SESA
NATURAL GAS TRANSMISSION PIPELINE

Statement of Environmental Objectives

April 2010

APA Group

APT O&M Services Pty Ltd

		Sign-off	Date
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AMENDMENT DETAILS

Issue	Section	Page	Description	Date
1	All	All	Initial Issue prepared by ECOS Consulting, prior to construction of the SESA Pipeline, for Origin Energy to comply with Part 3(13) Petroleum Regulations (SA) 2000.	February 2005
2	All		• Objective associated with the loss of supply has been added to the Environmental Management Objectives for Operation of the SESA Pipeline, (Objective 10 in Table 1) • Incident Definitions have been revised in support of Section 85(1)(e) and regulation 32(1)(b) • Reference made to Petroleum and Geothermal Energy Act and Regulations (SA) 2000 - as proclaimed on 1/10/09, • Environmental Management Objectives revised in accordance with the definitions that constitute reportable and serious incidents.	February 2010
2a			• The environmental objectives associated with 'construction' have been added to 'Issue 2' (now Issue 2a) to ensure that environmental management objectives associated with any additions or modifications (construction) along the SESA Pipeline are considered and achieved.	
2ai	Section 4 Objective 4		• Section 4 revised to refer specifically to construction as well as operation. • The assessment criteria against objective 4 revised.	April 2010

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ABBREVIATIONS

Abbreviation	Description
APIA	Australian Pipeline Industry Association
AS	Australian Standards
DN	Nominal Diameter
EER	Environmental Effects Report
EIR	Environmental Impact Report
EMP	Operations Environmental Management Plan
EPHC	Environment Protection and Heritage Council
EPP	Environment Protection Polices (SA)
ERP	Emergency Response Plan
GAS	Goal Attainment Scaling
km	Kilometre
KP	Kilometre Point
kPa	Kilopascal
LGPS	Ladbroke Grove Power Station
mm	millimetre
MLV	Main Line Valve
PIRSA	Primary Industries and Resources, South Australia
PL	Pipeline Licence
ROW	Right of Way
SAOP	Safety and Operating Plan
SAPG	South Australians Pipelines Group
SEO	Statement of Environmental Objectives
SEPS	South East Pipeline System
SESA	South East South Australia

1. LEGISLATIVE OVERVIEW

A Statement of Environmental Objectives (SEO) is required for all regulated activities under Division 4 Section 99 of the South Australia *Petroleum and Geothermal Energy Act 2000*. The essential requirements necessary in the SEO are outlined in Section 100 of the South Australia *Petroleum and Geothermal Energy Act 2000*, these are:

(1) A statement of environmental objectives for regulated activities-

(a) must state environmental objectives that must be achieved in carrying out regulated activities to which the statement applies; and

(b) must state criteria to be applied to determine whether the stated environmental objectives have been achieved in a particular case; and

(c) may include conditions and requirements to be complied with, in order to achieve the stated objectives; and

(d) must impose reporting obligations on a person carrying out regulated activities to which it relates.

(2) One of the environmental objectives must be the rehabilitation of land adversely affected by regulated activities.

(3) A statement of environmental objectives-

(a) may provide for and, for high impact activities, must provide for a report or periodic reports (to be obtained by the Minister at the expense of the licensee) from an independent expert on the environmental consequences of the activities; and

(b) may include a system for evaluating the licensee's environmental performance.

(4) A statement of environmental objectives-

(a) may be generally applicable throughout the State; or

(b) may be limited to a specific part of the State.

2. INTRODUCTION

To accord with Division 4 Section 99 of the South Australia *Petroleum and Geothermal Energy Act 2000,* this SEO has been prepared for the South East South Australia natural gas transmission pipeline, herein referred to as the SESA Pipeline, South Australian Pipeline Licence Number 16 (PL 16), to include the release of the *South Australian Petroleum and Geothermal Energy Act and Regulations 2000* as proclaimed on 1 October 2009.

2.1 BACKGOUND

This SEO is intended to complement the Operations Environmental Management Plan (EMP) for the SESA Pipeline, which was developed based on the Environmental Effects Report / Environmental Impact Report (EER/EIR) and includes objectives that relate to the operation, construction and decommissioning of the SESA Pipeline.

On the basis of the information provided in the EER/EIR and a stakeholder consultation program an SEO was developed early during 2005 (prior to construction) to outline the environmental objectives to which the pipelines construction, operation and decommissioning activities would conform and integrate the key elements and systems, contained within the *APIA Code of Environmental Practice - Onshore Pipelines,* to facilitate continual environmental improvement.

Although an SEO is only required for Pipeline licence approval in South Australia its contents is applied to both the South Australian and Victorian sections of the pipeline. An SEO report to assess environmental performance is provided to PIRSA electronically on a quarterly basis. During June 2008 the SESA quarterly report template was revised to include all operational objectives rather than incident definitions as previously reported.

