Table 1: Significance Assessment

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PIRSA FILE:	**SR 28/1/344**																		
ASSESSOR:	**David Wiltshire (reviewed by A. Crimes)**																		

				PREDICTABILITY						**MANAGEABILITY**								
REF	**PIPELINE ACTIVITY**	**POTENTIAL EVENT/IMPACT**	**POTENTIAL CONSEQUENCES**	SIZE	SCOPE	DURATION	FREQUENCY	STAKEHOLDERS	SIGNIFICANCE	AVOIDANCE	PROBABILITY	DURATION	SIZE AND SCOPE	CUMULATIVE EFFECTS	STAKEHOLDERS	SIGNIFICANCE	**COMMENTS**	**ENVIRONMENTAL SIGNIFICANCE**
		NATURAL ENVIRONMENT																
		Soil																
6.2, 6.3, 11.7	General construction activities	Soil contamination resulting from oil/fuel spills, exposure of acid sulphate soils	Poor vegetation regrowth, risks to human health	M	H	H	H	H	2	No	Low	Short	Small	No	No	2	Procedures for minimising the risk of oil/fuel spills and for managing construction in acid sulphate soils will be developed and included in the EMP.	**Low**
6.2, 6.3	Vehicle movement and access	Soil compaction	Poor recovery of vegetation on R.O.W.	M	H	H	H	H	2	No	Med	Short	Small	No	No	2	Degree of compaction will depend upon soil type and water content of soil. Compacted areas will be ripped during R.O.W. restoration.	**Low**
6.2, 6.3	Clear and grade	Lack of, or incorrect stripping and stockpiling of topsoil	Loss of soil fertility and poor recovery of vegetation on R.O.W.	H	H	M	M	H	2	Yes	Low	Short	Small	Low	No	1	Care will be taken to ensure that topsoil is stripped and stockpiled (as specified in the EMP).	**Low**
6.2, 6.3		Erosion of the R.O.W. by run-off and wind	Loss of topsoil and soil fertility, poor recovery of vegetation on the R.O.W., gullying	M	M	M	M	H	3	Yes	Med	Short	Small	No	No	2	In erosion prone areas erosion control structures and silt fences will be constructed on the R.O.W. (as specified in the EMP). Stability will be regularly monitored and erosion quickly rectified.	**Medium**
6.2, 6.3	Trenching	Mixing of spoil with topsoil	Loss of soil fertility, poor recovery of vegetation on R.O.W.	H	H	M	M	H	2	Yes	Low	Short	Small	No	No	1	Care will be taken to ensure that topsoil and spoil are stockpiled separately.	**Low**
6.2, 6.3		Slope failure, landslip or mass movement due to earthworks	Loss of soil fertility, poor recovery of R.O.W.	M	H	H	M	H	2	Yes	Med	Short	Small	Low	No	2	In areas prone to slope failure, construction times will be selected to coincide with dry periods. Slope compaction and stabilisation measures will be included in the EMP.	**Low**
6.2, 6.3	Back filling	Mixing or inversion of topsoil and spoil	Loss of soil fertility, poor recovery of vegetation on R.O.W.	H	H	M	M	H	2	Yes	Low	Short	Small	No	No	1	Care will be taken to ensure that mixing or inversion do not occur.	**Low**
6.2, 6.3		Poor compaction of backfilled soil	Subsidence of soil along trenchline	H	H	H	M	H	2	Yes	Low	Short	Small	No	No	2	The trench will be compacted to a level consistent with the surrounding soils. Any subsidence will be quickly rectified.	**Low**
6.2, 6.3	Pressure testing	Leak during hydrotesting; disposal of test water	Contamination of soil	M	H	H	M	H	2	Yes	Low	Short	Small	No	No	1	Disposal of hydrotest water will be as specified in the EMP.	**Low**
6.2, 6.3	Operation	Erosion of R.O.W. by run-off	Loss of topsoil and poor recovery of vegetation; gullying	M	H	H	M	H	2	No	Low	Short	Small	No	No	2	The R.O.W. will be regularly monitored to ensure that it remains stable. Erosion will be rectified.	**Low**
		Air																
8.1	General construction activity	Pollution of air via vehicle emissions	Lowered air quality	H	H	H	H	H	1	No	Low	short	Small	No	No	1	A very minor issue. Vehicles will be kept in good working order.	**Low**
8.1	Clear and grade, trenching, padding, backfilling and restoration	Generation of dust	Nuisance to people living or working near the R.O.W.	M	H	H	M	H	2	No	Med	Short	Small	No	No	2	In areas where dust may cause problems, dust suppression measures, including watering and having lower vehicle speed limits, will be used (as specified in the EMP). Nearby residents will be liaised with.	**Low**
8.3	Operation	Increased use of gas in South Australia; gas emissions during venting operations	Potential increase in greenhouse gas emissions	M	H	H	H	H	2	Yes	Low	Short	Small	No	No	1	Replacement of greenhouse gas productive fuels such as coal and diesel by gas will result in a net reduction in greenhouse gas emissions.	**Low**
