Moomba to Adelaide Pipeline System

&

Beverley Lateral Pipeline

Statement of Environmental Objectives

Pipeline Licence 1 & Pipeline Licence 12

S-1-101-SEO-G-002

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DOCUMENT CONTROL SHEET

PL1 Statement of Environmental Objectives

Reference	Rev	Date	Prepared by	Reviewed by	Approved by	Comment
ENV490-SEO	A	22/01/03	KD/ZB	KD		Internal Revision
ENV490-SEO	B	30/01/03	KD/ZB	KD		Draft Issued to Epic Executive & PIRSA
ENV490-SEO	C	20/02/03	KD/ZB	KD		PIRSA Comments included
ENV490-SEO	0	20/03/03	KD/ZB	KD		For submission to PIRSA
S-1-101-SEO-G-002	A	11/04/08	GD/GB/RZ	CDC		Internal revision
S-1-101-SEO-G-002	1	04/08/08	GD/GB/RZ	CDC	PIRSA & CDC	Accepted by PIRSA
S-1-101-SEO-G-002	2	01/12/08	GD/RZ	RB		Minor amendment
S-1-101-SEO-G-002	3	03/12/09	GB	CDC		Changes to Incident reporting definitions – Section 4.1
S-1-101-SEO-G-002	4	03/12/09	DMITRE	DMITRE		Changes to Incident reporting definitions – Section 4.1
S-1-101-SEO-G-002	4A	28/10/14	NF	AT		Draft 5 yearly review issued to DSD.
S-1-101-SEO-G-002	4B	01/06/15	NF	AT		Consolidates objectives as requested DSD. Amalgamation of PL12 SEO with PL1.
S-1-101-SEO-G-002	4C	10/07/15	DSD	DSD		DSD review of draft.
S-1-101-SEO-G-002	4D	17/07/15	NF	BW/AT/ Heathgate Resources		DSD comments incorporated. Issued to DSD for review.
S-1-101-SEO-G-002	4E	21/12/15	NF	AT	DSD	DSD comments incorporated. Provided to DSD for Consultation with Government Departments
S-1-101-SEO-G-002	4F	08/06/16	NF	AT/BW		Minor amendments following consultation.
S-1-101-SEO-G-002	5	28/07/16	NF	AT/BW	DSD	Issued for use

Contents

Appendices

1 Introduction

This Statement of Environmental Objectives (SEO), for the operation of Pipeline Licence 1 (Moomba to Adelaide Pipeline System) and Pipeline Licence 12 (Beverley Lateral Pipeline), has been prepared by Epic Energy South Australia (EESA) in accordance with the requirements of section 99 of the *Petroleum and Geothermal Energy Act 2000* (the Act).

Details of Pipeline Licence 1 and associated infrastructure are provided below:

Licence	*Pipeline Licence 1:*	Moomba to Adelaide Pipeline
Licence description	*Pipelines:*	Moomba to Adelaide Pipeline (858 km including loops) Amcor Lateral (10.2 km) Angaston Lateral (38.7 km) Burra Lateral (15.0 km) Dry Creek Lateral (1.30 km) Hallett Lateral (0.72 km) Mintaro Lateral (0.33 km) Nuriootpa Lateral (1.60 km) Osborne Lateral (1.31 km) Pelican Point Lateral (1.88 km) Peterborough Lateral (1.90 km) Point Douglas Lateral (11.5 km) Port Bonython Lateral (5.50 km) Port Pirie Lateral (77.80 km) Quarantine Power Station Lateral (0.12 km) Sea Gas MAPS Interconnect Pipeline (0.5 km) Taperoo Lateral (1.20 km) Tarac Lateral (0.4 km) Wasleys-Torrens Island Loop (43 km) Whyalla Lateral (87.80 km)
	Facilities:	Compressor Stations (7) (CS2, 5 & 7 are mothballed) Station Accommodation (CS1, 2, 3, 4, 5, 6) Metering / Regulation Stations Scraper Stations Hot Taps Mainline Valves Communications Cathodic Protection Pipeline Markers
Location	Refer to Figure 1.	
Activities covered by this SEO.	All regulated activities relating to the operation, maintenance and decommissioning of the pipeline and laterals. This SEO does not apply to pipeline construction projects.	

Details of Pipeline Licence 12 and associated infrastructure are provided below:

Licence	*Pipeline Licence 12:*	Beverley Lateral Pipeline
Licence description	*Pipeline:*	Beverley Lateral (14.4 km)
	Facilities:	1 Inlet Meter Station Pipeline Markers
Location	Refer to Figure 1.	
Activities covered by this SEO.	All regulated activities relating to the operation, maintenance and decommissioning of the lateral. This SEO does not apply to pipeline construction projects.	

1.1 Background

The Moomba to Adelaide Pipeline (MAP) was constructed by the Pipeline Authority of South Australia (PASA) in 1969, and acquired by Epic Energy in 1995. The pipeline transports natural gas from the Cooper Basin to markets in Adelaide and, via a series of lateral pipelines to regional centres such as Peterborough, Port Pirie, Whyalla, Burra, Angaston and Nuriootpa.