2.2 PURPOSE OF THE SEO

The SEO aims to provide guidance and direction for the environmental management of operational, construction and decommissioning activities and embodies industry best environmental practice, to ensure long-term environmental sustainability. The SEO has been designed to identify the potential environmental hazards and consequences associated with the operation, construction and decommissioning of the SESA Pipeline and in keeping with the objectives of the South Australia *Petroleum and Geothermal Energy Act 2000*; which include:

- Minimising the environmental damage from the activities involved in the operation of transmission pipelines for transporting petroleum hydrocarbon gases.
- To establish appropriate consultative processes involving people directly affected by regulated activity and the public generally.
- To protect the public from the risks inherent in regulated activities.
- To promote adherence to AS2885 as a primary means of achieving public, environmental and safety objectives.

3. OPERATIONAL OVERVIEW

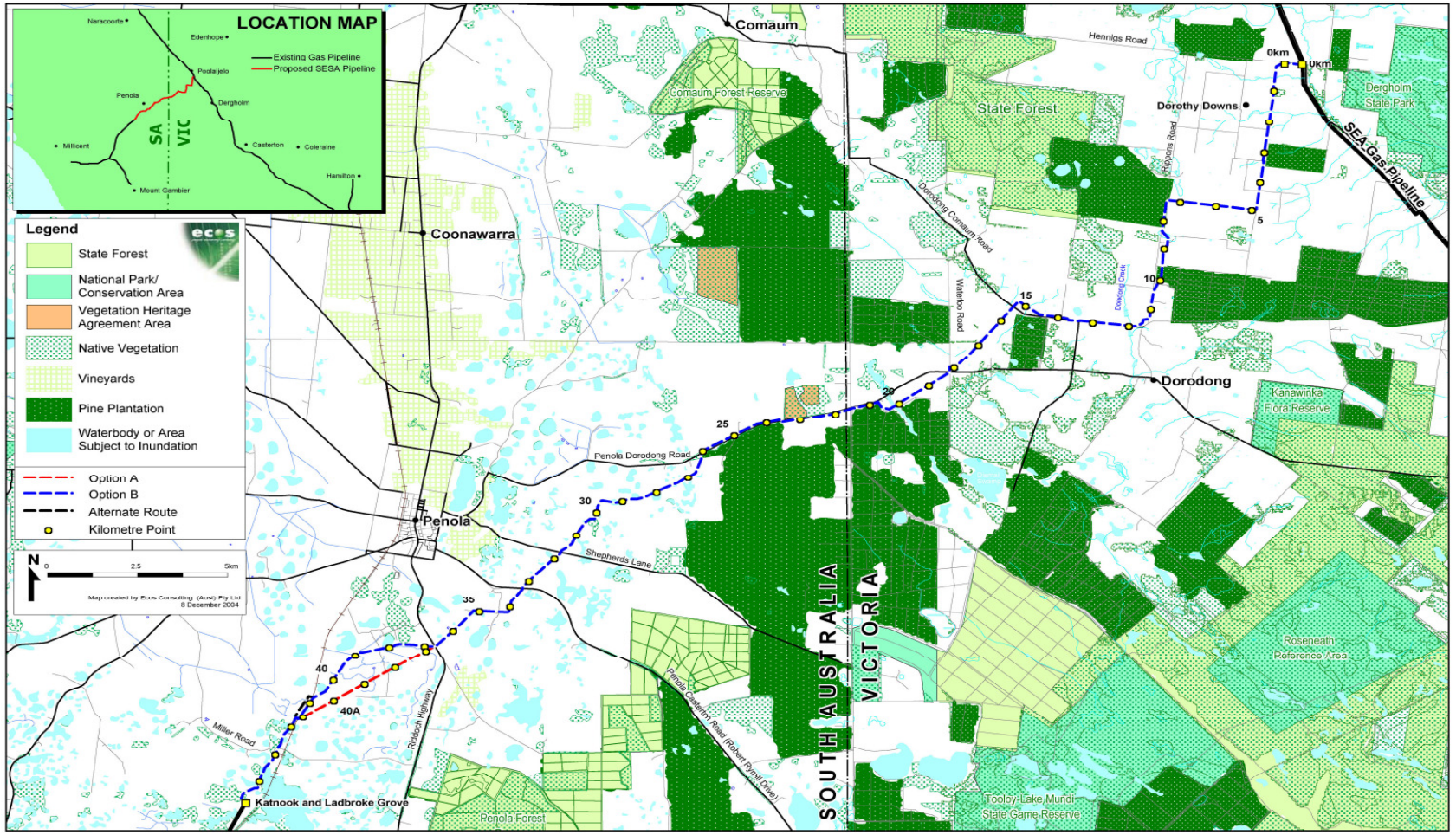
The 45km pipeline falls under two separate pipeline licenses; the first 22km is subject to PL 255 (Vic) issued on 1/3/05, the last 23km is subject to PL 16 (SA) issued on 23/2/05. The APA Group owns and operates the SESA pipeline in accordance with Australian Standard *AS 2885.1, AS2885.2 and AS2885.3* and is subject to the provisions of the South Australia *Petroleum and Geothermal Energy Act 2000* and the Victorian *Pipelines Act 2005*.

