APA Group

2007 ANNUAL REPORT

TO

PRIMARY INDUSTRIES AND RESOURCES SA (Petroleum and Geothermal Group)

ON

Pipeline Licence No 11

Berri to Mildura Pipeline

March 2008

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1. Introduction

The Berri to Mildura Pipeline is operated and maintained by APT O&M Services Pty. Ltd. (herein referred to as APT O&M) a company within the APA Group. APT O&M previously traded as Origin Energy Asset Management Services and was sold to APA Group on 2 July 2007.

This annual report has been prepared by APT O&M on behalf of Envestra Limited, the pipeline licensee, in accordance with section 33 of the Petroleum Regulations (SA) 2000. This annual report also meets the requirements of section 11 (2) of the Pipeline Regulations (Vic) 2007.

As required by Pipeline Licence 11, an annual review of the Berri to Mildura pipeline operations for the 2007 calendar year is provided herein.

2. Pipeline Throughput

The pipeline throughput for the year 2007 was approximately 361TJ.

3. Statement of Expenditure

Commercial in confidence.

4. Safety and Environment

There were no reported safety or environmental incidents on the Berri to Mildura Pipeline during 2007.

4.1 Environmental Management

To comply with the requirements of Australian Standard AS2885 “Pipelines – Gas & Liquid Petroleum” and the South Australian Petroleum Act and Regulations 2000, APT O&M operates the pipeline in accordance with the Berri to Mildura Pipeline Statement of Environmental Objectives (SEO) which defines performance objectives for management of environmental issues along the pipeline right of way. All SEO objectives were achieved in 2007. An annual summary of SEO compliance is contained in Appendix 1.

In accordance with section 99 of the *Petroleum Act (SA) 2000* the pipeline SEO was submitted for mandatory 5 yearly review in September 2007. APT O&M are awaiting Ministerial approval of the revised SEO.

4.2 Environmental Audits

APT O&M conducted an environmental audit of the Berri to Mildura pipeline in June 2007. The audit was designed to assess the performance against the requirements of Pipeline Licenses 11 SA and 226 VIC, environmental objectives specified in the Berri to Mildura Natural Gas Transmission Pipeline Statement of Environmental Objectives (Sept 2002) and the APIA Code of Environmental Practice.

The environmental audit comprised an inspection of the Berri to Mildura Pipeline corridor and a review of operational systems and programs associated with the ongoing monitoring and measurement of environmental objectives for the pipeline. Representatives from the operating group participated in both phases of the environmental audit.

Environmental conditions observed along the pipeline corridor and at infrastructure sites were found to be good, thus ensuring the integrity of the gas infrastructure and stability of the ground surface along the pipeline corridor. Activities associated with the operation and maintenance of the Berri to Mildura pipeline and associated infrastructure were found to have been performed in accordance with the

environmental objectives specified in the Statement of Environmental Objectives (SEO) and APIA Code of Environmental Practice.

Two recommendations for improvement in environmental performance and environmental conditions were identified during the course of the audit. They related to soil stability and the management of overgrown vegetation affecting the line of sight along the corridor. These recommendations will be actioned during 2008.

The current and previous environmental audits have demonstrated that the environmental objectives for the Berri to Mildura pipeline specified in the Statement of Environmental Objectives (SEO) and APIA Code of Environmental Practice are being met as part of the ongoing management of the pipeline corridor and operation and maintenance activities. As a result of the June 2007 audit it was recommended that environmental audit frequency is extended to every second year and this change in audit frequency has been reflected in the 2007 review of the pipeline SEO.

5. Inspection and Maintenance Activities

5.1 Routine Inspection and Maintenance

Routine maintenance on the pipeline has been carried out in accordance with the maintenance schedule contained in the Berri to Mildura Pipeline Safety and Operating Plan. This has consisted of monthly pipeline patrols, 6 monthly maintenance of valves and other mechanical equipment and annual maintenance of electrical and instrumentation components. The five yearly overhaul of the Mildura Gate Station Regulators was carried out in December 2007.

A leakage survey of the above ground facilities, main line valves and the T1 classification locations along the Berri to Mildura pipeline was conducted in May 2007. No leaks were detected on the underground pipeline. There were 13 minor gas leaks detected at the Berri Off-take, Mildura Gate Station and Main Line Valve 4 and one moderate gas leak detected at the Mildura Gate Station. These leaks were repaired.

