertaken in accordance with a SEO and the Native Vegetation Council has signified that, as a result of work undertaken in accordance with the SEO, there will be a 'significant environmental benefit' (SEB) at the site of the operations or within the same region of the State, or
- the project makes a payment into the Native Vegetation Fund of an amount considered by the Native Vegetation Council to be sufficient to achieve a 'significant environmental benefit'.

A 'significant environmental benefit' is typically achieved by undertaking works to establish, regenerate, preserve or maintain native vegetation.

In accordance with Regulation 5(1)(zd), the Beach Production SEO has been updated to incorporate the requirement to achieve a SEB.

2.1.3 Production Operations

Production Facilities

Beach currently operates six oil production facilities, under Petroleum Production Licences (PPLs), in the Cooper Basin, as summarised in Table 2.

Table 2: Beach Production Operations

Licence No.	Location/Field	No. Wells
PPL 204	Sellicks Field	3
PPL 205	Christies Field	5
PPL 210	Aldinga Field	1
PPL 212	Kiana Field	1
PPL 220	Callawonga Field	4
PPL 224	Parsons	2

The location of operations is provided in Figure 1 and Figure 2.

Section 3 of the EIR provides information on the production facilities at Sellicks, Aldinga and Christies. The more recent facilities at Kiana, Callawonga and Parsons are not included. A summary of the facilities at these sites is provided in Table 3.

Table 3: Production Facilities at Kiana, Callawonga and Parsons

	Kiana	Callawonga	Parsons
Facility Components	Producing wells Gathering lines Tanks Tanker loading facility Produced formation water ponds	Producing wells Gathering lines Tanks Tanker loading facility Produced formation water ponds Pipelines (from Parsons and to Tantanna) Short-term accommodation for 1 person.	Producing wells Gathering lines Tanks Tanker loading facility Produced formation water ponds Pipeline to Callawonga.

Flowlines / Pipelines

Beach currently owns and operates two inter-field flowlines in the Cooper Basin, the Callawonga-Tantanna Flowline and the Parsons-Callawonga Flowline. The location of these flowlines is shown in Figure 3 and Figure 4.

Land Treatment/Soil Remediation Areas

Beach do not currently have any land treatment units (LTUs) in the Cooper Basin. However, consideration is being made to the establishment of a site at Callawonga to allow for on-site remediation and eliminate the transportation of material to Moomba, predominantly as a contingency in case a larger spill occurs.

