24.12 Appendix L – Risk Assessments and Relinquishment Criteria

Domain 1 - Upper Series

Domain 2 - Retention Dam

Domain 3 – Lower Series

Domain 4 – ROMS and Crushed Stockpiles

Domain 5 – Infrastructure

Domain 6 – Main Series

Domain 7 – Lobe C

Domain 8 – Lobe D

Domain 9 – Rest of Lease

LEIGH CREEK MINE CLOSURE - RELINQUISHMENT COMPLETION CRITERIA

DOMAIN 1 - UPPER SERIES - FEBRUARY 2017

ID	Risk Ref	Objective	Objective Measurement Criteria	What will be measured and form of measurement	Locations	Frequency	Control / baseline data	Leading indication criteria
D1-MC01	D1-PS01	Pits walls are stable long term and relevant geotechnical information provided to Government on relinquishment.	Independent verification by a suitably qualified person, confirms that the final pits in Domain 1 have been constructed to design, as per the relevant designs: LCK Map 22 Design Notes LCK Map 23 Design Notes	Provision of current relevant geotechnical information provided to DSD on relinquishment, as per Section 22 ADP Mine Closure. Report by a suitably qualified FP person confirms final pits constructed to design.	Domain 1 - Upper Series, Section 9.14.1, Fig 52, ADP Mine Closure.	Once, at cessation of in pit works	Mine Rehabilitation Inspection and Test Plan Procedure, Appendix PP Section 14.1 - Domain 1, ADP Mine Closure Relevant Design Notes	Quarterly verification report of QA/QC procedures being implemented.
D1-MC02	D1-PS01 D1-PS02 D1-PS04 D1-PS05 D1-PS06 D1-PS07 D1-PS08	Public safety risk of access to pit void managed to as low as reasonably practicable (ALARP) by the installation of abandonment bunds.	Verification by independent appropriately qualified person confirms that Safety bunds have been constructed to design and are located outside of the long term pit failure zone as detailed in Section 13.4 and Fig 155, ADP Mine Closure, and according to the relevant designs: LCK Map 21 Design Notes LCK Map 22 Design Notes LCK Map 23 Design Notes LCK Map 26 Design Notes LCK Map 27 Design Notes	Report by appropriately qualified FP person (eg geotechnical engineer) confirms, using as a minimum survey and QAQC data, that the safety bunds are constructed and located as per designs in the relevant Domain 1 Design Notes.	As per Figure 155, Section 13.4 ADP Mine Closure. See relevant Design Notes for detailed locations and designs.	Once, at completion of abandonment bunds	Mine Rehabilitation Inspection and Test Plan Procedure, Appendix PP Section 13.4 Pit Design and Stability - Management Strategy for Closure, ADP Mine Closure Section 14.1 - Domain 1, ADP Mine Closure Relevant Design Notes	Quarterly verification report of QA/QC procedures being implemented.
D1-MC03	D1-PS01 D1-PS02 D1-PS04 D1-PS05 D1-PS06 D1-PS07 D1-PS08	Public safety risk of access to pit void mitigated to ALARP by managing pit ramps for closure	Independent verification by a suitably qualified person, confirms that the prevention measures for the pit access ramps in Domain 1 have been constructed to design, as per relevant designs: LCK Map 21 Design Notes LCK Map 22 Design Notes LCK Map 23 Design Notes LCK Map 27 Design Notes	Report by appropriately qualified FP person confirms, using as a minimum survey and QAQC data, that the pit ramp access prevention measures are constructed to design.	Domain 1 - Upper Series, Section 9.14.1, Fig 52, ADP Mine Closure. See relevant Design Notes for detailed locations and designs.	Once, at cessation of in pit works	Mine Rehabilitation Inspection and Test Plan Procedure, Appendix PP Section 14.1 - Domain 1, ADP Mine Closure Design of access prevention methods for pit access ramps as per relevant Design Notes	Quarterly verification report of QA/QC procedures being implemented.
D1-MC04 see D9-MC03	D1-PS01 D1-PS02 D1-PS03 D1-PS07 D1-PS08 D1-PS09 D1-PS10 D1-PS12 D1-IH01	Public safety risk of access to mine site managed to ALARP by future leaseholder / government via controlled site access procedure	*See D9-MC03*	*See D9-MC03*	*See D9-MC03*	*See D9-MC03*	*See D9-MC03*	*See D9-MC03*
D1-MC05	D1-PS03 D1-PS10 D1-PS13 D1-PS14 D1-PS15	Spontaneous combustion risks managed to ALARP by future leaseholder / Government via: Principal Mining Hazard Management Plan (PHMP) - Spontaneous Combustion	FP employ a facilitative process to communicate and review PMHMP - Spontaneous Combustion with relevant Government stakeholders PMHMP - Spontaneous Combustion, to safely manage any instances of spontaneous combustion in mining and stockpile areas at Leigh Creek Coalfield, provided to future third parties and Government on relinquishment so that any risks are known and understood.	Communication of FP PMHMP - Spontaneous Combustion, and facilitation of a review session with relevant government stakeholders. Delivery of Principal Mining Hazard Management Plan (LCC-HSSE-PHMP-008) in agreed format to DSD on relinquishment.	Domain 1 - Upper Series, Section 9.14.1, Fig 52, ADP Mine Closure	Once, within 12mths of approval of the ADP Mine Closure.	LCC-HSSE-PHMP-008 Spontaneous Combustion, Appendix T, ADP Mine Closure	Annual reviews of PHMP-008
D1-MC06	D1-PS03 D1-PS04 D1-PS05 D1-PS06 D1-PS07 D1-PS08 D1-PS09 D1-PS10 D1-PS11 D1-PS13 D1-PS14 D1-PS15	Spontaneous combustion risks managed to ALARP by future leaseholder / Government by identifying at risk areas and assessing the success of control measures via the Mine Rehabilitation Spontaneous Combustion Management Plan (MRSCMP)	FP employ a facilitative process to communicate and review Mine Rehabilitation Spontaneous Combustion Management Plan with relevant Government stakeholders. The Mine Rehabilitation Spontaneous Combustion Management Plan, that identifies at risk areas and assesses the success of control measures applied, is provided to future third parties and Government on relinquishment so that any risks are known and understood.	Communication of MRSCMP, and facilitation of a review session with relevant government stakeholders. Delivery of MRSCMP in agreed format to DSD on relinquishment.	Domain 1 - Upper Series, Section 9.14.1, Fig 52, ADP Mine Closure	Once, within 12mths of approval of the ADP Mine Closure.	Section 13.5 Spontaneous Combustion Management Strategy for Closure, ADP Mine Closure Section 14.1 - Domain 1, ADP Mine Closure Mine Rehabilitation Spontaneous Combustion Management Plan, Appendix W, ADP Mine Closure	Annual reviews of MRSCMP

LEIGH CREEK MINE CLOSURE - RELINQUISHMENT COMPLETION CRITERIA

DOMAIN 1 - UPPER SERIES - FEBRUARY 2017

ID	Risk Ref	Objective	Objective Measurement Criteria	What will be measured and form of measurement	Locations	Frequency	Control / baseline data	Leading indication criteria
D1-MC07	D1-PS03 D1-PS06 D1-PS10 D1-PS11	Spontaneous Combustion risks are managed to ALARP post lease transfer via at risk waste rock dump areas being rehabilitated for spontaneous combustion control as per the designs.	Independent verification by a suitably qualified person that at risk waste rock dump areas in Domain 1 have been rehabilitated according to relevant designs: LCK Map 21 Design Notes LCK Map 22 Design Notes LCK Map 23 Design Notes LCK Map 26 Design Notes LCK Map 27 Design Notes	Report by appropriately qualified FP person, using all available data (including QA/QC records and surveys) confirms rehabilitation treatment of at risk waste rock dump areas (including surface water features and bunds) in Domain 1 is to design.	Waste rock dump high and moderate risk spontaneous combustion areas, Domain 1, Sect 14.1, Figs 182 and 183, ADP Mine Closure See relevant Design Notes for detailed locations and designs.	Once, upon completion of rehabilitation works for the waste rock dumps in Domain 1	Mine Rehabilitation Inspection and Test Plan Procedure, Appendix PP Section 13.5 Spontaneous Combustion Management Strategy for Closure, ADP Mine Closure Section 14.1 - Domain 1, ADP Mine Closure Mine Rehabilitation Spontaneous Combustion Management Plan, Appendix W, ADP Mine Closure Relevant Design Notes	Quarterly verification report of QA/QC procedures being implemented.
D1-MC08	D1-PS04 D1-PS07 D1-PS08 D1-PS09 D1-PS10 D1-PS11 D1-PS13 D1-PS14	Spontaneous Combustion risks are managed to ALARP post lease transfer via at risk pit areas rehabilitated for spontaneous combustion control as per the designs.	Independent verification by a suitably qualified person, verifies using all available data (including QA/QC data and surveys) that at risk pit areas in Domain 1 have been rehabilitated according to relevant designs (including surface water features and bunds): LCK Map 22 Design Notes LCK Map 23 Design Notes	Report by appropriately qualified FP person, using all available data (including QA/QC records and surveys) confirms rehabilitation treatment of at risk pit areas (including surface water features and bunds) in Domain 1 is to design.	Pit high and moderate risk spontaneous combustion areas, Domain 1, Sect 14.1, Figs 182 and 183, ADP Mine Closure. See relevant Design Notes for detailed locations and designs.	Once, upon completion of rehabilitation works for the pit in Domain 1	Mine Rehabilitation Inspection and Test Plan Procedure, Appendix PP Section 13.5 Spontaneous Combustion Management Strategy for Closure, ADP Mine Closure Section 14.1 - Domain 1, ADP Mine Closure Mine Rehabilitation Spontaneous Combustion Management Plan, Appendix W, ADP Mine Closure Relevant Design Notes	Quarterly verification report of QA/QC procedures being implemented.
D1-MC09 see D9-MC04	D1-PS01 D1-PS02 D1-PS03 D1-PS04 D1-PS05 D1-PS06 D1-PS07 D1-PS08 D1-PS09 D1-PS10	Public safety risks are managed to ALARP post lease transfer by future leaseholder / Government / Emergency Services via appropriate Emergency Response Management Plan provided to stakeholders on relinquishment.	*See D9-MC04*	*See D9-MC04*	*See D9-MC04*	*See D9-MC04*	*See D9-MC04*	*See D9-MC04*
D1-MC10	D1-SW01 D1-SW02 D1-SW03 D1-GW02 D1-GW03 D1-PS15	Environmental risk of adverse impacts from surface water run off (including sedimentation and AMD) managed to ALARP by surface water controls that are constructed according to design.	Independent verification by a suitably qualified person confirms that surface water controls in Domain 1 have been constructed to design, according to relevant designs LCK Map 21 Design Notes LCK Map 22 Design Notes LCK Map 23 Design Notes LCK Map 26 Design Notes LCK Map 27 Design Notes	Report by appropriately qualified FP person confirming construction of surface water controls in Domain 1 to design.	Domain 1 - Upper Series, Section 9.14.1, Fig 52, ADP Mine Closure. See relevant Design Notes for detailed locations and designs.	Once, upon completion of surface water control rehabilitation works for Domain 1	Mine Rehabilitation Inspection and Test Plan Procedure, Appendix PP Section 13.6 Acid and Metalliferous Drainage, ADP Mine Closure Section 13.7 Surface Water Management Strategy for Closure, ADP Mine Closure Section 14.1 - Domain 1, ADP Mine Closure Operational Guidelines Soil and Waste Characterisation, Appendix Q Relevant Design Notes	Quarterly verification report of QA/QC procedures being implemented. Implementation of Surface Water Quality Monitoring Plan and Ground Water Monitoring Plan to verify low risk to surrounding environments.

LEIGH CREEK MINE CLOSURE - RELINQUISHMENT COMPLETION CRITERIA

DOMAIN 1 - UPPER SERIES - FEBRUARY 2017

ID	Risk Ref	Objective	Objective Measurement Criteria	What will be measured and form of measurement	Locations	Frequency	Control / baseline data	Leading indication criteria
D1-MC11	D1-PS12	Public safety risks managed to ALARP by removal of infrastructure that has no ongoing value *See also D5 - Infrastructure*	Independent verification that Domain 1 infrastructure, for removal, as identified by the Generation Lessor Corporation (6th June 2016) and per Section 14.5 of the ADP Mine Closure, has been removed: - Mobile equipment and mobile plant * - Fuel storage and quick fill facilities - Transportable crib rooms	Audit report by appropriately qualified FP person confirming removal of Domain 1 infrastructure, as per Section 14.5 of the ADP Mine Closure. * Any equipment or infrastructure to be retained (eg dozers as per Section 19.1, and associated fuel storage in the form of self bunded transportable tank as per Section 15) must be in working condition, with maintenance records and condition reports provided where available.	As per Statutory Mine Plans, Appendix OO ADP Mine Closure	Once, upon removal of infrastructure.	Section 14.5 Demolition of Mine Infrastructure, ADP Mine Closure Section 14.1 - Domain 1, ADP Mine Closure Refer Infrastructure Position paper, Appendix N ADP Mine Closure	Progressive review of infrastructure needs as documented in Quarterly Mine Closure Report to DSD
D1-MC12 see D9-MC07	D1-NF01 D1-NF02	Environmental risks are managed to ALARP by future leaseholders / Government via a Flora and Fauna Pest Control plan provided by FP at handover.	*See D9-MC07*	*See D9-MC07*	*See D9-MC07*	*See D9-MC07*	*See D9-MC07*	*See D9-MC07*
D1-MC13	D1-PS01 D1-PS02 D1-PS03 D1-PS04 D1-PS05 D1-PS06 D1-PS07 D1-PS08 D1-PS09 D1-PS10 D1-PS11 D1-SW01 D1-SW02 D1-NF01 D1-NF02 D1-PS13 D1-PS14 D1-PS15	To manage future environmental and safety risks to ALARP by development of ongoing monitoring and management criteria for post relinquishment.	Ongoing monitoring and management criteria are developed in consultation with DSD and EPA and provided by FP for post relinquishment application by FP / contractor / future leaseholder / Government. Monitoring and management criteria to include - ongoing maintenance of fencing and signage - periodic inspection of residual infrastructure - surface water run off quality monitoring (as required) - spontaneous combustion monitoring (as required) - periodic weed and pest control - periodic maintenance of landforms in particular following heavy rainfall events (as required)	Defined agreement for post relinquishment monitoring, as per Section 19.1 ADP Mine Closure	Domain 1 - Main Series, Section 9.14.1 ADP Mine Closure	Once, within 12mths of approval of the ADP Mine Closure.	Data, designs and processes developed during Mine Closure	Provision of discussion "Draft - Post Lease Transfer Monitoring and Maintenance Plan" 6 & 9 months post ADP approval Quarterly Mine Closure report to DSD
D1-MC14	D1-IH02	Protection of Indigenous Heritage Articles - Damper Rocks and Fire Sticks post transfer of lease	Ongoing engagement with Adnyamathanha Traditional Landowners Association and South Australian Department for Aboriginal Affairs and Reconciliation. Assistance (within relevant expertise) provided for a relocation (if requested).	Relevant stakeholders informed 1) there will be no access to Damper Rocks and Fire Sticks in current location post closure due to installation of safety bund 2) of timing of installation of safety bund, so that any possible relocation of artefacts can be completed before safety bund is installed	Domain 1 - Upper Series, Section 9.14.1 ADP Mine Closure Section 9.10, Figure 27, APD Mine Closure	Quarterly through the Rehabilitation period.	Communication plan	Quarterly Mine Closure report to DSD

LEIGH CREEK MINE CLOSURE - RISK REGISTER

DOMAIN 1 - UPPER SERIES - FEBRUARY 2017

Risk Identification							Inherent Risk Rating			Residual Risk Rating					Proposed Mitigation of Risk Exposure / Improvement Actions			Target / Future Risk Rating		
ID	**Category**	**Source**	**Pathway**	**Receptor**	**Potential Consequences**	**Exposure Type**	**Consequence**	**Likelihood**	**Rating & Priority**	**Current Approach or (Existing Controls)**	**Effectiveness**	**Consequence**	**Likelihood**	**Rating & Priority**	**Risk Reduction Treatment or Asset Improvement Strategic or Approved Action**	**Action Owner**	**Planned Completion Date**	**Consequence**	**Likelihood**	**Rating & Priority**
D1-PS01	**Public Safety**	Pit wall	Failure of pit high / low wall	Member of the public, e.g. trespasser	Injury / fatality	Safety	1. Catastrophic	D. Possible	**High 9**	Pit designed for long term stability - Mine Plan, Geotechnical Management System, see Mine Closure Plan (MCP).	**Effective**	1. Catastrophic	E. Unlikely	**High 14**	Provide a plan for undertaking outstanding works	Flinders	Included in Mine Closure Plan	1. Catastrophic	E. Unlikely	**High 14**
										3rd party geotechnical review design / stability assessment, *Pit Slope Stability Assessment for Mine Closure* , see MCP.	**Marginal**				Ongoing monitoring program for agreed period to provide site management post mine closure, as per MCP, including minor remedial works if required.	Flinders / Government	At lease handback			
										Abandonment bund designed for mine closure, Factor of Safety 2.0 (based on Pit Slope Stability Assessment for Mine Closure, see above) and to WA guidelines to restrict access, see MCP.	**Effective**									
										Ramp access managed.	**Effective**				Review design of controls that require post closure maintenance	Flinders	Part of mine closure plan development			
										Stock fencing & signage, see MCP.	**Marginal**				Ongoing maintenance of fencing	Leaseholder	Post lease handback			
D1-PS02	**Public Safety**	Collapse of a surface dump	Failure of the dump	Member of the public, e.g. trespasser	Person(s) on dump when dump collapses - injury	Safety	3. Moderate	D. Possible	**Medium 16**	Site entry controls as per D1-PS01	**Effective**	3. Moderate	E. Unlikely	**Low 21**	Provide a plan for undertaking outstanding works	Flinders	Included in Mine Closure Plan	3. Moderate	E. Unlikely	**Low 21**
D1-PS03	**Public Safety**	Spontaneous combustion (Spon Comb) underneath surface	Failure of the dump surface	Person and equipment on the dump surface	Person(s) on dump when dump surface collapses - fatality / injury	Safety	1. Catastrophic	E. Unlikely	**High 14**	Application of Principal Mining Hazard Management Plan - Spontaneous Combustion LCC-HSSE-PHMP-008, see MCP.	**Effective**	1. Catastrophic	E. Unlikely	**High 14**				1. Catastrophic	E. Unlikely	**High 14**
										Improved understanding of propensity for Spon Comb of historical dumps, refer Mine Rehabilitation Spon Com Management Plan, and B3 report *Assessment of Spontaneous Combustion of Aged Coal and Rock Samples from LC Coal Mine*	**Marginal**				Dumps of high spon comb risk addressed in MCP	Flinders	Included in Mine Closure Plan			
D1-PS04	**Public Safety**	Gases, fire, smoke caused by geochemical processes in exposed coal	Access to domain pits	Member of the public, e.g. trespasser	Exposure to gases (eg carbon monoxide, hydrogen sulphide and sulphur dioxide). Medical affect on members of the public	Safety	2. Major	D. Possible	**High 12**	Engage a Spon Comb/ geochemist (B3 Mining Services Technical Reports, MWH *Spontaneous Combustion Management of Waste Rock Dumps at LC),* and closure/ erosion expert (MWH Surface Water Assessment and Soil Characterisation) to assist with developing appropriate rehabilitation designs	**Marginal**	3. Moderate	E. Unlikely	**Low 21**	Recommendations included in development of designs	Flinders	included in MCP	3. Moderate	E. Unlikely	**Low 21**
										Implement the Rehab Spon Comb Management Plan incorporating third party reviews	**Effective**				Ongoing monitoring program for agreed period to provide site management post mine closure, as per MCP, including minor remedial works if required.	Flinders / Government	At lease handback			
										Abandonment bund designed for long term, FOS 2.0 and to WA guidelines to restrict access.	**Effective**									

LEIGH CREEK MINE CLOSURE - RISK REGISTER

DOMAIN 1 - UPPER SERIES - FEBRUARY 2017

Risk Identification							Inherent Risk Rating			Residual Risk Rating					Proposed Mitigation of Risk Exposure / Improvement Actions			Target / Future Risk Rating		
ID	Category	Source	Pathway	Receptor	Potential Consequences	Exposure Type	Consequence	Likelihood	Rating & Priority	Current Approach or (Existing Controls)	Effectiveness	Consequence	Likelihood	Rating & Priority	Risk Reduction Treatment or Asset Improvement Strategic or Approved Action	Action Owner	Planned Completion Date	Consequence	Likelihood	Rating & Priority
										Site and pit entry controls as per D1-PS01	Effective									
										Monitor throughout rehabilitation phase to ensure effectiveness of controls	Effective									
D1-PS05	Public Safety	Major spon com outbreak	Oxygen deficient atmosphere in pit, buildings or confined spaces due to spontaneous combustion	Member of the public in the base of the pit, e.g. trespasser	Adverse health impact	Safety	2. Major	E. Unlikely	Medium 18	Controls as per D1-PS01	Effective	4. Minor	E. Unlikely	Low 23	NOTE: Potential for asphyxiation is considered extremely unlikely. There has been no evidence of this risk over the life of the operation. It is noted that spon comb risks during post closure will be markedly reduced compared to running an operational mine (spon comb propensity testing program forecast reactivity to be negligible after 5 years).					
D1-PS06	Public Safety	Gases, fire, smoke caused by geochemical processes in the WRDs	Access to domain WRDs	Members of the public i.e. trespassers	Exposure to gases (eg carbon monoxide, hydrogen sulphide and sulphur dioxide). Medical affect on members of the public. Note - Minimal spon com issues in WRDs in this Domain.	Safety	4. Minor	D. Possible	Low 20	Engage a Spon Comb/ geochemist (B3 Mining Services Technical Reports, MWH *Spontaneous Combustion Management of Waste Rock Dumps at LC),* and closure/ erosion expert (MWH Surface Water Assessment and Soil Characterisation) to assist with developing appropriate rehabilitation designs	Marginal	4. Minor	E. Unlikely	Low 23	Recommendations included in development of designs	Flinders	Included in MCP	3. Moderate	E. Unlikely	Low 21
										Implement the Rehab Spon Comb Management Plan	Effective				Ongoing monitoring program for agreed period to provide site management post mine closure, as per MCP, including minor remedial works if required.	Flinders / Government	At lease handback			
										Monitoring and mapping of the WRDs as per Rehab Spon Comb Mgt Plan, MCP	Effective									
										Site and pit entry controls as per D1-PS01	Effective									
										Monitor throughout rehabilitation phase to ensure effectiveness of controls, as per RSCMP	Effective									
										Complete rehabilitation works based on independent reports, monitoring results and on the basis of risk	Effective									

LEIGH CREEK MINE CLOSURE - RISK REGISTER
DOMAIN 1 - UPPER SERIES - FEBRUARY 2017

Risk Identification							Inherent Risk Rating			Residual Risk Rating					Proposed Mitigation of Risk Exposure / Improvement Actions			Target / Future Risk Rating		
ID	Category	Source	Pathway	Receptor	Potential Consequences	Exposure Type	Consequence	Likelihood	Rating & Priority	Current Approach or (Existing Controls)	Effectiveness	Consequence	Likelihood	Rating & Priority	Risk Reduction Treatment or Asset Improvement Strategic or Approved Action	Action Owner	Planned Completion Date	Consequence	Likelihood	Rating & Priority
D1-PS07	**Public Safety**	Gases, fire, smoke caused by geochemical processes. Generation of flammable gases (eg carbon monoxide and hydrogen) produced when fighting fires with water.	Access to domain WRDs	Emergency services responding to the fire/ smoke or injured person	Exposure to gases (eg carbon monoxide, hydrogen sulphide and sulphur dioxide). Illness or injury of emergency service personnel. Note - Minimal spon com issues in WRDs in this Domain	Safety	4. Minor	D. Possible	Low 20	Engage a Spon Comb/ geochemist (B3 Mining Services Technical Reports, MWH *Spontaneous Combustion Management of Waste Rock Dumps at LC),* and closure/ erosion expert (MWH Surface Water Assessment and Soil Characterisation) to assist with developing appropriate rehabilitation designs	Marginal	4. Minor	E. Unlikely	Low 23	Provide a schedule for undertaking outstanding works	Flinders	included in MCP	3. Moderate	E. Unlikely	Low 21
										Implement the Rehab Spon Comb Management Plan	Effective				Ongoing monitoring program for agreed period to provide site management post mine closure, as per MCP, including minor remedial works if required.	Flinders / Government	At lease handback			
										Identify all emergency responder stakeholders, commence discussion around post closure management issues	Effective				Adopt established Emergency response plan	Government	At lease handback			
										Develop a recommended Emergency response plan to be circulated to relevant stakeholders. These may be targeted depending on job description of emergency personnel	Effective									
										As D1-PS01, D1-PS04 and D1-PS06	Effective									
										Monitor throughout rehabilitation phase to ensure effectiveness of controls, as per RSCMP, see MCP.	Effective									
										Complete rehabilitation works based on independent reports, monitoring results and on the basis of risk	Effective									
D1-PS08	**Public Safety**	Major spon com outbreak	Oxygen deficient atmosphere in pit, site buildings or confined spaces due to spon com	Emergency services responding to the fire/ smoke or injured person. Authorised persons undertaking work in the domain.	Adverse health impact	Safety	2. Major	E. Unlikely	Medium 18	Controls as per D1-PS07	Effective	3. Moderate	E. Unlikely	Low 21	NOTE: Potential for asphyxiation is considered extremely unlikely. There has been no evidence of this risk over the life of the operation. It is noted that spon comb risks during post closure will be markedly reduced compared to running an operational mine (spon comb propensity testing program forecast reactivity to be negligible after 5 years).					
D1-PS09	**Public Safety**	Fire, smoke and gases caused by geochemical processes within the pit	Geochemical processes	Emergency services responding to the fire/ smoke or injured person	Exposure to gases (eg carbon monoxide, hydrogen sulphide and sulphur dioxide). Illness or injury of emergency service personnel.	Safety	3. Moderate	D. Possible	Medium 16	As D1-PS01, D1-PS04, D1-PS06 and D1-PS07	Effective	3. Moderate	E. Unlikely	Low 21	Provide a schedule for undertaking outstanding works	Flinders	included in ADP Closure	3. Moderate	E. Unlikely	Low 21

LEIGH CREEK MINE CLOSURE - RISK REGISTER

DOMAIN 1 - UPPER SERIES - FEBRUARY 2017

Risk Identification							Inherent Risk Rating			Residual Risk Rating					Proposed Mitigation of Risk Exposure / Improvement Actions			Target / Future Risk Rating		
ID	**Category**	**Source**	**Pathway**	**Receptor**	**Potential Consequences**	**Exposure Type**	**Consequence**	**Likelihood**	**Rating & Priority**	**Current Approach or (Existing Controls)**	**Effectiveness**	**Consequence**	**Likelihood**	**Rating & Priority**	**Risk Reduction Treatment or Asset Improvement Strategic or Approved Action**	**Action Owner**	**Planned Completion Date**	**Consequence**	**Likelihood**	**Rating & Priority**
D1-PS10	**Safety**	Fire, smoke and gases caused by geochemical processes within the domain	Geochemical processes	Authorised persons undertaking work in the domain	Exposure to gases (eg carbon monoxide, hydrogen sulphide and sulphur dioxide). Illness or injury of authorised persons.	Safety	3. Moderate	D. Possible	Medium 16	As D1-PS01, D1-PS04 and D1-PS06	Effective	3. Moderate	E. Unlikely	Low 21	Adopt mine access procedures post closure	Government	At lease handback	3. Moderate	E. Unlikely	Low 21
										Principal Mining Hazard Management Plan - Spontaneous Combustion LCC-HSSE-PHMP-008	Effective									
										Develop mine access procedures for authorised personnel post closure	Effective									
D1-PS11	**Public Safety**	Fire, smoke and gases caused by geochemical processes within the domain	Geochemical processes	Off lease communities	Illness or injury of adjacent communities, odour/ / nuisance	Safety	4. Minor	D. Possible	Low 20	As D1-PS04 and D1-PS06	Effective	5. Insignificant	E. Unlikely	Low 25						
D1-VA01	**Visual Amenity from Lyndhurst Highway**	WRDs	Visual amenity	Visual amenity of surface waste dumps from highway	Public complaint - none received over history of mine	Community	5. Insignificant	E. Unlikely	Low 25						No further work required					
D1-RD01	**Retention Dam**	Breach retention dam wall as per ADP (2000)	Flooding of Domain 1	Long term damage to rehab work and potential increase in spon com risk. Loss of retention dam source for public access / use as is and for upstream flow	1. Destroy the ecosystem of the dam 2. Destroy the water resource 3. Impact to northern pastoralists 4. Potential impact to rehab work (long term) 5. Potential long term spon com trigger	Environmental & Community	2. Major	B. Probable	Extreme 4	Develop alternative approach to dam breach, as per independent engineering and ANCOLD review, ie MWH *Surface Water Assessment* , see MCP.	Effective	4. Minor	E. Unlikely	Low 23	Endorse final configuration of dam system	Government	Approval of MCP	4. Minor	E. Unlikely	Low 23
															Implement final retention dam overflow configuration	Flinders	Jul-18			
D1-SW01	**Surface water management**	Surface water runoff with suspended solids	Contaminated water flowing offsite eg dispersive materials have higher propensity	Runoff from perimeter dump faces into off lease creeks and native vegetation	Surface water leads to impact on downstream receptors	Environmental	4. Minor	C. Likely	Medium 17	Independent assessment (MWH *Surface Water Assessment*) of surface water management plans	Marginal	4. Minor	E. Unlikely	Low 23	Implement monitoring program for surface water quality	Flinders	Jul-18	5. Insignificant	E. Unlikely	Low 25
										Undertake material characterisation (MWH *Soil and waste characterisation,* see MCP) to identify suitable materials for use in rehab program	Effective				Provide operational guidelines for undertaking works	Flinders	Included in Mine Closure Plan			
										Review of surface water management plans and input into final designs to prevent outflow from pits and support subsequent evaporation	Effective				Ongoing monitoring program for agreed period to provide site management post mine closure, as per MCP, including minor remedial works if required.	Flinders / Government	At lease handback			

LEIGH CREEK MINE CLOSURE - RISK REGISTER
DOMAIN 1 - UPPER SERIES - FEBRUARY 2017

Risk Identification							Inherent Risk Rating			Residual Risk Rating					Proposed Mitigation of Risk Exposure / Improvement Actions			Target / Future Risk Rating		
ID	Category	Source	Pathway	Receptor	Potential Consequences	Exposure Type	Consequence	Likelihood	Rating & Priority	Current Approach or (Existing Controls)	Effectiveness	Consequence	Likelihood	Rating & Priority	Risk Reduction Treatment or Asset Improvement Strategic or Approved Action	Action Owner	Planned Completion Date	Consequence	Likelihood	Rating & Priority
										Implement rehabilitation in accordance with agreed surface water management plan	Effective									
										Incorporate silt traps as part of rehabilitation design as recommended per independent review	Effective									
										Incorporate in retention dam overflow final configuration	Effective									
D1-SW02	Surface water management	Acidic and metalliferous drainage AMD	AMD contaminated surface water from incident rainfall on external dump surfaces (particularly Western Bund or Northern Dumps), or seepage through waste dumps (particularly Northern Dumps), flowing offsite	Runoff from perimeter dump faces or seepage into off lease creeks and native vegetation	Surface water leads to impact on downstream receptors Note: there are no known areas of adverse environmental impact caused by AMD, and the surface water quality monitoring conducted over the past 20yrs has not discovered any indications of this risk. Further detail in MCP.	Environmental	5. Insignificant	E. Unlikely	Low 25	Ensure surface water runoff from within the mine pit is directed to internal settlement ponds/evaporation basins and pit lakes.	Effective	5. Insignificant	E. Unlikely	Low 25	Implement monitoring program for surface water quality, including seep survey	Flinders	Jul-18	5. Insignificant	E. Unlikely	Low 25
										Undertake material characterisation (MWH *Soil and waste characterisation,* and ongoing field testing, see MCP) to determine potential for AMD.	Marginal				Ongoing monitoring program for agreed period to provide site management post mine closure, as per MCP, including minor remedial works if required.	Flinders / Government	At lease handback			
										Implement recommendations from surface water assessments and Soils and Waste Characterisation, including - potential AMD material will be quarantined, and surface water runoff from these dumps to be contained - the Western Bund will be reprofiled and covered with the best suited material for outward facing dump slopes - dump slopes that have been previously rehabilitated will remain in situ, to reduce the risk of mobilising contaminants	Effective									
D1-SW03	Surface water management	Uncontrolled surface water	Failure of surface water control structures due to rainfall event	Off lease creeks and native vegetation	Uncontrolled surface water leads to impact on downstream receptors	Environmental	4. Minor	E. Unlikely	Low 23	Final landform design parameters have been advised by MWH following their consideration of key site risks and data presented within the Spontaneous Combustion report(s), Surface Water report, Groundwater Aspects report, and Soils and Waste Characterisation report.	Effective	5. Insignificant	E. Unlikely	Low 25	Implement monitoring program for surface water quality, including seep survey	Flinders	Jul-18	5. Insignificant	E. Unlikely	Low 25
										Surface water designs (including drainage structures) progressively developed and peer reviewed by MWH and Coffey, and assessed in accordance with the design principles recommended in the MWH surface water reports.	Effective				Ongoing monitoring program for agreed period to provide site management post mine closure, as per MCP, including minor remedial works if required.	Flinders / Government	At lease handback			
										Implement QAQC process to confirm constructed to design and using correct materials as per design.	Effective									

LEIGH CREEK MINE CLOSURE - RISK REGISTER

DOMAIN 1 - UPPER SERIES - FEBRUARY 2017

Risk Identification							Inherent Risk Rating			Residual Risk Rating					Proposed Mitigation of Risk Exposure / Improvement Actions			Target / Future Risk Rating		
ID	Category	Source	Pathway	Receptor	Potential Consequences	Exposure Type	Consequence	Likelihood	Rating & Priority	Current Approach or (Existing Controls)	Effectiveness	Consequence	Likelihood	Rating & Priority	Risk Reduction Treatment or Asset Improvement Strategic or Approved Action	Action Owner	Planned Completion Date	Consequence	Likelihood	Rating & Priority
D1-GW01	**Ground water management**	Pit water	Seepage to groundwater	Local aquifer of high salinity water, low beneficial use	Localised interaction between surface and groundwater contained within the Leigh Creek basin, refer MWH report	Environmental	5. Insignificant	D. Possible	Low 24	Undertake independent assessment of ground water, MWH *Groundwater Aspects of Mine Closure*	Effective	5. Insignificant	E. Unlikely	Low 25						
D1-GW02	**Ground water management**	Pit water	Seepage to shallow groundwater (eg Telford gravels)	Groundwater dependent ecosystems	Offsite migration of ground water leads to impact on downstream receptors Note: the updated groundwater report indicates "both the Main Series and the Upper Series pits will remain groundwater sinks with long-term water levels significantly below the pre-mining levels".	Environmental	5. Insignificant	E. Unlikely	Low 25	Undertake independent assessment of ground water, MWH *Groundwater Aspects of Mine Closure*	Effective	5. Insignificant	E. Unlikely	Low 25	Implement ground water monitoring program to confirm modelled water levels, and improve understanding of water qualities.	Flinders	Jul-18			
D1-GW03	**Ground water management**	Acidic and metalliferous drainage AMD	AMD from incident rainfall on dump surfaces (particularly Western Bund Wall and Northern Dumps), or seepage through waste dumps (particularly Northern Dumps), reports to underlying ground water (eg Telford gravels)	Groundwater dependent ecosystems	Offsite migration of ground water leads to impact on downstream receptors Note: updated MWH report concluded there "no groundwater ecosystems that could be affected by the closure of Lobe B were identified in this study".	Environmental	5. Insignificant	E. Unlikely	Low 25	As per D1-SW02 Undertake independent assessment of ground water, MWH *Groundwater Aspects of Mine Closure* Implement recommendations from surface water assessments and Soils and Waste Characterisation, including - potential AMD material will be quarantined, and surface water runoff from these dumps to be contained - the Western Bund will be reprofiled and covered with the best suited material for outward facing dump slopes - dump slopes that have been previously rehabilitated will remain in situ, to reduce the risk of mobilising contaminants	Effective Effective Effective	5. Insignificant	E. Unlikely	Low 25	Implement ground water monitoring program to confirm basin is a terminal sink, as well as seep survey to identify any seepage through waste dumps potentially reporting offsite	Flinders	Jul-18	5. Insignificant	E. Unlikely	Low 25
D1-IH01	**Indigenous & Heritage**	Public / unauthorised access	Damage to heritage areas	Indigenous & Heritage areas	No known Heritage areas in this Domain	Heritage									No further work required					
D1-IH02	**Indigenous & Heritage**	Public / unauthorised access	Damage to Damper Rocks and Fire Sticks	Damper Rocks and Fire Sticks	Damage to or loss of Indigenous & Heritage items, sites	Heritage	3. Moderate	D. Possible	Medium 16	Controls as per D1-PS01	Marginal	3. Moderate	D. Possible	Medium 16	FP to liaise with relevant stakeholders (Government and ATLA) to assist decision as to whether Damper Rocks and Fire Sticks are to be moved / removed from Leigh Creek site	Flinders	Prior to lease handback	3. Moderate	E. Unlikely	Low 21
D1-DM01	**Dust Management**	Dust	Wind exposure	Surrounding communities	Dust affects communities (nuisance only, no recorded dust complaints during life of mine)	Environmental	5. Insignificant	E. Unlikely	Low 25	No ongoing works, crust formed, self seeded natural vegetation re-establishment	Effective	5. Insignificant	E. Unlikely	Low 25						

LEIGH CREEK MINE CLOSURE - RISK REGISTER

DOMAIN 1 - UPPER SERIES - FEBRUARY 2017

Risk Identification							Inherent Risk Rating			Residual Risk Rating					Proposed Mitigation of Risk Exposure / Improvement Actions			Target / Future Risk Rating		
ID	Category	Source	Pathway	Receptor	Potential Consequences	Exposure Type	Consequence	Likelihood	Rating & Priority	Current Approach or (Existing Controls)	Effectiveness	Consequence	Likelihood	Rating & Priority	Risk Reduction Treatment or Asset Improvement Strategic or Approved Action	Action Owner	Planned Completion Date	Consequence	Likelihood	Rating & Priority
D1-PS12	Infrastructure	Any existing infrastructure	Deteriorating infrastructure	Authorised or unauthorised access	Injury	Safety	3. Moderate	D. Possible	Medium 16	Remove all infrastructure from the domain, crib room, tanks etc.	Effective	5. Insignificant	E. Unlikely	Low 25						
D1-PS13	Public Safety	Ongoing weathering of coal faces	Small scale failures on pit walls leading to spon comb	Pit walls	Spontaneous combustion on pit walls	Safety	2. Major	E. Unlikely	Medium 18	Assess potential for small scale failures on pit walls to leading to spon comb, considering reduction in propensity due to oxidation via ageing	Ineffective	3. Moderate	E. Unlikely	Low 21	Ongoing monitoring program for agreed period to provide site management post mine closure, as per MCP, including minor remedial works if required.	Flinders / Government	At lease handback	3. Moderate	E. Unlikely	Low 21
										Any areas identified as having potential for small scale failures on in pit walls included in development of designs	Effective									
D1-PS14	Public Safety	Variable saturation of coal (and high energy shales in MS and LS)	Pit lake level fluctuations over time	Pit walls	Spontaneous combustion on pit walls	Safety	2. Major	E. Unlikely	Medium 18	Review modelled pit lake levels against pit lake coal locations	Effective	3. Moderate	E. Unlikely	Low 21	Ongoing monitoring program for agreed period to provide site management post mine closure, as per MCP, including minor remedial works if required.	Flinders / Government	At lease handback	3. Moderate	E. Unlikely	Low 21
										Inundation through increases in pit lake water levels	Effective									
D1-PS15	Public safety	Uncontrolled surface water	Failure of surface water control structures due to rainfall event	Areas rehabilitated due to risk of spontaneous combustion	Uncontrolled surface water leads to loss of control of spontaneous combustion mitigation measures	Safety	2. Major	E. Unlikely	Medium 18	Final landform design parameters have been advised by MWH following their consideration of key site risks and data presented within the Spontaneous Combustion report(s), Surface Water report, Groundwater Aspects report, and Soils and Waste Characterisation report.	Effective	5. Insignificant	E. Unlikely	Low 25	Ongoing monitoring program for agreed period to provide site management post mine closure, as per MCP, including minor remedial works if required.	Flinders / Government	At lease handback	5. Insignificant	E. Unlikely	Low 25
										Surface water designs (including drainage structures) progressively developed and peer reviewed by MWH and Coffey, and assessed in accordance with the design principles recommended in the MWH surface water reports.	Effective									
										Implement QAQC process to confirm constructed to design and using correct materials as per design	Effective									
D1-NF01	Native Flora	Increased risk of pests (flora)	Pests spreading across leases	Native flora	Potential increase in pests (flora)	Environmental	4. Minor	D. Possible	Low 20	Current pest control program ceases at mine closure		4. Minor	C. Likely	Medium 17	New landowner takes control for weed control with NRM Board	Government		4. Minor	D. Possible	Low 20

LEIGH CREEK MINE CLOSURE - RISK REGISTER

DOMAIN 1 - UPPER SERIES - FEBRUARY 2017

Risk Identification							Inherent Risk Rating			Residual Risk Rating					Proposed Mitigation of Risk Exposure / Improvement Actions			Target / Future Risk Rating		
ID	Category	Source	Pathway	Receptor	Potential Consequences	Exposure Type	Consequence	Likelihood	Rating & Priority	Current Approach or (Existing Controls)	Effectiveness	Consequence	Likelihood	Rating & Priority	Risk Reduction Treatment or Asset Improvement Strategic or Approved Action	Action Owner	Planned Completion Date	Consequence	Likelihood	Rating & Priority
										Consultation with North Flinders Group NRM	Effective									
D1-NF02	Native Fauna	Increased risk of pests (Fauna)	Pests breeding on leases	Native fauna	Potential increase in pests (fauna)	Environmental	4. Minor	D. Possible	Low 20	Current pest control program ceases at mine closure		4. Minor	C. Likely	Medium 17	New landowner takes control for pest control with NRM Board	Government		4. Minor	D. Possible	Low 20
										Consultation with North Flinders Group NRM	Effective									
D1-NF03	Native Fauna	Pit lakes, pit walls and geochemical processes	Access to pits and WRDs	Native fauna	Injury or death of native fauna	Environmental	5. Insignificant	E. Unlikely	Low 25	Low risk (as evidenced by history during life of mine), no further controls required										

LEIGH CREEK MINE CLOSURE - RELINQUISHMENT COMPLETION CRITERIA

DOMAIN 2 - RETENTION DAM - FEBRUARY 2017

ID	Risk Ref	Objective	Objective Measurement Criteria	What will be measured and form of measurement	Locations	Frequency	Control / baseline data	Leading indication criteria
D2-MC01	D2-RD01 D2-RD02 D2-RD03	Retention dam will be stable in the long term, maintains water level to EL225m, and allows flows of out of the dam above EL219m.	Verification by independent, suitably qualified person confirms that the Retention Dam spillway has been constructed to design (as per the relevant designs below), and the required ongoing management of the dam and spill way is appropriate to ensure sustainability of the dam: LCK Map 21 Design Notes LCK Map 25 Design Notes LCK Map 29 Design Notes.	Report from independent, suitably qualified FP engaged expert confirms (using as a minimum QA/QC data and survey), the dam (including spillway) has been constructed to design as per Section 14.2 ADP Mine Closure, Figure 198.	Domain 2 - Retention Dam, Section 9.14.2 ADP Mine Closure. Section 14.2, Figure 198 ADP Mine Closure. See relevant Design Notes for detailed locations and designs.	Once at completion of the dam & spillway work.	Mine Rehabilitation Inspection and Test Plan Procedure, Appendix PP. Section 14.2 Domain 2 - Retention Dam, ADP Mine Closure.	Independent third party hydrological and ANCOLD assessment of Retention Dam options, MWH *Surface Water Assessment* , Appendix E, ADP Mine Closure.
D2-MC02	D2-RD01 D2-RD02 D2-RD03	Diverted Leigh Creek Channel from the retention dam to be operational in the long term, preventing clean water from accessing the mine site area.	Verification by independent, suitably qualified person confirms that the Retention Dam channel has been constructed to design (as per relevant designs below) , will be stable in the long term (includes recommended management to ensure ongoing operation of the channels) and achieve the design requirement of preventing clean water from entering the mine site: LCK Map 21 Design Notes LCK Map 25 Design Notes LCK Map 29 Design Notes.	Report from independent, suitably qualified FP engaged expert confirms (using as a minimum QA/QC data and survey), the channel has been constructed to design as per Section 14.2 ADP Mine Closure, Figure 198.	Domain 2 - Retention Dam, Section 9.14.2 ADP Mine Closure. Section 14.2, Figure 198 ADP Mine Closure. See relevant Design Notes for detailed locations and designs.	Once at completion of the channel work.	Mine Rehabilitation Inspection and Test Plan Procedure, Appendix PP. Section 14.2 Domain 2 - Retention Dam, ADP Mine Closure.	Independent third party hydrological and ANCOLD assessment of Retention Dam options, MWH Surface Water Assessment.
D2-MC03	D2-SW01 D2-SW02	Environmental risk of adverse impacts from surface water run off (including sedimentation and AMD) managed to ALARP by surface water controls that are constructed according to design.	Verification by an independent, suitably qualified person confirms that surface water controls for the Western Bund have been constructed to design, according to relevant designs: LCK Map 17 Design Notes LCK Map 21 Design Notes LCK Map 25 Design Notes LCK Map 29 Design Notes.	Report by independent, suitably qualified FP engaged expert confirms construction of surface water controls in Domains 1, 2 and 6 to design.	Domain 1 - Upper Series, Section 9.14.1 ADP Mine Closure. Domain 2 - Retention Dam, Section 9.14.2 ADP Mine Closure. Domain 6 - Main Series, Section 9.14.6 ADP Mine Closure. See relevant Design Notes for detailed locations and designs.	Once, upon completion of surface water control rehabilitation works for Domains 1, 2 and 6.	Mine Rehabilitation Inspection and Test Plan Procedure, Appendix PP. Section 13.6 Acid and Metalliferous Drainage, ADP Mine Closure. Section 13.7 Surface Water Management Strategy for Closure, ADP Mine Closure. Section 14.1 - Domain 1, ADP Mine Closure. Section 14.2 - Domain 2, ADP Mine Closure. Section 14.6 - Domain 6, ADP Mine Closure. Operational Guidelines Soil and Waste Characterisation, Appendix Q. Design Notes for relevant domains.	Quarterly verification report of QA/QC procedures being implemented. Implementation of Surface Water Quality Monitoring Plan and Ground Water Monitoring Plan.
D2-MC04 see D9-MC07	D2-NF01 D2-NF02	Environmental risks are managed to ALARP by future leaseholders / Government via a Flora and Fauna Pest Control plan provided by FP at handover.	*See D9-MC07*	*See D9-MC07*	*See D9-MC07*	*See D9-MC07*	*See D9-MC07*	*See D9-MC07*
D2-MC05	D2-PS01 D2-RD02 D2-RD03 D2-SW01 D2-IH01 D2-PS12 D2-NF01 D2-NF02	To manage future environmental and safety risks to ALARP by development of ongoing monitoring and management plan for post relinquishment.	Ongoing monitoring and management plan is developed in consultation with DSD and EPA and provided by FP for post relinquishment application by FP / contractor / future leaseholder / Government. Monitoring and management criteria to include: - ongoing maintenance of fencing and signage - periodic inspection of residual infrastructure - surface water run off quality monitoring (as required) - spontaneous combustion monitoring (as required) - periodic weed and pest control - periodic maintenance of landforms in particular following heavy rainfall events (as required).	Provision of a joint "Post Lease Transfer Monitoring and Maintenance Plan" for Leigh Creek Coalfields, as per Section 19.1 ADP Mine Closure.	Domain 2 - Retention Dam, Section 9.14.2, Fig 59 ADP Mine Closure.	Once, within 12mths of approval of the ADP Mine Closure.	Data, designs and processes developed during Mine Closure.	Provision of discussion "Draft - Post Lease Transfer Monitoring and Maintenance Plan" 6 & 9 months post ADP approval Quarterly Mine Closure report to DSD

LEIGH CREEK MINE CLOSURE - RELINQUISHMENT COMPLETION CRITERIA

DOMAIN 2 - RETENTION DAM - FEBRUARY 2017

ID	Risk Ref	Objective	Objective Measurement Criteria	What will be measured and form of measurement	Locations	Frequency	Control / baseline data	Leading indication criteria
D2-MC06	D2-IH01	The protection of Indigenous heritage sites from the Retention Dam overflow.	Selection and implementation of a channel design that protects the Indigenous heritage site within Domain 2. Ongoing engagement with Adnyamathanha Traditional Landowners Association and South Australian Department for Aboriginal Affairs and Reconciliation. Locations of Indigenous heritage and heritage sites mapped and ongoing access management passed to future leaseholder / government.	Indigenous heritage and heritage site locations documented for access management by future leaseholder/Government (information controlled due to cultural sensitivity and protection of sites), as per Section 9.10 ADP Mine Closure.	As per Section 9.10 ADP Mine Closure, refer Figure 20.	Within 12 months of approval of the ADP Mine Closure.	Section 9.10 ADP Mine Closure.	NA

LEIGH CREEK MINE CLOSURE - RISK REGISTER

DOMAIN 2 - RETENTION DAM - FEBRUARY 2017

Risk Identification							Inherent Risk Rating			Residual Risk Rating					Proposed Mitigation of Risk Exposure / Improvement Actions			Target / Future Risk Rating		
ID	**Category**	**Source**	**Pathway**	**Receptor**	**Potential Consequences**	**Exposure Type**	**Consequence**	**Likelihood**	**Rating & Priority**	**Current Approach or (Existing Controls)**	**Effectiveness**	**Consequence**	**Likelihood**	**Rating & Priority**	**Risk Reduction Treatment or Asset Improvement Strategic or Approved Action**	**Action Owner**	**Planned Completion Date**	**Consequence**	**Likelihood**	**Rating & Priority**
D2-PS01	**Public Safety**	Retention Dam	Water hazard	Member of the public	Drowning / injury NOTE: Potential for drowning is considered extremely unlikely. There has been no evidence of this risk over the life of the operation (no instances since dam constructed in mid 1980s).	Safety	1. Catastrophic	E. Unlikely	High 14	Water safety signage	Marginal	1. Catastrophic	E. Unlikely	High 14	Determine future management of retention dam	Flinders / Government	On closure	1. Catastrophic	E. Unlikely	High 14
										Access only via beach, single access road into dam, remainder of area fenced	Marginal				Ongoing management of Dam by future leaseholder	Leaseholder / Government				
D2-RD01	**Retention Dam**	Breach retention dam wall as per previous ADP (2000)	Flooding of Domain 1	Long term damage to rehab work and potential increase in spon com risk. Loss of retention dam source for public access / use as is and for upstream flow	1. Destroy the ecosystem of the dam 2. Destroy the water resource 3. Impact to northern pastoralists 4. Potential impact to rehab work (long term) 5. Potential long term spon com trigger	Environmental	2. Major	B. Probable	Extreme 4	Dam breach as per previous ADP	Ineffective	2. Major	B. Probable	Extreme 4	Reconsider dam breach option following consultation with surrounding communities	Government	Nov-15	4. Minor	E. Unlikely	Low 23
															Develop Dam overflow channel options around mine reconnecting to Leigh Creek north of mine - consider ANCOLD requirements	Flinders	Nov-15			
															Overflow channel options - water across Lyndhurst Highway, consider management strategies	DPTI	Prior to handback of leases			
D2-RD02	**Retention Dam**	Stability of Dam wall	Failure of Dam - Flooding of Domain 1	Long term damage to rehab work and potential increase in spon com risk. Loss of retention dam source for public access / use as is and for upstream flow	1. Destroy the ecosystem of the dam 2. Destroy the water resource 3. Impact to northern pastoralists 4. Potential impact to rehab work (long term) 5. Potential long term spon com trigger 6. Public / personal safety	Environmental	2. Major	D. Possible	High 12	ANCOLD consequence assessed as low, refer MWH Surface Water Assessment, MCP.	Effective	2. Major	E. Unlikely	Medium 18	Recommend that the dam is retained at or near current levels. Consider future dam structure monitoring regime as per consultant's review in accordance with ANCOLD guideline.	Government	Prior to handback of leases	2. Major	E. Unlikely	Medium 18
										Existing Monitoring Regime	Marginal				As for D2-RD01					
D2-RD03	**Retention Dam**	Stability of Dam wall	Failure of Dam - Flooding of Domain 1	Public safety	Downstream flooding due to dam wall failure / potential impact on campers etc.	Environmental	2. Major	D. Possible	High 12	ANCOLD consequence assessed as low, refer MWH Surface Water Assessment, MCP.	Effective	2. Major	E. Unlikely	Medium 18	Recommend that the dam is retained at or near current levels. Consider future dam structure monitoring regime as per consultant's review in accordance with ANCOLD guideline.	Government	Prior to handback of leases	2. Major	E. Unlikely	Medium 18
										Existing Monitoring Regime	Marginal				As for D2-RD01					

LEIGH CREEK MINE CLOSURE - RISK REGISTER

DOMAIN 2 - RETENTION DAM - FEBRUARY 2017

Risk Identification							Inherent Risk Rating			Residual Risk Rating					Proposed Mitigation of Risk Exposure / Improvement Actions			Target / Future Risk Rating		
ID	**Category**	**Source**	**Pathway**	**Receptor**	**Potential Consequences**	**Exposure Type**	**Consequence**	**Likelihood**	**Rating & Priority**	**Current Approach or (Existing Controls)**	**Effectiveness**	**Consequence**	**Likelihood**	**Rating & Priority**	**Risk Reduction Treatment or Asset Improvement Strategic or Approved Action**	**Action Owner**	**Planned Completion Date**	**Consequence**	**Likelihood**	**Rating & Priority**
D2-SW01	**Surface water management**	Surface water run-off from adjacent domains	Contaminated water flowing offsite potentially derived from Western bund wall	Surrounding environment/ waterways	Contamination of water leads to significant impact of downstream livestock and native fauna / flora Domain not exposed to main waterways	Environmental	3. Moderate	D. Possible	Medium 16	Review of surface water management plans and input into final designs	Marginal	3. Moderate	E. Unlikely	Low 21	Ongoing monitoring program for agreed period to provide site management post mine closure, as per MCP, including minor remedial works if required.	Flinders / Government	At lease handback	5. Insignificant	E. Unlikely	Low 25
										Independent assessment of surface water management plans	Marginal				Implement monitoring program for water quality	Flinders	Jul-18			
										Implement rehabilitation in accordance with agreed surface water management plan	Effective									
										Incorporate in retention dam overflow options	Effective									
D2-SW02	**Surface water management**	Uncontrolled surface water	Failure of surface water control structures due to rainfall event	Off lease creeks and native vegetation	Uncontrolled surface water leads to impact on downstream receptors	Environmental	4. Minor	E. Unlikely	Low 23	Final landform design parameters have been advised by MWH following their consideration of key site risks and data presented within the Spontaneous Combustion report(s), Surface Water report, Groundwater Aspects report, and Soils and Waste Characterisation report.	Effective	5. Insignificant	E. Unlikely	Low 25	Implement monitoring program for surface water quality, including seep survey	Flinders	Jul-18	5. Insignificant	E. Unlikely	Low 25
										Surface water designs (including drainage structures) progressively developed and peer reviewed by MWH and Coffey, assessed in accordance with the design principles recommended in the MWH Surface Water reports.	Effective				Ongoing monitoring program for agreed period to provide site management post mine closure, as per MCP, including minor remedial works if required.	Flinders / Government	At lease handback			
										Implement QAQC process to confirm constructed to design and using correct materials as per design	Effective									
D2-GW01	**Ground water management**	Pit water	Seepage to shallow groundwater (eg Telford gravels)	Groundwater dependent ecosystems	Offsite migration of ground water leads to impact on downstream receptors Note: the updated groundwater report indicates "both the Main Series and the Upper Series pits will remain groundwater sinks with long-term water levels significantly below the pre-mining levels".	Environmental	5. Insignificant	E. Unlikely	Low 25	Undertake independent assessment of ground water, MWH *Groundwater Aspects of Mine Closure*	Effective	5. Insignificant	E. Unlikely	Low 25	Implement ground water monitoring program to confirm modelled water levels, and improve understanding of water qualities.	Flinders	Jul-18			

LEIGH CREEK MINE CLOSURE - RISK REGISTER

DOMAIN 2 - RETENTION DAM - FEBRUARY 2017

Risk Identification							Inherent Risk Rating			Residual Risk Rating					Proposed Mitigation of Risk Exposure / Improvement Actions			Target / Future Risk Rating		
ID	**Category**	**Source**	**Pathway**	**Receptor**	**Potential Consequences**	**Exposure Type**	**Consequence**	**Likelihood**	**Rating & Priority**	**Current Approach or (Existing Controls)**	**Effectiveness**	**Consequence**	**Likelihood**	**Rating & Priority**	**Risk Reduction Treatment or Asset Improvement Strategic or Approved Action**	**Action Owner**	**Planned Completion Date**	**Consequence**	**Likelihood**	**Rating & Priority**
D2-IH01	**Indigenous & Heritage**	Known Indigenous / heritage Area	Water Damage to indigenous / heritage area	Indigenous / heritage area	Damage to or loss of indigenous area due to water flow	Heritage	3. Moderate	C. Likely	High 11	Water diverted around area with engineered bund as required	Effective	4. Minor	E. Unlikely	Low 23	As for D2-RD01	Flinders	Prior to lease handback	4. Minor	E. Unlikely	Low 23
D2-PS02	**Infrastructure**	Any existing infrastructure	Deteriorating infrastructure	Authorised or unauthorised access	No built infrastructure in place	Safety														
D2-IN02	**Infrastructure**	Retention Dam overflow crossing at Mine Access road	Flow at crossing	Mine Access road crossing	Damage to crossing	Damage	4. Minor	D. Possible	Low 20	Maintenance of road as required	Effective	4. Minor	E. Unlikely	Low 23	Access road management	Leaseholder / Government				
D2-NF01	**Native Flora**	Increased risk of pests (flora)	Pests spreading across leases	Native flora	Potential increase in pests (flora)	Environmental	4. Minor	D. Possible	Low 20	Current pest control program ceases at mine closure		4. Minor	C. Likely	Medium 17	New landowner takes control for weed control with NRM Board	Government		4. Minor	D. Possible	Low 20
										Consultation with North Flinders Group NRM	Effective									
D2-NF02	**Native Fauna**	Increased risk of pests (Fauna)	Pests breeding on leases	Native fauna	Potential increase in pests (fauna)	Environmental	4. Minor	D. Possible	Low 20	Current pest control program ceases at mine closure		4. Minor	C. Likely	Medium 17	New landowner takes control for pest control with NRM Board	Government		4. Minor	D. Possible	Low 20
										Consultation with North Flinders Group NRM	Effective									
D2-NF03	**Native Fauna**	Pit lakes, pit walls and geochemical processes	Access to pits and WRDs	Native fauna	Injury or death of native fauna	Environmental	5. Insignificant	E. Unlikely	Low 25	Low risk (as evidenced by history during life of mine), no further controls required										

LEIGH CREEK MINE CLOSURE - RELINQUISHMENT COMPLETION CRITERIA

DOMAIN 3 - LOWER SERIES - FEBRUARY 2017

ID	Risk Ref	Objective	Objective Measurement Criteria	What will be measured and form of measurement	Locations	Frequency	Control / baseline data	Leading indication criteria
D3-MC01	D3-PS01	Pits walls are stable long term and relevant geotechnical information provided to Government on relinquishment.	Verification by an independent suitably qualified person, confirms that the final pits in Domain 3 have been constructed to design, as per the relevant designs: LCK Map 19 Design Notes LCK Map 23 Design Notes LCK Map 24 Design Notes.	Provision of current relevant geotechnical information provided to DSD on relinquishment, as per Section 22 ADP Mine Closure. Report by an independent, suitably qualified FP engaged expert confirms final pits are constructed to design.	Domain 3 - Lower Series, Section 9.14.3, Fig 62, ADP Mine Closure.	Once, at cessation of in pit works.	Mine Rehabilitation Inspection and Test Plan Procedure, Appendix PP. Section 14.3 - Domain 3, ADP Mine Closure. Relevant Design Notes.	Quarterly verification report of QA/QC procedures being implemented.
D3-MC02	D3-PS01 D3-PS02 D3-PS04 D3-PS05 D3-PS06 D3-PS07 D3-PS08	Public safety risk of access to pit void managed to as low as reasonably practicable (ALARP) by the installation of safety bunds.	Verification by an independent, suitably qualified person confirms that Safety bunds have been constructed to design and are located outside of the long term pit failure zone as detailed in Section 13.4 and Fig 159, ADP Mine Closure, and according to the relevant designs: LCK Map 19 Design Notes LCK Map 24 Design Notes.	Report by an independent, suitably qualified FP engaged expert (eg geotechnical engineer) confirms, using as a minimum survey and QAQC data, that the safety bunds are constructed and located as per designs in the relevant Domain 3 Design Notes.	As per Figure 159, Section 13.4 ADP Mine Closure. See relevant Design Notes for detailed locations and designs.	Once, at completion of safety bunds.	Mine Rehabilitation Inspection and Test Plan Procedure, Appendix PP. Section 13.4 Pit Design and Stability - Management Strategy for Closure, ADP Mine Closure. Section 14.3 - Domain 3, ADP Mine Closure. Relevant Design Notes.	Quarterly verification report of QA/QC procedures being implemented.
D3-MC03	D3-PS01 D3-PS02 D3-PS04 D3-PS05 D3-PS06 D3-PS07 D3-PS08	Public safety risk of access to pit void mitigated to ALARP by managing pit ramps for closure.	Verification by an independent, suitably qualified person, confirms that the prevention measures for the pit access ramps in Domain 3 have been constructed to design, as per relevant designs: LCK Map 19 Design Notes LCK Map 23 Design Notes LCK Map 24 Design Notes.	Report by an independent, suitably qualified FP engaged expert confirms, using as a minimum survey and QAQC data, that the pit ramp access prevention measures are constructed to design.	Domain 3 - Main Series, Section 9.14.3, Fig 62, ADP Mine Closure. See relevant Design Notes for detailed locations and designs.	Once, at cessation of in pit works.	Mine Rehabilitation Inspection and Test Plan Procedure, Appendix PP. Section 14.3 - Domain 3, ADP Mine Closure. Design of access prevention methods for pit access ramps as per relevant Design Notes.	Quarterly verification report of QA/QC procedures being implemented.
D3-MC04 see D9-MC01	D3-PS01 D3-PS02 D3-PS05 D3-PS06 D3-PS07 D3-PS08	Public safety risk of access to mine site managed to ALARP by fencing.	*See D9-MC01*	*See D9-MC01*	*See D9-MC01*	*See D9-MC01*	*See D9-MC01*	*See D9-MC01*
D3-MC05 see D9-MC03	D3-PS01 D3-PS02 D3-PS03 D3-PS07 D3-PS08 D3-PS09 D3-PS10 D3-PS12 D3-IH01	Public safety risk of access to mine site managed to ALARP by future leaseholder / government via controlled site access procedure.	*See D9-MC03*	*See D9-MC03*	*See D9-MC03*	*See D9-MC03*	*See D9-MC03*	*See D9-MC03*
D3-MC06	D3-PS03 D3-PS10 D3-PS13 D3-PS14 D3-PS15	Spontaneous combustion risks managed to ALARP by future leaseholder / Government via: Principal Mining Hazard Management Plan (PMHMP) - Spontaneous Combustion.	FP employ a facilitative process to communicate and review PMHMP - Spontaneous Combustion with relevant Government stakeholders. PMHMP - Spontaneous Combustion, to safely manage any instances of spontaneous combustion in mining and stockpile areas at Leigh Creek Coalfield, provided to future third parties and Government on relinquishment so that any risks are known and understood.	Communication of FP PMHMP - Spontaneous Combustion, and facilitation of a review session with relevant government stakeholders. Delivery of Principal Mining Hazard Management Plan (LCC-HSSE-PHMP-008) in agreed format to DSD.	Domain 3 - Lower Series, Section 9.14.3, Fig 62, ADP Mine Closure.	Once, within 12mths of approval of the ADP Mine Closure.	LCC-HSSE-PHMP-008 Spontaneous Combustion, Appendix T, ADP Mine Closure.	Annual reviews of PHMP-008.
D3-MC07	D3-PS03 D3-PS04 D3-PS05 D3-PS06 D3-PS07 D3-PS08 D3-PS09 D3-PS10 D3-PS11 D3-PS13 D3-PS14 D3-PS15	Spontaneous combustion risks managed to ALARP by future leaseholder / Government by identifying at risk areas and assessing the success of control measures via the: Mine Rehabilitation Spontaneous Combustion Management Plan (MRSCMP).	FP employ a facilitative process to communicate and review Mine Rehabilitation Spontaneous Combustion Management Plan with relevant Government stakeholders. The Mine Rehabilitation Spontaneous Combustion Management Plan, that identifies at risk areas and assesses the success of control measures applied, is provided to future third parties and Government on relinquishment so that any risks are known and understood.	Communication of MRSCMP, and facilitation of a review session with relevant government stakeholders. Delivery of MRSCMP in agreed format to DSD.	Domain 3 - Lower Series, Section 9.14.3, Fig 62, ADP Mine Closure.	Once, within 12mths of approval of the ADP Mine Closure.	Section 13.5 Spontaneous Combustion Management Strategy for Closure, ADP Mine Closure. Section 14.3 - Domain 3, ADP Mine Closure. Mine Rehabilitation Spontaneous Combustion Management Plan, Appendix W, ADP Mine Closure.	Annual reviews of MRSCMP.