		Surface Water																
7.2, 7.3, 11.7	General construction activity	Contamination of surface water by spills of fuel or chemicals	Lowered quality of surface waters	H	M	H	M	H	2	Yes	Low	Short	Small	No	No	1	Precautions to prevent/contain spills will be developed and included in the EMP.	**Low**
7.2, 7.3		Release of sediment into watercourses during rainfall events	Increased turbidity of surface waters	M	M	H	M	H	2	No	Med	Short	Small	No	No	2	Surface waters will be protected from sediment inputs via erosion control structures and sediment fencing, as described in the EMP.	**Low**
7.3.2, 7.3.3		Release of sediment into streams during open cut stream crossings	Increased turbidity in streams	H	H	H	H	H	1	No	Med	Short	Small	No	No	2	A detailed protocol for open-cut stream crossings will be developed and included in the EMP. Where open cut methods are likely to cause an unacceptable level of impact directional drills will be used. The River Murray and North Arm Creek will be crossed by directional drills.	**Low**
7.2, 7.3		Interruption of surface water flow patterns by embankments	Downstream areas are deprived of water within detrimental effects upon aquatic ecology and load users	H	M	H	M	H	2	Yes	Low	Short	Small	No	No	2	Care will be taken to ensure that stockpiles are breached at strategic locations and stream flows are maintained as specified in the EMP.	**Low**

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7.2, 7.3	Trench dewatering	Release of sediment, acid sulphate leachate into watercourses	Lowered water quality	H	H	H	H	H	1	No	Med	Short	Small	No	No	2	Care will be taken to ensure that disposal of water pumped from the trench is in accordance with EPA discharge standards. Procedures to trap sediment, dispose of hyper-saline water and neutralise acid sulphate leachate will be described in the EMP.	**Low**
7.2, 7.3	Pressure testing	Disposal of hydrostatic test water into streams	Lowered water quality	H	H	H	H	H	1	Yes	Low	Short	Small	No	No	1	Care will be taken to minimise the risk of contamination of surface waters. Procedures will be described in the EMP.	**Low**
		Ground Water																
7.1	General construction activities	Contamination of groundwater by spills of fuel or chemicals	Lowered groundwater quality	H	M	H	M	H	2	Yes	Low	Short	Small	No	No	1	Precautions to prevent contamination of groundwater by spills will be developed and included in the EMP.	**Low**
7.1	Trenching	Alteration of groundwater flows	Shallow groundwater flows may be interrupted by the open trench	M	M	H	M	H	2	No	Med	Short	Small	No	No	2	The interruption would be of short duration and probably relatively minor.	**Low**
7.1, 6.2		Contamination of groundwater by leachate from acid sulphate soils	Lowered groundwater quality	M	M	H	M	H	2	Yes	Low	Med	Small	No	No	3	Procedures for the management of acid sulphate soils will be included in the EMP. These procedures will include neutralising the leachate with lime if required.	**Low**
7.1	Pressure testing	Contamination of groundwater by chemicals in hydrotest water	Lowered groundwater quality	M	M	M	M	H	3	No	Med	Med	Small	No	No	3	Hydrotest water will contain low levels of corrosion inhibiting chemicals. Appropriate disposal options will be specified in the EMP, but some contamination of groundwater may occur.	**Medium**
7.1	Restoration and rehabilitation	Alteration of groundwater flows	Shallow groundwater may flow along the trenchline (if poorly compacted), or be blocked (if too compacted)	M	M	H	M	H	2	Yes	Low	Short	Small	No	No	1	Careful management of trench backfilling operations will be required to ensure that compaction is appropriate. Trench plugs may be needed in some areas to prevent longitudinal flow.	**Low**
		Vegetation/Habitat																
9.3, 9.4	General construction and operational activity	Introduction and/or spread of weeds and plant diseases (particularly Phytophthora and Mundulla Yellows)	Displacement of native flora and loss of ecological integrity of plant communities	M	M	M	M	H	3	Yes	Med	Med	Small	Low	Yes	3	Appropriate weed and pathogen management procedures will be developed and included in the EMP.	**Medium**
