

# SEA Gas Project

Jervois  
Lateral Pipeline

Pipeline Licence Extension



Environmental  
Impact  
Report

SOUTH EAST AUSTRALIA



November 2004

# Jervois Lateral Pipeline

## Pipeline Licence Extension

### Environmental Impact Report

December 2004



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# Executive Summary

The joint venture company South East Australia Gas Pty Ltd (SEA Gas) plans to construct a lateral pipeline to supply natural gas to a user at Jervois. The pipeline, referred to as the 'Jervois Lateral', will be 0.9km long and will start at an off-take valve on the SEA Gas Pipeline (near Kilometre Point 520). The Jervois Lateral will terminate at the Dairy Farmers processing plant, approximately 2km south-west of the Jervois township.

SEA Gas currently owns and operates the SEA Gas Pipeline under Pipeline Licence 13 (PL13). It is proposed that the Jervois Lateral pipeline be authorised as an extension to PL13.

The SEA Gas Project Environment Effects Report / Environmental Impact Report (SEA Gas Project EER/EIR) describes the general environmental impacts of the construction and operation of the main pipeline. It does not however, cover additional lateral pipelines. This document has been prepared to cover this lateral pipeline.

This document summarises, in conjunction with the SEA Gas EER/EIR (October 2001), the environmental hazards associated with the construction and operation of the proposed lateral pipeline.

The pipeline is aligned in cleared farming land and road reserves. No major potential impact has been identified. This document identifies the following as the main potential impacts:

- compaction or inversion of soils
- introduction of agricultural weeds
- noise emissions from operation of pressure safety valves.

This EIR outlines general mitigation strategies that address these potential impacts. Detailed task-specific management and mitigation requirements will be included in the Construction Environmental Management Plan.

The Jervois Lateral pipeline involves the construction of infrastructure in a degraded environment of low population density. The pipeline does not impact on environmentally and culturally sensitive areas. The potential impacts to landholders, the environment and stakeholders are expected to be short-term and minor in extent. No significant long-term adverse impacts are expected.

The existing SEA Gas Project Statement of Environmental Objectives (November 2002) adequately covers the objectives and assessment criteria associated with this extension to the SEA Gas pipeline licence and has not been revised.

# 1 Introduction

## 1.1 Background

The joint venture company South East Australia Gas Pty Ltd (SEA Gas) plans to construct a lateral pipeline to supply natural gas to the Dairy Farmers factory at Jervois. The pipeline, referred to as the 'Jervois Lateral', will be approximately 0.9km long and will start at an off-take valve on the SEA Gas Pipeline (near Kilometre Point 520). The Jervois Lateral will terminate at the Dairy Farmers processing plant, approximately 2km south-west of the Jervois township.

SEA Gas currently owns and operates the SEA Gas Pipeline under Pipeline Licence 13 (PL13). It is proposed that the Jervois Lateral pipeline be authorised as an extension to PL13.

The SEA Gas Project Environment Effects Report / Environmental Impact Report (SEA Gas Project EER/EIR) describes the general environmental impacts of the construction and operation of the main pipeline. It does not however, cover additional lateral pipelines. This document has been prepared to cover this aspect.

## 1.2 Project Proponent

SEA Gas is a joint venture company established specifically to develop and operate the SEA Gas Pipeline. The company is owned equally by Australian National Power, Origin Energy and TXU.

## 1.3 Environmental Commitment

SEA Gas is committed to responsible environmental management for the construction and operation of the Project and believes that any potential adverse environmental effects can be effectively managed in a manner that complies with the requirements of this document, as well as:

- all relevant State and Commonwealth laws and regulations
- SEA Gas Environmental Policy
- relevant industry standards (such as Australian Standard 2885, EPA guidelines and ANZECC water quality criteria)
- the Australian Pipeline Industry Association (APIA) *Code of Environmental Practice 1998*.

SEA Gas also recognises its community obligation to take all practicable steps to ensure its operations and activities are conducted in an efficient and environmentally sustainable manner.

## 1.4 Regulatory Framework

To support an application for the construction of the Jervois Lateral pipeline, SEA Gas must prepare:

- An Environmental Impact Report (EIR) - in accordance with Section 97 of the South Australian *Petroleum Act 2000* (the Act) and Regulation 10 of the *Petroleum Regulations 2000* (the Regulations)
- A Statement of Environmental Objectives (SEO) - in accordance with Section 99 and 100 of the Act and Regulations 12 and 13.

### 1.4.1 Environmental Impact Report

This document fulfils the requirements of an EIR as outlined in the Petroleum Act and Regulations.

### 1.4.2 Statement of Environmental Objectives

A Statement of Environmental Objectives (SEA Gas, November 2002) was produced and approved for the SEA Gas Project. It outlines the environmental objectives with which pipeline construction, operation and decommissioning activities must conform and the criteria upon which achievement of these objectives will be assessed.

The existing SEA Gas Project SEO was reviewed to determine if the proposed extension to the pipeline at Jervois would be adequately covered by this document. It was concluded that the existing SEO adequately covers the objectives and assessment criteria associated with this extension to the SEA Gas pipeline, primarily because the construction methods and potential environmental impacts involved in the pipeline extension are consistent with the methods and impacts identified for the SEA Gas pipeline.

In particular, pipeline construction and operation in the Jervois region, through farming areas, were considered in the SEA Gas Project EER/EIR and relevant objectives were included in the SEO. Section 5 of this report provides a list of the objectives contained in the existing SEO that address these potential environmental impacts.

Therefore, the existing SEA Gas Project Statement of Environmental Objectives (November 2002) adequately covers the proposed extension to the pipeline licence, and has not been revised.

### 1.4.3 Other Legislation and Approvals

Detailed discussion of the regulatory framework relevant to this Project is included in Chapter 2 the SEA Gas Project EER/EIR. It provides information on other relevant State and Commonwealth approvals and legislation, including:

- South Australia
  - *Aboriginal Heritage Act 1988*
  - *Heritage Act 1993*
  - *Water Resources Act 1997*
  - *Environment Protection Act 1993*
  - *Native Vegetation Act 1991*
- Commonwealth
  - *Environmental Protection and Biodiversity Conservation Act 1999*
  - *Native Title Act 1993*
  - *Aboriginal and Torres Strait Islander Heritage Protection Act 1984.*

## **Native Title**

The Ngarrindjeri and other registered claimants Native Title claim includes the Jervois region. However, a land titles search has indicated that Native Title is not likely to apply to any land along the proposed pipeline route, and this is being confirmed. If Native Title is found to apply, SEA Gas will consult with the Department of Aboriginal Affairs and Reconciliation (DAARE) and the Crown Solicitor to determine the appropriate course of action.

## **1.5 About This Document**

This Environmental Impact Report (EIR) has been prepared to support the application for an extension to the SEA Gas Project Pipeline Licence (PL13) from the SEA Gas Pipeline to a meter station at the Dairy Farmers processing plant, approximately 2km south-west of the Jervois township.