Soil/Ground interface inspections were conducted at the Berri Off-take, Mildura Gate Station and Main Line Valves. All brackets were removed at these stations and the pipe/bracket interface was inspected. No corrosion issues were identified through these inspections.

5.2 Non-Routine Maintenance

Following on from a recommendation in a 'Hazardous Area Survey Report' (Document No. P495-20.0-REP001), three Pressure Safety Valves (PSVs) on above ground stations on the Berri to Mildura pipeline were replaced in July 2007. One of the PSVs was located at the Berri off-take station (PSV01) on the dry filter pressure vessel and two of the PSVs were located at the Mildura city gate station (PSV02 and PSV03), installed on the filter-separator and the dry filter respectively. The new PSVs have a set pressure of 8,250 kPag and are sized to safeguard their respective pressure vessels from explosion under fire conditions. All related documentation was either modified or amended to reflect the change and 'Management of Change' documentation was signed off in October 2007.

A supporting bracket for the pressure sensing mechanism at the Mildura Gate Station Slam Shut Valve was identified as being damaged and was replaced.

6. Corrosion Control

To mitigate corrosion, the Berri to Mildura pipeline is coated with a High Density Polyethylene (HDPE) coating system which serves to isolate the external pipeline surfaces from corrosive elements in the surrounding environment. Field joints are coated with a field applied tape wrap system. Secondary protection at coating imperfections is achieved through the use of cathodic protection.

6.1 Coating

A DCVG survey was conducted in May 2007. This survey was carried out in accordance with APT O&M Procedure 6801 and Work Instruction 6803. Two defects were identified with % IR drop between 5% and 10%. These defects are scheduled for repair in 2008. There were 24 other defects identified with % IR drop less than 3%. A sample of these defects will be excavated in 2008. None of the coating defects identified are considered significant in terms of percentage reduction in cathodic protection.

6.2 Pipeline Cathodic Protection

The effectiveness of the cathodic protection is monitored by carrying out a full line potential survey and recording potentials over 24 hour periods at selected locations on a six monthly basis as per APT O&M Work Instructions 6606, 6608 and 6614. Routine checks of test points along the pipeline showed that all sections of the pipeline are protected and there are no areas of concern for the CP system on this pipeline. The May 2007 potential survey results have been tabulated in Appendix 2 with the associated graphical summary in Appendix 3. All pipeline potentials were measured with respect to a saturated copper/copper sulphate reference electrode.

All surge protection devices required to keep the earthing isolated from the pipeline were tested and confirmed to be working correctly.

7. Right of Way Management

7.1 Right of Way Patrols

Ground patrols are carried out monthly in accordance with the maintenance schedule for the Berri to Mildura pipeline.

7.2 Signage

All signage on the Berri to Mildura Pipeline is installed in accordance with AS2885 and maintains “Line of Sight”. The pipeline signage is monitored and replaced as required, as part of the routine patrol duties by APT O&M’s contractor based in Berri.

Compound signage providing contact details, emergency “Toll Free” numbers, site location and “HAZCHEM” details are installed at all facilities on the Berri to Mildura Pipeline. This signage is maintained in conjunction with routine activities.

All signage on the Berri to Mildura pipeline has been rebranded to reflect the change in pipeline operator name.

7.3 Landholder Contacts

There are 25 landowners/occupiers along the South Australian section of the Berri to Mildura Pipeline and 21 landowners/occupiers in the Victorian section of the pipeline. A landholder/occupier liaison scheme is in place whereby each owner or occupier is visited annually. This is to ensure that ongoing communication is maintained with landowners and occupiers and to identify and address any issues arising. Additional contacts were made with respective landholders and/or occupiers in the course of routine pipeline operations and maintenance activities (eg: corrosion surveys through properties, main line valve maintenance, routine patrols).

All landowners/occupiers were visited in the last quarter of 2007. Each land owner/occupier was reminded of their obligations to ensure pipeline safety and presented with information relating to Pipeline Safety and the Dial Before You Dig Service.