The MAP and laterals are referred to as the Moomba to Adelaide Pipeline System (MAPS) and are owned and operated by Epic Energy South Australia (EESA) under Pipeline Licence 1 (PL1).

The Beverley Lateral was constructed in 2000 to transport natural gas from the MAP to the Beverley mine site. It is owned by Heathgate Resources Pty Ltd (Heathgate) and operated by Epic Energy under Pipeline Licence 12 (PL12).

1.2 Purpose of SEO

The intent of this SEO is to outline the environmental objectives to which the pipeline operating activities will conform.

The objectives of this SEO have been developed on the basis of information and issues identified in the Pipeline Licence 1 and Pipeline Licence 12 Environmental Impact Report (Epic 2015) and are in keeping with the objectives in section 3 of the Act, which include:

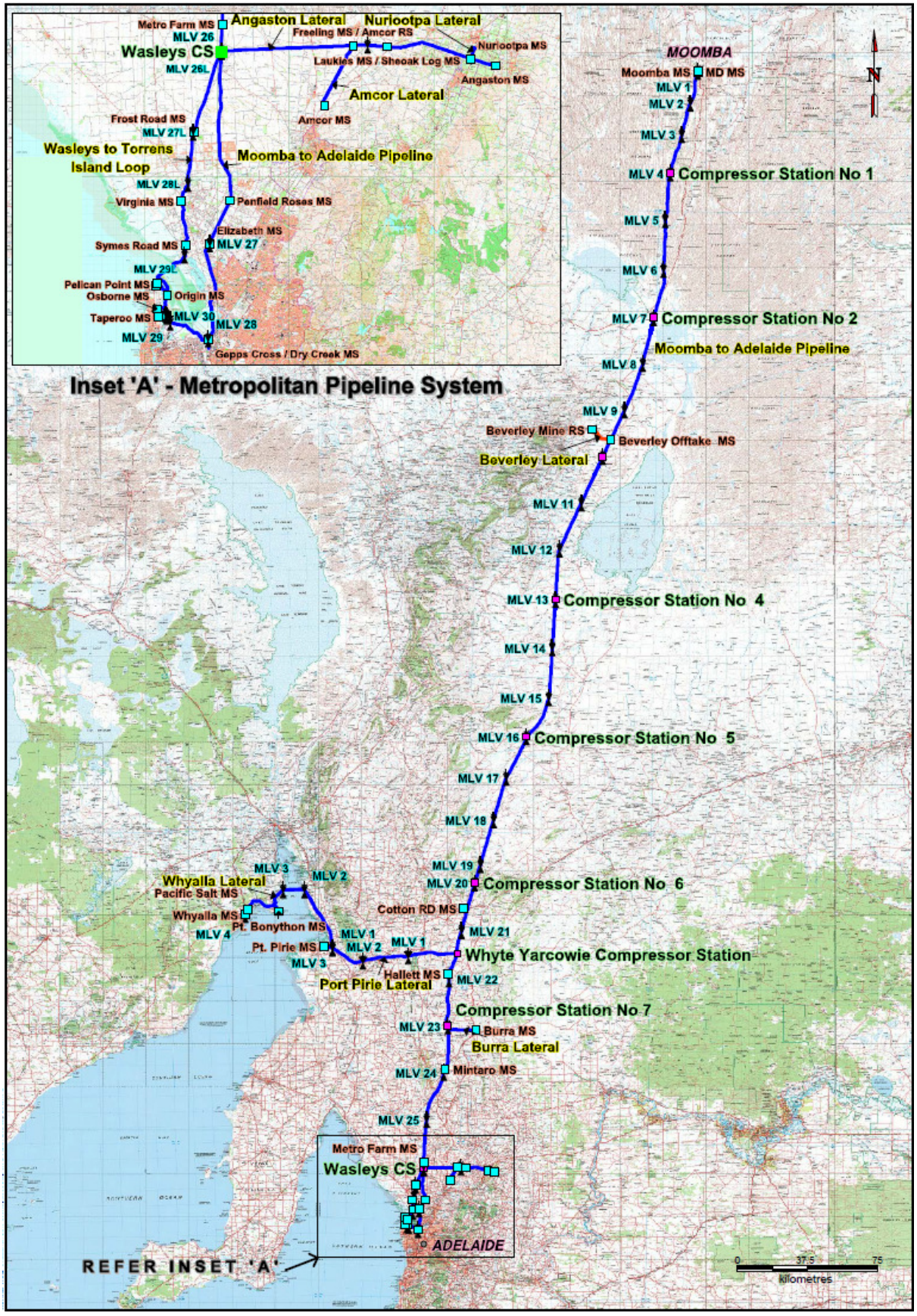
- To minimise the environmental damage from the activities involved in the operation of transmission pipelines for transporting petroleum;
- To establish appropriate consultative processes involving people directly affected by regulated activities and the public generally;
- To promote adherence to AS2885 as a primary means of achieving public, environmental and safety objectives;
- To ensure as far as reasonably practicable security of supply for users of natural gas; and
- To protect the public from risks inherent in regulated activities.

In accordance with regulation 12(2) of the *Petroleum and Geothermal Energy Regulations 2013*, this SEO also identifies events that could arise from the regulated activities associated with the operation, maintenance and decommissioning of PL1 and PL12, which may cause serious or reportable incidents within the meaning of section 85 of the Act. Refer to section 4 below.

