Our ref: MER F2015/000729
2018_030

Government of South Australia
Department of the Premier and Cabinet

12 June 2018

Environmental Impact Classification - Pursuant to Section 98 of the Petroleum and Geothermal Energy Act 2000 – *Riverland Pipeline (Pipeline Licence 6) and Berri to Mildura Pipeline (Pipeline Licence 11) - Statement of Environmental Objectives (SEO), APA Group, August 2017.*

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 Department of the Premier and Cabinet (DPC) Petroleum web page: http://petroleum.statedevelopment.sa.gov.au/legislation_and_compliance/environmental_register; and
- Comment received from relevant Government departments in accordance with established administrative arrangements between these departments and DPC-Energy Resources Division (DPC-ERD).

This document summarises the classification made by DPC-ERD on the *Riverland Pipeline (Pipeline Licence 6) and Berri to Mildura Pipeline (Pipeline Licence 11) - Statement of Environmental Objectives (SEO), APA Group, August 2017.* This classification is based on information provided in the EIR prepared by APA Group.

ACTIVITY CLASSIFICATION SUMMARY

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 impact**.

2. The majority of events associated with the PL 6 & 11 pipelines SEO were deemed to be of low environmental significance. This is due to the fact that appropriate management measures will be implemented by APA Group to avoid or mitigate any potential environmental consequences.

CONSULTATION

1. For a low impact classification, DPC-ERD consults with the Department of Environment, Water and Natural Resources (DEWNR) and the Environment Protection Authority (EPA) in accordance with relevant administrative arrangement's dated 11 November 2005 and 25 June 2012 respectively.

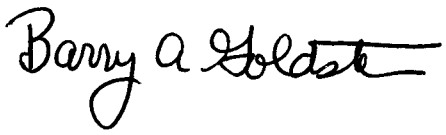
2. Comments received from DEWNR and the EPA on 30 May and 17 January 2018 respectively agreed with the classification of **low impact.**

3. In accordance with Section 101 of the Act, activities classified as low impact require DPC-ERD to undertake consultation with relevant government agencies. This consultation period was for at least 20 business days.

4. Comments received from this consultation are tabled in the appendix of the EIR whereby all reasonable comments within scope need to be adequately addressed. DPC-ERD are satisfied that all comments raised during consultation have been adequately addressed.

5. In accordance with Section 103A of the Act the Minister for Sustainability, Environment and Conservation approved the revised SEO insofar as it relates to petroleum activities undertaken in the River Murray Protection area and within the Murray Darling Basin on 30 May 2018.

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



Barry Goldstein

Executive Director
Energy Resources Division
Department of the Premier and Cabinet
Delegate of the Minister for Mineral Resources and Energy