Landowners/occupiers were asked if they had any issues regarding the right of way and were also made aware of requirements and obligations with respect to the pipeline easement. There were no landowner/occupier complaints received during 2007.

7.4 Pipeline Awareness Program

In addition to the landowner/occupier visits, a formal annual Pipeline Awareness Programme for the Berri to Mildura Pipeline is in place. The 2007 Awareness Program involved visits to Country Fire Authorities, Police, Mildura Rural City Council, Council Depot – Red Cliffs, The Department of Sustainability and Environment and Power and Water Utilities. A formal presentation was given to highlight pipeline safety and awareness. The focus of the presentation is to improve the awareness of pipeline operations and to provide the community with key contacts to enable sound management of activities in the vicinity of the pipeline assets.

7.5 Pipeline Location Service

APT O&M provides a free service to locate its pipelines for other utilities and third parties carrying out civil work in the vicinity. This is administered through the Dial Before You Dig (1100) organisation. There were a total of 35 location requests along the Berri to Mildura pipeline in 2007. All works carried out within the pipeline easement were conducted under APT O&M's "Permit to Work" System. The works are constantly supervised to ensure the safety and integrity of the pipeline system and personnel.

8. Emergency Management

8.1 Emergency Response Plan

The Emergency Response Plan (which is a combined plan for PL6 and PL11) was reviewed and updated in June 2007 to incorporate owner and operator name changes and changes to the organisation structure. Recommendations from the May 2007 emergency exercise were also incorporated. The Emergency Response Plan for the Berri to Mildura pipeline is due for review in June 2008.

8.2 Emergency Response Exercise

The last emergency exercise conducted for the Berri to Mildura pipeline system occurred in May 2007. The exercise was carried out on the Riverland/Berri to Mildura transmission pipeline system. It simulated a realistic emergency scenario and was designed to assess the ability of field operators and the emergency response team to respond to both a serious injury and a major gas escape from a transmission pipeline, in an industrial area.

As a result of the emergency exercise 13 recommendations were made and 11 of these recommendations have been actioned. The remaining two actions will be completed during 2008.

9. Compliance

During 2007 the Berri to Mildura Pipeline has been operated and maintained in compliance with the South Australian Petroleum Act 2000, Petroleum Regulations 2000, the Statement of Environmental Objectives and Pipeline Licence 11. Compliance with the Victorian Pipeline Act 2005, Pipeline Regulations 2007 and Pipeline Licence 226 has also been achieved.

9.1 Compliance Audits

9.1.1 Safety and Operating Plan Compliance Audit

The last Safety and Operating Plan (SAOP) Compliance Audit for the Berri to Mildura Pipeline was conducted in March 2006 and a further audit is not scheduled until 2008. All actions from the 2006 Compliance Audit have been completed.

9.1.2 Facilities Audit

An audit of the Berri to Mildura pipeline facilities was conducted by APT O&M Network Services Group in May 2007. This audit was conducted to verify compliance of the Berri to Mildura pipeline facilities with AS 2885.3-2001 section 5 and operational requirements. The pipeline was found to be well maintained although some maintenance requirements were identified. All actions resulting from this audit have been completed, noting that a missing gauge identified, that would only be required for pipeline pigging, has not yet been installed.

10. Management Systems

APT O&M utilises a number of management systems to ensure effective operations and management of the pipeline. Some of these are listed below:

- A Health Safety and Environment Management System that governs all APT O&M operations as they impact occupational health, safety and environmental matters.
- A risk management system to ensure that hazards are identified and risks evaluated and managed. Hazards are identified using HAZOPs, safety reviews, job safety analysis, incident reports and investigations, audits and inspections together with the AS2885 risk assessment.
- The APT O&M Gas Transmission Pipeline Operations and Maintenance Procedure Manual containing standards and practices for the operation and maintenance of transmission pipelines managed by APT O&M. These procedures are continually reviewed and periodically updated as appropriate.
- An Asset Protection Operations and Maintenance Manual containing standards and practices for activities such as coatings, pipeline patrols, leakage management, cathodic protection, earthing and DCVG surveys.
- A Document Management System which allows the controlled updating, distribution and viewing of pipeline documentation.
- A Management of Change System that assesses proposed changes to the pipeline across all engineering disciplines, operational parameters and documentation. This system interfaces with the Document Management System to ensure relevant documentation affected by the change is updated and distributed.
- An audit program that assesses contractor and operational management performance.
- An electronic database system called the Management of Audits, Regulatory Compliance and Incident System (MARCIS). The system provides ready access to all electronic copies of

legislation, regulations, codes, licenses, etc through an associated intranet facility. Using this system APA Group has adopted a 'compliance grid' approach to summarising requirements into an easily understood and manageable format. Where requirements are dated and periodically actionable, the system is designed to automatically advise the responsible manager of the pending requirement and track the requirement through to completion.