The SESA pipeline supplies natural gas from the SEAGas pipeline to the Ladbroke Grove Power Station (LGPS) and to industrial and domestic customers within the southeast region of South Australia via Epic Energy's Southeast Natural Gas Pipeline System (SEPS). The pipeline has a Maximum Allowable Operating Pressure (MAOP) of 10,200kPag, a main outside diameter of 219.1mm (8 inches), a nominal wall thickness of 4.01mm and a nominal depth of cover of 750mm. Increased wall thickness (6.77mm) and depth of cover (1200mm) have been applied to areas identified as 'high risk'; typically these areas include road crossings along the pipeline route.

The nominal pipeline easement width for the SESA Pipeline is 25 metres and is situated within crown land and private property. Land use over the pipeline route varies from sheep and cattle grazing, pine and blue gum plantations, and conservation reserves to vineyards. APA Group endeavours to effectively manage the environmental aspects associated with pipeline operations, whilst maintaining environmental sustainability and environmental compliance. The pipeline is operated and maintained in accordance with AS2885.3-2001 Pipelines – Gas and Liquid Petroleum, Part 3 – Operations and Maintenance. The SESA Transmission Pipeline Route is shown in Figure 1.

Figure 1

SESA Transmission Pipeline Route



4. ENVIRONMENTAL OBJECTIVES

The intent of this SEO is to outline the environmental objectives to which the pipeline construction, operation and decommissioning activities will conform and the criteria upon which the achievement of these objectives will be assessed. Potential environmental hazards and consequences associated with the construction, operation and decommissioning of the SESA Pipeline have been identified and incorporated into the SEO to enable regular assessment and achievement. An objective relating to the security of natural gas supply has been added to the SESA Pipeline Management Objectives for Operation. The objectives for the environmental management of the operation, construction and decommissioning of the SESA Pipeline (PL 16) are detailed in Tables 1, 2 and 3 respectively and cover the management of:

Operations:

- Soil and Ground Stability
- Water
- Land or Water Contamination
- Vegetation Cover
- Heritage
- Noise Emissions
- Atmospheric Emissions
- Damage to Infrastructure/Land Use
- Public Health and Safety
- Security of Supply

Construction:

- Soil and Ground Stability
- Water
- Land or Water Contamination
- Vegetation and Fauna
- Weeds and Pathogens
- Heritage
- Noise Emissions
- Atmospheric Emissions
- Damage to Infrastructure/Landholders and Land Use
- Public Health and Safety

Decommissioning:

- Easement Restoration and Infrastructure State

5. ASSESSMENT CRITERIA

To ensure that the environmental objectives are achieved and maintained, assessment criteria have been developed to ensure long-term compliance. The assessment criteria assigned to each objective will be one of the following:

- **Defined Condition** – Specific environmental objectives for operations, construction and decommissioning, which can only be evaluated through active prevention of non-complying impacts

- **Defined Requirement** – Attainment of environmental objectives against prescribed procedures or actions defined for an operational activity

Tables 1, 2 and 3 contain the assessment criteria for pipeline operation, construction and decommissioning respectively.

Achievement against the SEO is assessed on a quarterly basis through pipeline patrols, landowner/occupier consultation, incident reports, photo point monitoring and other pipeline operational non-routine and routine activities. Appropriate actions to reinstate compliance with stated objectives shall be initiated, based on an assessment of inherent environmental risk. Resources shall be optimised in order to target high priority non-compliances.

Environmental objectives shall be audited every two years as part of the environmental audit program, to assess the level of compliance in relation to stated objectives. Should subsequent audits identify any major non-conformances with respect to the environmental objectives then additional audits will be conducted until the non-conformances are rectified.

Table 1

SESA Pipeline Environmental Management Objectives – Pipeline Operations

OBJECTIVE	GOAL(S)	Guide to How Objectives Can Be Achieved[1]	ASSESSMENT CRITERIA[2]
1. To maintain soil stability/ Integrity on the easement.	1.1 To minimise the potential for soil erosion, inversion, compaction and/or subsidence along the pipeline easement. 1.2 To manage soil rehabilitation areas in an appropriate manner.	Inspections undertaken as part of regular patrols. Preventative measures implemented and monitored in susceptible areas in a timely manner.	No un-remediated subsidence. No evidence of subsoil on surface (colour). No evidence of soil compaction or associated poor plant growth on the pipeline easement (e.g. hard soil). Soil erosion and/or subsidence is better, or at least consistent with the surrounding area. Rehabilitation areas support regrowth consistent with the surrounding area.
2. To minimise and manage impacts to water resources.	2.1 To ensure that operation and maintenance activities do not give rise to pollution of watercourses. 2.2 To maintain current surface drainage patterns	Regular patrols undertaken to look for evidence of erosion, windrow development or any changes to the easement that could alter surface hydrology conditions. Observations undertaken following significant storm events. To promote and maintain water drainage patterns	Solid & liquid wastes have not polluted rivers, streams, watercourses, dams or lakes. Bank stability maintained, especially following high rainfall events. Likely alteration to drainage patterns not evidenced by soil erosion or subsidence. Compliance with EPA *Environment Protection (Water Quality) Policy 2003.* No reasonable complaints received from landholders or third party users in relation to use of surface waters.

[1] This column is provided for information only. Under the Petroleum and Geothermal Energy Act 2000, only objectives and assessment criteria are approved.

[2] Assessment criteria shown have been developed to be 'black and white'.