PROJECT:	**PIPELINE LICENCE 6&11- Riverland Gas and Berri to Mildura Gas**																		
ACTIVITY:	**OPERATIONS AND MAINTENANCE**																		
Date:	**November 2017**			**ABBREVIATIONS: H = High certa**															
				PREDICTABILITY						**MANAGEABILITY**									
REF	**TYPE OF IMPACT**	**EVENTS**	**POTENTIAL CONSEQUENCES**	SIZE	SCOPE	DURATION	FREQUENCY	STAKEHOLDERS	SIGNIFICANCE	AVOIDANCE	PROBABILITY	DURATION	SIZE AND SCOPE	CUMULATIVE EFFECTS	STAKEHOLDERS	SIGNIFICANCE	**COMMENTS**	**ENVIRONMENTAL SIGNIFICANCE**	
	Natural Environment Impacts																**The Riverland pipeline comprises of the Angaston to Berri natural gas lateral pipeline (167.0km) and the Murray Bridge natural gas lateral pipeline from Sedan Junction to Murray Bridge (64.1km). The Riverland pipeline is operated under Pipeline Licence 6 (PL6) issued by the Department of Primary Industries and Resources, South Australia (PIRSA) (now Department of Premier and Cabinet (DPC)) in January 1994. The Berri to Mildura Pipeline is an onshore gas transmission pipeline that supplies natural gas from an off-take on the Riverland Gas Pipeline near Berri in the Riverland of South Australia, to industrial, commercial and domestic markets in the city of Mildura in Victoria, and nearby areas including the Redcliffs township and Karadoc Winery. The Berri to Mildura Pipeline is approximately 148 km in length, with 42.3 kilometres in South Australia, and just over 105 kilometres in Victoria. The South Australian section of the Berri Mildura pipeline is operated under Pipeline Licence 11 (PL11) issued by the Department of Primary Industries and Resources, South Australia (PIRSA) (now the DPC) in May 1999; whist the Victorian section of the pipeline is operated under Pipeline Licence 226 (PL226) issued by the Department of Natural Resources and Environment, Victoria (DNRE, now the Department of Environment, Land, Water and Planning) in June 1999. The day-today operations of Pipeline license PL226 is administered by Energy Safe Victoria.**	
4.2.1.1; 5.2	**Soil Impacts**																**The Riverland Gas pipeline corridor traverses three Interim Biogeographic Regionalisation for Australia (IBRA) bioregions being the Flinders Lofty Block Bioregion, Kanmantoo Bioregion and Murray Darling Depression Bioregion. Heading West to East these bioregions include steep hills to rolling hills containing numerous small intermittent watercourses, undulating dune and hummocks to 3m high containing large plains (fine textured sand susceptible to wind erosion), hilly uplands which become floodplains in the River Murray Valley.The Berri Mildura Gas pipeline traverses only the Murray Darling Depression Bioregion. Again heading West to East the bioregion contains depositional plains that form the major landform of the route with sand ridges, lakes seasonal swamplands and floodplains forming minor landform events.**	
5.2		Integrity dig ups, trenching and excavations associated with maintenance	Soil erosion, Sediment release to land	H	M	H	H	H	2	No	Low	Short	Confined	N/A	N/A	2	Access to easement and on easement by vehicles limited to prevent erosion due to vehicular movements. Vegetation clearing within the easement or on land adjacent to the easement is limited to previously disturbed areas. Potential soil erosion and ground stability issues reviewed during Job Hazard and Environment Analysis when undertaking any works on easement. Minimise vegetation control, slashing etc. to achieve line of site objectives.	**Low**
			Soil inversion	H	H	H	H	H	2	Yes	Low	Short	Confined	N/A	N/A	1	During integrity dig up, topsoil and subsoil area removed and stored in separate piles. Subsoil is backfilled first and then the topsoil is spread over the excavation to aid in restoration and revegetation of disturbed the area.	**Low**
			Mobilisation of acid sulphate soils leading to soil contamination	M	M	M	H	H	2	No	Low	Medium	Localised	N/A	N/A	3	Records kept of areas prone to acid sulphate soils. Site specific investigation in areas of suspected acid sulphate soils. Management of acid sulphate soils as per state regulations/requirements. Specific staff training for operational staff involved with any earthworks in areas prone to acid sulphate soils. Management of contaminated soils as per state regulations/requirements and specific staff training for operational staff involved with any earthworks. Backfill of trenches with clean fill and treatment of lime if required and or where necessary. Mapping of any known contaminated soils areas on company GIS system. Employee and contractor inductions address waste disposal obligations of company and personnel. According to Australian Soil Resource Information System, the pipeline is situated in low risk area for acid sulfate soils (ASS). Excluding a small section of the pipeline, located directly underneath the Murray River (2.5km north east of Berri), which is located in an area of high risk of ASS. Should works be conducted within the high risk area an ASS Management Plan will be developed in line with appropriate EPA Guidelines.	**Low**
5.2		Inspections and maintenance along the easement and access tracks	Soil compaction, soil contamination	H	H	H	H	H	1	No	Med	Short	Confined	N/A	N/A	2	Soil compaction is not considered an issue as formal access tracks to the easement will be used. Access to pipeline only occur over cleared paddocks when access to a particular pipeline section is required (e.g. for maintenance) and not on a continuous basis. All relevant personnel, including contractors are trained in all aspects of fuel and chemical storage. Wherever possible vehicles and equipment are refuelled at appropriate locations off the easements at suitable refuelling locations to prevent the potential for soil contamination due to spills.	**Low**
5.2		Disposal of waste created during maintenance activities	Incorrect disposal of waste leading to soil contamination	M	M	H	M	H	2	No	Low	Short	Confined	N/A	N/A	2	Employee and contractor inductions address waste disposal obligations of company and personnel. Waste sorted at source and placed in appropriate disposal containers. Recycling undertaken where possible. All waste related incidents (inappropriate storage, transfer or disposal)reported through company Incident System. Licenced contractors undertake any suspected asbestos removal. Asbestos is only disposed of at appropriately licenced landfill. Inert and putrescible wastes removed from site and disposed of at licenced landfill. Easements monitored for the presence of illegally dumped rubbish. Rubbish is removed where practicable and disposed in an appropriate manner.	**Low**
5.2		Storage, use, collection and transport of hydrocarbons and chemicals	Soil contamination	H	H	H	H	H	1	Yes	Low	Short	Confined	N/A	N/A	1	Chemicals and other wastes are stored in container or storage areas as per the relevant requirements detailed in the product's SDS, AS 1940-2004 The storage and handling of flammable and combustible liquids and the EPA Bunding and Spill Management Guideline. Spill kits are located at each site that has a chemical storage area. Spill kits may also be required on work sites should it be identified in the risk assessment completed for the work.. All storage areas are secured. Personnel wear appropriate PPE when handling fuel, oils and chemicals. Condensate and oil removed from site by licenced contractor. Procedures in place for chemical storage and handling. Larger volumes of diesel, oils, and condensate are to be manned process undertaken by trained and competent personnel. Dangerous goods in transit are subject to regulations for road, rail, sea and air transport. All companies/persons transporting Dangerous goods will hold the appropriate licence as per regulatory requirements.	**Low**
5.2		Stress, cracking, corrosion repair projects.	Asbestos contamination of soil	H	H	H	H	H	1	No	Med	Short	Confined	N/A	N/A	2	Licenced contractors undertake any suspected asbestos removal. Asbestos is only disposed of at appropriately licenced landfill. Inert and putrescible wastes removed from site and disposed of at licenced landfill. Easements monitored for the presence of illegally dumped rubbish. Rubbish is removed where practicable and disposed in an appropriate manner. Safe storage areas are provided for any potentially hazardous wastes that ensure no potential for human or environmental exposure and contamination of land, air, soil, water.	**Low**