11. Reports Generated in 2007

APT O&M generated the following reports during 2007:

- PL 11 Annual Report for 2006, submitted in March 2007
- Quarterly compliance with SEO reports
- Berri to Mildura Pipeline Facilites Audit Report June 2007
- Riverland and Berri to Mildura Transmission Pipeline 2007 Emergency Response Exercise May 2007
- Berri to Mildura Natural Gas Transmission Pipeline and Laterals – Pipeline Patrol, Leak Survey, DCVG Survey and Cathodic Protection Report May 2007
- BMP Environmental Audit Report May 2007
- BMP Natural Gas Transmission Pipeline Statement of Environmental Objectives Issue 3 – September 2007

12. Known or Foreseeable Activities Affecting the Pipeline

A DCVG survey was undertaken of the Berri to Mildura pipeline in May 2007. Two coating defects were detected reading more than 5% IR, one near test point 14 at Lagoon Drive Lyrup South Australia and the other near test point 36 at Yarrara North Road, Yarrara, Victoria. These coating defects will be excavated and coating repairs effected in the first half of 2008.

Peak daily loads experienced by the Berri Mildura Pipeline are projected to approach its estimated supply limit in winter 2008. This is a result of ongoing load growth at Mildura, principally in domestic gas demand. A number of different options to address this are being explored, including installation of a compressor facility near Berri, or construction of a compressed natural gas (CNG) peak shaving facility adjacent to the Mildura Gate Station. The pipeline owner (Envestra) has been briefed on these issues and is considering the pipeline's future augmentation.

13. Future Operations

Future operations planned for the Berri to Mildura Pipeline during the next 12 months include:

- Routine preventative maintenance in accordance with the Safety and Operating Plan.
- An Emergency Response Exercise.
- Environmental monitoring of the pipeline as required by the Statement of Environmental Objectives and Environmental Management Plan for the pipeline.
- Regular liaison with landowners/occupiers along the pipeline route.
- Pipeline Awareness seminars with third parties.

- Monitoring of cathodic protection on the pipeline.
- Installation of Armco barriers at the Berri Off-take and Mildura Gate Station.
- A Compliance audit of Berri to Mildura Pipeline Safety and Operating Plan.

APPENDIX 1 – ASSESSMENT OF DECLARED ENVIRONMENTAL MANAGEMENT OBJECTIVES 2007

Berri to Mildura Pipeline Objectives and Assessment Criteria [1]

OBJECTIVE	GOAL(S)	COMPLIANCE CRITERIA	ACHIEVED/ NOT ACHIEVED	COMMENTS
1. Vegetation 1.1 To promote and maintain vegetation in accordance with surroundings.	1.1.2 To encourage regrowth of native grasses and shrubs along the right-of-way, within 3m of the pipeline centreline, where appropriate (i.e. – not in farmland used for cropping or pasture). 1.1.3 To maintain land use in accordance with pre-existing conditions. 1.1.4 To ensure environmental weeds and pathogens along the right-of-way are managed in a manner consistent with adjoining land. 1.1.5 To monitor and manage revegetation areas.	• Native vegetation regrowth (grasses, shrubs & trees) along easement is typical of adjoining areas. • Regular landholder liaison. No landholder claims in respect to crop losses along the easement. • No new weed infestations as a result of pipeline operations. • No spread of weeds along the pipeline easement. • Easement revegetation (as measured by foregoing criteria) confirmed via photographic records.	Achieved	Landowner liaison was completed in 2007 and no complaints were received from landowners.
2. Soil 2.1 To conserve the original state of the soil.	2.1.1 To ensure that there is no erosion or subsidence along the right-of-way. 2.1.2 To manage soil rehabilitation areas in an appropriate manner.	• Soil erosion and/or subsidence is better, or at least consistent with the surrounding area. • Rehabilitation areas support regrowth consistent with the surrounding area.	Achieved	Minor sinkholes were noted in May ROW Patrol and were subsequently rectified. Minor subsidence was noted in June DCVG Survey and was rectified.

