

Environmental Impact Classification
Pursuant to Section 98 of the *Petroleum and Geothermal Energy Act 2000*

Addendum - Production and Processing of Petroleum Products and Associated Activities at the Katnook and Ladbroke Grove Gas Plants, Otway Basin, April 2011

5 May 2011

INTRODUCTION

Pursuant to section 98 of the *Petroleum and Geothermal Energy Act 2000* (the Act) the Minister must classify the regulated activities covered by a prepared Environmental Impact Report (EIR) as either of low, medium or high environmental impact.

The classification must be made on the basis of:

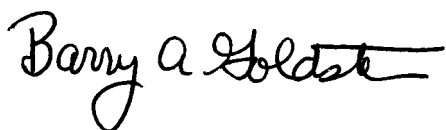
- The prepared EIR;
- Criteria established for classifying the level of environmental impact of regulated activities, a copy of which is found on the PIRSA Petroleum and Geothermal Group (PIRSA) web page:
http://www.pir.sa.gov.au/_data/assets/pdf_file/0008/27728/sigactv6.pdf; and
- Comment received from relevant Government departments in accordance with established administrative arrangements between these departments and PIRSA.

This document summarises the classification made by PIRSA on Adelaide Energy's reviewed Production and Processing of Petroleum Products at the Katnook and Ladbroke Grove Gas Plants SEO, Otway Basin, April 2011. This classification is based on information provided in the addendum EIR prepared by Adelaide Energy and RPS Consulting.

SUMMARY OF CLASSIFICATION

- 1) From an analysis of the environmental significance of the events and potential impacts associated with the proposed activities against the classification criteria referred to above (assessment provided as Attachment 1), these regulated activities have been classified as **low environmental impact**.
- 2) The majority of events associated with the Production and Processing of Petroleum Products at the Katnook and Ladbroke Grove Gas Plants, Otway Basin were assessed to be of low environmental significance. This is due to the fact that appropriate management measures will be implemented by Adelaide Energy Ltd to avoid or mitigate any potential environmental consequences.
- 3) For a low environmental impact classification, PIRSA is required to consult with Department of Environment and Natural Resources (DENR) and the Environment Protection Authority (EPA) in accordance with the administrative arrangement dated 11 November 2005 and 29 September 2010 respectively.
- 4) Comments received from EPA and DENR on 15th and 18th March 2011 respectively, agreed with the low environmental impact classification.

Pursuant to delegated powers, I hereby classify this regulated activity as **low environmental impact**.