LEIGH CREEK MINE CLOSURE - RELINQUISHMENT COMPLETION CRITERIA

DOMAIN 3 - LOWER SERIES - FEBRUARY 2017

ID	Risk Ref	Objective	Objective Measurement Criteria	What will be measured and form of measurement	Locations	Frequency	Control / baseline data	Leading indication criteria
D3-MC08	D3-PS03 D3-PS06 D3-PS10 D3-PS11	Spontaneous Combustion risks are managed to ALARP post lease transfer via at risk waste rock dump areas being rehabilitated for spontaneous combustion control as per the designs.	Verification by an independent, suitably qualified person confirms that at risk waste rock dump areas in Domain 3 have been rehabilitated according to relevant designs: LCK Map 19 Design Notes LCK Map 23 Design Notes LCK Map 24 Design Notes LCK Map 28 Design Notes.	Report by an independent, suitably qualified FP engaged expert, using all available data (including QA/QC records and surveys) confirms rehabilitation treatment of at risk waste rock dump areas (including surface water features and bunds) in Domain 3 is to design.	Domain 3 - Lower Series, Section 9.14.3, Fig 62, ADP Mine Closure See relevant Design Notes for detailed locations and designs.	Once, upon completion of rehabilitation works for the waste rock dumps in Domain 3.	Mine Rehabilitation Inspection and Test Plan Procedure, Appendix PP. Section 13.5 Spontaneous Combustion Management Strategy for Closure, ADP Mine Closure. Section 14.3 - Domain 3, ADP Mine Closure. Mine Rehabilitation Spontaneous Combustion Management Plan, Appendix W, ADP Mine Closure. Relevant Design Notes.	Quarterly verification report of QA/QC procedures being implemented.
D3-MC09	D3-PS04 D3-PS07 D3-PS08 D3-PS09 D3-PS10 D3-PS11 D3-PS13 D3-PS14	Spontaneous Combustion risks are managed to ALARP post lease transfer via at risk pit areas rehabilitated for spontaneous combustion control as per the designs.	Verification by an independent, suitably qualified person confirms that at risk pit areas in Domain 3 have been rehabilitated according to relevant designs (including surface water features and bunds): LCK Map 19 Design Notes LCK Map 24 Design Notes.	Report by an independent, suitably qualified FP engaged expert, using all available data (including QA/QC records and surveys), confirms rehabilitation treatment of at risk pit areas (including surface water features and bunds) in Domain 3 is to design.	Domain 3 - Lower Series, Section 9.14.3, Fig 62, ADP Mine Closure. See relevant Design Notes for detailed locations and designs.	Once, upon completion of rehabilitation works for the pit in Domain 3.	Mine Rehabilitation Inspection and Test Plan Procedure, Appendix PP. Section 13.5 Spontaneous Combustion Management Strategy for Closure, ADP Mine Closure. Section 14.3 - Domain 3, ADP Mine Closure. Mine Rehabilitation Spontaneous Combustion Management Plan, Appendix W, ADP Mine Closure. Relevant Design Notes.	Quarterly verification report of QA/QC procedures being implemented.
D3-MC10 see D9-MC04	D3-PS01 D3-PS02 D3-PS03 D3-PS04 D3-PS05 D3-PS06 D3-PS07 D3-PS08 D3-PS09 D3-PS10	Public safety risks are managed to ALARP post lease transfer by future leaseholder / Government / Emergency Services via appropriate Emergency Response Management Plan provided to stakeholders on relinquishment.	*See D9-MC04*	*See D9-MC04*	*See D9-MC04*	*See D9-MC04*	*See D9-MC04*	*See D9-MC04*
D3-MC11	D3-SW01 D3-SW02 D3-SW03 D3-SW04 D3-PS15	Environmental risk of adverse impacts from surface water run off (including sedimentation and AMD) managed to ALARP by surface water controls that are constructed according to design.	Verification by an independent, suitably qualified person confirms that surface water controls in Domain 3 have been constructed to design, according to relevant designs: LCK Map 19 Design Notes LCK Map 23 Design Notes LCK Map 24 Design Notes LCK Map 28 Design Notes.	Report by an independent, suitably qualified FP engaged expert confirms construction of surface water controls in Domain 3 to design.	Domain 3 - Lower Series, Section 9.14.3 ADP Mine Closure. See relevant Design Notes for detailed location and designs.	Once, upon completion of surface water control rehabilitation works for Domain 3.	Mine Rehabilitation Inspection and Test Plan Procedure, Appendix PP. Section 13.6 Acid and Metalliferous Drainage, ADP Mine Closure. Section 13.7 Surface Water Management Strategy for Closure, ADP Mine Closure. Section 14.3 - Domain 3, ADP Mine Closure. Operational Guidelines Soil and Waste Characterisation, Appendix Q. Relevant Domain 3 Design Notes.	Quarterly verification report of QA/QC procedures being implemented. Implementation of Surface Water Quality Monitoring Plan and Groundwater Monitoring Plan to verify low risk.
D3-MC12	D3-PS12	Public safety risks managed to ALARP by removal of infrastructure that has no ongoing value. *See also D5 - Infrastructure*	Verification that Domain 3 infrastructure, as identified for removal by the Generation Lessor Corporation (6th June 2016) and per Section 14.5 of the ADP Mine Closure, has been removed: - Mobile equipment and mobile plant * - Fuel storage and quick fill facilities - Transportable crib rooms - Groundwater dewatering system	Audit report by suitably qualified FP person confirming removal of Domain 3 infrastructure, as per Section 14.5 of the ADP Mine Closure. * Any equipment or infrastructure to be retained (eg dozers as per Section 19.1, and associated fuel storage in the form of self bunded transportable tank as per Section 15) must be in working condition, with maintenance records and condition reports provided where available.	Domain 3 - Lower Series, Section 9.14.3, Fig 62, ADP Mine Closure. As per Statutory Mine Plans, Appendix OO ADP Mine Closure.	Once, upon removal of infrastructure.	Section 14.5 Demolition of Mine Infrastructure, ADP Mine Closure. Section 14.3 - Domain 3, ADP Mine Closure. Refer Infrastructure Position paper, Appendix N ADP Mine Closure.	Progressive review of infrastructure needs as documented in Quarterly Mine Closure Report to DSD.

LEIGH CREEK MINE CLOSURE - RELINQUISHMENT COMPLETION CRITERIA

DOMAIN 3 - LOWER SERIES - FEBRUARY 2017

ID	Risk Ref	Objective	Objective Measurement Criteria	What will be measured and form of measurement	Locations	Frequency	Control / baseline data	Leading indication criteria
D3-MC13 see D9-MC07	D3-NF01 D3-NF02	Environmental risks are managed to ALARP by future leaseholders / Government via a Flora and Fauna Pest Control plan provided by FP at handover.	*See D9-MC07*	*See D9-MC07*	*See D9-MC07*	*See D9-MC07*	*See D9-MC07*	*See D9-MC07*
D3-MC14	D3-PS01 D3-PS02 D3-PS03 D3-PS04 D3-PS05 D3-PS06 D3-PS07 D3-PS08 D3-PS09 D3-PS10 D3-PS11 D3-SW01 D3-SW02 D3-SW03 D3-SW04 D3-NF01 D3-NF02 D3-PS13 D3-PS14 D3-PS15	To manage future environmental and safety risks to ALARP by development of ongoing monitoring and management plan for post relinquishment.	Ongoing monitoring and management plan is developed in consultation with DSD and EPA and provided by FP for post relinquishment application by FP / contractor / future leaseholder / Government. Monitoring and management criteria to include: - ongoing maintenance of fencing and signage - periodic inspection of residual infrastructure - surface water run off quality monitoring (as required) - spontaneous combustion monitoring (as required) - periodic weed and pest control - periodic maintenance of landforms in particular following heavy rainfall events (as required).	Provision of a joint "Post Lease Transfer Monitoring and Maintenance Plan" for Leigh Creek Coalfields, as per Section 19.1 ADP Mine Closure.	Domain 3 - Lower Series, Section 9.14.3, Fig 62, ADP Mine Closure.	Once, within 12mths of approval of the ADP Mine Closure.	Data, designs and processes developed during Mine Closure.	Provision of discussion "Draft - Post Lease Transfer Monitoring and Maintenance Plan" 6 & 9 months post ADP approval. Quarterly Mine Closure report to DSD.
D3-MC15	See D5-MC05	Safety and environmental risks are managed to ALARP by implementation of EPA approved Voluntary Site Contamination Assessment Proposal (22nd Sept 2016), that identifies contaminated areas, develops and implements remediation plans (as required).	As per Section 14.5 ADP Closure plan and in accordance with EPA site contamination requirements: 1. Completion of - Preliminary Site Investigation (PSI) - Detailed Site Investigation (DSI) 2. Formation of remediation plan (as required) 3. Implementation of remediation plan to schedule (as required).	EPA approval of: - PSI report - DSI report - Site Remediation reports (as required).	Domain 3 - Lower Series, Section 9.14.3, Fig 62, ADP Mine Closure. See site Contamination Assessment Reports, Appendix R, ADP Mine Closure for detailed locations.	Once, prior to application of lease transfer.	Section 12.2 Site Contamination Assessment, ADP, Mine Closure. Site Contamination Assessment Reports, Appendix R, ADP Mine Closure. PSI, DSI, Remediation plan. Prior compliance inspections. Quarterly progress report as provided to EPA.	Quarterly progress report to be provided to EPA.

LEIGH CREEK MINE CLOSURE - RISK REGISTER

DOMAIN 3 - LOWER SERIES - FEBRUARY 2017

Risk Identification							Inherent Risk Rating			Residual Risk Rating					Proposed Mitigation of Risk Exposure / Improvement Actions			Target / Future Risk Rating		
ID	**Category**	**Source**	**Pathway**	**Receptor**	**Potential Consequences**	**Exposure Type**	**Consequence**	**Likelihood**	**Rating & Priority**	**Current Approach or (Existing Controls)**	**Effectiveness**	**Consequence**	**Likelihood**	**Rating & Priority**	**Risk Reduction Treatment or Asset Improvement Strategic or Approved Action**	**Action Owner**	**Planned Completion Date**	**Consequence**	**Likelihood**	**Rating & Priority**
D3-PS01	**Public Safety**	Pit wall	Failure of pit / high wall	Member of the public, e.g. trespasser	Injury / fatality	Safety	1. Catastrophic	D. Possible	High 9	Pit designed for long term stability - Mine Plan, Geotechnical Management System, see Mine Closure Plan (MCP).	Effective	1. Catastrophic	E. Unlikely	High 14	Provide a plan for undertaking outstanding works	Flinders	Included in Mine Closure Plan	1. Catastrophic	E. Unlikely	High 14
										3rd party geotechnical review design / stability assessment, *Pit Slope Stability Assessment for Mine Closure* , see MCP.	Marginal				Ongoing monitoring program for agreed period to provide site management post mine closure, as per MCP, including minor remedial works if required.	Flinders / Government	At lease handback			
										Abandonment bund designed for mine closure, Factor of Safety 2.0 (based on Pit Slope Stability Assessment for Mine Closure, see above) and to WA guidelines to restrict access, see MCP.	Effective									
										Ramp access managed.	Effective				Review design of controls that require post closure maintenance	Flinders	Part of mine closure plan development			
										Stock fencing & signage, see MCP.	Marginal				Ongoing maintenance of fencing	Leaseholder	Post lease handback			
D3-PS02	**Public Safety**	Collapse of a surface dump	Failure of the dump	Member of the public, e.g. trespasser	Person(s) on dump when dump collapses - injury	Safety	3. Moderate	D. Possible	Medium 16	Site entry controls as per D3-PS01	Effective	3. Moderate	E. Unlikely	Low 21	Provide a plan for undertaking outstanding works	Flinders	Included in Mine Closure Plan	3. Moderate	E. Unlikely	Low 21
D3-PS03	**Public Safety**	Spontaneous combustion (Spon Comb) underneath surface	Failure of the dump surface	Person and equipment on the dump surface	Person(s) on dump when dump surface collapses - fatality / injury	Safety	1. Catastrophic	D. Possible	High 9	Application of Principal Mining Hazard Management Plan - Spontaneous Combustion LCC-HSSE-PHMP-008, see MCP.	Effective	1. Catastrophic	D. Possible	High 9				1. Catastrophic	E. Unlikely	High 14
										Improved understanding of propensity for Spon Comb of historical dumps, refer Mine Rehabilitation Spon Com Management Plan, and B3 report *Assessment of Spontaneous Combustion of Aged Coal and Rock Samples from LC Coal Mine*	Marginal				Dumps of high spon comb risk addressed in MCP	Flinders	Included in Mine Closure Plan			
D3-PS04	**Public Safety**	Gases, fire, smoke caused by geochemical processes in exposed coal	Access to domain pits	Member of the public, e.g. trespasser	Exposure to gases (eg carbon monoxide, hydrogen sulphide and sulphur dioxide). Medical affect on members of the public.	Safety	2. Major	D. Possible	High 12	Engage a Spon Comb/ geochemist (B3 Mining Services Technical Reports, MWH *Spontaneous Combustion Management of Waste Rock Dumps at LC),* and closure/ erosion expert (MWH Surface Water Assessment and Soil Characterisation) to assist with developing appropriate rehabilitation designs	Marginal	3. Moderate	E. Unlikely	Low 21	Recommendations include in development of designs	Flinders	included in MCP	3. Moderate	E. Unlikely	Low 21
										Implement the Rehab Spon Comb Management Plan incorporating third party reviews	Effective				Ongoing monitoring program for agreed period to provide site management post mine closure, as per MCP, including minor remedial works if required.	Flinders / Government	At lease handback			
										Site and pit entry controls as per D3-PS01	Effective									
										Monitor throughout rehabilitation phase to ensure effectiveness of controls	Effective									

LEIGH CREEK MINE CLOSURE - RISK REGISTER

DOMAIN 3 - LOWER SERIES - FEBRUARY 2017

Risk Identification							Inherent Risk Rating			Residual Risk Rating					Proposed Mitigation of Risk Exposure / Improvement Actions			Target / Future Risk Rating		
ID	**Category**	**Source**	**Pathway**	**Receptor**	**Potential Consequences**	**Exposure Type**	**Consequence**	**Likelihood**	**Rating & Priority**	**Current Approach or (Existing Controls)**	**Effectiveness**	**Consequence**	**Likelihood**	**Rating & Priority**	**Risk Reduction Treatment or Asset Improvement Strategic or Approved Action**	**Action Owner**	**Planned Completion Date**	**Consequence**	**Likelihood**	**Rating & Priority**
D3-PS05	**Public Safety**	Major spon com outbreak	Oxygen deficient atmosphere in pit, buildings or confined spaces due to spontaneous combustion	Member of the public in the base of the pit, e.g. trespasser	Adverse health impact	Safety	2. Major	E. Unlikely	Medium 18	Controls as per D3-PS04	Effective	4. Minor	E. Unlikely	Low 23	NOTE: Potential for asphyxiation is considered extremely unlikely. There has been no evidence of this risk over the life of the operation. It is noted that spon comb risks during post closure will be markedly reduced compared to running an operational mine (spon comb propensity testing program forecast reactivity to be negligible after 5 years).					
D3-PS06	**Public Safety**	Gases, fire, smoke caused by geochemical processes in the WRDs	Access to domain WRDs	Members of the public i.e. trespassers	Exposure to gases (eg carbon monoxide, hydrogen sulphide and sulphur dioxide). Medical affect on members of the public. Note - Minimal spon com issues in WRDs in this Domain.	Safety	2. Major	D. Possible	High 12	Engage a Spon Comb/ geochemist (B3 Mining Services Technical Reports, MWH *Spontaneous Combustion Management of Waste Rock Dumps at LC),* and closure/ erosion expert (MWH Surface Water Assessment and Soil Characterisation) to assist with developing appropriate rehabilitation designs	Marginal	2. Major	E. Unlikely	Medium 18	Recommendations included in development of designs	Flinders	Included in MCP	3. Moderate	E. Unlikely	Low 21
										Implement the Rehab Spon Comb Management Plan	Effective				Ongoing monitoring program for agreed period to provide site management post mine closure, as per MCP, including minor remedial works if required.	Flinders / Government	At lease handback			
										Monitoring and mapping of the WRDs as per Rehab Spon Comb Mgt Plan, MCP	Effective									
										Site and pit entry controls as per D1-PS01	Effective									
										Complete rehabilitation works based on independent reports, monitoring results and on the basis of risk	Effective									
										Monitor throughout rehabilitation phase to ensure effectiveness of controls, as per RSCMP	Effective									

LEIGH CREEK MINE CLOSURE - RISK REGISTER

DOMAIN 3 - LOWER SERIES - FEBRUARY 2017

Risk Identification							Inherent Risk Rating			Residual Risk Rating					Proposed Mitigation of Risk Exposure / Improvement Actions			Target / Future Risk Rating		
ID	Category	Source	Pathway	Receptor	Potential Consequences	Exposure Type	Consequence	Likelihood	Rating & Priority	Current Approach or (Existing Controls)	Effectiveness	Consequence	Likelihood	Rating & Priority	Risk Reduction Treatment or Asset Improvement Strategic or Approved Action	Action Owner	Planned Completion Date	Consequence	Likelihood	Rating & Priority
D3-PS07	**Public Safety**	Gases, fire, smoke caused by geochemical processes. Generation of flammable gases (eg carbon monoxide and hydrogen) produced when fighting fires with water.	Access to domain WRDs	Emergency services responding to the fire/ smoke or injured person	Exposure to gases (eg carbon monoxide, hydrogen sulphide and sulphur dioxide). Illness or injury of emergency service personnel. Note - Minimal spon com issues in WRDs in this Domain	Safety	2. Major	D. Possible	High 12	Engage a Spon Comb/ geochemist (B3 Mining Services Technical Reports, MWH *Spontaneous Combustion Management of Waste Rock Dumps at LC),* and closure/ erosion expert (MWH Surface Water Assessment and Soil Characterisation) to assist with developing appropriate rehabilitation designs	Marginal	3. Moderate	E. Unlikely	Low 21	Provide a schedule for undertaking outstanding works	Flinders	included in ADP Closure	3. Moderate	E. Unlikely	Low 21
										Implement the Rehab Spon Comb Management Plan	Effective				Ongoing monitoring program for agreed period to provide site management post mine closure, as per MCP, including minor remedial works if required.	Flinders / Government	At lease handback			
										Identify all emergency responder stakeholders, commence discussion around post closure management issues	Effective				Adopt established Emergency response plan	Government	At lease handback			
										Develop a recommended Emergency response plan to be circulated to relevant stakeholders. These may be targeted depending on job description of emergency personnel	Effective									
										Site and pit access controls as D3-PS01	Effective									
										Complete rehabilitation works based on independent reports, monitoring results and on the basis of risk	Effective									
										Monitor throughout rehabilitation phase to ensure effectiveness of controls, as per RSCMP, see MCP.	Effective									
D3-PS08	**Public Safety**	Major spon com outbreak	Oxygen deficient atmosphere in pit, or site buildings due to spon com	Emergency services responding to the fire/ smoke or injured person. Authorised persons undertaking work in the domain.	Adverse health impact	Safety	2. Major	E. Unlikely	Medium 18	Controls as per D3-PS04, D3-PS07	Effective	3. Moderate	E. Unlikely	Low 21	NOTE: Potential for asphyxiation is considered extremely unlikely. There has been no evidence of this risk over the life of the operation. It is noted that spon comb risks during post closure will be markedly reduced compared to running an operational mine (spon comb propensity testing program forecast reactivity to be negligible after 5 years).					
D3-PS09	**Public Safety**	Fire, smoke and gases caused by geochemical processes within the pit	Geochemical processes	Emergency services responding to the fire/ smoke or injured person	Exposure to gases (eg carbon monoxide, hydrogen sulphide and sulphur dioxide). Illness or injury of emergency service personnel	Safety	2. Major	D. Possible	High 12	Controls as per D3-PS04	Effective	3. Moderate	E. Unlikely	Low 21	Provide a schedule for undertaking outstanding works	Flinders	included in ADP Closure	3. Moderate	E. Unlikely	Low 21

LEIGH CREEK MINE CLOSURE - RISK REGISTER

DOMAIN 3 - LOWER SERIES - FEBRUARY 2017

Risk Identification							Inherent Risk Rating			Residual Risk Rating					Proposed Mitigation of Risk Exposure / Improvement Actions			Target / Future Risk Rating		
ID	**Category**	**Source**	**Pathway**	**Receptor**	**Potential Consequences**	**Exposure Type**	**Consequence**	**Likelihood**	**Rating & Priority**	**Current Approach or (Existing Controls)**	**Effectiveness**	**Consequence**	**Likelihood**	**Rating & Priority**	**Risk Reduction Treatment or Asset Improvement Strategic or Approved Action**	**Action Owner**	**Planned Completion Date**	**Consequence**	**Likelihood**	**Rating & Priority**
D3-PS10	**Safety**	Fire, smoke and gases caused by geochemical processes within the domain	Geochemical processes	Authorised persons undertaking work in the domain	Exposure to gases (eg carbon monoxide, hydrogen sulphide and sulphur dioxide). Illness or injury of authorised persons	Safety	2. Major	D. Possible	High 12	Controls as per D3-PS04	Effective	3. Moderate	E. Unlikely	Low 21	Adopt mine access procedures post closure	Government	At lease handback	3. Moderate	E. Unlikely	Low 21
										Principal Mining Hazard Management Plan - Spontaneous Combustion LCC-HSSE-PHMP-008	Effective									
										Develop mine access procedures for authorised personnel post closure	Effective									
D3-PS11	**Public Safety**	Fire, smoke and gases caused by geochemical processes within the domain	Geochemical processes	Off lease communities	Illness or injury of adjacent communities, odour/ / nuisance	Safety	4. Minor	D. Possible	Low 20	Controls as per D3-PS04 and D3-PS06	Effective	5. Insignificant	E. Unlikely	Low 25						
D3-VA01	**Visual Amenity from Lyndhurst Highway**	WRDs	Visual amenity	Visual amenity of surface waste dumps from highway	Public complaint - none received over history of mine	Community	5. Insignificant	E. Unlikely	Low 25						No further work required					
D3-SW01	**Surface water management**	Surface water runoff with suspended solids	Contaminated water flowing offsite eg dispersive materials have higher propensity	Runoff from perimeter dump faces into off lease creeks and native vegetation	Surface water leads to impact on downstream receptors	Environmental	4. Minor	E. Unlikely	Low 23	Review of surface water management plans and input into final designs to prevent outflow from pits and support subsequent evaporation	Effective	4. Minor	E. Unlikely	Low 23	Implement monitoring program for water quality	Flinders	Jul-18	5. Insignificant	E. Unlikely	Low 25
										Independent assessment (MWH *Surface Water Assessment*) of surface water management plans	Marginal				Ongoing monitoring program for agreed period to provide site management post mine closure, as per MCP, including minor remedial works if required.	Flinders / Government	At lease handback			
										Implement rehabilitation in accordance with agreed surface water management plan	Effective									
										Incorporate silt traps as part of rehabilitation design as recommended per independent review	Effective									
										Incorporate in retention dam overflow final configuration	Effective									
										Undertake material characterisation (MWH *Soil and waste characterisation,* see MCP) to identify suitable materials for use in rehab program	Marginal				Provide soil & cover operational guidelines for undertaking works	Flinders	Included in Mine Closure Plan			

LEIGH CREEK MINE CLOSURE - RISK REGISTER

DOMAIN 3 - LOWER SERIES - FEBRUARY 2017

Risk Identification							Inherent Risk Rating			Residual Risk Rating					Proposed Mitigation of Risk Exposure / Improvement Actions			Target / Future Risk Rating		
ID	**Category**	**Source**	**Pathway**	**Receptor**	**Potential Consequences**	**Exposure Type**	**Consequence**	**Likelihood**	**Rating & Priority**	**Current Approach or (Existing Controls)**	**Effectiveness**	**Consequence**	**Likelihood**	**Rating & Priority**	**Risk Reduction Treatment or Asset Improvement Strategic or Approved Action**	**Action Owner**	**Planned Completion Date**	**Consequence**	**Likelihood**	**Rating & Priority**
D3-SW02	**Surface water management**	Brine water in L5 from R/O plant	Overtopping into surface water catchment	Surface water catchment	Potential consequences are on surface water quality e.g. salinity Highly unlikely due to lower inflow and high evaporation rates, groundwater modelling indicates that over time it will run dry.	Environmental	4. Minor	E. Unlikely	Low 23											
D3-SW03	**Surface water management**	Acidic and metalliferous drainage AMD	AMD contaminated surface water from incident rainfall on external dump surfaces (particularly Western Bund or Northern Dumps), or seepage through waste dumps (particularly Northern Dumps), flowing offsite	Runoff from perimeter dump faces or seepage into off lease creeks and native vegetation	Surface water leads to impact on downstream receptors Note: there are no known areas of adverse environmental impact caused by AMD, and the surface water quality monitoring conducted over the past 20yrs has not discovered any indications of this risk. Further detail in MCP.	Environmental	5. Insignificant	E. Unlikely	Low 25	Ensure surface water runoff from within the mine pit is directed to internal settlement ponds/evaporation basins and pit lakes.	Effective	5. Insignificant	E. Unlikely	Low 25	Implement monitoring program for surface water quality, including seep survey	Flinders	Jul-18	5. Insignificant	E. Unlikely	Low 25
										Undertake material characterisation (MWH *Soil and waste characterisation,* and ongoing field testing, see MCP) to determine potential for AMD.	Marginal				Ongoing monitoring program for agreed period to provide site management post mine closure, as per MCP, including minor remedial works if required.	Flinders / Government	At lease handback			
										Implement recommendations from surface water assessments and Soils and Waste Characterisation, including - potential AMD material will be quarantined, and surface water runoff from these dumps to be contained - the Western Bund will be reprofiled and covered with the best suited material for outward facing dump slopes - dump slopes that have been previously rehabilitated will remain in situ, to reduce the risk of mobilising contaminants	Effective									
D3-SW04	**Surface water management**	Uncontrolled surface water	Failure of surface water control structures due to rainfall event	Off lease creeks and native vegetation	Uncontrolled surface water leads to impact on downstream receptors	Environmental	4. Minor	E. Unlikely	Low 23	Final landform design parameters have been advised by MWH following their consideration of key site risks and data presented within the Spontaneous Combustion report(s), Surface Water report, Groundwater Aspects report, and Soils and Waste Characterisation report.	Effective	5. Insignificant	E. Unlikely	Low 25	Implement monitoring program for surface water quality, including seep survey	Flinders	Jul-18	5. Insignificant	E. Unlikely	Low 25
										Surface water designs (including drainage structures) progressively developed and peer reviewed by MWH and Coffey, and assessed in accordance with the design principles recommended in the MWH surface water reports.	Effective				Ongoing monitoring program for agreed period to provide site management post mine closure, as per MCP, including minor remedial works if required.	Flinders / Government	At lease handback			
										Implement QAQC process to confirm constructed to design and using correct materials as per design	Effective									

LEIGH CREEK MINE CLOSURE - RISK REGISTER

DOMAIN 3 - LOWER SERIES - FEBRUARY 2017

Risk Identification							Inherent Risk Rating			Residual Risk Rating					Proposed Mitigation of Risk Exposure / Improvement Actions			Target / Future Risk Rating		
ID	**Category**	**Source**	**Pathway**	**Receptor**	**Potential Consequences**	**Exposure Type**	**Consequence**	**Likelihood**	**Rating & Priority**	**Current Approach or (Existing Controls)**	**Effectiveness**	**Consequence**	**Likelihood**	**Rating & Priority**	**Risk Reduction Treatment or Asset Improvement Strategic or Approved Action**	**Action Owner**	**Planned Completion Date**	**Consequence**	**Likelihood**	**Rating & Priority**
D3-GW01	**Ground water management**	Pit water	Seepage to groundwater	Local aquifer of high salinity water, low beneficial use	Localised interaction between surface and groundwater contained within the Leigh Creek basin, refer MWH report	Environmental	5. Insignificant	D. Possible	Low 24	Undertake independent assessment of ground water, MWH *Groundwater Aspects of Mine Closure*	Effective	5. Insignificant	E. Unlikely	Low 25						
D3-GW02	**Ground water management**	Brine water in L5 from R/O plant	Seepage to groundwater	Local aquifer of high salinity water, low beneficial use	Localised interaction between surface and groundwater Note: groundwater contained within the Leigh Creek basin and is poor quality. Groundwater modelling does not indicate a pit lake forming, suggesting that over time it will run dry.	Environmental	5. Insignificant	D. Possible	Low 24											
D3-GW03	**Ground water management**	Pit water	Seepage to shallow groundwater (eg Telford gravels)	Groundwater dependent ecosystems	Offsite migration of ground water leads to impact on downstream receptors Note: the updated groundwater report indicates "both the Main Series and the Upper Series pits will remain groundwater sinks with long-term water levels significantly below the pre-mining levels".	Environmental	5. Insignificant	E. Unlikely	Low 25	Undertake independent assessment of ground water, MWH *Groundwater Aspects of Mine Closure*	Effective	5. Insignificant	E. Unlikely	Low 25	Implement ground water monitoring program to confirm modelled water levels, and improve understanding of water qualities.	Flinders	Jul-18			
D3-GW04	**Ground water management**	Acidic and metalliferous drainage AMD	AMD from incident rainfall on dump surfaces (particularly Western Bund Wall and Northern Dumps), or seepage through waste dumps (particularly Northern Dumps), reports to underlying ground water (eg Telford gravels)	Groundwater dependent ecosystems	Offsite migration of ground water leads to impact on downstream receptors Note: updated MWH report concluded there "no groundwater ecosystems that could be affected by the closure of Lobe B were identified in this study".	Environmental	5. Insignificant	E. Unlikely	Low 25	As per D1-SW02	Effective	5. Insignificant	E. Unlikely	Low 25	Implement ground water monitoring program to confirm basin is a terminal sink, as well as seep survey to identify any seepage through waste dumps potentially reporting offsite	Flinders	Jul-18	5. Insignificant	E. Unlikely	Low 25
										Undertake independent assessment of ground water, MWH *Groundwater Aspects of Mine Closure*	Effective									
										Implement recommendations from surface water assessments and Soils and Waste Characterisation, including - potential AMD material will be quarantined, and surface water runoff from these dumps to be contained - the Western Bund will be reprofiled and covered with the best suited material for outward facing dump slopes - dump slopes that have been previously rehabilitated will remain in situ, to reduce the risk of mobilising contaminants	Effective									
D3-IH01	**Indigenous & Heritage**	Public / unauthorised access	Damage to heritage areas	Indigenous & Heritage areas	No known indigenous & Heritage areas in this Domain	Heritage									No further work required					

LEIGH CREEK MINE CLOSURE - RISK REGISTER

DOMAIN 3 - LOWER SERIES - FEBRUARY 2017

Risk Identification							Inherent Risk Rating			Residual Risk Rating					Proposed Mitigation of Risk Exposure / Improvement Actions			Target / Future Risk Rating		
ID	**Category**	**Source**	**Pathway**	**Receptor**	**Potential Consequences**	**Exposure Type**	**Consequence**	**Likelihood**	**Rating & Priority**	**Current Approach or (Existing Controls)**	**Effectiveness**	**Consequence**	**Likelihood**	**Rating & Priority**	**Risk Reduction Treatment or Asset Improvement Strategic or Approved Action**	**Action Owner**	**Planned Completion Date**	**Consequence**	**Likelihood**	**Rating & Priority**
D3-DM01	**Dust Management**	Dust	Wind exposure	Surrounding communities	Dust affects communities (nuisance only, no recorded dust complaints during life of mine)	Environmental	5. Insignificant	E. Unlikely	Low 25	No ongoing works, crust formed, self seeded natural vegetation re-establishment	Effective	5. Insignificant	E. Unlikely	Low 25						
D3-PS12	**Infrastructure**	Any existing infrastructure	Deteriorating infrastructure	Authorised or unauthorised access	No infrastructure in this domain	Safety														
D3-PS13	**Public Safety**	Ongoing weathering of coal faces	Small scale failures on pit walls leading to spon comb	Pit walls	Spontaneous combustion on pit walls	Safety	2. Major	E. Unlikely	Medium 18	Assess potential for small scale failures on pit walls to leading to spon comb, considering reduction in propensity due to oxidation via ageing	Ineffective	3. Moderate	E. Unlikely	Low 21	Ongoing monitoring program for agreed period to provide site management post mine closure, as per MCP, including minor remedial works if required.	Flinders / Government	At lease handback	3. Moderate	E. Unlikely	Low 21
										Any areas identified as having potential for small scale failures on in pit walls included in development of designs	Effective									
D3-PS14	**Public Safety**	Variable saturation of coal	Pit lake level fluctuations over time	Pit walls	Spontaneous combustion on pit walls	Safety	2. Major	E. Unlikely	Medium 18	Review modelled pit lake levels against pit lake coal locations	Effective	3. Moderate	E. Unlikely	Low 21	Ongoing monitoring program for agreed period to provide site management post mine closure, as per MCP, including minor remedial works if required.	Flinders / Government	At lease handback	3. Moderate	E. Unlikely	Low 21
										Inundation through increases in pit lake water levels	Effective									
D3-PS15	**Public safety**	Uncontrolled surface water	Failure of surface water control structures due to rainfall event	Areas rehabilitated due to risk of spontaneous combustion	Uncontrolled surface water leads to loss of control of spontaneous combustion mitigation measures	Safety	2. Major	E. Unlikely	Medium 18	Final landform design parameters have been advised by MWH following their consideration of key site risks and data presented within the Spontaneous Combustion report(s), Surface Water report, Groundwater Aspects report, and Soils and Waste Characterisation report.	Effective	5. Insignificant	E. Unlikely	Low 25	Ongoing monitoring program for agreed period to provide site management post mine closure, as per MCP, including minor remedial works if required.	Flinders / Government	At lease handback	5. Insignificant	E. Unlikely	Low 25
										Surface water designs (including drainage structures) progressively developed and peer reviewed by MWH and Coffey, and assessed in accordance with the design principles recommended in the MWH surface water reports.	Effective									
										Implement QAQC process to confirm constructed to design and using correct materials as per design	Effective									
D3-NF01	**Native Flora**	Increased risk of pests (flora)	Pests spreading across leases	Native flora	Potential increase in pests (flora)	Environmental	4. Minor	D. Possible	Low 20	Current pest control program ceases at mine closure		4. Minor	C. Likely	Medium 17	New landowner takes control for weed control with NRM Board	Government		4. Minor	D. Possible	Low 20

LEIGH CREEK MINE CLOSURE - RISK REGISTER

DOMAIN 3 - LOWER SERIES - FEBRUARY 2017

Risk Identification							Inherent Risk Rating			Residual Risk Rating					Proposed Mitigation of Risk Exposure / Improvement Actions			Target / Future Risk Rating		
ID	Category	Source	Pathway	Receptor	Potential Consequences	Exposure Type	Consequence	Likelihood	Rating & Priority	Current Approach or (Existing Controls)	Effectiveness	Consequence	Likelihood	Rating & Priority	Risk Reduction Treatment or Asset Improvement Strategic or Approved Action	Action Owner	Planned Completion Date	Consequence	Likelihood	Rating & Priority
										Consultation with North Flinders Group NRM	Effective									
D3-NF02	Native Fauna	Increased risk of pests (Fauna)	Pests breeding on leases	Native fauna	Potential increase in pests (fauna)	Environmental	4. Minor	D. Possible	Low 20	Current pest control program ceases at mine closure		4. Minor	C. Likely	Medium 17	New landowner takes control for pest control with NRM Board	Government		4. Minor	D. Possible	Low 20
										Consultation with North Flinders Group NRM	Effective									
D3-NF03	Native Fauna	Pit lakes, pit walls and geochemical processes	Access to pits and WRDs	Native fauna	Injury or death of native fauna	Environmental	5. Insignificant	E. Unlikely	Low 25	Low risk (as evidenced by history during life of mine), no further controls required										

LEIGH CREEK MINE CLOSURE - RELINQUISHMENT COMPLETION CRITERIA
DOMAIN 4 - ROM and CRUSHED COAL STOCKPILES - FEBRUARY 2017

ID	Risk Ref	Objective	Objective Measurement Criteria	What will be measured and form of measurement	Locations	Frequency	Control / baseline data	Leading indication criteria
D4-MC01	D4-PS01	All coal removed from ROM, and crushed stockpiles to ground level, to mitigate the potential risk of spontaneous combustion.	Verification that no loose coal remains on ROM or crushed coal stockpile areas, as per the relevant designs: LCK Map 19 Design Notes LCK Map 20 Design Notes.	Audit report by suitably qualified FP person (using as a minimum survey, QAQC data, thermal imaging results and photographs) confirms that there is no significant loose coal remaining on the ROM or crushed coal areas, as per the relevant Domain 4 Design Notes.	Domain 4 - ROM and Crushed Coal Stockpiles, Section 9.14.4, Fig 66, ADP Mine Closure. See relevant Design Notes for detailed locations and designs.	Once, upon completion of works in Domain 4	Mine Rehabilitation Inspection and Test Plan Procedure, Appendix PP. Section 13.5 Spontaneous Combustion Management Strategy for Closure, ADP Mine Closure. Section 14.4 - Domain 4, ADP Mine Closure. Mine Rehabilitation Spontaneous Combustion Management Plan, Appendix W, ADP Mine Closure. Relevant Design Notes.	Quarterly verification report of QA/QC procedures being implemented.
D4-MC02	D4-SW01 D4-SW02	Environmental risk of adverse impacts from surface water run off (including sedimentation and AMD) managed to ALARP by surface water controls that are constructed according to design.	Verification by an independent, suitably qualified person confirms that surface water controls in Domain 4 have been constructed to design, according to relevant designs: LCK Map 18 Design Notes LCK Map 19 Design Notes>	Report by an independent, suitably qualified FP engaged expert confirms construction of surface water controls in Domain 4 to design.	Domain 4 - ROM and Crushed Coal Stockpiles, Section 9.14.4, Fig 66, ADP Mine Closure. See relevant Design Notes for detailed location and designs.	Once, upon completion of surface water control rehabilitation works for Domain 4	Mine Rehabilitation Inspection and Test Plan Procedure, Appendix PP Section 13.6 Acid and Metalliferous Drainage, ADP Mine Closure Section 13.7 Surface Water Management Strategy for Closure, ADP Mine Closure Section 14.4 - Domain 4, ADP Mine Closure Operational Guidelines Soil and Waste Characterisation, Appendix Q Relevant Domain 4 Design Notes	Quarterly verification report of QA/QC procedures being implemented. Implementation of Surface Water Quality Monitoring Plan and Groundwater Monitoring Plan.
D4-MC03	D4-PS02	Public safety risk of access to rail corridor managed ALARP by securely fenced rail corridor.	Verification that the rail corridor is secure, and as per design (fencing, gate and signage), Section 13.3 ADP Mine Closure.	Survey and condition report by suitably qualified FP person confirms rail corridor is securely fenced, access road gate locked, with signage installed at the access road gate, in accordance with the design as per Section 13.3 ADP Mine Closure.	As per Statutory Mine Plans, Appendix OO ADP Mine Closure.	Once, one month prior to application to surrender lease.	Integrity of fencing, gate and signage via inspections.	NA
D4-MC04	D4-PS03	Public safety risks managed to ALARP by removal of infrastructure that has no ongoing value. *See also D5 - Infrastructure*	Verification that Domain 4 infrastructure, as identified for removal by the Generation Lessor Corporation (6th June 2016) and per Section 14.5 of the ADP Mine Closure, has been removed: - Mobile equipment and mobile plant * - Fuel storage and quick fill facilities - Transportable crib rooms.	Audit report by suitably qualified FP person confirming removal of Domain 4 infrastructure, as per Section 14.5 of the ADP Mine Closure. * Any equipment or infrastructure to be retained (eg dozers as per Section 19.1, and associated fuel storage in the form of self bunded transportable tank as per Section 15) must be in working condition, with maintenance records and condition reports provided where available.	Domain 4 - ROM and Crushed Coal Stockpiles, Section 9.14.4, Fig 66, ADP Mine Closure. As per Statutory Mine Plans, Appendix OO ADP Mine Closure.	Once, upon removal of infrastructure.	Section 14.5 Demolition of Mine Infrastructure, ADP Mine Closure. Section 14.4 - Domain 4, ADP Mine Closure. Refer Infrastructure Position paper, Appendix N ADP Mine Closure.	Progressive review of infrastructure requirements as documented in Quarterly Mine Closure Report to DSD.
D4-MC05 see D9-MC07	D4-NF01 D4-NF02	Environmental risks are managed to ALARP by future leaseholders / Government via a Flora and Fauna Pest Control plan provided by FP at handover.	*See D9-MC07*	*See D9-MC07*	*See D9-MC07*	*See D9-MC07*	*See D9-MC07*	*See D9-MC07*
D4-MC06	D4-PS01 D4-PS02 D4-PS03 D4-SW01 D4-NF01 D4-NF02	To manage future environmental and safety risks to ALARP by development of ongoing monitoring and management plan for post relinquishment.	Ongoing monitoring and management plan is developed in consultation with DSD and EPA and provided by FP for post relinquishment application by FP / contractor / future leaseholder / Government. Monitoring and management criteria to include: - ongoing maintenance of fencing and signage - periodic inspection of residual infrastructure - surface water run off quality monitoring (as required) - spontaneous combustion monitoring (as required) - periodic weed and pest control - periodic maintenance of landforms in particular following heavy rainfall events (as required).	Provision of a joint "Post Lease Transfer Monitoring and Maintenance Plan" for Leigh Creek Coalfields, as per Section 19.1 ADP Mine Closure.	Domain 4 - ROM and Crushed Coal Stockpiles, Section 9.14.4, Fig 66 ADP Mine Closure.	Once, within 12mths of approval of the ADP Mine Closure.	Data, designs and processes developed during Mine Closure.	Provision of discussion "Draft - Post Lease Transfer Monitoring and Maintenance Plan" 6 & 9 months post ADP approval. Quarterly Mine Closure report to DSD.

LEIGH CREEK MINE CLOSURE - RELINQUISHMENT COMPLETION CRITERIA

DOMAIN 4 - ROM and CRUSHED COAL STOCKPILES - FEBRUARY 2017

ID	Risk Ref	Objective	Objective Measurement Criteria	What will be measured and form of measurement	Locations	Frequency	Control / baseline data	Leading indication criteria
D4-MC07	See D5-MC05	Safety and environmental risks are managed to ALARP by implementation of EPA approved Voluntary Site Contamination Assessment Proposal (22nd Sept 2016), that identifies contaminated areas, develops and implements remediation plans (as required).	As per Section 14.5 ADP Closure plan and in accordance with EPA site contamination requirements: 1. Completion of - Preliminary Site Investigation (PSI) - Detailed Site Investigation (DSI) 2. Formation of remediation plan (as required) 3. Implementation of remediation plan to schedule (as required).	EPA approval of: - PSI report - DSI report - Site Remediation reports (as required).	Domain 4 - ROM and Crushed Coal Stockpiles, Section 9.14.4, Fig 66, ADP Mine Closure. See site Contamination Assessment Reports, Appendix R, ADP Mine Closure for detailed locations.	Once, prior to application of lease transfer.	Section 12.2 Site Contamination Assessment, ADP, Mine Closure. Site Contamination Assessment Reports, Appendix R, ADP Mine Closure. PSI, DSI, Remediation plan. Prior compliance inspections. Quarterly progress report as provided to EPA.	Quarterly progress report to be provided to EPA.

LEIGH CREEK MINE CLOSURE - RISK REGISTER

DOMAIN 4 - ROM and CRUSHED COAL STOCKPILES - FEBRUARY 2017

Risk Identification							Inherent Risk Rating			Residual Risk Rating					Proposed Mitigation of Risk Exposure / Improvement Actions			Target / Future Risk Rating		
ID	Category	Source	Pathway	Receptor	Potential Consequences	Exposure Type	Consequence	Likelihood	Rating & Priority	Current Approach or (Existing Controls)	Effectiveness	Consequence	Likelihood	Rating & Priority	Risk Reduction Treatment or Asset Improvement Strategic or Approved Action	Action Owner	Planned Completion Date	Consequence	Likelihood	Rating & Priority
D4-PS01	**Public Safety**	Gases, fire, smoke cause by geochemical processes, moisture	Access to domain	Members of the public & authorised personnel	Adverse health impact	Safety	2. Major	D. Possible	High 12	Optimised operational plan to haul all coal to APS and removal of all substantive coal from ROM area.	Effective	5. Insignificant	E. Unlikely	Low 25						
										Review of domain included in independent spon com review.	Marginal				No remaining coal so no potential for spon comb.					
										Complete rehabilitation works based on independent reports, monitoring results and on the basis of risk.	Effective									
D4-PS02	**Public Safety**	Within mine area	Access to domain	Members of the public & authorised personnel	Injury	Safety	4. Minor	E. Unlikely	Low 23	Stock fencing & signage, see MCP.	Marginal	5. Insignificant	E. Unlikely	Low 25	Ongoing maintenance of fencing.	Leaseholder	Post lease handback			
										Rail corridor and access road fenced and locked, signage installed at access road gate.	Marginal									
D4-DM01	**Dust Management**	Dust	Wind exposure	Surrounding communities	Dust affects communities (nuisance only, no recorded dust complaints during life of mine)	Environmental	5. Insignificant	E. Unlikely	Low 25	Area cleared of stockpiled coal, no ongoing works, crust formed, self seeded natural vegetation re-establishment.	Effective	5. Insignificant	E. Unlikely	Low 25						
D4-SW01	**Surface water management**	Surface water runoff with suspended solids	Contaminated water flowing offsite eg dispersive materials have higher propensity	Runoff from domain into off lease creeks and native vegetation	Surface water leads to impact on downstream receptors	Environmental	4. Minor	C. Likely	Medium 17	Independent assessment (MWH *Surface Water Assessment*) of surface water management plans.	Marginal	4. Minor	E. Unlikely	Low 23	Implement monitoring program for water quality.	Flinders	Jul-18	5. Insignificant	E. Unlikely	Low 25
										Undertake material characterisation (MWH *Soil and waste characterisation,* and ongoing field testing, see MCP) to identify suitable materials for use in rehab program.	Effective				Provide operational guidelines for undertaking works.	Flinders	Included in Mine Closure Plan			
										Review of surface water management plans and input into final designs to prevent outflow from domain and support subsequent evaporation.	Effective				Ongoing monitoring program for agreed period to provide site management post mine closure, as per MCP, including minor remedial works if required.	Flinders / Government	At lease handback			
										Implement rehabilitation in accordance with agreed surface water management plan.	Effective									

LEIGH CREEK MINE CLOSURE - RISK REGISTER

DOMAIN 4 - ROM and CRUSHED COAL STOCKPILES - FEBRUARY 2017

Risk Identification							Inherent Risk Rating			Residual Risk Rating					Proposed Mitigation of Risk Exposure / Improvement Actions			Target / Future Risk Rating		
ID	Category	Source	Pathway	Receptor	Potential Consequences	Exposure Type	Consequence	Likelihood	Rating & Priority	Current Approach or (Existing Controls)	Effectiveness	Consequence	Likelihood	Rating & Priority	Risk Reduction Treatment or Asset Improvement Strategic or Approved Action	Action Owner	Planned Completion Date	Consequence	Likelihood	Rating & Priority
										Incorporate silt traps as part of rehabilitation design as recommended per independent review.	Effective									
D4-SW02	**Surface water management**	Uncontrolled surface water	Failure of surface water control structures due to rainfall event	Off lease creeks and native vegetation	Uncontrolled surface water leads to impact on downstream receptors	Environmental	4. Minor	E. Unlikely	Low 23	Final landform design parameters have been advised by MWH following their consideration of key site risks and data presented within the Spontaneous Combustion report(s), Surface Water report, Groundwater Aspects report, and Soils and Waste Characterisation report.	Effective	5. Insignificant	E. Unlikely	Low 25	Implement monitoring program for surface water quality, including seep survey.	Flinders	Jul-18	5. Insignificant	E. Unlikely	Low 25
										Surface water designs (including drainage structures) progressively developed and peer reviewed by MWH and Coffey, and assessed in accordance with the design principles recommended in the MWH surface water reports.	Effective				Ongoing monitoring program for agreed period to provide site management post mine closure, as per MCP, including minor remedial works if required.	Flinders / Government	At lease handback			
										Implement QAQC process to confirm constructed to design and using correct materials as per design.	Effective									
D4-PS03	**Infrastructure**	Any existing infrastructure	Deteriorating infrastructure	Authorised or unauthorised access	Injury	Safety	3. Moderate	D. Possible	Medium 16	Remove all infrastructure from the domain, unless future use identified and management transferred to future leaseholder.	Effective	5. Insignificant	E. Unlikely	Low 25	See Domain 5 - Infrastructure.					
D4-IH01	**Indigenous & Heritage**	Public / unauthorised access	Damage to heritage areas	Indigenous & Heritage areas	No known indigenous & Heritage areas in this Domain	Heritage									No further work required.					
D4-NF01	**Native Flora**	Increased risk of pests (flora)	Pests spreading across leases	Native flora	Potential increase in pests (flora)	Environmental	4. Minor	D. Possible	Low 20	Current pest control program ceases at mine closure.		4. Minor	C. Likely	Medium 17	New landowner takes control for weed control with NRM Board.	Government		4. Minor	D. Possible	Low 20
										Consultation with North Flinders Group NRM.	Effective									
D4-NF02	**Native Fauna**	Increased risk of pests (Fauna)	Pests breeding on leases	Native fauna	Potential increase in pests (fauna)	Environmental	4. Minor	D. Possible	Low 20	Current pest control program ceases at mine closure.		4. Minor	C. Likely	Medium 17	New landowner takes control for pest control with NRM Board.	Government		4. Minor	D. Possible	Low 20
										Consultation with North Flinders Group NRM.	Effective									
D4-NF03	**Native Fauna**	Pit lakes, pit walls and geochemical processes	Access to pits and WRDs	Native fauna	Injury or death of native fauna	Environmental	5. Insignificant	E. Unlikely	Low 25	Low risk (as evidenced by history during life of mine), no further controls required.										