4.2.2.1; 5.7	**Groundwater Impacts & Surface Water Impacts**																**The two pipelines have a total of 3 major river crossings for the River Murray and one smaller crossing of Reedy Creek. 31 watercourses are intersected along the pipeline which are mostly small and/or intermittent in nature. Wetlands of high to moderate conservation status are found along a number of locations along the Riverland Pipeline while only one significant wetland can be found in proximity to the Berri-Mildura Pipeline. Works needing to be done in areas of shallow groundwater will be managed and attempted to occur during the drier months and will be avoided unless absolutely necessary in riparian zones. Discharge of water will be avoided and minimise impact on environmentally sensitive areas which will be monitored for compliance with water quality guidelines. A permit for water affecting activities will be sought if required.**	
5.7		Easement or facility operations	Reduced water quality due to sediment and organic matter run-off	M	H	H	H	H	2	No	Low	Short	Confined	N/A	N/A	2	Soil and ground stability issues along the easement and access tracks due to erosion and instability of watercourse crossings as well as erosion and sediment controls. The condition of the easement, including watercourse crossings and banks are inspected and monitored during routine surveillance for water related damage and potential water contamination. Any fuels, oils or chemicals are stored, transported and handled to prevent contamination of land or water. Surface waters are diverted around storage areas and stockpiles to prevent water contamination. All wastes are stored to prevent contamination of land or water.	**Low**
5.7		Integrity dig ups, trenching and excavations associated with maintenance	Reduced water quality due to sediment run-off, surface water sedimentation	M	M	H	M	H	2	No	Low	Short	Confined	N/A	N/A	2	Erosion control works or rehabilitation of watercourse is to occur as soon as is practicable after the issues are identified. This includes restoring bank profiles, replanting, replacing gabions, and geotextile fabric. Licenced contractors undertake any suspected asbestos removal. Asbestos is only disposed of at appropriately licenced landfill. Inert and putrescible wastes removed from site and disposed of at licenced landfill.	**Low**
			Mobilisation of acid sulphate soils leading to water contamination	M	M	M	H	H	2	No	Low	Medium	Localised	N/A	N/A	3	Records kept of areas prone to acid sulphate soils. Site specific investigation in areas of suspected acid sulphate soils. Management of acid sulphate soils as per state regulations/requirements. Specific staff training for operational staff involved with any earthworks in areas prone to acid sulphate soils. Management of contaminated soils as per state regulations/requirements and specific staff training for operational staff involved with any earthworks. Backfill of trenches with clean fill and treatment of lime if required and or where necessary. Mapping of any known contaminated soils areas on company GIS system. Employee and contractor inductions address waste disposal obligations of company and personnel. According to Australian Soil Resource Information System, the pipeline is situated in low risk area for acid sulfate soils (ASS). Excluding a small section of the pipeline, located directly underneath the Murray River (2.5km north east of Berri), which is located in an area of high risk of ASS. Should works be conducted within the high risk area an ASS Management Plan will be developed in line with appropriate EPA Guidelines.	**Low**
5.7		Redirection of surface water flow by pipeline excavation work, access track construction or easement maintenance work	Altered drainage patterns to surface water and groundwater	M	H	H	H	H	2	No	Low	Short	Confined	N/A	N/A	2	In the event that drainage patters or water flows are affected during non-routine maintenance activities or projects, they are to be restored as near as practicable to the original profile during restoration. Where practicable the number of water crossings is kept to a minimum, and the beds and banks are maintained in a stable condition. Erosion control works or rehabilitation of watercourse is to occur as soon as is practicable after the issues are identified. This includes restoring bank profiles, replanting, replacing gabions, and geotextile fabric. Permits may be required for work within a certain distance of a watercourse, an appropriate APA employee to be consulted.	**Low**
5.7		Temporary damming or diversion of creeks or waterways associated with excavations	Erosion	M	H	H	M	H	2	No	Low	Short	Confined	N/A	N/A	2	Soil and ground stability issues along the easement and access tracks due to erosion and instability of watercourse crossings as well as erosion and sediment controls. Erosion control works or rehabilitation of watercourse is to occur as soon as is practicable after the issues are identified. This includes restoring bank profiles, replanting, replacing gabions, and geotextile fabric. Permits may be required for work within a certain distance of a watercourse, an appropriate APA employee to be consulted. In the event that drainage patters or water flows are affected during non-routine maintenance activities or projects, they are to be restored as near as practicable to the original profile during restoration.	**Low**
5.7		Disposal of waste water created during operations activities (i.e. hydrotesting)	Contamination of ground and surface water	H	H	H	H	H	1	Yes	Low	Short	Confined	N/A	N/A	1	If hydrostatic testing is required during non-routine maintenance, appropriate methods of testing of and disposal of the testing water will be considered in the job specific environmental impact assessment and all appropriate approvals obtained where necessary. Any fuels, oils or chemicals are stored, transported and handled to prevent contamination of land or water. Surface waters are diverted around storage areas and stockpiles to prevent water contamination. All wastes are stored to prevent contamination of land or water. Site specific investigations in areas of suspected high water table and use of qualified contractors in high risk areas when dewatering required. Infiltration water taken back into surrounding environment. Dewatering managed according to state guidelines. Wherever possible vehicles and equipment are refuelled at appropriate locations off the easements at suitable refuelling locations to prevent the potential for soil/water contamination due to spills.	**Low**
5.7		Storage, use, collection and transport of hydrocarbons and chemicals	Water contamination	H	H	H	H	H	1	Yes	Low	Short	Confined	N/A	N/A	1	Chemicals and other wastes are stored in container or storage areas as per the relevant requirements detailed in the product's SDS, AS 1940-2004 The storage and handling of flammable and combustible liquids and the EPA Bunding and Spill Management Guideline. Spill kits are located at each site that has a chemical storage area. Spill kits may also be required on work sites should it be identified in the risk assessment completed for the work.All storage areas are secured. Personnel wear appropriate PPE when handling fuel, oils and chemicals. Minimum amounts of chemicals, fuels are stored on sites, and or transported to job sites on easement as per all relevant legislation and standards. Condensate and oil removed from site by licenced contractor. Procedures in place for chemical storage and handling. Larger volumes of diesel, oils, and condensate are to be manned process undertaken by trained and competent personnel. All relevant personnel, including contractors are trained in all aspects of fuel and chemical storage. Wherever possible vehicles and equipment are refuelled at appropriate locations off the easements at suitable refuelling locations to prevent the potential for soil/water contamination due to spills.	**Low**