The document:

- provides a description of the proposed Jervois Lateral pipeline
- describes the specific features of the environment that can reasonably be expected to be affected by pipeline construction and operation activities
- identifies potential environmental impacts and consequences
- proposes measures to mitigate potential environmental impacts and consequences
- summarises stakeholder consultation.

As a comprehensive EIR has already been prepared for the SEA Gas Project, this document only seeks to provide additional information on the specific issues associated with the lateral pipeline at Jervois. Consequently it does not repeat information relating to the general aspects of the proposed pipeline but, where applicable, makes reference to the SEA Gas Project EER/EIR.

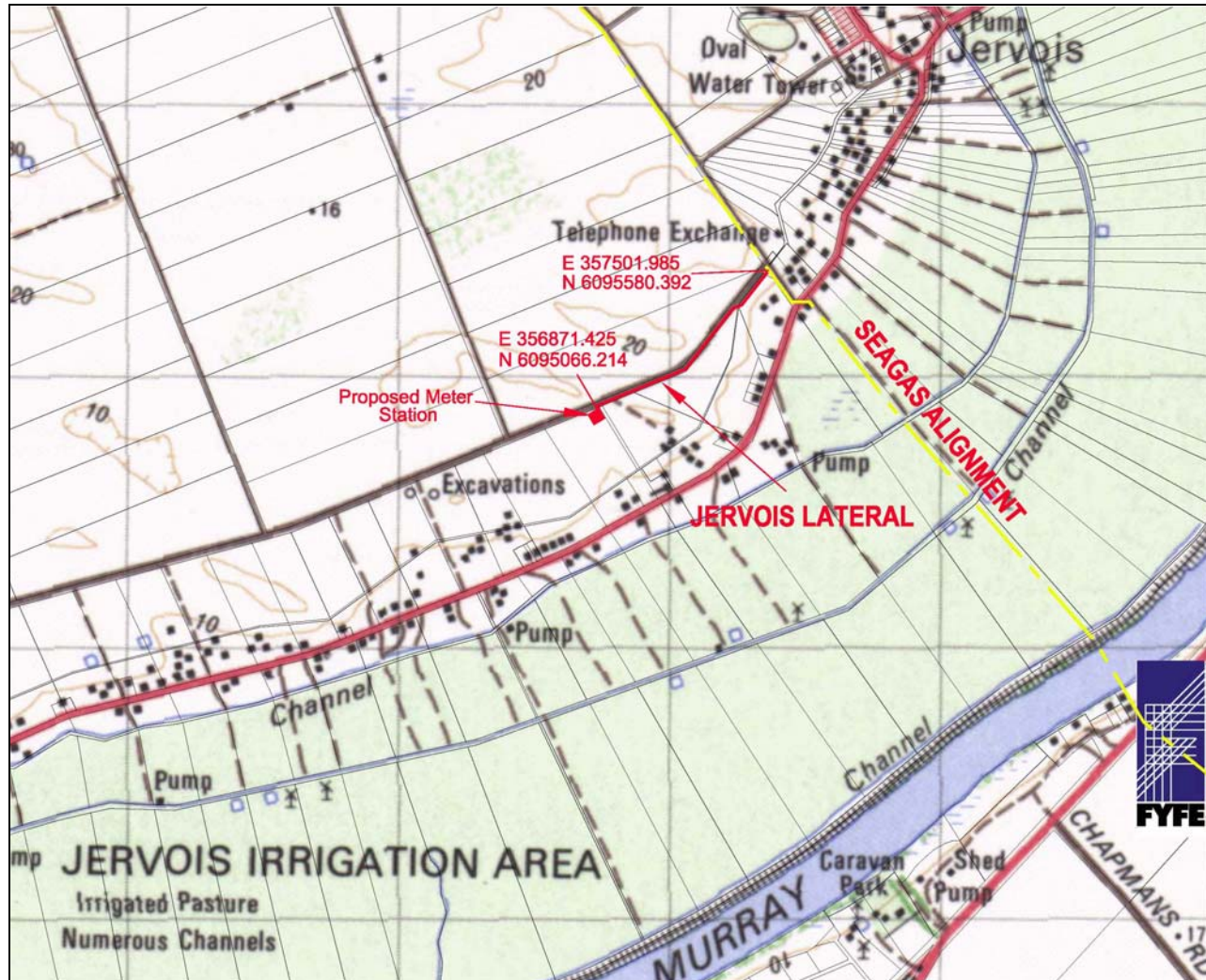


Figure 1: Proposed Jervois Lateral Pipeline Alignment

# 2 Project Description

## 2.1 Project Overview

The proposed Jervois Lateral project involves construction and operation of a lateral pipeline from an existing off-take valve near KP520 on the SEA Gas pipeline to the Dairy Farmers factory (located approximately 2km south-west of the Jervois township) and the construction of a meter station near the factory site. The pipeline will be approximately 0.9 km long. The proposed route at Jervois traverses farming paddocks and the road verge on the southern side of Fabbian Road (see Figure 1).

The SEA Gas pipeline consists of a single 450mm pipe at the off-take location.

## 2.2 Project Schedule

The construction of the Jervois Lateral is scheduled to commence in January 2005 and be completed by March 2005.

## 2.3 Design and Engineering

The proposed Jervois Lateral pipeline will be designed in accordance with the Australian pipeline standard AS2885:1997 - Gas and Liquid Petroleum. Key engineering and design features of the pipeline are provided in Table 1.

**Table 1: Pipeline Engineering and Design Features**

Design Element	Details
Length	0.9km
Diameter (outside)	60.3 mm
Wall Thickness	5.54 mm
Pipe quality	ASTM A106 Grade B
Factory Coating	HDPE
Pipeline Content	Dry Natural Gas (odorised)
Operational Pressure	3,500 to 14,000 kPag
Maximum Allowable Operating Pressure	15,306 kPag (current) 16,800 kPag (possible future)
Hydrotest Pressure	21,000 kPa (125% of operating pressure)
Design capacity	350 TJ/a
Standard Construction / Operation Easement Width	15m
Minimum depth of cover	In accordance with AS 2885, typically: <ul style="list-style-type: none"> <li>▪ Cross Country Sections – 900mm</li> <li>▪ Beneath Roads – 1200mm</li> </ul>

Design Element	Details
Corrosion Protection	External Coating and impressed current cathodic protection
Non-destructive Testing	100% radiography of welded joints
Buried marker tape	Installed along the full length at a minimum of 300mm above the pipe
SCADA	Pipeline monitoring and line break protection system

The meter station will also be designed in accordance with all relevant legislation and standards.