9.3, 9.4	Clear and grade	Loss of threatened flora, loss of remnant vegetation and habitat, fragmentation of habitat	Loss of biodiversity	M	M	M	M	H	3	No	Low	Med	Small	Low	Yes	2	Less than 0.2 percent of the route traverses relatively intact native vegetation. In these areas all ecologically sensitive sites will be identified and flagged prior to construction. Site specific procedures to avoid or minimise impacts upon vegetation and habitat will be developed and included in the EMP.	**Medium**
9.4	Restoration and rehabilitation	Poor recovery of native vegetation on cleared sections of the R.O.W.	Aesthetic impacts. Ongoing loss of native vegetation. Barrier to small animal movement.	M	H	M	M	H	2	Yes	Low	Short	Small	No	No	2	Site specific rehabilitation procedures promoting revegetation will be developed and included in the EMP.	**Low**
		Fauna																
9.2, 9.4	General construction activity	Vehicles striking fauna	Loss of fauna or injury to fauna	H	H	H	H	H	1	No	Low	Short	Small	No	No	1	There is little intact habitat along the route and consequently the density of native fauna is very low. Consequently, the likelihood of fauna being struck is low.	**Low**
9.2, 9.4		Disturbance to native fauna	Emigration from local area. Interruption of breeding cycles	H	H	H	H	H	1	No	Low	Short	Small	No	No	1	There is little intact habitat along the route. Consequently, disturbance to native fauna will be insignificant.	**Low**
9.2	Trenching and pipelaying activities	Entrapment of fauna in the open trench	Loss of fauna or injury to fauna	H	H	H	M	H	2	No	Med	Short	Small	No	No	2	To minimise the risk of entrapment of fauna the trench will be left open for minimal time, escape ramps will be left in place and open trenches will be checked daily and trapped fauna removed. Procedures will be included in the EMP.	**Low**
		SOCIO-ECONOMIC ENVIRONMENT																
		Cultural Heritage																
10.1, 10.2	Access, clear and grade	Damage to Aboriginal or European heritage sites	Loss of cultural heritage	H	H	H	M	H	2	Yes	Low	Short	Small	No	No	1	All cultural heritage sites will be identified and flagged prior to construction. Where possible, adjustments to the alignment will be made to avoid sites. Site specific management procedures will be developed and included in the EMP.	**Low**

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10.1, 10.2	Trenching	Damage to sub-surface Aboriginal heritage sites	Loss of cultural heritage	H	H	H	M	H	2	No	Low	Short	Small	No	No	2	Construction staff will be made aware of their responsibilities regarding excavation of Aboriginal heritage items. Protocols for identifying and protecting items will be developed and included in the EMP.	**Low**
		Conservation Areas																
11.2.2, 11.2.3	Construction and operation	Impacts upon the natural values of conservation areas	Lowered conservation value of various conservation Parks and Reserves, particularly the Reedy Creek National Estate Area	M	M	H	H	H	2	Yes	Low	Short	Small	No	No	1	The corridor traverses the National Estate Area through land used for grazing and cropping (ie. 1.5 km from the area of principal geological value). The corridor is at least 1km from all other conservation areas and will have no effect upon them.	**Low**
		Agriculture																
11.2.2, 11.2.3	General construction activities	Disruption of agricultural land uses including grazing, cropping and hobby farming	Loss of production of cropping land. Disturbance to livestock. Disturbance to lifestyle.	M	H	H	M	H	2	No	Low	Short	Small	No	No	2	Landholders will be consulted with closely to avoid or minimise conflicts. Formal easement agreements will be entered into with landholders. Site specific requirements will be developed and included in the EMP.	**Low**
9.3, 9.4		Spread of weeds, particularly broomrape, and animal diseases	Loss of crop productivity. Detrimental affects on livestock.	M	M	M	M	H	3	Yes	Med	Med	Small	Low	Yes	3	Areas of weed infestation or disease susceptibility on the route will be identified prior to construction commencing. Appropriate weed and disease management procedures will be developed in conjunction with PIRSA and included in the EMP.	**Medium**
