

PROJECT:	Santos Ltd - Moon #1 to Kerna 2A Gas Pipeline																																				
ACTIVITY:	Pipeline Construction, Operation and Abandonment																																				
PIRSA FILE:	SR 28/1/351																																				
ASSESSOR:	Santos Ltd - Rob Batterham, Field Environmental Adviser Central Business Unit (Reviewed by Angela Crimes, PIRSA)																																				
REF	PIPELINE ACTIVITY	POTENTIAL EVENT/IMPACT	POTENTIAL CONSEQUENCES	PREDICTABILITY						MANAGEABILITY						COMMENTS	ENVIRONMENTAL SIGNIFICANCE																				
				SIZE	SCOPE	DURATION	FREQUENCY	STAKEHOLDERS	SIGNIFICANCE	AVOIDANCE	PROBABILITY	DURATION	SIZE AND SCOPE	CUMULATIVE EFFECTS	STAKEHOLDERS			SIGNIFICANCE																			
		Ripping and repair of pipeline inspection/access tracks	Mixing of soil types. Inversion of soil profile.	M	H	H	M	H	2	No	Low	Med	Conf	Low	No	2	Topsoil to be stockpiled separately to avoid soil inversion/mixing.	Low																			
		Air																																			
	Pipeline Construction																																				
	General construction activities	Ignition of fire from construction activities	Particulate emissions to atmosphere	M	H	H	M	H	2	No	Low	Med	Small	Low	No	1	Managed through ban on open fires and smoking on the worksite. Emergency response procedures in place.	Low																			
	Pipeline Operation																																				
	Operation	Gas leak during pipeline operation	Atmospheric pollution	H	H	H	M	H	2	No	Med	Short	Small	Low	Low	3	Regular monitoring of equipment and protection measures. Emergency response procedures in place.	Low																			
		Explosion or fire along pipeline	Atmospheric pollution	H	H	M	H	H	2	No	Low	Short	Small	Low	Low	1	Pipeline designed, constructed and operated to AS 2885 pipeline standards.	Low																			
		Surface Water																																			
	Pipeline Construction																																				
	General construction activities	Flooding of Cooper Creek Floodplain and associated water courses	Contamination of water courses. Siltation of watercourses.	H	M	M	H	H	2	No	Low	Short	Small	Low	Low	2	Appropriate timing of work to mitigate the impacts. Management procedures in place to avoid impacts to water courses.	Low																			
		Spill of stored chemicals or fuel outside bunded area	Contamination of water courses.	H	H	H	H	H	1	Yes	Low	Short	Small	Low	Low	1	Unlikely due to no water courses in the vicinity.	Low																			
	Clear and grade	Impediment to flood water movement via removal of surface material.	Alteration of natural drainage. Siltation of water courses.	M	H	H	M	H	2	Yes	Low	Short	Small	Low	No	1	ROW reinstated in shortest possible time. Natural contours restored Reduced ROW at water courses. Construction timed to avoid periods of flood.	Low																			
	Trenching	Impediment to flood water by open pipeline trench	Disturbance to natural drainage. Siltation of water courses.	M	H	H	M	H	2	No	Low					1	ROW reinstated in shortest possible time. Natural contours restored Reduced ROW at water courses. Construction timed to avoid periods of flood.	Low																			
	Pressure Testing	Spill of hydro testing water	Contamination of surface water	H	H	M	M	M	2	Yes	Low					1	Strict procedures in place for hydrotesting. Such spills unlikely to pose a threat.	Low																			
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	Trenching (buried pipeline)	Change visual attributes of the area	Short-term reduction in aesthetic and recreational values of the area	H	H	M	M	M	2	No	Med	Short	Small	Low	Low	2	Restore natural contours to as near as natural state, and undertaking monitoring programs to return land to natural state. Land system-specific route selection to manage any potential for reductions in aesthetic impact. Pipeline route generally avoids public areas. Trenching also only lasts for short duration.	Low																		
		Cultural																																		
	Pipeline Construction																																			
	General construction activities	Disturbance of cultural heritage sites	Damage to or loss of sites of cultural significance	M	H	H	M	H	2	Yes						1	Sites surveyed for Aboriginal heritage prior to construction activity. Significant sites marked and recorded to minimise any potential for disturbance.	Low																		
		Community Health																																		
	Pipeline Construction																																			
	General construction activities	Vehicle accidents with third parties with presence of heavy vehicles and machinery on unsealed public roads	Injury or death of third parties	M	M	M	M	M	3	No	Low					1	Santos policies in place for dirt road driving (lights on / 80km speed restriction/ no overtaking in dust clouds - instant dismissal).	Low																		
	Pipeline Operation																																			
	Pipeline Operation	Explosion or fire along pipeline	Injury or death of employees, contractors and/or public	M	H	H	M	H	2	No	Low					1	Pipeline constructed to AS2885 standards. Unlikely to occur.	Low																		
		Third party damage to pipeline	Injury or death of third party	H	H	M	M	H	2	No	Low					1	Under AS2885 pipeline is to be designed in a manner the reduces any threats to as low as reasonably practicable, i.e. will be designed to withstand likely third party impacts.	Low																		
		ECONOMIC ENVIRONMENT																																		
		Community/Landuser Welfare																																		
	Pipeline Construction																																			