LEIGH CREEK MINE CLOSURE - RELINQUISHMENT COMPLETION CRITERIA
DOMAIN 5 - INFRASTRUCTURE - FEBRUARY 2017

ID	Risk Ref	Objective	Objective Measurement Criteria	What will be measured and form of measurement	Locations	Frequency	Control / baseline data	Leading indication criteria
D5-MC01 see D9-MC01	D5-PS01 D5-PS02 D5-PS03 D5-PS04 D5-PS05 D5-PS06 D5-PS07 D5-PS08 D5-PS09 D5-PS11 D5-PS13	Public safety risk of access to mine site managed to ALARP by fencing.	*See D9-MC01*	*See D9-MC01*	*See D9-MC01*	*See D9-MC01*	*See D9-MC01*	*See D9-MC01*
D5-MC02 see D9-MC03	D5-PS01 D5-PS02 D5-PS03 D5-PS04 D5-PS05 D5-PS06 D5-PS07 D5-PS08 D5-PS09 D5-PS11 D5-PS13	Public safety risk of access to mine site managed to ALARP by future leaseholder / government via controlled site access procedure.	*See D9-MC03*	*See D9-MC03*	*See D9-MC03*	*See D9-MC03*	*See D9-MC03*	*See D9-MC03*
D5-MC03	D5-PS01 D5-PS02 D5-PS03 D5-PR01 D5-PS04 D5-PS06 D5-CN05 D5-ST01 D5-TT01 D5-US01 D5-BO01 D5-TC01 D5-WD01 D5-PS14 D5-PS15 D5-PS17	Public safety risks managed to ALARP by removal of infrastructure that has no ongoing value.	Verification that Domain 5 infrastructure, as identified for removal by the Generation Lessor Corporation (6th June 2016) and per Section 14.5 of the ADP Mine Closure, has been removed. * - Coal Handling Facilities including coal loader bins, control tower, crushers and transfer tower and reclaim - Fuel Storage Tanks – Telford - Mobile equipment and mobile plant - Abrasive blasting facility - Fuel storage and chemical storage facilities	Audit report by suitably qualified FP person confirming removal of Domain 5 infrastructure, as per Section 14.5 of the ADP Mine Closure. * Any equipment or infrastructure to be retained (eg dozers as per Section 19.1, and associated fuel storage in the form of self bunded transportable tank as per Section 15) must be in working condition, with maintenance records and condition reports provided where available.	As per Statutory Mine Plans, Appendix OO ADP Mine Closure.	Once, upon removal of infrastructure.	Section 14.5 Coalfield Infrastructure - Demolition of Mine Infrastructure, ADP Mine Closure. Refer Infrastructure Position paper, Appendix N ADP Mine Closure.	Progressive review of infrastructure needs as documented in Quarterly Mine Closure Report to DSD.
D5-MC04	D5-PS01 D5-PS02 D5-PS03 D5-PS04 D5-PS05 D5-PS06 D5-PS07 D5-PS08 D5-PS09 D5-PS10 D5-PS11 D5-PS12 D5-PS13 D5-TT01 D5-BO01 D5-TC01 D5-WD01 D5-PS15	To manage future environmental and safety risks to ALARP by development of ongoing monitoring and management plan for post relinquishment.	Ongoing monitoring and management plan is developed in consultation with DSD and EPA and provided by FP for post relinquishment application by FP / contractor / future leaseholder / Government. Monitoring and management criteria to include: - ongoing maintenance of fencing and signage - periodic inspection of residual infrastructure - surface water run off quality monitoring (as required) - spontaneous combustion monitoring (as required) - periodic weed and pest control - periodic maintenance of landforms in particular following heavy rainfall events (as required).	Provision of a joint "Post Lease Transfer Monitoring and Maintenance Plan" for Leigh Creek Coalfields, as per Section 19.1 ADP Mine Closure.	Domain 5 - Coalfield Infrastructure, Section 9.14.5, Fig 67, ADP Mine Closure.	Once, within 12mths of approval of the ADP Mine Closure.	Data, designs and processes developed during Mine Closure.	Provision of discussion "Draft - Post Lease Transfer Monitoring and Maintenance Plan" 6 & 9 months post ADP approval. Quarterly Mine Closure report to DSD.
D5-MC05	D5-PS03 D5-PS12 D5-CN05 D5-ST01 D5-TT01 D5-US01 D5-BD01 D5-TC01 D5-HS01 D5-WD01 D5-PS14 D5-PS16	Safety and environmental risks are managed to ALARP by implementation of EPA approved Voluntary Site Contamination Assessment Proposal (22nd Sept 2016), that identifies contaminated areas, develops and implements remediation plans (as required).	As per Section 14.5 ADP Closure plan and in accordance with EPA site contamination requirements: 1. Completion of - Preliminary Site Investigation (PSI) - Detailed Site Investigation (DSI) 2. Formation of remediation plan (as required) 3. Implementation of remediation plan to schedule (as required).	EPA approval of: - PSI report - DSI report - Site Remediation reports (as required).	Domain 5 - Infrastructure, Section 9.14.5, Fig 67, ADP Mine Closure. See site Contamination Assessment Reports, Appendix R, ADP Mine Closure for detailed locations.	Once, prior to application of lease transfer.	Section 12.2 Site Contamination Assessment, ADP, Mine Closure. Site Contamination Assessment Reports, Appendix R, ADP Mine Closure. PSI, DSI, Remediation plan. Prior compliance inspections. Quarterly progress report as provided to EPA.	Quarterly progress report to be provided to EPA.

LEIGH CREEK MINE CLOSURE - RELINQUISHMENT COMPLETION CRITERIA

DOMAIN 5 - INFRASTRUCTURE - FEBRUARY 2017

ID	Risk Ref	Objective	Objective Measurement Criteria	What will be measured and form of measurement	Locations	Frequency	Control / baseline data	Leading indication criteria
D5-MC06	D5-PS12	Safety and environmental risks of exposed asbestos cement piping are managed to ALARP by covering the piping, signposting and mapping the locations, in accordance with EPA requirements.	Verification that exposed asbestos cement piping is covered, and locations signposted and mapped, according to Section 14.5 ADP Mine Closure, and EPA requirements.	Audit report by suitably qualified FP person (including survey, QA/QC data and photographs) confirms exposed asbestos cement piping has been covered, and locations signposted and mapped, as per Section 14.5 ADP Mine Closure, and in accordance with EPA requirements.	As per Statutory Mine Plans, Appendix OO ADP Mine Closure	Once, at completion of works	Section 14.5 ADP Mine Closure Mine statutory plan	Progressive QC process by completed area.

LEIGH CREEK MINE CLOSURE - RISK REGISTER

DOMAIN 5 - INFRASTRUCTURE - FEBRUARY 2017

Risk Identification							Inherent Risk Rating			Residual Risk Rating					Proposed Mitigation of Risk Exposure / Improvement Actions			Target / Future Risk Rating		
ID	**Category**	**Source**	**Pathway**	**Receptor**	**Potential Consequences**	**Exposure Type**	**Consequence**	**Likelihood**	**Rating & Priority**	**Current Approach or (Existing Controls)**	**Effectiveness**	**Consequence**	**Likelihood**	**Rating & Priority**	**Risk Reduction Treatment or Asset Improvement Strategic or Approved Action**	**Action Owner**	**Planned Completion Date**	**Consequence**	**Likelihood**	**Rating & Priority**
D5-PS01	**Public Safety**	Infrastructure - rail loop	Railway loop deteriorates	Member of public or authorised person access	Injury	Safety	4. Minor	E. Unlikely	Low 23	Level crossings and track are maintained to a safe condition.	Effective	4. Minor	E. Unlikely	Low 23	Agree rail loop to be retained.	Government / Flinders	Jun-16			
										Note: Recommend that loop stays as it is a critical part of rail infrastructure. If retained - loop to be maintained.					Infrastructure condition to be monitored by leaseholder / SA Government.	Leaseholder / Government	Jun-16			
D5-PS02	**Public Safety**	Infrastructure - access road	Access road deteriorates, leading to a road traffic incident on the mine access road	Member of public or authorised person access	Injury	Safety	4. Minor	E. Unlikely	Low 23	Road condition monitored, required for access to cemetery and any other remaining infrastructure. Low level of usage	Effective	4. Minor	E. Unlikely	Low 23	Agree road to be retained for access to site / cemetery and any other retained infrastructure	Government / Flinders	Jun-16	4. Minor	E. Unlikely	Low 23
										Ensure road in sound condition on handback of leases	Effective				Access road to be monitored by leaseholder /government	Leaseholder / Government	Jun-16			
															Realign access road to accommodate abandonment bunds	Flinders	Prior to relinquishment, as per MCP			
D5-PS03	**Public Safety**	Retained workshops	Workshop condition deteriorates posing a safety risk to authorised and unauthorised persons	Injury / fatality to authorised / unauthorised person	Injury	Safety	2. Major	D. Possible	High 12	Retain infrastructure for future operations, and transfer management to future leaseholder	Effective	2. Major	E. Unlikely	Medium 18	Agree workshops to be retained.	Government / Flinders	Jun-16	2. Major	E. Unlikely	Medium 18
										Access to ladders gated off	Marginal				Infrastructure condition to be monitored by leaseholder / SA Government	Leaseholder / Government	Jun-16			
										Removal of all hazardous substances	Effective									
D5-PR01	**Community Relations**	Existing infrastructure	Public reaction to loss of key assets (eg workshops, electrical)	Government & Flinders	Adverse public reaction	Community	3. Moderate	D. Possible	Medium 16	Demolish in accordance with previous ADP	Ineffective	3. Moderate	D. Possible	Medium 16	Agree to key infrastructure being retained (refer to D5-PS01,02,&03)	Government / Flinders	Jun-16	5. Insignificant	E. Unlikely	Low 25
D5-PS04	**Public Safety**	Coal plant (crusher, conveyor, loading bins)	Deteriorating infrastructure poses safety risk	Injury / fatality to authorised / unauthorised person	Injury / fatality	Safety	1. Catastrophic	D. Possible	High 9	Site access controls as D1-PS01	Marginal	1. Catastrophic	E. Unlikely	High 14	Agree to remove/demolish infrastructure	Government	Jun-16	5. Insignificant	E. Unlikely	Low 25
										Demolish/removal of Coal Plant and immediately surrounding Infrastructure as per MCP	Effective	5. Insignificant	E. Unlikely	Low 25	No further work required					

LEIGH CREEK MINE CLOSURE - RISK REGISTER

DOMAIN 5 - INFRASTRUCTURE - FEBRUARY 2017

Risk Identification							Inherent Risk Rating			Residual Risk Rating					Proposed Mitigation of Risk Exposure / Improvement Actions			Target / Future Risk Rating		
ID	**Category**	**Source**	**Pathway**	**Receptor**	**Potential Consequences**	**Exposure Type**	**Consequence**	**Likelihood**	**Rating & Priority**	**Current Approach or (Existing Controls)**	**Effectiveness**	**Consequence**	**Likelihood**	**Rating & Priority**	**Risk Reduction Treatment or Asset Improvement Strategic or Approved Action**	**Action Owner**	**Planned Completion Date**	**Consequence**	**Likelihood**	**Rating & Priority**
D5-PS05	**Public Safety**	Major spon com outbreak	Oxygen deficient atmosphere in buildings or confined spaces due to spontaneous combustion	Member of the public in the domain, e.g. trespasser	Adverse health impact	Safety	2. Major	E. Unlikely	Medium 18	Controls as per D1-PS01	Effective	4. Minor	E. Unlikely	Low 23	NOTE: Potential for asphyxiation is considered extremely unlikely. There has been no evidence of this risk over the life of the operation. It is noted that spon comb risks during post closure will be markedly reduced compared to running an operational mine (spon comb propensity testing program forecast reactivity to be negligible after 5 years).					
D5-PS06	**Public Safety**	Gases, fire, smoke caused by geochemical processes	Access to domain	Member of the public, e.g. trespasser	Exposure to gases (eg carbon monoxide, hydrogen sulphide and sulphur dioxide). Medical affect on members of the public. Note - Minimal spon com issues within this Domain.	Safety	2. Major	E. Unlikely	Medium 18	Engage a Spon Comb/ geochemist (B3 Mining Services Technical Reports, MWH *Spontaneous Combustion Management of Waste Rock Dumps at LC),* and closure/ erosion expert (MWH Surface Water Assessment and Soil Characterisation) to assist with developing appropriate rehabilitation designs	Marginal	3. Moderate	E. Unlikely	Low 21	Recommendations include in development of designs	Flinders	included in MCP	3. Moderate	E. Unlikely	Low 21
										Implement the Rehab Spon Comb Management Plan incorporating third party reviews	Effective				Ongoing monitoring program for agreed period to provide site management post mine closure, as per MCP, including minor remedial works if required.	Flinders / Government	At lease handback			
										Site entry controls as per D1-PS01	Effective									
										ROM and crushed stockpile areas cleared of stockpiled coal	Effective									
										Monitor throughout rehabilitation phase to ensure effectiveness of controls	Effective									
D5-PS07	**Public Safety**	Gases, fire, smoke caused by geochemical processes. Generation of flammable gases (eg carbon monoxide and hydrogen) produced when fighting fires with water.	Access to domain	Emergency services responding to the fire/ smoke or injured person	Exposure to gases (eg carbon monoxide, hydrogen sulphide and sulphur dioxide). Illness or injury of emergency service personnel. Note - Minimal spon com issues within this Domain	Safety	2. Major	D. Possible	High 12	Engage a Spon Comb/ geochemist (B3 Mining Services Technical Reports, MWH *Spontaneous Combustion Management of Waste Rock Dumps at LC),* and closure/ erosion expert (MWH Surface Water Assessment and Soil Characterisation) to assist with developing appropriate rehabilitation designs	Marginal	3. Moderate	E. Unlikely	Low 21	Recommendations included in development and implementations of mine rehabilitation designs	Flinders	Included in MCP	3. Moderate	E. Unlikely	Low 21
										Implement the Rehab Spon Comb Management Plan	Effective				Ongoing monitoring program for agreed period to provide site management post mine closure, as per MCP, including minor remedial works if required.	Flinders / Government	At lease handback			
										Identify all emergency responder stakeholders, commence discussion around post closure management issues	Effective				Adopt established Emergency response plan	Government	At lease handback			

LEIGH CREEK MINE CLOSURE - RISK REGISTER

DOMAIN 5 - INFRASTRUCTURE - FEBRUARY 2017

Risk Identification							Inherent Risk Rating			Residual Risk Rating					Proposed Mitigation of Risk Exposure / Improvement Actions			Target / Future Risk Rating		
ID	Category	Source	Pathway	Receptor	Potential Consequences	Exposure Type	Consequence	Likelihood	Rating & Priority	Current Approach or (Existing Controls)	Effectiveness	Consequence	Likelihood	Rating & Priority	Risk Reduction Treatment or Asset Improvement Strategic or Approved Action	Action Owner	Planned Completion Date	Consequence	Likelihood	Rating & Priority
										Develop a recommended Emergency response plan to be circulated to relevant stakeholders. These may be targeted depending on job description of emergency personnel	Effective									
										Controls as for D1-PS01	Effective									
										ROM and crushed stockpile areas cleared of stockpiled coal	Effective									
										Monitor throughout rehabilitation phase to ensure effectiveness of controls, as per RSCMP, see MCP.	Effective									
D5-PS08	**Public Safety**	Major spon com outbreak	Oxygen deficient atmosphere in site buildings or confined spaces due to spon com	Emergency services responding to the fire/ smoke or injured person. Authorised persons undertaking work in the domain.	Adverse health impact	Safety	2. Major	E. Unlikely	Medium 18	Controls as per D5-PS07	Effective	3. Moderate	E. Unlikely	Low 21	NOTE: Potential for asphyxiation is considered extremely unlikely. There has been no evidence of this risk over the life of the operation. It is noted that spon comb risks during post closure will be markedly reduced compared to running an operational mine (spon comb propensity testing program forecast reactivity to be negligible after 5 years).					
D5-PS09	**Safety**	Fire, smoke and gases caused by geochemical processes within the domain	Geochemical processes	Authorised persons undertaking work in the domain	Exposure to gases (eg carbon monoxide, hydrogen sulphide and sulphur dioxide). Illness or injury of authorised persons	Safety	2. Major	D. Possible	High 12	Controls as per D5-PS07	Effective	3. Moderate	E. Unlikely	Low 21	Adopt mine access procedures post closure	Government	At lease handback	3. Moderate	E. Unlikely	Low 21
										Application of Principal Mining Hazard Management Plan - Spontaneous Combustion LCC-HSSE-PHMP-008	Effective									
										Develop mine access procedures for authorised personnel post closure	Marginal									
D5-PS10	**Public Safety**	Fire, smoke and gases caused by geochemical processes within the domain	Geochemical processes	Off lease communities	Illness or injury of adjacent communities, odour/ / nuisance	Safety	4. Minor	D. Possible	Low 20	Controls as per D5-PS07	Effective	5. Insignificant	E. Unlikely	Low 25						
D5-PS11	**Public Safety**	Power Supply	Electricity infrastructure	Physical Injury to authorised / unauthorised person	Injury / fatality	Safety	1. Catastrophic	D. Possible	High 9	Isolation of electricity supply by ElectraNet at substation on closure	Effective	5. Insignificant	E. Unlikely	Low 25	Agree electrical distribution network to be retained	Government	Jun-16	5. Insignificant	E. Unlikely	Low 25

LEIGH CREEK MINE CLOSURE - RISK REGISTER

DOMAIN 5 - INFRASTRUCTURE - FEBRUARY 2017

Risk Identification							Inherent Risk Rating			Residual Risk Rating					Proposed Mitigation of Risk Exposure / Improvement Actions			Target / Future Risk Rating		
ID	**Category**	**Source**	**Pathway**	**Receptor**	**Potential Consequences**	**Exposure Type**	**Consequence**	**Likelihood**	**Rating & Priority**	**Current Approach or (Existing Controls)**	**Effectiveness**	**Consequence**	**Likelihood**	**Rating & Priority**	**Risk Reduction Treatment or Asset Improvement Strategic or Approved Action**	**Action Owner**	**Planned Completion Date**	**Consequence**	**Likelihood**	**Rating & Priority**
										Site access controls as D1-PS01	Effective				Periodic inspection of residual electrical infrastructure on closure to ensure a safe condition	Government	Post relinquishment			
										Remove all electricity infrastructure not required to feed any retained infrastructure	Effective				Provision of information on closure regarding the residual electrical infrastructure	Flinders	Closure			
										If infrastructure is retained, maintain in a safe condition and prevent unauthorised access and isolate local supply	Marginal	4. Minor	E. Unlikely	Low 23						
D5-CN05	**PCB contaminated transformers**	Transformers	Potential leakage	Environment	Environmental impact	Environmental	4. Minor	D. Possible	Low 20	Testing and removal of PCB by licenced contractor	Effective	5. Insignificant	E. Unlikely	Low 25						
										Removal of redundant electrical infrastructure as for D5-PS10										
										Site contamination assessment										
D5-PS12	**Public Safety**	Asbestos cement piping	Asbestos fibres	Authorised / unauthorised person / environment	Potential health issue / environmental contamination	Safety	2. Major	D. Possible	High 12	Cover, signpost and survey any exposed asbestos cement pipeline	Effective	5. Insignificant	E. Unlikely	Low 25						
										Township R/O plant brine asbestos pipeline (required post mine closure for brine output to L5 pit). Not part of Mine infrastructure, forms part of Township leased assets (map of piping location on closure plan) not owned by Flinders. This risk relates to the infrastructure not being retained & maintained on closure	Ineffective	2. Major	D. Possible	High 12	Maintenance of pipeline by party responsible for Township water supply	Leaseholder / Government	Jan-17	2. Major	E. Unlikely	Medium 18
D5-WI01	**Water infrastructure**	poly piping	failure of piping	outer lying communities reliant on potable water supply	Failure to supply potable water to communities	Community	4. Minor	D. Possible	Low 20	Township R/O plant pot water poly pipeline for community water supply. Not part of Mine infrastructure, forms part of Township leased assets not owned by Flinders	Ineffective	4. Minor	D. Possible	Low 20	Maintenance of pipeline by party responsible for Township water supply	Leaseholder / Government	Jan-17	4. Minor	D. Possible	Low 20
D5-ST01	**Septic tanks**	septic tanks	leakage of system	soil / groundwater	adverse impact on environment	Environmental	4. Minor	D. Possible	Low 20	Remove septic tanks	Effective	5. Insignificant	E. Unlikely	Low 25	Agree to retain septic tanks relevant to retained infrastructure, remove others	Leaseholder / Government	Jun-16	4. Minor	E. Unlikely	Low 23

LEIGH CREEK MINE CLOSURE - RISK REGISTER

DOMAIN 5 - INFRASTRUCTURE - FEBRUARY 2017

Risk Identification							Inherent Risk Rating			Residual Risk Rating					Proposed Mitigation of Risk Exposure / Improvement Actions			Target / Future Risk Rating		
ID	**Category**	**Source**	**Pathway**	**Receptor**	**Potential Consequences**	**Exposure Type**	**Consequence**	**Likelihood**	**Rating & Priority**	**Current Approach or (Existing Controls)**	**Effectiveness**	**Consequence**	**Likelihood**	**Rating & Priority**	**Risk Reduction Treatment or Asset Improvement Strategic or Approved Action**	**Action Owner**	**Planned Completion Date**	**Consequence**	**Likelihood**	**Rating & Priority**
										Retain septic tanks relevant to any infrastructure retention	Marginal	4. Minor	D. Possible	Low 20	Infrastructure condition to be monitored by leaseholder / Government	Leaseholder / Government				
D5-PS13	**Public Safety**	Main Series void	Trespass into MS void	Public visiting cemetery	Injury / fatality	safety	1. Catastrophic	D. Possible	High 9	Controls as per D6-PS01	Effective	1. Catastrophic	E. Unlikely	High 14	Manage ongoing access protocols to cemetery	Leaseholder / Government	Post lease handback			
D5-DM01	**Dust Management**	Dust around coal plant / reclaim stockpile	Wind exposure	Authorised access individuals / surrounding communities	Dust affects communities (nuisance only)	Environmental	4. Minor	E. Unlikely	Low 23	Area cleared of stockpiled coal, no ongoing works, crust formed, self seeded natural vegetation re-establishment	Effective	5. Insignificant	E. Unlikely	Low 25						
D5-TT01	**Telford contamination**	Telford Tanks	Historical contamination (pre-2000) from tanks	Environment	Localised contamination, groundwater impact	Environmental	4. Minor	B. Probable	High 13	Site contamination assessment	Marginal	5. Insignificant	E. Unlikely	Low 25						
										Implement site remediation measures as required	Effective									
										Remove tanks as per MCP, if required by the site contamination assessment and if no future users are identified	Effective									
D5-US01	**Underground Storage Tanks**	Six underground fuel storage tanks at Stores, 2 in active use	Potential seepage	Environment	Localised contamination	Environmental	3. Moderate	D. Possible	Medium 16	Site contamination assessment	Marginal	5. Insignificant	E. Unlikely	Low 25						
										Implement site remediation measures as required	Effective									
										Remove tanks as per MCP	Effective									
D5-BO01	**Bulk oil distribution facility at workshop**	Tanks and pipework	Potential leakage to ground	Limited environmental receptors	Localised contamination	Environmental	3. Moderate	D. Possible	Medium 16	Drain and dispose of all waste as per site MCP	Effective	5. Insignificant	E. Unlikely	Low 25	Agree bulk oil distribution facility be retained as part of workshop buildings infrastructure	Leaseholder / Government	Jun-16	4. Minor	E. Unlikely	Low 23
D5-TC01	**Telecommunications**	Telecommunications and radio infrastructure	Deterioration of equipment	Environment	Deteriorated equipment remains in situ	Environmental	4. Minor	D. Possible	Low 20	Provide details and plans of existing telecommunications infrastructure	Effective	4. Minor	D. Possible	Low 20	Agree telecommunications infrastructure be retained	Leaseholder / Government	Jun-16	4. Minor	E. Unlikely	Low 23
															Infrastructure condition to be monitored by leaseholder / Government	Leaseholder / Government				

LEIGH CREEK MINE CLOSURE - RISK REGISTER

DOMAIN 5 - INFRASTRUCTURE - FEBRUARY 2017

Risk Identification							Inherent Risk Rating			Residual Risk Rating					Proposed Mitigation of Risk Exposure / Improvement Actions			Target / Future Risk Rating		
ID	Category	Source	Pathway	Receptor	Potential Consequences	Exposure Type	Consequence	Likelihood	Rating & Priority	Current Approach or (Existing Controls)	Effectiveness	Consequence	Likelihood	Rating & Priority	Risk Reduction Treatment or Asset Improvement Strategic or Approved Action	Action Owner	Planned Completion Date	Consequence	Likelihood	Rating & Priority
D5-HS01	**Hazardous substances**	Inventory of hazardous chemicals and substances in the stores / workshops	Potential leakage	Minor leaks / spills to ground	Deteriorated equipment remains in situ	Environmental	4. Minor	D. Possible	Low 20	Dispose of all hazardous substances as per EPA closure requirements listed in MCP	Effective	5. Insignificant	E. Unlikely	Low 25						
D5-WD01	**Wash-down area**	Contaminated water	Potential leakage	Environment	Leakage of contaminated water impacting localised soil	Environmental	3. Moderate	D. Possible	Medium 16	Drain and dispose of all waste as per MCP	Effective	5. Insignificant	E. Unlikely	Low 25	Agree wash down facility be retained as part of workshop buildings infrastructure	Leaseholder / Government	Jun-16	4. Minor	E. Unlikely	Low 23
															Infrastructure condition to be monitored by leaseholder / Government	Leaseholder / Government				
D5-PS14	**Public Safety**	Radiation gauges - coal crushing plant & Coal Lab	Exposure to low energy radioactive sources	Personnel	Exposure to very low doses of radiation	Safety	3. Moderate	E. Unlikely	Low 21	Radiation gauges decommissioned and removed from site by authorised party	Effective	5. Insignificant	E. Unlikely	Low 25						
										Site contamination investigation										
D5-PS15	**Public Safety**	Asbestos in building wet areas	Asbestos cladding deteriorating over time	Personnel	Exposure to non-friable asbestos	Safety	3. Moderate	E. Unlikely	Low 21	Refer D5-PS03										
D5-PS16	**Public Safety**	Tooling containing hazardous materials e.g. manometer	degradation / exposure over time	Personnel	Exposure to hazardous material	Safety	3. Moderate	E. Unlikely	Low 21	Tooling containing hazardous materials removed from site by authorised party	Effective	5. Insignificant	E. Unlikely	Low 25						
D5-PS17	**Public Safety**	Drill and blast compound, explosives magazine	Degradation / exposure over time	Injury / fatality to authorised / unauthorised person	Injury	Safety	3. Moderate	E. Unlikely	Low 21	Facilities removed from site as per MCP	Effective	5. Insignificant	E. Unlikely	Low 25	Agree infrastructure be retained	Leaseholder / Government	Jun-16			
															Infrastructure condition to be monitored by leaseholder / Government	Leaseholder / Government				

LEIGH CREEK MINE CLOSURE - RELINQUISHMENT COMPLETION CRITERIA

DOMAIN 6 - MAIN SERIES - FEBRUARY 2017

ID	Risk Ref	Objective	Objective Measurement Criteria	What will be measured and form of measurement	Locations	Frequency	Control / baseline data	Leading indication criteria
D6-MC01	D6-PS01	Pits walls are stable long term and relevant geotechnical information provided to Government on relinquishment.	Verification by an independent, suitably qualified person, confirms that the final pits in Domain 6 have been constructed to design, as per the relevant designs: LCK Map 17 Design Notes LCK Map 18 Design Notes LCK Map 19 Design Notes LCK Map 23 Design Notes	Provision of current relevant geotechnical information provided to DSD on relinquishment, as per Section 22 ADP Mine Closure. Report by an independent, suitably qualified FP engaged expert confirms final pits constructed to design.	Domain 6 - Main Series, Section 9.14.6, Fig 78, ADP Mine Closure	Once, at cessation of in pit works	Mine Rehabilitation Inspection and Test Plan Procedure, Appendix PP. Section 14.6 - Domain 6, ADP Mine Closure. Relevant Design Notes.	Quarterly verification report of QA/QC procedures being implemented.
D6-MC02	D6-PS01 D6-PS02 D6-PS04 D6-PS05 D6-PS06 D6-PS07 D6-PS08	Public safety risk of access to pit void managed to as low as reasonably practicable (ALARP) by the installation of safety bunds.	Verification by an independent, suitably qualified person confirms that safety bunds have been constructed to design and are located outside of the long term pit failure zone as detailed in Section 13.4 and Fig 159, ADP Mine Closure, and according to the relevant designs: LCK Map 17 Design Notes LCK Map 18 Design Notes LCK Map 19 Design Notes LCK Map 20 Design Notes LCK Map 23 Design Notes LCK Map 27 Design Notes LCK Map 28 Design Notes.	Report by an independent, suitably qualified FP engaged expert (eg geotechnical engineer) confirms, using as a minimum survey and QAQC data, that the safety bunds are constructed and located as per designs in the relevant Domain 6 Design Notes.	As per Figure 159, Section 13.4 ADP Mine Closure. See relevant Design Notes for detailed locations and designs.	Once, at completion of safety bunds.	Mine Rehabilitation Inspection and Test Plan Procedure, Appendix PP. Section 13.4 Pit Design and Stability - Management Strategy for Closure, ADP Mine Closure. Section 14.6 - Domain 6, ADP Mine Closure. Relevant Design Notes.	Quarterly verification report of QA/QC procedures being implemented.
D6-MC03	D6-PS01 D6-PS02 D6-PS04 D6-PS05 D6-PS06 D6-PS07 D6-PS08	Public safety risk of access to pit void mitigated to ALARP by managing pit ramps for closure.	Verification by an independent, suitably qualified person, confirms that the prevention measures for the pit access ramps in Domain 6 have been constructed to design, as per relevant designs: LCK Map 17 Design Notes LCK Map 18 Design Notes LCK Map 19 Design Notes LCK Map 23 Design Notes.	Report by an independent, suitably qualified FP engaged expert confirms, using as a minimum survey and QAQC data, that the pit ramp access prevention measures are constructed to design.	Domain 6 - Main Series, Section 9.14.6, Fig 78, ADP Mine Closure. See relevant Design Notes for detailed locations and designs.	Once, at cessation of in pit works.	Mine Rehabilitation Inspection and Test Plan Procedure, Appendix PP. Section 14.6 - Domain 6, ADP Mine Closure. Design of access prevention methods for pit access ramps as per relevant Design Notes.	Quarterly verification report of QA/QC procedures being implemented.
D6-MC04 see D9-MC01	D6-PS01 D6-PS02 D6-PS05 D6-PS06 D6-PS07 D6-PS08	Public safety risk of access to mine site managed to ALARP by fencing.	*See D9-MC01*	*See D9-MC01*	*See D9-MC01*	*See D9-MC01*	*See D9-MC01*	*See D9-MC01*
D6-MC05 see D9-MC03	D6-PS01 D6-PS02 D6-PS03 D6-PS07 D6-PS08 D6-PS09 D6-PS10 D6-PS12 D6-IH01	Public safety risk of access to mine site managed to ALARP by future leaseholder / government via controlled site access procedure.	*See D9-MC03*	*See D9-MC03*	*See D9-MC03*	*See D9-MC03*	*See D9-MC03*	*See D9-MC03*
D6-MC06	D6-PS03 D6-PS04 D6-PS05 D6-PS06 D6-PS07 D6-PS08 D6-PS09 D6-PS10 D6-PS11 D6-PS13 D6-PS14 D6-PS15	Spontaneous combustion risks managed to ALARP by future leaseholder / Government via: Principal Mining Hazard Management Plan (PMHMP) - Spontaneous Combustion.	FP employ a facilitative process to communicate and review PMHMP - Spontaneous Combustion with relevant Government stakeholders. PMHMP - Spontaneous Combustion, to safely manage any instances of spontaneous combustion in mining and stockpile areas at Leigh Creek Coalfield, provided to future third parties and Government on relinquishment so that any risks are known and understood.	Communication of FP PMHMP - Spontaneous Combustion, and facilitation of a review session with relevant government stakeholders. Delivery of Principal Mining Hazard Management Plan (LCC-HSSE-PHMP-008) in agreed format to DSD.	Domain 6 - Main Series, Section 9.14.6, Fig 78, ADP Mine Closure.	Once, within 12mths of approval of the ADP Mine Closure.	LCC-HSSE-PHMP-008 Spontaneous Combustion, Appendix T, ADP Mine Closure.	Annual reviews of PHMP-008
D6-MC07	D6-PS03 D6-PS04 D6-PS05 D6-PS06 D6-PS07 D6-PS08 D6-PS09 D6-PS10 D6-PS11 D6-PS13 D6-PS14 D6-PS15	Spontaneous combustion risks managed to ALARP by future leaseholder / Government by identifying at risk areas and assessing the success of control measures via the: Mine Rehabilitation Spontaneous Combustion Management Plan (MRSCMP).	FP employ a facilitative process to communicate and review Mine Rehabilitation Spontaneous Combustion Management Plan with relevant Government stakeholders. The Mine Rehabilitation Spontaneous Combustion Management Plan, that identifies at risk areas and assesses the success of control measures applied, is provided to future third parties and Government on relinquishment so that any risks are known and understood.	Communication of MRSCMP, and facilitation of a review session with relevant government stakeholders. Delivery of MRSCMP in agreed format to DSD.	Domain 6 - Main Series, Section 9.14.6, Fig 78, ADP Mine Closure.	Once, within 12mths of approval of the ADP Mine Closure.	Section 13.5 Spontaneous Combustion Management Strategy for Closure, ADP Mine Closure. Section 14.6 - Domain 6, ADP Mine Closure. Mine Rehabilitation Spontaneous Combustion Management Plan, Appendix W, ADP Mine Closure.	Annual reviews of MRSCMP

LEIGH CREEK MINE CLOSURE - RELINQUISHMENT COMPLETION CRITERIA

DOMAIN 6 - MAIN SERIES - FEBRUARY 2017

ID	Risk Ref	Objective	Objective Measurement Criteria	What will be measured and form of measurement	Locations	Frequency	Control / baseline data	Leading indication criteria
D6-MC08	D6-PS03 D6-PS04 D6-PS05 D6-PS06 D6-PS07 D6-PS08 D6-PS09 D6-PS10 D6-PS11 D6-PS13 D6-PS14 D6-PS15	Spontaneous Combustion risks are managed to ALARP post lease transfer via at risk waste rock dump areas being rehabilitated for spontaneous combustion control as per the designs.	Verification by an independent, suitably qualified person confirms that at risk waste rock dump areas in Domain 6 have been rehabilitated according to relevant designs: LCK Map 14 Design Notes LCK Map 15 Design Notes LCK Map 17 Design Notes LCK Map 18 Design Notes LCK Map 19 Design Notes LCK Map 20 Design Notes LCK Map 23 Design Notes LCK Map 27 Design Notes.	Report by an independent, suitably qualified FP engaged expert, using all available data (including QA/QC records and surveys) confirms rehabilitation treatment of at risk waste rock dump areas (including surface water features and bunds) in Domain 6 is to design.	Waste rock dump high and moderate risk spontaneous combustion areas, Domain 6, Sect 14.6, Figs 209 and 212, ADP Mine Closure. See relevant Design Notes for detailed locations and designs.	Once, upon completion of rehabilitation works for the waste rock dumps in Domain 6.	Mine Rehabilitation Inspection and Test Plan Procedure, Appendix PP. Section 13.5 Spontaneous Combustion Management Strategy for Closure, ADP Mine Closure. Section 14.6 - Domain 6, ADP Mine Closure. Mine Rehabilitation Spontaneous Combustion Management Plan, Appendix W, ADP Mine Closure. Relevant Design Notes.	Quarterly verification report of QA/QC procedures being implemented.
D6-MC09	D6-PS04 D6-PS07 D6-PS08 D6-PS09 D6-PS10 D6-PS11 D6-PS13 D6-PS14	Spontaneous Combustion risks are managed to ALARP post lease transfer via at risk pit areas rehabilitated for spontaneous combustion control as per the designs.	Verification by an independent, suitably qualified person confirms that at risk pit areas in Domain 6 have been rehabilitated according to relevant designs (including surface water features and bunds): LCK Map 17 Design Notes LCK Map 18 Design Notes LCK Map 19 Design Notes LCK Map 23 Design Notes.	Report by an independent, suitably qualified FP engaged expert, using all available data (including QA/QC records and surveys) confirms rehabilitation treatment of at risk pit areas (including surface water features and bunds) in Domain 6 is to design.	Pit high and moderate risk spontaneous combustion areas, Domain 6, Sect 14.6, Figs 209 and 212, ADP Mine Closure. See relevant Design Notes for detailed locations and designs.	Once, upon completion of rehabilitation works for the pit in Domain 6.	Mine Rehabilitation Inspection and Test Plan Procedure, Appendix PP. Section 13.5 Spontaneous Combustion Management Strategy for Closure, ADP Mine Closure. Section 14.6 - Domain 6, ADP Mine Closure. Mine Rehabilitation Spontaneous Combustion Management Plan, Appendix W, ADP Mine Closure. Relevant Design Notes.	Quarterly verification report of QA/QC procedures being implemented.
D6-MC10 see D9-MC04	D6-PS01 D6-PS02 D6-PS03 D6-PS04 D6-PS05 D6-PS06 D6-PS07 D6-PS08 D6-PS09 D6-PS10	Public safety risks are managed to ALARP post lease transfer by future leaseholder / Government / Emergency Services via appropriate Emergency Response Management Plan provided to stakeholders on relinquishment.	*See D9-MC04*	*See D9-MC04*	*See D9-MC04*	*See D9-MC04*	*See D9-MC04*	*See D9-MC04*
D6-MC11	D6-VA01	Social impact of the visibility of the Main Series surface dumps adjacent to the Lyndhurst highway is managed to ALARP by rehabilitation of these dumps to design.	Verification by an independent, suitably qualified person confirms that rehabilitation of the MS surface dumps of Domain 6 adjacent to the Lyndhurst highway have been constructed according to relevant designs: LCK Map 17 Design Notes LCK Map 21 Design Notes.	Report by an independent, suitably qualified FP engaged expert confirms rehabilitation treatment of surface dumps in Domain 6 adjacent to Lyndhurst highway are to design.	Main Series surface dumps adjacent to the Lyndhurst highway, Domain 6 - Main Series, Section 9.14.6, Fig 78, ADP Mine Closure. See relevant Design Notes for detailed locations and designs.	Once, upon completion of rehabilitation works for the surface dumps adjacent to the Lyndhurst highway Domain 6.	Mine Rehabilitation Inspection and Test Plan Procedure, Appendix PP. Section 14.6 - Domain 6, ADP Mine Closure. Relevant Domain 6 Design Notes.	Quarterly verification report of QA/QC procedures being implemented.

LEIGH CREEK MINE CLOSURE - RELINQUISHMENT COMPLETION CRITERIA

DOMAIN 6 - MAIN SERIES - FEBRUARY 2017

ID	Risk Ref	Objective	Objective Measurement Criteria	What will be measured and form of measurement	Locations	Frequency	Control / baseline data	Leading indication criteria
D6-MC12	D6-SW01 D6-SW02 D6-SW03 D6-GW02 D6-GW03 D6-PS15	Environmental risk of adverse impacts from surface water run off (including sedimentation and AMD) managed to ALARP by surface water controls that are constructed according to design.	Verification by an independent, suitably qualified person confirms that surface water controls in Domain 6 have been constructed to design, according to relevant designs LCK Map 14 Design Notes LCK Map 15 Design Notes LCK Map 17 Design Notes LCK Map 18 Design Notes LCK Map 19 Design Notes LCK Map 20 Design Notes LCK Map 23 Design Notes LCK Map 24 Design Notes LCK Map 27 Design Notes LCK Map 28 Design Notes.	Report by an independent, suitably qualified FP engaged expert confirms construction of surface water controls in Domain 6 are to design.	Domain 6 - Main Series, Section 9.14.6 ADP Mine Closure. See relevant Design Notes for detailed location and designs.	Once, upon completion of surface water control rehabilitation works for Domain 6.	Mine Rehabilitation Inspection and Test Plan Procedure, Appendix PP. Section 13.6 Acid and Metalliferous Drainage, ADP Mine Closure. Section 13.7 Surface Water Management Strategy for Closure, ADP Mine Closure. Section 14.6 - Domain 6, ADP Mine Closure. Operational Guidelines Soil and Waste Characterisation, Appendix Q. Relevant Domain 6 Design Notes.	Quarterly verification report of QA/QC procedures being implemented. Implementation of Surface Water Quality Monitoring Plan and Groundwater Monitoring Plan.
D6-MC13	D6-PS12	Public safety risks managed to ALARP by removal of infrastructure that has no ongoing value *See also D5 - Infrastructure*	Verification that Domain 6 infrastructure, as identified for removal by the Generation Lessor Corporation (6th June 2016) and per Section 14.5 of the ADP Mine Closure, has been removed: - Mobile equipment and mobile plant * - Fuel storage and quick fill facilities - Transportable crib rooms - Mine dewatering system	Audit report by suitably qualified FP person confirming removal of Domain 6 infrastructure, as per Section 14.5 of the ADP Mine Closure. * Any equipment or infrastructure to be retained (eg dozers as per Section 19.1, and associated fuel storage in the form of self bunded transportable tank as per Section 15) must be in working condition, with maintenance records and condition reports provided where available.	Domain 6 - Main Series, Section 9.14.6, Fig 78, ADP Mine Closure As per Statutory Mine Plans, Appendix OO ADP Mine Closure.	Once, upon removal of infrastructure.	Section 14.5 Demolition of Mine Infrastructure, ADP Mine Closure. Section 14.6 - Domain 6, ADP Mine Closure. Refer Infrastructure Position paper, Appendix N ADP Mine Closure.	Progressive review of infrastructure needs as documented in Quarterly Mine Closure Report to DSD.
D6-MC14 see D9-MC07	D6-NF01 D6-NF02	Environmental risks are managed to ALARP by future leaseholders / Government via a Flora and Fauna Pest Control plan provided by FP at handover.	*See D9-MC07*	*See D9-MC07*	*See D9-MC07*	*See D9-MC07*	*See D9-MC07*	*See D9-MC07*
D6-MC15	D6-PS01 D6-PS02 D6-PS03 D6-PS04 D6-PS05 D6-PS06 D6-PS07 D6-PS08 D6-PS09 D6-PS10 D6-PS11 D6-SW01 D6-SW02 D6-NF01 D6-NF02 D6-PS13 D6-PS14 D6-PS15 D6-TR01	To manage future environmental and safety risks to ALARP by development of ongoing monitoring and management plan for post relinquishment.	Ongoing monitoring and management plan is developed in consultation with DSD and EPA and provided by FP for post relinquishment application by FP / contractor / future leaseholder / Government. Monitoring and management criteria to include: - ongoing maintenance of fencing and signage - periodic inspection of residual infrastructure - surface water run off quality monitoring (as required) - spontaneous combustion monitoring (as required) - periodic weed and pest control - periodic maintenance of landforms in particular following heavy rainfall events (as required).	Provision of a joint "Post Lease Transfer Monitoring and Maintenance Plan" for Leigh Creek Coalfields, as per Section 19.1 ADP Mine Closure.	Domain 6 - Main Series, Section 9.14.6, Fig 78, ADP Mine Closure.	Once, within 12mths of approval of the ADP Mine Closure.	Data, designs and processes developed during Mine Closure.	Provision of discussion "Draft - Post Lease Transfer Monitoring and Maintenance Plan" 6 & 9 months post ADP approval Quarterly Mine Closure report to DSD
D6-MC16	D6-TR01	Environmental risks (such as vermin attraction and harbourage, tyres catching fire) are managed to ALARP by covering the large waste tyres at the M7 area.	Approval by the EPA that the cover measures to prevent attraction and harbourage of vermin are according to the conditions stipulated in EPA licence 13009, and to design, as per relevant designs: LCK Map 23 Design Notes.	Report by independent, suitably qualified FP engaged expert that construction of cover for the large waste tyres at M7 is to design, according to conditions (67-197) stipulated in EPA Licence 13009, as per Section 15 ADP Mine Closure.	Domain 6 - Main Series, Section 9.14.6, Fig 78, ADP Mine Closure. See relevant Design Notes for detailed location and designs.	Once, at completion of works.	EPA Licence 13009. Mine Rehabilitation Inspection and Test Plan Procedure, Appendix PP.	Quarterly verification report of QA/QC procedures being implemented.
D6-MC17	D6-PS16	Safety and environmental risks are managed to ALARP by closure of the asbestos cell according to the Asbestos Cell Landfill Environment Management Plan (LEMP), prior to lease relinquishment.	Approval by the EPA that the cell has been closed according to the conditions stipulated in EPA licence 13009 and the LEMP.	Internal cell closure report by suitably qualified FP person confirming compliance with cell closure requirements of LEMP (including GPS reference points, site survey and photos).	Domain 6 - Main Series, see Asbestos Cell LEMP, Appendix LL, ADP Mine Closure.	Once, following closure of the asbestos cell, and prior to lease relinquishment.	Leigh Creek Coalfield Asbestos Cell Landfill Environment Management Plan. EPA Licence 13009, 3(3) Waste or Recycling Depot.	Quarterly Mine Closure report to DSD.

LEIGH CREEK MINE CLOSURE - RELINQUISHMENT COMPLETION CRITERIA

DOMAIN 6 - MAIN SERIES - FEBRUARY 2017

ID	Risk Ref	Objective	Objective Measurement Criteria	What will be measured and form of measurement	Locations	Frequency	Control / baseline data	Leading indication criteria
D6-MC18	See D5-MC05	Safety and environmental risks are managed to ALARP by implementation of EPA approved Voluntary Site Contamination Assessment Proposal (22nd Sept 2016), that identifies contaminated areas, develops and implements remediation plans (as required).	As per Section 14.5 ADP Closure plan and in accordance with EPA site contamination requirements: 1. Completion of - Preliminary Site Investigation (PSI) - Detailed Site Investigation (DSI) 2. Formation of remediation plan (as required) 3. Implementation of remediation plan to schedule (as required).	EPA approval of: - PSI report - DSI report - Site Remediation reports (as required).	Domain 6 - Main Series, Section 9.14.6, Fig 78, ADP Mine Closure. See site Contamination Assessment Reports, Appendix R, ADP Mine Closure for detailed locations.	Once, prior to application of lease transfer.	Section 12.2 Site Contamination Assessment, ADP, Mine Closure. Site Contamination Assessment Reports, Appendix R, ADP Mine Closure. PSI, DSI, Remediation plan. Prior compliance inspections. Quarterly progress report as provided to EPA.	Quarterly progress report to be provided to EPA.

LEIGH CREEK MINE CLOSURE - RISK REGISTER

DOMAIN 6 - MAIN SERIES - FEBRUARY 2017

Risk Identification							Inherent Risk Rating			Residual Risk Rating					Proposed Mitigation of Risk Exposure / Improvement Actions			Target / Future Risk Rating		
ID	**Category**	**Source**	**Pathway**	**Receptor**	**Potential Consequences**	**Exposure Type**	**Consequence**	**Likelihood**	**Rating & Priority**	**Current Approach or (Existing Controls)**	**Effectiveness**	**Consequence**	**Likelihood**	**Rating & Priority**	**Risk Reduction Treatment or Asset Improvement Strategic or Approved Action**	**Action Owner**	**Planned Completion Date**	**Consequence**	**Likelihood**	**Rating & Priority**
D6-PS01	**Public Safety**	Pit wall	Failure of pit high / low wall	Member of the public, e.g. trespasser	Injury / fatality	Safety	1. Catastrophic	D. Possible	High 9	Pit designed for long term stability - Mine Plan, Geotechnical Management System, see Mine Closure Plan (MCP).	Effective	1. Catastrophic	E. Unlikely	High 14	Provide a plan for undertaking outstanding works	Flinders	Included in Mine Closure Plan	1. Catastrophic	E. Unlikely	High 14
										3rd party geotechnical review design / stability assessment, *Pit Slope Stability Assessment for Mine Closure* , see MCP.	Marginal				Ongoing monitoring program for agreed period to provide site management post mine closure, as per MCP, including minor remedial works if required.	Flinders / Government	At lease handback			
										Abandonment bund designed for mine closure, Factor of Safety 2.0 (based on Pit Slope Stability Assessment for Mine Closure, see above) and to WA guidelines to restrict access, see MCP.	Effective									
										Ramp access managed.	Effective				Review design of controls that require post closure maintenance	Flinders	Part of mine closure plan development			
										Stock fencing & signage, see MCP.	Marginal				Ongoing maintenance of fencing	Leaseholder	Post lease handback			
										Access gate remains to restrict access post lease handback - cemetery access to be managed by Town Authority.	Marginal				Manage ongoing access protocols to cemetery	Leaseholder / Government	Post lease handback			
D6-PS02	**Public Safety**	Collapse of a surface dump	Failure of the dump	Member of the public, e.g. trespasser	Person(s) on dump when dump collapses - injury	Safety	3. Moderate	D. Possible	Medium 16	Site entry controls as per D6-PS01	Effective	3. Moderate	E. Unlikely	Low 21	Provide a plan for undertaking outstanding works	Flinders	Included in Mine Closure Plan	3. Moderate	E. Unlikely	Low 21
D6-PS03	**Public Safety**	Spontaneous combustion (Spon Comb) underneath surface	Failure of the dump surface	Person and equipment on the dump surface	Person(s) on dump when dump surface collapses - fatality / injury	Safety	1. Catastrophic	D. Possible	High 9	Application of the Principal Mining Hazard Management Plan - Spontaneous Combustion LCC-HSSE-PHMP-008, see MCP.	Effective	1. Catastrophic	D. Possible	High 9				1. Catastrophic	E. Unlikely	High 14
										Improved understanding of propensity for Spon Comb of historical dumps, refer Mine Rehabilitation Spon Com Management Plan, and B3 report *Assessment of Spontaneous Combustion of Aged Coal and Rock Samples from LC Coal Mine*	Marginal				Dumps of high spon comb risk addressed in MCP	Flinders	Included in Mine Closure Plan			
D6-PS04	**Public Safety**	Gases, fire, smoke caused by geochemical processes in exposed coal	Access to domain pits	Member of the public, e.g. trespasser	Exposure to gases (eg carbon monoxide, hydrogen sulphide and sulphur dioxide). Medical affect on members of the public	Safety	2. Major	D. Possible	High 12	Engage a Spon Comb/ geochemist (B3 Mining Services Technical Reports, MWH *Spontaneous Combustion Management of Waste Rock Dumps at LC),* and closure/ erosion expert (MWH Surface Water Assessment and Soil Characterisation) to assist with developing appropriate rehabilitation designs	Marginal	3. Moderate	E. Unlikely	Low 21	Recommendations included in development of designs	Flinders	included in MCP	3. Moderate	E. Unlikely	Low 21
										Implement the Mine Rehab Spon Comb Management Plan incorporating third party reviews	Effective				Ongoing monitoring program for agreed period to provide site management post mine closure, as per MCP, including minor remedial works if required.	Flinders / Government	At lease handback			
										Site and pit entry controls as per D1-PS01	Effective									

LEIGH CREEK MINE CLOSURE - RISK REGISTER

DOMAIN 6 - MAIN SERIES - FEBRUARY 2017

Risk Identification							Inherent Risk Rating			Residual Risk Rating					Proposed Mitigation of Risk Exposure / Improvement Actions			Target / Future Risk Rating		
ID	Category	Source	Pathway	Receptor	Potential Consequences	Exposure Type	Consequence	Likelihood	Rating & Priority	Current Approach or (Existing Controls)	Effectiveness	Consequence	Likelihood	Rating & Priority	Risk Reduction Treatment or Asset Improvement Strategic or Approved Action	Action Owner	Planned Completion Date	Consequence	Likelihood	Rating & Priority
										Monitor throughout rehabilitation phase to ensure effectiveness of controls	Effective									
D6-PS05	**Public Safety**	Major spon com outbreak	Oxygen deficient atmosphere in pit, buildings or confined spaces due to spontaneous combustion	Member of the public in the base of the pit, e.g. trespasser	Adverse health impact	Safety	2. Major	E. Unlikely	Medium 18	Site access controls as per D6-PS04	Effective	4. Minor	E. Unlikely	Low 23	NOTE: Potential for asphyxiation is considered extremely unlikely. There has been no evidence of this risk over the life of the operation. It is noted that spon comb risks during post closure will be markedly reduced compared to running an operational mine (spon comb propensity testing program forecast reactivity to be negligible after 5 years).					
D6-PS06	**Public Safety**	Gases, fire, smoke caused by geochemical processes in the WRDs	Access to domain WRDs	Members of the public i.e. trespassers	Exposure to gases (eg carbon monoxide, hydrogen sulphide and sulphur dioxide) Medical affect on members of the public	Safety	2. Major	D. Possible	High 12	Engage a Spon Comb/ geochemist (B3 Mining Services Technical Reports, MWH *Spontaneous Combustion Management of Waste Rock Dumps at LC),* and closure/ erosion expert (MWH Surface Water Assessment and Soil Characterisation) to assist with developing appropriate rehabilitation designs	Marginal	3. Moderate	E. Unlikely	Low 21	Recommendations included in development and implementations of mine rehabilitation designs	Flinders	Included in MCP	3. Moderate	E. Unlikely	Low 21
										Implement the Mine Rehab Spon Comb Management Plan	Effective				Ongoing monitoring program for agreed period to provide site management post mine closure, as per MCP, including minor remedial works if required.	Flinders / Government	At lease handback			
										Monitoring and mapping of the WRDs as per Mine Rehab Spon Comb Mgt Plan, MCP	Effective									
										Site and pit entry controls as per D1-PS01	Effective									
										Monitor throughout rehabilitation phase to ensure effectiveness of controls, as per MRSCMP	Effective									
D6-PS07	**Public Safety**	Gases, fire, smoke caused by geochemical processes. Generation of flammable gases (eg carbon monoxide and hydrogen) produced when fighting fires with water.	Access to domain WRDs	Emergency services responding to the fire/ smoke or injured person	Exposure to gases (eg carbon monoxide, hydrogen sulphide and sulphur dioxide). Illness or injury of emergency service personnel. Note - Minimal spon com issues in WRDs in this Domain	Safety	2. Major	D. Possible	High 12	Engage a Spon Comb/ geochemist (B3 Mining Services Technical Reports, MWH *Spontaneous Combustion Management of Waste Rock Dumps at LC),* and closure/ erosion expert (MWH Surface Water Assessment and Soil Characterisation) to assist with developing appropriate rehabilitation designs	Marginal	3. Moderate	E. Unlikely	Low 21	Recommendations included in development and implementations of mine rehabilitation designs	Flinders	Included in MCP	3. Moderate	E. Unlikely	Low 21
										Implement the Mine Rehab Spon Comb Management Plan	Effective				Ongoing monitoring program for agreed period to provide site management post mine closure, as per MCP, including minor remedial works if required.	Flinders / Government	At lease handback			

LEIGH CREEK MINE CLOSURE - RISK REGISTER

DOMAIN 6 - MAIN SERIES - FEBRUARY 2017

Risk Identification							Inherent Risk Rating			Residual Risk Rating					Proposed Mitigation of Risk Exposure / Improvement Actions			Target / Future Risk Rating		
ID	Category	Source	Pathway	Receptor	Potential Consequences	Exposure Type	Consequence	Likelihood	Rating & Priority	Current Approach or (Existing Controls)	Effectiveness	Consequence	Likelihood	Rating & Priority	Risk Reduction Treatment or Asset Improvement Strategic or Approved Action	Action Owner	Planned Completion Date	Consequence	Likelihood	Rating & Priority
										Identify all emergency responder stakeholders, commence discussion around post closure management issues	Effective				Adopt established Emergency response plan	Government	At lease handback			
										Develop a recommended Emergency response plan to be circulated to relevant stakeholders. These may be targeted depending on job description of emergency personnel	Effective									
										Controls as for D6-PS01, D6-PS04 and D6-PS06	Effective									
										Monitor throughout rehabilitation phase to ensure effectiveness of controls, as per RSCMP, see MCP.	Effective									
										Complete rehabilitation works based on independent reports, monitoring results and on the basis of risk	Effective									
D6-PS08	**Public Safety**	Major spon com outbreak	Oxygen deficient atmosphere in pit, or site buildings due to spon com	Emergency services responding to the fire/ smoke or injured person. Authorised persons undertaking work in the domain.	Adverse health impact	Safety	2. Major	E. Unlikely	Medium 18	Controls as per D6-PS04, D6-PS07	Effective	3. Moderate	E. Unlikely	Low 21	NOTE: Potential for asphyxiation is considered extremely unlikely. There has been no evidence of this risk over the life of the operation. It is noted that spon comb risks during post closure will be markedly reduced compared to running an operational mine (spon comb propensity testing program forecast reactivity to be negligible after 5 years).					
D6-PS09	**Public Safety**	Fire, smoke and gases caused by geochemical processes within the pit	Geochemical processes	Emergency services responding to the fire/ smoke or injured person	Exposure to gases (eg carbon monoxide, hydrogen sulphide and sulphur dioxide). Illness or injury of emergency service personnel	Safety	2. Major	D. Possible	High 12	Controls as per D6-PS04	Effective	3. Moderate	E. Unlikely	Low 21	Provide a schedule for undertaking outstanding works	Flinders	included in ADP Closure	3. Moderate	E. Unlikely	Low 21
D6-PS10	**Safety**	Fire, smoke and gases caused by geochemical processes within the domain	Geochemical processes	Authorised persons undertaking work in the domain	Exposure to gases (eg carbon monoxide, hydrogen sulphide and sulphur dioxide). Illness or injury of authorised persons	Safety	2. Major	D. Possible	High 12	Controls as per D6-PS04 and D6-PS06	Effective	3. Moderate	E. Unlikely	Low 21	Adopt mine access procedures post closure	Government	At lease handback	3. Moderate	E. Unlikely	Low 21
										Application of Principal Mining Hazard Management Plan - Spontaneous Combustion LCC-HSSE-PHMP-008	Effective									
										Develop mine access procedures for authorised personnel post closure	Marginal									
D6-PS11	**Public Safety**	Fire, smoke and gases caused by geochemical processes within the domain	Geochemical processes	Off lease communities	Illness or injury of adjacent communities, odour/ nuisance	Safety	4. Minor	D. Possible	Low 20	Controls as per D6-PS04 and D6-PS06	Effective	5. Insignificant	E. Unlikely	Low 25						