This SEO takes account the previous Declarations of Environmental Factors and Codes of Environmental Practice approved under the Act, and makes reference to the Australian Pipeline Industry Association Code of Environmental Practice – Onshore Pipelines (Revision 3, 2013).

As stated above, this SEO applies to pipeline operations, maintenance and decommissioning only.

Figure 1: Location of Pipeline and Laterals (PL1 and PL12)



2 Environmental Objectives

Potential environmental hazards and consequences associated with the operation of the Moomba to Adelaide Pipeline System and Beverley Lateral Pipeline have been identified in the Pipeline Licence 1 and Pipeline Licence 12 Environmental Impact Report (EIR) (Epic 2015) Epic Energy and Heathgate Resources are committed to achieving a range of environmental objectives in regard to these potential hazards.

2.1 Operations and Maintenance

The environmental objectives for the operations and maintenance of PL1 and PL12 are:

1. *No injuries, deaths or health impacts to the public or third parties from regulated activities that could have been reasonably prevented by the operator.*

2. *No significant impacts to native flora and fauna (including terrestrial and aquatic) due to regulated activities or escape of petroleum, processes substance, chemical or fuel.*

3. *Minimise disturbance to drainage patterns and avoid water contamination.*

4. *No introduction of new species of weed, plant, pathogen or pests (feral animal) that have long term adverse impacts and implement control measures as necessary.*

5. *Minimise disturbance to indigenous and non-indigenous heritage sites, objects, remains and places unless prior approval under relevant legislation obtained.*

6. *Maintain stakeholder relationships and minimise disturbance to landowners and/or associated infrastructure.*

7. *To ensure as far reasonably practicable security of supply for users of natural gas.*

2.2 Decommissioning

Epic Energy's Pipeline Integrity Management Plan includes a 5 yearly Remaining Life Review of each pipeline for continued operation at its design conditions and Maximum Allowable Operating Pressure (MAOP).

Where the remaining life of a pipeline has been evaluated as insufficient to meet its design life; (a) the design life of the pipeline shall be revised in accordance with Clause 10.2.1 of AS2885.3 - 2012 for any proposed MAOP reduction; or (b) a refurbishment program shall be planned and implemented to reinstate the structural integrity of the pipeline.

In the event that the pipeline system is no longer required, it will be decommissioned in accordance with AS2885 and the regulatory requirements and accepted current environmental best practices of the day.

The environmental objective for the decommissioning of PL1 and PL12 is:

8. *To appropriately decommission the pipelines and associated infrastructure in accordance with regulatory requirements and accepted best practice environmental management.*

3 Assessment Criteria

The environmental objectives identified above are subject to an assessment to measure the level of achievement. The assessment criteria for each objective will be one of the following:

- **Defined conditions** - objectives for operation activities that can only be managed through the prevention of unacceptable actions (e.g. no soil or water contamination due to pipeline activities);

- **Defined requirements** - the achievement of an objective can be assessed against the implementation of specific procedures or actions required for an activity (e.g. the design and construction of the pipeline must meet the requirements of *AS 2885.1—2012 Pipelines—Gas and liquid petroleum*); and

- **Goal Attainment Scaling (GAS) Criteria** – objectives requiring visual assessment can be prone to uncertainties of subjective judgement. To minimise this occurring, GAS is used to measure such objectives against a series of criteria described by a written description and/or photographically. In this SEO, GAS is applied to measuring construction, management and rehabilitation of borrow pits (refer to Appendix B).

Appendix A tabulates the objectives and the appropriate assessment criteria.

4 Reporting

Pursuant to regulation 12(2), this SEO identifies events that could arise from the regulated activities associated with the operation, maintenance and decommissioning of PL 1 and PL 12, which may cause serious or reportable incidents within the meaning of section 85 of the Act.

4.1 Definitions

The following descriptions have been provided to help clarify and elaborate on the expanded definitions to section 85(1) of the Act and regulation 32(1).

Serious incident means an incident arising from activities conducted under the licence in which:

a) a person is seriously injured or killed; or

b) an imminent risk to public health or safety arises; or

c) serious environmental damage occurs or an imminent risk of serious environmental damage arises; or

d) security of natural gas supply is prejudiced or an imminent risk of prejudice to security of natural gas supply arises; or

e) some other event or circumstance occurs or arises that results in the incident falling within a classification of serious incidents under the regulations or a relevant statement of environmental objectives (refer to note below).

Reportable incident means an incident (other than a serious incident) arising from activities conducted under a licence classified under the regulations as a reportable incident.

In accordance with regulation 32(1), the following are classified as reportable incidents:

a) an escape of petroleum, a processed substance, a chemical or a fuel that affects area that has not been specifically designed to contain such an escape; and

b) an incident identified as a reportable incident under the relevant statement of environmental objectives (refer to note below).

Note: In order to expand on section 85(e) and regulation 32(b) DSD has developed the following set of incident definitions (Table 1) relative to operations (facility and pipeline) activities. These definitions are intended to provide consistency with Licence reporting. The purpose of the provision of examples within the definitions is to enable Licensees to clearly identify events that must be reported.