OBJECTIVE	GOAL(S)	Guide to How Objectives Can Be Achieved[1]	ASSESSMENT CRITERIA[2]
3. To avoid land or water contamination.	3.1 To prevent spills and if they occur minimise their impact. 3.2 To ensure that rubbish and waste material are disposed of in an appropriate manner. 3.3 To prevent the spread of contamination where the easement intersects known contaminated sites. 3.4 To prevent impacts as a result of hydrotest water, trench water and waste water (wash down water) disposal.	To ensure that all wastes are removed from the site and appropriately disposed. To conduct all activities associated with pipeline operation in a manner that reduces the production of waste. Regular patrols carried out to look for evidence of rubbish, spills (soil discolouration). Spills/contamination remediated in consultation with regulatory bodies and agencies. Ensure appropriate spill response equipment is available and personnel are trained in spill Response Procedures. Testing of hydrotest water if potentially harmful chemicals added.	No wastes evident on or off the easement arising from pipeline operations. No soil or water contamination as a result of pipeline activities. No evidence of impacts to soil, water and vegetation as a result of water disposal. Documented waste disposal records to confirm disposal of prescribed waste in accordance with the *Environment Protection Act 1993*. Discharge water meets appropriate EPHC criteria for point of disposal.

OBJECTIVE	GOAL(S)	Guide to How Objectives Can Be Achieved[1]	ASSESSMENT CRITERIA[2]
4. To promote and maintain native vegetation cover on the right-of-way and prevent the spread of weeds and pathogens.	4.1 To promote and maintain regrowth on the easement to be consistent with surrounding areas. 4.2 To minimise additional clearing of native vegetation as part of operational activities. 4.3 To manage vegetation on the easement so that it does not interfere with the integrity of the pipeline. 4.4 To ensure maintenance activities are planned and carried-out in a manner that minimises impacts to native fauna. 4.5 To ensure that weeds and pathogens are controlled at a level that is consistent with adjacent land.	Encourage regrowth of native grasses and shrubs along the right-of-way, within 3m of the pipeline centreline, where appropriate (i.e. – not in farmland used for cropping or pasture). Revegetation of easement where remnant vegetation has been cleared during construction. Maintain vegetation in accordance with pre-existing conditions and ensure environmental weeds and pathogens along the right-of-way are managed in a manner consistent with adjoining land. Prompt reinstatement and revegetation of cleared native vegetation. Implementation of control of weeds and pathogens on easement. Records of outbreaks found, weed control activities and photo monitoring of significant outbreaks. Vehicle cleaning and wash down procedures in place.	Native vegetation regrowth (grasses, shrubs & trees) along right-of-way is typical of adjoining areas. Note: Assessment of the consistency with surrounding areas will take into account that regrowth is dependant on time and rainfall. No complaints from landholders in respect to crop losses along the right-of-way. Vegetation trimmed rather than cleared where possible. Avoid disturbance to areas of remnant vegetation. Approval obtained under the *Native Vegetation Act 1991* for any clearance of native vegetation. No new weed infestations or pathogens as a result of pipeline activities.
5. To adequately protect heritage sites and values.	5.1 To ensure that identified heritage sites are undisturbed and appropriately managed during pipeline operations and maintenance activities.	To implement an effective communication strategy with relevant heritage groups. To manage identified Aboriginal and European heritage sites in accordance with prescribed procedures. To appropriately manage any newly identified heritage sites in accordance with prescribed procedures.	Management of identified heritage sites in consultation with traditional custodians. Any new heritage sites identified are reported to appropriate authority and recorded. Compliance with work Instructions in relation to heritage site management. No impact to known sites without approval under the *Aboriginal Heritage Act 1988* or the *Heritage Places Act 1993.*

OBJECTIVE	GOAL(S)	Guide to How Objectives Can Be Achieved[1]	ASSESSMENT CRITERIA[2]
6. To minimise noise due to operations.	6.1 To ensure operations comply with noise standards	To ensure that operations comply with noise standards and where possible ensure that landholders are not disturbed. Monitoring results and incident reports. Design any facilities to meet the noise requirements under the *Environment Protection Act 1993.*	No noise related complaints from landholders or third parties. Compliance with Legislative requirements of *Environment Protection Act 1993 and Environmental Protection (Industrial Noise) Policy 1994* in respect of noise emissions.
7. To minimise atmospheric emissions	7.1 To minimise controlled and uncontrolled atmospheric emissions. 7.2 To minimise the generation of dust.	To ensure that uncontrolled atmospheric emissions that affect an area, not designed to contain such an escape, are managed to accord with the requirements of the Petroleum and Geothermal Energy Act 2000. To minimise dust generation by management of vehicle operations along the easement.	No uncontrolled atmospheric emissions that have affected an area that has not been specifically designed to contain such an escape. No complaints from third parties in respect of air quality. Compliance with EPA *Environment Protection (Air Quality) Policy 1994*.
8. To avoid unnecessary disturbance to third party infrastructure, landholders or land use.	8.1 To minimise disturbance or damage to infrastructure/land use and remediate where disturbance can not be avoided. 8.2 To maintain appropriate consultation with all relevant landholders.	To minimise disturbance to land use and damage to infrastructure. To develop site-specific land management strategies in consultation with landholders, for likely impacts arising from temporary land use disturbance. To inform landholders of likely land use disturbance as a direct result of operations. Measures undertaken to minimise third party use of right-of-way.	No reasonable complaints from landholders in relation to land use or infrastructure damage. Where disturbance is unavoidable or accidental, infrastructure or land use is restored to the satisfaction of the landholder or to undisturbed condition. Duration of disturbance does not exceed agreed time frame. Appropriate consultation with landholders regarding pipeline activities, which may affect their particular property.