LEIGH CREEK MINE CLOSURE - RISK REGISTER

DOMAIN 6 - MAIN SERIES - FEBRUARY 2017

Risk Identification							Inherent Risk Rating			Residual Risk Rating					Proposed Mitigation of Risk Exposure / Improvement Actions			Target / Future Risk Rating		
ID	Category	Source	Pathway	Receptor	Potential Consequences	Exposure Type	Consequence	Likelihood	Rating & Priority	Current Approach or (Existing Controls)	Effectiveness	Consequence	Likelihood	Rating & Priority	Risk Reduction Treatment or Asset Improvement Strategic or Approved Action	Action Owner	Planned Completion Date	Consequence	Likelihood	Rating & Priority
D6-VA01	**Visual Amenity from Lyndhurst Highway**	WRDs	Visual amenity	Visual amenity of surface waste dumps from highway	Public complaint - none received over history of mine	Community	4. Minor	C. Likely	Medium 17	Engage a Spon Comb/ geochemist (B3 Mining Services Technical Reports, MWH *Spontaneous Combustion Management of Waste Rock Dumps at LC),* and closure/ erosion expert (MWH Surface Water Assessment and Soil Characterisation) to assist with developing appropriate rehabilitation designs	Marginal	4. Minor	E. Unlikely	Low 23						
					ETSA legacy issue - historic mining operations, lack of available topsoil etc. limits rehabilitation options					WRDs adjacent to access road facing highway to be reprofiled and covered as per MCP	Effective									
										Develop and implement community engagement plan	Effective									
D6-SW01	**Surface water management**	Surface water runoff with suspended solids	Contaminated water flowing offsite eg dispersive materials have higher propensity	Runoff from perimeter dump faces into off lease creeks and native vegetation	Surface water leads to impact on downstream receptors	Environmental	4. Minor	C. Likely	Medium 17	Independent assessment (MWH *Surface Water Assessment*) of surface water management plans	Marginal	4. Minor	E. Unlikely	Low 23	Implement monitoring program for water quality	Flinders	Jul-18	5. Insignificant	E. Unlikely	Low 25
										Review of surface water management plans and input into final designs to prevent outflow from pits and support subsequent evaporation	Effective				Ongoing monitoring program for agreed period to provide site management post mine closure, as per MCP, including minor remedial works if required.	Flinders / Government	At lease handback			
										Implement rehabilitation in accordance with agreed surface water management plan	Effective									
										Incorporate silt traps as part of rehabilitation design as recommended per independent review	Effective									
										Incorporate in retention dam overflow final configuration	Effective									
										Undertake material characterisation (MWH *Soil and waste characterisation,* and ongoing field testing, see MCP) to identify suitable materials for use in rehab program	Effective				Provide operational guidelines for undertaking works	Flinders	Included in Mine Closure Plan			

LEIGH CREEK MINE CLOSURE - RISK REGISTER

DOMAIN 6 - MAIN SERIES - FEBRUARY 2017

Risk Identification							Inherent Risk Rating			Residual Risk Rating					Proposed Mitigation of Risk Exposure / Improvement Actions			Target / Future Risk Rating		
ID	**Category**	**Source**	**Pathway**	**Receptor**	**Potential Consequences**	**Exposure Type**	**Consequence**	**Likelihood**	**Rating & Priority**	**Current Approach or (Existing Controls)**	**Effectiveness**	**Consequence**	**Likelihood**	**Rating & Priority**	**Risk Reduction Treatment or Asset Improvement Strategic or Approved Action**	**Action Owner**	**Planned Completion Date**	**Consequence**	**Likelihood**	**Rating & Priority**
D6-SW02	**Surface water management**	Acidic and metalliferous drainage AMD	AMD contaminated surface water from incident rainfall on external dump surfaces (particularly Western Bund or Northern Dumps), or seepage through waste dumps (particularly Northern Dumps), flowing offsite	Runoff from perimeter dump faces or seepage into off lease creeks and native vegetation	Surface water leads to impact on downstream receptors Note: there are no known areas of adverse environmental impact caused by AMD, and the surface water quality monitoring conducted over the past 20yrs has not discovered any indications of this risk. Further detail in MCP.	Environmental	5. Insignificant	E. Unlikely	Low 25	Ensure surface water runoff from within the mine pit is directed to internal settlement ponds/evaporation basins and pit lakes.	Effective	5. Insignificant	E. Unlikely	Low 25	Implement monitoring program for surface water quality, including seep survey	Flinders	Jul-18	5. Insignificant	E. Unlikely	Low 25
										Undertake material characterisation (MWH *Soil and waste characterisation,* and ongoing field testing, see MCP) to determine potential for AMD.	Marginal									
										Implement recommendations from surface water assessments and Soils and Waste Characterisation, including - potential AMD material will be quarantined, and surface water runoff from these dumps to be contained - the Western Bund will be reprofiled and covered with the best suited material for outward facing dump slopes - dump slopes that have been previously rehabilitated will remain in situ, to reduce the risk of mobilising contaminants	Effective				Ongoing monitoring program for agreed period to provide site management post mine closure, as per MCP, including minor remedial works if required.	Flinders / Government	At lease handback			
D6-SW03	**Surface water management**	Uncontrolled surface water	Failure of surface water control structures due to rainfall event	Off lease creeks and native vegetation	Uncontrolled surface water leads to impact on downstream receptors	Environmental	4. Minor	E. Unlikely	Low 23	Final landform design parameters have been advised by MWH following their consideration of key site risks and data presented within the Spontaneous Combustion report(s), Surface Water report, Groundwater Aspects report, and Soils and Waste Characterisation report.	Effective	5. Insignificant	E. Unlikely	Low 25	Implement monitoring program for surface water quality, including seep survey	Flinders	Jul-18	5. Insignificant	E. Unlikely	Low 25
										Surface water designs (including drainage structures) progressively developed and peer reviewed by MWH and Coffey, and assessed in accordance with the design principles recommended in the MWH surface water reports.	Effective				Ongoing monitoring program for agreed period to provide site management post mine closure, as per MCP, including minor remedial works if required.	Flinders / Government	At lease handback			
										Implement QAQC process to confirm constructed to design and using correct materials as per design	Effective									
D6-GW01	**Ground water management**	Pit water	Seepage to groundwater	Local aquifer of high salinity water, low beneficial use	Localised interaction between surface and groundwater contained within the Leigh Creek basin	Environmental	5. Insignificant	D. Possible	Low 24	Undertake independent assessment of ground water, MWH *Groundwater Aspects of Mine Closure*	Effective	5. Insignificant	E. Unlikely	Low 25	NOTE: MWH Groundwater report indicates minimal interaction between surface and groundwater contained within the Leigh Creek basin					

LEIGH CREEK MINE CLOSURE - RISK REGISTER

DOMAIN 6 - MAIN SERIES - FEBRUARY 2017

Risk Identification							Inherent Risk Rating			Residual Risk Rating					Proposed Mitigation of Risk Exposure / Improvement Actions			Target / Future Risk Rating		
ID	Category	Source	Pathway	Receptor	Potential Consequences	Exposure Type	Consequence	Likelihood	Rating & Priority	Current Approach or (Existing Controls)	Effectiveness	Consequence	Likelihood	Rating & Priority	Risk Reduction Treatment or Asset Improvement Strategic or Approved Action	Action Owner	Planned Completion Date	Consequence	Likelihood	Rating & Priority
D6-GW02	**Ground water management**	Pit water	Seepage to shallow groundwater (eg Telford gravels)	Groundwater dependent ecosystems	Offsite migration of ground water leads to impact on downstream receptors Note: the updated groundwater report indicates "both the Main Series and the Upper Series pits will remain groundwater sinks with long-term water levels significantly below the pre-mining levels".	Environmental	5. Insignificant	E. Unlikely	Low 25	Undertake independent assessment of ground water, MWH *Groundwater Aspects of Mine Closure*	Effective	5. Insignificant	E. Unlikely	Low 25	Implement ground water monitoring program to confirm modelled water levels, and improve understanding of water qualities.	Flinders	Jul-18			
D6-GW03	**Ground water management**	Acidic and metalliferous drainage AMD	AMD from incident rainfall on dump surfaces (particularly Western Bund Wall and Northern Dumps), or seepage through waste dumps (particularly Northern Dumps), reports to underlying ground water (eg Telford gravels)	Groundwater dependent ecosystems	Offsite migration of ground water leads to impact on downstream receptors Note: updated MWH report concluded there "no groundwater ecosystems that could be affected by the closure of Lobe B were identified in this study".	Environmental	5. Insignificant	E. Unlikely	Low 25	As per D1-SW02	Effective	5. Insignificant	E. Unlikely	Low 25	Implement ground water monitoring program to confirm basin is a terminal sink, as well as seep survey to identify any seepage through waste dumps potentially reporting offsite	Flinders	1/07/2018	5. Insignificant	E. Unlikely	Low 25
										Undertake independent assessment of ground water, MWH *Groundwater Aspects of Mine Closure*	Effective									
										Implement recommendations from surface water assessments and Soils and Waste Characterisation, including - potential AMD material will be quarantined, and surface water runoff from these dumps to be contained - the Western Bund will be reprofiled and covered with the best suited material for outward facing dump slopes - dump slopes that have been previously rehabilitated will remain in situ, to reduce the risk of mobilising contaminants	Effective									
D6-IH01	**Indigenous & Heritage**	Public / unauthorised access	Damage to heritage areas	Indigenous & Heritage areas	No known indigenous & Heritage areas in this Domain	Heritage									No further work required					
D6-DM01	**Dust Management**	Dust	Wind exposure	Surrounding communities	Dust affects communities (nuisance only, no recorded dust complaints during life of mine)	Environmental	5. Insignificant	E. Unlikely	Low 25	No ongoing works, crust formed, self seeded natural vegetation re-establishment	Effective	5. Insignificant	E. Unlikely	Low 25						
D6-PS12	**Infrastructure**	Any existing infrastructure	Deteriorating infrastructure	Authorised or unauthorised access	Injury	Safety	3. Moderate	D. Possible	Medium 16	Remove all infrastructure from the domain, crib room, tanks etc.	Effective	5. Insignificant	E. Unlikely	Low 25						
D6-PS13	**Public Safety**	Ongoing weathering of coal faces	Small scale failures on pit walls leading to spon comb	Pit walls	Spontaneous combustion on pit walls	Safety	2. Major	E. Unlikely	Medium 18	Assess potential for small scale failures on pit walls to leading to spon comb, considering reduction in propensity due to oxidation via ageing	Ineffective	3. Moderate	E. Unlikely	Low 21	Ongoing monitoring program for agreed period to provide site management post mine closure, as per MCP, including minor remedial works if required.	Flinders / Government	At lease handback	3. Moderate	E. Unlikely	Low 21

LEIGH CREEK MINE CLOSURE - RISK REGISTER

DOMAIN 6 - MAIN SERIES - FEBRUARY 2017

Risk Identification							Inherent Risk Rating			Residual Risk Rating					Proposed Mitigation of Risk Exposure / Improvement Actions			Target / Future Risk Rating		
ID	Category	Source	Pathway	Receptor	Potential Consequences	Exposure Type	Consequence	Likelihood	Rating & Priority	Current Approach or (Existing Controls)	Effectiveness	Consequence	Likelihood	Rating & Priority	Risk Reduction Treatment or Asset Improvement Strategic or Approved Action	Action Owner	Planned Completion Date	Consequence	Likelihood	Rating & Priority
										Any areas identified as having potential for small scale failures on in pit walls included in development of designs	Effective									
D6-PS14	Public Safety	Variable saturation of coal	Pit lake level fluctuations over time	Pit walls	Spontaneous combustion on pit walls	Safety	2. Major	E. Unlikely	Medium 18	Review modelled pit lake levels against pit lake coal locations	Effective	3. Moderate	E. Unlikely	Low 21	Ongoing monitoring program for agreed period to provide site management post mine closure, as per MCP, including minor remedial works if required.	Flinders / Government	At lease handback	3. Moderate	E. Unlikely	Low 21
										Inundation through increases in pit lake water levels	Effective									
D6-PS15	Public safety	Uncontrolled surface water	Failure of surface water control structures due to rainfall event	Areas rehabilitated due to risk of spontaneous combustion	Uncontrolled surface water leads to loss of control of spontaneous combustion mitigation measures	Safety	2. Major	E. Unlikely	Medium 18	Final landform design parameters have been advised by MWH following their consideration of key site risks and data presented within the Spontaneous Combustion report(s), Surface Water report, Groundwater Aspects report, and Soils and Waste Characterisation report.	Effective	5. Insignificant	E. Unlikely	Low 25	Ongoing monitoring program for agreed period to provide site management post mine closure, as per MCP, including minor remedial works if required.	Flinders / Government	At lease handback	5. Insignificant	E. Unlikely	Low 25
										Surface water designs (including drainage structures) progressively developed and peer reviewed by MWH and Coffey, and assessed in accordance with the design principles recommended in the MWH surface water reports.	Effective									
										Implement QAQC process to confirm constructed to design and using correct materials as per design	Effective									
D6-PS16	Public Safety Environment	Asbestos Cell - M10	Loss of containment during lifecycle of the M10 decommissioning activities asbestos cell	Members of the Public Authorised personnel Environmental impact	Adverse health impact Environmental harm	Safety Environmental	2. Major	D. Possible	High 12	Manage asbestos cell according to LEMP	Effective	3. Moderate	E. Unlikely	Low 21	Asbestos cell closed prior to lease relinquishment, or licence transferred to future leaseholder / Government	Flinders / Government	At lease handback	3. Moderate	E. Unlikely	Low 21
										Compliance to LEMP verified by - regular inspections conducted by competent FP personnel - annual environmental audit by independent environmental auditor	Marginal									
D6-NF01	Native Flora	Increased risk of pests (flora)	Pests spreading across leases	Native flora	Potential increase in pests (flora)	Environmental	4. Minor	D. Possible	Low 20	Current pest control program ceases at mine closure		4. Minor	C. Likely	Medium 17	New landowner takes control for weed control with NRM Board	Government		4. Minor	D. Possible	Low 20
										Consultation with North Flinders Group NRM	Effective									

LEIGH CREEK MINE CLOSURE - RISK REGISTER

DOMAIN 6 - MAIN SERIES - FEBRUARY 2017

Risk Identification							Inherent Risk Rating			Residual Risk Rating					Proposed Mitigation of Risk Exposure / Improvement Actions			Target / Future Risk Rating		
ID	Category	Source	Pathway	Receptor	Potential Consequences	Exposure Type	Consequence	Likelihood	Rating & Priority	Current Approach or (Existing Controls)	Effectiveness	Consequence	Likelihood	Rating & Priority	Risk Reduction Treatment or Asset Improvement Strategic or Approved Action	Action Owner	Planned Completion Date	Consequence	Likelihood	Rating & Priority
D6-NF02	**Native Fauna**	Increased risk of pests (Fauna)	Pests breeding on leases	Native fauna	Potential increase in pests (fauna)	Environmental	4. Minor	D. Possible	Low 20	Current pest control program ceases at mine closure		4. Minor	C. Likely	Medium 17	New landowner takes control for pest control with NRM Board	Government		4. Minor	D. Possible	Low 20
										Consultation with North Flinders Group NRM	Effective									
D6-NF03	**Native Fauna**	Pit lakes, pit walls and geochemical processes	Access to pits and WRDs	Native fauna	Injury or death of native fauna	Environmental	5. Insignificant	E. Unlikely	Low 25	Low risk (as evidenced by history during life of mine), no further controls required										
D6-TR01	**M7 Large Tyre Landfill**	Large waste tyres	Exposed tyres	Native fauna Air Quality	Attraction and harbourage of vermin Risk of tyres catching fire	Environmental	4. Minor	D. Possible	Low 20	Implement rehabilitation earthworks designs that include 2m cover for M7 large waste tyre area, as per MCP	Effective	4. Minor	E. Unlikely	Low 23	Ongoing monitoring program for agreed period to provide site management post mine closure, as per MCP, including minor remedial works if required.	Flinders / Government	At lease handback	5. Insignificant	E. Unlikely	Low 25
										Implement QAQC process to confirm constructed to design	Effective									

LEIGH CREEK MINE CLOSURE - RELINQUISHMENT COMPLETION CRITERIA

DOMAIN 7 - LOBE C - FEBRUARY 2017

ID	Risk Ref	Objective	Objective Measurement Criteria	What will be measured and form of measurement	Locations	Frequency	Control / baseline data	Leading indication criteria
D7-MC01 see D9-MC01	D7-PS01 D7-PS02 D7-PS03 D7-PS04 D7-PS05 D7-PS06	Public safety risk of access to mine site managed to ALARP by fencing.	*See D9-MC01*	*See D9-MC01*	*See D9-MC01*	*See D9-MC01*	*See D9-MC01*	*See D9-MC01*
D7-MC02 see D9-MC04	D7-PS06 D7-PS07	Public safety risks are managed to ALARP post lease transfer by future leaseholder / Government / Emergency Services via appropriate Emergency Response Management Plan provided to stakeholders on relinquishment.	*See D9-MC04*	*See D9-MC04*	*See D9-MC04*	*See D9-MC04*	*See D9-MC04*	*See D9-MC04*
D7-MC03	D7-SW02 D7-GW01 D7-GW02	Future ground and surface water contamination managed to ALARP by preventing surface water entering the mine void area Lobe C.	Independent verification that main surface water flows to the pit are blocked in accordance with Section 14.7 ADP Mine Closure, and to relevant designs.	Independent audit report by suitably qualified FP-engaged person confirms main surface water inflow paths are blocked according to design, as per Section 14.7, and Figure 218, ADP Mine Closure.	Domain 7 - Lobe C, as per Section 14.7, Fig 218, ADP Mine Closure. See relevant Design Notes for detailed locations and designs.	Within 12 months of approval of the ADP Mine Closure.	Pit water level data.	Pit water level measurement during closure. Quarterly Mine Closure report to DSD.
D7-MC04 see D9-MC07	D7-NF01 D7-NF02	Environmental risks are managed to ALARP by future leaseholders / Government via a Flora and Fauna Pest Control plan provided by FP at handover.	*See D9-MC07*	*See D9-MC07*	*See D9-MC07*	*See D9-MC07*	*See D9-MC07*	*See D9-MC07*
D7-MC05 see D9-MC03	D7-PS01 D7-PS02 D7-PS03 D7-PS04 D7-PS05 D7-PS06 D7-PS07 D7-PS08 D7-PS12 D7-PS13	Public safety risk of access to mine site managed to ALARP by future leaseholder / government via controlled site access procedure.	*See D9-MC03*	*See D9-MC03*	*See D9-MC03*	*See D9-MC03*	*See D9-MC03*	*See D9-MC03*
D7-MC06	D7-PS01 D7-PS02 D7-PS03 D7-PS04 D7-PS05 D7-PS06 D7-PS07 D7-PS08 D7-PS09 D7-PS11 D7-PS12 D7-PS13 D7-SW01 D7-SW02 D7-GW02 D7-GW03 D7-NF01 D7-NF02	To manage future environmental and safety risks to ALARP by development of ongoing monitoring and management plan for post relinquishment.	Ongoing monitoring and management plan is developed in consultation with DSD and EPA and provided by FP for post relinquishment application by FP / contractor / future leaseholder / Government. Monitoring and management criteria to include: - ongoing maintenance of fencing and signage - periodic inspection of residual infrastructure - surface water run off quality monitoring (as required) - spontaneous combustion monitoring (as required) - periodic weed and pest control - periodic maintenance of landforms in particular following heavy rainfall events (as required).	Provision of a joint "Post Lease Transfer Monitoring and Maintenance Plan" for Leigh Creek Coalfields, as per Section 19.1 ADP Mine Closure.	Domain 7 - Lobe C, Section 9.14.7, Fig 85, ADP Mine Closure.	Once, within 12mths of approval of the ADP Mine Closure.	Data, designs and processes developed during Mine Closure.	Provision of discussion "Draft - Post Lease Transfer Monitoring and Maintenance Plan" 6 & 9 months post ADP approval. Quarterly Mine Closure report to DSD.
D7-MC07	See D5-MC05	Safety and environmental risks are managed to ALARP by implementation of EPA approved Voluntary Site Contamination Assessment Proposal (22nd Sept 2016), that identifies contaminated areas, develops and implements remediation plans (as required).	As per Section 14.5 ADP Closure plan and in accordance with EPA site contamination requirements: 1. Completion of - Preliminary Site Investigation (PSI) - Detailed Site Investigation (DSI) 2. Formation of remediation plan (as required) 3. Implementation of remediation plan to schedule (as required).	EPA approval of: - PSI report - DSI report - Site Remediation reports (as required).	Domain 7 - Lobe C, Section 9.14.7, Fig 85, ADP Mine Closure. See site Contamination Assessment Reports, Appendix R, ADP Mine Closure for detailed locations.	Once, prior to application of lease transfer.	Section 12.2 Site Contamination Assessment, ADP, Mine Closure. Site Contamination Assessment Reports, Appendix R, ADP Mine Closure. PSI, DSI, Remediation plan. Prior compliance inspections. Quarterly progress report as provided to EPA.	Quarterly progress report to be provided to EPA.

LEIGH CREEK MINE CLOSURE - RISK REGISTER

DOMAIN 7 - LOBE C - FEBRUARY 2017

Note: Mining ceased in this Domain in 1977, with no mining activity since. There are no records on the geotechnical stability of the domain, and accordingly any further rehabilitation activities are not recommended due to 1) the uncertainty of the risks to operational safety in this environment, 2) the lack of any active spontaneous combustion observed in the last 40plus years and 3) a protocol of not disturbing previously treated areas that exhibit no signs of spontaneous combustion.

Risk Identification							Inherent Risk Rating			Residual Risk Rating					Proposed Mitigation of Risk Exposure / Improvement Actions			Target / Future Risk Rating		
ID	Category	Source	Pathway	Receptor	Potential Consequences	Exposure Type	Consequence	Likelihood	Rating & Priority	Current Approach or (Existing Controls)	Effectiveness	Consequence	Likelihood	Rating & Priority	Risk Reduction Treatment or Asset Improvement Strategic or Approved Action	Action Owner	Planned Completion Date	Consequence	Likelihood	Rating & Priority
D7-PS01	Public Safety	Pit wall	Failure of pit high / low wall	Member of the public, e.g. trespasser	Injury / fatality	Safety	1. Catastrophic	D. Possible	High 9	Existing bunding / trenching designed to restrict access long term	Effective	1. Catastrophic	E. Unlikely	High 14				1. Catastrophic	E. Unlikely	High 14
										There is currently one access point from Lyndhurst highway, this access point to be blocked. The access path from Lobe B also to be blocked.	Effective									
										Stock fencing & signage, see MCP.	Marginal				Ongoing maintenance of fencing	Leaseholder / Government	Post lease handback			
D7-PS02	Public Safety	Collapse of a surface dump	Failure of the dump	Member of the public, e.g. trespasser	Person(s) on dump when dump collapses - injury / fatality	Safety	3. Moderate	E. Unlikely	Low 21	Site entry controls as per D7-PS01	Effective	3. Moderate	E. Unlikely	Low 21						
D7-PS03	Public Safety	Spon com underneath surface	Failure of the dump surface	Person and equipment on the dump surface	Person(s) on dump when dump surface collapses - fatality / injury	Safety	1. Catastrophic	D. Possible	High 9	Site entry controls as per D7-PS01	Effective	1. Catastrophic	D. Possible	High 9	No operation on dumps due to unknown condition under surface and stable environment over last 40 plus years					
D7-PS04	Public Safety	Gases, fire, smoke caused by geochemical processes in exposed coal	Access to domain pits	Member of the public, e.g. trespasser	Medical affect on members of the public (No instances of spon com at Lobe C since privatisation)	Safety	3. Moderate	E. Unlikely	Low 21	Site entry controls as per D7-PS01	Effective	3. Moderate	E. Unlikely	Low 21						
										Visual monitoring for any spon comb activity throughout the closure period.	Effective									
D7-PS05	Public Safety	Gases, fire, smoke caused by geochemical processes in the WRDs	Access to domain WRDs	Members of the public i.e. trespassers	Medical affect on members of the public	Safety	3. Moderate	E. Unlikely	Low 21	Site entry controls as per D7-PS01	Effective	3. Moderate	E. Unlikely	Low 21						
										Visual monitoring for any spon comb activity throughout the closure period	Effective									
D7-PS06	Public Safety	Gases, fire, smoke caused by geochemical processes. Generation of flammable gases (eg carbon monoxide and hydrogen) produced when fighting fires with water.	Access to domain WRDs	Emergency services responding to the fire/ smoke or injured person	Illness or injury of emergency service personnel Note - Minimal spon com issues in WRDs in this Domain	Safety	3. Moderate	E. Unlikely	Low 21	As D7-PS01, D7-PS05	Effective	3. Moderate	E. Unlikely	Low 21	Adopt established Emergency response plan	Government	At lease handback	3. Moderate	E. Unlikely	Low 21
										Identify all emergency responder stakeholders, commence discussion around post closure management issues	Effective									
										Develop a recommended Emergency response plan to be circulated to relevant stakeholders. These may be targeted depending on job description of emergency personnel	Effective									

LEIGH CREEK MINE CLOSURE - RISK REGISTER

DOMAIN 7 - LOBE C - FEBRUARY 2017

Note: Mining ceased in this Domain in 1977, with no mining activity since. There are no records on the geotechnical stability of the domain, and accordingly any further rehabilitation activities are not recommended due to 1) the uncertainty of the risks to operational safety in this environment, 2) the lack of any active spontaneous combustion observed in the last 40plus years and 3) a protocol of not disturbing previously treated areas that exhibit no signs of spontaneous combustion.

Risk Identification							Inherent Risk Rating			Residual Risk Rating					Proposed Mitigation of Risk Exposure / Improvement Actions			Target / Future Risk Rating		
ID	Category	Source	Pathway	Receptor	Potential Consequences	Exposure Type	Consequence	Likelihood	Rating & Priority	Current Approach or (Existing Controls)	Effectiveness	Consequence	Likelihood	Rating & Priority	Risk Reduction Treatment or Asset Improvement Strategic or Approved Action	Action Owner	Planned Completion Date	Consequence	Likelihood	Rating & Priority
D7-PS07	**Public Safety**	Gases, fire, smoke caused by geochemical processes. Generation of flammable gases (eg carbon monoxide and hydrogen) produced when fighting fires with water.	Geochemical processes	Emergency services responding to the fire/ smoke or injured person	Illness or injury of emergency service personnel	Safety	3. Moderate	E. Unlikely	Low 21	As D7-PS01, and D7-PS05	Effective	3. Moderate	E. Unlikely	Low 21	Adopt established Emergency response plan	Government	At lease handback	3. Moderate	E. Unlikely	Low 21
										Identify all emergency responder stakeholders, commence discussion around post closure management issues	Effective									
										Develop a recommended Emergency response plan to be circulated to relevant stakeholders. These may be targeted depending on job description of emergency personnel	Effective									
D7-PS08	**Safety**	Fire, smoke and gases caused by geochemical processes within the domain	Geochemical processes	Authorised persons undertaking work in the domain	Illness or injury of authorised persons	Safety	3. Moderate	E. Unlikely	Low 21	As D7-PS01, D7-PS05	Effective	3. Moderate	E. Unlikely	Low 21	Adopt mine access procedures post closure	Government	At lease handback	3. Moderate	E. Unlikely	Low 21
										Develop mine access procedures for authorised personnel post closure	Effective									
D7-PS09	**Public Safety**	Fire, smoke and gases caused by geochemical processes within the domain	Geochemical processes	Off lease communities	Illness or injury of adjacent communities odour (nuisance)	Safety	5. Insignificant	E. Unlikely	Low 25	NOTE: No instances in the past 40+ years.										
D7-VA01	**Visual Amenity from Lyndhurst Highway**	WRDs	Visual amenity	Public on Lyndhurst Highway	Public complaint - none received over history of mine		5. Insignificant	E. Unlikely	Low 25	Note: Previously completed rehabilitation work on waste dumps immediately facing Highway					No further work required					
D7-SW01	**Surface water management**	Surface water runoff with suspended solids	Contaminated water flowing offsite	Runoff from surface dumps into off lease waterways	Surface water leads to impact on downstream receptors Note: dumps have been in-situ since 1970s and have limited vegetation coverage	Environmental	4. Minor	D. Possible	Low 20	Review of surface water management plans and input into final designs	Effective	4. Minor	E. Unlikely	Low 23	Implement monitoring program for water quality, as per the Water Quality Management Plan ie Lobe C Creek	Flinders	Jul-18	5. Insignificant	E. Unlikely	Low 25

LEIGH CREEK MINE CLOSURE - RISK REGISTER

DOMAIN 7 - LOBE C - FEBRUARY 2017

Note: Mining ceased in this Domain in 1977, with no mining activity since. There are no records on the geotechnical stability of the domain, and accordingly any further rehabilitation activities are not recommended due to 1) the uncertainty of the risks to operational safety in this environment, 2) the lack of any active spontaneous combustion observed in the last 40plus years and 3) a protocol of not disturbing previously treated areas that exhibit no signs of spontaneous combustion.

Risk Identification							Inherent Risk Rating			Residual Risk Rating					Proposed Mitigation of Risk Exposure / Improvement Actions			Target / Future Risk Rating		
ID	Category	Source	Pathway	Receptor	Potential Consequences	Exposure Type	Consequence	Likelihood	Rating & Priority	Current Approach or (Existing Controls)	Effectiveness	Consequence	Likelihood	Rating & Priority	Risk Reduction Treatment or Asset Improvement Strategic or Approved Action	Action Owner	Planned Completion Date	Consequence	Likelihood	Rating & Priority
D7-SW02	**Surface water management**	Acid and metalliferous drainage AMD	Acidic water flowing offsite due to overtopping of Lobe C pit water	Off lease waterways	Surface water leads to impact on downstream receptors Note: Acid mine drainage is not an existing known environmental hazard at the mine Note: evaporation rates exceed water inflows	Environmental	3. Moderate	E. Unlikely	Low 21	Prevent external surface water inflows to the pit, ie close the breach in the southern wall of Lobe C	Effective	4. Minor	E. Unlikely	Low 23	Implement monitoring program for water quality, as per the Water Quality Management Plan, ie Lobe C Creek	Flinders	Jul-18	5. Insignificant	E. Unlikely	Low 25
D7-GW01	**Ground water management**	Pit water	Seepage to groundwater	Shallow local aquifers	Adverse impact on confined groundwater quality Evaporation rates exceed water inflow and hold water level well below shallow aquifers	Environmental	5. Insignificant	D. Possible	Low 24	Review of surface water management plans and input into final designs	Effective	5. Insignificant	E. Unlikely	Low 25						
D7-GW02	**Ground water management**	Pit water	Seepage to shallow groundwater (eg Telford gravels)	Groundwater dependent ecosystems	Offsite migration of ground water leads to impact on downstream receptors Note: the updated groundwater report concludes negligible risk of overtopping Lobe C pit, leading to contaminating the shallow Telford gravels	Environmental	3. Moderate	E. Unlikely	Low 21	Undertake independent assessment of ground water, MWH *Groundwater Aspects of Mine Closure*	Effective	5. Insignificant	E. Unlikely	Low 25	Implement water monitoring program for pit water level to confirm basin is a terminal sink	Flinders	Jul-18	5. Insignificant	E. Unlikely	Low 25
										Prevent external surface water inflows to the pit, ie close the breach in the southern wall of Lobe C	Effective	4. Minor	E. Unlikely	Low 23						
D7-GW03	**Ground water management**	Acidic and metalliferous drainage AMD	AMD from incident rainfall on dump surfaces, or seepage through waste dumps, reports to underlying ground water (eg Telford gravels)	Groundwater dependent ecosystems	Offsite migration of ground water leads to impact on downstream receptors	Environmental	5. Insignificant	E. Unlikely	Low 25	Undertake independent assessment of ground water, MWH *Groundwater Aspects of Mine Closure*	Effective	5. Insignificant	E. Unlikely	Low 25	Implement water monitoring program for pit water level to confirm basin is a terminal sink	Flinders	Jul-18	5. Insignificant	E. Unlikely	Low 25
D7-IH01	**Indigenous & Heritage**	Public / unauthorised access	Damage to heritage areas	Indigenous Heritage areas	No known Indigenous & Heritage items or areas n this Domain	Heritage									No further work required					

LEIGH CREEK MINE CLOSURE - RISK REGISTER

DOMAIN 7 - LOBE C - FEBRUARY 2017

Note: Mining ceased in this Domain in 1977, with no mining activity since. There are no records on the geotechnical stability of the domain, and accordingly any further rehabilitation activities are not recommended due to 1) the uncertainty of the risks to operational safety in this environment, 2) the lack of any active spontaneous combustion observed in the last 40plus years and 3) a protocol of not disturbing previously treated areas that exhibit no signs of spontaneous combustion.

Risk Identification							Inherent Risk Rating			Residual Risk Rating					Proposed Mitigation of Risk Exposure / Improvement Actions			Target / Future Risk Rating		
ID	Category	Source	Pathway	Receptor	Potential Consequences	Exposure Type	Consequence	Likelihood	Rating & Priority	Current Approach or (Existing Controls)	Effectiveness	Consequence	Likelihood	Rating & Priority	Risk Reduction Treatment or Asset Improvement Strategic or Approved Action	Action Owner	Planned Completion Date	Consequence	Likelihood	Rating & Priority
D7-DM01	**Dust Management**	Dust	Wind exposure	Surrounding communities	Dust affects communities (nuisance only)	Environmental	5. Insignificant	E. Unlikely	Low 25	No further works, landform is now stable.										
D7-PS10	**Infrastructure**	Any existing infrastructure	Deteriorating infrastructure	Authorised or unauthorised access	All Infrastructure has been removed from this Domain	Safety														
D7-NF01	**Native Flora**	Increased risk of pests (flora)	Pests spreading across leases	Native flora	Potential increase in pests (flora)	Environmental	4. Minor	D. Possible	Low 20	Current pest control program ceases at mine closure		4. Minor	C. Likely	Medium 17	New landowner takes control for weed control with NRM Board	Government		4. Minor	D. Possible	Low 20
										Consultation with North Flinders Group NRM	Effective									
D7-NF02	**Native Fauna**	Increased risk of pests (Fauna)	Pests breeding on leases	Native fauna	Potential increase in pests (fauna)	Environmental	4. Minor	D. Possible	Low 20	Current pest control program ceases at mine closure		4. Minor	C. Likely	Medium 17	New landowner takes control for pest control with NRM Board	Government		4. Minor	D. Possible	Low 20
										Consultation with North Flinders Group NRM	Effective									
D7-NF03	**Native Fauna**	Pit lakes, pit walls and geochemical processes	Access to pits and WRDs	Native fauna	Injury or death of native fauna	Environmental	5. Insignificant	E. Unlikely	Low 25	Low risk (as evidenced by history during life of mine), no further controls required										
D7-PS11	**Public Safety**	Variable saturation of coal in Lobe C pit	Pit lake level fluctuations over time	Lobe C pit	Possible spontaneous combustion in Lobe C pit	Safety				The exposed coal seams in the pit floor of Lobe C have been under water for several decades, and it is unknown what exposure occurred prior to pit flooding, and the associated oxidation and reduction in spon comb propensity. Accordingly it is unknown whether there is a risk of spontaneous combustion in Lobe C pit due to pit lake level fluctuations.										
D7-PS12	**Public Safety**	Major spon com outbreak	Oxygen deficient atmosphere in pit due to spontaneous combustion	Member of the public in the base of the pit, e.g. trespasser	Adverse health impact	Safety	3. Moderate	E. Unlikely	Low 21	Controls as per D7-PS01	Effective	4. Minor	E. Unlikely	Low 23	NOTE: Potential for asphyxiation is considered extremely unlikely. There has been no evidence of this risk over the life of the operation. It is noted that spon comb risks during post closure will be markedly reduced compared to running an operational mine (spon comb propensity testing program forecast reactivity to be negligible after 5 years).					

LEIGH CREEK MINE CLOSURE - RISK REGISTER

DOMAIN 7 - LOBE C - FEBRUARY 2017

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Risk Identification							Inherent Risk Rating			Residual Risk Rating					Proposed Mitigation of Risk Exposure / Improvement Actions			Target / Future Risk Rating		
ID	Category	Source	Pathway	Receptor	Potential Consequences	Exposure Type	Consequence	Likelihood	Rating & Priority	Current Approach or (Existing Controls)	Effectiveness	Consequence	Likelihood	Rating & Priority	Risk Reduction Treatment or Asset Improvement Strategic or Approved Action	Action Owner	Planned Completion Date	Consequence	Likelihood	Rating & Priority
D7-PS13	Public Safety	Major spon com outbreak	Oxygen deficient atmosphere in pit due to spon com	Emergency services responding to the fire/ smoke or injured person. Authorised persons undertaking work in the domain.	Adverse health impact	Safety	3. Moderate	E. Unlikely	Low 21	Controls as per D7-PS01	Effective	3. Moderate	E. Unlikely	Low 21	NOTE: Potential for asphyxiation is considered extremely unlikely. There has been no evidence of this risk over the life of the operation. It is noted that spon comb risks during post closure will be markedly reduced compared to running an operational mine (spon comb propensity testing program forecast reactivity to be negligible after 5 years).					

LEIGH CREEK MINE CLOSURE - RELINQUISHMENT COMPLETION CRITERIA

DOMAIN 8 - LOBE D - FEBRUARY 2017

ID	Risk Ref	Objective	Objective Measurement Criteria	What will be measured and form of measurement	Locations	Frequency	Control / baseline data	Leading indication criteria
D8-MC01 see D9-MC01	D8-PS01 D8-PS02 D8-PS03 D8-PS04 D8-PS05 D8-PS06	Public safety risk of access to mine site managed to ALARP by fencing.	*See D9-MC01*	*See D9-MC01*	*See D9-MC01*	*See D9-MC01*	*See D9-MC01*	*See D9-MC01*
D8-MC02 see D9-MC04	D8-PS06 D8-PS07	Public safety risks are managed to ALARP post lease transfer by future leaseholder / Government / Emergency Services via appropriate Emergency Response Management Plan provided to stakeholders on relinquishment.	*See D9-MC04*	*See D9-MC04*	*See D9-MC04*	*See D9-MC04*	*See D9-MC04*	*See D9-MC04*
D8-MC03	D8-SW02 D8-GW01 D8-GW02	Future ground and surface water contamination managed to ALARP by preventing surface water entering the mine void area Lobe D.	Independent verification that main surface water flows to the pit are blocked, see Section 14.8 ADP Mine Closure.	Audit report by suitably qualified independent FP-engaged person confirms main surface water inflow paths are blocked, see Section 14.8, ADP Mine Closure.	Domain 8 - Lobe D, as per Section 9.14.8, Fig 88, ADP Mine Closure.	Within 12 months of approval of the ADP Mine Closure.	Pit water level data.	Pit water level measurement during closure. Quarterly Mine Closure report to DSD.
D8-MC04 see D9-MC07	D8-NF01 D8-NF02	Environmental risks are managed to ALARP by future leaseholders / Government via a Flora and Fauna Pest Control plan provided by FP at handover.	*See D9-MC07*	*See D9-MC07*	*See D9-MC07*	*See D9-MC07*	*See D9-MC07*	*See D9-MC07*
D8-MC05 see D9-MC03	D8-PS01 D8-PS02 D8-PS03 D8-PS04 D8-PS05 D8-PS06 D8-PS07 D8-PS08	Public safety risk of access to mine site managed to ALARP by future leaseholder / government via controlled site access procedure.	*See D9-MC03*	*See D9-MC03*	*See D9-MC03*	*See D9-MC03*	*See D9-MC03*	*See D9-MC03*
D8-MC06	D8-PS01 D8-PS02 D8-PS03 D8-PS04 D8-PS05 D8-PS06 D8-PS07 D8-PS08 D8-PS09 D8-PS11 D8-PS12 D8-PS13 D8-SW01 D8-SW02 D8-GW02 D8-GW03 D8-NF01 D8-NF02	To manage future environmental and safety risks to ALARP by development of ongoing monitoring and management plan for post relinquishment.	Ongoing monitoring and management plan is developed in consultation with DSD and EPA and provided by FP for post relinquishment application by FP / contractor / future leaseholder / Government. Monitoring and management criteria to include: - ongoing maintenance of fencing and signage - periodic inspection of residual infrastructure - surface water run off quality monitoring (as required) - spontaneous combustion monitoring (as required) - periodic weed and pest control - periodic maintenance of landforms in particular following heavy rainfall events (as required).	Provision of a joint "Post Lease Transfer Monitoring and Maintenance Plan" for Leigh Creek Coalfields, as per Section 19.1 ADP Mine Closure.	Domain 8 - Lobe D, Section 9.14.8, Fig 88, ADP Mine Closure.	Once, within 12mths of approval of the ADP Mine Closure.	Data, designs and processes developed during Mine Closure.	Provision of discussion "Draft - Post Lease Transfer Monitoring and Maintenance Plan" 6 & 9 months post ADP approval. Quarterly Mine Closure report to DSD.
D8-MC07	See D5-MC05	Safety and environmental risks are managed to ALARP by implementation of EPA approved Voluntary Site Contamination Assessment Proposal (22nd Sept 2016), that identifies contaminated areas, develops and implements remediation plans (as required).	As per Section 14.5 ADP Closure plan and in accordance with EPA site contamination requirements: 1. Completion of - Preliminary Site Investigation (PSI) - Detailed Site Investigation (DSI) 2. Formation of remediation plan (as required) 3. Implementation of remediation plan to schedule (as required).	EPA approval of: - PSI report - DSI report - Site Remediation reports (as required).	Domain 8 - Lobe D, Section 9.14.8, Fig 88, ADP Mine Closure. See site Contamination Assessment Reports, Appendix R, ADP Mine Closure for detailed locations.	Once, prior to application of lease transfer.	Section 12.2 Site Contamination Assessment, ADP, Mine Closure. Site Contamination Assessment Reports, Appendix R, ADP Mine Closure. PSI, DSI, Remediation plan. Prior compliance inspections. Quarterly progress report as provided to EPA.	Quarterly progress report to be provided to EPA.

LEIGH CREEK MINE CLOSURE - RISK REGISTER

DOMAIN 8 - LOBE D - FEBRUARY 2017

Note: mining ceased in this Domain in 1977, with no mining activity since. There are no records on the geotechnical stability of the domain, and accordingly any further rehabilitation activities are not recommended due to 1) the uncertainty of the risks to operational safety in this environment, 2) the lack of any active spontaneous combustion being observed in the last 40plus years and 3) a protocol of not disturbing previously treated areas that exhibit no signs of spontaneous combustion.

Risk Identification							Inherent Risk Rating			Residual Risk Rating					Proposed Mitigation of Risk Exposure / Improvement Actions			Target / Future Risk Rating		
ID	Category	Source	Pathway	Receptor	Potential Consequences	Exposure Type	Consequence	Likelihood	Rating & Priority	Current Approach or (Existing Controls)	Effectiveness	Consequence	Likelihood	Rating & Priority	Risk Reduction Treatment or Asset Improvement Strategic or Approved Action	Action Owner	Planned Completion Date	Consequence	Likelihood	Rating & Priority
D8-PS01	Public Safety	Pit wall	Failure of pit high / low wall	Member of the public, e.g. trespasser	Injury / fatality	Safety	1. Catastrophic	D. Possible	High 9	Existing bunding / trenching designed to restrict access long term	Effective	1. Catastrophic	E. Unlikely	High 14				1. Catastrophic	E. Unlikely	High 14
										There is currently one access point from Lyndhurst highway, this access point to be blocked. The access path from Lobe B also to be blocked.	Effective									
										Stock fencing & signage, see MCP.	Marginal				Ongoing maintenance of fencing	Leaseholder / Government	Post lease handback			
D8-PS02	Public Safety	Collapse of a surface dump	Failure of the dump	Member of the public, e.g. trespasser	Person(s) on dump when dump collapses - injury / fatality	Safety	3. Moderate	E. Unlikely	Low 21	Site entry controls as per D8-PS01	Effective	3. Moderate	E. Unlikely	Low 21						
D8-PS03	Public Safety	Spon com underneath surface	Failure of the dump surface	Person and equipment on the dump surface	Person(s) on dump when dump surface collapses - fatality / injury	Safety	1. Catastrophic	D. Possible	High 9	Site entry controls as per D8-PS01	Effective	1. Catastrophic	D. Possible	High 9	No operation on dumps due to unknown condition under surface and stable environment over last 40 plus years					
D8-PS04	Public Safety	Gases, fire, smoke caused by geochemical processes in exposed coal	Access to domain pits	Member of the public, e.g. trespasser	Medical affect on members of the public (No instances of spon com at Lobe D since privatisation)	Safety	3. Moderate	E. Unlikely	Low 21	Site entry controls as per D8-PS01	Effective	3. Moderate	E. Unlikely	Low 21						
										Visual monitoring for any spon comb activity throughout the closure period	Effective									
D8-PS05	Public Safety	Gases, fire, smoke caused by geochemical processes in the WRDs	Access to domain WRDs	Members of the public i.e. trespassers	Medical affect on members of the public	Safety	3. Moderate	E. Unlikely	Low 21	Site entry controls as per D8-PS01	Effective	3. Moderate	E. Unlikely	Low 21						
										Visual monitoring for any spon comb activity throughout the closure period	Effective									
D8-PS06	Public Safety	Gases, fire, smoke caused by geochemical processes. Generation of flammable gases (eg carbon monoxide and hydrogen) produced when fighting fires with water.	Access to domain WRDs	Emergency services responding to the fire/ smoke or injured person	Illness or injury of emergency service personnel Note - Minimal spon com issues in WRDs in this Domain	Safety	3. Moderate	D. Possible	Medium 16	As D8-PS01, D8-PS05	Effective	3. Moderate	E. Unlikely	Low 21						
										Identify all emergency responder stakeholders, commence discussion around post closure management issues	Effective				Adopt established Emergency response plan	Government	At lease handback	3. Moderate	E. Unlikely	Low 21
										Develop a recommended Emergency response plan to be circulated to relevant stakeholders. These may be targeted depending on job description of emergency personnel	Effective									

LEIGH CREEK MINE CLOSURE - RISK REGISTER

DOMAIN 8 - LOBE D - FEBRUARY 2017

Note: mining ceased in this Domain in 1977, with no mining activity since. There are no records on the geotechnical stability of the domain, and accordingly any further rehabilitation activities are not recommended due to 1) the uncertainty of the risks to operational safety in this environment, 2) the lack of any active spontaneous combustion being observed in the last 40plus years and 3) a protocol of not disturbing previously treated areas that exhibit no signs of spontaneous combustion.

Risk Identification							Inherent Risk Rating			Residual Risk Rating					Proposed Mitigation of Risk Exposure / Improvement Actions			Target / Future Risk Rating		
ID	Category	Source	Pathway	Receptor	Potential Consequences	Exposure Type	Consequence	Likelihood	Rating & Priority	Current Approach or (Existing Controls)	Effectiveness	Consequence	Likelihood	Rating & Priority	Risk Reduction Treatment or Asset Improvement Strategic or Approved Action	Action Owner	Planned Completion Date	Consequence	Likelihood	Rating & Priority
D8-PS07	**Public Safety**	Gases, fire, smoke caused by geochemical processes. Generation of flammable gases (eg carbon monoxide and hydrogen) produced when fighting fires with water.	Geochemical processes	Emergency services responding to the fire/ smoke or injured person	Illness or injury of emergency service personnel	Safety	3. Moderate	E. Unlikely	Low 21	As D8-PS01, and D8-PS05	Effective	3. Moderate	E. Unlikely	Low 21						
										Identify all emergency responder stakeholders, commence discussion around post closure management issues	Effective				Adopt established Emergency response plan	Government	At lease handback	3. Moderate	E. Unlikely	Low 21
										Develop a recommended Emergency response plan to be circulated to relevant stakeholders. These may be targeted depending on job description of emergency personnel	Effective									
D8-PS08	**Safety**	Fire, smoke and gases caused by geochemical processes within the domain	Geochemical processes	Authorised persons undertaking work in the domain	Illness or injury of authorised persons	Safety	3. Moderate	E. Unlikely	Low 21	As D8-PS01, D8-PS05	Effective	3. Moderate	E. Unlikely	Low 21	Adopt mine access procedures post closure	Government	At lease handback	3. Moderate	E. Unlikely	Low 21
										Develop mine access procedures for authorised personnel post closure	Effective									
D8-PS09	**Public Safety**	Fire, smoke and gases caused by geochemical processes within the domain	Geochemical processes	Off lease communities	Illness or injury of adjacent communities odour (nuisance)	Safety	5. Insignificant	E. Unlikely	Low 25											
D8-VA01	**Visual Amenity from Lyndhurst Highway**	WRDs	Visual amenity	Public on Lyndhurst Highway	public complaint - none received over history of mine		5. Insignificant	E. Unlikely	Low 25	Note: Previously completed rehabilitation work on waste dumps immediately facing Highway					No further work required					
D8-SW01	**Surface water management**	Surface water runoff with suspended solids	Contaminated water flowing offsite	Runoff from surface dumps into off lease waterways	Surface water leads to impact on downstream receptors Note: dumps have been in-situ since 1970s and have limited vegetation coverage	Environmental	4. Minor	D. Possible	Low 20	Review of surface water management plans and input into final designs	Effective	4. Minor	E. Unlikely	Low 23	Implement monitoring program for water quality, as per the Water Quality Management Plan ie Northfield Creek	Flinders	Jul-18	5. Insignificant	E. Unlikely	Low 25

LEIGH CREEK MINE CLOSURE - RISK REGISTER

DOMAIN 8 - LOBE D - FEBRUARY 2017

Note: mining ceased in this Domain in 1977, with no mining activity since. There are no records on the geotechnical stability of the domain, and accordingly any further rehabilitation activities are not recommended due to 1) the uncertainty of the risks to operational safety in this environment, 2) the lack of any active spontaneous combustion being observed in the last 40plus years and 3) a protocol of not disturbing previously treated areas that exhibit no signs of spontaneous combustion.

Risk Identification							Inherent Risk Rating			Residual Risk Rating					Proposed Mitigation of Risk Exposure / Improvement Actions			Target / Future Risk Rating		
ID	Category	Source	Pathway	Receptor	Potential Consequences	Exposure Type	Consequence	Likelihood	Rating & Priority	Current Approach or (Existing Controls)	Effectiveness	Consequence	Likelihood	Rating & Priority	Risk Reduction Treatment or Asset Improvement Strategic or Approved Action	Action Owner	Planned Completion Date	Consequence	Likelihood	Rating & Priority
D8-SW02	**Surface water management**	Acid and metalliferous drainage AMD	Acidic water flowing offsite due to overtopping of Lobe D pit water	Off lease waterways	Surface water leads to impact on downstream receptors Note: Acid mine drainage is not an existing known environmental hazard at the mine Note: evaporation rates exceed water inflows	Environmental	3. Moderate	E. Unlikely	Low 21	Prevent surface water inflows to the pit	Effective	4. Minor	E. Unlikely	Low 23	Implement monitoring program for water quality, as per the Water Quality Management Plan ie Northfield Creek	Flinders	Jul-18	5. Insignificant	E. Unlikely	Low 25
D8-GW01	**Ground water management**	Pit water	Seepage to groundwater	Shallow local aquifers	Adverse impact on confined groundwater quality Evaporation rates exceed water inflow	Environmental	5. Insignificant	E. Unlikely	Low 25											
D8-GW02	**Ground water management**	Pit water	Seepage to shallow groundwater (eg Telford gravels)	Groundwater dependent ecosystems	Offsite migration of ground water leads to impact on downstream receptors Note: the updated groundwater report concludes negligible risk of overtopping Lobe C pit, leading to contaminating the shallow Telford gravels	Environmental	4. Minor	E. Unlikely	Low 23	Undertake independent assessment of ground water, MWH *Groundwater Aspects of Mine Closure*	Effective	5. Insignificant	E. Unlikely	Low 25	Implement water monitoring program for pit water level to confirm basin is a terminal sink	Flinders	Jul-18	5. Insignificant	E. Unlikely	Low 25
										Prevent external surface water inflows to the pit, ie close the breach in the southern wall of Lobe C	Effective	4. Minor	E. Unlikely	Low 23						
D8-GW03	**Ground water management**	Acidic and metalliferous drainage AMD	AMD from incident rainfall on dump surfaces, or seepage through waste dumps, reports to underlying ground water (eg Telford gravels)	Groundwater dependent ecosystems	Offsite migration of ground water leads to impact on downstream receptors Note: updated MWH report concluded there "no groundwater ecosystems that could be affected by the closure of Lobe B were identified in this study".	Environmental	5. Insignificant	E. Unlikely	Low 25	Undertake independent assessment of ground water, MWH *Groundwater Aspects of Mine Closure*	Effective	5. Insignificant	E. Unlikely	Low 25	Implement water monitoring program for pit water level to confirm basin is a terminal sink	Flinders	Jul-18	5. Insignificant	E. Unlikely	Low 25
D8-IH01	**Indigenous & Heritage**	Public / unauthorised access	Damage to heritage areas	Indigenous Heritage areas	No known Indigenous & Heritage items or areas n this Domain	Heritage									No further work required					

LEIGH CREEK MINE CLOSURE - RISK REGISTER

DOMAIN 8 - LOBE D - FEBRUARY 2017

Note: mining ceased in this Domain in 1977, with no mining activity since. There are no records on the geotechnical stability of the domain, and accordingly any further rehabilitation activities are not recommended due to 1) the uncertainty of the risks to operational safety in this environment, 2) the lack of any active spontaneous combustion being observed in the last 40plus years and 3) a protocol of not disturbing previously treated areas that exhibit no signs of spontaneous combustion.

Risk Identification							Inherent Risk Rating			Residual Risk Rating					Proposed Mitigation of Risk Exposure / Improvement Actions			Target / Future Risk Rating		
ID	Category	Source	Pathway	Receptor	Potential Consequences	Exposure Type	Consequence	Likelihood	Rating & Priority	Current Approach or (Existing Controls)	Effectiveness	Consequence	Likelihood	Rating & Priority	Risk Reduction Treatment or Asset Improvement Strategic or Approved Action	Action Owner	Planned Completion Date	Consequence	Likelihood	Rating & Priority
D8-TR01	**Tyre Dump**	Historic Tyre Dump	Inert cover of tyre dump water damaged exposing tyres	Air quality	Risk of tyres catching fire (minimal)	Environmental	5. Insignificant	E. Unlikely	Low 25	Pit entry controls as per D8-PS01	Effective	5. Insignificant	E. Unlikely	Low 25	Tyres to remain in situ, no further action required, as per MCP					
D8-DM01	**Dust Management**	Dust	Wind exposure	Surrounding communities	Dust affects communities (nuisance only)	Environmental	5. Insignificant	E. Unlikely	Low 25	No further works, landform is now stable.										
D8-PS10	**Infrastructure**	Any existing infrastructure	Deteriorating infrastructure	Authorised or unauthorised access	All Infrastructure has been removed from this Domain	Safety														
D8-NF01	**Native Flora**	Increased risk of pests (flora)	Pests spreading across leases	Native flora	Potential increase in pests (flora)	Environmental	4. Minor	D. Possible	Low 20	Current pest control program ceases at mine closure		4. Minor	C. Likely	Medium 17	New landowner takes control for weed control with NRM Board	Government		4. Minor	D. Possible	Low 20
										Consultation with North Flinders Group NRM	Effective								
D8-NF02	**Native Fauna**	Increased risk of pests (Fauna)	Pests breeding on leases	Native fauna	Potential increase in pests (fauna)	Environmental	4. Minor	D. Possible	Low 20	Current pest control program ceases at mine closure		4. Minor	C. Likely	Medium 17	New landowner takes control for pest control with NRM Board	Government		4. Minor	D. Possible	Low 20
										Consultation with North Flinders Group NRM	Effective								
D8-NF03	**Native Fauna**	Pit lakes, pit walls and geochemical processes	Access to pits and WRDs	Native fauna	Injury or death of native fauna	Environmental	5. Insignificant	E. Unlikely	Low 25	Low risk (as evidenced by history during life of mine), no further controls required										
D8-PS11	**Public Safety**	Variable saturation of coal in Lobe D pit	Pit lake level fluctuations over time	Lobe D pit	Possible spontaneous combustion in Lobe D pit	Safety				Lobe D has recently been dry, is cut off from external flows and only partly fills with significant rainfall events. It is unknown whether there is a risk of spontaneous combustion in Lobe D due to pit lake level fluctuations, however the lack of any observed spontaneous combustion activity over the last 40 years in conjunction with the fluctuation in water levels over this period, would suggest this is unlikely.										

LEIGH CREEK MINE CLOSURE - RISK REGISTER

DOMAIN 8 - LOBE D - FEBRUARY 2017

Note: mining ceased in this Domain in 1977, with no mining activity since. There are no records on the geotechnical stability of the domain, and accordingly any further rehabilitation activities are not recommended due to 1) the uncertainty of the risks to operational safety in this environment, 2) the lack of any active spontaneous combustion being observed in the last 40plus years and 3) a protocol of not disturbing previously treated areas that exhibit no signs of spontaneous combustion.

Risk Identification							Inherent Risk Rating			Residual Risk Rating					Proposed Mitigation of Risk Exposure / Improvement Actions			Target / Future Risk Rating		
ID	Category	Source	Pathway	Receptor	Potential Consequences	Exposure Type	Consequence	Likelihood	Rating & Priority	Current Approach or (Existing Controls)	Effectiveness	Consequence	Likelihood	Rating & Priority	Risk Reduction Treatment or Asset Improvement Strategic or Approved Action	Action Owner	Planned Completion Date	Consequence	Likelihood	Rating & Priority
D8-PS12	Public Safety	Major spon com outbreak	Oxygen deficient atmosphere in pit due to spontaneous combustion	Member of the public in the base of the pit, e.g. trespasser	Adverse health impact	Safety	3. Moderate	E. Unlikely	Low 21	Controls as per D8-PS01	Effective	4. Minor	E. Unlikely	Low 23	NOTE: Potential for asphyxiation is considered extremely unlikely. There has been no evidence of this risk over the life of the operation. It is noted that spon comb risks during post closure will be markedly reduced compared to running an operational mine (spon comb propensity testing program forecast reactivity to be negligible after 5 years).					
D8-PS13	Public Safety	Major spon com outbreak	Oxygen deficient atmosphere in pit due to spon com	Emergency services responding to the fire/ smoke or injured person. Authorised persons undertaking work in the domain.	Adverse health impact	Safety	3. Moderate	E. Unlikely	Low 21	Controls as per D8-PS01	Effective	3. Moderate	E. Unlikely	Low 21	NOTE: Potential for asphyxiation is considered extremely unlikely. There has been no evidence of this risk over the life of the operation. It is noted that spon comb risks during post closure will be markedly reduced compared to running an operational mine (spon comb propensity testing program forecast reactivity to be negligible after 5 years).					