Figure 1: Beach Petroleum Cooper Basin Operations – PEL 91 & PEL 92

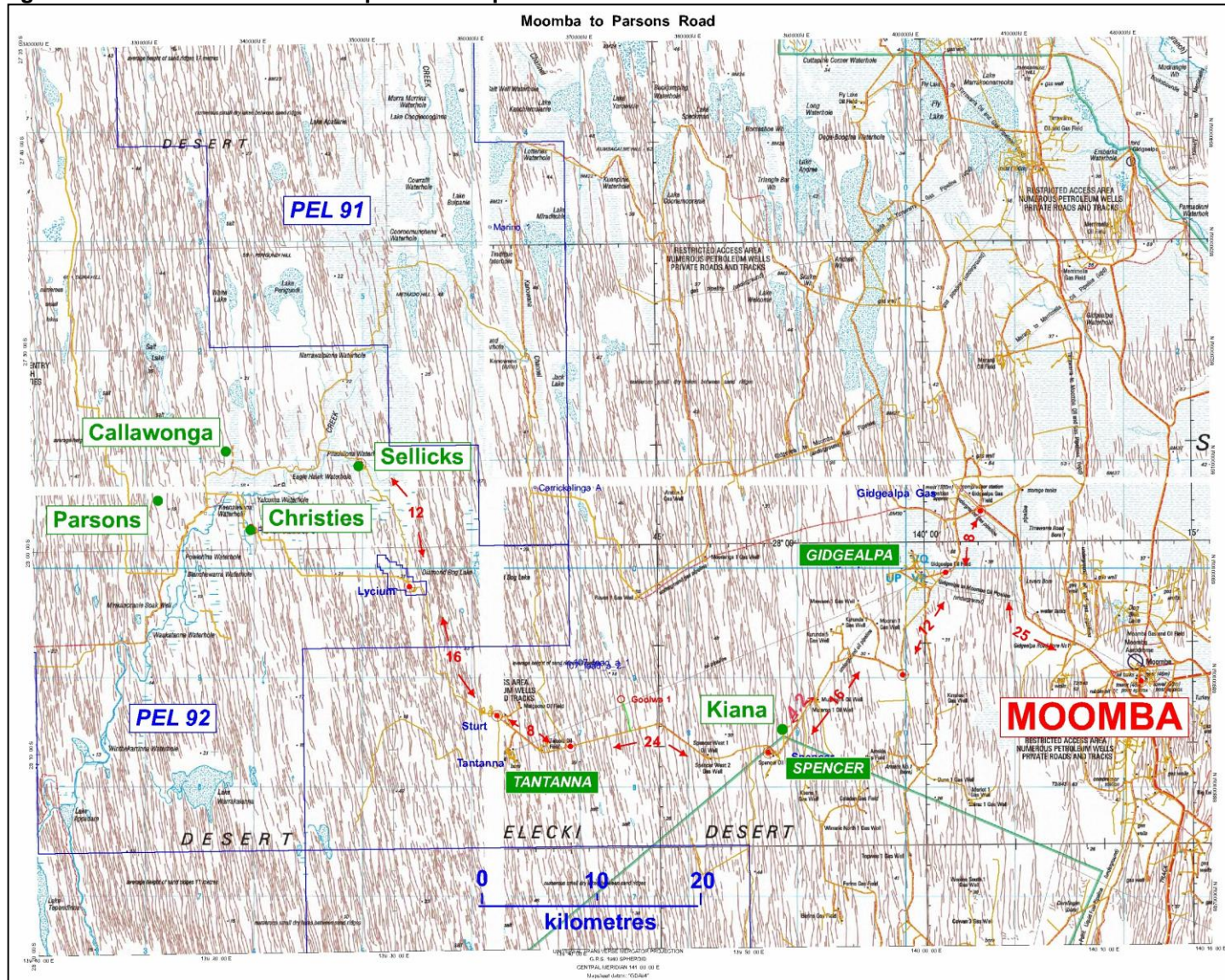