## 2.4 Construction

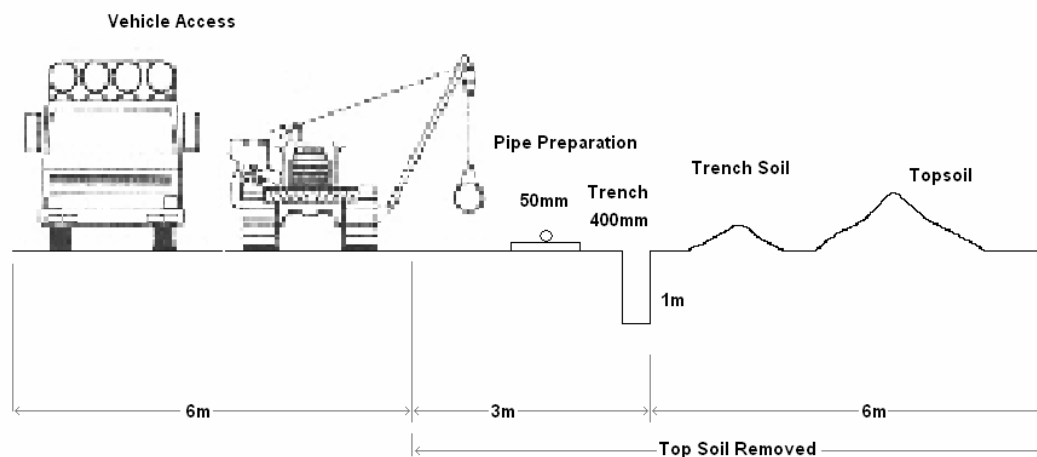
Standard pipeline construction practices will be adopted for the proposed Jerois Lateral pipeline. Construction techniques will be in accordance with the Australian Pipeline Industry Association *Code of Environmental Practice*. Construction techniques are described in detail in the SEA Gas Project EER/EIR, however it refers to the construction of a much larger diameter pipeline. The construction of the lateral pipeline will be much smaller in scale and will follow the sequence outlined in Table 2.

**Table 2: Pipeline Construction Sequence**

Construction Activity	Description
Detailed Survey	Engineering, environmental and cultural heritage surveys are used both in route selection and to determine if any special construction techniques or mitigation measures are required. Once the preferred pipeline route has been determined, then the centreline is surveyed and engineering aspects are finalised. Markers (pegs) are placed to identify pipeline route and right-of-way.
Fencing	Severed fences are replaced with construction gates.
Clear and Grade	A grader or bulldozer is used to clear the right-of-way of vegetation and topsoil ready for construction to commence. Vegetation and topsoil is stockpiled separately on the right-of-way. Topsoil will typically be graded to a depth of 100 to 150 mm for a blade-width over the trench line or the entire non-working side or the full right-of-way, depending on factors such as the soil type, terrain, construction requirements and weather conditions.
Trenching	After the route is cleared, a trench (approx. 1.0 metres in depth) is dug for the pipeline either by a trenching machine or excavator. Trench spoil is stockpiled on the right-of-way, usually on the non-working side. Top soil from the trench, to a depth of 600 mm, will be stockpiled separately from the subsoil.
Stringing	Steel pipe is trucked to the construction site and sections, each approximately 12 metres long, are laid end-to-end next to the trench. The sections are placed on sandbags that are raised on blocks of wood (timber skids) to protect the pipe from corrosion and coating damage.
Bending	Where required, pipe sections are bent to match changes either in elevation or direction of the route.
Welding	Pipe sections are welded together.
X-raying	The pipes are inspected using x-ray equipment as per AS 2885.2-1995.
Joint Coating	The area around the weld is then grit blasted and coated, with a protective coating to reduce corrosion
Padding	Where required, padding machines are used to sift the excavated subsoil to remove coarse materials. To protect the pipe coating the remaining fine material is used to pad beneath and on top of the buried pipe. In some instances (e.g. very rocky soils) imported sand or foam pillows are used for padding.
Lowering-in	Sidebooms (bulldozers with cranes) or excavators are used to lower the welded pipe into the trench.
Backfilling	Trench spoil (subsoil and topsoil) is returned to the trench and material compacted to

Construction Activity	Description
	minimise risk of subsidence of material over the pipe.
Pressure Testing	Pipeline integrity is verified using hydrostatic testing in accordance with AS 2885.5. During hydrostatic testing the pipeline is capped with test manifolds, filled with water and pressurised up to 125% of operating pressure for a minimum of two hours. A 24-hour leak test or a 3-hour combined strength and leak test then follows. Providing it meets water quality guidelines and has landholder approval, hydrotest water is discharged to the surrounding environment. If water fails to meet quality guidelines it will be treated prior to disposal eg. by chemical neutralisation. Hydrotest water is sometimes treated with chemicals such as biocide, oxygen scavengers and corrosion inhibitors prior to testing. An oxygen scavenger may be used in this instance, however this may not be necessary due to the small size of the lateral and subsequent short period of testing.
Restoration and Rehabilitation	The easement is recontoured to match surrounding landform and erosion controls constructed where appropriate. Separately stockpiled topsoil is then respread evenly across the easement and any cleared vegetation placed across the easement, to assist in soil retention and provision of seed stock.  Reseeding or revegetation of the easement, using appropriate species (i.e. crops/pasture or indigenous native species) is undertaken to restore vegetation cover.
Signage	Warning signs are erected along the easement as per AS 2885.1-1997.

The Jerois Lateral pipeline will be constructed in a 15m wide right-of-way. Typical construction layout is shown in Figure 2.



**Figure 2: Typical Layout of Construction Right-of-Way for a Small-Bore Pipeline**

Road crossings will be carried out in accordance with local council requirements, the APIA Code of Practice and AS 2885.1-1997.

The construction workforce is expected to consist of approximately 20 people, including the project management and pipe supply/distribution personnel. In general, no more than 12 personnel are expected to be on site at any given time.

A Construction Environmental Management Plan (CEMP) will be developed for the Jerois Lateral. It will outline the environmental objectives, roles and responsibilities for environmental management, site

specific environmental management procedures, training programs and monitoring, auditing and reporting systems.

## 2.5 Operation

Pipeline commissioning for the Jervois Lateral is scheduled for March 2005. Gas delivery will be controlled from the SEA Gas Control Centre in Adelaide.

Following reinstatement and revegetation of the construction right-of-way, very little above-ground infrastructure will be visible. Above ground infrastructure will be limited to a small compound around an isolating valve near the start of the lateral, marker posts to identify the location of the pipeline and the meter station, which will be located inside the boundaries of the processing plant at Jervois.

Environmental impact associated with operating gas pipelines is minimal and is generally associated with access and potential emissions (venting).

## 2.6 Decommissioning

The design life of the Jervois Lateral pipeline is 40 years. When the utility is no longer required, the pipeline will be decommissioned in accordance with the legislative requirements of the day.

## 2.7 Project Rationale and Alternatives

The Jervois Lateral pipeline has been proposed in direct response to a request from a potential customer to assist them with their natural gas needs.

The Dairy Farmers Jervois milk processing plant contains three boilers (two of which are LPG fired) and a hot water tank system (LPG fired). The Whey-Drying Plant will also use gas heating for spray drying, evaporation and steam generation.