4.2 Reporting Requirements

Serious Incidents must be reported to the Minister as soon as practicable after the occurrence, as per section 85 of the Act and regulation 32 of the Regulations.

Reportable Incidents must be reported to the Department of State Development on a quarterly basis within 1 month of the end of the quarter, as per regulation 32 of the Act.

Table 1: Incident definitions for operation (facility and pipelines) activities

Serious Incidents	Reportable Incidents
1. A person is seriously injured[1] 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[2]. 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[3]. 4. Security of natural gas supply is prejudiced or an imminent risk of prejudice to security of natural gas supply arises[4]. 5. An event that results in a rupture of a pressure containing asset or facility. 6. A regulated activity[5] being undertaken in manner that involved or will involve a serious risk to the health or safety of a person emanating from an immediate or imminent exposure to a hazard[6]. 7. Activity on a pipeline easement where the pipeline is contacted and repair action is required[7]. 8. An uncontrolled gas release resulting in the activation of emergency response and/or evacuation procedures of an area in or adjacent to the gas release, and/or fire or explosion.	1. An escape of petroleum[8], processed substance, a chemical or a fuel that affects an area that has not been specifically designed to contain such an escape[9] (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) Activity on a pipeline easement with equipment that has been identified[7] as exceeding the pipeline's penetration resistance, determined in accordance with Australian Standard (AS) 2885. b) Identification of a through-wall defect on a pipeline[10] or plant component (other than a serious incident). c) Identification[11] of a partial through-wall defect (e.g. through visual inspection, inline inspection, non-destructive testing) that requires repair or replacement action, or a reduction of the Maximum Allowable Operating Pressure, to maintain safe operation (other than a serious incident). d) Activity on a pipeline easement with equipment or vehicles that have been identified[7] as exceeding allowable stress limits, determined in accordance with AS2885. e) An unapproved[12] excursion outside of critical design or operating conditions/parameters. f) Failure of a critical procedural control in place to reduce a credible threat to low or as low as reasonably practicable (ALARP).[13] 3. Unauthorised activity on a pipeline easement where the pipeline is contacted but repair action is not required. 4. Malfunction or failure of critical plant or equipment that had (or still has) potential to cause a serious incident.

[1] As per the definition in section 36 of the *Work Health and Safety Act 2012*.
[2] Pursuant to Aboriginal Heritage Act 1988 and Heritage Places Act 1993.
[3] Pursuant to Native Vegetation Act 1991 (flora) and National Parks and Wildlife Act 1972 (fauna).
[4] 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.
[5] Regulated activity as defined in section 10 of the *Petroleum and Geothermal Energy Act 2000*.
[6] Resulting in the issuing of a prohibition notice by SafeWork SA pursuant to section 195 the *Work Health and Safety Act 2012*.
[7] For the case where a detailed assessment is required to determine this, DMITRE recommends the incident be reported initially and amended at a later date if required.
[8] In gaseous, liquid or solid state, as per *Petroleum and Geothermal Energy Act 2000* definition.
[9] 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.
[10] As per *Petroleum and Geothermal Energy Act 2000* definition, the term 'pipeline' includes tanks, machinery and equipment necessary for, or associated with, operation of the pipeline.
[11] For reporting purposes, the incident is considered to have occurred at the time that a decision is made to repair or replace the defect, or reduce the Maximum Allowable Operating Pressure.
[12] "Approval" as per AS2885 definition. Note that there may be situations where excursions are allowable under AS2885.
[13] As per the Safety Management System process articulated in AS 2885.1-2012, or similar risk assessment process.

5 Definitions

Definitions of the terms used in the SEO is provided below.

Archaeological Potential	A part of the landscape, generally a physiographic unit or landform, that is likely to contain occurrences of cultural material on the basis of comparative research in similar areas.
Area of known Archaeological Sensitivity	A part of the landscape that contains demonstrated occurrences of cultural material. The level of sensitivity depends upon the density and significance of the material.
Consistent with surrounding land / area	A qualitative assessment of land condition on the easement to determine if condition of the easement is similar to that of adjacent land (i.e. soil, vegetation, landform).
Easement	For the purpose of this SEO, an easement is considered to be land directly above the buried pipeline. The width of the easement is generally up to 25 m, but not less than 6 m, of cleared land to permit safe pipeline operations.
Infrastructure	Physical assets which are built on the land (e.g. roads, power poles, fences, railway, troughs, gates, dams, other services).
Landholder	Owner or occupier of the land.
Landuse	Use of land e.g. grazing, cropping, access, industrial, residential, environmentally sensitive area, recreational.
Line of sight clearance	Clearing of large vegetation between pipeline markers to maintain a clear line of site between each pipeline marker. E.g. for trees on easement where large trees cannot be retained, vegetation trimmed to height of 1 m over pipeline and to 3 m either side of centreline. This is to satisfy the operational obligations to ensure pipeline integrity and personnel safety cannot be compromised (i.e. any objective is subservient to these requirements).
Minimise	To reduce as far as possible, considering all other factors (e.g. requirements for safe operations and accessibility).
Non-interference activities (marine)	Any activity undertaken within the marine environment that does not involve the physical disturbance of the seabed, marine vegetation or flora (e.g. diving, submarine inspection).