11.2.2, 11.2.3	Restoration and rehabilitation	Poor regrowth of pasture grasses or crops on the R.O.W.	Loss of productivity of pastures and crops	M	H	H	M	H	2	Yes	Low	Short	Small	No	No	2	The R.O.W. will be rehabilitated in consultation with the landholders to ensure that their requirements are met. Direct seeding and application of fertilizer is likely to be used. Site specific procedures will be developed and included in the EMP.	**Low**
		Visual Amenity																
11.3.1, 11.3.2	General construction activity	The aesthetic impact of cleared vegetation and extensive earthworks during construction	Temporary loss of visual amenity	H	H	H	H	M	2	No	High	Short	Small	No	No	2	The loss of visual amenity will only be temporary and of relatively short duration.	**Low**
11.6		Careless disposal of waste materials	Loss of visual amenity. Poor public perception of the project.	H	H	H	H	H	1	Yes	Low	Short	Small	No	No	1	Waste management procedures will be developed and included in the EMP. Construction personnel will be inducted concerning waste management responsibilities and procedures.	**Low**
11.3.2, 11.3.3	Operational facilities	The aesthetic impact of above ground infrastructure	Loss of visual amenity	H	M	H	H	H	2	No	Med	Long	Small	Yes	No	3	Above ground infrastructure will be sited, where possible, in areas of low visual sensitivity, screening vegetation will be planted where appropriate, and appropriate colours will be used. There will, however, be some loss of visual amenity at several sites.	**Low**
		Third Party Infrastructure																
11.4.2, 11.4.3	General construction activities	Damage to third party infrastructure, including roads, fences, gas pipelines, fibre optic cables, water utilities and power lines	Inconvenience to the public or landholders; disruption to services	H	H	H	M	H	2	Yes	Med	Short	Small	No	No	2	Careful planning and close consultation with third parties will ensure that inconvenience to third parties or damage to infrastructure is avoided or minimised. Important infrastructure will be marked on line lists and flagged on the ground. Directional drills will be used where deemed necessary to minimise inconvenience to the public.	**Low**
		Public Safety/Health																
8.1	General construction activities	Dust generation in inhabited areas	Distress and inconvenience to the public	M	M	M	M	M	3	Yes	Med	Short	Small	No	No	2	Nearby residents will be consulted concerning likely dust problems. Dust suppression measures, such as watering the R.O.W., will be used if dust levels are excessive and are perceived to be causing problems to the public.	**Medium**
8.2.2, 8.2.3		Excessive noise levels in inhabited area	Distress and inconvenience to the public	M	M	H	M	M	3	No	Med	Short	Small	No	No	2	When operating near houses construction crews will only use noisy equipment during normal working hours. Residents will be informed if out-of-hours work is required.	**Medium**

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11.5		Increased heavy traffic in the construction area	Traffic accidents involving members of the public	M	H	H	M	H	2	Yes	Low	Short	Small	No	No	1	The construction area will be clearly sign-posted warning the public of possible traffic hazards.	**Low**
11.5		Initiation of fire by welding operations or other construction activities	Danger to the public and damage to vegetation, crops and infrastructure	M	M	H	M	H	2	Yes	Low	Short	Med	No	No	2	Procedures to minimise the risk of fire being initiated during construction will be developed and included in the EMP. Since very little native vegetation is traversed by the corridor, the risk of fire is low. There is, however, a low risk to crops and pasture.	**Low**
8.1	Operational activities	Venting of gas to the atmosphere	Hazard to human health	H	H	H	H	H	1	Yes	Low	Short	Small	No	No	1	Modelling has indicated that venting of gas to the atmosphere at the Yallamurray Compressor Station will comply with EPA standards.	**Low**
11.5		Unplanned incidents/failures involving the uncontrolled release of gas to the atmosphere	Fire and/or explosion with possible injury or death to members of the public	M	M	H	M	H	2	Yes	Low	Short	Small	No	No	1	A risk assessment has identified a number of threats, which will be reviewed on a site specific basis in the final risk assessment. Physical and procedural measures will be adopted to ensure that appropriate safety standards are met.	**Low**