OBJECTIVE	GOAL(S)	Guide to How Objectives Can Be Achieved[1]	ASSESSMENT CRITERIA[2]
9. To minimise the risks to public and third party health and safety.	9.1 To ensure that adequate measures are in place to protect public and third party safety during operations. 9.2 To minimise the risk of fire during routine operations. 9.3 To prevent unauthorised activity on the easement that may adversely impact on the integrity of the pipeline.	To prevent unauthorised activities along the pipeline which have the potential to result in a risk to the safety of the public and third parties. Job Safety Analysis (JSAs) carried out to identify potential hazards and implement controls. Inspection/patrol reports and records. Adequate implementation of traffic management processes. Comprehensive landholder liaison program and records of communication with landholders. Clear identification of the pipeline to accord with AS2885. Reports of unauthorised activity on the ROW prepared to adhere with the *guidelines for Reportable and Serious Incidents.* Regular emergency response exercises and reviews of emergency response processes.	No incidents or accidents involving the public or a third party occur during pipeline operations. Documented evidence of public safety management and pipeline awareness, during the course of pipeline operations. Adherence to AS 2885. No fire outbreaks arising from pipeline operations.
10. To ensure that security of natural gas supplies are maintained to gas consumers.	10.1 To minimise the potential for significant disruption of gas supply to customers in line with contractual agreements.	Emergency Response Exercises carried out to determine prompt and effective response. In the event of an emergency where gas supplies are disrupted, ensure that the pipeline system is returned efficiently to a safe, operational state with minimum customer and environmental impact. Mapped processes of responding to breakdown and emergencies.	No interruption to gas supply.

Table 2

SESA Pipeline Environmental Management Objectives – Pipeline Construction

OBJECTIVE	GOAL(S)	Guide To How Objectives Can Be Achieved	ASSESSMENT CRITERIA
11. To avoid or minimise adverse impacts on soils and terrain	11.1 To minimise soil erosion and sedimentation as a result of pipeline construction 11.2 To prevent soil inversion 11.3 To mitigate soil compaction if necessary by remedial action 11.4 To mitigate impacts of exposing potential acid sulphate soils (ASS) 11.5 To reinstate soil and terrain to pre-construction contours and conditions	Construction Environmental Management Plan (CEMP) contains environmental work procedures (EWP) that specify soil management and reinstatement requirements Preventative measures implemented and monitored in susceptible areas Erosion and sedimentation control structures installed and maintained in susceptible areas Regular inspections undertaken of easement and construction areas to look for evidence of soil compaction and erosion Identification of areas of potential acid sulphate soils Implement reinstatement requirements as specified Regular inspections undertaken of easement and construction areas Installation and monitoring of photo points (environmental monitoring points)	The extent of soil erosion on the easement is consistent with surrounding land No evidence of subsoil on surface (colour) No visual evidence of soil compaction following remediation of pipeline easement (e.g. hard soil, local water pooling) No evidence of impacts of acid sulphate soil exposure (odour, discolouration, vegetation death) Surface contours consistent with adjacent land

OBJECTIVE	GOAL(S)	Guide To How Objectives Can Be Achieved	ASSESSMENT CRITERIA
12. To minimise and manage impacts to water resources	12.1 To minimise short term, and prevent long-term, interruption or modification to surface drainage patterns	Regular inspections undertaken of easement and construction areas specifically to look at watercourse crossings. Installation and monitoring of photo points (environmental monitoring points) Specify management requirements including:	No adverse impacts (for example to downstream ecology or land use) resulting from watercourse flow reductions or diversions as a result of pipeline construction activities. No evidence of altered watercourse flows following reinstatement.
	12.2 To minimise the amount of sediment entering surface water features	No stockpiling of materials in watercourses/flowlines Use of appropriate sediment and silt capturing devices Installation of permanent beams on slopes	No evidence of project related erosion of watercourses intersecting or adjacent to the pipeline easement. Surface drainage profiles restored.
	12.3 Minimise disruption to third party use of surface waters	Minimising period between clearing and reinstatement at or near watercourses Stabilisation, reinstatement and revegetation of watercourses and drainage lines Liaison with third party users regarding potential disruptions Minimising period of disturbance and prompt reinstatement in sections of easement intersecting or adjacent to water bodies interruptions	Drainage is maintained to pre-existing conditions or better. Compliance with EPA *Environment Protection (Water Quality) Policy 2003.* No reasonable complaints received from landholders or third party users in relation to use of surface waters.