Barry Goldstein
Executive Director Petroleum & Geothermal Division

Delegate of the Minister for Mineral Resources Development

ACTIVITY:	Environmental Significance Assessment																	
PROJECT:	Addendum - Production and Processing of Petroleum Products and Associated Activities at the Katnook and Ladbroke Grove Gas Plants - Adelaide Energy																	
ASSESSOR:	PIRSA																	
ABBREVIATIONS: H = High certainty; M = Medium certainty; L = Low certainty																		
PREDICTABILITY										MANAGEABILITY								
REF	TYPE OF IMPACT	EVENT(S)	POTENTIAL CONSEQUENCES	SIZE	SCOPE	DURATION	FREQUENCY	STAKEHOLDERS	SIGNIFICANCE	AVOIDANCE	PROBABILITY	DURATION	SIZE AND SCOPE	CUMULATIVE EFFECTS	STAKEHOLDERS	SIGNIFICANCE	COMMENTS	Environmental significance
	Natural Environment Impacts																	
	Soil Impacts																	
Table A1-2		Spill or leak of produced water from pumps, filters or flowlines	Soil contamination	H	H	M	M	H	2	No	Low					1	ADE will cease reinjection if there is a leak in the flowline transporting water to Katnook-1. Equipment designed and operated in accordance with relevant standards and guidelines. Flowline tested to design conditions. Water handling equipment located within plant site/ well site with lined bunding around major equipment. Flowline monitored for leaks (pressure gauges and visual inspection). Immediate clean-up and remediation if any spills or leaks occur.	Low
Table A1-2		Earthworks and heavy machinery operation during decommissioning and rehabilitation	Soil compaction/ erosion/ inversion	H	H	H	H	H	1	Yes						1	Rip areas of compacted soil. Restore natural contours to minimise impacts to natural drainage patterns. Respread topsoil and reseed in accordance with landowner requirements. Confine earthworks to minimum area necessary (typically undertaken on existing, disturbed infrastructure sites).	Low
Table A1-3		Handling and disposal of hazardous materials	Soil contamination	H	H	H	H	H	1	Yes						1	Identify associated risks prior to work commencing and develop specific safety and health procedures including PPE. Carry out work on hardstand areas where possible with appropriate spill response procedures and containment measures in place. Work performed by accredited contractor	Low
Table A1-3		Disposal of flushed water e.g. from pigging	Soil contamination	H	H	M	H	H	2	Yes						1	Use of biocides and toxic chemicals kept to a minimum. Dispose of water which contains biocide, other chemicals or hydrocarbons into lined evaporation ponds or use accredited waste management contractor with appropriate trucks and storage vessels to remove off site to licensed disposal facility. Use produced water evaporation ponds if ponds have adequate capacity.	Low
Table A1-3		Spills and leaks associated with chemical and fuel storage	Soil contamination	H	H	H	H	H	1	Yes						1	All fuel, oil and chemicals are stored, handled and transported in accordance with appropriate standards and guidelines e.g. AS 1940, Australian Dangerous Goods (ADG) Code and EPA guideline 080/07. Establishment of appropriate emergency/ spill response procedures. Immediate clean-up and remediation to minimise contamination.	Low
Table A1-3		Loss of containment of gas or condensate - pipeline rupture or leaks from equipment	Soil contamination	M	H	M	H	H	2	No	Low					1	Pipelines designed, constructed and operated in accordance with ADE Pipeline Operations and Maintenance Manual.	Low
Table A1-3		Explosion or fire at facility or well site	Soil contamination	M	H	M	H	H	2	No	Low					1	Abandonment programs planned to avoid or minimise hazardous situations, with controls in place to address risks. No smoking or safe smoking areas away from equipment or activity. Personnel are trained to supervise and instruct individuals entering area to conduct work. Safe work permits must be obtained to ensure only individuals with proper clearance can conduct works. Immediate clean-up and remediation to minimise contamination to soil and water. Petrol vehicles to be excluded from well/facility/pipeline sites during decommissioning. Implement appropriate emergency/ spill response procedures for explosion or fire. Safety, testing, maintenance and inspection procedures are implemented. Appropriate controls implemented for work during fire danger season e.g. fire fighting equipment on site, liaison with CFS, fire permits obtained where necessary.	Low
	Surface Water and Groundwater Impacts																	
Table A1-2		Loss of well integrity during water reinjection	Contamination of shallower (fresh water) aquifers	H	M	M	M	H	2	No	Low					1	Well contents (i.e. injected water) isolated from shallower aquifers by tubing and casing in well. Pressure measurements taken every 24 injection hours for tubing, casing and surface casing to ensure no communication between tubing and casing (i.e. all injected water is going into Windermere and Katnook sandstones).	Low
Table A1-2		Injection of waste water into Windermere and Katnook sandstone	Decrease in water quality of Windermere and Katnook sandstone	H	H	H	H	H	1	Yes						1	Windermere and Katnook sandstones are a depleted gas reservoir, isolated from shallower fresh water aquifers. Regular salinity measurements undertaken (monthly or every 100 injection hours) and periodic detailed water quality analysis (at least annually). Injection halted if salinity exceeds Windermere Sandstone salinity (20,000 mg/L) or other contaminants are of sufficient concern. This is unlikely to be exceeded as the concentration of incoming water from producing wells ranges from 2,000 to 6,000 mg/L.	Low