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REF	**TYPE OF IMPACT**	**EVENTS**	**POTENTIAL CONSEQUENCES**	SIZE	SCOPE	DURATION	FREQUENCY	STAKEHOLDERS	SIGNIFICANCE	AVOIDANCE	PROBABILITY	DURATION	SIZE AND SCOPE	CUMULATIVE EFFECTS	STAKEHOLDERS	SIGNIFICANCE	**COMMENTS**	**ENVIRONMENTAL SIGNIFICANCE**
		Maintaining "line of sight" and permanent access along easement, vegetation disturbance	Reduced water quality due to sediment run-off, surface water sedimentation	H	H	H	M	H	2	No	Low	Short	Confined	N/A	N/A	2	Routine aerial surveillance and on ground patrols for soil mobility and erosion. Reporting of any incidences via company Incident system. Maintain minimum ground vegetation cover levels (e.g. 150 to 300mm) for soil and ground stability. Replanting, reseeding, fencing of easement undertaken where poor vegetation cover occurs for rehabilitation purposes. Revegetation areas monitored and results and photo records reported. Traffic exclusion zones placed where practicable around revegetated areas. Revegetation areas monitored and results and photo records reported.	**Low**
5.2		Stress, cracking, corrosion repair projects.	Asbestos contamination of water	H	H	H	H	H	1	No	Med	Short	Confined	N/A	N/A	2	Licenced contractors undertake any suspected asbestos removal. Asbestos is only disposed of at appropriately licenced landfill. Inert and putrescible wastes removed from site and disposed of at licenced landfill. Easements monitored for the presence of illegally dumped rubbish. Rubbish is removed where practicable and disposed in an appropriate manner. Safe storage areas are provided for any potentially hazardous wastes that ensure no potential for human or environmental exposure and contamination of land, air, soil, water.	**Low**
3.4.6; 4.2.2.2; 4.3	**Vegetation Impacts**																**The pipeline generally traverses a disturbed and almost entirely modified landscape (greater than 95%) consisting mostly of non-native pasture grassland and cereal crop areas. Vegetative cover varies throughout the length of the pipeline alignment. Whilst large mature Blue Gums and Peppermint Box dominate the mostly cleared landscape in the Angaston region, mallee species of Eucalyptus dominate the undulating plains, which surround the River Murray. Stands of remnant mallee vegetation dot the landscape. Riparian vegetation communities dominated by large River Red Gums and River Box, with understoreys of lignum and reeds, dominate river and creek banks and floodplains. One significant Iron-Grass community was noted along the route and specific site managment protocols have been developed to ensure long term sustainability. Other species of note is Menzel's Wattle and Peep Hill hop-bush being nationally threatened plant species. Since the alignment of the pipeline has generally been constructed within existing, disturbed areas (i.e. areas without major conservation significance or status), no environmental impacts were evident to species with significant conservation status, during field surveys conducted along the length of the pipeline during 2002. The pipeline alignment has been adjusted on a number of occassions to avoid numerous communities of high conservation value. Notable weeds declared under the NRM Act 2004 along the pipeline corridor include Branched Broomrape along the Murray Bridge lateral.**	
5.7		Easement or facility operations	Riparian, aquatic and water dependant flora damage	M	H	H	H	H	2	No	Low	Short	Confined	N/A	N/A	2	Soil and ground stability issues along the easement and access tracks due to erosion and instability of watercourse crossings as well as erosion and sediment controls. The condition of the easement, including watercourse crossings and banks are inspected and monitored during routine surveillance for water related damage and potential water contamination. Any fuels, oils or chemicals are stored, transported and handled to prevent contamination of land or water. Surface waters are diverted around storage areas and stockpiles to prevent water contamination. All wastes are stored to prevent contamination of land or water. Prior to any non-routine maintenance activities occurring within National Parks, Nature reserves, Water catchment areas relevant senior personnel for these areas are contacted and consulted as to requirements prior to work commencing.	**Low**
5.3		Maintaining "line of sight" and permanent access along easement	Vegetation clearing (loss of habitat and biodiversity)	H	H	H	H	H	1	No	High	Short	Confined	N/A	N/A	2	Majority of easement cleared when initially constructed, low vegetation cover retained over easement as per 3.3 above to retain soil cover and stabilise. Vegetation removed only for access and "line of sight" requirements. Any fauna found during these activities either relocated to sides of easement or relocated by specialist trained wildlife. rAecsccueessr st.r acks are maintained to the minimal practicable width. Inductions for company employees and contractors and advanced driver training for company employees. Vehicles remain on existing roads/tracks or within designated areas at all times. Easement only accessed where necessary. Night driving is only to be undertaken where absolutely necessary.	**Low**
5.2		Integrity dig ups, trenching and excavations associated with maintenance	Vegetation clearing (loss of habitat and biodiversity)	H	M	H	H	H	2	No	High	Short	Confined	N/A	N/A	2	Access to easement and on easement by vehicles limited to prevent erosion due to vehicular movements. Vegetation clearing within the easement or on land adjacent to the easement is limited to previously disturbed areas. Potential soil erosion and ground stability issues reviewed during Job Hazard and Environment Analysis when undertaking any works on easement. Minimise vegetation control, slashing etc. to achieve line of site objectives.	**Low**
			Soil inversion	H	H	H	H	H	2	Yes	Low	Short	Confined	N/A	N/A	1	During integrity dig up, topsoil and subsoil area removed and stored in separate piles. Subsoil is backfilled first and then the topsoil is spread over the excavation to aid in restoration and revegetation of disturbed the area.	**Low**
			Mobilisation of acid sulphate soils leading to soil contamination	M	M	M	H	H	2	No	Low	Medium	Localised	N/A	N/A	3	Records kept of areas prone to acid sulphate soils. Site specific investigation in areas of suspected acid sulphate soils. Management of acid sulphate soils as per state regulations/requirements. Specific staff training for operational staff involved with any earthworks in areas prone to acid sulphate soils. Management of contaminated soils as per state regulations/requirements and specific staff training for operational staff involved with any earthworks. Backfill of trenches with clean fill and treatment of lime if required and or where necessary. Mapping of any known contaminated soils areas on company GIS system. Employee and contractor inductions address waste disposal obligations of company and personnel. According to Australian Soil Resource Information System, the pipeline is situated in low risk area for acid sulfate soils (ASS). Excluding a small section of the pipeline, located directly underneath the Murray River (2.5km north east of Berri), which is located in an area of high risk of ASS. Should works be conducted within the high risk area an ASS Management Plan will be developed in line with appropriate EPA Guidelines.	**Low**
5.4		Weeds on easement or adjacent land	Weed infestations. Reduction in diversity of native plant species due to competition	H	M	M	H	H	2	No	Low	Medium	Localised	N/A	N/A	3	Pipeline technicians trained in identification of declared noxious and environmental weed species and techniques for their eradication. Reporting to authorities where applicable of noxious weed outbreaks. Records of known infestations. Vehicles to remain on designated roads and access tracks with minimal off road driving. Project specific weed management programs – targeting specific weeds and management treatments developed and implemented. Ensure any technician spraying chemicals is suitably licenced and is familiar with specific issues such as chemical use near watercourses. All excavating machinery and other equipment to be received on site free of soil and organic matter and a record kept of all inspections. Clean slashing equipment after using in known weed infestation areas and before moving to a weed free area. Record wash-downs and inspections. Only conduct weed control within 20m/50m of watercourse following consultation with Environment Officer/s and in accordance with state regulations. Special considerations/consultation may be required where pipeline/s pass through national parks, water catchment areas, nature reserves. In this instance liaison to occur with parks manager as to weed management strategy.	**Low**
5.4		Import and/or spread of pathogens, disease or pests along or form activities on the easement	Damage to native vegetation, fauna and habitats. Loss of biodiversity Impaired visual amenity.	H	M	M	M	H	2	No	Low	Short	Confined	N/A	N/A	2	Ensure excavation machinery received on site for pipeline works is received free of soil and/or organic matter and record all inspections. Clean any demountable buildings used on the easement or work site prior to entry and removal from site by brushing and washing floors to ensure no foreign seeds are introduced. In areas where the easement is frequently accessed by vehicles e.g. urban areas, and above weed control such as for example "wash down" are impractical, other suitable controls should be considered, such as stabilised area of gravel or cattle grid to remove sediment from tyres. Machinery and vehicles cleaned prior to entering and exiting disease or pest areas, with either high pressure water or cleaning solutions as per government hygiene advice. Cleaning should remove all soil and vegetative material from the interior and exterior of vehicles, personnel clothing, boots and PPE.	**Low**
5.3		Bushfire on easement due to company activities	Damage or loss of vegetation	M	M	M	H	H	2	No	Med	Medium	Localised	N/A	N/A	3	All equipment used complies with relevant fire safety standards to ensure that explosion, ignition of gas or other substances does not occur, (e.g. use of spark arrestors). Any slashing, welding, grinding or cutting works are undertaken following Job Hazard and Environment Analysis which includes Ignition sources, fire, and explosion review, under the Permit to Work system. Dedicated observer's monitor for sparks etc. when welding or cutting works are being undertaken. Vehicles are regularly checked to ensure that combustible materials such as grass and debris do not build up in critical areas where ignition could occur. Where flammable or combustible chemicals are required to be stored, appropriate fire - fighting equipment is available and they are stored in accordance with AS 1940: Storage and handling of flammable and combustible liquids and as per SDS. Machinery and vehicles on the easement but not in use are parked in areas of low fire risk e.g. away from long grass, shrubs etc. Pipeline Technicians are trained in fire prevention and safety, personal responsibilities and basic fire suppression. All observed fires are reported to Triple zero (000) regardless of whether caused by company activities or not. Firebreaks are maintained on the easement around any above ground facilities. All Hazards and incidents reported through company incident reporting system.	**Low**
4.2.1.4, 4.2.2.3, 5.4, 5.6	**Native Fauna Impacts**																**This region contains habitats that support a variety of native mammal, bird and reptile species. Many species are now confined to isolated areas of remnant vegetation. Listed endangered, vulnerable or rare fauna species under the *SA National Parks and Wildlife Act 1972* and/or the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* are likely to be found in this region.**	
5.6		Maintaining access along the easement	Disturbance or injury to fauna, localised reduction in biodiversity	H	H	H	H	H	1	No	Med	Short	Confined	N/A	N/A	2	Majority of easement cleared when initially constructed, low vegetation cover retained over easement as per 3.3 above to retain soil cover and stabilise. Vegetation removed only for access and "line of sight" requirements. Any fauna found during these activities either relocated to sides of easement or relocated by specialist trained wildlife. rAecsccueessr st.r acks are maintained to the minimal practicable width. Inductions for company employees and contractors and advanced driver training for company employees. Vehicles remain on existing roads/tracks or within designated areas at all times. Easement only accessed where necessary. Night driving is only to be undertaken where absolutely necessary.	**Low**
			Injury to fauna, damage to or degradation of habitat	H	H	H	M	H	2	No	Low	Short	Confined	N/A	N/A	2	Site inductions, JHEA, JSA and Permit to Work sign on at site include vehicle speed restrictions, access to site routes when any maintenance undertaken on easement/facilities, and flora and fauna damage. Integrity digs undertaken in smallest footprint possible. Area's barricaded/fenced if open overnight. Any fauna found during these activities either relocated to sides of easement or relocated by specialist trained wildlife rescuers. Movement of fauna across and along the easement is in no way restricted, apart from existing agricultural or residential fencing already in place. The majority of easements are within agricultural/residential disturbed land areas, liaison with specified personnel where easements traverse National Parks, Nature reserves and Water catchments in relation to specific controls or fauna issues, or in areas where known vulnerable or at risk fauna populations exist. Construction activities only occur during daylight hours, unless emergency situation.	**Low**
			Localised reduction in biodiversity	H	H	H	M	H	2	No	Low	Short	Confined	N/A	N/A	2	Low vegetation cover on easement provides cover and interconnection for fauna movement, along and across easement.	**Low**
5.7		Easement or facility operations	Riparian, aquatic and water deepndant flora damage	M	H	H	H	H	2	No	Low	Short	Confined	N/A	N/A	2	Soil and ground stability issues along the easement and access tracks due to erosion and instability of watercourse crossings as well as erosion and sediment controls. The condition of the easement, including watercourse crossings and banks are inspected and monitored during routine surveillance for water related damage and potential water contamination. Any fuels, oils or chemicals are stored, transported and handled to prevent contamination of land or water. Surface waters are diverted around storage areas and stockpiles to prevent water contamination. All wastes are stored to prevent contamination of land or water. Prior to any non-routine maintenance activities occurring within National Parks, Nature reserves, Water catchment areas relevant senior personnel for these areas are contacted and consulted as to requirements prior to work commencing.	**Low**
5.6		Vibration form machinery and equipment	Potential for vibration of machinery/equipment in compounds to create disturbance to fauna and fauna movements outside the compound.	H	M	H	M	H	2	No	Med	Short	Confined	N/A	N/A	2	Vibration levels of machinery/equipment used in compounds restricted so as not to create disturbance to neighbours, personnel working on machinery/equipment. All compounds are security fenced, so any fauna is fenced out of compound, outside movements are not restricted in any way.	**Low**