LEIGH CREEK MINE CLOSURE - RISK REGISTER

DOMAIN 9 - REST OF LEASE - JANUARY 2018

Risk Identification							Inherent Risk Rating			Residual Risk Rating					Proposed Mitigation of Risk Exposure / Improvement Actions			Target / Future Risk Rating		
ID	Category	Source	Pathway	Receptor	Potential Consequences	Exposure Type	Consequence	Likelihood	Rating & Priority	Current Approach or (Existing Controls)	Effectiveness	Consequence	Likelihood	Rating & Priority	Risk Reduction Treatment or Asset Improvement Strategic or Approved Action	Action Owner	Planned Completion Date	Consequence	Likelihood	Rating & Priority
D9-PS01	Public Safety	Quarry pit (high wall and pit lake)	Unauthorised members of the public (trespassers) accessing the site	Unauthorised members of the public	Injury/Fatality	Safety	2. Major	E. Unlikely	Medium 18	Stock fencing and signage on mine perimeter - refer Mine Closure Plan	Effective	2. Major	E. Unlikely	Medium 18	Future management and control by responsible lease holder					
										Construction of Safety Bund at Pit wall crest	Effective									
										Very remote site - no vehicular access	Effective									
D9-SW01	Surface water management	Surface water impacted by suspended solids runoff from landfill	Water flowing offsite	Surrounding environment/ waterways	Potentially contaminated water flowing from landfill impacting downstream receptors	Environmental	3. Moderate	D. Possible	Medium 16	Management of the landfill in accordance with the Landfill Environmental Management Plan, the design of the landfill and the construction of the cells is such to minimise water run off, eg one cell open at a time for general waste, management of the cells and coverage at the end of each day.	Effective	3. Moderate	E. Unlikely	Low 21	Future management and control by responsible licence holder					
										Independent assessment of regional surface water run off indicates no impact to dump from Retention Dam overflow	Effective									
										Cells located in elevated area	Effective									
D9-GW01	Ground water management	Landfill leachate to groundwater	Water flowing offsite	Surrounding environment/ waterways	Potentially contaminated water leaching from landfills impacting ground water	Environmental	4. Minor	D. Possible	Low 20	Management of the landfill site in accordance with the EPA approved Landfill Environment Management Plan, the design of the landfill and the cells is such to prevent any leachate from leaving the cells, eg cells are located in clay material with clay sealing at base of cells.	Effective	5. Insignificant	E. Unlikely	Low 25						
D9-IH01	Indigenous & Heritage	Known Indigenous heritage Area	Damage to indigenous / heritage area in the south east area of lease	Indigenous / heritage area	Damage to or loss of indigenous heritage area	Heritage	3. Moderate	E. Unlikely	Low 21	Demarcation included in MCP, location confidential	Ineffective	3. Moderate	E. Unlikely	Low 21	Ongoing management of heritage areas by leaseholder	Leaseholder / Government	Prior to lease handback			

LEIGH CREEK MINE CLOSURE - RISK REGISTER

DOMAIN 9 - REST OF LEASE - JANUARY 2018

Risk Identification							Inherent Risk Rating			Residual Risk Rating					Proposed Mitigation of Risk Exposure / Improvement Actions			Target / Future Risk Rating		
ID	Category	Source	Pathway	Receptor	Potential Consequences	Exposure Type	Consequence	Likelihood	Rating & Priority	Current Approach or (Existing Controls)	Effectiveness	Consequence	Likelihood	Rating & Priority	Risk Reduction Treatment or Asset Improvement Strategic or Approved Action	Action Owner	Planned Completion Date	Consequence	Likelihood	Rating & Priority
D9-IH02	**Indigenous & Heritage**	Known heritage Area	Damage to heritage area, stone hut and windmill	Indigenous / heritage area	Damage to or loss of indigenous heritage area	Heritage	3. Moderate	E. Unlikely	Low 21	Demarcation included in MCP. Ensure rehabilitation designs do not impact on European heritage site.	Effective	3. Moderate	E. Unlikely	Low 21	Ongoing management of heritage areas by leaseholder	Leaseholder / Government	Prior to lease handback			
D9-DM01	**Dust Management**	Dust	Wind exposure	Surrounding communities	Dust affects communities (nuisance only)	Environmental	5. Insignificant	E. Unlikely	Low 25	Cells covered at the end of each day	Effective	5. Insignificant	E. Unlikely	Low 25						
										Revegetation following the completion of the cell (refer LEMP)	Effective									
D9-PS01	**Infrastructure**	Any existing infrastructure	Deteriorating infrastructure	Authorised or unauthorised access	Injury	Safety				Refer to Domain 5 - Infrastructure risk assessment										

LEIGH CREEK MINE CLOSURE - RISK REGISTER

DOMAIN 9 - REST OF LEASE - JANUARY 2018

Risk Identification							Inherent Risk Rating			Residual Risk Rating					Proposed Mitigation of Risk Exposure / Improvement Actions			Target / Future Risk Rating		
ID	Category	Source	Pathway	Receptor	Potential Consequences	Exposure Type	Consequence	Likelihood	Rating & Priority	Current Approach or (Existing Controls)	Effectiveness	Consequence	Likelihood	Rating & Priority	Risk Reduction Treatment or Asset Improvement Strategic or Approved Action	Action Owner	Planned Completion Date	Consequence	Likelihood	Rating & Priority
D9-NF01	Native Flora	Increased risk of pests (flora)	Pests spreading across leases	Native flora	Potential increase in pests (flora)	Environmental	4. Minor	D. Possible	Low 20	Current pest control program ceases at mine closure		4. Minor	C. Likely	Medium 17	New landowner takes control for weed control with NRM Board	Government		4. Minor	D. Possible	Low 20
										Consultation with North Flinders Group NRM	Effective									
D9-NF02	Native Fauna	Increased risk of pests (Fauna)	Pests breeding on leases	Native fauna	Potential increase in pests (fauna)	Environmental	4. Minor	D. Possible	Low 20	Current pest control program ceases at mine closure		4. Minor	C. Likely	Medium 17	New landowner takes control for pest control with NRM Board	Government		4. Minor	D. Possible	Low 20
										Consultation with North Flinders Group NRM	Effective									
D9-NF03	Native Fauna	Pit lakes, pit walls and geochemical processes	Access to pits and WRDs	Native fauna	Injury or death of native fauna	Environmental	5. Insignificant	E. Unlikely	Low 25	Low risk (as evidenced by history during life of mine), no further controls required										
D9-LF01	Landfill site	Landfill contents	Uncontrolled dump management	Environment and public	Illegal dumping, vermin, litter, odour in event that landfill facility closes	Environmental, Safety, community and political	4. Minor	D. Possible	Low 20	Ongoing compliance management post lease handback with transfer of operational control to a new entity	Effective	4. Minor	D. Possible	Low 20	If landfill site retained, future licence holder assumes responsibility for landfill site	Government	Prior to lease handback	4. Minor	D. Possible	Low 20
															Licence transfer for the dump	EPA	Prior to lease handback			
										Landfill closure	Ineffective				If landfill site closed, potential for illegal dumping in region	Government	Prior to lease handback	3. Moderate	A. Almost Certain	Extreme 6

LEIGH CREEK MINE CLOSURE - RELINQUISHMENT COMPLETION CRITERIA

DOMAIN 9 - REST OF LEASE - JANUARY 2018

ID	Risk Ref	Objective	Objective Measurement Criteria	What will be measured and form of measurement	Locations	Frequency	Control / baseline data	Leading indication criteria
D9-MC01	D9-PS01 see also D3-MC04 D5-MC01 D6-MC04 D7-MC01 D8-MC01	Public safety risk of access to mine site managed to ALARP by fencing.	Verification that fencing and signage is constructed as per design (Section 13.3 ADP Mine Closure) ie *stock fencing* , and in sound condition.	Survey and condition report by appropriately qualified FP person confirms fencing in the required locations, and height, construction, materials and signage are in accordance with the design as per Section 13.3 ADP Mine Closure.	Domain 9 - Rest of Lease, Section 9.14.9, Fig 90, ADP Mine Closure As per Statutory Mine Plans, Appendix OO ADP Mine Closure.	Once, within 12mths of approval of the ADP Mine Closure.	Section 13.3 Site Access Control - ADP Mine Closure.	NA
D9-MC02	D9-PS01	Public safety risk of access to rail corridor managed ALARP by securely fenced rail corridor.	Verification that the rail corridor is secure, and as per design (fencing, gate and signage), Section 13.3 ADP Mine Closure.	Survey and condition report by appropriately qualified FP person confirms rail corridor is securely fenced, access road gate locked, with signage installed at the access road gate, in accordance with the design as per Section 13.3 ADP Mine Closure	As per Statutory Mine Plans, Appendix OO ADP Mine Closure.	Once, one month prior to application to surrender lease.	Integrity of fencing, gate and signage via inspections.	NA
D9-MC03	See D1-MC04 D3-MC05 D5-MC02 D6-MC05 D7-MC05 D8-MC05	Public safety risk of access to mine site managed to ALARP by future leaseholder / government via controlled site access procedure.	FP employ a facilitative process to communicate and review current site access procedures with relevant government and emergency management stakeholders. Site access procedures to be provided to leaseholder / government and emergency management stakeholders on relinquishment to ensure controlled access to site (including cemetery).	Communication of FP site access procedures, and facilitation of a review session with relevant government and emergency management stakeholders. Documented site access procedure updated and provided prior to handover.	Domain 9 - Rest of Lease, Section 9.14.9, Fig 90, ADP Mine Closure	Once, within 12mths of approval of the ADP Mine Closure.	Section 13.3 Site Access Control, ADP Mine Closure. LC Standard 15 - New Employees Visitors and Contractors Control.	Engagement of relevant stakeholders in the development of the procedure.
D9-MC04	See D1-MC09 D3-MC10 D6-MC10 D7-MC02 D8-MC02	Public safety risks are managed to ALARP post lease transfer by future leaseholder / Government / Emergency Services via appropriate Emergency Response Management Plan provided to stakeholders on relinquishment.	FP employ a facilitative process to communicate and review the LC Coalfields Emergency Response Plan with relevant Government and Emergency Services stakeholders. Emergency response plan provided to future leaseholder / Government / Emergency Services stakeholders on relinquishment so that any risks are known and understood.	Communication of FP Emergency Response Management Plan, and facilitation of a review session with relevant Government and Emergency Services stakeholders. Delivery of Emergency Response Management Plan to DSD, Emergency Services and future leaseholder in agreed format on relinquishment.	Domain 9 - Rest of Lease, Section 9.14.9, Fig 90, ADP Mine Closure.	Once, within 12mths of approval of the ADP Mine Closure.	LC Coalfields Emergency Response Management Plan.	Annual reviews of Emergency Response Management Plan to ensure document remains current.
D9-MC05	D9-GW01 D9-FL01	Environmental risks (such as contamination to groundwater and impacts to flora and fauna) from the Landfill facility are managed to ALARP by compliance with the conditions of EPA licence 13009.	Verification by an independent, suitably qualified person that the Landfill facility has been managed in accordance with the Landfill Environment Management Plan and meets the conditions of EPA licence 13009, prior to licence transfer to future leaseholder/Government OR Approval by the EPA that the Landfill facilities have been closed according to the conditions of EPA licence 13009 and the LEMP.	Report by independent, suitably qualified FP engaged person confirming: - Management of Landfill facility to licence conditions by compliance inspections, as per Section 15.1 ADP Mine Closure, until licence transferred to future leaseholder / Government on relinquishment OR - Landfill facility closed as per EPA licence 13009 conditions and the LEMP.	Domain 9 - Rest of Lease, Section 9.14.9, Fig 90, ADP Mine Closure. Appendix KK - Landfill Environment Management Plan.	Once at lease surrender.	Compliance inspections.	Quarterly progress report to be provided to EPA.
D9-MC06	D9-IH01 D9-IH02	Protection of Indigenous heritage sites throughout the Closure Program and Post-Closure Period.	Ongoing engagement with Adnyamathanha Traditional Landowners Association and South Australian Department for Aboriginal Affairs and Reconciliation. Locations of Indigenous heritage sites mapped and ongoing access management passed to future leaseholder / government.	Indigenous heritage site locations documented for access management by future leaseholder/Government (information controlled due to cultural sensitivity and protection of sites), as per Section 9.10 ADP Mine Closure.	As per Section 9.10, Fig 23, ADP Mine Closure.	Within 12 months of approval of the ADP Mine Closure.	Section 9.10 ADP Mine Closure.	NA
D9-MC07	D9-NF01 D9-NF02 see also D1-MC12 D2-MC04 D3-MC13 D4-MC05 D6-MC14 D7-MC04 D8-MC04	Environmental risks are managed to ALARP by future leaseholders / Government via a Flora and Fauna Pest Control plan provided by FP at handover.	FP employ a facilitative process to communicate and review Flora and Fauna Pest Control Management Plan with relevant stakeholders ie North Flinders Group NRM. Independent verification by suitably qualified person confirms final flora and fauna pest control activities have been undertaken prior to relinquishment, as per Section 15.2 ADP Mine Closure. Flora and Fauna Pest Control Management plan provided to leaseholder / Government on relinquishment.	Communication of FP Flora and Fauna Management Plan, and facilitation of a review session with relevant stakeholders (ie North Flinders Group NRM). Report by appropriately qualified FP person confirming final flora and fauna activities completed, as per section 15.2 ADP Mine Closure. Documented pest management plan, incorporating final control actions undertaken prior to relinquishment, as per Section 15.2 ADP Mine Closure.	Domain 9 - Rest of Lease, Section 9.14.9, Fig 90, ADP Mine Closure.	Once, within 12mths of approval of the ADP Mine Closure.	Section 15.2 Weed and Pest Control, ADP Mine Closure. Athel Pine and Parkinsonia Survey Oct 2011, Appendix Z ADP Mine Closure.	Quarterly Mine Closure report to DSD.

LEIGH CREEK MINE CLOSURE - RELINQUISHMENT COMPLETION CRITERIA

DOMAIN 9 - REST OF LEASE - JANUARY 2018

ID	Risk Ref	Objective	Objective Measurement Criteria	What will be measured and form of measurement	Locations	Frequency	Control / baseline data	Leading indication criteria
D9-MC08	D9-PS01 D9-GW01 D9-NF01 D9-NF02	To manage future environmental and safety risks to ALARP by development of ongoing monitoring and management plan for post relinquishment.	Ongoing monitoring and management plan is developed in consultation with DSD and EPA and provided by FP for post relinquishment application by FP / contractor / future leaseholder / Government. Monitoring and management criteria to include - ongoing maintenance of fencing and signage - periodic inspection of residual infrastructure - surface water run off quality monitoring (as required) - spontaneous combustion monitoring (as required) - periodic weed and pest control - periodic maintenance of landforms in particular following heavy rainfall events (as required).	Provision of a joint "Post Lease Transfer Monitoring and Maintenance Plan" for Leigh Creek Coalfields, as per Section 19.1 ADP Mine Closure.	Domain 9 - Rest of Lease, Section 9.14.9, Fig 90, ADP Mine Closure. Appendix KK - Landfill Environment Management Plan.	Once, within 12mths of approval of the ADP Mine Closure.	Data, designs and processes developed during Mine Closure.	Provision of discussion "Draft - Post Lease Transfer Monitoring and Maintenance Plan" 6 & 9 months post ADP approval. Quarterly Mine Closure report to DSD.
D9-MC09	See D5-MC05	Safety and environmental risks are managed to ALARP by implementation of EPA approved Voluntary Site Contamination Assessment Proposal (22nd Sept 2016), that identifies contaminated areas, develops and implements remediation plans (as required).	As per Section 14.5 ADP Closure plan and in accordance with EPA site contamination requirements: 1. Completion of - Preliminary Site Investigation (PSI) - Detailed Site Investigation (DSI) 2. Formation of remediation plan (as required) 3. Implementation of remediation plan to schedule (as required).	EPA approval of: - PSI report - DSI report - Site Remediation reports (as required).	Domain 9 - Rest of Lease, Section 9.14.9, Fig 90, ADP Mine Closure. See site Contamination Assessment Reports, Appendix R, ADP Mine Closure for detailed locations.	Once, prior to application of lease transfer.	Section 12.2 Site Contamination Assessment, ADP, Mine Closure. Site Contamination Assessment Reports, Appendix R, ADP Mine Closure. PSI, DSI, Remediation plan. Prior compliance inspections. Quarterly progress report as provided to EPA.	Quarterly progress report to be provided to EPA.
D9-MC10	D9-IH02	Protection of European Heritage sites throughout the Closure Program and Post-Closure Period.	The potential cultural and heritage value of the Stone Hut and windmill (Section 9.10 c) Non Indigenous Heritage, ADP Mine Closure), is protected by ensuring closure works do no impinge on the site.	The Stone hut and windmill sites are not impacted by the closure works program.	North West boundary of the Pastoral lease area, Lyndhurst Highway, just North of the Mine Access road.	Within 12 months of approval of the ADP Mine Closure.	Section 9.10 ADP Mine Closure.	NA
D9-MC11	D9-PS01	Public safety risk of access to the quarry pits managed to as low as is reasonably practicable	Verification by a suitably qualified person confirms the installation of a safety bund at the crest of the quarry pit walls.	A report by a suitably qualified person confirms that the safety bund has been constructed as per the designs for Domain 9 Map Notes	See Map 29/30 Notes	Within 12 months of approval of the ADP Mine Closure.	Section 14.9 ADP Mine Closure.	NA

24.13 Appendix M – Retention Dam Options Paper

Retention Dam Options Paper (FPP, November 2015)

Leigh Creek Coalfields

Retention Dam Options Analysis

November 2015

Executive Summary

The Leigh Creek Retention Dam was constructed in 1981 across Leigh Creek upstream of the Leigh Creek Coalfields to prevent inflow of water to the newly expanded Lobe B coalfields.

The current Approved Mine Development Plan ADP states that if no-one is prepared to take on responsibility for the Dam at mine closure, it is to be breached at the base of the wall with the water draining into the Upper Series void.

While this option reduces associated ongoing maintenance and the risk of dam wall failure, it removes the use of the dam for future operators of the mine and the community, and it results in the current reservoir and future catchment waters reporting to the mine.

During the recent mine closure risk workshops held in conjunction with the Department for State Development and the Environmental Protection Authority, Alinta Energy was requested to propose alternative options for the Retention Dam post mine closure. The purpose of this paper is to outline these options, and identify the risks and benefits associated with each, for consideration by the State Government in their decision on the future configuration of the Retention Dam system.

The options incur varying levels of residual risk, ongoing maintenance, residual water body volumes and stakeholder impact. Significant community concern has been expressed regarding the future of the Retention Dam.

The Options are summarised in Table 1, with the relative residual risks, ongoing maintenance, repair costs and time to implement compared in Table 2.

Table 1: Retention Dam Options

Option	Description	Invert level
1	Dam remains in current form	EL219.0m
2	Breach dam at lowest point, water to mine, as per ADP	EL206.0m
3	Dam remains at current height, modify spillway to cater for 1:1000yr flood, future overflow water diverted around the mine	EL219.0m
4	Reduce dam size, divert future flood overflows around the mine	EL211.0m

Table 2: Retention Dam Option Analysis

	Option 1	Option 2	Option 3	Option 4
Residual risk	High	Extreme	Medium	Low
Total Material Works (BCM)	NA	108,650	667,300	1,079,100
Annual Ongoing Maintenance / Relative	$20,000 to $40,000 High	< $10,000 Low	$20,000 to $40,000 High	$10,000 to $20,000 Medium
Relative Costs to Repair / Replace	High	NA	High	Medium
Time to Implement (months)	NA	1	3	4

Timing of a decision on which option to implement is important to expedite the risk mitigation benefits as soon as possible.

In the absence of an alternative option being selected, the original ADP outcome (Option 2) will be implemented at the conclusion of Phase Two of the current Rehabilitation Plan, twelve months from commencement of the Rehabilitation program.

It is Alinta's intent to achieve the best value for investment in the rehabilitation program, and accordingly Alinta would be prepared to assist with the development and implementation of a preferred alternative option for the Retention Dam. However, Options 3 or 4 will incur incremental costs to the Alinta Energy rehabilitation program of works that will need to be offset by an equivalent reduction in other works or liabilities.

The options presented are only conceptual, and require final design by third party area experts prior to implementation. For this reason, cost estimates have been excluded from this paper. Alinta Energy does not accept any accountability or liability for the concepts outlined in this document and has no preference, other than a consideration of cost impact, for a particular option.

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1 Background

Built in 1981, the Leigh Creek Retention Dam was constructed across Leigh Creek upstream of the mining operations to prevent inflow of water to the newly expanded Lobe B of the Leigh Creek coalfields. The dam is intended to store all creek flows except for major floods.[1]

Water levels historically fluctuate between a minimum of EL213m and a maximum of EL220m. In a normal flood event a percentage of the peak flow is used in filling the dam. In doing so the dam acts a buffer, reducing the peak flows which need to be discharged through the overflow channels.

The current Approved Mine Development Plan (ADP No 00/42 [2]) states that if no-one is prepared to take on responsibility for the Dam at mine closure, it is to be breached at the base of the wall with the water draining into the Upper Series void.

While this option reduces associated maintenance and risk of dam wall failure, it results in the current reservoir and future catchment waters reporting to the mine. Over time this may lead to flood waters filling redundant mine voids, and eventually overtopping into surrounding watercourses.

To ensure the best value is achieved from rehabilitation efforts, Alinta Energy were requested to propose some alternative options (concept designs) for Retention Dam post mine closure.

These concept designs were based on an original estimate of 1:1000 year peak flow events of 220m^3/s [3], although more recent studies suggest that the peak flows for such events could be considerably higher, 377.5m^3/s. [4]

Because the Kinhill and earlier reports were based on a rolling series of earlier studies, it would be prudent to commission a new analysis/hydrology study using more recent data and the latest modelling tools. This will be important to the design of spillway and overflow channels.

As outlined for Options 2 and 4, as the height of the dam wall is reduced, so is the benefit that the dam provides in buffering the shock effect from peak flows. This impact on this buffering effect should be considered when reviewing options.

All elevations in this document written in the form EL215m are elevations referenced to the Australian Height Datum (AHD), referenced from SA Government Benchmark BM1635 Copley.

1.1 Retention Dam Description

Figure 1 shows the location of the Retention Dam in relation to the mine, the overflow area, the Upper Series pit and the continuation of Leigh Creek downstream of the mine.

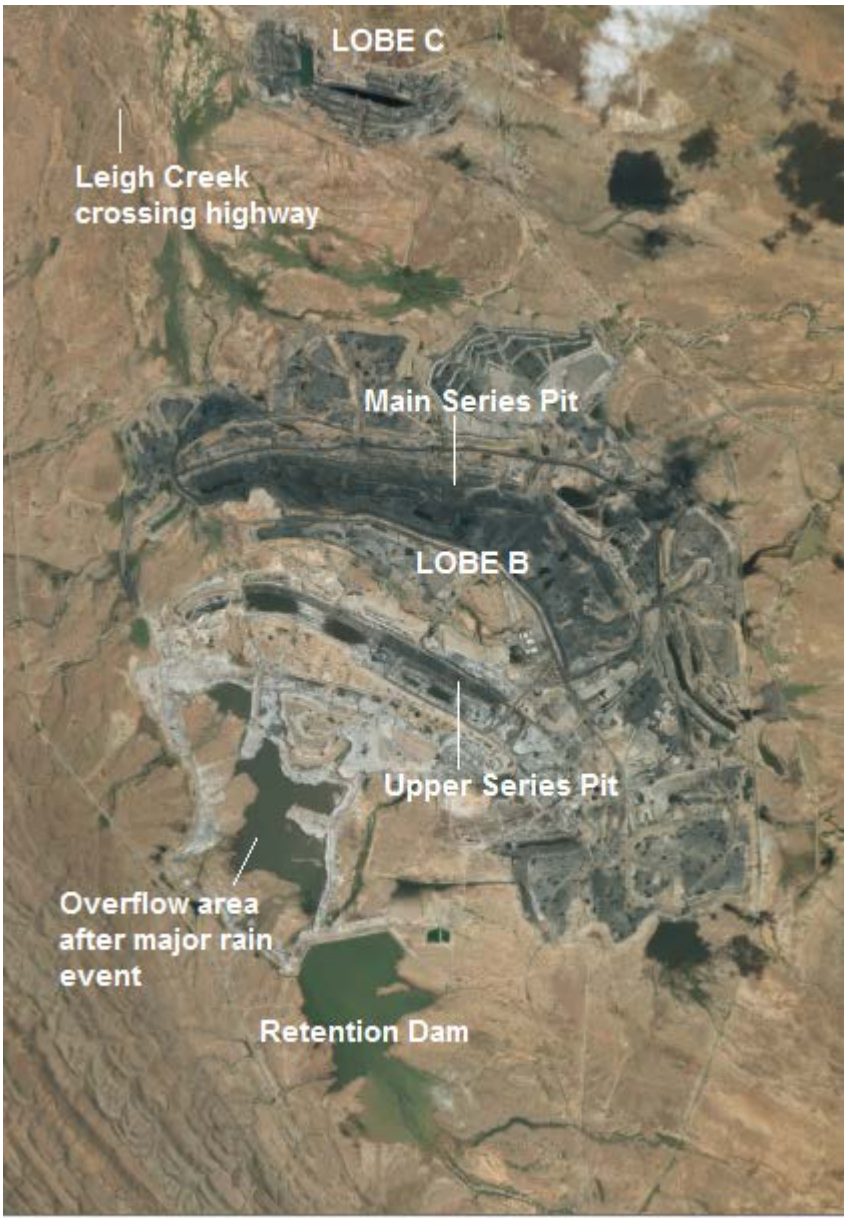


Figure 1: Retention Dam and adjacent areas

The Leigh Creek catchment area is "characterized by low ranges and hills with some higher hog back ridges, and undulating to rolling plains. It has a total catchment area of 187km^2 above the Retention Dam, and is bounded by the Sunday Creek catchment to the North and the Windy Creek catchment to the South which is one of the main tributaries to the Aroona Dam." [5]

The Retention Dam is 1.8km long, and 20m from base to crest at highest point. It is an earthen dam with rock beaching over the impervious lining on the upstream face.

Table 3: Retention Dam Dimensions

	Elevation	Capacity (surface area)
Retention Dam Catchment Area		187 km^2
Retention Dam Crest	EL226.5m	
Full Supply Level	EL225.0m	26 500 ML (5.20km^2)
Crest of Rock Beaching	EL223.0m	18 300 ML (3.25km^2)
Retention Dam Spillway channel	EL219.0m	7 760 ML (1.75km^2)
Base of Dam wall at controlled breach point	EL211.0m	413 ML (0.25km^2)
Retention Dam Water Level (29/10/2015)	EL214.4m	2 020 ML (0.75km^2)

The Retention Dam has been managed as part of the Geotechnical Management System (GMS) at Leigh Creek using the following procedures which will need to be continued until an option for the Retention Dam is selected and implemented.

The procedures form the basis of maintaining the dam wall in a serviceable condition. Currently there is no adequate spillway on the Retention Dam that will allow safe passage of large floods up to 1 in 1000 year event without endangering and/or damaging the dam embankment, through either an uncontrolled breach or a controlled breach. Human intervention is required during large flood events to monitor dam inflow and condition, and provide interventions as required, as outlined below.

- GMSP-407_Retention Dam Inspections procedure:
    - Regular monthly inspections when the water level is above EL218m, and 6 monthly when the water level is below EL218m.
    - Additional inspections after significant rainfall events.
    - Minor works are carried out as required, averaging quarterly. These works principally involve filling small tunnel erosion in the wall crest and minor erosion on the dam's upstream face.
- GMSP-503_Retention Dam - Heavy Rainfall procedure:
    - The GMS requires that a controlled breach needs to be considered if the water level reaches EL225m (full supply level). A controlled breach would be undertaken at this time to prevent Retention Dam failure and the potential flooding of the Upper Series pit.
    - The procedure also includes water level storage curves and water surface area curves.

1.2 Management Strategy

During the mine rehabilitation program the Retention Dam will continue to be managed according to procedures GMSP-407 and GMSP-503. This is the current management strategy which requires the following resources:

Table 4: Retention Dam Management

Resource	Activity
Geotechnical Engineer	• Monthly inspections when dam water level is above EL218m • Six monthly inspection when dam water is below EL218m • Storm inspection after every 20mm rain event (within 1 week) • On call (24hr) during significant rain events (eg when the dam is spilling)
Survey	Check dam water level monthly, and daily during spill events
Minor Works	Minor works to maintain the dam wall's integrity (currently this work is carried out quarterly)

1.3 Water levels

Water levels in the Retention Dam vary with the annual rainfall, the intensity of the rainfall (heavier falls create more run-off) and the amount of evaporation. Historically it is understood that the Retention Dam has only ever spilled infrequently, with the last three occasions being twice in 2010 after storms of ~100mm in 10 hrs; and once in 2012 after the average annual rain fall was received in 4 days.

Records indicate that the Retention Dam generally has a water level above EL214m. The maximum water level recorded by Alinta was EL220.87m on the 2/03/2012 after the rain fall event from 27 February to 1 March of that year. Observations of the wall indicate that the maximum water level reached was in excess of EL223m (the crest of the rock beaching).

1.4 Water quality monitoring

Alinta Energy regularly monitors the Retention Dam water quality.

Water is sampled weekly and tested in house for turbidity, salinity and pH. Results fluctuate seasonally, with water inflows, and weather conditions. A snapshot of this analysis using recent results is provided below:

Table 5: Water Analysis

Sample Date	6th October 2015
Turbidity (NTU)	7.2
Salinity (ppm)	1,520
pH	8.4

Water is also sampled three monthly for testing by an external laboratory for Coliforms and E.coli. This analysis provides an indication of any bacteria or disease causing organisms in the water.

This is a proactive service provided to the community, maintaining a current understanding of the quality of the water, and any potential hazards to those that utilise the dam, and may come into contact with the water.

As the Retention Dam is not utilised as a source of potable water, it is not required to be managed according to the Australian Drinking Water Guidelines, nor is it included in Alinta's Drinking Water Risk Management Plan.[6]

2 Conceptual Options and Risk Assessment

A risk assessment has been undertaken against each of the options, using the source / pathway / receptor model. The Alinta Energy Risk Management Framework is used as the basis, which is a consistent approach with mine closure risk mapping. Refer Appendix 8.1.

The receptors considered are the surrounding community stakeholders (north and south), offsite flows to the surrounding environment, the potential impact on completed mine rehabilitation works and the dam ecosystem that has evolved since dam construction.

The options for diversions are to direct the majority of flows to bypass the mine site. Any minor seepage incurred through the training walls and channels are not expected to cause significant risk or issue to the mine site rehabilitation. The only areas that are required to hold water are the dam walls in Options 1,3 and 4.

The options presented are conceptual only. The options require further work to be conducted by specialists in dam and spillway design. This work will need to consider at a minimum:

- Revised peak flow and frequency analysis to account for any changes in methodologies and the additional data from the last time such as study was conducted. This will include the large rainfall events of 2010, 2011 and 2012.
- Final design taking into consideration of the revised peak flow and frequency analysis of the preferred option.
- Erosion protection of the diversion channels and levees (e.g. rock beaching, gabions).
- Detailed design requirements including supervision, testing and documentation requirements.
- Risk assessment to ANCOLD levels if required.

2.1 Option 1 – Dam system remains as is

Option 1 sees the Retention Dam remain in its current state, with invert at EL219.0m. However an inherent risk of this option is that the current spillway and overflow system is not rated for a 1:1000 year flow event.

Flow down the overflow channel fills the secondary retention area between the Western Bund and Upper Series dumps. When the level in the secondary retention area reaches EL206.3m it flows through to reconnect Leigh Creek to the North. The remaining volume of water in the secondary storage evaporates or seeps through into the Upper Series void. Ongoing maintenance and inspections of the dam wall are required by the responsible land owner.

This option may result in the failure of the Retention Dam wall if a rainfall event is large enough to exceed the remaining capacity of the dam and the spill way. Once this occurs, either a controlled breach will need to occur prior to the dam over topping, or the dam will overtop the wall causing the wall to fail. A failure on the Western end of the dam wall will cause off site impacts as water will bypass the mine site. Such impacts will include cutting the road to Lyndhurst and rapidly inundating Leigh Creek to the north of the mine for a significant distance.

The reinstatement of this option after a controlled breach, or failure, will be significant as the dam wall will need extensive repairs or replacement.

This option does however see the Retention Dam continue to exist as a potential water resource for Southern Pastoralists and the Department of Planning Transport and Infrastructure [7], and a recreational resource for communities in the immediate vicinity. The ecosystem around the dam is retained. Pastoralists to the North will not receive flows, other than after very large rainfall events when the dam is already full. Northern stakeholders are also at risk from the dam overtopping.

With the receptor as Public Safety downstream, the consequence of an uncontrolled dam wall failure would be MAJOR, the likelihood would be LIKELY, resulting in a HIGH residual risk.

Residual Risk

HIGH

Advantages

- No capital cost

Disadvantages

- Current channel can't handle 1/1000 flood event
- Flooding secondary retention area
- Upper Series exposed to rehabilitation damage
- Minimal Northern flows

Key risks

- Underrated overflow channel
- Dam wall retained at full height presents risk of failure if not maintained

- Public safety risk of access to dam water body

Ongoing Maintenance

- Most comprehensive wall inspection regime will be required, see Section 5.

2.2 Option 2 – Dam breached at EL206m, water to mine, as per ADP

As specified in ADP No 00/42, if no-one takes responsibility for the ongoing maintenance of the Retention Dam, then it is to be breached at the lowest point, with the water allowed to drain into the Upper Series void. The conceptual plan for this option is presented as Appendix 8.2.

Subsequently, future waters periodically flooding into the Upper Series will have a negative impact on the completed rehabilitation works, and could potentially be a trigger for spontaneous combustion (these waters have the potential to remove material placed over exposed coal, allowing air ingress, as well as wetting the coal; factors that can increase the propensity for spontaneous combustion [8]).

Due to the diversion of all Leigh Creek flows into the mine site, there are longer term risks to the rehabilitation of the mine, and potential off site flows of site contaminated water if all of the rehabilitated pits are filled.

This option will cause the loss of the current water reservoir, and the dam ecosystem.

There is no re-connection of Leigh Creek with this option, so there will be no water flow at all to Northern Pastoralists. There is no retained water resource for Southern Pastoralists, or recreational resource for communities in the immediate vicinity.

In the absence of the dam, the buffering protection it provides from peak flows during major flood events is removed.

With the receptor as Mine Rehabilitation, the consequences of impacts to rehabilitation works would be MAJOR, the likelihood would be PROBABLE, resulting in an EXTREME residual risk.

Residual Risk

EXTREME

Advantages

- No ongoing maintenance of dam for future land owner
- Lower construction costs

Disadvantages

- Higher Spontaneous Combustion risk
- Potential damage to rehabilitation works
- Loss of water resource to all stakeholders (reputational damage, Government and Alinta)
- Loss of dam ecosystem
- Increased chance of contaminated water reporting offsite in the long-term

Key risks

- Damage to rehabilitation
- Increased propensity for Spontaneous Combustion
- Offsite contamination

Ongoing Maintenance

- No ongoing maintenance expected, although a possibility of ongoing maintenance to Upper Series rehabilitation.

2.3 Option 3 – Spillway modified, new overflow channel, water diverted around mine

To ensure sufficient capacity for a 1:1000yr event, and a peak flow of 220m^3/s [9], it is proposed that the existing spillway is modified, yet retained at the same height, and an overflow channel is constructed along the outside of the Western Bund to reconnect the flow to Leigh Creek in the North. The conceptual plans for this option are presented as Appendix 8.3.

The water reservoir, the dam and its associated ecosystem are retained under this option.

Ongoing maintenance and inspections of the dam wall are required by the responsible land owner.

This option may result in the failure of the Retention Dam wall if a rainfall event is large enough to exceed the remaining capacity of the dam and the spill way, or if the wall is not effectively maintained. A failure on the Western end of the dam wall will cause off site impacts as water will bypass the mine site. Such impacts will include cutting the road to Lyndhurst and rapidly inundating Leigh Creek to the north of the mine for a significant distance.

The reinstatement of this option after a controlled breach or failure will be significant as the dam wall will need extensive repairs or replacement.

A possible water resource for Southern Pastoralists, and a recreational resource for communities in the immediate vicinity are retained. Pastoralists to the north will only receive flows during very large rainfall events when the dam is already full.

With the receptor as Public Safety downstream, the consequence of an uncontrolled dam wall failure with the spillway modified would be MODERATE, the likelihood would be POSSIBLE, resulting in a MEDIUM residual risk.

Residual Risk

MEDIUM

Advantages

- Water resource and ecosystem retained
- No impact on Upper series

Disadvantages

- Water flows to the north only after very large rain events
- Ongoing Dam and Wall maintenance and inspections

Key risks

- Dam wall retained at full height risk of failure if not maintained
- Public safety risk of access to dam water body

Ongoing Maintenance

- Most comprehensive wall inspection regime will be required, see Section 5.

2.4 Option 4 – Dam breached at 211m EL, water diverted around mine

This option sees the Retention Dam retained, but at a reduced invert of EL211m. This retains the water resource of the dam and its associated ecosystem, albeit at a reduced volume, estimated at 400ML. This will reduce the volume of water in the dam, the load on the dam wall, and thus the risk of the dam wall failing. A different overflow route to Option 3 is required due to the reduced height and need for more frequent overflow. The conceptual plans for this option are presented as Appendix 8.4.

A modified channel with sufficient capacity to cover a 1:1000yr event is constructed in combination with a bund wall through the middle of the retention overflow area, cutting through the western bund to reconnect the flow to Leigh Creek. Due to the reduced capacity of the dam, the flows north would occur on a more frequent basis, creating a more useful water resource for the Northern Pastoralists.

The long term success of this option is reliant on the integrity of the bund wall, which will require ongoing maintenance.

A bund wall 25m wide and 3m high will be constructed along the eastern bank of the breach cut to prevent discharge water inundating the Indigenous heritage site. A 50m buffer zone will be marked around the site to prevent machinery entering the area. Consultation with the relevant stakeholders should be undertaken to confirm this buffer zone is sufficient.

Ongoing maintenance and inspections of the dam wall will be of a much reduced nature due to the reduced risk of failure, but will still need to be considered by the future land owner.

In addition to the lowering of the risk of dam wall failure, any failure of the wall will be partially mitigated by the composition of the rock beaching currently in place on the wall, clogging and restricting any failure, and causing water to still to be forced into the diversion channel.

There is no potential for a wall failure in this option to have off site impacts, as the volume is vastly reduced and diverted around the mine.

The reinstatement of this option after any failure will be significantly less than Options 1 and 3 as the section of dam wall needing repair and replacement will be of reduced height and length.

However, the decreased capacity of the dam reduces the buffering protection it provides from peak flows during major flood events.

The Retention Dam is retained in a reduced form not large enough to provide a reliable possible water resource for Southern Pastoralists, and becomes a limited recreational resource for communities in the immediate vicinity. The ecosystem around the dam is retained in a reduced form. Pastoralists to the north will receive flows on a more frequent basis.

With the environment as the Receptor, the consequence of a failure of the lower height wall would be MODERATE, and the likelihood UNLIKELY, resulting in a LOW residual risk

Residual Risk

LOW

Advantages

- Water resource retained (in reduced form)
- No impact on Upper Series
- More frequent water flows in Leigh Creek a positive for Northern Pastoralists
- Reduced ongoing maintenance and inspections

Disadvantages

- Some ongoing wall maintenance responsibility (much less than Option 3)
- More extensive build than Option 3
- Reduced volume impacts on the dam ecosystem
- Ongoing maintenance requirement for the bund
- Reduced value as a water resource for Southern Pastoralists and the community

Key risks

- Public safety risk of dam water body (in reduced form)

Ongoing Maintenance

- Dam wall height reduced, wall inspection and maintenance requirements reduced, see Section 5.

2.5 Options Summary

The options and residual risks are summarised below:

Table 6: Options Summary

Option	Description	Residual Risk	Invert Level
1	Dam remains at current height with the current overflow channel	HIGH	EL219.0m
2	Dam is breached at lowest point with no reconnection of Leigh Creek flows as per ADP	EXTREME	EL206.0m
3	Spillway modified, new over flow channel constructed along Western Bund	MEDIUM	EL219.0m
4	Dam breached at EL211, over flow channel and bund constructed through overflow	LOW	EL211.0m

These concept designs were based on an original estimate of 1:1000 year peak flow events of 220m^3/s [10], although more recent studies suggest that the peak flows for such events could be considerably higher, eg 377.5m^3/s. [11]

Because the Kinhill and earlier reports were based on a rolling series of earlier studies, it would be prudent to undertake a new analysis/hydrology study using more recent data (incorporating the significant events of 2010 and 2012), and utilising the latest modelling tools. This will be important to the final design and success of spillway and overflow channels.

The timing to implement any of the options is important for two considerations. Firstly, it has been identified that the current dam system is not of sufficient capacity to cater for a 1 in 1000 year event, and hence another such event could cause undesired results in terms of retaining the current water reservoir, flow path of contents and overflows, and impact to any rehabilitation works and spontaneous combustion.

Secondly, the mine's rehabilitation program is expected to occur in several phases, with key equipment and resources dropping significantly after the second phase, currently expected to conclude 12months from commencement of the rehabilitation program.

In the absence of an alternative option being selected, the original Option 2 would be undertaken at the conclusion of Phase Two of the current Rehabilitation Plan, twelve months from commencement of the Rehabilitation Program.

3 Stakeholder Impact and Feedback

Alinta Energy recognises there are many stakeholders in this process including:

- Community groups to the south who have expressed an interest in seeing the dam retained
- Pastoralists to the north who have expressed an interest in seeing Leigh Creek reconnected
- Pastoralists to the south who have expressed an interest in the water resource of the dam remaining
- Indigenous groups with their own views on the dam and its future status

Many of these stakeholders have made representations to the Upper Spencer Gulf Outback Community Engagement (USGOCE) team during its work documenting community views on the future of the Leigh Creek town. Alinta is yet to receive a copy of the report from this work.

Alinta was invited to attend the Northern Flinders Community Workshop (Outback Community Authorities, Leigh Creek 14th October 2015), where Steve Dangerfield (USGOCE) provided feedback on the report to the community. The workshop also held an interactive session to brainstorm the benefits and values of Leigh Creek Township in its current form to the region, from which the following comment was noted [12] :

> *"the retention dam is highly valued and needs to be retained, source of recreation, aquatic activities, fauna, unique".*

Alinta have received a report from Ms Anne-Maree Taranto of Copley[13], expressing the views of community stakeholders who wish to see Retention Dam preserved, in the form of Option 3, ie "create a drain to manage flood overflow out of the Retention Dam, while maintaining 80-90% water catchment".

Ms Taranto advised that "this report has been submitted to the Honourable Member for Stuart, Mr Dan van Holst Pellekaan, and copied to Honourable Kyam Maher and Premier Jay Weatherill".

In addition to affirming the value of the dam as a significant water asset, Taranto also mentions the recreational value of the dam for locals, and passing travellers, as well as for domestic dogs due to the area being free of the poisoned baits so common to many surrounding areas.

Taranto also proposes some future considerations, including reinstating the sand beach to align with any new water level, and that "construction proposals will be subject to appropriate approval by the traditional landowners".

Alinta has no association with any of these views but tables them as relevant to the discussion.

4 Bulk Earthworks

The earthworks required to implement the options have been determined from the conceptual design plans, as presented in Appendices 8.2 - 8.4. These plans detail the cut and fill volumes necessary to form the required channels, bunds and embankments.

Time to implement has been calculated solely on the basis of the volume of material moved, and doesn't include consideration for the time to develop and finalise designs, which could add several months to the time for completion.

Table 7: Estimated Bulk Earthworks

Option	Bulk handling (BCM)	Dozing (BCM)	Total material works (BCM)	Time to Implement (months)
1	NA	NA	NA	NA
2	103,650	5,000	108,650	1
3	363,800	303,500	667,300	3
4	532,400	546,700	1,079,100	4

It is Alinta's intent to achieve the best value for investment in the Rehabilitation Program, and accordingly Alinta would be prepared to assist with the development and implementation of a preferred alternative option for the Retention Dam (other than that currently specified in the ADP) for a similar reduction in value of other obligations in the ADP that are intended to mitigate the lower residual risk components of mine closure.

5 Ongoing Maintenance

Ongoing inspections are required for some of the options, presented below with estimated costs. These would require confirmation following detailed design and subsequent risk assessment:

Table 8: Estimated Ongoing Maintenance

Option	Scheduled Inspections	Additional Inspections	Works costs	Estimated costs / relative
1	Monthly when water level above EL218m 6 monthly when below EL218m	After large rainfall events	• Inspections 4 hrs@ $150 p/h • Supervision of minor works 4 hrs@ $150 p/h • Minor works to maintain the dam wall's integrity @ 2 days at $2,500 p/day (loader, tip truck and roller) undertaken quarterly	$20 000 to $40 000 High
2	None	None	Nil	<$10 000 Low
3	Monthly when water level above EL218m 6 monthly when below EL 218m	After large rainfall events	• Inspections 4 hrs@ $150 p/h • Supervision of minor works 4 hrs@ $150 p/h • Minor works to maintain the dam wall's integrity @ 2 days at $2,500 p/day (loader, tip truck and roller) undertaken quarterly	$20 000 to $40 000 High
4	Annual	None	• Inspections 4 hrs@ $150 p/h • Supervision of minor works 4 hrs@ $150 p/h • Minor works to maintain the dam wall's integrity @ 2 days at $2,500 p/day (loader, tip truck and roller)	$10 000 to $20 000 Medium

6 Summary

The time to implement a preferred option is an important consideration, 1) to ensure risk mitigation benefits provided by the option are available at the earliest opportunity, and 2) to access the Alinta resources available as part of the Rehabilitation Program, if required.

Table 9: Retention Dam Options Analysis

	Option 1	Option 2	Option 3	Option 4
Residual risk	High	Extreme	Medium	Low
Total Material Works (BCM)	NA	108,650	667,300	1,079,100
Annual Ongoing Maintenance / Relative	$20,000 to $40,000 High	< $10,000 Low	$20,000 to $40,000 High	$10,000 to $20,000 Medium
Relative Costs to Repair / Replace	High	NA	High	Medium
Time to Implement (months)	NA	1	3	4

The options consider sending some or the entire current reservoir, and future catchment waters, either to the mine, or around the mine and back to Leigh Creek, and incur varying levels of residual risk, ongoing maintenance, residual water body volumes and stakeholder satisfaction.

Significant community concern has been expressed regarding the future of the Retention Dam, and it has been suggested that approval for any changes to the current form of the dam may be required from the traditional owners of the land.

In the absence of an alternative option being selected, the original ADP option (Option 2), will be implemented at the conclusion of Phase Two of the current Rehabilitation Plan, twelve months from commencement of the Rehabilitation Program.

The options presented are only conceptual, and require final design by third party area experts prior to implementation.

Alinta Energy does not accept any responsibility or liability for the concepts outlined in this document.

The information has been provided in good faith to assist the SA Government determine future management plans for the Retention Dam.

7 References

[1] Coffey Partners International Pty Ltd, Report No A2049/1-AC, *ETSA Leigh Creek Retention Dam, Assessment of Structural Integrity and Recommended Remedial Measures,* November 1989

[2] Leigh Creek Mine Development Plan, Lobe B, ADP No 00/42, 22 July 2000, page 30

[3] Coffey & Partners Pty Ltd, A138/11 RLC/CSE, *ETSA Report on Spillway Design, Leigh Creek Retention Dam*, 15 December 1981, page 4

[4] Kinhill Pty Ltd, *Leigh Creek Coalfield, Retention Dam Spillway*, 14 August 1998, page 1

[5] BC Tonkin and Associates, *Leigh Creek Retention Dam Study for ETSA*, February 1990, page 2

[6] Alinta Energy, *Drinking Water Risk Management Plan Outline for Leigh Creek South and District*, 8 April 2010

[7] Taranto and Jones, *"Retention Dam: A Positive Legacy. Community Recommendations for the Alinta Energy Rehabilitation Plan of the Retention Dam, Leigh Creek Coal Mine Site",* 5 October 2015, page 8

[8] Beamish, B, *Spontaneous Combustion of Coal, General Background and Stockpile Issues*, B3 Mining Services Pty Ltd, October 2013, slide 5

[9] Coffey & Partners Pty Ltd, Op Cit, page 4

[10] Ibid, page 4

[11] Kinhill Pty Ltd, *Leigh Creek Coalfield, Retention Dam Spillway*, 14 August 1998, page 1

[12] Outback Communities Authority, Northern Flinders Community Workshop, *Workshop Summary*, 14 October 2015, page 7

[13] Taranto and Jones, *"Retention Dam: A Positive Legacy. Community Recommendations for the Alinta Energy Rehabilitation Plan of the Retention Dam, Leigh Creek Coal Mine Site",* 5 October 2015

8 Appendixes

8.1 Retention Dam Options Risk Assessment

ALINTA ENERGY - RISK ASSESSMENT - LEIGH CREEK MINE CLOSURE - RETENTION DAM

Asset Issue or Improvement Opportunity							Inherent Risk Rating			Residual Risk Rating					Proposed Mitigation of Risk Exposure / Improvement Actions			Target Risk Rating		
ID	Category	Source	Pathway	Receptor	Potential Consequences	Exposure Type	Consequence	Likelihood	Rating & Priority	Current Approach (Existing Controls)	Effectiveness	Consequence	Likelihood	Rating & Priority	Risk Reduction Treatment or Asset Improvement Strategic or Approved Action	Action Owner	Planned Completion Date	Consequence	Likelihood	Rating & Priority
RD-01	**Retention Dam Option 1**	Dam water supply	Uncontrolled wall failure	Public Safety Downstream	Public downstream impacted by uncontrolled release	Public Safety	2. Major	C. Likely	High 7	Dam to be maintained to current standard under current procedures till handback of leases	Ineffective	2. Major	C. Likely	High 7	Determine ongoing management / inspection regime of the Dam			4. Minor	E. Unlikely	Low 23
	Leave Dam and overflow in current state	Environmental flows	Leigh Creek not reconnected to the north	Downstream Environment	No flows north or water makes its way north via offsite flows	Environmental / Economic				In effective after lease handback if Dam maintenance not ongoing					Consider dam options following consultation with stakeholders	Government Taskforce	Prior to mine completion of all rehabilitation phases			
		Dam water supply	Overflow water impacts rehab works	Mine Rehabilitation	Potential impact to rehab work **Upper Series Void** (long term) Potential long term spon com trigger	Environmental									Develop Dam Overflow options around mine considering ANCOLD requirements					
		Downstream water supply	Leigh Creek not reconnected to the north	Community Stakeholders (Northern Pastoralists)	No flows north or water makes its way north via offsite flows	Economic														
RD-02	**Retention Dam Option 2**	Environmental flows	Any flow downstream is via mine site	Downstream Environment	No flows north or water makes its way north via offsite flows	Environmental	2. Major	B. Probable	Extreme 4	Dam to be maintained to current standard under current procedures until Rehabilitation crews have completed works then breached	Ineffective	2. Major	B. Probable	Extreme 4	Consider dam options following consultation with stakeholders	Government Taskforce	Prior to mine completion of all rehabilitation phases	4. Minor	E. Unlikely	Low 23
	Breach Dam as currently required in ADP, Flooding Upper Series with no reconnection of Leigh Creek to the north	Dam water supply	Overflow water impacts rehab works	Mine Rehabilitation	Impact to rehab work **Upper Series Void** (long term) Potential long term spon com trigger	Environmental									Develop Dam Overflow options around mine considering ANCOLD requirements					
		Downstream water supply	Leigh Creek not reconnected to the north	Community Stakeholders (Northern Pastoralists)	No flows north or water makes its way north via offsite flows	Environmental / Economic									Consider ANCOLD requirements in design					
		Water resource	No Dam retained	Dam Ecosystem	Loss to Community Stakeholders to the South	Environmental														

ALINTA ENERGY - RISK ASSESSMENT - LEIGH CREEK MINE CLOSURE - RETENTION DAM

Asset Issue or Improvement Opportunity							Inherent Risk Rating			Residual Risk Rating					Proposed Mitigation of Risk Exposure / Improvement Actions			Target Risk Rating		
ID	Category	Source	Pathway	Receptor	Potential Consequences	Exposure Type	Consequence	Likelihood	Rating & Priority	Current Approach (Existing Controls)	Effectiveness	Consequence	Likelihood	Rating & Priority	Risk Reduction Treatment or Asset Improvement Strategic or Approved Action	Action Owner	Planned Completion Date	Consequence	Likelihood	Rating & Priority
RD-03	**Retention Dam Option 3 EL 219**	Dam water supply	Uncontrolled wall failure	Dam Ecosystem	Current Dam Volume retained	Public Safety	3. Moderate	D. Possible	Medium 16	Dam to be maintained to current standard under current procedures till handback of leases	Marginal	3. Moderate	D. Possible	Medium 16	Consider dam options following consultation with stakeholders	Government Taskforce	Prior to mine completion of all rehabilitation phases	4. Minor	E. Unlikely	Low 23
	Modify spillway, build overflow channel along Western Bund, reconnecting Leigh Creek to the North	Downstream water supply	Leigh Creek reconnected to the north only after dam is full and high rainfall	Community Stakeholders (Northern Pastoralists)	Reconnection of peak flows only (could be quantified by modelling for detailed design)	Economic				Marginal after lease handback if Dam maintenance not ongoing					Develop detailed Dam Overflow options around mine					
		Environmental flows	Leigh Creek reconnected to the north only after when dam is full and high rainfall	Downstream Environment	No flows north	Environmental				Consequence moderate due to implementation of overflow channel					Consider ANCOLD requirements in design					
															Ongoing Maintenance requirement to Govt					
RD-04	**Retention Dam Option 4 EL 211**	Dam water supply	Uncontrolled wall failure of reduced height wall	Dam Ecosystem	Total Dam Volume reduced to 400ML	Public Safety	3. Moderate	E. Unlikely	Low 21	Dam to be maintained to current standard under current procedures till handback of leases	Effective	3. Moderate	E. Unlikely	Low 21	Consider dam options following consultation with stakeholders	Government Taskforce	Prior to mine completion of all rehabilitation phases	4. Minor	E. Unlikely	Low 23
	Build Dam overflow Channel through Retention overflow area reconnecting Leigh Creek to the North	Water resource	Smaller dam size	Community Stakeholders to the South	Smaller Area of water - will dry out more frequently	Environmental				Consequence moderate due to implementation of overflow channel					Develop detailed Dam Overflow options around mine					
		Downstream water supply	Leigh Creek reconnected to the north only after when dam is full and high rainfall	Community Stakeholders (Northern Pastoralists)	Significant reconnection of storm flows (could be quantified by modelling for detailed design)	Economic									Consider ANCOLD requirements in design					
															Reduced ongoing Maintenance requirement to Govt due to lower height					

8.2 Retention Dam Option 2 Plan

249500 250000 250500 251000 251500 252000 252500

6624500 6624000 6623500 6623000 6622500 6622000 6621500 6621000 6620500

MAIN SERIES PIT

UPPER SERIES PIT

M3 PIT

OLD TOWNSHIP ROADS

ADMIN

WORKSHOPS

UT04
900ML
(EL84.0m)

UT03
580ML
(EL98.0m)

U23
400ML
(EL198.5m)

1) REMOVE BUND
Cut 3000bcm

2) INSTALL BUND
Fill 5,000bcm

ORIGINAL CREEK BED

RETENTION DAM
EL214.7
1,872.4ML

Spillway
EL220.0m

NOTE:
DE-ENERGIZE/DISCONNECT
POWER LINES PRIOR TO
BREACHING DAM WALL

IMPORTANT NOTE:
DE-ENERGIZE/DISCONNECT
POWER LINES PRIOR TO
BREACHING DAM WALL

1) REMOVE BUND = Cut 3,000bcm
2) INSTALL BUND = Fill 5,000bcm

3) BREACH RETENTION DAM INTO UPPER SERIES PIT
CHANNEL 10m Wide, Banks 1 in 4
TOTAL CUT: 201,300bcm

ALINTA ENERGY - LEIGH CREEK COALFIELD

Title:	RETENTION DAM BREACH TO UPPER SERIES				
Department:	Mine Engineering		Branch:	PLANNING	
Drawing No.:	151029_RETNBREACH_B		Scale:	1:12500	
Drawn By:	P.W.K.	Checked By:	B.P	Approved By:	K.D
Issue Date:	29/10/15	Register No.:	LC_0562	Revision:	B

200 0 100 200 300 400 500
Metres

MAPTEK Vulcan

8.3 Retention Dam Option 3 Plans

248500 249000 249500

6621000

6620500

SECONDARY RETENTION DAM

WEIR CREST

EMERGENCY SPILLWAY

EXISTING CHANNEL

PROPOSED SOUTHERN CHANNEL

DRILL DEPTH 1m

DRILL DEPTH 2m

DRILL DEPTH 3m

POWER LINES

RETENTION DAM

VOLUME: 40,000 approx

248500 249000 249500

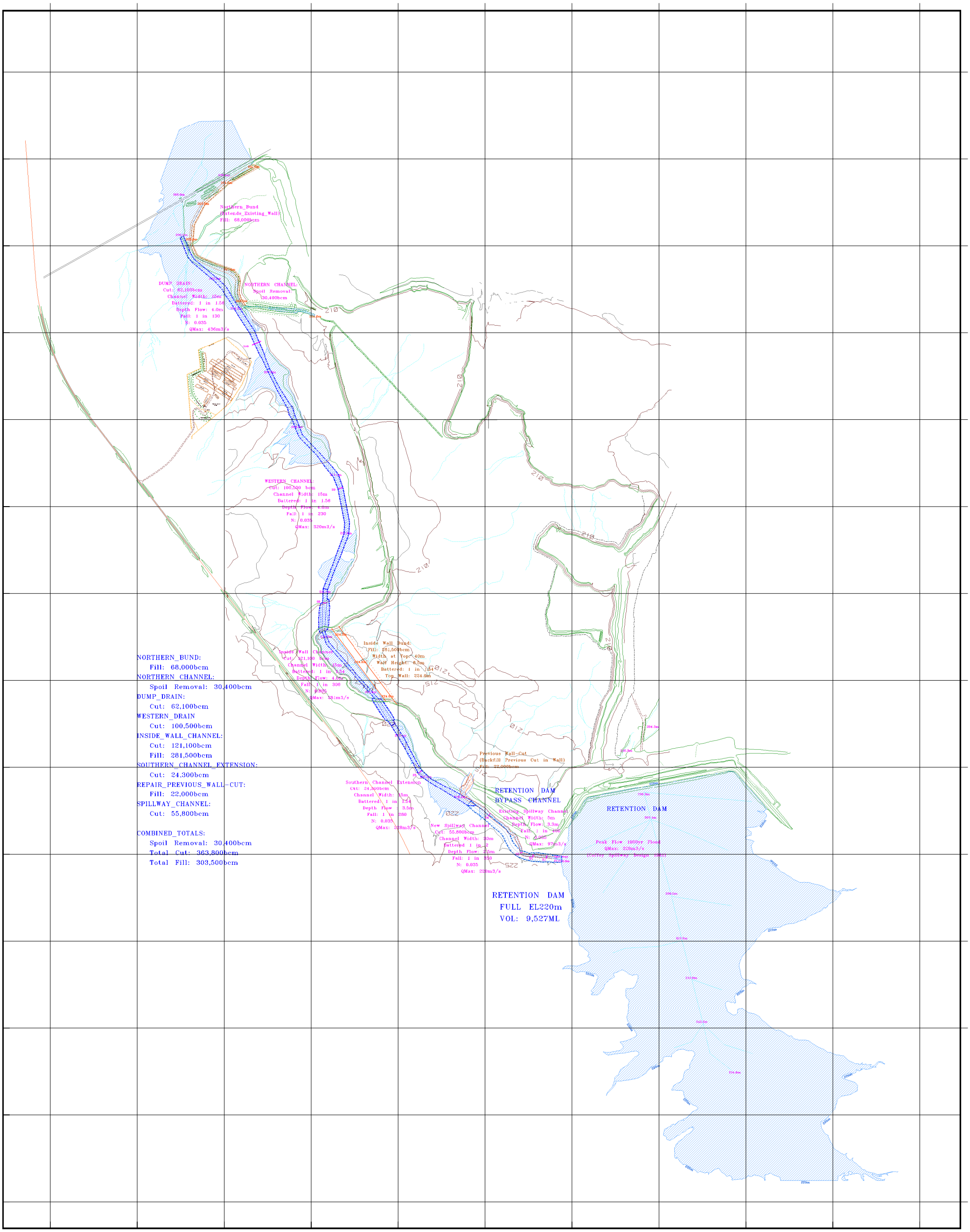
100 0 50 100 150 200 250

Metres

ALINTA ENERGY – LEIGH CREEK COALFIELD

Title:	RETENTION DAM SPILLWAY DESIGN				
Department:	Mine Engineering		Branch:	PLANNING	
Drawing No.:	150904_RETN_SPILLWAY		Scale:	1:4000	
Drawn By:	P.W.K	Checked By:		Approved By:	
Issue Date:	150904	Register No.:	LC_0557	Revision:	

MAPTEK Vulcan



ALINTA ENERGY - LEIGH CREEK COALFIELD

Title:	RETENTION BYPASS DRAIN EL220m				
Department:	Mine Engineering		Branch:	PLANNING	
Drawing No.:	150703_RETDAM_DN_220		Scale:	1:20000	
Drawn By:	P.W.K.	Checked By:	P.J	Approved By:	
Issue Date:	03/07/15	Register No.:	LC_0547	Revision:	

400 0 200 400 600 800 1000

Metres

MAPTEK Vulcan

8.4 Retention Dam Option 4 Plan

247000 247500 248000 248500 249000 249500 250000

6624500 6624000 6623500 6623000 6622500 6622000 6621500 6621000 6620500

E ACCESS ROAD

198.0m
198.6m
200.6m
301.4m
214.0m
213.0m
205.5m
200.0m
198.8m
204.0m
201.0m
206.0m
204.6m
202.4m
204.4m
205.2m
204.3m
202.5m
201.7m
201.4m
207.0m
202.4m
206.8m
204.3m
205.7m
206.0m
207.1m
207.3m
207.0m
206.8m
206.0m
204.6m
205.3m
207.1m
214.2m
206.3m
207.1m
204.3m

210 215 220 225

Ch1) NORTHERN CHANNEL:
Cut: 294,500bcm
Channel Width: 15m
Battered: 1 in 4
Depth Flow: 3.8m
Fall: 1 in 500
N: 0.035
QMax: 268m3/s

CENTRAL_EMBANKMENT
15m Wide, 1 in 4
~4.0m High
444,900bcm

CENTRAL_EMBANKMENT
15m Wide, 1 in 4
~6.0m High
444,900bcm

Ch2) CENTRAL CHANNEL:
Cut: 98,700bcm
Channel Width: 20m
Battered: 1 in 4
Depth Flow: 4.3m
Fall: 1 in 1200
N: 0.035
QMax: 262m3/s

Ch3) DAM_BREACH:
Cut: 139,200bcm
Channel Width:15m
Battered: 1 in 4
Depth Flow: 3.0m
Fall: 1 in 200
N: 0.035
QMax: 260m3/s

HERITAGE SITE BUND
25m Wide, 3m High
101,800bcm

HERITAGE SITE
50m Buffer

NOTE:
DE-ENERGIZE/DISCONNECT
POWER LINES PRIOR TO
BREACHING DAM WALL

BREACH WALL
@ EL211m

RETENTION DAM
EL214.7
1,672.4ML
Volume @EL211
294ML

ORIGINAL
CREEK BED

RETENTION
BYPASS CHANNEL

Existing Spillway Channel
Channel Width: 5m
Depth Flow: 3.3m
Fall: 1 in 400
N: 0.035
QMax: 97m3/s

Spillway
EL220.0m

Peak Flow 1000yr Flood
QMax: 220m3/s
(Coffey Spillway Design 1981)

Ch1) NORTHERN_CHANNEL:
Cut: 294,500bcm

Ch2) CENTRAL_CHANNEL:
Cut: 98,700bcm
CENTRAL_EMBANKMENT:
Fill: 444,900bcm

Ch3) DAM_BREACH:
Cut: 139,200bcm
HERITAGE_SITE_BUND:
Fill: 101,800bcm

COMBINED_TOTALS:
Total Cut: 532,400bcm
Total Fill: 546,700bcm

IMPORTANT NOTE:
DE-ENERGIZE/DISCONNECT
POWER LINES PRIOR TO
BREACHING DAM WALL

RETENTION DAM DRAIN & EMBANKMENT
CHANNEL 15-20m Wide, Banks 1 in 4
TOTAL CUT: 532,400bcm

247000 247500 248000 248500 249000 249500 250000

ALINTA ENERGY - LEIGH CREEK COALFIELD

Title:	RETENTION DAM DRAIN & BANK (OPTION_3)				
Department:	Mine Engineering		Branch:	PLANNING	
Drawing No.:	150904_RETNDAM_DN_C		Scale:	1:12500	
Drawn By:	P.W.K.	Checked By:	B.P	Approved By:	M.B
Issue Date:	04/09/15	Register No.:	LC_0556	Revision:	C

200 0 100 200 300 400 500
Metres

MAPTEK Vulcan

8.5 GMSP-407_Retention Dam Inspections

PROCEDURE	GMSP-407	RETENTION DAM INSPECTIONS

PURPOSE & SCOPE

This Procedure refers to geotechnical inspections of the Retention Dam.