### 2.7.1 Pipeline Route Alternatives

The proposed route runs through cleared farming paddocks and the road verge adjacent to Fabbian Road (south side). The route was selected as it is direct and has minimal impact on vegetation and land use. Two alternative routes were investigated: a northern route through paddocks on the northern side of Fabbian Road and a southern route within paddocks on the south side of Fabbian Road. The selected route was considered most suitable because:

- there are no significant values (e.g. native vegetation) precluding alignment of the pipeline in the road verge
- alignment of the pipeline in the paddocks for its entire length was not considered suitable due to existing land-uses, including small borrow pits/ quarries in the paddocks on both sides of Fabbian road and the use of the paddocks north of Fabbian Road for disposal (by irrigation) of the Dairy Farmers factory effluent.

The road verge at the eastern end of the pipeline was avoided as it contains a row of planted of trees.

# 3 Management of Environmental Issues

This section describes the existing environment along the proposed lateral pipeline alignment, the potential impacts to the environment as a result of pipeline construction and operation and proposed impact mitigation strategies.

Identification of potential impacts and mitigation strategies are based on environmental issues (such as soils and terrain, ecology and heritage) rather than construction activity (such as clearing, trenching and welding). More detailed management procedures for specific tasks will be included in the Construction Environmental Management Plan (CEMP).

This document addresses issues only specifically relevant to the Jerois Lateral pipeline. More detailed information in the context of the entire SEA Gas pipeline is contained in the SEA Gas Project EER/EIR.

## 3.1 SEA Gas Environmental Management Strategy

SEA Gas has developed an environmental management strategy for the Project and will develop a Construction Environmental Management Plan for the construction of the lateral pipeline. Details of this strategy are provided in Section 5.2 of the SEA Gas Project EER/EIR.

## 3.2 Climate

The Jerois Lateral lies within the lower portion of the Murray River Plains, to the east of the Mt Lofty Ranges. The area has a well-defined Mediterranean climate with long, dry summers and cool to mild winters. The temperature ranges from a mean minimum of 5.5°C in July to a mean maximum of 29.6°C in January. Rainfall has a strong seasonal distribution (i.e. distinct winter rainfall) with a mean annual rainfall at Tailem Bend of 380mm (Bureau of Meteorology 2004).

## 3.3 Soils and Terrain

### 3.3.1 Existing Environment

The region surrounding the Jerois Lateral is comprised of undulating plains above the flood plains of the Murray River. The area is characterized by well-drained red calcareous earths and surface sands. These soils are generally not considered to be susceptible to water erosion but are prone to wind erosion (PIRSA 2004). Much of the proposed route passes through areas where calcareous rock is present at or near the surface.

There is a borrow pit located in a paddock adjacent to the proposed route which is currently used as a source of calcareous rock/rubble.

The existing landuse in the area (agriculture) indicates that it is unlikely that contaminated soils are present in the proposed construction corridor.

### 3.3.2 Potential Impacts

Potential impacts to soils as a result of pipeline construction are outlined in detail in Section 6.2 of the SEA Gas Project EER/EIR. Construction of the Jerois Lateral pipeline may result in the following potential adverse impacts to soils and terrain:

- possible erosion associated with earthworks (e.g. erosion of stockpiled soil)
- compaction of soils
- subsidence over the pipeline
- changes in soil structure through mixing of topsoil and subsoil
- contamination of soils by fuel, oils or chemicals (small quantities of fuel, oils and chemicals may be kept on-site for operation/maintenance of vehicles and equipment).

### 3.3.3 Impact Mitigation

Mitigation measures detailed in Section 6.3 of the SEA Gas Project EER/EIR will be followed to minimise adverse effects to soils. Mitigation measures will include:

- restriction of construction activities to the construction right-of-way
- construction will be scheduled for dry periods of the year. In the event of rain and wet soils, movement of vehicles and equipment along right-of-way will be minimised or avoided
- ripping any areas of compacted soil as part of reinstatement works
- prompt reinstatement of the right-of-way and any associated access tracks upon completion of construction works
- assessment of hydrotest water quality before disposal to meet water quality guidelines
- implementation of appropriate storage and handling procedures for fuels and chemicals (e.g. labelling, bunding)
- topsoil and subsoil will be stockpiled separately
- trench spoil will be returned to the trench and compacted
- construction activities will be monitored for excessive dust generation. Dust control measures (e.g. use of water carts) will be implemented if excessive dust generation occurs.

## 3.4 Hydrology

### 3.4.1 Existing Environment

There are no creeks or surface water bodies located along the proposed construction corridor. The River Murray channel is located more than 1.5 km from the site.

Shallow groundwater reserves in the area are associated with the irrigation of the River Murray floodplain.

### 3.4.2 Potential Impacts

Potential impacts to surface and ground water as a result of pipeline construction are outlined in Chapter 7 of the SEA Gas Project EER/EIR. At the Jerois sites, the most relevant of these are:

- interruption or modification of surface or ground water drainage patterns
- potential contamination of surface or ground water by minor spills of fuel or chemicals or discharged hydrotest water.

### 3.4.3 Impact Mitigation

Mitigation measures outlined in Chapter 7 of the SEA Gas Project EER/EIR will be implemented to minimise adverse effects to hydrology of the area. In particular, the following will be implemented:

- construction will be scheduled for dry periods of the year
- adequate erosion and sediment controls will be in place
- procedures for management of discharged hydrotest water will be included in the CEMP
- trench dewatering to watercourses or unstable land will be avoided
- the trench will be compacted to a level consistent with surrounding soils to avoid impeding groundwater flows
- spill prevention, response and cleanup procedures (including refuelling techniques and chemical storage and handling requirements) will be included in the CEMP.

## 3.5 Noise Emissions

### 3.5.1 Existing Environment

The Jervois Lateral is located in a predominantly rural setting. Ambient noise levels at the off-take location are dominated by rural activity and traffic along the nearby Jervois Road. Closer to the processing plant, noise from the processing plant associated with vehicles and the processing operations dominate the noise environment. The Dairy Farmers factory typically operates 24 hours per day, 7 days per week.

The project area is not densely settled but there are several houses located within 500m of the proposed pipeline easement, with the closest residence being approximately 100m from the easement. However the nearest residence to the location of the proposed meter station is over 300m and it is also adjacent to the Dairy Farmers factory.

### 3.5.2 Potential Impacts

Noise emissions will be produced during both the construction and operation of the pipeline.

#### Construction

Pipeline construction activity will result in a temporary increase in noise levels associated with the operation of vehicles and equipment such as excavators, graders, bulldozers and boring equipment. Blasting is extremely unlikely to be carried out.

Noisy construction activities at stationary and long-term work sites is permitted between 7.00am and 7.00pm, Monday to Saturday and between 9.00am and 7.00pm on Sunday (EPA Information 425/04 Sheet *Construction Noise – October 2004*).