Pipeline operations	Any activity associated with the operation, inspection and maintenance of the pipeline, easement and associated facilities. This includes: Pipeline: Dig ups; Pigging & integrity testing; Welding; Cathodic Protection; Inspection and testing; and Pipeline surveys (including marine surveys where applicable). Easement: Patrolling / inspections (foot, vehicle, aerial); Vegetation control; Erosion control; and Establishment, use and rehabilitation of borrow pits and mineral extraction. Facilities: Storage and use of diesels, oils and chemicals; Weed control; Waste treatment and disposal; and Inspection and testing. (Facilities include Compressor Stations, Station Accommodation, Main Line Valves, Access Tracks, Cathodic Protection Beds, Meter Stations, Communication Sites and Scraper Stations).
Right of Way (ROW)	For the purpose of this SEO, a right of way is considered to be generally 3 m to 5 m wide to permit safe vehicular traffic.
Spill	Uncontrolled or unplanned release or discharge of a hydrocarbon, chemical or hazardous substance.
Stakeholder	The affected public, Local Government Departments, Utilities, Authorities, Emergency Agencies, Construction and Excavation Contractors.
Timely manner	Timeframe agreeable to EESA and impacted third party, which considers all external factors e.g. weather constraints and accessibility.
Uncontrolled emission	Discharge to air that is not planned or part of any routine operation or routine maintenance (e.g. maintenance or checks of valves and equipment).

6 Abbreviations

A description of the abbreviations used in the SEO is provided below.

ALARP	As Low As Reasonably Practical
APGA	Australian Pipeline and Gas Association
APIA	Australian Pipeline Industry Association (now APGA)
AS 2885	Australian Standard AS 2885.3-2012 Pipelines - Gas and liquid petroleum - Operation and maintenance
DEF	Declaration of Environmental Factors
DEWNR	Department of Environment, Water and Natural Resources
DSD	Department of State Development
DWLBC	Department of Water, Land and Biodiversity Conservation
EESA	Epic Energy South Australia
EPA	Environment Protection Authority
EIR	Environmental Impact Report prepared in accordance with section 97 of the Petroleum and Geothermal Energy Act 2000 and regulation 10.
PIRSA	Department of Primary Industries and Resources, South Australia (now DSD)
ROW	Right of Way
SEO	Statement of Environmental Objectives prepared in accordance with section 99 and 100 of the Petroleum and Geothermal Energy Act 2000 and regulations 12 and 13.

7 References

Australian Pipeline Industry Association (APIA) 2013. *Code of Environmental Practice – Onshore Pipelines Revision 3*.

Epic Energy 2015. *Pipeline Licence 1 and Pipeline Licence 12 Environmental Impact Report*.

Epic Energy 2004. *Pipeline Licence Nos.3 and 4 Environmental Impact Report*. Prepared by Ecos Consulting (Aust).

Epic Energy 2009. *Pipeline Licence No. 12 Statement of Environmental Objectives* (archived 2015).

Heathgate Resources 1999. *Beverley Uranium Mine, Declaration of Environmental Factors, A proposal to install the Beverley gas lateral.*

McDonough, R. 1999. *Goal attainment scaling: a tool for evaluating pipeline environmental performance.* Primary Industries and Resources of South Australia, Adelaide.

Petroleum Group (PIRSA) 2000. *Criteria for Classifying the Level of Environmental Impact of Regulated Activities: Requirements under Part 12 Petroleum Act 2000*. Primary Industries and Resources of South Australia, Adelaide. http://www.pir.sa.gov.au

Appendix A

Objectives and Assessment Criteria

Objectives and Assessment Criteria

Assessment criteria have been developed to be "black and white". Professional judgement is required to assess whether non-compliance is minor or major. It is necessary to ensure that adequate information is available to enable this judgement to be made.

Table A1: Statement of Environmental Objectives – Objectives and Assessment Criteria

Objective	Assessment Criteria	Guide to How Objectives Can Be Achieved
1) No injuries, deaths or health impacts to the public or third parties from regulated activities that could have been reasonably prevented by the operator.	• Investigation conducted by a relevant government authority into any injury or death does not result in a prohibition notice pursuant to section 195 of the Work Health and Safety Act 2012. • Compliance with the relevant legislation regarding noise and air quality. • No uncontrolled gas release resulting in activation of emergency response plan. • No pipeline loss of containment in an area not designed for a gas escape. • All reasonable measures implemented to ensure no injuries or health risks to the public or third parties. • No unauthorised activity on the easement that has the potential to impact on integrity. • No immediate repairs required in order to maintain safe operation. • Sewage and grey water to be managed in accordance with the South Australian Public Health (Wastewater) Regulations 2013 or otherwise by written authority from the Department of Health.	• Comply with requirements of AS2885 including: – Safety Management Studies and reviews – Risk Assessments – External Interference Management such as pipeline patrols, 'One Call' services and annual communication with landholders to discuss pipeline awareness – Pipeline Integrity Management Plan – Maintenance program including pigging, intelligent pigging and pipeline maintenance – Remaining Life Review. • Comply with all other relevant industry standards where applicable. • Identify, mitigate and report on health and safety hazards by: – Use of Safe Systems of Work procedures – Job Hazard Analysis used before starting a new activity – Workers and visitors complete safety inductions – Regular training provided to personnel on health and safety procedures – Appropriate fencing and signage for hazardous areas – Driver training and fatigue management for operational employees – Regular fire safety and emergency response training for workers – Emergency response plan implemented and personnel trained – Regular review of operating procedures – Hazards and incident reporting. • Audit compliance with health and safety procedures and management plans. • Communications with affected landholders prior to and during non-routine work including advice on the nature and schedule of maintenance activities. • Compliance with local government regulations and health and sanitation regulations. • Implement specific management plans for activities that may generate excessive noise or air pollution or when frequent complaints have been received.