OBJECTIVE	GOAL(S)	Guide To How Objectives Can Be Achieved	ASSESSMENT CRITERIA
13. To avoid land or water contamination	13.1 To prevent spills from occurring	Regular inspections for evidence of soil or water discolouration, vegetation or fauna death. Incident / Spill reports. Use of spill protection methods where work is completed within or adjacent to environmentally sensitive areas. Ensuring personnel are trained in spill response procedures. Containment of all hazardous substances and liquid waste in appropriate vessels/containment areas. Compliance with fuel and hazardous waste standards. Waste management requirements including removal of all waste specified.	No spills or leaks to areas not designated to contain spills.
	13.2 To ensure that rubbish and waste material are disposed of in an appropriate manner		No rubbish or litter on easement or at facilities Waste material is contained and disposed of in accordance with Environment Protection Act.
	13.3 To prevent adverse impacts as a result of hydrotest water, trench water and waste water (washdown water) disposal	Regular inspection to look for evidence of rubbish, spills (soil discolouration) Waste disposal records, chemical manifests. Appropriately licensed contractors used for any hazardous waste disposal and records are maintained for all hazardous waste disposal. Water disposed of in a manner that prevented discharge or runoff to watercourses or environmentally sensitive areas. Water discharged onto stable ground, with no evidence of erosion as a result of discharge. Records on source of water and discharge method/location.	No evidence of impacts to soil, water and vegetation as a result of water disposal (e.g. soil erosion, soil salinity, dead vegetation, water discoloration).

OBJECTIVE	GOAL(S)	Guide To How Objectives Can Be Achieved	ASSESSMENT CRITERIA
14. To minimise adverse impacts to vegetation and fauna	14.1 To minimise and where practicable avoid clearing of remnant vegetation	Utilise previously disturbed areas to avoid remnant vegetation. Flagging/marking of remnant vegetation requiring management/avoidance. Retain trees on ROW where possible. Trim vegetation in lieu of removal where possible.	All areas of remnant vegetation avoided, or where clearance required, significant environmental benefit approved by the Native Vegetation Council.
	14.2 To minimise disturbance to fauna	Restrict disturbance the ROW and approved access and work areas. Reduction of ROW width during construction in identified significant areas. Obtain any permits / clearance consent required. Identification of significant fauna habitats that require management during construction and implementation of management requirements. Alignment selection to minimise impacts to important nesting/breeding habitats. Provision of fauna ramps at regular intervals in open trench. Daily inspection of open trenches in areas adjacent to remnant vegetation.	Native fauna casualties associated with construction restricted to as low as reasonably practical. Species abundance and distribution on the easement is consistent with the pre-construction conditions. Note: assessment of the consistency with surrounding areas will take into account that regrowth is a time and rainfall dependent process.
	14.3 To appropriately rehabilitate the easement to pre-construction condition, as reasonably practical	Prompt reinstatement and revegetation of cleared native vegetation. Revegetation of areas on the easement where remnant vegetation has been cleared during construction with appropriate local native species. Installation and monitoring of photo points (environmental monitoring points).	No reasonable complaints received from landholders in relation to regrowth of vegetation on the easement.

OBJECTIVE	GOAL(S)	Guide To How Objectives Can Be Achieved	ASSESSMENT CRITERIA
15. To avoid the introduction or dispersal of weeds and pathogens	15.1 To avoid the spread of environmental/proclaimed weeds and animal and plant pathogens and undertake control where required	Vehicles and machinery cleaned and inspected before entry to project area. Vehicle cleaning register. Identification of weeds/pathogens on easement and adjacent land. Implementation of control measures of weeds and pathogens on easement. Records of outbreaks found, weed control activities and photo-monitoring of significant outbreaks.	The presence of weeds and pathogens on the easement is consistent with or better than adjacent land. No new outbreak or spread of pathogens.
16. To minimise and manage impacts to heritage sites and values during construction	16.1 To ensure that identified heritage sites are not disturbed, including archaeological heritage, built heritage and culturally significant vegetation	Identification of known heritage sites on easement. Surveys / cultural heritage monitoring during clear and grade in sensitive areas. Implement appropriate protocols for dealing with accidental discovery of cultural heritage material during construction. Obtain all necessary approvals in the event of an accidental/unavoidable site disturbance. Seek advice from relevant authorities for remediation of site, if required. Incident reports.	No impact to known sites without approval under the *Aboriginal Heritage Act 1998* or the *Heritage Act 1993.* Any new sites identified are reported to appropriate authority and recorded.
17. To minimise noise due to construction	17.1 To minimise noise impacts associated with the movement and operation of construction vehicles and equipment	Schedule normal construction activities near residences in accordance with EPA guidelines and/or consult with local residents when unavoidable out-of-hours work is required. Regular maintenance of construction vehicles and equipment.	Compliance with EPA guidelines when constructing near residences.