#### Operation

Noise emissions associated with the operation of the pipeline will include the continuous operation of the gas metering and pressure regulation station, and occasional operation of the pressure safety valves.

Noise from industrial premises is controlled by the *Environment Protection (Industrial Noise) Policy 1994*. This states that the allowable noise level is the maximum of:

- 5 dB(A) greater than the background noise level
- the maximum allowable noise level scheduled for the particular area.

In rural areas, the maximum allowable noise level under the policy is 47 dB(A) in the daytime, and 40 dB(A) at night (10 pm – 7 am). Maximum allowable levels for other land uses are higher. Because intensive rural activity (wineries, produce processing) does not fit easily into the land use descriptions in the policy, it is becoming more usual that they be treated similar to light industry or urban residential with some industry, with maximum permissible night-time levels of 45 dB(A) or more.

The policy is used to assess noise from existing situations, and is not strictly applicable for planning new developments. Current practice, and the EPA, suggests that an environmental noise design criterion of 5 dB(A) lower than the noise level set out in the policy be used for assessing environmental noise in a planning context.

Existing ambient noise levels have previously been measured at the residences nearest the cheese factory, with night-time background noise levels at 45 dB(A). Noise levels nearer 40 dB(A) are expected at residences further from the factory (Bassett 2004). A night-time design criterion of 35 dB(A) has been adopted for this project to ensure existing noise levels are not increased.

Another relevant criterion that is not addressed in the *Environment Protection (Industrial Noise) Policy* is in relation to higher level short term noise ingress. The EPA recommend use of 60dB(A) as maximum short term noise level, based on World Health Organisation sleep disturbance criteria<sup>1</sup>. On this basis, the environmental noise criterion for short term noise from the pressure safety valves is 60 dB(A) maximum.

### Noise Assessment Methods

A noise assessment has been undertaken by Bassett Acoustics to consider environmental noise resulting from operation of the gas metering and pressure regulation station. Noise sources assessed were:

- steady regulator noise radiating from the exposed pipe-work with the maximum level of 79 dB(A) at 1 m for the first pressure cut regulator and 80 dB(A) at 1 m for the final pressure cut regulator
- short term noise from the low pressure and intermediate pressure safety valves, with noise levels based on modelling of choke flow (shock) noise and turbulent flow noise.

Environmental noise levels were predicted at the nearest residences, located as follows:

- R1: 350 m east
- R2: 390 m east north-east

Weather was assumed to be “worst case” i.e. conducive to noise propagation. This occurs with a wind from the source to the receiver and either a clear night or an overcast day. Levels can be up to 15 dB(A) lower for other conditions. Environmental noise levels were predicted using CONCAWE algorithms in SoundPLAN noise propagation software.

### Noise Assessment Results

Predicted levels for continuous noise from the meter station were well within the EPA environmental noise criterion for rural locations. Predicted levels were:

- R1: 27 dB(A)
- R2: 26 dB(A)

Predicted levels for short-term pressure safety valve noise are listed in Table 3. They indicate that both the low pressure and intermediate pressure safety valves will require discharge attenuation to meet

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<sup>1</sup> Berglund, Lindvall and Schwela, 1999, “Guidelines for Community Noise”. World Health Organisation.

environmental (sleep disturbance) criteria. This can be readily achieved, for example using a multistage let-down attenuator or a combined multistage let-down with absorptive element attenuator.

**Table 3: Predicted Maximum Pressure Safety Valve Noise – dB(A)**

Valve	Location		
	5m	R1	R2
Low pressure	111	76	74
Intermediate pressure	122	88	87

### 3.5.3 Mitigation Measures

Mitigation measures outlined in Section 8.2.3 of the SEA Gas Project EER/EIR will be followed to minimise adverse noise impacts. In particular the noise impacts shall be mitigated through the following measures:

- under normal operating conditions, construction will be scheduled in accordance with EPA Information 425/04 Sheet *Construction Noise – October 2004*.
- local residents will be consulted if unavoidable out-of-hours work is required
- all vehicles and equipment shall conform to appropriate noise control standards
- attenuation will be applied to the pressure safety valves to ensure that noise levels meet the 60 dB(A) environmental (sleep disturbance) criteria at nearby residences.

## 3.6 Atmospheric Emissions

### 3.6.1 Existing Environment

Air quality in the project area is expected to be reasonable. The surrounding environment is predominantly rural, and there are few emission sources in the project area. Operations at the factory are expected to emit small amounts of pollutants such as carbon monoxide and nitrous oxides as a result of butane combustion in the boilers. Vehicle emissions are considered to be the only other significant source of pollutants.

### 3.6.2 Potential Impacts

Minor emission pollutants such as nitrous oxides, sulphur oxides and carbon monoxide are associated with the exhausts of machinery and support vehicles. Construction phase emission impacts are expected to be minimal due to the short-term nature of the project. The impact of air quality and Greenhouse gas emissions will be insignificant.

Dust resulting from construction and restoration activities on the right-of-way is the most likely air quality hazard. Dust generation is expected to be localised and restricted to construction and restoration phases of the project. Impacts are expected to be minor.

The release of gas from the pipeline will be minimised for economic, environmental and greenhouse gas emission reasons. Pipeline venting is expected to occur in association with pipeline commissioning and may occur if required as part of maintenance activities during operations. The impacts on air quality and Greenhouse gas emissions will be insignificant.

### 3.6.3 Mitigation Measures

Mitigation measures outlined in Section 8.1.3 of the SEA Gas Project EER/EIR will be followed to minimise adverse effects to air quality in the construction areas. These include:

- regularly maintaining and servicing machinery and vehicles
- minimising the period between clearing and restoration, and limiting vehicle speeds on the pipeline easement or access roads
- implementing dust suppression measures, such as water carts, where required.

Where practical, planned gas releases shall be conducted under favourable meteorological conditions that will facilitate rapid atmospheric dispersion of the gas.

## 3.7 Flora and Fauna

### 3.7.1 Existing Environment

An assessment of the flora and fauna of the proposed alignment at Jerois was undertaken on 18th November 2004 by Dr Travis How (Environment and Biodiversity Services). A total of 28 plant species were identified within the survey area with all species, except one, being introduced (refer Table 4). The only native species within the survey area was Ruby Saltbush (*Enchylaena tomentosa* var. *tomentosa*) with several plants of this very common and widespread species being located near the western end of the survey area. The survey area is dominated by weed species and is considered to be an Exotic Grassland of species such as Barley Grass (*Critesion murinum*), Oats (*Avena barbata* / *fatua*) and Great Brome (*Bromus diandrus*).