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5.7		Storage, use, collection and transport of hydrocarbons and chemicals	Native fauna access to contaminants	H	H	H	H	H	1	Yes	Low	Short	Confined	N/A	N/A	1	Chemicals and other wastes are stored in container or storage areas as per the relevant requirements detailed in the product's SDS, AS 1940-2004 The storage and handling of flammable and combustible liquids and the EPA Bunding and Spill Management Guideline. Spill kits are located at each site that has a chemical storage area. Spill kits may also be required on work sites should it be identified in the risk assessment completed for the work.All storage areas are secured. Personnel wear appropriate PPE when handling fuel, oils and chemicals. Minimum amounts of chemicals, fuels are stored on sites, and or transported to job sites on easement as per all relevant legislation and standards. Condensate and oil removed from site by licenced contractor. Procedures in place for chemical storage and handling. Larger volumes of diesel, oils, and condensate are to be manned process undertaken by trained and competent personnel. All relevant personnel, including contractors are trained in all aspects of fuel and chemical storage. Wherever possible vehicles and equipment are refuelled at appropriate locations off the easements at suitable refuelling locations to prevent the potential for soil/water contamination due to spills.	Low
5.3		Bushfire on easement due to company activities	Damage or loss of flora, fauna, habitat.	M	M	M	H	H	2	No	Med	Medium	Localised	N/A	N/A	3	All equipment used complies with relevant fire safety standards to ensure that explosion, ignition of gas or other substances does not occur, (e.g. use of spark arrestors). Any slashing, welding, grinding or cutting works are undertaken following Job Hazard and Environment Analysis which includes Ignition sources, fire, and explosion review, under the Permit to Work system. Dedicated observer's monitor for sparks etc. when welding or cutting works are being undertaken. Vehicles are regularly checked to ensure that combustible materials such as grass and debris do not build up in critical areas where ignition could occur. Where flammable or combustible chemicals are required to be stored, appropriate fire - fighting equipment is available and they are stored in accordance with AS 1940: Storage and handling of flammable and combustible liquids and as per SDS. Machinery and vehicles on the easement but not in use are parked in areas of low fire risk e.g. away from long grass, shrubs etc. Pipeline Technicians are trained in fire prevention and safety, personal responsibilities and basic fire suppression. All observed fires are reported to Triple zero (000) regardless of whether caused by company activities or not. Firebreaks are maintained on the easement around any above ground facilities. All Hazards and incidents reported through company incident reporting system.	Low
5.3		Lighting for compounds	Potential for lighting in compounds to create disturbance to fauna and fauna movements	H	H	H	H	H	1	No	Med	Medium	Localised	N/A	N/A	3	Lighting is directed to within the compound so that light spill outside the compound is minimised. Where lights do not need to be on at night for security/operational purposes, they are left off. All compounds are securely fenced to prevent egress which also acts to prevent fauna entry to compounds.	Low
5.4		Weeds on easement or adjacent land	Weed infestations. Reduction in diversity of native plant species due to competition and potential destruction of natural habitat.	H	M	M	H	H	2	No	Low	Medium	Localised	N/A	N/A	3	Pipeline technicians trained in identification of declared noxious and environmental weed species and techniques for their eradication. Reporting to authorities where applicable of noxious weed outbreaks. Records of known infestations. Vehicles to remain on designated roads and access tracks with minimal off road driving. Project specific weed management programs – targeting specific weeds and management treatments developed and implemented. Ensure any technician spraying chemicals is suitably licenced and is familiar with specific issues such as chemical use near watercourses. All excavating machinery and other equipment to be received on site free of soil and organic matter and a record kept of all inspections. Clean slashing equipment after using in known weed infestation areas and before moving to a weed free area. Record wash-downs and inspections. Only conduct weed control within 20m/50m of watercourse following consultation with Environment Officer/s and in accordance with state regulations. Special considerations/consultation may be required where pipeline/s pass through national parks, water catchment areas, nature reserves. In this instance liaison to occur with parks manager as to weed management strategy.	Low
5.4		Import and/or spread of pathogens, disease or pests along or form activities on the easement	Damage to native vegetation, fauna and habitats. Loss of biodiversity Impaired visual amenity.	H	M	M	M	H	2	No	Low	Short	Confined	N/A	N/A	2	Ensure excavation machinery received on site for pipeline works is received free of soil and/or organic matter and record all inspections. Clean any demountable buildings used on the easement or work site prior to entry and removal from site by brushing and washing floors to ensure no foreign seeds are introduced. In areas where the easement is frequently accessed by vehicles e.g. urban areas, and above weed control such as for example "wash down" are impractical, other suitable controls should be considered, such as stabilised area of gravel or cattle grid to remove sediment from tyres. Machinery and vehicles cleaned prior to entering and exiting disease or pest areas, with either high pressure water or cleaning solutions as per government hygiene advice. Cleaning should remove all soil and vegetative material from the interior and exterior of vehicles, personnel clothing, boots and PPE.	Low
4.2.2.1, 4.5.2, 5.2, 5.6, 5.7	**Sensitive Area Impacts**																**The Pipelines traverse through areas of conservation, heritage and cultural significance, such as roadside reserves, rivers, creeks, conservation areas and wetlands. The sites include Reedy Creek, North Para River, Marne River and Murray River floodplains and wetlands, Keyneton stone walls and isolated strands and corridors of remnant vegetation remaining in roadside reserve.There are two significant wetlands within close proximity of the Riverland pipeline; the Swan Reach Wetland Complex and Spectacle Lakes, which are both listed in the Directory of Important Wetlands in Australia, and are considered to be of national importance for their ecological values (Environment Australia 2015). There are two significant wetlands within close proximity of the Berri Mildura pipeline; the Gurra Lakes Wetland Complex and Pike-Mundic Wetland Complex, which are both listed in the Directory of Important Wetlands in Australia, and are considered to be of national importance for their ecological values (Environment Australia 2015). The Gurra Lakes Wetland Complex is located within the Lyrup Forest Reserve (Listed on the Register of the National Estate).**	
5.2, 5.6, 5.7		Disturbance to Environmentally Sensitive Areas found along pipeline	Loss of environmental values	H	H	H	H	H	1	No	Low	Short	Confined	N/A	N/A	2	No impacts are expected to conservation areas other than those addressed under soil, water, flora and fauna impacts. Every precaution has been taken to ensure the integrity of the pipeline to prevent any breach which may detrimentally affect these wetlands. Regular audits, patrols and aerial surveys are conducted to ensure continual safe operation.	Low
3.4.2, 3.4.8, 3.4.9, 4.7, 5.9	**Air Impacts**																**The air quality in the vicinity of the pipeline route is expected to be typical of a rural environment and influenced by a range of activities such as: • Dust from stock and vehicle movements or high winds; and • Vehicle and equipment exhaust fumes.Air emissions from the Pipeline and facility operations are usually of limited duration and quantity. Emissions that may impact on air quality include the release of natural gas during pipeline venting or purging to allow certain maintenance activities, vehicle and machinery exhausts and dust emissions from vehicle and equipment movement.**	
5.9		Routine maintenance surveillance and operations of above ground facilities. Emergency maintenance	Venting to atmosphere of greenhouse gases	M	H	H	H	H	2	No	High	Short	Confined	N/A	N/A	2	Venting or purging activities are undertaken on as needed basis and are minimised for economic and greenhouse gas emission reasons. Adjacent residents and local authorities are advised of pending major venting operations prior to undertaking the activity and notification is documented. Periodic leakage surveys are undertaken to detect fugitive gas releases from the pipeline or facilities per AS2858.3 requirements. Gas vents are located at appropriate distances from residential areas and infrastructure in accordance with relevant regulatory and Australian standards requirements. Where practicable planned gas releases, including venting, are undertaken under favourable weather conditions that will facilitate rapid atmospheric dispersion of the gas. Particular emissions and combustion emissions are reported to the National Pollutant Inventory (NPI). Greenhouse Gas emissions reporting is undertaken for venting and other gas emissions. Vehicles are regularly maintained to ensure that emissions are minimised. The amount of gas vented is recorded and reported to the appropriate authorities, as per Greenhouse Gas Emission reporting requirements.	Low
			Dust impacts on neighbours	H	M	H	M	M	2	No	Med	Short	Localised	N/A	N/A	2	Soil that is stockpiled for more than one week is covered with geotextile/hessian, if weather conditions require, or other suitable material to minimise dust generation. Soil that is stockpiled for periods of longer than three months is seeded with sterile grass to prevent wind/water erosion and dust production. Where dust problems occur at certain locations the following measures are adopted as appropriate: revegetate using existing species (where appropriate) and prevent access until vegetation has established; ensure speed limits are appropriate and being observed; minimise vehicle movements; use geotextiles, hessian or mulched vegetation on localised areas; stripping of surface and installation of a firm base, e.g. gravel or compacted clay; water sprays if available and relevant.	Low
5.9		Stress, cracking, corrosion repair projects.	Asbestos dust impacts	M	M	H	H	M	2	No	Low	Short	Confined	N/A	N/A	2	Licenced contractors undertake any suspected asbestos removal. Asbestos is only disposed of at appropriately licenced landfill. Inert and putrescible wastes removed from site and disposed of at licenced landfill. Easements monitored for the presence of illegally dumped rubbish. Rubbish is removed where practicable and disposed in an appropriate manner. Safe storage areas are provided for any potentially hazardous wastes that ensure no potential for human or environmental exposure and contamination of land, air, soil, water.	Low
5.9		Operational and maintenance activities at above ground facilities or on easement.	Incorrect disposal of waste leading to air contamination including odour issues	H	M	H	M	M	2	No	Low	Short	Confined	N/A	N/A	2	Employee and contractor inductions address waste disposal obligations of company and personnel. Waste sorted at source and placed in appropriate disposal containers. Recycling undertaken where possible. All waste related incidents (inappropriate storage, transfer or disposal)reported through company Incident System. Licenced contractors undertake any suspected asbestos removal. Asbestos is only disposed of at appropriately licenced landfill. Inert and putrescible wastes removed from site and disposed of at licenced landfill. Easements monitored for the presence of illegally dumped rubbish. Rubbish is removed where practicable and disposed in an appropriate manner.	Low
	SOCIAL ENVIRONMENT																	
4.5.1, 4.5.3, 5.4, 5.5	**Existing Land use Impacts**																**The main land use of this region is agriculture with extensive pasture grassland and cereal crop areas made up of leasehold and freehold land. Some limited areas of remnant vegetation remain. Communications will be constantly ongoing with landholders when non-routine activities are required and easement agreements are in place with existing landholders to permit normal grazing and cropping (shallow rooted) activities.**	
5.5		Operations and routine/non routine maintenance activities producing noise	Disruption of land use rights and practices, disturbance of residents, landholders and third parties	H	H	H	H	H	1	Yes	Med	Short	Confined	N/A	N/A	1	Liaison with landholders and regulatory authorities undertaken with regard to any special management measures required for properties/area such as weed or disease management provisions, quarantine, or certified area provisions e.g. organic, disease weed free. Where practicable operations and maintenance activities are scheduled during appropriate seasons in relation to land use activities including cropping regimes, livestock cycles in order to reduce potential adverse effects. Landholders, residents within proximity and any relevant third parties are notified in advance of any operational or maintenance activities likely to cause disruption. A record of all landholder contacts are retained on the company wide database. As per regulatory requirements (AS 2885) a database is maintained with all landholder contact details for all lands that the pipeline and easement traverses. Regular contact, at least annually, with landholders is maintained and all relevant pipeline and easement management issues discussed. New landholders are contacted and briefed regarding approved and prohibited land uses on the pipeline easement, as well as safety, emergency and operational considerations. Pipeline facilities are kept in a clean and tidy condition for safety and visual amenity reasons. Vegetation screening is maintained for visual amenity and kept trimmed for bushfire prevention. Normal and emergency contact details are supplied to all landholders with an 1800 contact number also supplied to all landholders.	Low
			Urban encroachment within radiation zone distance of easement	H	H	H	H	H	1	Yes	Low	Short	Confined	N/A	N/A	1	Education to State planning departments and local Council through Gas awareness programs on planning and risk assessment requirements and radiation zones under AS:2885 related to high pressure gas pipelines. Attendance and involvement in local and state planning Land use and land use planning change forums, discussions, plans etc.	Low
		Integrity dig ups, trenching and excavations associated with maintenance	Soil inversion	H	H	H	H	H	2	Yes	Low	Short	Confined	N/A	N/A	1	During integrity dig up, topsoil and subsoil area removed and stored in separate piles. Subsoil is backfilled first and then the topsoil is spread over the excavation to aid in restoration and revegetation of disturbed the area. If soil inversion were to affect farm productivity, the area affected would be minor, and it is a requirement under Part 10 of the Petroleum and Geothermal Energy Act 2000 that landowners will be entitled to compensation if the damage is not made good by the licensee.	Low