Inspections will identify issues with structural integrity of the dam and will specify earthworks required to maintain the dam.

RESPONSIBILITIES

The following personnel have responsibilities under this Procedure:

- Geotech
- MMELC
- PRMLC

PROCEDURE

The INSPECTION PROCEDURE is located in
G:\2.Mine_Engineering\2.2_Geotech\2.2.3 GMS\4_Verification\Retention Dam Inspections

Inspections will be carried out every six months (May and November) or after heavy rainfall, and monthly when the water level is above EL 218.0.

Documented inspection records will be stored in the **Inspections** folder.

NOTE the Inspections folder contains background information relevant to dam hazard assessments, flooding scenarios, earthworks histories and insurance enquiries.

DOCUMENT CONTROL & REVIEW

This procedure forms part of Leigh Creek Coalfield's Geotechnical Management System (GMS). Procedure numbers beginning with GMSP-4 refer to the Verification stage of geotechnical hazard management.

MMELC is responsible for review of this procedure, as specified in the GMS.

VERSION	5.0	DATE	November 2014	UNCONTROLLED COPY WHEN PRINTED

8.6 GMSP-503_Retention Dam - Heavy Rainfall

GMSP-503
LEIGH CREEK COALFIELD
PLANNING & PRODUCTION BRANCHES

PROCEDURES FOR HEAVY RAINFALL

Originally prepared: September 2001

Revised: November 2014 – Ben Plowman, Geotechnical Engineer
Leigh Creek Coalfield.

GMSP-503 Heavy Rainfall Procedure
Introduction

Purpose

This procedure sets out actions to minimise damage to the mine, in the event of excessive rainfall and spillage of the Retention Dam.

Responsibilities

area of responsibility	responsible person	in their absence
overall responsibility	Mine Engineering Manager (MMELC)	Manager (MLC) or person nominated by MLC
coordination of actions	Planning Manager (MMELC)	Production Shift Supervisors
weather assessment and runoff prediction, Retention Dam assessment and monitoring	Geotech	MMELC, who may seek advice from geotechnical consultant

Outline

ISSUE	CONSEQUENCE	ACTION	LIKELIHOOD
1. Excessive runoff into in-pit operating areas	flooding of equipment	EG to monitor weather conditions when there is potential for pit flooding; PRMLC to coordinate shifting of equipment as required.	⬆ more likely
2. Retention Dam fills to spillway level (EL 220.5) and water flows through spillway	downstream flooding (mine access road); potential for flooding of M12-M13	EG to monitor condition of dam wall, water level and approaching weather; PRMLC to evacuate non-essential personnel before mine access road is flooded; PRMLC to coordinate blocking of mine access road at Western Bund if required.	
3. Retention Dam fills almost to dam crest (EL 225)	excessive downstream flooding (mine access road); potential for dam to be overtopped, leading to catastrophic flooding of Upper Series.	as above, and: PRMLC to coordinate controlled breach of dam wall to minimise downstream damage.	less likely ⬇

Details

The following sections deal with each of these issues separately.

1. Excessive Runoff into Pits

Purpose Prevent damage/loss of equipment due to pit flooding from heavy rainfall (not Retention Dam spillage).

Likelihood Storms in excess of 1 in 5 year events can cause significant pit flooding.
A 1 in 5 year event has a probability of
20% in any one year
67% in any five year period
96% in 15 year mine life

Actions

1. Geotech to monitor weather conditions and warn PRMLC of likelihood of excessive rainfall that may flood working areas.

2. PRMLC to coordinate moving of equipment as required.

Consequence of Inaction Equipment damage / loss.

Weather Forecasting

Internet information is available at the following sites.

forecast charts:	www.bom.gov.au/weather/national/charts/
rainfall maps:	www.bom.gov.au/cgi-bin/climate/rainmaps.cgi
forecasts:	www.bom.gov.au/weather/sa/forecasts.shtml
radar:	www.bom.gov.au/weather/radar/

NOTES:

1. Forecast charts are the same as those on weather fax 2690.
2. Rainfall maps give past rainfall over selected periods.
3. Woomera radar is unavailable during wind finding times.

Runoff Estimation

Runoff can be estimated from rainfall quantity and catchment area. However, note the following:

1. Runoff percentage depends on rainfall intensity.
2. Runoff may not always all go to the bottom of the pit.

Runoff Coefficient is the percentage of rainfall that goes as runoff (does not soak into the ground).

Runoff coefficients have been measured at **55–75%** for major storms.

Runoff coefficient will be closer to 75% from more intense rainfall and/or longer duration of rainfall.

Runoff Quantity is estimated as follows:

volume (megalitres) = rainfall (mm) x area (square km) x runoff coefficient

Flooding depth in working areas cannot be presented in these guidelines because of the changing nature of the pits. Use the Vulcan system to determine likely depth of flooding.

As a guide to visualising flood volumes, one megalitre is 1000m^3 or a cube of water, 10x10x10 metres.

Pit Catchment Areas are:

Main Series (M11-M13)	2.6 km^2
Upper Series (current mining areas)	1.3 km^2
Upper Series (remainder of U26-U27)	0.7 km^2

Pit catchments will change over time and should be reviewed regularly.

Catchment areas exclude in-pit dumps which experience little or no runoff.

Moving Equipment

Flood levels can increase rapidly during heavy rainfall. Intensities of 5mm per 10 minutes have been recorded. Continued rainfall of this intensity for an hour would yield runoff of up to 50 megalitres in M6-M9, flooding the entire lowest bench.

Pumping of flood water can be done at 25–35 litres per second (2–3 megalitres per day). *Pumping during rainfall* should therefore only be attempted if the expected runoff is less than this amount – otherwise pumps will be flooded. If pumps cannot keep pace with inflow, they should be moved along with other equipment.

2. Retention Dam Spillway Flowing

Purpose Minimise downstream flooding from the Retention Dam spillway.

Likelihood Less likely than pit flooding due to heavy rainfall.

For example, a 1 in 100 year event will cause spillway to flow, when water level is at median level (EL 216).

Water level has been at or above EL 216 for 38% of the time.

A 1 in 100 year event has a probability of:
1% in any one year
14% in 15 year mine life

Flood hazards and volumes for each storm event are in Appendix 3.

Actions

1. MMELC to monitor weather conditions, Retention Dam level, and dam wall condition. Warn PRMLC of likely volume of spillway flow.

2. PRMLC to arrange evacuation of non-essential personnel from mine site prior to flooding of Mine Access Road. Essential personnel must include operators of equipment for (3) below.

3. PRMLC to prevent spillway flow from reaching M12-M13 through the Western Bund at the Mine Access Road, by coordinating blockage of road at Bund (road will already be underwater and impassable).

Consequence of Inaction

Catastrophic flooding of M12-M13.
For example, 5000 mega litres would fill M12-M13 to EL150,
and would take 5 years to pump out.

Runoff Estimation

Runoff estimation for the dam catchment is done by the initial loss / continuing loss method.

This assumes from experience that the first 20mm of rain is lost as seepage, then 7mm per hour is lost as seepage. The remainder is runoff.

To estimate runoff:

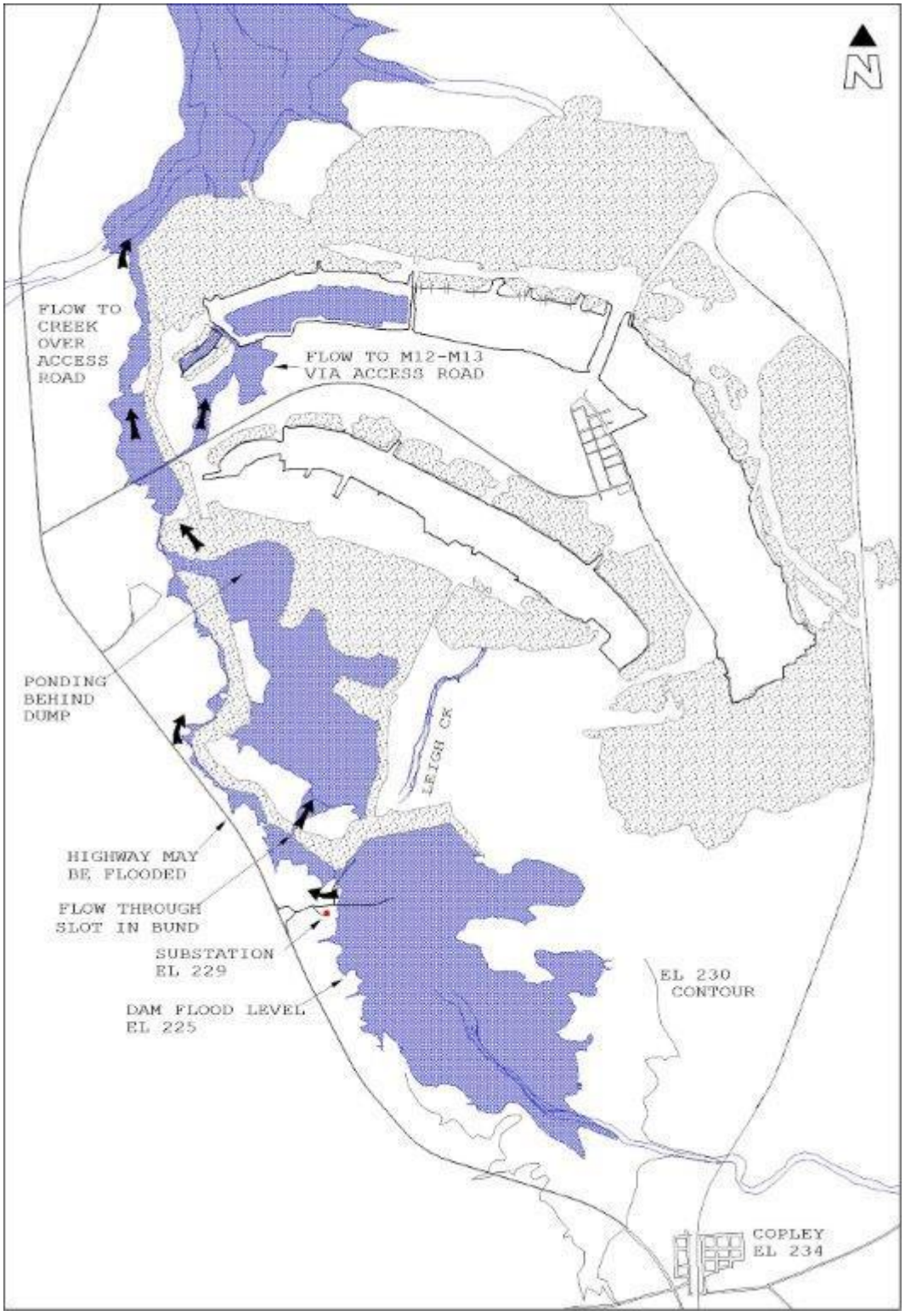
1.	Estimate recurrence interval	(Appendix 1)
2.	Estimate runoff from the catchment	(Appendix 2)
3.	Estimate the effect on the dam	(Appendix 3)

The critical storm duration for the Retention Dam is 2 hours. Critical storm duration is a feature of the catchment size and shape.

Longer storms will yield more runoff, but the flow will arrive at the dam more slowly, giving time for the spillway to flow without such a rapid rise in the dam level.

Flow to the Secondary Story and Mine Access Road Channel

Significant flow from the spillway will spill to the Secondary Storage which will drain to the channel across the Mine Access Road.



3. Retention Dam Fills to Crest

Purpose

Prevent uncontrolled breach of the Retention Dam by breaching the dam in a preferred location.

Likelihood

Much less likely than Retention Dam spillway flow.

For example, a 1 in 1000 year event will fill the dam, when water level is at median level (EL 216).

Water level has been at or above EL 216 for 38% of the time.

A 1 in 1000 year event has a probability of:
0.1% in any one year
1.5% in 15 year mine life

Flood hazards and volumes for each storm event are in Appendix 3.
Note that the dam is in danger from a 1 in 1000 year flood if the starting water level is at or above EL 218.

Actions

1. MMELC to monitor weather conditions, Retention Dam level, and dam wall condition. Warn PRMLC If dam being is in danger of failure.

2. Significant spillway flow will have already occurred. PRMLC will have already evacuated non-essential personnel, and will have already blocked Mine Access Road.

3. If water level in dam is likely to reach EL 225 (1.5m below dam crest), PRMLC to move relevant equipment to dam ready to cut slot. EG to monitor and recommend actions.

4. PRMLC to cut slot in dam and allow controlled breach, *only if dam failure is imminent.* Final authorisation for breach of dam *may only* be made GMLC on recommendation from PRMLC.

Consequence of Inaction

Catastrophic flooding of Upper Series.
For example, 26,500 megalitres would fill Upper Series to EL164, and would take 28 years to pump out (see plan next page).

Runoff Estimation

Runoff estimation for the dam catchment is done as described for Retention Dam Spillway Flow.

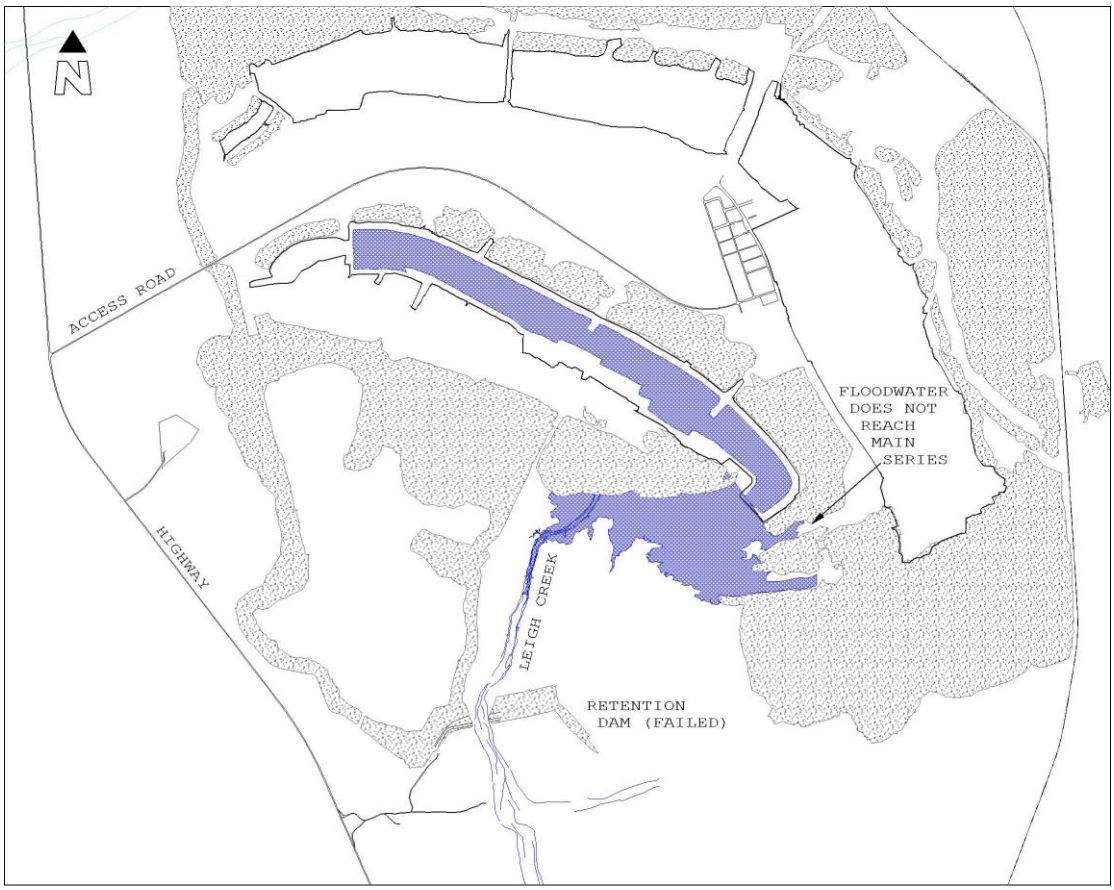
To estimate runoff:
1. Estimate recurrence interval (Appendix 1)
2. Estimate runoff from the catchment (Appendix 2)

3. Estimate the effect on the dam (Appendix 3)

Uncontrolled Failure of Retention Dam

Failure of the Retention Dam can occur by piping through the eroded section of the dam wall, or by overtopping.

Failure along any part of the dam east of Chainage 400 would result in flow to the Upper Series. Once failure begins, erosion of the dam wall will increase flow until the dam is empty.



Controlled Breach of Retention Dam

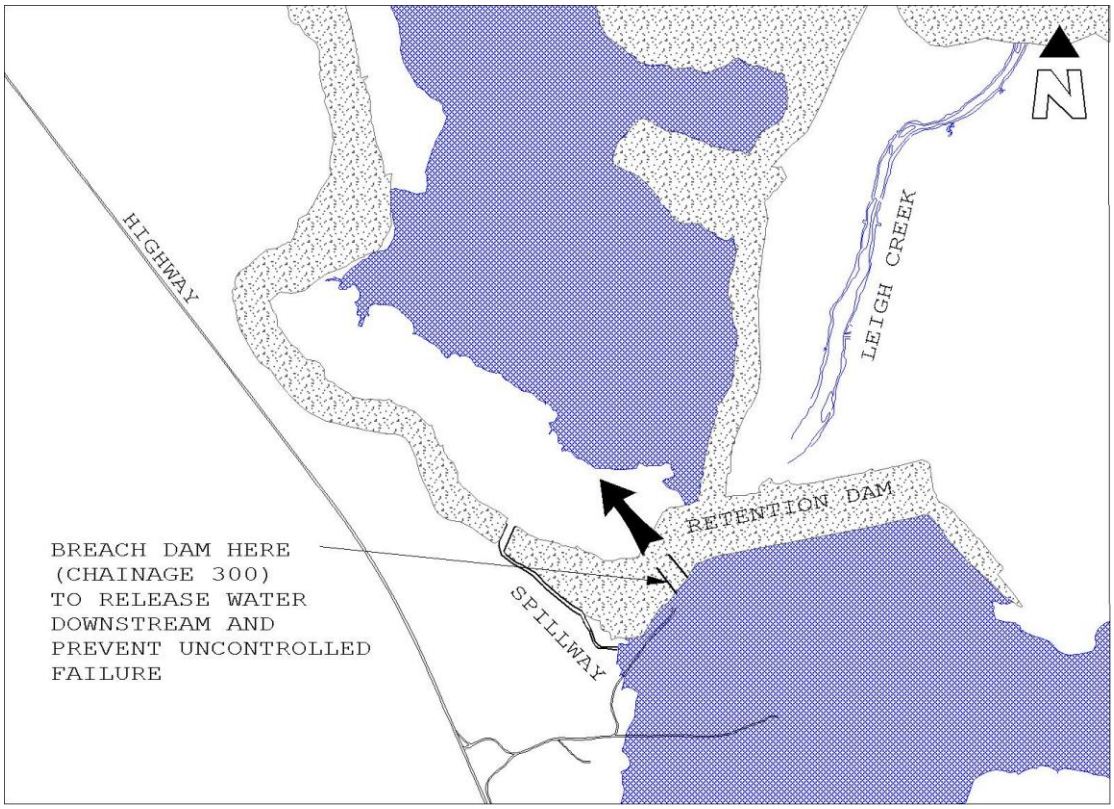
If water level reaches EL 225 (1.5m below the crest), machinery must be moved to the dam in preparation for cutting a slot.

If water level exceeds EL 225 and dam failure/overtopping is imminent, cut a slot in the dam at Chainage 300 (chainages are marked on steel pickets every 100m). See diagram and detailed instructions next page.

This area is between two rock outcrops which will prevent excessive erosion of the dam wall towards the east. Power poles in the area are founded in rock and are also protected.

Thousands of megalitres will be released from the dam and add to downstream flooding. Ensure that the Access Road blockage is secure, and at least 2m in height, to prevent flooding of M12-M13.

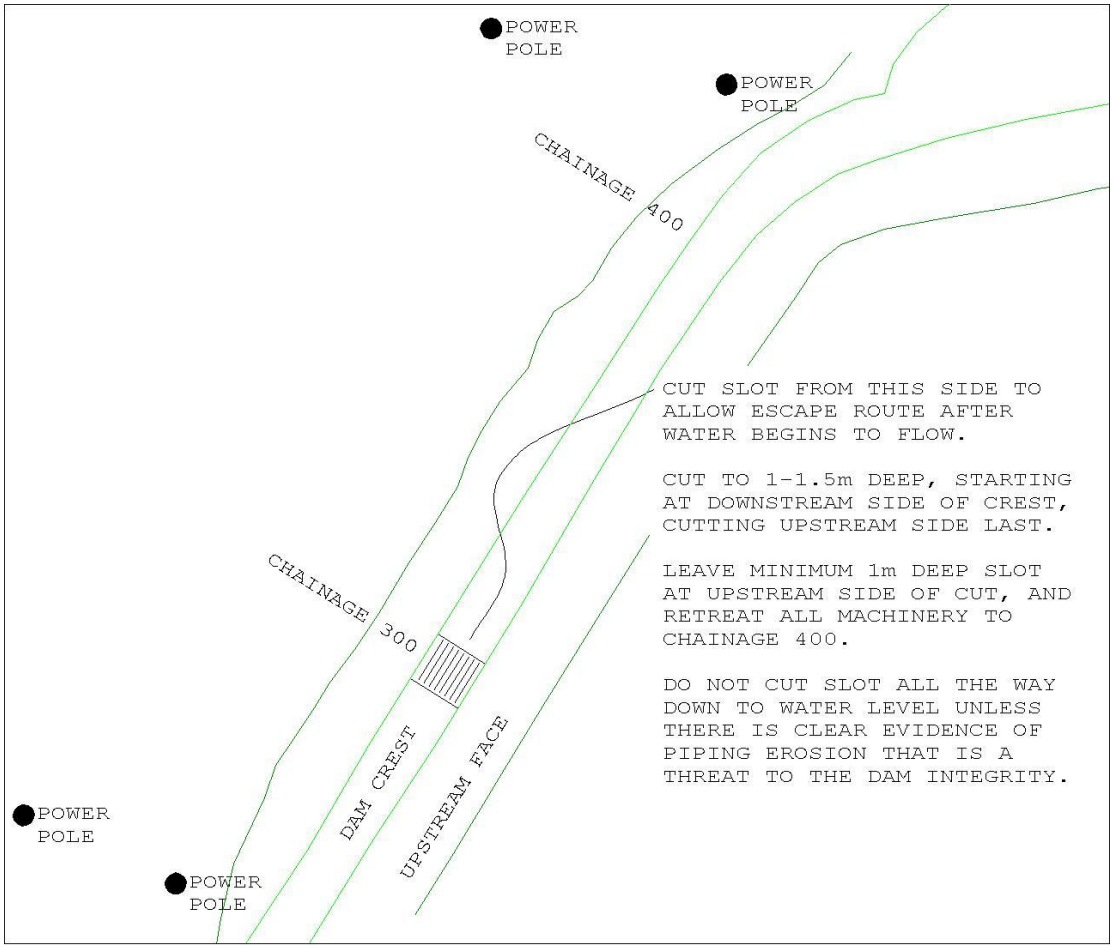
ONLY BREACH THE DAM IF FAILURE OR OVERTOPPING IS IMMINENT



Controlled Breach of Retention Dam – Continued

Cut the slot in the dam as follows:

- Operate from the eastern side of the slot. When water flows through the slot, the dam wall between the spillway and the slot will become an island.
- Start cutting the slot from the downstream side of the crest, working back towards the upstream side.
- The total depth of the slot should be 1.5m. Make it as wide as is needed to achieve this depth.
- Leave a minimum 1m-deep cut at the upstream side of the slot.
- A decision must now be made (by PRMLC, with recommendations from MMELC/Geotech), as to whether the water is allowed to rise to the slot, or the last part of the slot is breached down to the water level:
    - If piping erosion immediately threatens integrity of the dam anywhere along its length, go ahead and breach the final part of the slot. Beware of the rush of water as flow begins through the slot and the dam erodes.
    - Otherwise, leave the slot as it is but continue monitoring weather and dam conditions.
- All machinery must be moved back to Chainage 400 to be clear of potential erosion (whether the last part of the slot is breached or not).



Appendix 1 – Rainfall Intensity

Outline

Rainfall intensity (expressed as a recurrence, say “1 in 100”) can be used as a guide to the severity of a storm event.

These recurrences are useful for comparing to the dam hazard guidelines (eg. Appendix 3) because dam designs are expressed in terms of projected rainfall intensities.

The Rainfall Intensity Diagram is supplied by the Bureau of Meteorology based on real recorded rainfall intensities in the area, and projected up to the more severe storm events.

The dashed curves, 1 in 500 and 1 in 1000, are projected beyond the Bureau’s data for dam design and hazard assessment by B.C. Tonkin.

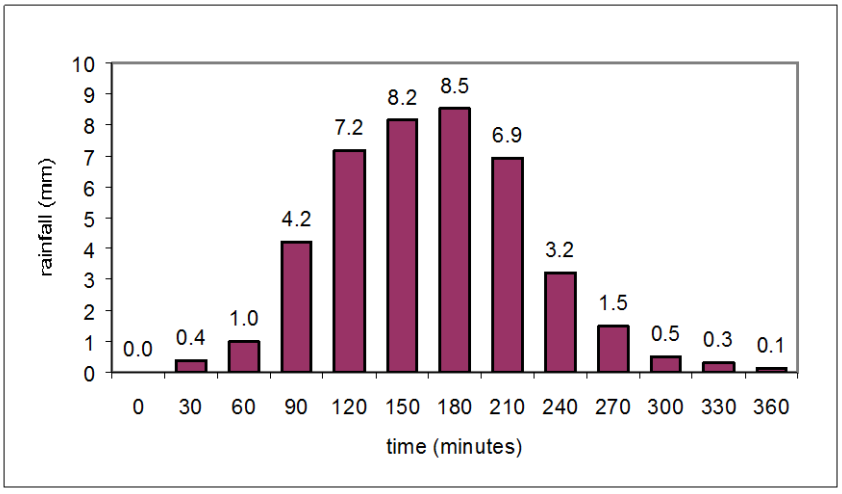
How to Use the Rainfall Intensity Diagram

Rainfall intensity can be derived from:

- A total gauging for a number of hours; or
- A cumulative total recorded by a tipping-bucket rain gauge (such as the Production Branch weather station).

Obviously the latter will give better results because the precise duration of the storm event is known.

The rainfall intensity will increase in intensity to a peak, then gradually reduce over the duration of the event. An example is shown in the graph.



For this example, a 6-hour storm event totalling 42mm gives an average intensity of 7 mm/hour. Reading from the graph on the next page, the recurrence interval for this event is 1 in 5 years.

Insignificant follow-up rain or ongoing drizzle that does not contribute to runoff will skew the result towards lower recurrence intervals, by making the storm duration longer. Use discretion in choosing the storm duration.

However, note also that choosing only the heavier part of a storm for the calculation also tends to skew the result towards lower recurrence.

Appendix 1 (Continued) – Rainfall Intensity

A Common Misconception about Recurrence Intervals

The commonly-used expression "1 in 5 years" is misleading. The terminology is only repeated here because it tends to be used everywhere, and it needs explaining.

It *does not mean* that there will be one storm event of this intensity every five years.

There could be a 1 in 5 year event tomorrow, followed by another one the next day. Although this would be unusual, it would not be impossible.

There is not some kind of quota of rainfall. We do not get a 1 in 5 year event every five years, nor do we necessarily wait 1000 years to get the design 1 in 1000 year event.

Recurrence interval is a probabilistic measure of the likelihood of rainfall intensity.

A 1 in 5 year event has a probability of 1 in 5 (or 20%) of being exceeded in any one year period.

Recurrence Intervals For Longer Periods

We often refer to the probability for a longer period, such as a 15-year mine life. This is derived as follows.

Let P be the probability for one year, and
P_n be the probability for *n* years.

So if P_n = probability of at least one event in *n* years,
Then $(1-P_n)$ = probability that there will not be one event in *n* years.

The probability of not having one event in *n* years $(1-P_n)$, is the probability of not having an event in each year (1-P).

Probabilities in each year are independent of every other year; i.e. the outcome in any one year does not affect subsequent years. So, the probabilities for each year can be multiplied.

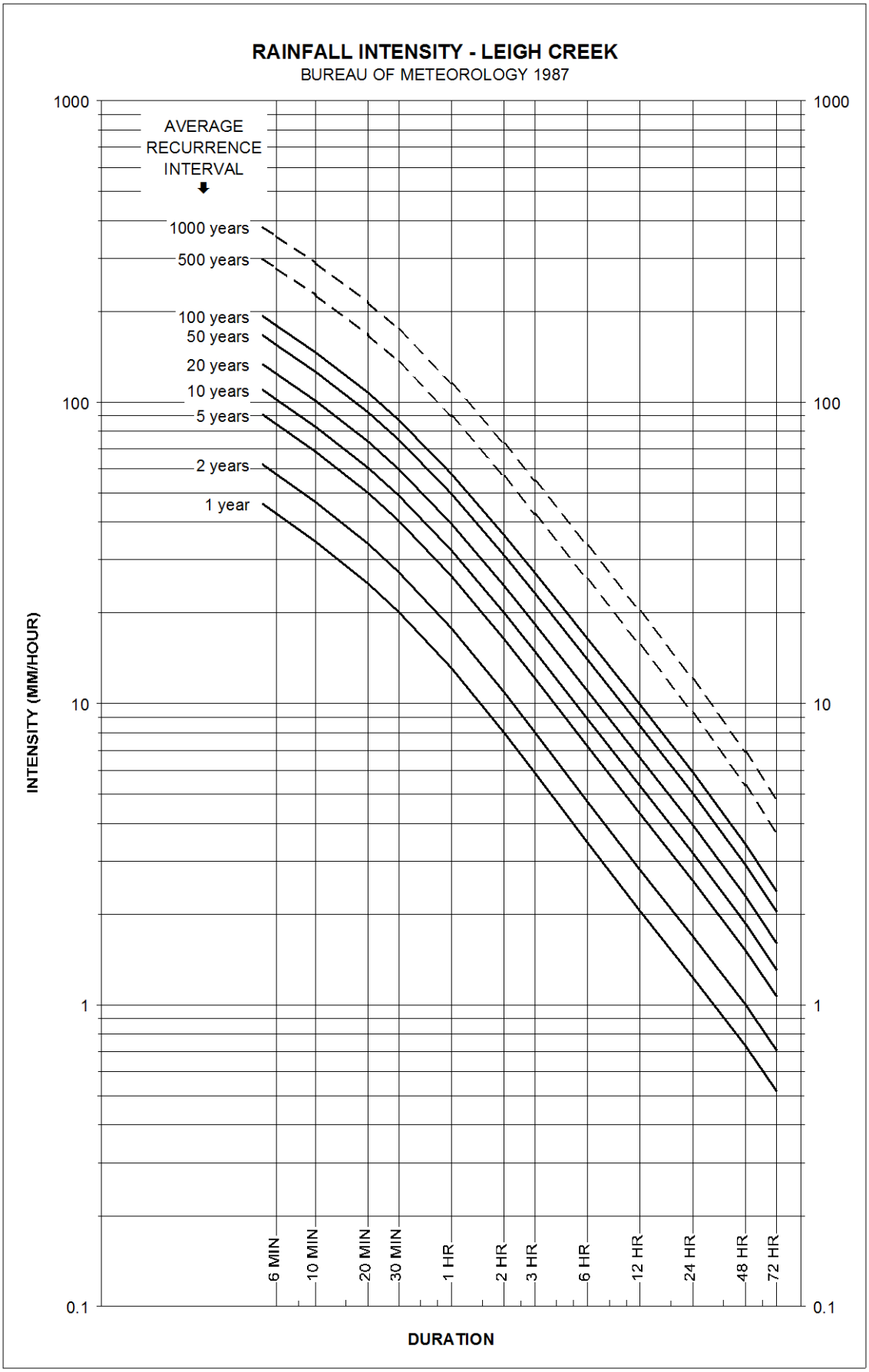
Thus, $(1-P_n) = (1-P)_{year\ 1} \times (1-P)_{year\ 2} \times \ldots . \times (1-P)_{year\ n}$
$= (1-P)^n$

So, the probability of one event in *n* years is
$1-(1-P_n) = P_n = 1-(1-P)^n$

The last formula is used to determine probabilities for periods longer than one year. Remember that probabilities are expressed as numbers between 0 and 1, not as percentages.

For example, a 10% probability (P=0.1) in a 15-year mine life gives
$P_n = 1-(1-0.1)^{15} = 0.79$, or 79%.

Appendix 1 (Continued) – Rainfall Intensity



Appendix 2 – Retention Dam Catchment Runoff

The method used is the initial loss / continuing loss method.

This was used by B.C. Tonkin & Associates in their Retention Dam spillway studies.

It assumes that the first 20mm of rain goes as seepage into the soil, followed by a continuing loss of 7mm per hour. The remainder is runoff.

Lower losses (higher runoffs) may occur on an already wet catchment.

Hydrological studies have shown that the two-hour storm duration is critical, as it delivers the most rapid inflow to the dam.

The catchment area is 187 square kilometres.

Catchment runoffs are as follows.

flood	probability in one year	probability in 15 years	2hr rain (mm)	runoff (Ml)
1:1	100%	100%	16	0
1:2	50%	100%	22	72
1:5	20%	96%	33	1148
1:10	10%	79%	39	1954
1:20	5%	54%	49	3605
1:50	2%	26%	63	5927
1:100	1%	14%	75	7921
1:200	0.5%	7.2%	91	10769
1:500	0.2%	3.0%	116	15219
1:1000	0.1%	1.5%	152	21502

When rainfall intensity is available for a particular storm event (eg. from the tipping-bucket rain gauge), calculate the catchment runoff as follows:

1. Was the catchment initially dry before the rainfall?
    a. If so, take away the first 20mm of rainfall. This “initial loss” goes as seepage into the catchment soil.
    b. If not, and particularly if the rainfall is intense, assume no “initial loss”.
2. For each hour after the initial loss, list the total rainfall in each hour.
3. For each hourly rainfall, subtract 7mm. The remainder will flow from the catchment into the Retention Dam.
4. Total the rainfall in millimetres which goes as runoff. Multiply this by 187 (the catchment area in square kilometres) to get the runoff (in megalitres).
5. Use judgement. If the rain was more intense, or less intense, over the catchment than the mine site, then obviously the runoff will be greater.
6. The catchment is broad and not very long. As a guide, most of its area is on Leigh Creek Station. Expect an intense storm to deliver peak inflow to the dam in only a few hours. Water level in the dam will rise most rapidly following a 2-hour storm event.

Appendix 3 – Retention Dam Flood Hazards and Volumes

Based on hydrology by B.C. Tonkin, for a 10m wide channel at EL220.5.

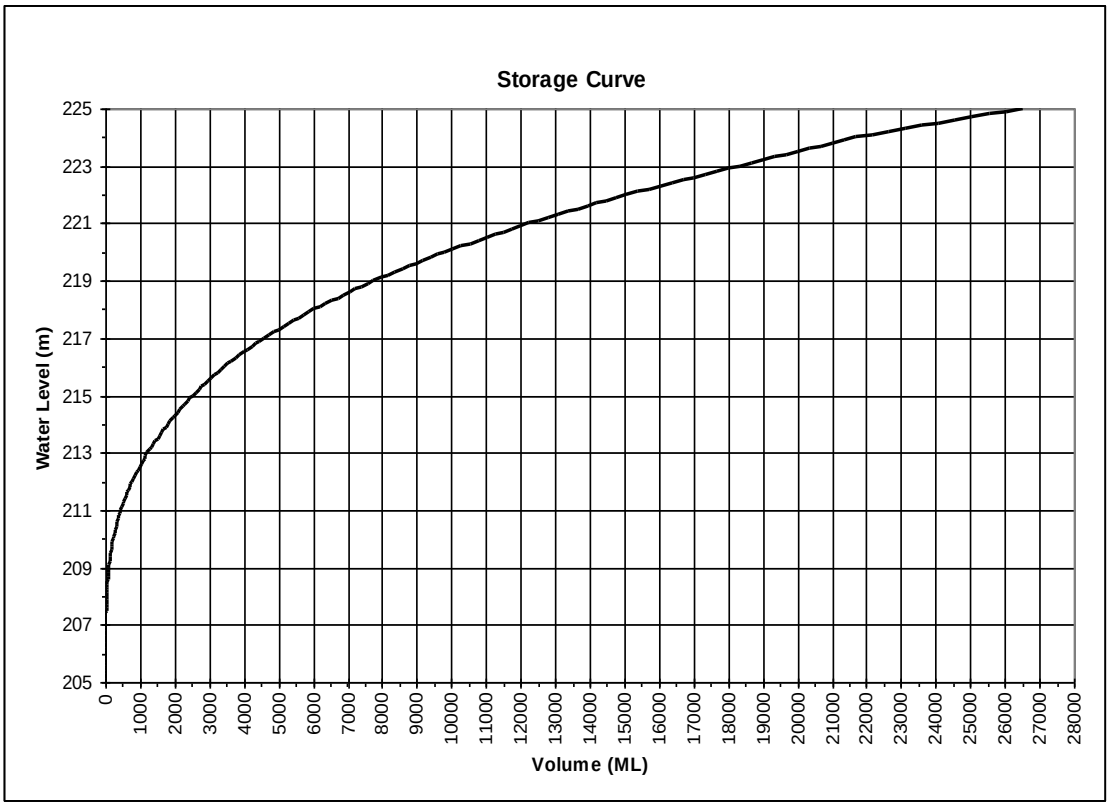
flood size		units	initial dam level (before flood)			
			220.5	**218**	**216**	**214**
1:1000	total flood volume	megalitres	21,500	21,500	21,500	21,500
	volume to fill up to spillway crest	megalitres	0	5,000	7,595	9,215
	volume higher than spillway, to fill dam to EL225	megalitres	15,480	15,480	13,905	12,285
	surplus volume over EL225	megalitres	6,020	1,020	0	0
	total flood water spilling from dam	megalitres	**21,500**	**16,500**	**13,905**	**12,285**
	water level in dam after flood	EL (metres)	> EL225	> EL225	224.8	224.4
	time for water level to drop level to EL223.5	hours	> 10	> 10	9	7
outcomes:	*spillway flowing*		*YES*	*YES*	*YES*	*YES*
	cracked zone of dam wall inundated above EL223.5		*YES*	*YES*	*YES*	*YES*
	dam full within 1.5m of crest (danger of overtopping)		*YES*	*YES*	*no*	*no*
1:400	total flood volume	megalitres	15,200	15,200	15,200	15,200
	volume to fill up to spillway crest	megalitres	0	5,000	7,595	9,215
	volume higher than spillway, to fill dam to EL225	megalitres	15,200	10,200	7,605	5,985
	surplus volume over EL225	megalitres	0	0	0	0
	total flood water spilling from dam	megalitres	**15,200**	**10,200**	**7,605**	**5,985**
	water level in dam after flood	EL (metres)	225.0	223.9	223.1	222.6
	time for water level to drop level to EL223.5	hours	10	4	n/a	n/a
outcomes:	*spillway flowing*		*YES*	*YES*	*YES*	*YES*
	cracked zone of dam wall inundated above EL223.5		*YES*	*YES*	*no*	*no*
	dam full within 1.5m of crest (danger of overtopping)		*no*	*no*	*no*	*no*
1:200	total flood volume	megalitres	10,700	10,700	10,700	10,700
	volume to fill up to spillway crest	megalitres	0	5,000	7,595	9,215
	volume higher than spillway, to fill dam to EL225	megalitres	10,700	5,700	3,105	1,485
	surplus volume over EL225	megalitres	0	0	0	0
	total flood water spilling from dam	megalitres	**10,700**	**5,700**	**3,105**	**1,485**
	water level in dam after flood	EL (metres)	224.0	222.5	221.7	221.1
	time for water level to drop level to EL223.5	hours	4	n/a	n/a	n/a
outcomes:	*spillway flowing*		*YES*	*YES*	*YES*	*YES*
	cracked zone of dam wall inundated above EL223.5		*YES*	*no*	*no*	*no*
	dam full within 1.5m of crest (danger of overtopping)		*no*	*no*	*no*	*no*
1:100	total flood volume	megalitres	8,000	8,000	8,000	8,000
	volume to fill up to spillway crest	megalitres	0	5,000	7,595	8,000
	volume higher than spillway, to fill dam to EL225	megalitres	8,000	3,000	405	0
	surplus volume over EL225	megalitres	0	0	0	0
	total flood water spilling from dam	megalitres	**8,000**	**3,000**	**405**	**0**
	water level in dam after flood	EL (metres)	223.2	221.6	220.7	220.0
	time for water level to drop level to EL223.5	hours	n/a	n/a	n/a	n/a
outcomes:	*spillway flowing*		*YES*	*YES*	*YES*	*no*
	cracked zone of dam wall inundated above EL223.5		*no*	*no*	*no*	*no*
	dam full within 1.5m of crest (danger of overtopping)		*no*	*no*	*no*	*no*
1:50	total flood volume	megalitres	5,900	5,900	5,900	5,900
	volume to fill up to spillway crest	megalitres	0	5,000	5,900	5,900
	volume higher than spillway, to fill dam to EL225	megalitres	5,900	900	0	0
	surplus volume over EL225	megalitres	0	0	0	0
	total flood water spilling from dam	megalitres	**5,900**	**900**	**0**	**0**
	water level in dam after flood	EL (metres)	222.5	220.9	219.8	219.0
	time for water level to drop level to EL223.5	hours	n/a	n/a	n/a	n/a
outcomes:	*spillway flowing*		*YES*	*YES*	*no*	*no*
	cracked zone of dam wall inundated above EL223.5		*no*	*no*	*no*	*no*
	dam full within 1.5m of crest (danger of overtopping)		*no*	*no*	*no*	*no*

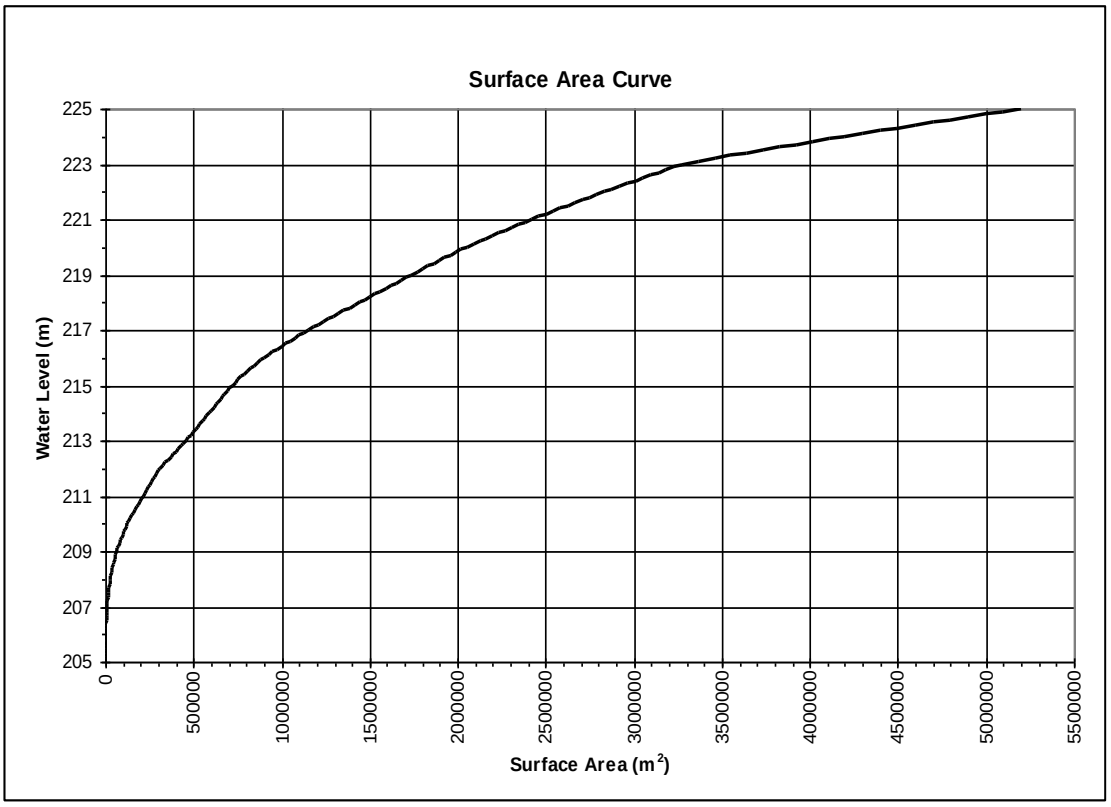
Based on historical measurements, water level is:

86% likely to be at or above EL 214
38% likely to be at or above EL 216
6% likely to be at or above EL 218

The highest recorded level is EL 218.88 (22/3/1989).

Appendix 4 – Storage Volume and Surface Area Curves





Appendix 5 – Storage Volumes

level (m)	volume (ML)	level (m)	volume (ML)	level (m)	volume (ML)	level (m)	volume (ML)	level (m)	volume (ML)
205.0	0.000	209.0	101.563	213.0	1215.316	217.0	4576.161	221.0	12232.257
205.1	0.125	209.1	113.907	213.1	1274.222	217.1	4720.458	221.1	12515.423
205.2	0.250	209.2	126.251	213.2	1333.129	217.2	4864.755	221.2	12798.588
205.3	0.375	209.3	138.594	213.3	1392.035	217.3	5009.053	221.3	13081.754
205.4	0.500	209.4	150.938	213.4	1450.941	217.4	5153.349	221.4	13364.920
205.5	0.625	209.5	163.282	213.5	1509.848	217.5	5297.646	221.5	13648.086
205.6	0.750	209.6	175.626	213.6	1568.754	217.6	5441.942	221.6	13931.251
205.7	0.875	209.7	187.970	213.7	1627.660	217.7	5586.239	221.7	14214.417
205.8	1.000	209.8	200.313	213.8	1686.560	217.8	5730.536	221.8	14497.583
205.9	1.125	209.9	212.657	213.9	1745.473	217.9	5874.833	221.9	14780.748
206.0	1.250	210.0	225.001	214.0	1804.379	218.0	6019.130	222.0	15063.914
206.1	2.165	210.1	246.876	214.1	1876.238	218.1	6193.205	222.1	15391.264
206.2	3.063	210.2	268.751	214.2	1948.098	218.2	6367.280	222.2	15718.614
206.3	3.969	210.3	290.626	214.3	2019.957	218.3	6541.355	222.3	16045.964
206.4	4.875	210.4	312.501	214.4	2091.817	218.4	6715.430	222.4	16373.314
206.5	5.782	210.5	334.376	214.5	2163.676	218.5	6889.505	222.5	16700.665
206.6	6.688	210.6	356.251	214.6	2235.535	218.6	7063.580	222.6	17028.015
206.7	7.594	210.7	378.126	214.7	2307.395	218.7	7231.655	222.7	17355.365
206.8	8.500	210.8	400.001	214.8	2379.254	218.8	7411.730	222.8	17682.715
206.9	9.407	210.9	421.876	214.9	2451.114	218.9	7585.805	222.9	18010.065
207.0	10.313	211.0	443.751	215.0	2522.973	219.0	7759.880	223.0	18337.415
207.1	13.063	211.1	474.908	215.1	2613.170	219.1	7965.199	223.1	18673.674
207.2	15.813	211.2	506.064	215.2	2703.367	219.2	8170.518	223.2	19009.932
207.3	18.563	211.3	537.221	215.3	2793.564	219.3	8375.836	223.3	19346.191
207.4	21.313	211.4	568.377	215.4	2883.761	219.4	8581.155	223.4	19682.449
207.5	24.063	211.5	599.534	215.5	2973.958	219.5	8786.474	223.5	20018.708
207.6	26.813	211.6	630.690	215.6	3064.154	219.6	8991.793	223.6	20354.966
207.7	29.563	211.7	661.847	215.7	3154.351	219.7	9197.112	223.7	20691.225
207.8	32.313	211.8	693.003	215.8	3244.548	219.8	9402.430	223.8	21027.483
207.9	35.063	211.9	724.160	215.9	3334.745	219.9	9607.470	223.9	21363.742
208.0	37.813	212.0	755.316	216.0	3424.942	220.0	9813.068	224.0	21700.000
208.1	44.188	212.1	801.316	216.1	3540.064	220.1	10054.987	224.1	22130.000
208.2	50.563	212.2	847.316	216.2	3655.186	220.2	10296.906	224.2	22560.000
208.3	56.938	212.3	893.316	216.3	3770.308	220.3	10538.825	224.3	22990.000
208.4	63.313	212.4	939.316	216.4	3885.430	220.4	10780.744	224.4	23420.000
208.5	69.688	212.5	985.316	216.5	4000.552	220.5	11022.663	224.5	23850.000
208.6	76.063	212.6	1031.316	216.6	4115.673	220.6	11264.581	224.6	24280.000
208.7	82.438	212.7	1077.316	216.7	4230.795	220.7	11506.500	224.7	24710.000
208.8	88.813	212.8	1123.316	216.8	4345.917	220.8	11748.419	224.8	25140.000
208.9	95.188	212.9	1169.316	216.9	4461.039	220.9	11990.338	224.9	25570.000
								225.0	26500.000

24.14 Appendix N – Infrastructure Position Paper

Infrastructure Position Paper (FPP, December 2015)

24.14 Appendix N – Infrastructure Position Paper

Infrastructure Position Paper (FPP, December 2015)

Flinders Power Partnership

Leigh Creek Coalfields

Infrastructure Position Paper

December 2015

Executive Summary

The existing Leigh Creek Coalfield Lobe B Approved Development Plan specifies End of Life Obligations for the mine and associated assets and infrastructure.

The ADP proposes that all significant man-made structures are removed from the mining lease at the end of mining, unless agreement is reached for an alternative use.

Key infrastructure at the mine is important to the development of economic opportunities for the Leigh Creek region. The infrastructure is a valuable set of assets for any party wishing to develop a commercial operation in the area.

The current requirement to demolish substantial infrastructure has raised community concerns. These concerns, in conjunction with the current interest from third parties in utilising this infrastructure, have resulted in the development of this paper to provide a descriptive overview of each infrastructure group and the assessed risks.

To enable the community's and Government's objective of regional development to be realised, FPP will assist any interested third party and the Government to work through options for retaining all or parts of the mine infrastructure.

Infrastructure will be retained subject to:

- Government approval;
- Future third party land access and usage rights as approved by the Government;
- Legal responsibility for maintenance and ultimate removal is accepted by a suitable third party as required by the Government.

FPP will provide all associated infrastructure design and maintenance records available.

Summary Risk Assessment

Asset	Demolish		Retain	
	Public Safety	Social and Economic	Public Safety	Social and Economic
Railway Balloon Loop	Low	High	Low	Low
Maintenance Compound	Low	High	Medium	Low
Supply Compound	Low	High	Medium	Low
Administration Buildings	Low	High	Low	Low
Electrical Infrastructure	Low	High	Low	Low
Coal plant control room, switch room and amenities	Low	High	Medium	Low
Telecommunications	Low	High	Low	Low
Sealed Mine Access road	Low	High	Low	Low

Table 1: Infrastructure residual risks summary

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1 Background

In June 2015 Alinta Energy announced its decision to close its Flinders Power Partnership (FPP) Operations and cease generation at its Augusta Power Stations at the end of March 2016 or soon thereafter. As part of the closure process, the Leigh Creek Coalfields ceased coal production in November 2015 and are currently operating in a transition phase towards mine closure. Once the final Mine Closure Plan has been agreed, the mine rehabilitation phase will commence.