Figure 2: Beach Petroleum Cooper Basin Operations – PEL 94 & PEL 95

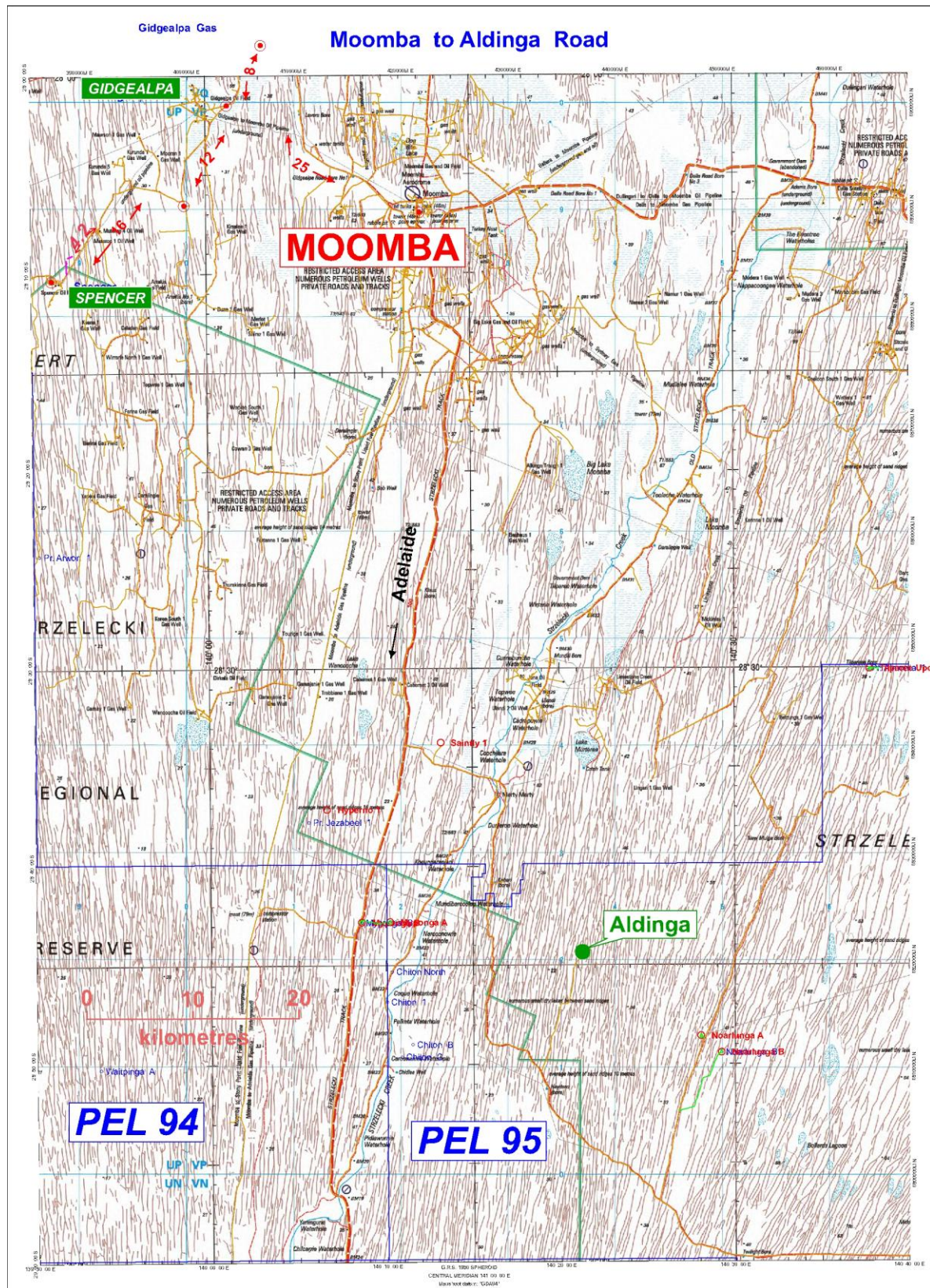


Figure 3: Location