OBJECTIVE	GOAL(S)	Guide To How Objectives Can Be Achieved	ASSESSMENT CRITERIA
18. To minimise atmospheric emissions	18.1 To minimise the generation of dust	Management requirements specified in CEMP/EWP including use of water trucks and sprayers if necessary. Records of induction/training.	No reasonable complaints received.
19. To minimise disturbance to third party infrastructure, landholders and land use	19.1 To minimise disturbance or damage to infrastructure / land use and remediate where disturbance cannot be avoided 19.2 To minimise disturbance to landholders 19.3 To appropriately reinstate and rehabilitate the easement to allow continuation of current land use activities post-construction	Formal easement agreements outlining the legal responsibilities of Origin and landowners. Implement CEMP requirements. Restrict disturbance the ROW and approved access and work areas. Identification of utilities present on or near the easement on alignment sheets. Records of communications with landholders / 3rd party prior to and during construction activities. Incident reports. Restrict disturbance the ROW and approved access and work areas. Records of communications with landholders prior to and during construction activities. Management requirements specified in CEMP and property line list. Records of communications with landholders prior to and during construction activities.	Where disturbance is unavoidable or accidental, infrastructure or land use is restored to the satisfaction of the landholder/owner or to undisturbed condition. No disturbance outside the ROW and approved access and work areas. Duration of disturbance does not exceed agreed timeframe. No reasonable complaints received. No reasonable landholder complaints. Landholder activities not restricted or disturbed as a result of pipeline activities unless by prior arrangement. Vegetation cover on the easement consistent with the surrounding area or as agreed with landholder. Note: assessment of the consistency with surrounding areas will take into account that regrowth is a time and rainfall dependent process.

OBJECTIVE	GOAL(S)	Guide To How Objectives Can Be Achieved	ASSESSMENT CRITERIA
20. To minimise the risk to public health and safety	20.1 To adequately protect public safety during construction	Records of communications with adjacent landholder and 3rd Parties prior to and during construction work including advice of the nature and schedule of activities. Use of signage or bunting to identify all potentially hazardous areas. Site induction program for all personnel / visitors. Adequate implementation of traffic management practices. Records of Fitness for Purpose Reports, Risk Assessment and inspections. Records demonstrating compliance with AS2885. Records of emergency response plan induction/training for construction personnel.	No injuries or incidents involving the public.
	20.2 To avoid fires associated with pipeline construction activities	Incident Reports. Records of regular fire safety and emergency response training for construction personnel. Appropriate fire prevention/control equipment on site.	No pipeline construction related fires.

Table 3

SESA Pipeline Environmental Management Objectives – Pipeline Decommissioning

OBJECTIVE	GOAL (S)	Guide to How Objectives Can Be Achieved[1]	ASSESSMENT CRITERIA[2]
21. To appropriately decommission the pipeline in accordance with regulatory requirements and accepted best practice environmental management criteria.	21.1 To decommission pipeline and associated infrastructure in a safe and timely manner, in accordance with appropriate regulatory requirements. 21.2 To minimise environmental disturbance to remnant vegetation; landholders and third party stakeholders. 21.3 To restore the natural environment and promote biodiversity.	Compliance with relevant occupational health, safety and welfare regulatory requirements. Records of consultation with regulatory authorities, landholders and industry associations. Compliance with relevant environmental regulatory requirements. Initiation of revegetation or similar restoration works and monitoring programmes as required.	Pipeline and associated above-ground infrastructure decommissioned to an appropriate standard as required by the legislation and standards of the time. No complaints from landholders and third party stakeholders.

[1] This column is provided for information only. Under the Petroleum and Geothermal Energy Act 2000, only objectives and assessment criteria are approved.
[2] Assessment criteria shown have been developed to be 'black and white'.

6. INCIDENT REPORTING REQUIREMENTS

In accordance with the requirements of Section 100 (1) (d) of the South Australia *Petroleum and Geothermal Energy Act 2000*, an SEO shall impose reporting obligations on an individual carrying out regulated activities. Regulation 12(2) requires an SEO to identify events, which may arise from regulated activities, which could contribute towards the development of a serious incident or a reportable incident within the context of Section 85 of the Act.

Section 85 of the South Australia *Petroleum and Geothermal Energy Act 2000* and Section 32 of the South Australia *Petroleum and Geothermal Energy Regulations 2000,* respectively, prescribe that incidents deemed to be "serious" or "reportable", shall be reported to the Minister of Primary Industries and Resources as soon as practicable after the occurrence. Both reportable and serious incident reports are to include an assessment of the effectiveness of design, procedures and management systems that were in place to prevent the incident from occcurring. Other reporting requirements include:

- Serious Incidents – must be reported to the Minister for Primary Industries and Resources as soon as practicable after the occurrence, as per Section 85 of the South Australia *Petroleum and Geothermal Energy Act 2000* and Section 32 of the South Australia *Petroleum and Geothermal Energy Regulations 2000*.
- Reportable Incidents – must be reported to the Minister for Primary Industries and Resources on a quarterly basis within one month of the end of the quarter, as per Section 32 of the South Australia *Petroleum and Geothermal Energy Regulations 2000*.

6.1 INCIDENT DEFINITIONS

Pursuant to Section 85(1) and the expanded incident definitions in support of Section 85(1)(e) and Regulation 32(1)(b), the definitions contained in Table 4 constitute serious and reportable incidents.