Following State Government Upper Spencer Gulf and Outback Taskforce meetings a series of Mine Closure Risk Workshops were conducted jointly between the Department for State Development (DSD), the Environmental Protection Authority (EPA) and FPP. An action that emerged from the workshops was for FPP to provide details of the existing mine infrastructure and to determine where the original APD requirement may be reconsidered to leverage the existing assets. The purpose of this paper is to detail the existing infrastructure and assess the residual risks for consideration by the State Government in its decision on the treatment of this infrastructure.

The existing mine operations comply with the Work Health and Safety Act 2012 and the Environmental Protection Act. Operation and closure of the Leigh Creek Coalfields is subject to an existing Approved Mine Development Plan (ADP), presented in Appendix 6.2.

The ADP currently specifies that all significant man-made structures are to be removed from the mining lease at the end of mining, unless agreement is reached for an alternative use. Details of the works to be undertaken on the listed Infrastructure Areas at closure are provided in Table 2 of the ADP.

Details of the existing mine infrastructure are provided in the *Leigh Creek Coalfield Infrastructure Condition Report and Asset Management Plan,* Appendix 6.3, which notes that "*all material assets required for mining operations are in good condition and have been maintained in accordance with OEM specifications*".

The existence of key infrastructure at the mine is of value to the potential economic viability of the region. The existing requirement to demolish substantial infrastructure that may be used for future commercial operations has been raised as a concern by local communities.

This concern, in conjunction with the current level of interest received from third parties in leveraging this infrastructure to realise future business opportunities plans, has resulted in the development of this paper regarding the future of these items.

The paper provides current information, outlines associated risks, and provides a recommended approach.

1.1 Infrastructure Overview

Figure 1 below shows the location of the Infrastructure areas in relation to the mine.

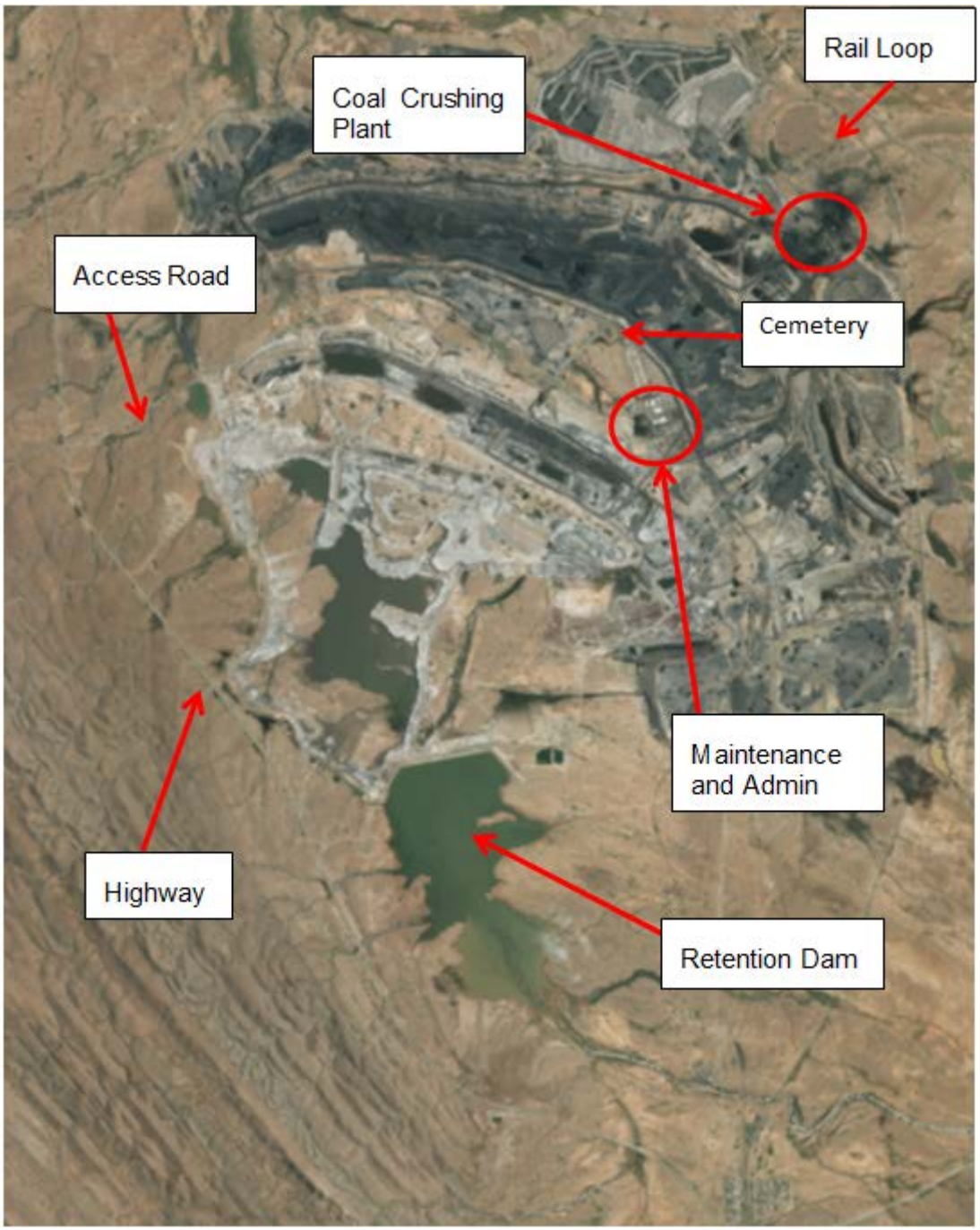

Figure 1: Key infrastructure areas of Leigh Creek Lobe B Coalfield

The Infrastructure for consideration comprises

1. Railway Balloon Loop
2. Maintenance Compound
3. Supply warehouses
4. Administration Buildings
5. Electrical Infrastructure
6. Coal plant control tower, switch room, crib room and ablutions
7. Sealed Mine Access road

8. Brine Pipeline from Reverse Osmosis water treatment plant
9. Potable and wastewater infrastructure
10. Radio and Telecommunication Infrastructure

It is important to note that the Brine pipeline from the RO plant is not part of the perpetual mine leases, rather it is subject to the Leigh Creek Township Lease. Due to its interface with the mine site, and to promote consideration for this in future decision making, it has been included in this document.

The Coal Crushing Plant and Rail Loop are located on the north east corner of the mine site. Most of the remaining infrastructure is grouped in the Maintenance / Admin area. The Retention Dam to the south of the site is the subject of a separate Options Analysis paper (November 2015).

Coalfield Structures and Buildings include the maintenance, supply and administration buildings, crib room facilities, coal crushing plant and several sheds and storage facilities (refer figure 2).

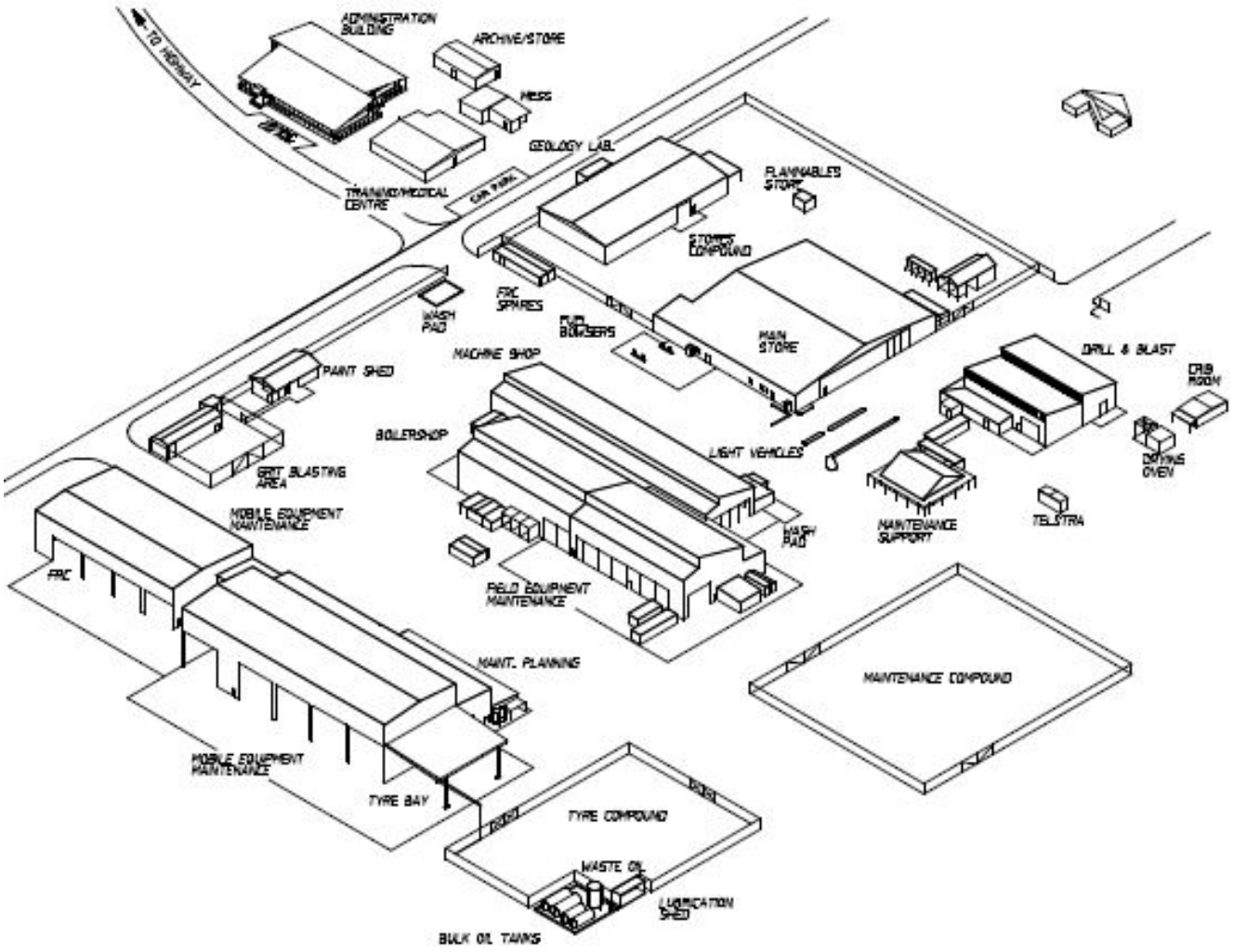

Figure 2: Admin / Supply / Maintenance area

The two main maintenance buildings, namely the Mobile Equipment Maintenance Services (MEMS) and Field Equipment Maintenance Services (FEMS), are significant structures incorporating many ancillary components. Both facilities include cranes, storage facilities, ablutions and significant electrical infrastructure. MEMS also has lube oil storage, distribution and waste oil drainage. The two workshops are best viewed as integrated assets unique to the region.

Maintenance, Supply and Administration buildings are grouped within walking distance, and provide the bulk of the services and administration for the coalfield. They may be considered as one consolidated group or as three distinct domains - Administration, Supply and Maintenance. Fencing could be erected to suit the requirements of single or multiple users.

The *Leigh Creek Coal Field Infrastructure Condition Report and Asset Management Plan* is attached as Appendix 6.3. This details the various Infrastructure components in further detail and is referred to throughout this paper.

Figure 3: Maintenance / Administration / Supply areas

1.2 Management Strategy

FPP has made significant ongoing investment to ensure the assets are available to reliably support its production requirements and that all requirements of relevant legislation are met.

Site Infrastructure will remain subject to ongoing regular inspections and checks as part of the maintenance management system throughout the mine closure period.

Most buildings, except for the main administration, have been extensively remodelled and renovated as the requirements for the mine have changed. The various maintenance buildings and supply buildings have undergone fit-outs and modifications to suit the changing needs of staff and equipment and are all in a “fit for use” condition.

The grit blasting and paint shed facilities have been recently upgraded.

Overhead cranes in the various workshops have recently been checked and replaced and/or upgraded to ensure ongoing compliance with current standards. Cranes are serviced by a licensed contractor every 3 months and detailed annual and 10-yearly inspections are conducted.

While the option of removing the entire Infrastructure reduces associated maintenance costs and risk of public safety, it results in the loss of a valuable resource to the region. This has the effect of reducing the opportunity to develop any future commercial operation in the area that can utilise such infrastructure.

2 Infrastructure Descriptions and Risk Assessment

A risk assessment for the mine infrastructure (identified as Domain 5) was completed as part of a risk workshop involving representatives from the Department of State Development (DSD), the Environment Protection Authority (EPA) and FPP. The risks are assessed using the source / pathway / receptor model. This assessment is documented in the format of Alinta Energy's Enterprise Risk Management framework, and presented as Appendix 6.4.

The risk assessments for the infrastructure areas are summarised in the table below, and discussed in the following sections:

Asset	Demolish		Retain	
	Public Safety	Social and Economic	Public Safety	Social and Economic
Railway Balloon Loop	Low	High	Low	Low
Maintenance Compound	Low	High	Medium	Low
Supply Compound	Low	High	Medium	Low
Administration Buildings	Low	High	Low	Low
Electrical Infrastructure	Low	High	Low	Low
Coal plant control room, switch room and amenities	Low	High	Medium	Low
Telecommunications	Low	High	Low	Low
Sealed Mine Access road	Low	High	Low	Low

Table 1: Infrastructure residual risks summary

NOTE: The 'Retain' option assumes no permanent presence at the mine. If management control of the infrastructure is passed to an alternate entity the risks identified as 'Medium' would be reduced to 'Low'.

Item D5-PR01 of the Domain 5 risk assessment identified the *adverse public reaction to demolition of all existing infrastructure* event as a moderate consequence and an almost certain likelihood, resulting in an **extreme** risk rating. While the risk will vary for each area of infrastructure, in the absence of any clearer information on future use, it is difficult to determine public reaction to each. Hence, the likelihood of an adverse reaction to demolishing existing infrastructure on an individual basis has been assessed as probable resulting in a **high** risk rating overall.

The Domain 5 risk assessment did not specifically consider the impact on future business viability as a result of infrastructure demolition or retention, however the level of external interest post closure announcement warrants this consideration playing an integral part in any decision, and accordingly the category of **Social and Economic risk** has been used in this document to provide an indication of the relative risk to the combination of public reaction and business viability. Similarly to public reaction above, the impact to business viability is difficult to determine for each area without understanding the specific requirements and plans for future use of the infrastructure.

It is to be noted that there are some asbestos containing products used in the toilet and washroom areas of some of the older buildings such as the maintenance workshops. This information is recorded in the site asbestos register.

Further descriptions and the individual risk assessments for each area of infrastructure follow.

2.1 Railway Loop

The Leigh Creek Coalfield Balloon Loop consists of the Balloon Loop, and a Bypass Loop that bypasses the loading facilities. Ballast conditions vary throughout the loop, with much replaced in 2014 during re-railing and turnout renewals. It is currently in a state fit for use at 24T axle loads.

Figure 4: Rail Loop viewed from south showing train loading facility and conveyors to be removed

Three Coalfield bypass turnouts were replaced in 2014/15. As part of the installation, new National Trackworks 1002RG “back-saver” levers were installed to reduce the risk of manual handling injuries when being operated. Much of the rail on the southern side of the loading bins has been replaced with 47kg plain carbon rail. Rail through the loading bins has been renewed with new 50kg plain carbon rail.

Figure 5: Coal train on balloon loop section of railway line

The ADP lists the rail loop under the principal fixed plant infrastructure to be removed (Table 2 ADP No 00/42).

This is in contrast with FPP's requirement under the rail lease to hand the rest of the line back in "good operational condition". There has been some interest by a third-party in developing an intermodal point at the location, utilising the rail loop. The loop provides the ability for the train to turn around rather than to reach a dead-end point.

Figure 6: Rail Loop viewed from north showing train loading facility and conveyors to be removed

With the receptor as Social and Economic the consequence of an adverse reaction to removing the Rail Loop would be MODERATE, the likelihood would be PROBABLE, resulting in a HIGH residual risk.

Residual Risk of Removing Rail Loop

HIGH

The Infrastructure Risk Assessment Appendix 6.1 lists the loop being maintained as part of railway after railway is handed back as proposed risk mitigation with a low residual risk.
With the receptor as Public Safety the consequence of an injury would be MINOR, the likelihood would be UNLIKELY, resulting in a LOW residual risk.

Residual Risk of Retaining Rail Loop

LOW

Asset	Remove		Retain	
	Public Safety	Social and Economic	Public Safety	Social and Economic
Railway Balloon Loop	Low	HIGH	Low	Low

Advantages

- No capital cost, facilitates train turn-around
- Leaves regional transport infrastructure in place for future enterprises

Disadvantages

- None

Key risks

- Public safety risk of retained Loop e.g. slips, trips and falls (no different to rest of line)

Implementation costs

- Nil

Ongoing Maintenance

- Loop maintained as part of railway after railway lease is handed back

2.2 Maintenance Compound

The two main maintenance buildings – Mobile Equipment Maintenance Services (MEMS) and Field Equipment Maintenance Services (FEMS) – are significant structures incorporating many ancillary components – eg. cranes, lube oil storage, distribution, waste oil drainage/storage facilities and significant electrical infrastructure. They also incorporate offices, crib rooms, and washroom and toilet facilities.

Figure 7: Maintenance Compound with FEMS building right and Supply warehouses left

The existing ADP proposes at the end of mining that unless agreement for an alternate use is reached the maintenance workshops are to be removed.

Figure 8: MEMS Workshop with wash-down facility in foreground.

The Maintenance Workshops are best viewed as an integrated asset unique to the region. They were specifically built to ETSA's specifications, are air-conditioned and come equipped with heated floors. They would be an invaluable asset to anyone wishing to start a future enterprise in the area. All the general tooling and plant would be removed from the workshops. However the integrated overhead gantry cranes and lube oil distribution plumbing would most likely remain.

The equipment wash-down facility adjacent the MEMS workshop would also be an attractive addition to leave in place to complement a retained MEMS workshop facility.
There has been some interest shown by a stakeholder in developing an intermodal point at the location and utilising the maintenance workshops. The MEMS building is a very attractive proposition to them as the largest integrated gantry crane is capable of lifting 35T, enough to facilitate container lifting.

Figure 9: 35T Konicrane in MEMS workshop

The costs to replicate these facilities in the future would be prohibitive, and could quite possibly be the difference in a future project being viable or not. Should they be retained, the workshops would be fenced off as per the mitigating actions in the risk assessment. All hazardous substances would be removed and access ladders would be secured.

Figure 10: MEMS workshop

Figure 11: Unit rig 240T dump truck inside MEMS workshop

Figure 12: FEMS Workshop viewed from North

Figure 13: Boilermaker shop inside FEMS Workshop

Figure 14: LV Workshop inside FEMS Workshop

The Maintenance compound containing the workshops is partially fenced and would be relatively easy to fence off as a segregated unit or as part of a larger Maintenance and supply combined area.

With the receptor as Social and Economic the consequence of an adverse reaction to removing the maintenance workshops would be MODERATE, the likelihood would be PROBABLE, resulting in a HIGH residual risk.

Residual Risk of Removing Maintenance Workshops

HIGH

With retained workshops and the receptor as the Public Safety, the consequence of an injury would be MAJOR, given the access controls in place the likelihood would be UNLIKELY, resulting in an MEDIUM residual risk.

Residual Risk of Retaining Maintenance Workshops

MEDIUM

Asset	Demolish		Retain	
	Public Safety	Social and Economic	Public Safety	Social and Economic
Maintenance Compound	Low	High	Medium	Low

Advantages

- Workshops retained as unique asset in the region
- Increased viability of future business venture at site

Disadvantages

- Workshop condition will need to be monitored by SA Government or next occupant.

Key risks

- Public Safety (mitigated by separately fencing off maintenance area)
- Adverse public reaction if workshops demolished

Ongoing Maintenance

- Minimal ongoing maintenance expected.

NOTE: The 'retain' option assumes no permanent presence at the mine. If management control of the infrastructure is passed to an alternate entity the risks identified as 'Medium' would be reduced to 'Low'.

2.3 Supply Compound

The two main supply warehouses are significant steel structures with high clearance. They are surrounded by a fenced compound incorporating hardstand truck unloading area, a bunded drum storage area and smaller storage sheds.

Figure 15: Bunded Drum Storage area

Figure 16: Fenced supply compound

Figure 17: Supply compound with truck unloading area and Warehouse 1 in background

Warehouse 1 was originally an aircraft hangar and has high clearance access at both ends with a drive-through facility. It is air-conditioned and currently fitted out with both heavy duty pallet racking and steel part storage shelving. It is also fitted with additional steel part storage shelving on a mezzanine floor. It incorporates offices, a crib room and toilet facilities.

An air-conditioned ventilated standalone flammable storage facility is attached to the Warehouse.

Figure 18: Warehouse 1

Figure 19: Warehouse 1

Figure 20: Warehouse 1

Figure 21: Warehouse 1

Figure 22: Flammable Storage facility in Warehouse 1

Warehouse 2 also is currently fitted out partially with heavy duty pallet racking. it also has a large high clearance storage area.

Figure 23: Supply Warehouse 2

Figure 24: Supply Warehouse 2

Figure 25: Supply Warehouse 2

With the receptor as Social and Economic the consequence of an adverse reaction to demolishing the warehouses would be MODERATE, the likelihood would be PROBABLE, resulting in a HIGH residual risk.

Residual Risk of Demolishing Supply Warehouses

HIGH

With the receptor as the Public Safety, the consequence of an injury would be MAJOR; given the access controls in place the likelihood would be UNLIKELY, resulting in an MEDIUM residual risk.

Residual Risk of Retaining Supply Warehouses

MEDIUM

Asset	Demolish		Retain	
	Public Safety	Social and Economic	Public Safety	Social and Economic
Supply Compound	Low	High	Medium	Low

Advantages

- Warehouses retained as unique asset in the region
- Increased viability of future business venture at site

Disadvantages

- Warehouses condition will need to be monitored by SA Government, or next occupant.

Key risks

- Public Safety e.g. falls from the roof by a trespasser (mitigated by separately fencing off supply area)
- Adverse public reaction if warehouses demolished

Ongoing Maintenance
Minimal ongoing maintenance expected.

NOTE: The ‘retain’ option assumes no permanent presence at the mine. If management control of the infrastructure is passed to an alternate entity the risks identified as ‘Medium’ would be reduced to ‘Low’.

2.4 Administration Buildings

The main Administration Building was opened in 2001. It was constructed in Adelaide in modular form, trucked and assembled on site with concrete floors. It is a modern fit for purpose building and consists of 25 air-conditioned offices fitted. It is fitted out with IT servers and telecommunications. It also houses a conference room, a kitchen/lunchroom and toilet/shower facilities. It is surrounded by a veranda to suit the climate.

Figure 26: Administration building - reception

Figure 27: Administration building – rear access

There are also three smaller buildings forming the Administration complex.

Figure 28: Production training building

The Production Training building is older and of a modular construction. It houses additional office space, the first aid room, 2 training rooms and additional toilets.

Figure 29: Mess building

The Mess building houses a full kitchen, dining area and cool room.

Figure 30: The Archive building is an open plan building used for storage

The surrounds of the Administration complex are paved and planted with native plants watered by an irrigation system.

The options for the Administration complex are to leave all buildings in place, remove one or all of the auxiliary buildings leaving the main building in place or remove all the buildings.

The Administration complex is serviced by the sealed mine access road and is adjacent the Maintenance compound. As such it would be a valuable retained asset to complement the large maintenance workshops and/or supply warehouses should they be retained for a future enterprise.

The option would be available to separately fence the retained Admin buildings as a group should the identified risk dictate.

With the receptor as Social and Economic the consequence of an adverse reaction to demolishing the Administration complex would be MODERATE, the likelihood would be PROBABLE, resulting in a HIGH residual risk.

Residual Risk of Demolishing Administration Complex

HIGH

With the receptor as the Public Safety, the consequence of an injury would be MODERATE; given the access controls in place the likelihood would be UNLIKELY, resulting in an LOW residual risk.

Residual Risk of Retaining Administration Complex

LOW

Asset	Demolish		Retain	
	Public Safety	Social and Economic	Public Safety	Social and Economic
Administration Buildings	Low	High	Low	Low

Advantages

- Administration complex retained as unique asset in the region
- Increased viability of future business venture at site

Disadvantages

- Building condition will need to be monitored.

Key risks

- Public Safety
- Adverse public reaction if main Administration building demolished

Ongoing Maintenance

Minimal ongoing maintenance expected.

2.5 Coal Plant Control Tower, Crib Room and Ablutions

The Control Tower is built on top of the Electrical switch room which currently houses the electrical switchgear that controls the crushing and train loading infrastructure.

The Switch room is fed by 2 separate 33 kV electrical supplies. Leaving one of these in place will allow for any future electrical needs of an intermodal site or any future user of the railway loop.

All sections of the coal plant and train loading are visible by the operator from the tower due to its elevated position.

Figure 31: Control Tower viewed from North West

This would make it an ideal office/control room for a train unloading area associated with an Intermodal facility. All of the other major components of the coal crushing plant and train loading facility would be removed as listed in the ADP, if it is not required by an external party.

A fenced compound could easily be constructed around the remaining infrastructure to restrict access.

Crib room and washroom/toilet facilities are located in buildings adjacent the Control Tower.

Figure 32: Control Tower viewed from east, Secondary Crusher in background to be removed

Figure 33: Crib Room at Control tower

Figure 34: Toilets at Control Tower

Figure 35: Flammable Storage at Control Tower

With the receptor as Social and Economic the consequence of an adverse reaction to demolishing the Control Tower would be MODERATE, the likelihood would be PROBABLE, resulting in a HIGH residual risk.

Residual Risk of Demolishing Control Tower

HIGH

With the receptor as the Public Safety, the consequence of an injury would be MAJOR; given the access controls in place the likelihood would be UNLIKELY, resulting in a MEDIUM residual risk.

Residual Risk of retaining Control Tower

MEDIUM

Asset	Demolish		Retain	
	Public Safety	Social and Economic	Public Safety	Social and Economic
Coal plant control room, switch room and amenities	Low	High	Medium	Low

Advantages

- Control Tower building retained as an asset adjacent to the rail loop and line
- Increased viability of future business venture at site

Disadvantages

- Building condition will need to be monitored by SA Government, or next occupant

Key risks

- Public Safety e.g. falls from the roof by a trespasser (mitigated by limited access)

Ongoing Maintenance

Minimal ongoing maintenance expected.

2.6 Sealed Mine Access Road

The 6.5 km access road provides sealed vehicle access to the Administration complex and the adjacent Maintenance/Supply compound from the Hawker to Lyndhurst highway. It also provides access to the road that leads to the Historic Old Leigh Creek town cemetery.

There are gates where the road enters the mine lease boundary and it is currently also serviced by automated security boom gates. The access road has been routinely maintained by Town Services and provides all weather access.

Figure 36: Access Road looking east towards Admin/ Maintenance

Figure 37: Access Road looking west towards Highway

Figure 38: Automated Access Gate

Should any of the Maintenance workshops, or Administration buildings be retained, the access road in its current form would provide valuable all weather access to the infrastructure.

The ADP proposes that at the end of mining all roads other than what is required to access the historic cemetery or maintain the potable water line are to be removed.

With the receptor as Social and Economic the consequence of an adverse reaction to removing the Access road would be MODERATE, the likelihood would be PROBABLE, resulting in a HIGH residual risk.

Residual Risk of removing Sealed Access Road

HIGH

With the receptor as the Public Safety, the consequence of an injury would be MINOR; given the access controls in place the likelihood would be UNLIKELY, resulting in an LOW residual risk.

Residual Risk of retaining Sealed Access Road

LOW

Advantages

- All weather access to Admin/Maint/Supply/Cemetery retained
- Increased viability of future business venture at site

Disadvantages

- Road condition will need to be monitored by SA Government or next occupant.

Key risks

- Public Safety
- Adverse public reaction if access road to infrastructure removed

Ongoing Maintenance

Minimal ongoing maintenance expected.

2.7 Electrical Infrastructure

The Electrical Distribution system for the Leigh Creek Coal Mine consists of the Leigh Creek Coalfield Substation and high voltage infrastructure.

The electricity supply to the Leigh Creek Coalfield Substation is provided through the 132kV line from the ElectraNet Davenport Substation at Port Augusta with a spur off to the Leigh Creek South Substation, 5km to the south of the Coalfield Substation.

The 132/33kW Coalfield Substation is provided by ElectraNet and the Leigh Creek connection point is located on the supply side of the FPP 33kV disconnectors A4837 and A4838 located within the substation. These disconnectors supply the mine East and West 33kV Feeders, each with its own 33kV circuit breaker. From the Leigh Creek connection point two independent feeds run through East and West of the mine, both terminating at the Coal Crushing facility which can run independently on either feed.

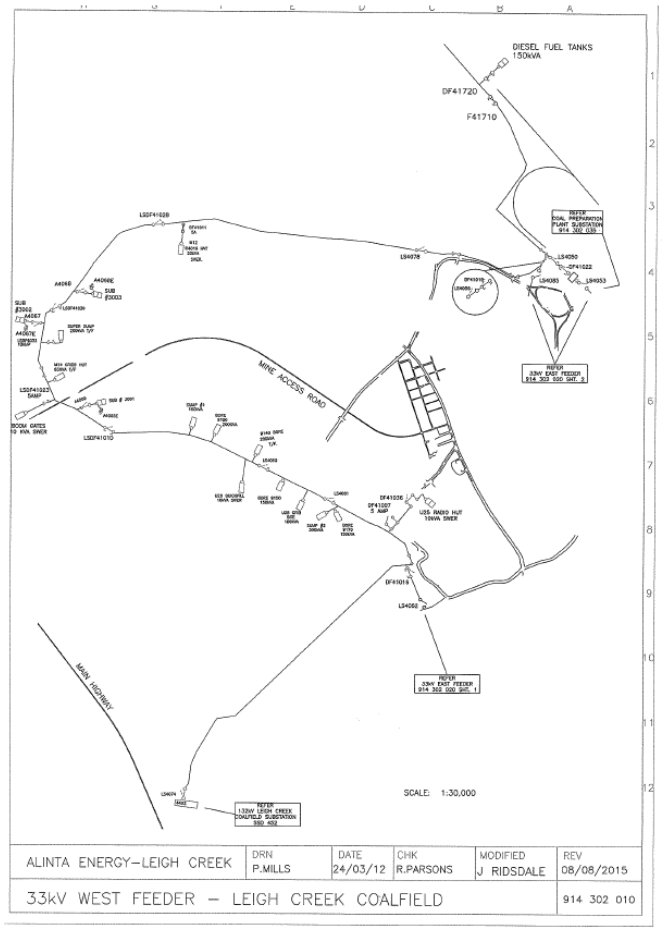

Figure 39: West Feeder

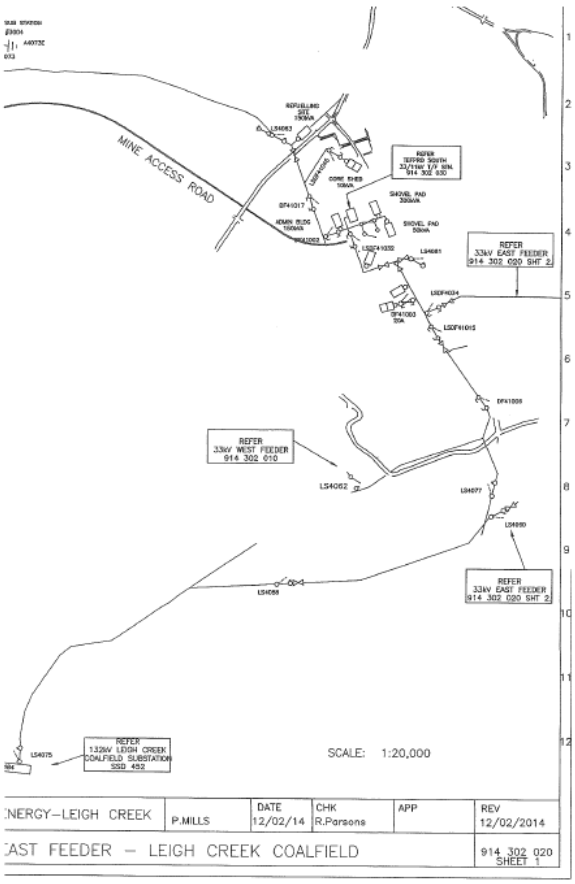

Figure 40 East Feeder

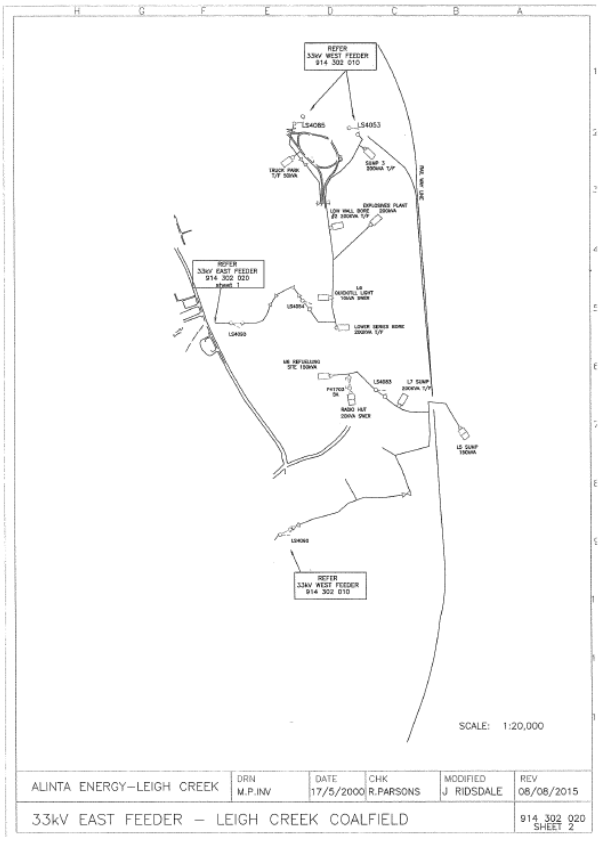

Figure 41: East Feeder (feed to coal plant)

The Electrical Distribution system is in good condition, being subject to ongoing regular inspections and maintenance to ensure operational reliability.

ElectraNet has a contract with SA Power Networks for the maintenance of their entire transmission infrastructure, including the Leigh Creek 132kV, 132/33kV transformers, 33kV reactors, 33kV/415V station transformer, substation protection and Coalfield Substation.

SA Power Networks (previously ETSA Utilities) provides maintenance services to FPP through specific project contracts. [7]

Other maintenance carried out by site personnel include:

- Routine inspections
- Detailed inspection of 20% of equipment every 5 years
- Routine oil sampling of transformers.

Electrical Feeder Options

Under the current Approved Mine Development Plan the electrical assets are listed to be decommissioned and removed.

An option has been identified to isolate the coalfield electrical infrastructure from the main transmission line at the substation to retain a section of the electrical supply assets that would be useful post closure for a future user.

Should any of the built infrastructure remain such as the maintenance buildings, admin complex or control tower at the rail loop, then it would be logical to leave the relevant portion of the electrical distribution system in place.

The Maintenance Workshops, Supply Warehouses and Admin complex area all are supplied electricity via the East Feeder. If any of these assets are retained the East feeder line from the Coalfield Substation would be retained this far with the unused portion of the East feeder and the West feeder removed.

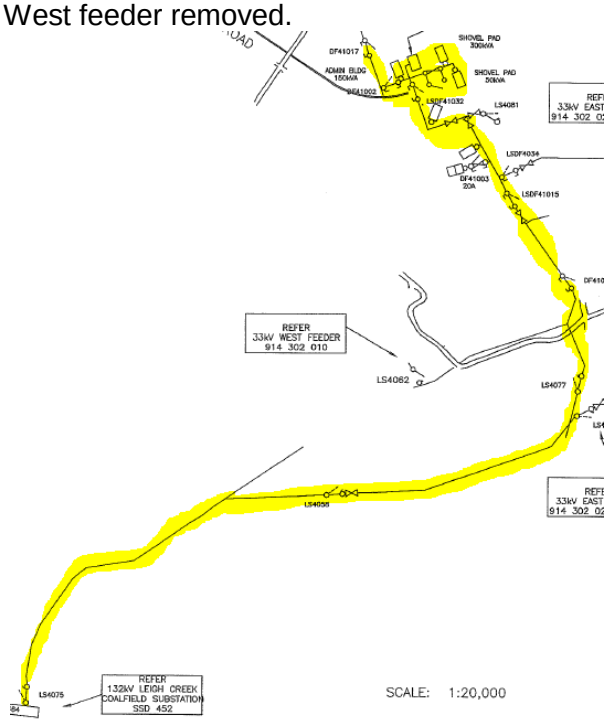

Figure 42: East Feeder (showing supply to Maint/Admin in yellow)

Retained section of East feeder to supply Maintenance / Supply / Admin

As the Substation at the Coal Plant / Rail Loop is supplied by both East and West feeders independently, the section of the East feeder from the Coalfield Substation to the Maintenance Compound and the attached Feeder line through to the Coal Plant substation could remain to supply the rail loop area.

The West Feeder and redundant sections of the East Feeder would still be removed.

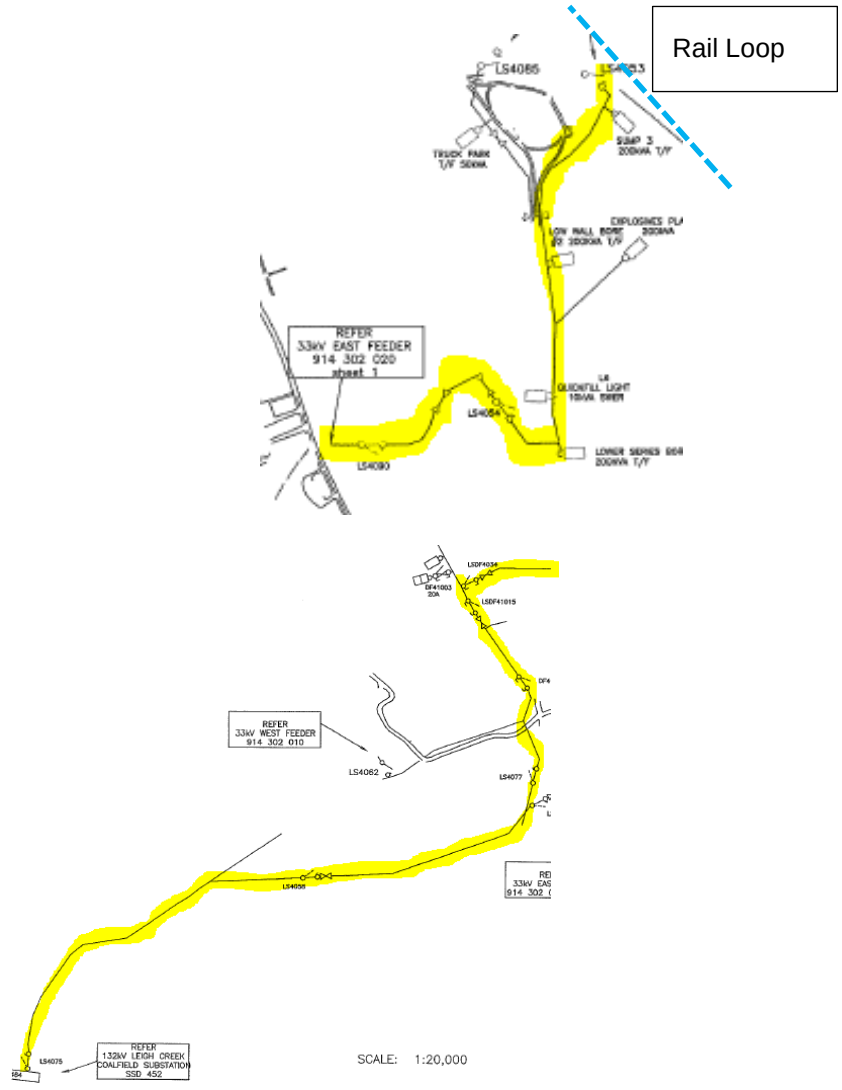

Figure 43: East Feeder (showing retained section of East Feeder to Supply Coal Plant / Rail Loop)

With the receptor as Social and Economic the consequence of an adverse reaction to removing the Electrical Infrastructure would be MODERATE, the likelihood would be PROBABLE, resulting in a HIGH residual risk.

Residual Risk of removing Electrical Infrastructure

HIGH

With the receptor as the Public safety, given that the Electrical Infrastructure would be left disconnected at the sub-station if not required, the consequence of an injury would be MINOR, given the access controls in place the likelihood would be UNLIKELY, resulting in an LOW residual risk.

Residual Risk of retaining Electrical Infrastructure

LOW

Asset	Demolish		Retain	
	Public Safety	Social and Economic	Public Safety	Social and Economic
Electrical Infrastructure	Low	High	Low	Low

Advantages

- High Voltage Electrical Supply available for future enterprises onsite

Disadvantages

- Maintenance/Compliance requirements

Key risks

- Depreciation of asset condition over time

Ongoing Maintenance

Minimal ongoing maintenance expected, responsibility could be passed on to future user.

2.8 Telephone and Radio communications

The Telephone communications comes in to site via an underground line that under the ADP is left in place. The distribution hut (referred to as the Telstra hut) and all above ground communication equipment would be removed if all the infrastructure was removed. If any building infrastructure remains it would be logical that the Telstra distribution hut and any above ground communication equipment used to service that building be retained.

With the receptor as Social and Economic the consequence of an adverse reaction to removing the Telephone and Radio Infrastructure would be MODERATE, the likelihood would be PROBABLE, resulting in a HIGH residual risk.

Residual Risk of removing Telephone and Radio Infrastructure

HIGH

With the receptor as the Public safety, the consequence of an injury would be MINOR; given the access controls in place the likelihood would be UNLIKELY, resulting in an LOW residual risk.

Residual Risk of retaining Telephone and Radio Infrastructure

LOW

Asset	Demolish		Retain	
	Public Safety	Social and Economic	Public Safety	Social and Economic
Telecommunications	Low	High	Low	Low

2.9 Brine Pipeline from Reverse Osmosis Treatment Plant

The Asbestos Cement (AC) pipelines located on the mine lease were manufactured during the mid-1980's, and were installed during that period. The pipeline lays on the surface with ballast dumped at intervals along the length of the pipe. The mine dewatering system is supported by a network of piping across the site. This network consists of different pipe types and diameter. It includes Poly, Lay-flat and AC pipeline that is recommended for removal at mine closure.

In addition to this there is a 12 km AC pipeline that carries the brine output from the Leigh Creek township Reverse Osmosis (RO) plant to the L5 pit on the far eastern part of the mine lease.

The Leigh Creek township ongoing requirements don't formally come under the Mine perpetual lease, However the RO plant is still going to require a destination for its brine water. Consideration needs to be given to leaving the existing AC brine line in place after mine closure.

Figure 44: Asbestos Cement Pipeline

3 Stakeholder Impact and Feedback

FPP recognises that there are several stakeholders interested in the future treatment of Leigh Creek Coalfield infrastructure.

The Upper Spencer Gulf and Outback Community Engagement Team undertook a program of community engagement from 12 June to 30 September 2015. The purpose of this work was to support affected workers and communities and to identify options and opportunities for the future of Leigh Creek and the surrounding region[1].

The community engagement program consisted of a range of meetings, which varied to suit the needs of the community and to ensure the collation of the many views and opinions.

The engagement program was subsequently followed up by an Outback Communities Australia workshop on the 14th October 2015 that sought feedback and input, and brainstormed future uses for the facilities and the region. The railway was one of the infrastructure areas identified in this forum as valuable for future industry in the region[2].

Several third parties have expressed interest in the existing infrastructure to date, in particular, the rail balloon loop, the maintenance workshops, supply warehouse, administrations buildings, and coal control tower, crib room and ablutions. The functionality of this infrastructure is not complete without the associated electrical and telecommunications infrastructure.

While FPP's responsibility is to remove, or demolish and bury all mine infrastructure, FPP continues to make available all information requested, and host visits, by interested third parties in relation to mine infrastructure to allow them to develop commercial opportunities and uses of the infrastructure.

FPP will work with the South Australian Government and to ensure that any infrastructure retained is done so with the Government's approval where:

- Land access and usage rights are approved by the Government;
- Legal responsibility for maintenance and ultimate removal is accepted by a suitable third party as required by the Government;
- FPP will provide all associated infrastructure design and maintenance records available.

FPP has no direct association with any of the opportunities currently being developed.

4 Summary

Key infrastructure at the mine is important to the development of economic opportunities for the Leigh Creek region. The infrastructure is a valuable set of assets for any party wishing to develop a commercial operation in the area.

The current requirement of demolishing substantial infrastructure has raised community concerns. These concerns, in conjunction with the current interest from third parties in utilising this infrastructure, have resulted in the development of this paper to provide a descriptive overview of each infrastructure group and the associated risks.

The **'retain'** option for the mine infrastructure, assuming no permanent presence at the mine, has a 'Medium' public safety risk at worst. If management control of the infrastructure is passed to an alternate entity the risks identified as **'Medium'** would be reduced to **'Low'**.

To enable the community's and Government's objective of regional development, FPP will continue to work in partnership with any interested third party and the Government to work through options for retaining all or parts of the mine infrastructure.

5 References

[1] Upper Spencer Gulf and Outback Community Engagement Team *Leigh Creek Community Views – A Summary*, http://www.statedevelopment.sa.gov.au/resources/leigh-creek-community-views-report

[2] Outback Communities Authority, Northern Flinders Community Workshop, *Workshop Summary*, 14 October 2015, page 15

6 Appendixes

6.1 Infrastructure Risk Assessment

ALINTA ENERGY - LEIGH CREEK MINE CLOSURE - DOMAIN 5 - INFRASTRUCTURE (Report Appendix)

as at **11-Dec-15**

Risk Identification							Inherent Risk Rating			Residual Risk Rating					Proposed Mitigation of Risk Exposure / Improvement Actions			Target / Future Risk Rating		
ID	**Category**	**Source**	**Pathway**	**Receptor**	**Potential Consequences**	**Exposure Type**	**Consequence**	**Likelihood**	**Rating & Priority**	**Current Approach or (Existing Controls)**	**Effectiveness**	**Consequence**	**Likelihood**	**Rating & Priority**	**Risk Reduction Treatment or Asset Improvement Strategic or Approved Action**	**Action Owner**	**Planned Completion Date**	**Consequence**	**Likelihood**	**Rating & Priority**
D5-PS01	**Public Safety**	Infrastructure - rail loop	railway loop deteriorates	member of public or authorised person access	injury	Safety	4. Minor	E. Unlikely	Low 23	level crossings and track are stable	Effective	4. Minor	E. Unlikely	Low 23	Consider retaining loop for future use as part of Leigh Creek Railway after railway handback by Alinta - potential intermodal point - otherwise demolish as part of Mine Closure plan	Government	Feb-16	4. Minor	E. Unlikely	Low 23
										Note: Recommend that loop stays as it is a critical part of rail infrastructure					If retained - loop to be maintained as part of railway after LCK Railway handed back	Government	Feb-16			
D5-PS02	**Public Safety**	Infrastructure - access road	access road deteriorates	member of public or authorised person access	injury	Safety	4. Minor	E. Unlikely	Low 23	Road condition monitored, required for access to cemetery and any other remaining infrastructure. Low level of usage	Effective	4. Minor	E. Unlikely	Low 23	Consider retaining road for access to site / cemetery and any other retained infrastructure	Government	Feb-16	4. Minor	E. Unlikely	Low 23
										Ensure road in sound condition on handback of leases	Effective				If retained - access road to be monitored by DPTI	Government	Feb-16			
D5-PS03	**Public Safety**	Retained workshops	workshop condition deteriorates posing a safety risk to authorised and unauthorised persons	serious injury	injury	Safety	2. Major	D. Possible	High 12	Workshop infrastructure fenced off as defined in Appendix X of closure plan	Marginal	2. Major	E. Unlikely	Medium 18	Consider retaining infrastructure for future commercial operations - otherwise demolish	Government	Feb-16	2. Major	E. Unlikely	Medium 18
										Access to ladders gated off	Marginal				If workshop retained - infrastructure condition to be monitored by SA Gov. (if maintained then consequence reduces)	Government				
										Removal of all hazardous substances	Marginal									
										Demolish workshops and surrounding Infrastructure as per AMDP	Effective	5. Insignificant	E. Unlikely	Low 25	No further work required					

ALINTA ENERGY - LEIGH CREEK MINE CLOSURE - DOMAIN 5 - INFRASTRUCTURE (Report Appendix)

as at **11-Dec-15**

Risk Identification							Inherent Risk Rating			Residual Risk Rating					Proposed Mitigation of Risk Exposure / Improvement Actions			Target / Future Risk Rating		
ID	Category	Source	Pathway	Receptor	Potential Consequences	Exposure Type	Consequence	Likelihood	Rating & Priority	Current Approach or (Existing Controls)	Effectiveness	Consequence	Likelihood	Rating & Priority	Risk Reduction Treatment or Asset Improvement Strategic or Approved Action	Action Owner	Planned Completion Date	Consequence	Likelihood	Rating & Priority
D5-PS10	**Public Safety**	Retained supply warehouses	warehouse condition deteriorates posing a safety risk to authorised and unauthorised persons	serious injury	injury	Safety	2. Major	D. Possible	High 12	Warehouse infrastructure fenced off as defined in Appendix X of closure plan	Marginal	2. Major	E. Unlikely	Medium 18	Consider retaining infrastructure for future commercial operations - otherwise demolish	Government	Feb-16	2. Major	E. Unlikely	Medium 18
										Access to ladders gated off	Marginal				If workshop retained - infrastructure condition to be monitored by SA Gov. (if maintained then consequence reduces)	Government				
										Removal of all hazardous substances	Marginal									
										Demolish supply warehouses and surrounding Infrastructure as per AMDP	Effective	5. Insignificant	E. Unlikely	Low 25	No further work required					
D5-PS11	**Public Safety**	Retained Admin buildings	Admin building conditions deteriorate posing a safety risk to authorised and unauthorised persons	serious injury	injury	Safety	3. Moderate	D. Possible	Medium 16	Admin building infrastructure fenced off as defined in Appendix X of closure plan	Marginal	3. Moderate	E. Unlikely	Low 21	Consider retaining infrastructure for future commercial operations - otherwise demolish	Government	Feb-16	2. Major	E. Unlikely	Medium 18
										Access to ladders gated off	Marginal				If workshop retained - infrastructure condition to be monitored by SA Gov. (if maintained then consequence reduces)	Government				
										Demolish admin buildings and surrounding Infrastructure as per AMDP	Effective	5. Insignificant	E. Unlikely	Low 25	No further work required					
D5-PR01	**Community Relations**	Existing infrastructure	public reaction to demolition of infrastructure	Government & Alinta	Adverse public reaction	Community	3. Moderate	A. Almost Certain	Extreme 6	Demolish in accordance with existing ADP	Ineffective	3. Moderate	A. Almost Certain	Extreme 6	refer to D5-PS03					
										refer to D5-PS03										

ALINTA ENERGY - LEIGH CREEK MINE CLOSURE - DOMAIN 5 - INFRASTRUCTURE (Report Appendix)

as at **11-Dec-15**

Risk Identification							Inherent Risk Rating			Residual Risk Rating					Proposed Mitigation of Risk Exposure / Improvement Actions			Target / Future Risk Rating		
ID	Category	Source	Pathway	Receptor	Potential Consequences	Exposure Type	Consequence	Likelihood	Rating & Priority	Current Approach or (Existing Controls)	Effectiveness	Consequence	Likelihood	Rating & Priority	Risk Reduction Treatment or Asset Improvement Strategic or Approved Action	Action Owner	Planned Completion Date	Consequence	Likelihood	Rating & Priority
D5-PS04	**Public Safety**	Coal plant (crusher, conveyor, loading bins)	deteriorating infrastructure poses safety risk	Injury / fatality to authorised / unauthorised person	Injury / fatality	Safety	1. Catastrophic	D. Possible	High 9	Site access controls as D1-PS01	Marginal	1. Catastrophic	E. Unlikely	High 14	Consider retaining infrastructure for future commercial operations - otherwise demolish	Government	Feb-16			
										Demolish Coal Plant and surrounding Infrastructure as per AMDP	Effective	5. Insignificant	E. Unlikely	Low 25	No further work required					
D5-PS12	**Public Safety**	Coal plant (control room, crib room and toilets)	deteriorating infrastructure poses safety risk	Serious injury	Injury	Safety	2. Major	D. Possible	High 12	Site access controls as D1-PS01	Marginal	2. Major	E. Unlikely	Medium 18	Consider retaining infrastructure for future commercial operations - otherwise demolish	Government	Feb-16			
										Demolish Coal Plant and surrounding Infrastructure as per AMDP	Effective	5. Insignificant	E. Unlikely	Low 25	No further work required					
D5-PS05	**Public Safety**	Power Supply	electricity infrastructure	Physical Injury to authorised / unauthorised person	Injury / fatality	Safety	1. Catastrophic	D. Possible	High 9	Isolation of electricity supply by ElectraNet at substation on closure	Effective	5. Insignificant	E. Unlikely	Low 25	Confirm removal of all electricity infrastructure in line with workshop and other infrastructure decision - refer D5-PS03	Alinta / Government	Feb-16			
										Site access controls as D1-PS01	Effective									
										remove all electricity infrastructure not required to feed any retained infrastructure	Effective									
										if infrastructure is retained, maintain in a safe condition and prevent unauthorised access and isolate local supply	Marginal	4. Minor	E. Unlikely	Low 23						

ALINTA ENERGY - LEIGH CREEK MINE CLOSURE - DOMAIN 5 - INFRASTRUCTURE (Report Appendix)

as at **11-Dec-15**

Risk Identification							Inherent Risk Rating			Residual Risk Rating					Proposed Mitigation of Risk Exposure / Improvement Actions			Target / Future Risk Rating		
ID	**Category**	**Source**	**Pathway**	**Receptor**	**Potential Consequences**	**Exposure Type**	**Consequence**	**Likelihood**	**Rating & Priority**	**Current Approach or (Existing Controls)**	**Effectiveness**	**Consequence**	**Likelihood**	**Rating & Priority**	**Risk Reduction Treatment or Asset Improvement Strategic or Approved Action**	**Action Owner**	**Planned Completion Date**	**Consequence**	**Likelihood**	**Rating & Priority**
D5-CN05	**PCB contaminated transformers**	transformers	potential leakage	environment	environmental impact	environmental	4. Minor	D. Possible	Low 20	testing and removal of PCB by licenced contractor	Effective	5. Insignificant	E. Unlikely	Low 25						
										removal of electrical infrastructure as for D5-PS05										
										Site contamination assessment										
D5-PS06	**Public Safety**	Asbestos cement piping	asbestos fibres	authorised / unauthorised person / environment	Potential health issue / environmental contamination	safety	2. Major	D. Possible	High 12	Removal of exposed asbestos cement pipeline and bury within site asbestos dump	Effective	5. Insignificant	E. Unlikely	Low 25						
										Township R/O plant asbestos pipeline (required post mine closure for brine output to L5 pit). Not part of Mine infrastructure, forms part of Township leased assets (map of piping location 0n closure plan) not owned by Alinta	Ineffective	2. Major	D. Possible	High 12	Maintenance of pipeline by party responsible for Township water supply	GLC	Jul-18	2. Major	E. Unlikely	Medium 18
D5-WI01	**Water infrastructure**	poly piping	failure of piping	outer lying communities reliant on potable water supply	Failure to supply potable water to communities	Community	4. Minor	D. Possible	Low 20	Township R/O plant poly pipeline for community water supply. Not part of Mine infrastructure, forms part of Township leased assets not owned by Alinta	Ineffective	4. Minor	D. Possible	Low 20	Maintenance of pipeline by party responsible for Township water supply	GLC	Jul-18	4. Minor	D. Possible	Low 20
D5-ST01	**Septic tanks**	septic tanks	leakage of system	soil / groundwater	adverse impact on environment	Environmental	4. Minor	D. Possible	Low 20	Remove septic tanks	Effective	5. Insignificant	E. Unlikely	Low 25	Consider retaining infrastructure for future commercial operations - otherwise demolish	Government	Feb-16	4. Minor	E. Unlikely	Low 23
										retain septic tanks relevant to any infrastructure retention	Marginal	4. Minor	D. Possible	Low 20	If workshop retained - infrastructure condition to be monitored by SA Gov. (if maintained then consequence reduces)	Government				
D5-PS07	**Public Safety**	Main Series void	trespass into MS void	public visiting cemetery	Injury / fatality	safety	1. Catastrophic	D. Possible	High 9	Controls as per D6-PS01	Effective	1. Catastrophic	E. Unlikely	High 14	determine future access regime for cemetery, open access vs. escorted	Government				

ALINTA ENERGY - LEIGH CREEK MINE CLOSURE - DOMAIN 5 - INFRASTRUCTURE (Report Appendix)

as at **11-Dec-15**

Risk Identification							Inherent Risk Rating			Residual Risk Rating					Proposed Mitigation of Risk Exposure / Improvement Actions			Target / Future Risk Rating		
ID	Category	Source	Pathway	Receptor	Potential Consequences	Exposure Type	Consequence	Likelihood	Rating & Priority	Current Approach or (Existing Controls)	Effectiveness	Consequence	Likelihood	Rating & Priority	Risk Reduction Treatment or Asset Improvement Strategic or Approved Action	Action Owner	Planned Completion Date	Consequence	Likelihood	Rating & Priority
D5-DM01	**Dust Management**	Dust around coal plant / reclaim stockpile	wind exposure	Authorised access individuals / surrounding communities	Dust affects communities (nuisance only)	Environmental	4. Minor	E. Unlikely	Low 23	Area cleaned of coal and covered with inert material	Effective	4. Minor	E. Unlikely	Low 23						
D5-TT01	**Telford contamination**	Telford Tanks	Historical contamination (pre-2000) from tanks	environment	localised contamination, groundwater impact	Environmental	4. Minor	B. Probable	High 13	Site contamination assessment	Effective	5. Insignificant	E. Unlikely	Low 25						
										Implement site remediation measures as required										
D5-US01	**Underground Storage Tanks**	Six underground fuel storage tanks at Stores, 2 in active use	potential seepage	environment	localised contamination	Environmental	3. Moderate	D. Possible	Medium 16	Site contamination assessment	Effective	5. Insignificant	E. Unlikely	Low 25						
										Implement site remediation measures as required										
D5-BO01	**Bulk oil distribution facility at workshop**	tanks and pipework	potential leakage to ground	limited environmental receptors	localised contamination	Environmental	3. Moderate	D. Possible	Medium 16	drain and dispose of all waste as per site contamination assessment	Effective	5. Insignificant	E. Unlikely	Low 25	Consider retaining infrastructure for future commercial operations - otherwise demolish	Government	Feb-16	4. Minor	E. Unlikely	Low 23
										potential removal of tanks subject to infrastructure retention	Marginal	3. Moderate	D. Possible	Medium 16						
D5-TC01	**Telecommunications**	telecommunications and radio infrastructure	deterioration of equipment	environment	deteriorated equipment remains in situ	Environmental	4. Minor	D. Possible	Low 20	removal of above ground infrastructure	Effective	5. Insignificant	E. Unlikely	Low 25	Consider retaining infrastructure for future commercial operations - otherwise demolish	Government	Feb-16	4. Minor	E. Unlikely	Low 23
										potential removal of telecoms subject to infrastructure retention	Marginal	4. Minor	D. Possible	Low 20						
D5-HS01	**Hazardous substances**	inventory of hazardous chemicals and substances in the stores / workshops	potential leakage	minor leaks / spills to ground	deteriorated equipment remains in situ	Environmental	4. Minor	D. Possible	Low 20	dispose of all hazardous substances as per EPA requirements	Effective	5. Insignificant	E. Unlikely	Low 25						

ALINTA ENERGY - LEIGH CREEK MINE CLOSURE - DOMAIN 5 - INFRASTRUCTURE (Report Appendix)

as at **11-Dec-15**

Risk Identification							Inherent Risk Rating			Residual Risk Rating					Proposed Mitigation of Risk Exposure / Improvement Actions			Target / Future Risk Rating		
ID	Category	Source	Pathway	Receptor	Potential Consequences	Exposure Type	Consequence	Likelihood	Rating & Priority	Current Approach or (Existing Controls)	Effectiveness	Consequence	Likelihood	Rating & Priority	Risk Reduction Treatment or Asset Improvement Strategic or Approved Action	Action Owner	Planned Completion Date	Consequence	Likelihood	Rating & Priority
D5-WD01	**Wash-down area**	contaminated water	potential leakage	environment	leakage of contaminated water impacting localised soil	Environmental	3. Moderate	D. Possible	Medium 16	drain and dispose of all waste as per site contamination assessment	Effective	5. Insignificant	E. Unlikely	Low 25	Consider retaining infrastructure for future commercial operations - otherwise demolish	DSD / Government Taskforce	Feb-16	4. Minor	E. Unlikely	Low 23
										potential removal of wash-down area subject to infrastructure retention	Marginal	3. Moderate	D. Possible	Medium 16						
D5-PS08	**Public Safety**	Radiation gauges - coal crushing plant & Coal Lab	Exposure to low energy radioactive sources	Personnel	Exposure to very low doses of radiation	Safety	3. Moderate	E. Unlikely	Low 21	Radiation gauges decommissioned and removed from site by authorised party	Effective	5. Insignificant	E. Unlikely	Low 25						
D5-PS09	**Public Safety**	Asbestos in building wet areas	Asbestos cladding deteriorating over time	Personnel	Exposure to non-friable asbestos	Safety	3. Moderate	E. Unlikely	Low 21	Refer D5-PS03 - retain or demolish infrastructure										
D5-PSxx01	**Public Safety**	Tooling containing hazardous materials e.g. manometer	degradation / exposure over time	Personnel	Exposure to hazardous material	Safety	3. Moderate	E. Unlikely	Low 21	Tooling containing hazardous materials removed from site by authorised party	Effective	5. Insignificant	E. Unlikely	Low 25						

6.2 Approved Development Plan for Lobe B

LEIGH CREEK MINE DEVELOPMENT PROGRAMME

LOBE B

Leigh Creek Mine Development Programme
Lobe B

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1. Purpose

This plan sets out the specific actions required to be undertaken both during and after mining ceases to address the environmental effects of mining operations at Lobe B in the Leigh Creek Coalfields. This plan is submitted pursuant to Regulation 10 of the Mines and Works Inspection Act 1920.