Objective	Assessment Criteria	Guide to How Objectives Can Be Achieved
2) No significant impacts to native flora and fauna (including terrestrial and aquatic) due to regulated activities or escape of petroleum, processed substances, chemical or fuel.	• Any escape of petroleum, processed substance, chemical or fuel outside an area designed to contain it is confined to pre-disturbed/operational areas. • Where soil is affected by an escape of petroleum, processed substance, chemical or fuel outside of an area designed to contain it, an assessment and if required, rehabilitation is undertaken in accordance with NEPM guidelines. • 0, +1 or +2 GAS criteria are attained for Construction, Management and Rehabilitation of Borrow Pits (Clean and Tidy, Soil, Vegetation, Water Retention) • No native fauna casualties that could have reasonably been prevented. • All waste disposed of at licensed facility. • No uncontrolled fires resulting from regulated activities. • Spills or leaks are contained, cleaned up, reported, investigated and corrective / preventative action implemented.	• Appropriate containment, storage, bunding and handling of hazardous substances. • All new bunds designed in accordance with *EPA Guideline 080/12: Bunding and spill management.* • Storage and handling of flammable and combustible liquids to comply with AS1940. • Use of appropriate spill prevention methods. • Compliance with relevant sections of the *Environment Protection Act 1993.* • Maintenance program including pigging, intelligent pigging and pipeline maintenance. • In the event of a spill, the spill was, reported, contained, cleaned-up, investigated and corrective / preventative action implemented. • Management procedures for activities that may adversely impact on native flora and fauna. • Timed photo points or annual land survey, specifically to look at evidence of erosion, subsidence, vegetation loss on easement and compare to adjacent land. • Inspections undertaken as part of regular patrols, following specific works or significant events. • Disturbance checklist for pipeline excavations signed off to indicate soil profiles appropriately reinstated following the completion of works / excavations. • Open trenches are fenced off when unattended, include escape ramps and monitored daily. • Use of photo points before, and after pipeline excavation or land disturbance activity. • Rehabilitation work undertaken where natural regeneration has been inadequate. • Restrict disturbance to the ROW and approved access and work areas where practicable. • Vegetation trimmed rather than cleared where possible. • Comply with the *Native Vegetation Act 1991* for any clearance of native vegetation. • Only undertake non-interference maintenance activities in the marine habitat. • Obtain regulatory approval prior to undertaking disturbance in marine habitat (contact should be initially made with DSD during the planning process). • Waste disposal records and chemical manifests. • Licensed contractors used for hazardous waste disposal and appropriate records maintained.

Objective	Assessment Criteria	Guide to How Objectives Can Be Achieved
3) Minimise disturbance to drainage patterns and avoid water contamination.	• Current surface drainage patterns are maintained. • Any escape of petroleum, processed substance, chemical or fuel outside an area designed to contain it is confined to pre-disturbed/operational areas. • Any escape of petroleum, processed substance, chemical or fuel does not result in contamination of surface water and / or shallow groundwater. • 0, +1 or +2 GAS criteria are attained for Construction, Management and Rehab-ilitation of Borrow Pits (Clean and Tidy, Soil, Vegetation, Water Retention). • No water affecting activities as defined under the *Natural Resources Management Act 2004 (NRM Act)* undertaken unless relevant permits have been obtained. • No unlicensed discharge of water (or other liquids) to waterways. • Waste disposed of at licensed facility. • Spills or leaks are contained, cleaned, reported, investigated and corrective / preventative action implemented.	• Appropriate containment, storage, bunding and handling of hazardous substances. • All new bunds designed in accordance with *EPA Guideline 080/12: Bunding and spill management.* • Storage and handling of flammable and combustible liquids to comply with AS1940. • Use of appropriate spill prevention methods. • Compliance with relevant sections of the *Environment Protection Act 1993.* • Maintenance program including pigging, intelligent pigging and pipeline maintenance. • In the event of a spill, the spill was, reported, contained, cleaned-up, investigated and corrective / preventative action implemented. • Use of groundwater monitoring bores near potential contamination sources. • Active remediation methods implemented where it is determined that contamination is spreading or level of contamination is not decreasing. • Timed photo points or annual land survey, specifically to look at evidence of disturbance to drainage patterns and compare to adjacent land. • Inspections undertaken as part of regular patrols, following specific works or significant events. • Restrict disturbance to the ROW and approved access and work areas where practicable. • Waste disposal records and chemical manifests. • Licensed contractors used for hazardous waste disposal and appropriate records maintained. • Water disposal that prevents discharge or runoff to watercourses or environmentally sensitive areas. • Records kept on water source and discharge method / location. • Water discharged onto stable ground, with no evidence of erosion as a result of discharge. • Compliance with the *Environment Protection (Water Quality) Policy 2015.* • Compliance with the *South Australian Public Health (Wastewater) Regulations 2013* for sewerage and grey water management. • Compliance with relevant sections of the *NRM Act.*
4) No introduction of new species of weed, plant, pathogen or pests (feral animal) that have long term adverse impacts and implement control measures as necessary.	• Presence/absence and abundance of pest plants and animals are consistent with pre-existing conditions and / or adjacent land or where pest plants and animals are identified on operational areas, management plan is implemented immediately. • Declared plants/animals are reported and managed in accordance with the *NRM Act* and regional NRM plans. • 0, +1 or +2 GAS criteria are attained for Management and Rehabilitation of Borrow Pits (Weeds).	• Regular patrols undertaken to look for evidence of weeds on easement and adjacent land (if weeds on easement but not adjacent land must implement control to prevent spread). • Use of weed management procedure to describe suitable controls. • Records of outbreaks found, weed control activities and photo monitoring of significant outbreaks. • Vehicle washdown facilities. • Where appropriate, closure of pipeline access road. • Maintain native vegetation cover on the easement where practicable • Minimise clearing of native vegetation as part of operational activities • Management procedures for activities that have potential to cause the spread of weeds, plants, pathogens or pests.