Table 4

Serious Incidents	Reportable Incidents
1. A person is seriously injured[5] or killed. 2. An imminent risk to public health or safety arises. 3. Serious environmental damage occurs or an imminent risk of serious environmental damage arises. For example: a) Disturbance to sites of cultural and/or heritage significance without appropriate permits and approvals[6]. b) An escape of petroleum, process substance, a chemical or a fuel to a water body, or to land in a place where it is reasonably likely to enter a water body by seepage or infiltration, or onto land that affects the health of native flora and fauna species. c) Detection of a declared weed, animal/plant pathogen or plant pest species that has been introduced or spread as a direct result of activities. d) Any removal of rare, vulnerable or endangered flora and fauna without appropriate permits and approvals[7]. 4. Security of natural gas supply is prejudiced or an imminent risk of prejudice to security of natural gas supply arises[8]. 5. An event that compromises the physical integrity of an asset or facility. For example: a) Pipeline[9] or facility failure or rupture. b) Unauthorised activity on a pipeline easement where the pipeline is contacted and repair action is required[10]. 6. An uncontrolled gas release resulting in the activation of gas detection alarms and/or emergency response and evacuation procedures of an area in or adjacent to the gas release, and/or fire or explosion.	1. An escape of petroleum[11], processed substance, a chemical or a fuel that affects an area that has not been specifically designed to contain such an escape[12] (other than a serious incident). 2. An event that has the potential to compromise the physical integrity of an asset or facility. For example: a) Unauthorised activity on a pipeline easement where the pipeline is contacted but repair action is not required. b) Unauthorised activity on a pipeline easement with equipment that has been identified[10] as exceeding the pipeline's penetration resistance, determined in accordance with Australian Standard (AS) 2885. c) Unauthorised activity on a pipeline easement with equipment or vehicles that have been identified[10] as exceeding allowable stress limits, determined in accordance with AS2885. d) An unapproved[13] excursion outside of critical design or operating conditions/parameters. e) Failure of a critical procedural control in place to reduce a credible threat to low or as low as reasonably practicable (ALARP).[14] 3. Malfunction or failure of critical plant or equipment that had (or still has) potential to cause a serious incident.

[5] Includes an immediately notifiable work-related injury pursuant to Division 6.6 of the *Occupational Health, Safety and Welfare Regulations 1995* that results in the issuing of a Prohibition Notice by SafeWork SA.
[6] Pursuant to *Aboriginal Heritage Act 1988* and *Heritage Places Act 1993*
[7] Pursuant to *Native Vegetation Act 1991* (flora) and *National Parks and Wildlife Act 1972* (fauna).
[8] That is, after taking into account relevant factors on a day and rights and obligations under contracts, a significant curtailment of firm service that detrimentally impacts or is likely to impact upon the security of electricity supply to South Australia or to gas supplies to a significant number of commercial and/or domestic gas users in SA.
[9] As per the SA Petroleum and Geothermal Energy Act (2000) definition, the term 'pipeline' includes tanks, machinery and equipment necessary for, or associated with, operation of the pipeline and/or part of a pipeline.
[10] For the case where a detailed assessment is required to determine this, PIRSA recommends the incident be reported initially and amended at a later date if required.
[11] A naturally occurring substance consisting of a hydrocarbon or mixture of hydrocarbons in gaseous, liquid or solid state, as per the SA Petroleum and Geothermal Energy Act (2000) definition.
[12] An area assigned during a Hazard and Operability Process (HAZOP) study as a hazardous area for the purpose of gas venting, and designed as such, is considered to be an area specifically designed to contain a gas escape.
[13] "Approval" as per AS2885 definition. Note that there may be situations where excursions are allowable under AS2885.
[14] As per the Safety Management System process articulated in Australian Standard (AS) 2885.1-2007, or similar risk assessment process.

7. ANNUAL REPORTING REQUIREMENTS

An annual report will be submitted to the Minister for PL 16 as required by Regulation 33, detailing the nature of regulated activities for the previous licence year. The written report will detail technical and performance issues in relation to regulated activities controlled under the licence. Performance against the stated environmental objectives detailed within the SEO, including any non-conformances will also be reported in the annual report. Compliance with the intent of the SEO shall be supported by audit results and action status reports.

8. REFERENCES

- Aboriginal Heritage Act 1988
- AS 2885.1-2007 Pipelines – Gas and Liquid Petroleum, Part 1 – Design and Construction
- AS 2885.3-2001 Pipelines – Gas and Liquid Petroleum, Part 3 – Operations and Maintenance
- Australian Pipeline Industry Association (2005) Code of Environmental Practice – Onshore Pipelines
- *SESA Pipeline* Environment Effects Report / Environmental Impact Report - Origin Energy 2004
- Environment Protection Act 1993
- Environment Protection (Air Quality) Policy 1994
- Environment Protection (Water Quality) Policy 2003
- Environment Protection (Noise) Policy 2007
- Heritage Places Act 1993
- Guidelines for Reportable and Serious Incidents prepared under the Petroleum and Geothermal Energy Act 2000
- Operations Environmental Management Plan for the SESA Pipeline, February 2008
- Petroleum Act (SA) 1994
- Petroleum Act (SA) 2000
- South Australia Petroleum and Geothermal Energy Act 2000
- South Australia Petroleum and Geothermal Energy Regulations 2000
- Native Vegetation Act 1991