Several of the flora species within the survey area are listed as proclaimed under the *Animal and Plant Control Act* 1986. These include African Boxthorn (*Lycium ferocissimum*), Horehound (*Marrubium vulgare*), Onion Weed (*Asphodelus fistulosus*) and Salvation Jane (*Echium plantagineum*). Several other species within the survey area are considered to be environmental weed species. These include Peppertree (*Schinus areira*), Couch (*Cynodon dactylon*), Kikuyu (*Pennisetum clandestinum*),

Due to dominance of the weed species and the lack of native plant species in the survey area, the vegetation is considered to be in poor condition. It is also considered to have a low value as habitat for fauna species. During the field survey a total of five fauna species were identified within survey area. These species were Galah, Feral Pigeon, Magpie, Ibis and a Fox. It is likely that common fauna species, such as Brown Snakes, Sleepy Lizards, Bearded Dragons and farmland birds, also utilise the site. However, it is unlikely that any fauna species of conservation significance utilise or rely on the area for habitat.



**Plate 1: Pipeline alignment showing planted wind break and cropped paddocks, facing north-east**



**Plate 2: Pipeline alignment showing vegetation in road reserve, facing south-west**



**Plate 3: Proposed Meter Station Site, facing south to Dairy Farmers factory**

**Table 4: Plant Species Recorded on the Easement**

Species Name	Common Name
<i>Enchylaena tomentosa</i> var. <i>tomentosa</i>	Ruby Saltbush
* <i>Asphodelus fistulosus</i>	Onion Weed
* <i>Avena barbata</i> / <i>fatua</i>	Wild Oat
* <i>Bromus diandrus</i>	Great Brome
* <i>Chenopodium murale</i>	Nettle-leaf Goosefoot
* <i>Critesion murinum</i>	Barley-grass
* <i>Cynodon dactylon</i>	Couch
* <i>Diplotaxis tenuifolia</i>	Lincoln Weed
* <i>Echium plantagineum</i>	Salvation Jane
* <i>Euphorbia terracina</i>	False Caper
* <i>Galenia secunda</i>	Galenia
* <i>Lepidium africanum</i>	Common Peppergrass
* <i>Lolium rigidum</i>	Wimmera Ryegrass
* <i>Lycium ferocissimum</i>	African Boxthorn
* <i>Malva parviflora</i>	Small-flower Marshmallow
* <i>Marrubium vulgare</i>	Horehound
* <i>Medicago truncatula</i>	Barrel Medic
* <i>Melaleuca armillaris</i>	Honey-myrtle
* <i>Oenothera stricta</i> ssp. <i>stricta</i>	Common Evening Primrose
* <i>Pennisetum clandestinum</i>	Kikuyu
* <i>Polygonum aviculare</i>	Wireweed
* <i>Raphanus raphanistrum</i>	Wild Radish

Species Name	Common Name
* <i>Reichardia tingitana</i>	False Sowthistle
* <i>Rumex crispus</i>	Curled Dock
* <i>Salvia verbenaca</i> form	Wild Sage
* <i>Schinus areira</i>	Pepper-tree
* <i>Sonchus oleraceus</i>	Common Sow-thistle
* <i>Vulpia myuros</i>	Fescue

\*Denotes alien species

### 3.7.2 Potential Impacts

The overall impact of clearing the right-of-way is not considered significant as existing vegetation is highly disturbed with no significant presence of remnant species.

Weeds are common along the proposed alignment. No sign of disease was noted. There is a limited potential for introduction or spread of weeds and/or disease associated with movement of vehicles and machinery. However, weed management strategies need to be implemented during and following the construction phase of the project to reduce the chance of spreading proclaimed and environmental weed species. These strategies will be specified in the CEMP and may include removal of some proclaimed weed species (e.g. African Boxthorn) prior to construction and post-construction weed control.

There is some potential for snakes to become trapped in the open trench.

### 3.7.3 Impact Mitigation

Mitigation measures outlined in Section 9.3 of the SEA Gas Project EER/EIR will be integrated into the CEMP, and implemented to minimise adverse effects to flora and fauna. In particular:

- the period in which the trench is open will be minimised
- the trench will be regularly inspected for the presence of fauna and an appropriately licensed person used if native fauna handling is required
- weed management strategies (including clean-down of vehicles and machinery before entering the project area and post-construction weed control) will be implemented.

## 3.8 Cultural Heritage

### 3.8.1 Existing Environment

During the cultural heritage assessment of the adjacent SEA Gas corridor and its subsequent construction, no nearby sites of significance to Aboriginal tradition, history, anthropology or archaeology were found. It is considered unlikely that sites of Aboriginal heritage significance are present along the proposed route, particularly due to the heavily disturbed nature of the site.

A cultural heritage survey of the proposed pipeline route by Australian Cultural Heritage Management with representatives from the Ngarrindjeri Heritage Committee will be undertaken.

### 3.8.2 Potential Impacts

Potential impacts to indigenous heritage as a result of construction activities are outlined in Chapter 10 of the SEA Gas Project EER/EIR. These include:

- damage to shallow artefact scatters
- damage to subsurface material.

Earthworks associated with construction activities have the potential to disturb or damage shallow artefact scatters. These earthworks may be associated with either the mainline pipeline construction or with incidental or related activities such as topsoil removal, trenching, the creation of access tracks, work areas, stockpiles, drill pads and installation of pipeline infrastructure (for example cathodic protection equipment).

Trenching operations have the potential to damage previously unrecorded subsurface material.

### 3.8.3 Impact Mitigation

The mitigation measures proposed in Section 10.1.3 of the SEA Gas Project EER/EIR will be implemented to minimise adverse impacts to heritage. In particular, the following will be undertaken:

- a cultural heritage survey of the proposed pipeline route will be undertaken prior to construction with representatives from the Ngarrindjeri Heritage Committee
- if cultural heritage sites are detected, the final alignment will be selected to avoid such sites, as far as practicable
- appropriate authorisation will be obtained in the unlikely event that unavoidable site disturbances are necessary to permit the construction of the pipeline
- if cultural material, particularly human burials, should become evident during construction activities, work in the vicinity will cease immediately and contact will be made with the Department of Aboriginal Affairs and Reconciliation, as well as a representative of the Ngarrindjeri Heritage Committee, who will assess the situation. These procedures will be incorporated into the Construction Environmental Management Plan.

## 3.9 Land Use

Chapter 11 of the SEA Gas Project EER/EIR outlines a range of potential social issues, including impacts to land use, visual amenity and third party infrastructure. Specific issues relevant to the Jervois Lateral are summarised below.

### 3.9.1 Existing Environment

The main land use in the region and along the alignment is broad-acre farming and grazing. Land parcels in the region are relatively small due to intensive land use however the population density is moderate to low.

There are no noted areas of conservation significance within the vicinity of the pipeline.

The pipeline is outside the Branched Broomrape quarantine area.

### 3.9.2 Potential Impacts

The Jervois pipeline is small in scale and impacts to land use are expected to be minor. Localised impacts can be summarised as:

- short-term reduction in availability of cropping/grazing land

- minor disruption associated with construction in the Fabbian Road verge
- potential introduction or spread of agricultural weeds or diseases
- temporary replacement of permanent fences with access gates
- short term disturbance to stock associated with noise and human activity
- potential injury to, or mortality of, stock in the open trench
- risk of fire associated with welding and the use of vehicles and machinery in paddocks.