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

OBJECTIVE	GOAL(S)	COMPLIANCE CRITERIA	ACHIEVED/ NOT ACHIEVED	COMMENTS
3. Fauna 3.1 To preserve existing habitats.	3.1.1 To ensure that pipeline operations do not impinge upon existing native fauna habitats. 3.1.2 To maintain stockpiled vegetation. 3.1.3 To ensure that operations do not impose restrictions to fauna crossing the right-of-way.	• No alterations to existing remnant vegetation areas. • No alteration to existing stockpiled vegetation. • No obstructions to fauna installed along easement. • Pest animals such as foxes and feral cats reported to appropriate authorities.	Achieved	
4. Water Resources 4.1 To prevent pollution of watercourses. 4.2 To promote and maintain water drainage patterns	4.1.1 To ensure that operation and maintenance activities do not give rise to pollution of watercourses. 4.1.2 To ensure that there is no evidence of altered drainage patterns.	• Solid & liquid wastes have not polluted rivers, streams, watercourses, dams or lakes. • Bank stability maintained, especially following high rainfall events. • Likely alteration to drainage patterns not evidenced by soil erosion or subsidence.	Achieved	
5. Air Quality 5.1 To minimise the potential for emissions that heighten public concern.	5.1.1 To ensure that uncontrolled gas emissions are reported and actioned in a timely manner. 5.1.2 To minimise dust generation by management of vehicle operations along the right-of-way.	• No unintentional gas emissions reported. • No complaints from third parties in respect of air quality. • Compliance with Legislative requirements of *Environment Protection Act1993* in respect of gaseous and dust emissions.	Achieved	

OBJECTIVE	GOAL(S)	COMPLIANCE CRITERIA	ACHIEVED/ NOT ACHIEVED	COMMENTS
6. Land Use 6.1 To avoid significant disturbance to land use or damage to infrastructure.	6.1.1 To minimise disturbance to land use and damage to infrastructure. 6.1.2 To inform landholders of likely land use disturbance as a direct result of operations. 6.1.3 To develop site-specific land management strategies in consultation with landholders, for likely impacts arising from temporary land use disturbance.	• No complaints from landholders in relation to land use modification or infrastructure damage. • Landholders are appropriately consulted regarding pipeline activities which may affect their particular property.	Achieved	Landowner liaison was completed in 2007 and there were no complaints received from landowners.
7. Public Safety 7.1 To minimise risks to public and third party health and safety.	7.1.1 To ensure that adequate measures are in place to protect public and third party safety during operations and maintenance activities. 7.1.2 To ensure that adequate measures are in place to protect public and third party safety during emergency operations. 7.1.3 To minimise the risk of fire during routine operations.	• No occupational health, safety and welfare incident or accidents involving third parties. • No unauthorised activity on the pipeline easement • Documented evidence of public safety management and pipeline awareness, in the course of pipeline operations. • Adherence to AS2885 demonstrated via annual reports, emergency response reports and fitness for purpose reports (refer to *Petroleum Act 2000*). • No fire outbreaks arising from pipeline operations.	Achieved	No safety incidents occurred during 2007. There was no unauthorised activity on the pipeline easement. Pipeline Awareness sessions were held in both Berri and Mildura. An Emergency Response Exercise for the BMP was held in May 2007.
8. Noise 8.1 To minimise noise due to operations.	8.1.1 To ensure that operations comply with noise standards.	• No noise related complaints from landholders or third parties. • Compliance with Legislative requirements of *Environment Protection Act 1993* in respect of noise emissions.	Achieved	No complaints regarding noise were received throughout 2007.