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5.7		Storage, use, collection and transport of hydrocarbons and chemicals	Access to livestock and/or spills resulting in loss of agricultural production	H	H	H	H	H	1	Yes	Low	Short	Confined	N/A	N/A	1	Chemicals and other wastes are stored in container or storage areas as per the relevant requirements detailed in the product's SDS, AS 1940-2004 The storage and handling of flammable and combustible liquids and the EPA Bunding and Spill Management Guideline. Spill kits are located at each site that has a chemical storage area. Spill kits may also be required on work sites should it be identified in the risk assessment completed for the work.All storage areas are secured. Personnel wear appropriate PPE when handling fuel, oils and chemicals. Minimum amounts of chemicals, fuels are stored on sites, and or transported to job sites on easement as per all relevant legislation and standards. Condensate and oil removed from site by licenced contractor. Procedures in place for chemical storage and handling. Larger volumes of diesel, oils, and condensate are to be manned process undertaken by trained and competent personnel. All relevant personnel, including contractors are trained in all aspects of fuel and chemical storage. Wherever possible vehicles and equipment are refuelled at appropriate locations off the easements at suitable refuelling locations to prevent the potential for soil/water contamination due to spills.	**Low**	
5.5		Bushfire on easement due to company activities	Damage to agricultural production and or third party infrastructure.	M	M	M	H	M	2	No	Med	Medium	Localised	N/A	N/A	3	All equipment used complies with relevant fire safety standards to ensure that explosion, ignition of gas or other substances does not occur, (e.g. use of spark arrestors). Any slashing, welding, grinding or cutting works are undertaken following Job Hazard and Environment Analysis which includes Ignition sources, fire, and explosion review, under the Permit to Work system. Dedicated observer's monitor for sparks etc. when welding or cutting works are being undertaken. Vehicles are regularly checked to ensure that combustible materials such as grass and debris do not build up in critical areas where ignition could occur. Where flammable or combustible chemicals are required to be stored, appropriate fire - fighting equipment is available and they are stored in accordance with AS 1940: Storage and handling of flammable and combustible liquids and as per SDS. Machinery and vehicles on the easement but not in use are parked in areas of low fire risk e.g. away from long grass, shrubs etc. Pipeline Technicians are trained in fire prevention and safety, personal responsibilities and basic fire suppression. All observed fires are reported to Triple zero (000) regardless of whether caused by company activities or not. Firebreaks are maintained on the easement around any above ground facilities. All Hazards and incidents reported through company incident reporting system.	**Low**	
5.3		Maintaining "line of sight" and permanent access along easement	Erosion or sedimentation; loss of agricultural production capacity; loss of visual amenity	H	H	H	H	H	1	No	Low	Short	Confined	N/A	N/A	2	Routine aerial surveillance and on ground patrols for soil mobility and erosion. Reporting of any incidences via company Incident system. Maintain minimum ground vegetation cover levels (e.g. 150 to 300mm) for soil and ground stability. Replanting, reseeding, fencing of easement undertaken where poor vegetation cover occurs for rehabilitation purposes. Revegetation areas monitored and results and photo records reported. Traffic exclusion zones placed where practicable around revegetated areas. Revegetation areas monitored and results and photo records reported.	**Low**	
5.10		Operations and routine/non routine maintenance activities producing noise	Noise disturbance to existing landusers	M	M	H	H	H	2	No	Low	Short	Confined	N/A	N/A	2	All plant and facilities along the pipeline comply with the EPA guidelines for the Environment Protection (Noise) Policy and AS1055:Acoustics. Activities likely to produce elevated noise levels are scheduled for time periods less likely to result in noise nuisance to landholders and local residents following liaison and consultation, except in the case of emergencies. Noise generating equipment used in non-routine maintenance activities, e.g. generators, air compressors, water pumps are located at appropriate distances from landholders, residences, sensitive stock, or other sensitive environments where practicable. Notification of routine events to neighbours, e.g. venting that is likely to generate above normal noise levels. Notification documented and retained. Any noise complaints are investigated and closed out. A record of the complaint and the actions taken are recorded on the complaints register and reported. Noise monitoring is conducted on an as needed basis as directed by the appropriate authority. Aerial surveillance is undertaken with due regard to disturbance of livestock, with higher altitude flight path used if specifically requested by landholder.	**Low**	
5.4		Weeds on easement or adjacent land	Weed infestations. Reduction in agricultural production and quality, detrimental effects on stock, including poisoning.	H	M	M	H	H	2	No	Low	Medium	Localised	N/A	N/A	3	Pipeline technicians trained in identification of declared noxious and environmental weed species and techniques for their eradication. Reporting to authorities where applicable of noxious weed outbreaks. Records of known infestations. Vehicles to remain on designated roads and access tracks with minimal off road driving. Project specific weed management programs – targeting specific weeds and management treatments developed and implemented. Ensure any technician spraying chemicals is suitably licenced and is familiar with specific issues such as chemical use near watercourses. All excavating machinery and other equipment to be received on site free of soil and organic matter and a record kept of all inspections. Clean slashing equipment after using in known weed infestation areas and before moving to a weed free area. Record wash-downs and inspections. Only conduct weed control within 20m/50m of watercourse following consultation with Environment Officer/s and in accordance with state regulations. Special considerations/consultation may be required where pipeline/s pass through national parks, water catchment areas, nature reserves. In this instance liaison to occur with parks manager as to weed management strategy.	**Low**	
5.4		Import and/or spread of pathogens, disease or pests along or from activities on the easement	Reduction in agricultural productivity and or adverse effects on livestock health.	H	M	H	M	H	2	No	Low	Short	Confined	N/A	N/A	2	Vehicles accessing site/easement to remain on designated roads and tracks at all times. Training of pipeline technicians, personnel on potential diseases, pests, pathogens and most recent control measures. Potential diseases and pests issues and associated controls discussed in routine liaison and communication with landholders. A record kept of all communications. In confirmed disease, pathogen, pest areas vehicles, boots to be cleaned before and after access. In certain instances access may only be on foot. Observe signage at risk areas, keep up to date with most effective management techniques. Gates along access tracks or the easement "left as found" to prevent the possible integration of separated herds/flocks. Information on disease, pest infected areas and outbreaks obtained from the relevant Commonwealth and State agencies and the relevant hygiene arrangements conveyed to operational personnel. At intensive farming properties e.g. poultry, piggeries or feedlots, landholders consulted and any particular requirements complied with (i.e. vehicle wash down at entry and exit from property). Consultation documented. Vehicle wash down register kept to demonstrate compliance with hygiene requirements. Vehicle cleaning points located close to the infected area along the easement to reduce the risk of spreading infected material. In potentially infected areas, disease, pests monitored in accordance with an approved monitoring program. Comply with the company's Fire Ant Risk Management Plan if identified.	**Low**	