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	Pipeline Construction	Pipeline construction activities interfere with other land users	Disruption to land use, loss of grazing feedstock	H	H	M	M	H	2	No	Low																							Other landholders are consulted prior to construction activities (in accordance with Act specifications) being undertaken. Sparse cattle presence makes risks to cattle very low.	Low								
	Pipeline Operation																																										
	Pipeline Operation	Fire as a result of pipeline operations	Disruption to land use. Loss of grazing feedstock	H	H	M	M	H	2	No	Low																							1 The likelihood of fire and the low cattle density makes such a risk very low.	Low								
		Spill or leak from pipeline onto grazing land	Disruption to land use, loss of Organic Beef Certification	M	H	M	M	H	2	No	Med	Short	Small	Low	Low																			2 Spills on Organic Beef properties can threaten this certification status. This issue will be managed through fencing of any spills to isolate them from stock. Routine pipeline inspections will also identify leaks in timely manner to reduce any risk to cattle.	Low								

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N/A
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Adviser Central Business Unit

LOW ENVIRONMENTAL IMPACT: environmental significance of all associated activities is assessed as low using PIRSA classification criteria. Level of environmental significance is considered to be low.

POTENTIAL EVENT/IMPACT	PREDICTABILITY	MANAGEABILITY	ENVIRONMENTAL SIGNIFICANCE
	SIGNIFICANCE	SIGNIFICANCE	
NATURAL ENVIRONMENT			
Soil			
Stored chemical or field spill	2	1	Low
Removal of topsoil and stockpile	1	2	Low
Removal of trench material and stockpile	1	1	Low
Flood event when trench open	2	1	Low
Disposal of hydrotest water. Leak during testing.	2	2	Low
Recontouring of easement (dunes)	2	2	Low
Pipeline failure - explosion (gas line)	2	2	Low
Stored chemical or field spill	2	1	Low
Ripping and repair of pipeline inspection/access tracks	2	2	Low
Air			
Ignition of fire from construction activities	2	1	Low
Gas leak during pipeline operation	2	3	Low
Explosion or fire along pipeline	2	1	Low
Surface Water			
Flooding of Cooper Creek Floodplain and associated water courses	2	2	Low
Spill of stored chemicals or fuel into water courses.	2	1	Low
Impediment to flood water movement via removal of surface material.	2	1	Low
Impediment to flood water by open pipeline trench	2	1	Low
Condensate leak during pipeline operation into water courses	3	1	Low
Ground Water			
Spill of stored chemicals or fuel into groundwater	3	1	Low
Spill of hydro testing water into groundwater	3	1	Low
Leak into groundwater resulting from an explosion or fire along pipeline	3	1	Low
Leak into groundwater as a result of pipeline failure	2	1	Low
Flora			
Heavy machinery and vehicle traversing over native vegetation	2	2	Low
Clearing native vegetation on ROW	2	3	Low
Fauna			
Clearance of fauna habitat on ROW	2	3	Low
Open trench in path of fauna movement	2	2	Low
SENSITIVE AREAS			
National Parks			
Disturbance to Conservation features of Parks/Regional Reserves	2	1	Low
Increased public access to remote areas as a result of pipeline/operation infrastructure	2	1	Low
World Heritage Areas			
Registered areas			
SOCIAL ENVIRONMENT			
Community Resource			
Movement of heavy vehicles and machinery on unsealed public roads	2	1	Low
Change visual attributes of the area	2	2	Low
Change visual attributes of the area	2	2	Low
Cultural			
Disturbance of cultural heritage sites	2	1	Low
Disturbance of cultural heritage sites	2	1	Low
Disturbance of cultural heritage sites	2	1	Low
Community Health			
Vehicle accidents with third parties with presence of heavy vehicles and machinery on unsealed public roads	3	1	Low
Explosion or fire along pipeline	2	1	Low
Third party damage to pipeline	2	1	Low
ECONOMIC ENVIRONMENT			
Community/Landuser Welfare			
Pipeline construction activities interfere with other land users	2	1	Low
Fire as a result of pipeline operations	2	1	Low
Spill or leak from pipeline onto grazing land	2	2	Low