OBJECTIVE	GOAL(S)	COMPLIANCE CRITERIA	ACHIEVED/ NOT ACHIEVED	COMMENTS
9. Waste 9.1 To manage all operational wastes in an appropriate manner.	9.1.1 To ensure that all wastes are removed from the site and, in order, reused, recycled or appropriately disposed. 9.1.2 To conduct all activities in a manner that reduces the production of waste.	• No wastes evident on or off the easement arising from pipeline operations. • Documented waste disposal records to confirm appropriate disposal.	Achieved	Wastes generated from normal pipeline operations of gate and main line valve stations are collected and returned to APA depot for safe disposal.
10. Right of Way Clearance 10.1 To enable unobstructed access for right-of-way inspection; routine operation, maintenance and emergency access.	10.1.1 To manage vegetation regrowth along the right-of-way, so as not to restrict access or to incur damage to the pipeline infrastructure. 10.1.2 To deter regrowth of native trees along the right-of-way (minimum separation of 3m from pipeline centreline).	• Disturbance of native vegetation restricted to right-of-way. • Avoid disturbance to areas of remnant vegetation. • No new weed infestations as a result of pipeline operations.	Achieved	Vegetation overgrowth was addressed throughout 2007 in some right of way areas.
11. Heritage Management 11.1 To ensure that identified heritage sites are undisturbed and appropriately managed during pipeline operations and maintenance activities.	11.1.1 To manage identified Aboriginal and European heritage sites in accordance with prescribed procedures. 11.1.2 To appropriately manage any newly identified heritage sites in accordance with prescribed procedures.	• Management of identified heritage sites in consultation with traditional custodians. • Compliance with work instructions in relation to heritage site management. • Compliance with Legislative requirements of *Aboriginal Heritage Act 1988* and *Heritage Act 1993* in respect of previously identified and potentially 'new' sites along the pipeline easement.	Achieved	No new heritage or Aboriginal sites were identified throughout 2007.

OBJECTIVE	GOAL(S)	COMPLIANCE CRITERIA	ACHIEVED/ NOT ACHIEVED	COMMENTS
12. Security of supply 12.1 To ensure that security of natural gas supplies are maintained to gas consumers.	12.1.1 To minimise the potential for significant disruption of gas supply to customers in line with contractual agreements.	• No interruption to supply.	Achieved	There were no interruptions to supply throughout 2007.
13. Easement restoration and infrastructure state 13.1 To appropriately decommission the pipeline in accordance with regulatory requirements and accepted best practice environmental management criteria	13.1.1 To decommission pipeline and associated infrastructure in a safe and timely manner, in accordance with appropriate regulatory requirements 13.1.2 To minimise environmental disturbance to remnant vegetation; landholders and third party stakeholders 13.1.3 To restore the natural environment and promote biodiversity (if applicable)	• Compliance with relevant occupational health, safety and welfare regulatory requirements • Compliance with relevant environmental regulatory requirements • No complaints from landholders and third party stakeholders • Initiation of revegetation or similar restoration works and monitoring programmes as required (if applicable)	Not Applicable	