of the Callawonga-Tantanna Flowline

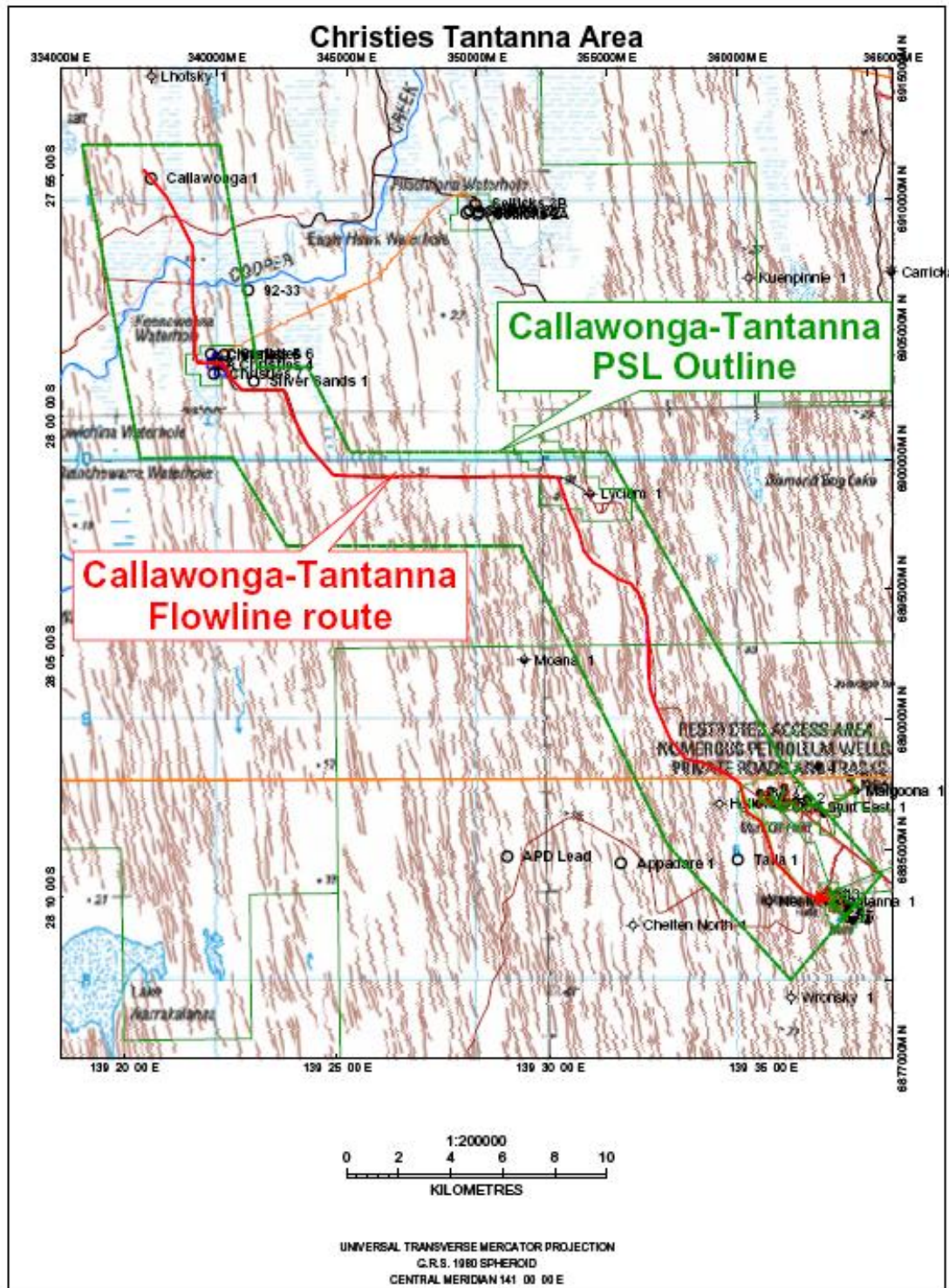
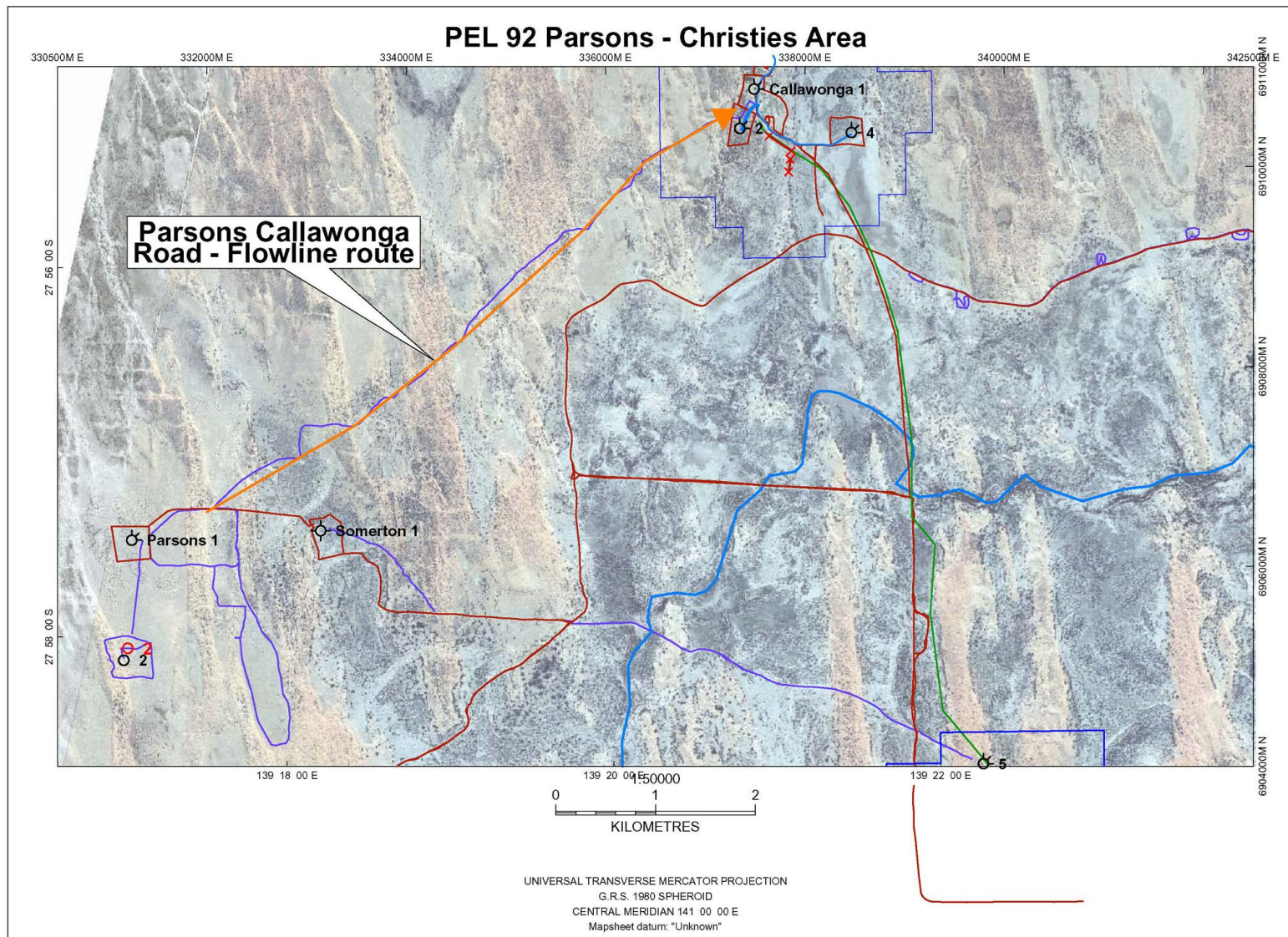