Objective	Assessment Criteria	Guide to How Objectives Can Be Achieved
5) Minimise damage, disturbance to indigenous and non-indigenous heritage sites, objects and remains unless prior approval under relevant legislation obtained.	• No sites have been knowingly disturbed or destroyed by regulated activities. • Sites of Aboriginal and non-Aboriginal heritage have been identified and avoided. • No non-compliance with the *Aboriginal Heritage Act 1988* and the *Heritage Places Act 1993*.	• Use of a cultural heritage management procedure to describe controls. • Consultation with relevant heritage groups if operations occur outside existing pipeline corridors, highly modified environments or known surveyed areas. • Records of site locations on operations GIS. • Use of disturbance checklist prior to undertaking maintenance works. • Site examined for cultural heritage material prior to work involving off-easement disturbance or in an area of archaeological potential or in an area identified as being of known medium to high archaeological sensitivity. • Identified sites are recorded in Land Management System and reported to appropriate authority. • Comply with the *Aboriginal Heritage Act 1988* or the *Heritage Places Act 1993*.
6) Maintain stakeholder relationships and minimise disturbance to landowners and/or associated infrastructure.	• No unresolved reasonable stakeholder complaints. • No disturbance to landholder activities as a result of regulated activities unless by prior arrangement. • Where disturbance is unavoidable or accidental, infrastructure or land use is restored to the satisfaction of the landholder/owner. • 0, +1 or +2 GAS criteria are attained for Management and Rehabilitation of Borrow Pits (Soil, Vegetation, Water Retention, Clean and Tidy).	• Comply with requirements of AS2885 including: – Safety Management Studies and reviews – Risk Assessments – External Interference Management such as pipeline patrols, 'One Call' services and annual communication with landholders to discuss pipeline awareness – Pipeline Integrity Management Plan – Maintenance program including pigging, intelligent pigging and pipeline maintenance – Remaining Life Review. • Comply with all other relevant industry standards where applicable. • Comply with the Environment Protection (Air Quality) Policy 1994. • Use of management procedure to minimise impacts (borrow pits, vehicle movement, dust suppression, etc.). • Communications with affected landholders prior to and during non-routine work including advice on the nature and schedule of maintenance activities. • Compliance with local government regulations and health and sanitation regulations. • Implement specific management plans for activities that may generate excessive noise or air pollution or when frequent complaints have been received.

Objective	Assessment Criteria	Guide to How Objectives Can Be Achieved
7) To ensure as far reasonably practicable security of supply for users of natural gas.	• No unplanned interruption to gas supply that impacts the public. • Emergency response procedures are effectively implemented in the event of an emergency, as assessed by post-incident debrief. • Emergency response exercises are conducted, reported on and actions arising are addressed. • Pipeline repaired in a timeframe that represents good industry practice. • Damage arising from a pipeline incident or emergency is remediated to as near as practicable to condition prior to disturbance, such that stakeholder usage can continue.	• Comply with requirements of AS2885 and the Act to achieve adequate pipeline integrity management including: – Safety Management Studies and reviews – Risk Assessments – External Interference Management such as pipeline patrols, 'One Call' services and annual communication with landholders to discuss pipeline awareness – Pipeline Integrity Management Plan – Maintenance program including pigging, intelligent pigging and pipeline maintenance – Remaining Life Review – Emergency response plan implemented and personnel trained – Emergency response exercises are conducted annually and reported.
8) To appropriately decommission the pipeline in accordance with regulatory requirements and accepted best practice environmental management.	• Pipeline and associated above-ground infrastructure decommissioned to an appropriate standard that addresses the environmental objectives for operations, as appropriate and as required by legislative requirements of the day. • No reasonable landholder complaints arising from decommission activities. • Landholder activities not materially restricted or compromised as result of decommissioning activities unless by prior arrangement.	• Pipeline and associated above-ground infrastructure decommissioned to an appropriate standard as required by the legislation and standards of the day. • Records of consultation with appropriate regulatory authorities, industry associations and affected landholders. • Incident reports. • No above-ground infrastructure evident.