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2.2.2, Table A1-2		Spill or leak of produced water from pumps, filters or flowlines	Surface water contamination	H	H	M	M	H	2	No	Low					1	ADE will cease reinjection if there is a leak in the flowline transporting water to Katnook-1. Equipment designed and operated in accordance with relevant standards and guidelines. Flowline tested to design conditions. Water handling equipment located within plant site/ well site with lined bunding around major equipment. Flowline monitored for leaks (pressure gauges and visual inspection). Immediate clean-up and remediation if any spills or leaks occur.	Low					
Table A1-3		Earthworks and heavy machinery operation during decommissioning and rehabilitation	Disturbance to natural drainage and siltation of surface water	H	H	H	H	H	1	Yes						1	Restore natural contours to minimise impacts to natural drainage patterns. Respread topsoil and reseed in accordance with landowner requirements	Low					
Table A1-3		Handling and disposal of hazardous materials	Surface water contamination	H	H	H	H	H	1	Yes						1	Identify associated risks prior to work commencing and develop specific safety and health procedures including PPE. Carry out work on hardstand areas where possible with appropriate spill response procedures and containment measures in place. Work performed by accredited contractor	Low					
Table A1-3		Disposal of flushed water e.g. from pigging	Surface water contamination	H	H	M	H	H	2	Yes						1	Use of biocides and toxic chemicals kept to a minimum. Dispose of water which contains biocide, other chemicals or hydrocarbons into lined evaporation ponds or use accredited waste management contractor with appropriate trucks and storage vessels to remove off site to licensed disposal facility. Use produced water evaporation ponds if ponds have adequate capacity.	Low					
Table A1-3		Spills and leaks associated with chemical and fuel storage	Surface water contamination	H	H	H	H	H	1	Yes						1	All fuel, oil and chemicals are stored, handled and transported in accordance with appropriate standards and guidelines e.g. AS 1940, Australian Dangerous Goods (ADG) Code and EPA guideline 080/07. Establishment of appropriate emergency/ spill response procedures. Immediate clean-up and remediation to minimise contamination.	Low					
Table A1-3		Loss of containment of gas or condensate - pipeline rupture or leaks from equipment	Surface water contamination	M	H	M	H	H	2	No	Low					1	Pipelines designed, constructed and operated in accordance with ADE Pipeline Operations and Maintenance Manual.	Low					
Table A1-3		Explosion or fire at facility or well site	Surface water contamination	M	H	M	H	H	2	No	Low					1	Abandonment programs planned to avoid or minimise hazardous situations, with controls in place to address risks. No smoking or safe smoking areas away from equipment or activity. Personnel are trained to supervise and instruct individuals entering area to conduct work. Safe work permits must be obtained to ensure only individuals with proper clearance can conduct works. Immediate clean-up and remediation to minimise contamination to soil and water. Petrol vehicles to be excluded from well/facility/pipeline sites during decommissioning. Implement appropriate emergency/ spill response procedures for explosion or fire. Safety, testing, maintenance and inspection procedures are implemented. Appropriate controls implemented for work during fire danger season e.g. fire fighting equipment on site, liaison with CFS, fire permits obtained where necessary.	Low					
	Vegetation Impacts																						
Table A1-3		Earthworks and heavy machinery operation during decommissioning and rehabilitation	Introduction and or spread of weeds	H	M	H	H	H	2	No	Low					1	Implement weed protocols e.g. vehicle and equipment washdown when operations have been undertaken in areas of known weed infestations.	Low					
Table A1-3		Movement of machinery and vehicles along roads, easements and access tracks	Introduction and or spread of weeds	H	M	H	H	H	2	No	Low					1	Implement weed protocols e.g. vehicle and equipment washdown when operations have been undertaken in areas of known weed infestations. Drive only on roads and access tracks or other designated access routes.	Low					