Figure 4: Location of the Parsons-Callawonga Flowline



2.1.4 Existing Environment

Beach Production Facilities – Environment Description

Section 4.2 of the EIR provides a description of the local environment at the Sellicks, Aldinga and Christies facilities. The more recent facilities at Kiana, Callawonga and Parsons are not included. An environmental description for each of these new sites is provided in Table 4.

Table 4: Local Environments at the Kiana, Callawonga and Parsons Facilities

	Kiana	Callawonga	Parsons
Landform & Soils	<p>Located in a dunefield, in the Strzelecki land system¹.</p> <p>The sands at the site are orange-yellow sand to sandy clays and are typical of Strzelecki interdunes and dunes</p>	<p>Located on a floodplain within the Cooper land system¹.</p> <p>Soils at the site are typical of the Cooper landsystem, which range from a sandy clay layer and areas of grey self-mulching cracking clay soils with "crabholes" on the floodplain, to sandy loams on the sandplain sitting slightly above the level of the Coolibah flats</p>	<p>Located on a broad sandy swale between sand dunes in the Strzelecki land system.</p> <p>Soils at the site are pale sandy clay loams and are typical of Strzelecki interdunes and dunes</p>
Drainage	<p>The site is located approx. 60km east of the Cooper Creek and there are no significant drainage features present at the site.</p>	<p>The site is located on a floodplain of the lower Cooper Creek, approx. 3 km north of the main channel of Cooper Creek and within the ten-year flood boundary. Periodic flooding of the site can be expected to occur during large Cooper Creek flood events.</p>	<p>The site is located on a broad swale, approximately 4km north-west of the Cooper Creek. There site has no connection to flood flows from the Cooper Creek and there are no significant drainage features present at the site.</p>
Vegetation	<p>Vegetation at the site consists of a sparse open low shrubland with scattered low grasses or herbs. Vegetation on the adjacent dune is comprised of an open shrubland with sandhill canegrass (<i>Zygochloa paradoxa</i>) and Rattlepod (<i>Crotalaria</i> sp.) and occasional tall shrubs (<i>Acacia</i> sp, <i>Hakea</i> sp.).</p>	<p>Vegetation at the site is an open woodland dominated by Prickly Wattles (<i>Acacia victoriae</i>) and a low sparse understorey dominated grasses and chenopods. A number of large Coolibah (<i>Eucalyptus coolabah</i>) trees are also present at the site.</p>	<p>Vegetation at the site is comprised of an open shrubland of Dead Finish (<i>Acacia tetragonophylla</i>), Prickly Wattle (<i>Acacia victoriae</i>) and Old Man Saltbush (<i>Atriplex nummularia</i>) with a sparse understorey of ephemeral and annual herbs.</p>
Land use	<p>The site is located on the Gidgealpa pastoral lease.</p>	<p>The site is located on the Waukatana pastoral lease (which is part of Mungeranie Station).</p>	<p>The site is located on the Mungeranie pastoral lease.</p>

¹ Marree Soil Conservation Board (2004) *Marree Soil Conservation Board District Plan*.