Appendix B

Goal Attainment Scaling Criteria for Borrow Pits

Table B1: Goal Attainment Scaling (GAS) Criteria for Borrow Pit Construction and Restoration

Construction, Management and Rehabilitation of Borrow Pits (Soil, Vegetation, Water Retention Clean and Tidy)

Objectives	Goals	Goal Exceeded +2	Goal Exceeded +1	Goal Attained 0	Minor Shortfall -1	Significant Shortfall -2
Construction						
Minimise impacts on soil	Pit sited and designed to minimise erosion and facilitate rehabilitation	-	Pit located on flat terrain	Pit located on low sloping terrain and includes erosion control measures	Pit located on low sloping terrain and includes no erosion control measures	Pit located on sloping terrain
Minimise impacts on vegetation	Perennial vegetation clearance minimised	No trees or other vegetation removed	No trees were removed, only other vegetation	Trees and other vegetation were removed where removal could not have been avoided	Trees with trunk diameters between 20 & 50cm were removed	Trees with trunk diameters >50cm were removed
	Topsoil with seed bank retained	-	-	Topsoil stockpiled onsite and stabilised	-	Topsoil not onsite
Minimise visual impacts	Site pit appropriately	Borrow pit not visible from the road	Borrow pit shielded from road by utilising screening vegetation or landform	Borrow pit more than 10m from track or 50m from public road Visible from road due to lack of screening vegetation	Borrow pit less than 10m from track or less than 50m from public road	Borrow pit less than 5m from track or less than 20m from public road

Objectives	Goals	Goal Exceeded +2	Goal Exceeded +1	Goal Attained 0	Minor Shortfall -1	Significant Shortfall -2
Management						
Minimise impact on soil	Minimise soil erosion	-	Erosion prevention measures in place such as contour banks. No evidence of erosion.	Erosion prevention measures in place such as contour banks. Minor erosion that can be easily rehabilitated	Erosion prevention measures in place such as contour banks. Moderate erosion and gullying	No erosion prevention measures in place Uncontrolled run off, moderate to severe erosion with gullying
Minimise impacts on vegetation	No weeds introduced as a result of regulated activity	No weeds in pit	-	Weeds in pit consistent with surrounding landscape	Weeds in pit not consistent with surrounding landscape	Declared weeds introduced into pit
Minimise water retention in pit	Minimise water retention in pit	No water retention in pit	Water retained in pit for less than one week following rainfall	Water retained in pit for less than one month following rainfall	Water retained in pit for up to three months following rainfall	Water retained in pit for more than three months following rainfall
Minimise visual impacts	Borrow pit effectively re-contoured and ripped	Pit contours indistinguishable from surrounding landscape	Pit contours blend well into surrounding landscape, although still evident	Pit slides battered and ripped along the contour, but pit outline visible	Pit slides battered but not ripped	No re-contouring of pit has occurred – pit slides are very steep
	Minimise stockpiled material	No stockpiled material in pit	Minimal stockpiled material in pit not visible from the road	Minimal stockpiled material in pit slightly visible from the road	Stockpiled material in pit easily visible from the road	Large stockpiles in pit easily visible from the road

Objectives	Goals	Goal Exceeded +2	Goal Exceeded +1	Goal Attained 0	Minor Shortfall -1	Significant Shortfall -2
Rehabilitation						
Minimise impact on soil	Rehabilitation designed to minimise soil erosion	-	-	Erosion prevention measures in place such as contour banks	-	No erosion prevention measures in place
Minimise impacts on vegetation	Topsoil spread of pit to encourage revegetation	-	-	Topsoil and vegetation respread over disturbed area	-	Topsoil and vegetation not respread
	No weeds introduced as a result of regulated activity	No weeds in pit	-	Weeds in pit consistent with surrounding landscape	Weeds in pit not consistent with surrounding landscape	Declared weeds introduced into pit
	Pit revegetated to resemble surrounding landscape following suitable recovery period.	Pit revegetated with indigenous species and resembles surrounding landscape	-	Pit revegetated and resembles surrounding landscape	Revegetation inconsistent, annual species more prevalent than surrounding landscape	No revegetation of pit
Minimise water retention in pit	Minimise water retention in pit	No water retention in pit	Water retained in pit for less than one week following rainfall	Water retained in pit for less than one month following rainfall	Water retained in pit for up to three months following rainfall	Water retained in pit for more than three months following rainfall
Minimise visual impacts	Borrow pit effectively re-contoured and ripped	Pit contours indistinguishable from surrounding landscape. Access ripped	Pit contours blend well into surrounding landscape, although still evident	Pit slides battered and ripped along the contour, but pit outline visible	Pit slides battered but not ripped	No re-contouring of pit has occurred – pit slides are very steep
	No foreign material left on site			No foreign material including litter and marker posts left onsite post rehabilitation	-	Litter and other foreign material found in pit