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REF	TYPE OF IMPACT	EVENT(S)	POTENTIAL CONSEQUENCES	PREDICTABILITY						MANAGEABILITY						COMMENTS	Environmental significance	
				SIZE	SCOPE	DURATION	FREQUENCY	STAKEHOLDERS	SIGNIFICANCE	AVOIDANCE	PROBABILITY	DURATION	SIZE AND SCOPE	CUMULATIVE EFFECTS	STAKEHOLDERS			SIGNIFICANCE
Table A1-3		Explosion or fire at facility or well site	Loss of vegetation due to fire	M	M	M	H	H	2	No	Low					1	Abandonment programs planned to avoid or minimise hazardous situations, with controls in place to address risks. No smoking or safe smoking areas away from equipment or activity. Personnel are trained to supervise and instruct individuals entering area to conduct work. Safe work permits must be obtained to ensure only individuals with proper clearance can conduct works. Immediate clean-up and remediation to minimise contamination to soil and water. Petrol vehicles to be excluded from well/facility/pipeline sites during decommissioning. Implement appropriate emergency/ spill response procedures for explosion or fire. Safety, testing, maintenance and inspection procedures are implemented. Appropriate controls implemented for work during fire danger season e.g. fire fighting equipment on site, liaison with CFS, fire permits obtained where necessary.	Low
Fauna Impacts																		
Table A1-3		Earthworks and heavy machinery operation during decommissioning and rehabilitation	Disturbance to stock and native fauna	H	H	H	H	H	1	No	Low					1	Ensure sites are securely fenced. Minimise risks to fauna by leaving excavations open for as little time as possible.	Low
Table A1-3		Spills and leaks associated with chemical and fuel storage	Access to contaminants by stock and native fauna	H	H	H	H	H	1	No	Low					1	Fencing of contaminated areas if threat is posed to stock or native fauna	Low
Table A1-1		Compressor Operation	Noise disturbance to stock and wildlife	H	H	M	M	H	2	No	Med	Med	Conf			3	Possible localised effects at well sites close to native vegetation but stock and wildlife will generally become used to constant noise emissions. The area in Which ADE's well sites are located would generally be classified as "Rural Industry".	Low
Community Resource Impacts																		
Table A1-3		Earthworks and heavy machinery operation during decommissioning and rehabilitation	Damage to third party infrastructure	H	H	H	H	H	1	Yes						1	Liaise with landowners regarding notification and management of works and site issues. Implement procedures for location of existing services and infrastructure.	Low
Table A1-3		Movement of machinery and vehicles along roads, easements and access tracks	Road hazard/disturbance to local road community	H	H	H	H	H	1	No	Low					1	Implement traffic safety management plans.	Low
Cultural & Heritage Impacts																		
Table A1-3		Earthworks and heavy machinery operation during decommissioning and rehabilitation	Disturbance to cultural heritage sites	H	H	H	H	H	1	No	Low					1	Confine operations to areas previously disturbed and/or cleared for cultural heritage and implement procedures for accidental discovery of heritage material.	Low
Community Health & Safety																		
2.2.1, Table A1-1		Compressor Operation	Noise disturbance to nearby residents	H	H	H	H	H	1	Yes						1	Well sites distant (several hundred meters or more) from closest house. Noise measurements of gas jack compressors at several well sites indicates noise is less than 45dB(A) at closest residences. Installation of portable gas jack compressors meet EPA Noise Policy requirements at houses in proximity. Additional measures (such as noise shielding) implemented if required. Compressor units at Katnook specifically designed achieve very low noise levels at nearby residences. ADE would generally aim to achieve noise levels from any new noise sources that are 5dB(A) below the environmental noise criteria that are outlined by the Environmental Protection (Noise) policy 2007. The area in which ADE's well sites are located would generally be classified as "Rural Industry".	Low
Table A1-3		Storage of wastes and disposal	Loss of visual amenity (litter)	H	H	H	H	H	1	Yes						1	Removal of waste to appropriately licensed off-site disposal facility. Cover all loads of rubbish leaving site to ensure no spillage. Minimise generation of waste where practicable. Recycle and re-use material where possible. Provide suitable bins for the collection and storage of waste.	Low

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Table A1-3		Handling and disposal of hazardous materials	Danger to health of employees, contractors and possibly the public	H	H	M	H	H	1	Yes						1	Identify associated risks prior to work commencing and develop specific safety and health procedures including PPE. Carry out work on hardstand areas where possible with appropriate spill response procedures and containment measures in place. Work performed by accredited contractor	Low
Table A1-3		Explosion or fire at facility or well site	Danger to health of employees, contractors and possibly the public	H	H	M	M	H	2	No	Low					1	Abandonment programs planned to avoid or minimise hazardous situations, with controls in place to address risks. No smoking or safe smoking areas away from equipment or activity. Personnel are trained to supervise and instruct individuals entering area to conduct work. Safe work permits must be obtained to ensure only individuals with proper clearance can conduct works. Immediate clean-up and remediation to minimise contamination to soil and water. Petrol vehicles to be excluded from well/facility/pipeline sites during decommissioning. Implement appropriate emergency/ spill response procedures for explosion or fire. Safety, testing, maintenance and inspection procedures are implemented. Appropriate controls implemented for work during fire danger season e.g. fire fighting equipment on site, liaison with CFS, fire permits obtained where necessary.	Low