APPENDIX 2 – CATHODIC PROTECTION SURVEY RESULTS MAY 2007

Potential Survey results of the Berri to Mildura Pipeline

TP NO	LOCATION	POT (DC)	POT (AC)	ANODE DCV	ANODE CURR	FOREIGN STRUCT.	PREV ON	COMMENTS
1	Berri Gate Station	-1.198	0.174				-1.230	Ni-Cad battery at this location
2	Existing Gas Pipeline Xing	-0.990	0.123			-0.265	-0.990	
3	Easement	-1.260	0.096				-1.255	earth with varister
4	Hardwick Rd	-1.255	0.055				-1.243	Ni-Cad battery at this location
5	Jury Rd	-1.220	0.575				-1.145	
6	Easement	-1.190	0.618				-1.235	
7	Tipper St	-1.010	0.123			-0.438	-1.209	Ni-Cad battery at this location
8	JC Smith Rd	-1.261	0.086			-0.578	-1.248	Ni-Cad battery at this location
9	JC Smith Rd	-1.200	0.041			-0.56	-1.277	Ni-Cad battery at this location
9a	JC Smith Rd	-1.160	0.127			-0.532	-1.230	Ni-Cad battery at this location
10	Jellet Rd	-1.290	0.082			-0.67	-1.230	
11	Shiel &Skellon Rds	-1.107	0.080			-0.55	-1.138	Ni-Cad battery at this location
12	Sturt Highway	-1.100	0.104				-1.233	
13	West Bank Murray River Old Tip	-1.080	0.095				-1.296	
14	Lagoon Drv	-1.030	0.096				-1.254	
15	Brown St-Lyrup	-0.967	0.116				-1.209	
16	Brown St-Lyrup	-0.944	0.103				-1.116	
17	Brown St-Lyrup	-1.111	0.040				-1.095	
18	Old Lyrup Main Rd	-1.249	0.060				-1.210	
19	Loxton/Mildura Rd	-1.226	0.055	-1.314	31.6		-1.280	MLV2 & magnesium anode bed A=-1360mV
20	Paddock at Fenceline	-1.199	0.039				-1.077	
21	Buglehut Rd	-1.133	0.030				-1.019	
22	Goulden Rd	-1.054	0.025				-1.122	
23	Taldra Rd	-1.004	0.026				-1.097	
24	Gregurkies Paddock	-1.021	0.021				-1.084	
25	Bede Rd	-1.017	0.031				-1.089	
26	Sturt Hwy-Border	-1.007	0.038				-0.993	Victorian/SA Border
27	Sturt Hwy-Murray Sunset Nat Pk	-1.038	0.047				-1.035	
28	Sturt Hwy-Murray Sunset Nat Pk	-1.040	0.069				-1.062	
29	Settlement Rd	-1.034	0.080				-1.056	Varistor & magnesium anode bed at this locatior
30	Sturt Hwy-Inside Fence	-1.010	0.075				-0.988	
31	Nunns Rd-Sturt Hwy	-1.022	0.056				-0.953	
32	Duncans Rd-Sturt Hwy	-1.006	0.340				-1.053	
33	Karween Nth Rd-Sturt Hwy	-1.016	0.067				-1.063	MLV3
34	Sturt Hwy-4.8Km Eof TP33	-0.992	0.020				-1.051	
35	Irwins Rd-Sturt Hwy	-0.961	0.023				-1.019	
36	Yarrara Rd-Sturt Hwy	-0.945	0.022				-1.433	
37	Bailey rd -Sturt Hwy	-0.998	0.043				-1.017	
38	Sturt Hwy-4.2Km Eof TP37	-1.018	0.036				-1.102	
39	Barkers Lane-Sturt Hwy	-1.012	0.038				-1.013	
40	Werrimul Nth Rd-Sturt Hwy	-1.053	0.070	-1.072	20.45		-0.970	Zinc anode bed
41	Leersen La-Sturt Hwy	-1.074	0.059				-1.133	
42	Hards La-Sturt Hwy	-1.071	0.063				-1.069	
43	Karrawinna Nth Rd-Sturt Hwy	-1.054	0.050				-1.079	
44	Rogers Ln-Sturt Hwy	-1.056	0.056				-1.018	
45	Sturt Hwy-MLV4	-0.968	0.038				-1.150	MLV4
46	Wheelers Rd-Odeas Lane	-1.071	0.042				-1.110	
47	Eastmond Rd-Odeas Lane	-1.055	0.023				-1.144	
48	PirittaNth Rd-Odeas Lane	-1.084	0.013				-1.080	
49	Pratts Rd-Odeas Lane	-1.076	0.019				-1.023	
50	Government Rd-Odeas Lane	-1.024	0.014				-1.132	
51	Meridian Rd-Odeas Lane	-1.059	0.011				-1.124	
52	Box Ave-Koorlong State Forest	-1.072	0.070				-1.104	
53	Oak ave-Koorlong SF	-1.083	0.070				-1.140	
54	San Mateo Ave-Koorlong SF	-1.062	0.003	-1.114	9.54		-1.162	Zinc anode bed A=-1167mV
55	Benetook Ave	-1.092	0.002				-1.140	
56	Benetook Ave-700m Eof TP55	-1.081	0.005				-1.118	Earthing
57	Twentieth St	-1.068	0.044				-1.118	
58	Mildura Gate Station	-1.061	0.103				-1.137	

APPENDIX 3 – GRAPHICAL RESULTS FROM CATHODIC PROTECTION SURVEY MAY 2007