3.5, 5.8	**Cultural & Heritage Impacts**																**Several sites have been identified along the Riverland pipeline corridor; these sites have been assessed as being of significant Aboriginal heritage value. Several sites have been identified along the Riverland pipeline corridor; these sites have been assessed as being of significant Aboriginal heritage value. Numerous burials have been unearthed at Murray Bridge during house and road construction and some of these are in close proximity to the pipeline route. However, no items of Aboriginal heritage significance were unearthed during the construction of the pipeline. Eight sites were detected during the field survey of Berri-Mildura pipeline route. A disturbed shell midden was found on the Western side of the Murray River crossing on and around the pipeline easement. This site extends for at least 260m back from the riverbank and on the surface comprises fragmentary mussel shell and a small number of chert stone artefacts. This location forms part of the former Berri rubbish dump and thus the land was previously disturbed before construction of the natural gas pipeline. Aboriginal archaeological sites were also found on the eastern side of the river crossing. Relatively dense shell middens containing faunal material and hearths were found on each of the sandy levees on the floodplain. Scattered, fragmentary shell midden was also found on the riverbanks.The pipeline route avoids areas of significant European heritage significance by utilising roads, roadside verges, disused railway easements and cleared paddocks. Dry stone walls in the Keyneton region (KP 15.6) were traversed during construction, whereby each wall was dismantled and reinstated to its original condition following completion of construction activities.**	
4.4.1, 5.8		Vehicle movements, vegetation management and earthworks for integrity digs, erosion control associated with operational and maintenance activities on the easement	Disturbance or destruction of heritage items or sites	H	H	H	M	H	2	No	Low	Short	Confined	N/A	N/A	2	Information on heritage sites is maintained during operations on the company wide database and/ or GIS system and Alignment sheets, from information that has been prepared prior to pipeline construction or during subsequent projects by suitably qualified persons with input from indigenous communities. Information kept includes detail regarding the significance, location and management measures for each site. Information from this database is available to patrol officers and environmental advisers and auditors during operations. No disturbance/destruction of any heritage items shall occur except under permit arrangements with relevant state government department. All operation activities comply with permit and reporting requirements under the relevant State and Federal heritage legislation. Known sites that are within or adjacent to the easement are given physical protection such as barriers of logs or fences, and appropriate signs. Physical protection measures are maintained as per maintenance schedule. Pipeline technicians, engineers and project staff are trained in heritage and cultural issues and management. Pipeline technicians report any disturbance to potential heritage sites. Cultural heritage advisor/archaeologist to record disturbance. Actions taken to address disturbance are undertaken following consultation with regulatory authorities and local community groups as necessary. Program in place to facilitate effective consultation with heritage and community groups, regulatory authorities and other relevant stakeholders. Where maintenance work or other operations have the potential to impact upon known heritage items, a heritage consultant is used to undertake investigation prior to the work commencing and provide suitable management measures. If during any activities artefacts or evidence of other heritage items/objects are uncovered/disturbed, all works in the area will cease immediately and the relevant state department notified. If during any activities bones, evidence of burial sites are uncovered/disturbed, all works in the area will cease immediately and the Police department notified.	**Low**	
4.5.3, 4.6, 5.4, 5.10, 5.11, 5.12	**Community Health & Safety Impacts**																**The pipeline in sections runs parralel with other significant infrastructure notably the MurrayLink High Voltage Direct Current cable and a Telstra Broadband Fibre Optic cable. A number of mid-high volume traffic roads and other minor roads and tracks are intersected. In the event of an emergency APA personnel have all been trained in the response procedures and any incidents that could cause an emergency are treated very seriously by management. Simulation exercises are undertaken frequently within the organisation. The Gas Pipeline is predominately located within registered easements passing through private properties; these are typically 15m - 20m in width. The balance of the pipeline passes through crown land and road reserves enroute to Berri and Murray Bridge respectively. The Pipeline supplies natural gas to industrial, commercial and domestic consumers in the townships of Berri and Murray Bridge respectively and the City of Mildura and surrounding townships in Victoria via the Berri to Mildura transmission pipeline.**	
5.10		Operations and routine/non routine maintenance activities producing noise	Noise disturbance to the public	M	M	H	H	H	2	No	Low	Short	Confined	N/A	N/A	2	All plant and facilities along the pipeline comply with the EPA guidelines for the Environment Protection (Noise) Policy and AS1055:Acoustics. Activities likely to produce elevated noise levels are scheduled for time periods less likely to result in noise nuisance to landholders and local residents following liaison and consultation, except in the case of emergencies. Noise generating equipment used in non-routine maintenance activities, e.g. generators, air compressors, water pumps are located at appropriate distances from landholders, residences, sensitive stock, or other sensitive environments where practicable. Notification of routine events to neighbours, e.g. venting that is likely to generate above normal noise levels. Notification documented and retained. Any noise complaints are investigated and closed out. A record of the complaint and the actions taken are recorded on the complaints register and reported. Noise monitoring is conducted on an as needed basis as directed by the appropriate authority. Aerial surveillance is undertaken with due regard to disturbance of livestock, with higher altitude flight path used if specifically requested by landholder.	**Low**	
5.11		Operational and maintenance activities at above ground facilities or on easement.	Injury to public or personnel	M	M	H	H	H	2	Yes	Low	Short	Confined	N/A	N/A	1	The Pipeline is operated through a Pipeline Management System which ensures compliance with all aspects of AS2885 and regulatory requirements to maintain pipeline integrity.The implementation of the System will ensure the Pipeline is operated and maintained to industry standards. Safe Work Method Statement to include hazards to third parties and outline mitigation. All work sites compliant with SafeWork requirements. Regular ground and aerial patrols to identify third party activity. Implement pipeline awareness program with all land owners, occupiers and stakeholders (LGA, utilities). Provision of 24 hour 'Dial Before You Dig' contact number and free pipeline location service. Installation and maintenance of pipeline warning signs along the pipeline route. Safety Management Study and location class review to identify and manage external threats. Install physical protection measures and buried markers as per AS2885 and location class (i.e. slabbing, depth of cover, marker tape). 24 hour Integrated Operations Centre incorporating monitoring and control systems that continuously receives and analyse pipeline operating reports. 'Intelligent pigging' operations, in which detection equipment travels inside the pipeline checking for abnormalities and corrosion. Cathodic protection survey and system to further mitigate corrosion – as per AS 2832.1. Compliance with operational requirements of AS2885 including the management of as-built information. Compliance with design requirements of AS2885 including isolation points, wall thickness, depth of cover. Landholders, residents within proximity and any relevant third parties are notified in advance of any non-routine activities likely to cause hazard. All potentially hazardous areas, such as the Inlet and Outlet Stations, are fenced with security fencing to prevent unauthorised access. Any near miss or incident must be reported through the internal reporting system. This ensures that	**Low**	
		Third Party or External Interference to the pipeline causing it to rupture		H	H	M	H	H	2	No	Low	Short	Confined	N/A	N/A	2		**Low**	
		Pipeline corrosion, design defects construction defects, over pressure associated with pipeline rupture		H	H	H	H	M	2	No	Low	Short	Confined	N/A	N/A	2		**Low**	
		Uncontrolled bushfire		M	M	M	H	H	2	No	Low	Short	Confined	N/A	N/A	2		**Low**	