### 3.9.3 Impact Mitigation

Impact mitigation measures are discussed in detail in Section 11.2 of the SEA Gas Project EER/EIR. Appropriate mitigation measures include:

- vehicles and machinery will be clean and free of weeds before entering the project area
- appropriate traffic control / warning signage will be placed on the approach to construction activities being undertaken in the Fabbian Road verge and adjacent to Hicks Road
- disturbance to crops/pastures shall be restricted to the 15m right-of-way
- access shall be restricted to that which is essential for pipeline construction and operation
- all vehicles shall carry fire extinguishers
- the exact location of services shall be determined before construction proceeds
- the pipeline shall be buried to a minimum depth of 900 mm, thereby allowing cropping/grazing to continue following completion of pipeline construction
- all fences shall be reinstated following rehabilitation of the easement
- landholders shall be compensated for any loss of production associated with the project.

## 3.10 Public Risk and Safety

### 3.10.1 Existing Environment

The project area is classified as "Town Land" T1 under AS2885, with residences located significant distances apart. The main transport corridor in the project area is the Jervois Road, which is east of the construction right-of-way.

### 3.10.2 Potential Impacts

The potential impacts to public safety are fire, explosion or radiation exposure as a result of pipeline rupture. The main potential causes of damage or pipeline failure are considered to be:

- heavy vehicle traffic
- corrosion of the pipeline (external or internal)
- natural events which stress the pipeline (e.g. earthquake)
- excavation in the easement by third parties
- overpressure
- metallurgical or construction faults.

Injury to third parties is also a potential impact of construction activities. Hazards include construction work across roads, increased heavy vehicle traffic in the project area and dust generation. Hazards associated with dust are discussed in Section 3.6.

### 3.10.3 Mitigation Measures

Mitigation strategies include:

- a detailed risk assessment shall be undertaken in accordance with AS 2885
- appropriate protective measures (e.g. deep burial, concrete slabs) shall be installed where determined to be necessary by risk assessment

- appropriate signage, in accordance with project traffic management plans, shall be installed during construction and operation to clearly identify the presence of construction vehicles and the pipeline
- the design, installation and commissioning process shall be in accordance with relevant codes, in particular AS 2885.1-1997
- appropriate safety measures shall be undertaken where construction activities occur adjacent to or across roads
- the pipeline line will be pressure tested prior to commissioning to ensure integrity of pipes and welds
- a comprehensive corrosion prevention program shall be implemented;
- all welded joints shall be subject to radiographic inspection during construction to ensure integrity of welds
- regular liaison shall be conducted with landholders and local residents to inform them of the schedule of construction works
- monitoring of the pipeline from SEA Gas's Central Control Room in Adelaide and by locally based field inspectors.

### 3.11 Hazardous Storage, Spill and Emergency Response

A limited amount of chemicals and hazardous substances may be required on site for the construction of the pipeline. These may include fuel, lube oils, solvents, rust-proofing agents and primer, as outlined in Section 11.7 of the SEA Gas Project EER/EIR.

Potential impacts include contamination of soils and water resources, as discussed in Sections 3.3, 3.4 and 3.7 of this EIR and in Sections 6, 7 and 9 of the SEA Gas Project EER/EIR.

Mitigation measures outlined in the SEA Gas Project EER/EIR will be followed, including:

- hazardous material will not be stored or drained onto the ground or onto watercourses or floodplains
- all fuels and hazardous materials used on-site will be appropriately stored with bunding as per regulatory guidelines
- vehicles and machinery will not be refuelled within 50m of a floodplain or watercourse
- materials and equipment required to respond to a hazardous spill will be readily available
- appropriate implementation of cleanup/spill response procedures in the event of a spill
- material Safety Data Sheets to be kept for each chemical used on-site and at a location that is easily accessible 24 hrs per day
- all personnel will be instructed in spill prevention, safety and response practices as a component of the environmental induction process.

### 3.12 Additional Mitigation Strategies

#### 3.12.1 Construction Environmental Management Plan

A task-specific Construction Environmental Management Plan is being developed for the Jervois Lateral pipeline. Specific aspects of the lateral pipeline will be incorporated into this EMP for review by PIRSA prior to construction and implemented during construction.

#### 3.12.2 Awareness Program

SEA Gas shall ensure that all personnel and associated contractors are adequately aware of the relevant impact mitigation strategies.

### **3.12.3 Contractual Obligations**

All contracts with companies undertaking construction activities for SEA Gas on the Jervois Lateral pipeline shall include a requirement to:

- operate in a manner consistent with SEA Gas's Environmental Policy
- adopt mitigation strategies outlined in this EIR
- meet SEO commitments.

# 4 Consultation

SEA Gas recognises that an effective consultation program is an essential part of any project. SEA Gas aim to effectively communicate with all key landholders, stakeholders and other interested parties.

SEA Gas actively sought stakeholder input into the environmental assessment process for construction and operation of the SEA Gas pipeline. Information on stakeholder consultation and SEA Gas's ongoing consultation strategy is provided in Chapter 12 of the SEA Gas Project EER/EIR.

Specific consultation regarding the Jervois Lateral pipeline is discussed further below.

## 4.1 Key Stakeholders

The following stakeholders have been identified as having a direct interest in the construction and operation of the Jervois Lateral pipeline:

- State regulatory agencies
- Local government
- Landowners/occupiers
- Aboriginal heritage groups and Native Title claimants.

Stakeholder consultation carried out for the Jervois Lateral pipeline is summarised in Table 5. Issues raised by stakeholders have been addressed within this EIR where appropriate.

**Table 5: Stakeholder Consultation**

Stakeholder	Key Issues
<b>State Government</b>	
PIRSA Petroleum	<ul style="list-style-type: none"> <li>▪ EIR required for licence extension</li> <li>▪ Ensure adequate information distributed to landholders</li> </ul>
<b>Local Government</b>	
Rural City of Murray Bridge	<ul style="list-style-type: none"> <li>▪ Approval required to install pipe in road reserve</li> </ul>
<b>Heritage</b>	
State Aboriginal Heritage Committee	<ul style="list-style-type: none"> <li>▪ Indigenous group to consult for a heritage study is the Ngarrindjeri Heritage Committee</li> </ul>
Ngarrindjeri Heritage Committee	<ul style="list-style-type: none"> <li>▪ Work area agreement (in progress)</li> <li>▪ Survey to be undertaken</li> </ul>

### 4.1.1 Landowners/occupiers

The Jervois Lateral traverses four land titles (see Table 6).

**Table 6: Landholders on the Jervois Lateral Pipeline**

Name	Title Reference
Cockburn SV	CL 1433/4
Minister for Environment & Conservation (as Custodian)	CR 5689/957
Gazzola IA & LC	CL 1172/20
Gazzola JA & JM	CT 5900/664

Landowners/occupiers on the proposed Lateral pipeline route have been informed of the proposed extension and negotiations for easement acquisition are well advanced. SEA Gas will continue to work closely with landowners/occupiers as the Project progresses.