Land Use and Management

There have been a number of changes to land use and management in the Cooper Basin in recent years including:

- The proclamation of the Coongie Lakes National Park in 2005, from which oil and gas exploration activities are excluded
- Changes to the state's natural resources management framework, with the introduction of the South Australian Arid Lands Natural Resources Management Board.
- Ongoing changes to the conservation status of numerous species that occur in the region under state and Commonwealth legislation

While these changes may affect specific exploration locations (e.g. inside the area now proclaimed as Coongie Lakes National Park), they do not make a significant difference to the evaluation of hazards, risks and management measures in the EIR.

2.1.5 Risk Assessment

Beach Petroleum's operational practices in the Cooper Basin have not undergone major change, although improvements are continually being implemented (e.g. improved bunding and spill management). In general, the description of operations and their associated hazards and risks provided in the EIR are appropriate for current operations.

3 Changes to the SEO

The significant changes in the content of the Beach Petroleum *Statement of Environmental Objectives Cooper Basin Petroleum Production Operations* (November 2003) and the revised 2009 SEO are detailed below.

3.1 Reporting Criteria

The key changes are:

- Section 4 'Reporting' has been amended to include information on incident definitions relative to operation activities (facility and pipeline) including a table of incident definitions developed by PIRSA in September 2009.
- Section 4.1 and Section 4.2 have been removed as they have been superseded by the PIRSA definitions.

3.2 Objectives and Assessment Criteria

The Environmental Objectives and Assessment Criteria (along with the reporting criteria) are the sections of the SEO most integral to its use. As discussed above, the contents of these have been changed only where the review identified a genuine need for update, clarification or improvement.

The key changes to the Objectives and Assessment Criteria are:

All objectives:

- 'Measure How' column renamed as *Guide to How Objectives Can Be Achieved* to more clearly describe contents
- 'Objective Achieved' column renamed as *Assessment Criteria* to better describe contents and align wording with the Petroleum and Geothermal Energy Act.

Objective 2:

- Goal 2.1 - Additional measures added to *Guide to How Objectives Can Be Achieved* column.

Objective 3:

- New goal added to capture the requirement to comply with the *Native Vegetation Regulations 2003* and to achieve a significant environmental benefit for native vegetation clearance.

Objective 6:

- Goal 6.1 – additional words added to *Guide to How Objectives Can Be Achieved* column to clarify that production operations will be suspended when flooding is imminent and flowlines will be purged.
- Goal 6.2 - additional words added to *Guide to How Objectives Can Be Achieved* column to clarify that groundwater monitoring bores may be used where there is an identified risk to groundwater.
- Goal 6.3 - Additional measures added to *Guide to How Objectives Can Be Achieved* column in regard to preventing wildlife from accessing refuse materials.
- Goal 6.5 - Additional measures added to *Guide to How Objectives Can Be Achieved* column and *Assessment Criteria* to include a reference to the requirements of the *Public and Environmental Health (Waste Control) Regulations 1995* and compliance with the Environment Protection Act regarding sewage management.
- Goal 6.6 – TPH target level information added to *Guide to How Objectives Can Be Achieved* column and wording of *Assessment Criteria* altered to clarify the various types of holding ponds.

Objective 11:

- Goal 11.1 – Additional criteria added to *Assessment Criteria*:
 - Impact to identified sites criteria modified to 'No impact to identified sites without approval under the *Aboriginal Heritage Act 1998...*' to clarify legislative requirements.
 - reference added to GAS criteria for borrow pit construction.

4 References

Beach Petroleum (2003) *Statement of Environmental Objectives: Cooper Basin Petroleum Production Operations*. November 2003.

Beach Petroleum (2003) *Environmental Impact Report: Cooper Basin Petroleum Production Operations*. November 2003.

DWLBC (2005). *Guidelines for a Native Vegetation Significant Environmental Benefit Policy for the clearance of native vegetation associated with the minerals and petroleum industry*. Prepared for the Native Vegetation Council, September 2005. Department of Water, Land & Biodiversity Conservation.

Appendix A: Beach Environmental Policy