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		Pipe rupture	Injury to public or personnel	H	H	H	H	M	2	No	Low	Short	Confined	N/A	N/A	2	the appropriate senior personnel are advised of its occurrence and allows for an investigation into the cause of the incident to be completed. Any improvements identified in the investigation will be tracked and implemented in the same system. Should incidents need to be reported to an authority it will be identified through this process.	Low
		Stress, cracking, corrosion repair projects.		H	H	H	H	H	1	Yes	Low	Short	Confined	N/A	N/A	1		Low
5.12		Pipe rupture	Loss of gas supply	H	H	L	H	M	4	No	High	Medium	Localised	N/A	N/A	3	The Pipeline is operated through a Pipeline Management System which ensures compliance with all aspects of AS2885 and regulatory requirements to maintain pipeline integrity.The implementation of the System will ensure the Pipeline is operated and maintained to industry standards. In the event that security of gas supplies is compromised due to an incident along the pipeline, procedures in accordance with the Networks Emergency Response Plan (ERP) shall be initiated. The ERP shall provide the basis for ensuring that incidents do not compromise worker or public safety, coupled with ensuring that minimum disruptions to gas supplies are experienced, through expeditious reinstatement of the gas supply. Emergencies are expected to be very rare, however, emergency preparedness is taken very seriously and all incidents and situations likely to develop into incidents are reported to management immediately for further investigation. An emergency is defined as an incident so serious that site resources are not able to cope and specialised resources and management plans are required to effectively combat the incident. Emergencies, such as full-bore rupture, are likely to impact on gas supplies. All potentially hazardous areas, such as the Inlet and Outlet Stations, are fenced with security fencing to prevent unauthorised access. Regular ground and aerial patrols to identify third party activity. Implement pipeline awareness program with all land owners, occupiers and stakeholders (LGA, utilities). Provision of 24 hour 'Dial Before You Dig' contact number and free pipeline location service. Installation and maintenance of pipeline warning signs along the pipeline route. Safety Management Study and location class review to identify and manage external threats. Install physical protection measures and buried markers as per AS2885 and location class (i.e. slabbing, depth of cover, marker tape).	Medium
		Third Party or External Interference to the pipeline causing it to rupture		H	H	L	H	H	4	No	High	Short	Localised	N/A	N/A	2		Medium
		Stress, cracking, corrosion repair projects.		H	H	H	H	M	2	No	Low	Short	Localised	N/A	N/A	2		Low