# 5 Statement of Environmental Objectives

The SEA Gas Project Statement of Environmental Objectives (SEO), November 2002 outlines the environmental objectives with which construction, operation and decommissioning activities must conform and the criteria upon which achievement of these objectives will be assessed.

The construction methods and potential environmental impacts involved in the extension of the SEA Gas pipeline at Jerois are consistent with the methods and impacts identified for the remainder of the SEA Gas pipeline.

Because no new construction techniques, additional environmental impacts or required mitigation strategies have been identified for extension of the pipeline, the SEA Gas SEO adequately covers the objectives and assessment criteria relevant to the extension of the pipeline.

In particular, the SEO Objectives listed in Table 7 address the main issues that have been outlined in this EIR. In addition, Section 5 of the SEO contains detailed conditions and requirements that must be complied with in order to meet the objectives and thus address the environmental issues described in this EIR.

**Table 7: Relevant Objectives from the SEA Gas Project SEO (November 2002)**

Issue	Relevant SEO Objectives
Soil	1.1 To limit the occurrence and extent of trench subsidence, soil erosion and sedimentation 1.2 To reinstate soil and terrain to pre-construction contours and conditions 1.4 To avoid soil inversion and if necessary undertake remedial action 1.5 To mitigate soil compaction if necessary by remedial action 1.6 To appropriately protect soils from contamination and to plan for the constraints posed by pre-existing soil contamination
Groundwater	2.1 To prevent significant alteration to hydrological conditions & remediate if required 2.2 To appropriately protect groundwater quality from contamination by fuel, chemicals, acid sulphate soil leachate or other hazardous substances and remediate if required 2.4 To plan for the constraints posed by shallow groundwater to standard construction activities
Surface Water	3.1 To minimise the amount of sediment entering surface water features 3.2 To appropriately protect surface waters from contamination by fuel, chemicals, highly saline groundwater, acid sulphate soil leachate or other hazardous substances 3.3 To minimise short term, and prevent long-term, interruption or modification to surface drainage patterns & remediate if required
Air Quality	5.1 To minimise dust emissions 5.2 To maintain vehicles and construction equipment to minimise air quality impacts

Issue	Relevant SEO Objectives
Noise	22.a To meet regulatory requirements for noise emissions from the Compressor Station and other pipeline infrastructure 22.3 Minimise noise impacts associated with operation of the pipeline and associated infrastructure
Flora and fauna	7.1 To minimise and where practicable avoid clearing of remnant vegetation 7.2 To keep fauna fatalities to as low as possible 7.3 To avoid destruction of significant fauna habitats 7.4 To minimise and where practicable avoid fragmentation of fauna habitats 7.5 To minimise disruption to critical fauna lifecycle stages 7.6 To minimise loss of biodiversity 7.7 To avoid the spread of environmental and proclaimed weeds 7.8 To undertake appropriate actions to destroy environmental or proclaimed weeds
Indigenous heritage	8.1 To protect surface and shallow artefact scatters from damage 8.2 To minimise damage to subsurface material 8.3 To avoid damage to culturally significant vegetation 8.4 To avoid damage to built heritage 8.6 To implement appropriate protocols for dealing with cultural heritage material discovered during construction 8.7 To avoid damage to sites of significance to Aboriginal anthropology or history
Land use	10.1 To prevent adverse effects on stock during construction 10.2 To avoid unacceptable disturbances to landowner assets and infrastructure remediate where required 10.4 To prevent the spread of, and to take practicable measures to control weeds and animal and plant pests and diseases, (such as branched broomrape, phylloxera and footrot), and to take appropriate remediation measures where required 10.5 To avoid adverse effects to residential and industrial activities
Stakeholder consultation	16.3 To identify issues and concerns to provide the opportunity for them to be addressed during project planning, assessment and design 16.5 To establish all necessary agreements with landowner/occupiers directly affected

# 6 Conclusion

The extension of the SEA Gas pipeline licence (Pipeline Licence 13) to include the construction and operation of a lateral pipeline at Jervois is a relatively small project that will deliver gas directly to the end-user, the Dairy Farmers processing plant near Jervois.

SEA Gas has developed this Environmental Impact Report in accordance with the South Australian *Petroleum Act 2000* to address issues specifically relevant to the Jervois Lateral pipeline.

The Jervois Lateral pipeline involves the construction of infrastructure in a degraded environment of low population density. The pipeline does not impact on environmentally and culturally sensitive areas.

The potential impacts to landholders, the environment and stakeholders are expected to be short-term and minor in extent. No significant long-term adverse impacts are expected.

In managing potential impacts, SEA Gas is committed to working closely with all relevant authorities and landholders. SEA Gas shall take all necessary steps to rehabilitate areas affected by the Project during both construction and operation. As part of these commitments SEA Gas will integrate environmental management principles and procedures into the design and construction processes.

A Construction Environmental Management Plan (CEMP), which will outline the environmental objectives, roles and responsibilities for environmental management, site specific environmental management procedures, training programs and monitoring, auditing and reporting systems will be developed for the Jervois Lateral pipeline.

# 7 References

Bureau of Meteorology (2004). Climate Information. <http://www.bom.gov.au/climate/>.

Bassett Acoustics (2004). Dairy Farmers Jervois Lateral Pipeline Metering Station Operational and Gas Discharge Noise. Unpublished report to GPA Engineering.

Neagle, N. (1995). *An Update of the Conservation Status of the Major Plant Associations of South Australia*. Native Vegetation Conservation Section, Department of Environment and Land Management, South Australia.

SEA Gas (2001). *SEA Gas Project Environmental Effects Report / Environmental Impact Report*. SEA Gas, Adelaide.

SEA Gas (2001). *SEA Gas Project Statement of Environmental Objectives, November 2002*. SEA Gas, Adelaide.

PIRSA (2004) *Soil Conservation Districts Planning Maps*. <http://www.soil.pir.sa.gov.au/>

# 8 Abbreviations

Ecos	Ecos Consulting (Aust) Pty Ltd
EIR	Environmental Impact Report prepared in accordance with Section 97 of the <i>Petroleum Act 2000</i> and Regulation 10.
CEMP	Construction Environmental Management Plan
dB(A)	Decibels (A-weighted)
DEH	Department for Environment and Heritage
DAARE	Department of Aboriginal Affairs and Reconciliation
DWLBC	Department of Water, Land and Biodiversity Conservation
EMS	Environmental Management System
KP	Kilometre Point
PIRSA	Primary Industries and Resources, South Australia
SCADA	Supervisory Control and Data Acquisition
SEA Gas	South East Australia Gas Pty Ltd
SEO	Statement of Environmental Objectives prepared in accordance with Section 99 and 100 of the <i>Petroleum Act 2000</i> and Regulations 12 and 13.