2. Background

2.1 Regulatory Regime

Flinders Power has the right to mine coal at Leigh Creek Coalfields by virtue of four Crown Perpetual Leases. These Leases provide that the rights of the Lessee are the rights conferred by section 43d of the Electricity Trust of South Australia Act 1946 which has been repealed. The Leases specifically set out a description of the relevant rights previously conferred under that section.

In addition, section 48 of the Electricity Corporations Act provides that Flinders Coal may:

- mine by open or closed working any seams of coal vested in the Crown or Flinders Coal at or near Leigh Creek;
- mine (by open or closed workings) any substance vested in the Crown or Flinders Coal discovered in the course of operations for the mining of coal;
- treat, grade or otherwise prepare for sale, and use, sell or otherwise dispose of any coal or other substance so mined; and
- authorise another body to exercise all or any of the powers conferred on Flinders Coal as described above (Flinders Coal has granted such an authorisation to Flinders Power).

Flinders Power additionally holds an Expiration Licence (numbered 2667) granted under the Mining Act entitling it to explore for minerals (except for extractive minerals and precious stones) for a period of one year commencing on 9 November 1999. The Licence enables Flinders Power to explore land to which Lobe E extends (but which fall outside the area reserved from the operation of certain provisions of the Mining Act) to the extent that the statutory right to mine does not extend to that area. Flinders Power intends to apply for a Retention Lease (confined to exploratory operations) under the Mining Act to replace this Expiration Licence.

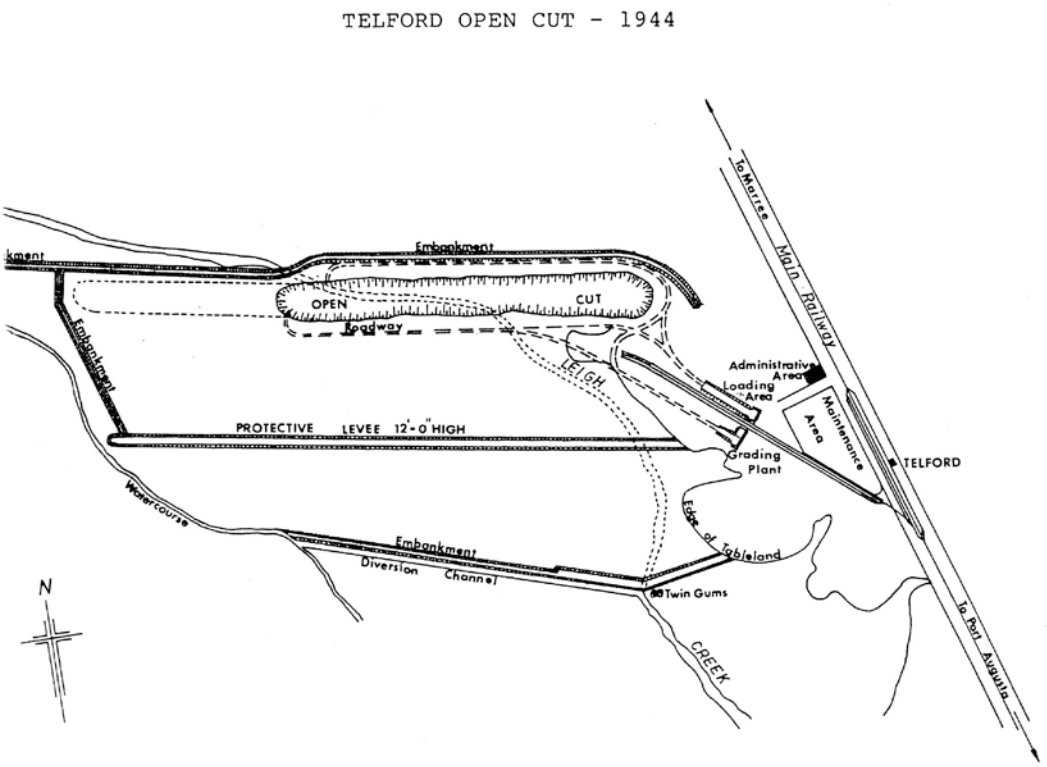
The mine covered by the Leases (but not the land subject to the Expiration Licence) is currently reserved from the operations of Parts 4, 5, 6, 6A, 7 and 8 of the Mining Act by a Proclamation in the Government Gazette dated 25 October 1984.

The Mines Works Inspection Act by section 5 applies to every mine under whatsoever tenure held and wheresoever situated within the State. Regulation 10 of the Mines and Works Inspection Act allows the Chief Inspector of Mines to request the preparation of mine plans and development plans. Pursuant to these powers, PIRSA approved a Mine Development Plan for the Leigh Creek Coalfields in July 1997.

2.2 Mining History

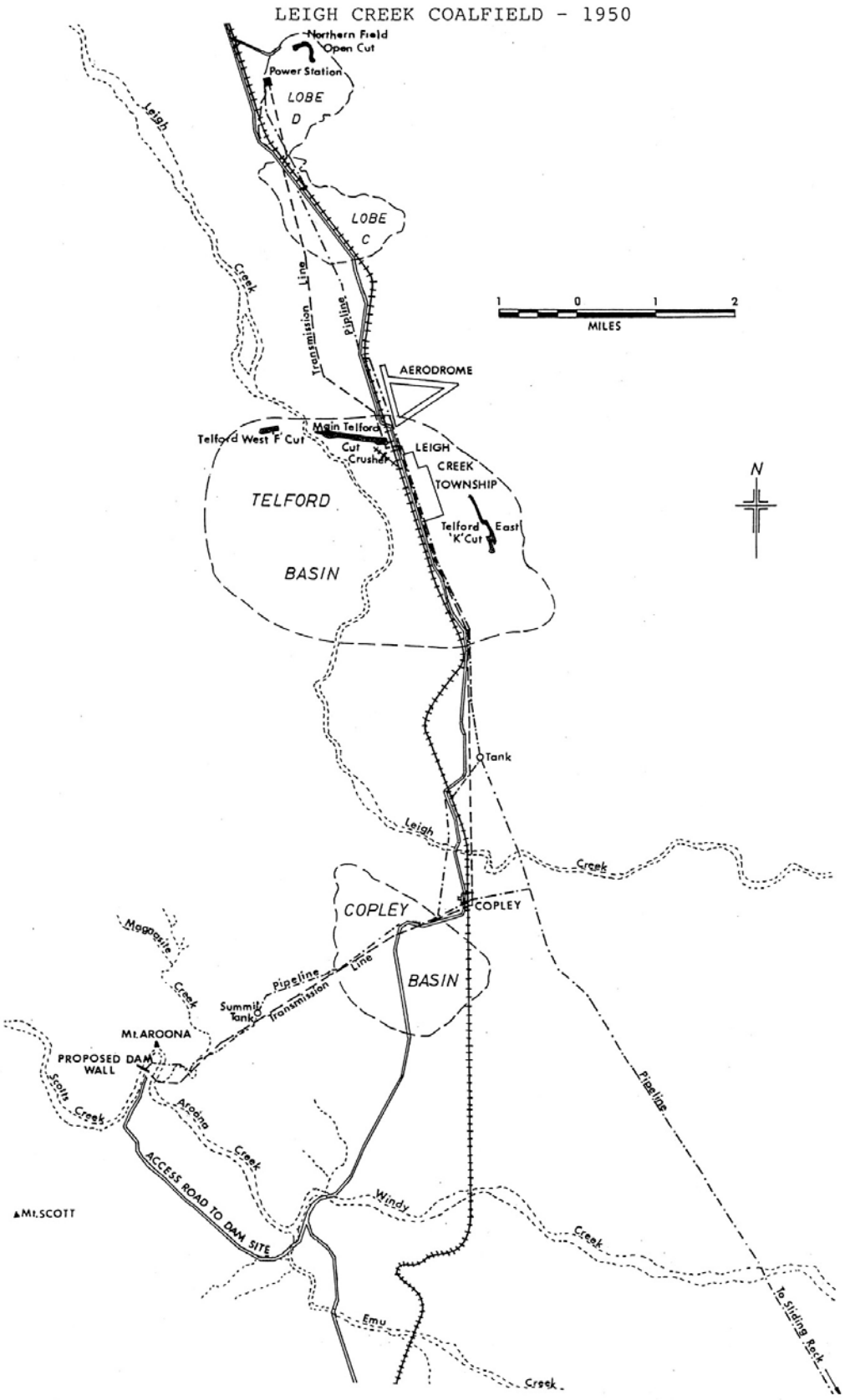
Open cut mining originally commenced in Lobe B in August 1943. The original mining plan involved the removal of approximately 80 foot of overburden along a strip 4,400 feet long running from close to the Central Australian railway line (Telford siding) almost due west. At that time, Leigh Creek ran across and along the line of the proposed open cut. It was therefore necessary to divert the creek to prevent future flooding of the open cut. A 60 foot wide and 12 foot high levee was constructed as a diversion for the creek and a new creek bed was ripped so that it would form a new channel away from the open cut. The extent of the operations in 1944 is shown in **Figure 1**.

Figure 1



The early years of Leigh Creek saw a dramatic increase in production from 9,000 tons per annum in 1943 to approximately 440,000 tons per annum in 1949/50. The extent of the operations as at 1950 is shown in **Figure 2**.

Figure 2


LEIGH CREEK COALFIELD - 1950
Northern Field Open Cut
Power Station
LOBE D
LOBE C
Leigh Creek
Transmission Line
Railway
1 0 1 2
MILES
AERODROME
Main Telford Cut
Telford West 'F' Cut
Crusher
LEIGH CREEK TOWNSHIP
TELFORD BASIN
Telford East 'K' Cut
N
Tank
Leigh Creek
COPLEY
COPLEY BASIN
Magazine Creek
Summit Tank
Pipeline
Transmission Line
Mt. AROONA
PROPOSED DAM WALL
Splits Creek
Ateena Creek
ACCESS ROAD TO DAM SITE
Mt. SCOTT
Windy Creek
Emu Creek
Pipeline
To Stirling Rock

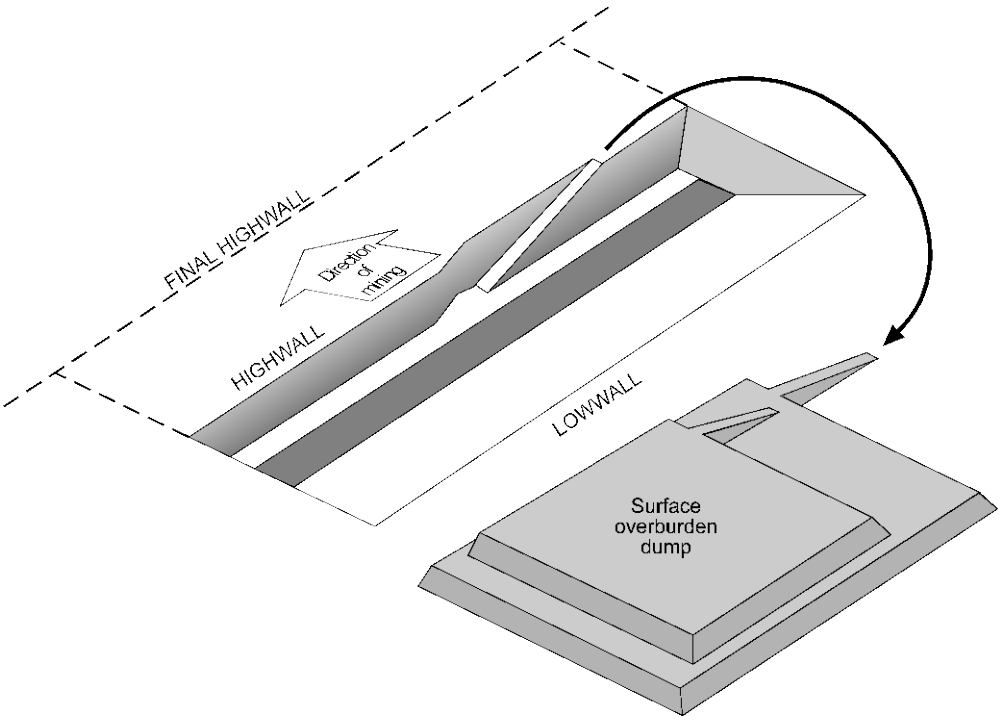
The next stage of Leigh Creek development occurred when the Electricity Trust of South Australia took control of the Leigh Creek Coalfield in February 1948 as part of the process of developing what is now known as the Playford A Power Station. Mining continued within Lobe B until it reached its then economic limit of 110 feet of overburden in 1957. Mining then moved to Lobes C and D (North Field). These deposits were mined until September 1977.

When mining recommenced in Lobe B in 1982, mining proceeded by dragline and then truck and shovel methods so as to enable the economic removal of overburden to a depth of 150 metres. In addition to the change in mining method it was also necessary to block Leigh Creek with a retention dam. The purpose of this dam was to prevent the waters of the creek flowing into the Upper and Main Series pits. In addition, the western bund was built so as to divert small creeks and any overflow from the retention dam away from the pits. At the same time a similar eastern bund was constructed so as to divert small creeks away from the coal field.

In addition, it was also necessary to move some of the low wall dumps which surrounded the previous mining pits so as to enable the re-establishment of the old mining cuts so that they could be developed to further depths. These dumps were relocated to their present locations where further material was subsequently added to them from other mining operations.

A simplified diagram of the strip mining method used at Lobe B is shown in **Figure 3**. Strip mining involves using either a drag line or truck and shovel to remove the coal and overburden and transport it out of the pit. Waste rock dumps are constructed beyond the limits of any future mining area. Utilising truck and shovel, this method involved the removal of 12 metre thick strips of overburden along a typical one kilometre long/length to expose coal.

Figure 3 - Simplified model of strip mining

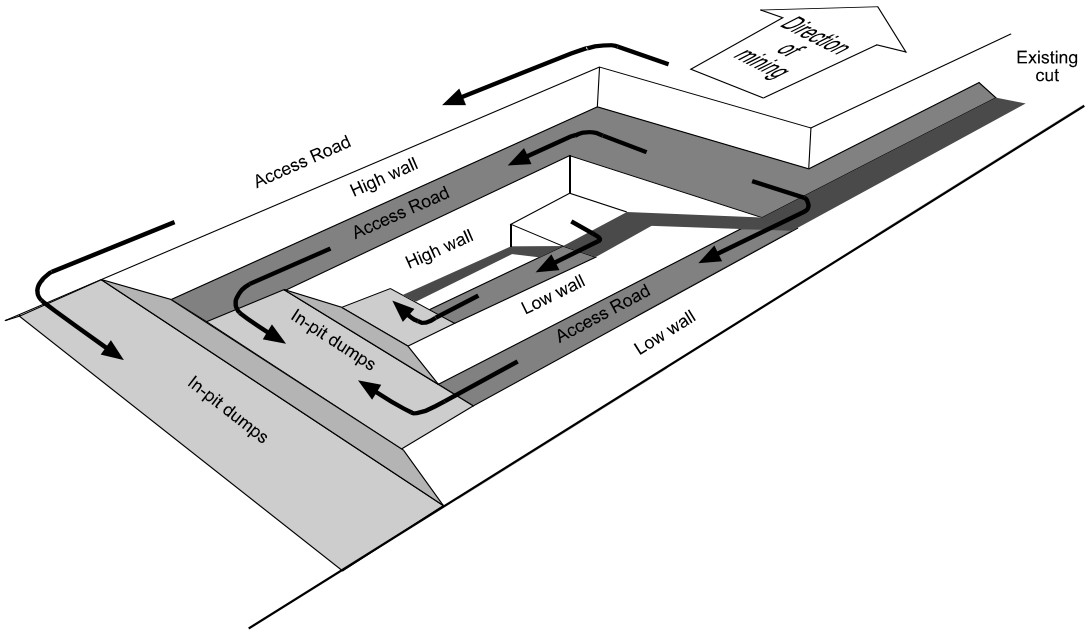


Increased haul cycle times associated with the deepening strip mining operations and the need to reduce overburden removal costs lead to an extensive three year study commencing in 1986 of alternative overburden removal techniques. This study lead to the introduction of "terrace mining" in the Main Series in 1991.

Terrace mining is a truck and shovel technique which in contrast to strip mining allows the void to be in-filled. It involves the excavation of an initial void referred to as the "Box cut" to the full economic depth at one end of the deposit and mining the full cross section along strike as a face advancing in a series of 150 to 300 metre wide terraces. Each terrace is divided into a series of 12 to 15 metre benches.

The overburden is hauled along in-pit haul roads and mostly dumped in the mined out area in a series of advancing dump faces. Currently, the advancing dump faces are each approximately 20 to 30 metres in height. A simplified model of terrace mining appears below in **Figure 4**.

Figure 4 - Simplified model of terrace mining



Geotechnical considerations are a major issue in ensuring the safety of terrace mining operations. The Leigh Creek operation has a well developed and sophisticated system for addressing these issues. Its proven track record in this area demonstrates the success of the mining practices used by Flinders Power.

3. Site Description

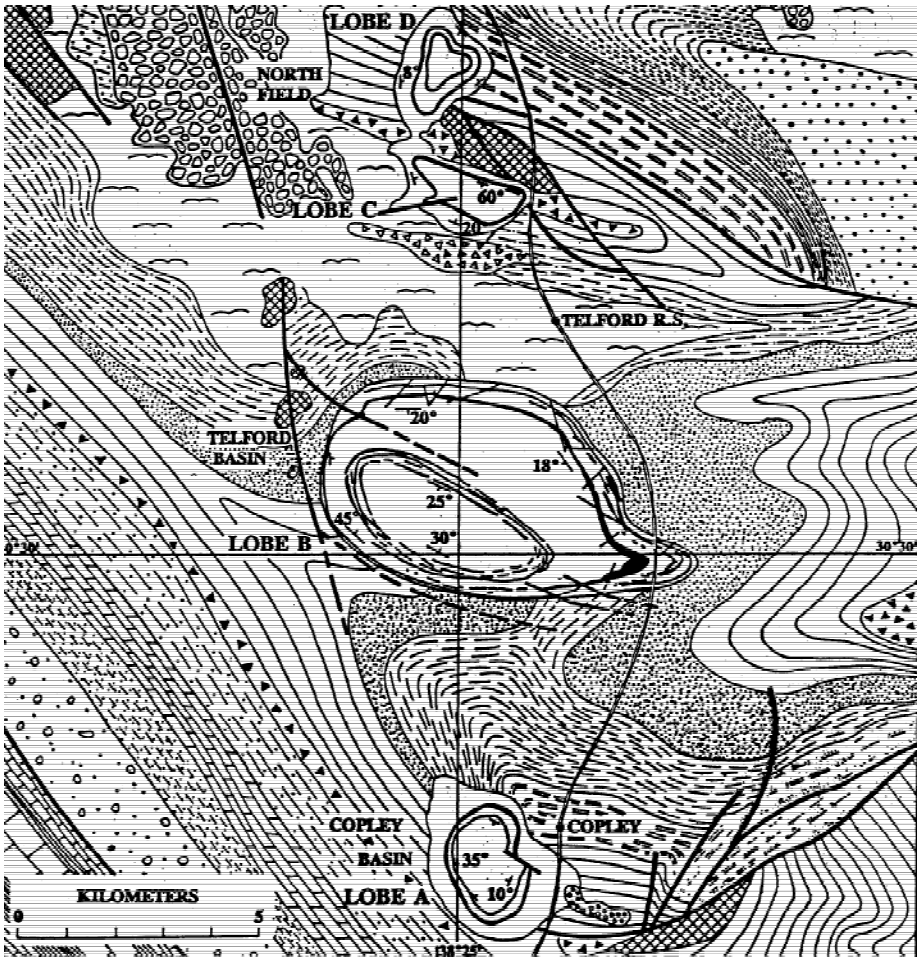
Leigh Creek Coalfield is located about 550 km north of Adelaide in an embayment of the Northern Flinders Ranges as is shown on **Figure 5**.

Figure 5 – Leigh Creek Coalfield Locality Plan

3.1 The Coalfield Resource

Leigh Creek Coalfield is located in the northern extension of the Adelaide Geosyncline. The coal measures are of Triassic age (200-240 million years old) and occur as saucer shaped sedimentary deposits underlying a flat plain. They are laid down on a pre-Carnian basement of limestones and siltstone. Quaternary sediments (conglomerates, gravels, clays, alluvium) cover the coal measures. The regional geology of the Leigh Creek area is shown in **Figure 6**.

Figure 6 - Regional Geology of the Leigh Creek Area



QUATERNARY
Alluvium

Conglomorates, gravels, clays

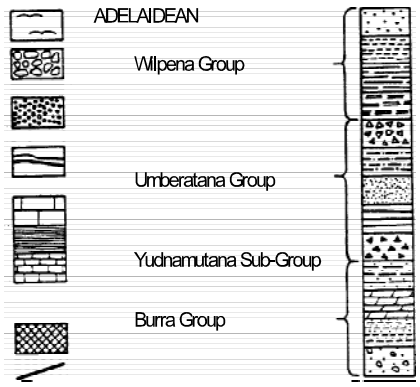
JURASSIC
Sandstones with plant remains

TRIASSIC
Coal measures, coal seams

CAMBRIAN
Aroona Creek limestone
Billy Creek formation, purple green shales
Ajax limestone

Diapir Breccia

Fault



Wilpena Group – quartzites, sandstones, siltstones, shales, sandy limestones and dolomitic shales.

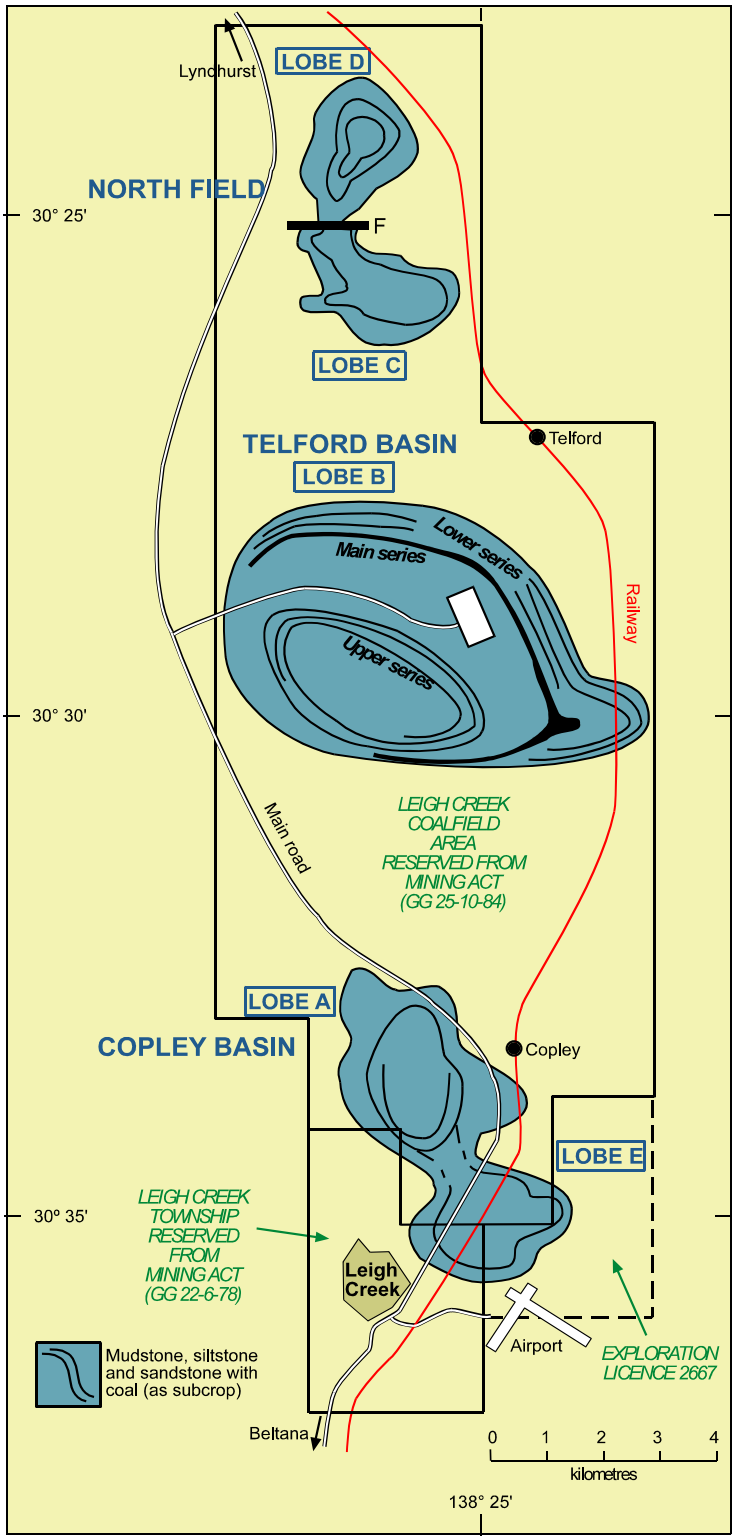
Umberatana Group – sandstones, greywacke, tillites, siltstones, calcareous, dolomitic and silty shales, shales, dolomites, limestones.

Yudnamutana Sub-Group – silty shales, quartzites, greywacke tillite and calc-silicate metasediments.

Burra Group – sandstones, siltstones, dolomites and dolomitic shales and quartzites.

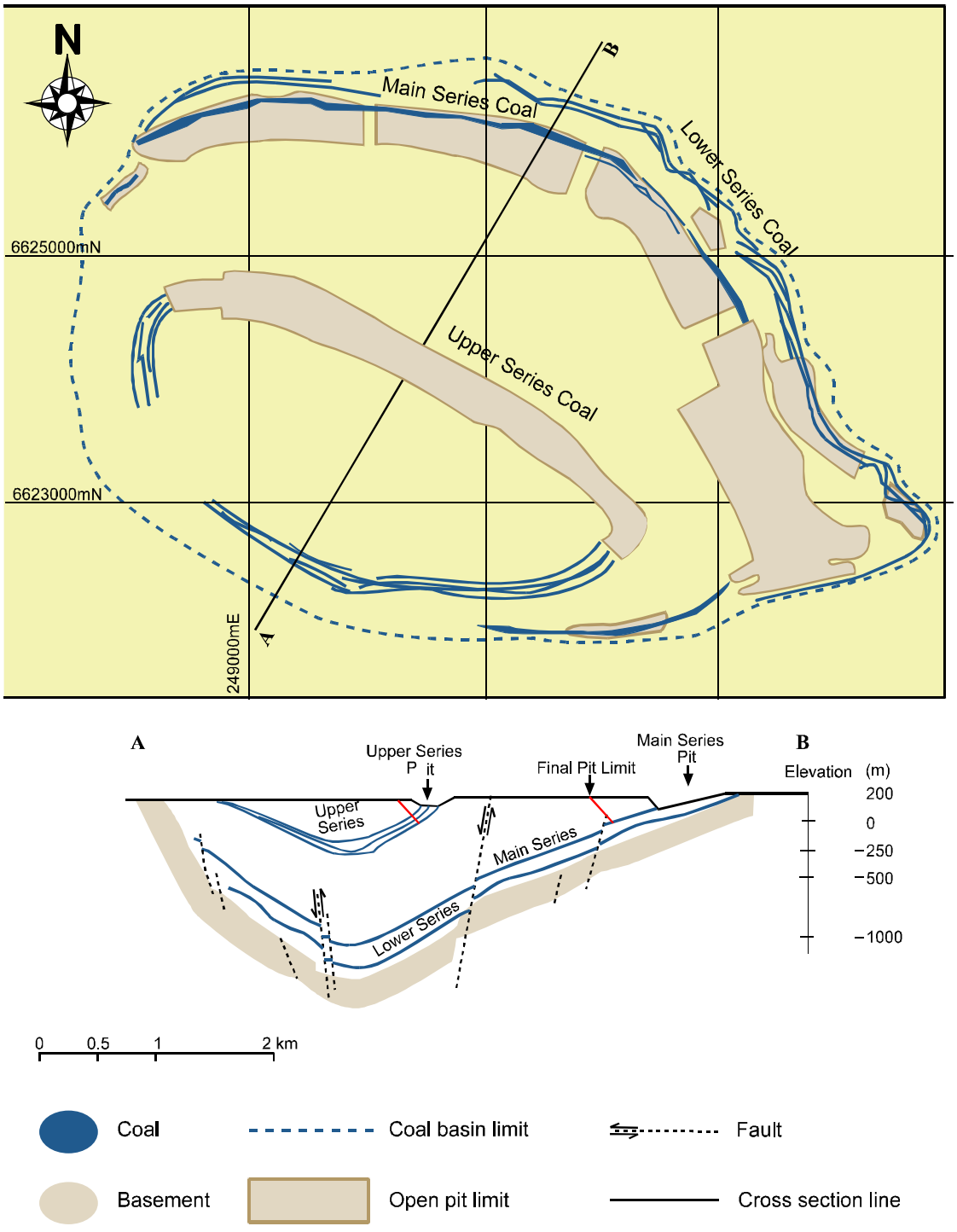
The coal measures occur in five isolated basins or lobes of coal within a 20 km north-south interval, referred to as Lobes A and E (Copley Basin), Lobe B (Telford Basin) and Lobes C & D (North Field) (refer **Figure 7**). Current estimates indicate a total in-situ resource of over 587 million tonnes.

Figure 7 – The Leigh Creek Coal Basins A-E



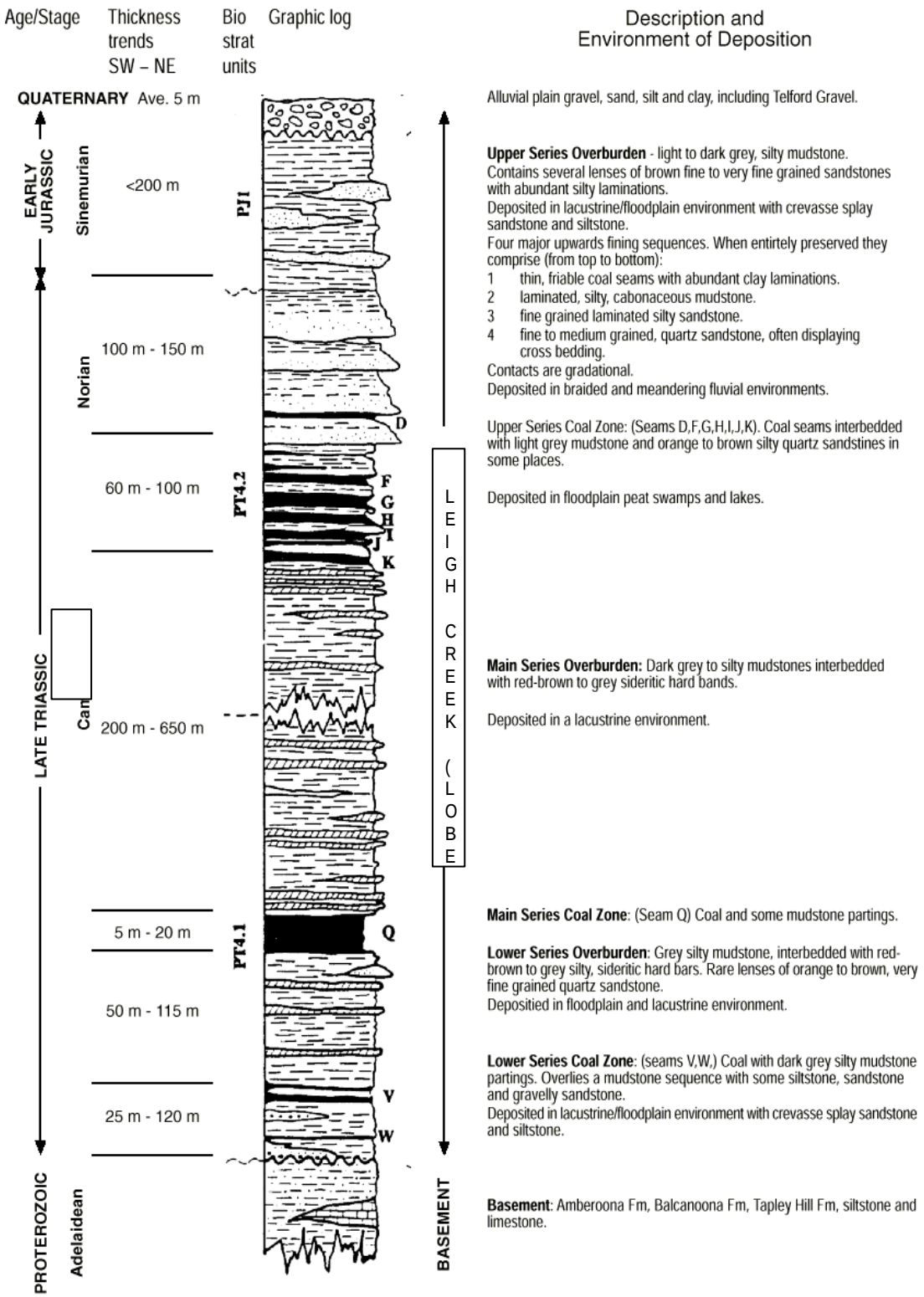
The geological plan of Lobe B is shown on **Figure 8**.

Figure 8 – Geological plan of Lobe B



The stratigraphic column for Lobe B appears as **Figure 9** below.

Figure 9 – stratigraphic column – Lobe B

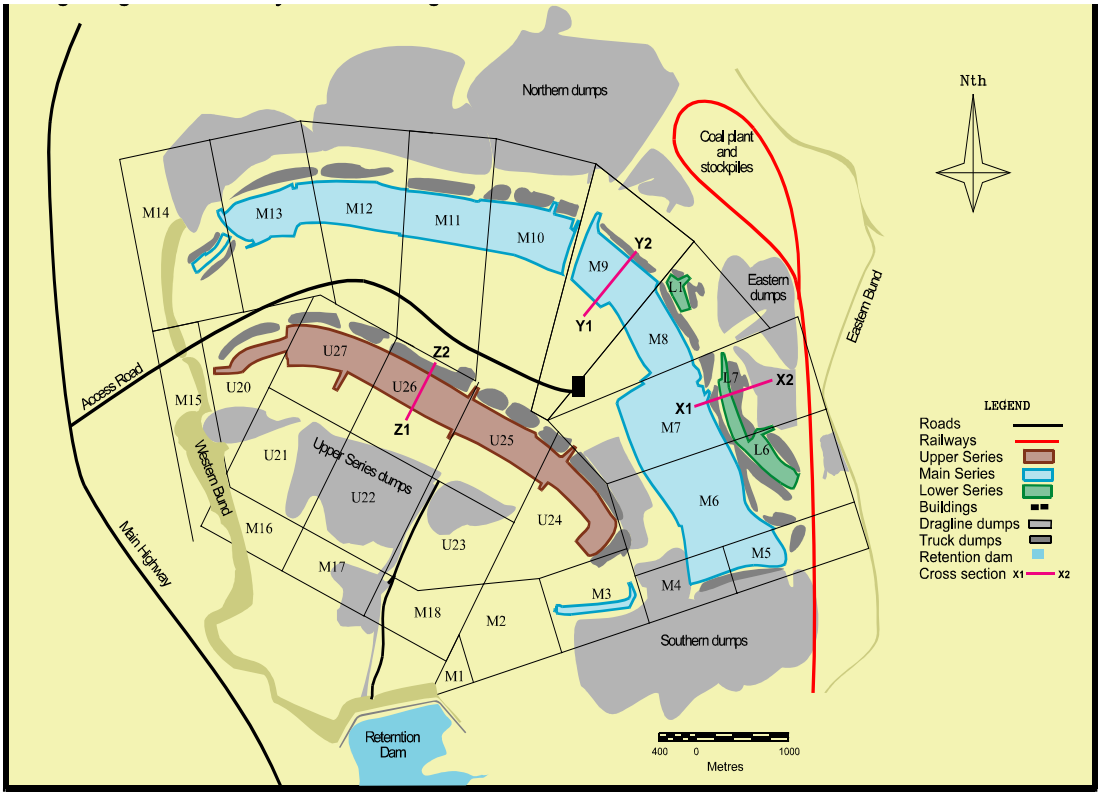


3.2

3.3 Mine Layout

The general mine layout and mine grid is shown in **Figure 10** below. In addition, the cross-sections Z1 – Z2, X1 - X2 and Y1 – Y2 are highlighted on the plan. These cross-sections highlight the characteristics of the Lower, Middle and Upper Series.

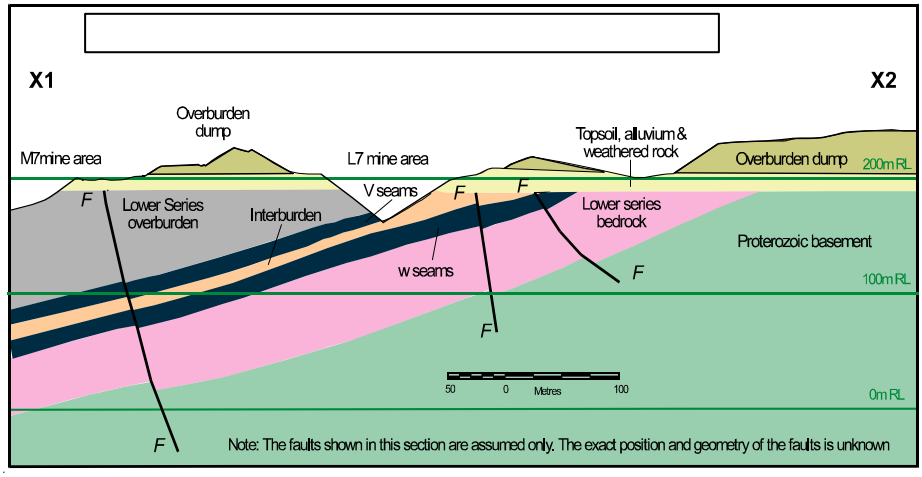
Figure 10 – General mine layout and mine grid



Lower Series

The Lower Series seams are the least developed and are characterised by a number of thin seams within two discrete zones (refer **Figure 11**). The lowermost zone (W zone) contains up to six thin seams, often high in ash relative to the other Series. These seams attain a maximum cumulative coal thickness of 6 m over an interval of about 10 m. Individual seams exceeding 1 m thickness are rare in the east and absent in the west. The second Lower Series zone (V zone), occurs 10 to 20 m above the W zone and contains three to five seams with a cumulative coal thickness of between 3 and 10 m. Although forming an important component of the 'mining reserve' the Lower Series are not under development due to the lower quality, the structural complexity and high cost of the seams.

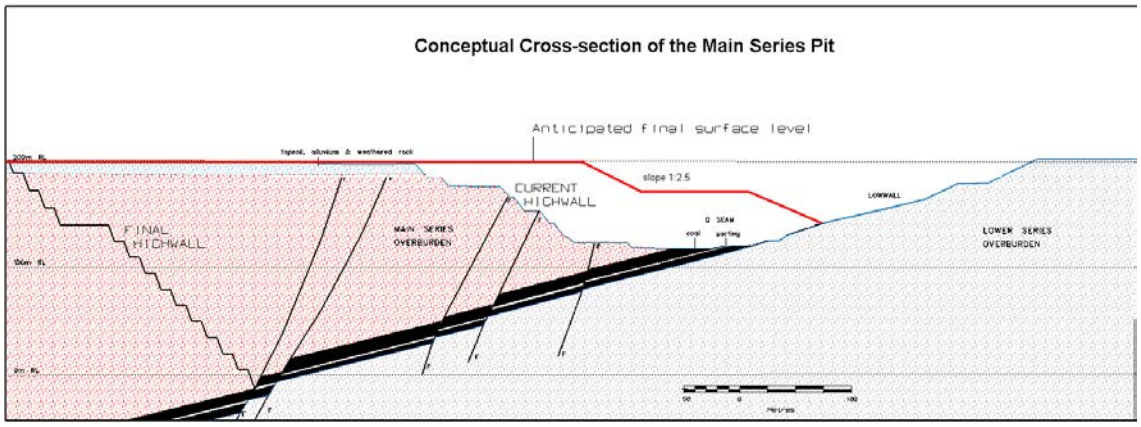
Figure 11 – Typical cross-section of the Lower Series L7



Main Series

The Main Series coal is represented by one coal zone (Q Seam) which is thickest on the northern, eastern and south-eastern sides of the basin where it varies between 14 and 20 m. In this region partings are generally absent or limited to thin mudstone bands less than 1 m thick (refer **Figure 12**).

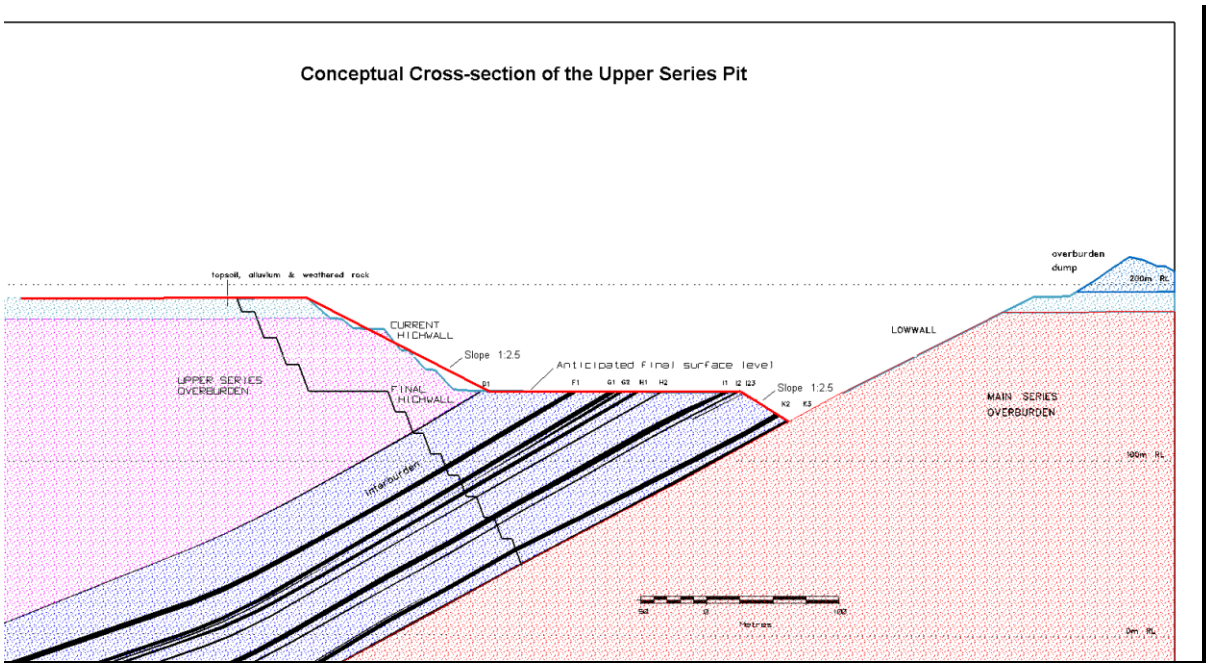
Figure 12 – Conceptual cross-section of the Main Series M9 Area



Upper Series

The Upper Series contains seven coal seams (Seams K, J, I, H, G, F, and D) over a vertical interval of about 100 m. Individual seam thickness is commonly between 0.5 and 5 m and reach a maximum of 10 m where the F and G seams coalesce. Cumulative coal thickness in the Upper Series is about 25 m (refer **Figure 13**).

Figure 13 – Conceptual cross-section of the Upper Series U26 Area



4. Natural Environment at Leigh Creek

4.1 Climate

Leigh Creek's arid climate is characterised by hot dry summers, cool to mild winters and a low annual rainfall of around 200 mm (refer **Figure 14**). Seasonal variation in the weather is a function of the location of large scale high pressure systems which move cyclically across the continent, north of the Coalfield during summer and south during the winter, resulting in a highly variable rainfall pattern.

Summer is characterised by high intensity storms often leading to flash flooding. Winter rainfall is often of lesser intensity and of greater value to vegetation.

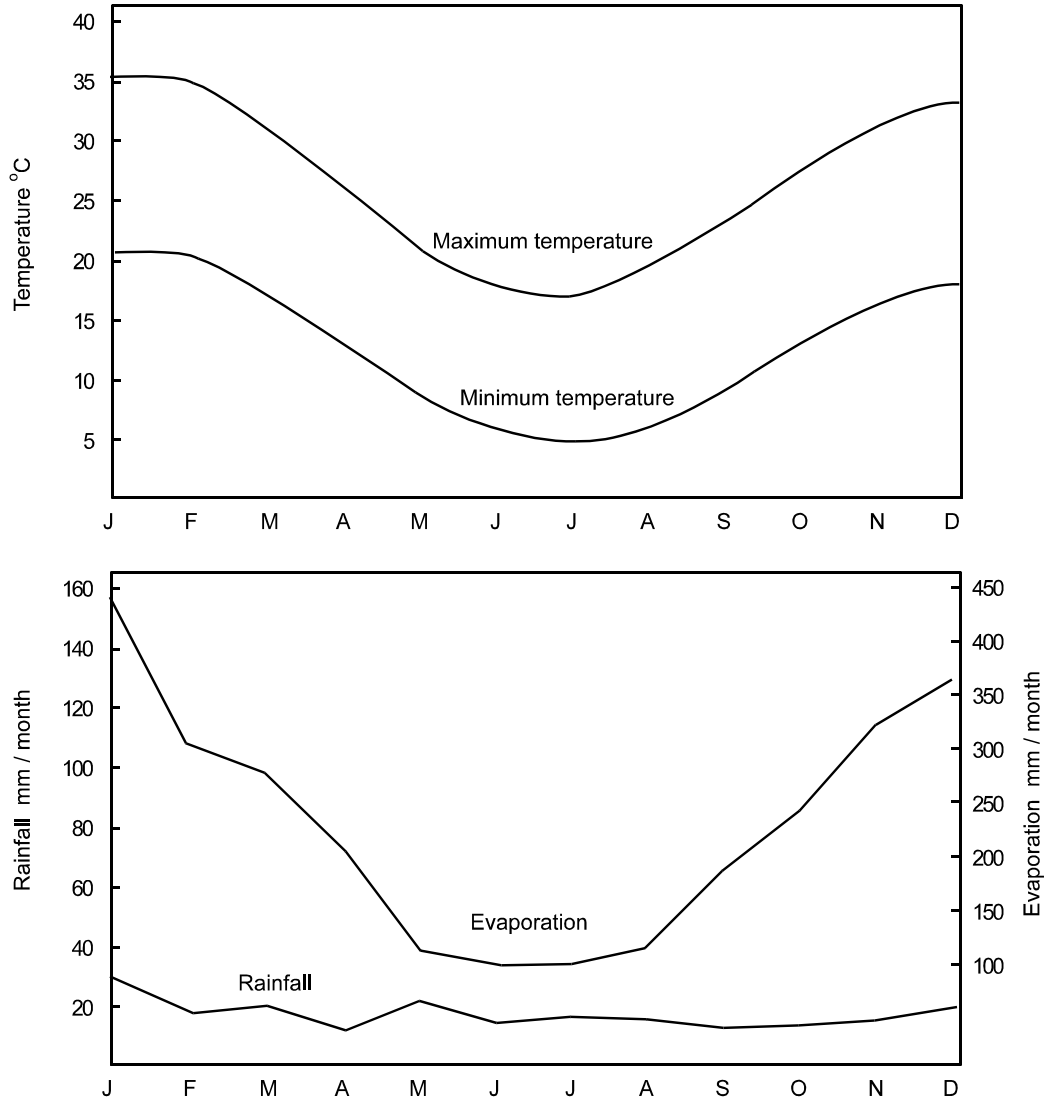
Annual evaporation rates are very high (3000 mm) while monthly rates generally exceed the mean monthly rainfall –100 mm in July to –450 mm in January. Recorded temperatures range from 47°C in summer to –3°C in winter.

During December to March wind direction is generally from the E to SE in the morning tending stronger in the afternoon from the S or SW. with occasional gale force winds (62-74 km/h). From April to June, winds are again from the E to SE, and generally lighter. From July to September, winds strengthen from the NW to SW.

Frosts occur in the area during calm, clear nights with low humidity between May and September, the frequency being dependent on local surface features (including vegetation) and topography.

Dust storms (visibility less than 1 km) occur from time to time, the last event being recorded in November 1981. Drought conditions as reported by the Bureau of Meteorology occurred during 1888, 1902, 1927, 1928, 1929, 1940, 1943, 1944, 1961, 1964, 1970, 1982 and 1991.

Figure 14 – Monthly Variation



4.2 Land Resources

The Coalfield is situated in an arid flat plain at an elevation of around 200 m above sea level. It is bounded by undulating low ranges (150-200 m in height) 2-5 km to the west and 5-10 km to the east. Numerous creek beds dissect the landscape, particularly to the west. The main watercourse in the area, Leigh Creek, winds northwards through the Coalfield deposit towards Lake Eyre South.

4.3 History of land use

Before the arrival of European settlers in the latter half of the 1800s, the primary land use consisted of hunting and the gathering of berries, nuts, fruits of vines etc. as a food source by Aborigines.

Early government regulations required graziers to carry stock in excess of sustainable numbers and as a result massive overgrazing occurred. This was particularly evident close to stock watering points where, in many cases, areas were completely denuded

of vegetation which led to widespread sheet and gully erosion and siltation of depressions.

'Scalding' of the land was also induced as deep-rooted plant species were no longer present to prevent saline ground water levels rising to the surface. Some of these scalds persist to the present day. Numerous areas have been treated as part of Leigh Creek management programs.

Early photographs of the area corroborate the degraded nature of the land . The removal of domestic grazing animals in recent years has assisted in reducing these pressures. However, until recently, the continued impact of rabbits has prevented effective natural re-generation of many plant species. The Leigh Creek rabbit control program and the recent release of the calici virus has greatly reduced rabbit numbers and therefore their impact.

Early mining at Leigh Creek was undertaken with no plans for future rehabilitation. Some efforts were made to test the suitability of overburden materials to grow trees without success. Thereafter efforts concentrated on the improvement of the environment in the local settlements.

The first attempts at stabilising the environment occurred in the old township as early as 1944 with the planting of trees (mainly Athel Pines) by Mr. H.P. Moss, with later plantings of myall, sandalwood, blackbutt, bullock bush, sennas, acacias, pepper trees and wild apricot. Seed was provided by the Waite Institute. Later, eucalypts from the Western Australia goldfields were successfully introduced into Leigh Creek.

Native Australian plants became a feature of the Leigh Creek township, demonstrating the potential to create pleasant living environments in harsh arid areas. However mining continued during the 1950s and 1960s without environmental planning. Despite this, there was sufficient work undertaken on landscape development in the old township to provide a foundation and tradition for the planning of the present township of Leigh Creek, which is now a prime example of sound town planning in an arid environment.

4.4 Flora

Vegetation and associated wildlife have adapted to the climatic and environmental conditions. In highly saline areas, vegetation diversity is poor with plant varieties being limited to salt tolerant species such as samphire *(Arthrocnemum spp.*), nitre bush *(Nitraria billardieri*) and old man saltbush *(Atriplex nummularia*). In flood depression areas with good drainage and creek lines, water, organic matter and nutrients from the catchment are concentrated in small areas and consequently support the growth of larger more diverse plant communities. In the creek lines larger trees such as river redgum *(Eucalyptus camaldulensis*) can survive.

Ground cover percentage varies greatly depending on season and plant varieties present. After good soaking rains a large number of annual grasses and herbs emerge. Rains also revive lichen and mosses which are vital to soil stability and the nutrient cycle of arid lands.

The bulk of the Leigh Creek Coalfield and surrounding rangelands is referred to as arid saltbush country and is dominated by members of the chenopods – bladder saltbush *(Atriplex vesicaria*), black bluebush *(Maireana pyramidata*) and low bluebush *(Maireana astrotrichaa*). Prickly wattle *(Acacia victoriae*) is widespread and is a valuable

environmental indicator plant, the species' population responding to increasing or decreasing grazing pressures.

4.5 Fauna

Fauna surveys have identified a diversity of native fauna on the site, dominated by kangaroos, emus and reptiles. Over 40 species of local and migratory birds have been identified. Several varieties of fish, shrimp and aquatic snails native to the Cooper Creek system have been introduced into the retention dam at the Coalfield.

The wildlife population varies according to the condition of vegetation on the Coalfield and surrounding areas. During drought, the grazing pressure on vegetation by wildlife increases substantially as a direct result of available surface water and vegetation in the Coalfield area.

Without controls, feral predators and competitors such as cats, foxes and rabbits also have the potential to threaten the diversity and possible long term survival of some animal and plant species in the area. Leigh Creek undertakes an ongoing program to assist biodiversity in the local area by controlling predators and other programs such as managing noxious weeds on the mine site.

4.6 Social and Cultural Environment

(a) Cultural preservation

There are several sites of Aboriginal significance on the Coalfield lease identified by Aboriginal people and already marked for respect and protection by the Aboriginal heritage group of the Department of Aboriginal Affairs. Out of respect to the aboriginal community, it is the policy of the Coalfield not to make public the location of these areas.

No formal assessment of non-Aboriginal sites of significance has been undertaken. However, DENR have advised that the Stone Hut and adjacent operative windmill, located on the north west boundary of the lease, are of potential heritage value.

(b) Socio-economic and off-site Aspects

The Coalfield is bounded by the pastoral grazing properties of Myrtle Springs station to the west and Leigh Creek Station to the east. To the south the Coalfield is bounded by the township of Copley. Mining activities around Leigh Creek have included: copper, magnesite, barite, talc and zinc minerals. Talc is still being mined just north of Lyndhurst and intermittent mining of zinc occurs about 3 km west of Leigh Creek township.

Compensation for damming the flow of Leigh Creek through Myrtle Springs Station is made through access to a quantity of free water via the Leigh Creek to Lyndhurst pipeline situated near the main highway and readily accessible to the Station.

Some of the creeks flowing through the Coalfield have been dammed, thereby increasing stock water sources on the Leigh Creek pastoral lease. Where some land was acquired for mining, additional piped stock watering points were provided as compensation.

The Coalfield area is central to many of the tourist attractions of Central South Australia. These include the Flinders Ranges, the Strezlecki and Birdsville tracks, Arkaroola tourist resort and Lake Eyre to the north. The Leigh Creek township

constitutes a departure point to these areas and provides a caravan park and motel facilities for tourists.

4.7 Soils

Soils on the Coalfield consist of loams, clay loams and gravelly clay loams; characteristically alkaline (pH 8 to 10), saline, often sodic, highly dispersable and hard setting with poor drainage and limited fertility. Some soils contain phytotoxic trace elements such as boron.

Disturbed soils in general are prone to sheet, tunnel and gully erosion. Infiltration is generally low due to crusting and water tends to pond in depressions after rainstorms.

The Department of Environment and Natural Resources has also regionally mapped the area and included it in their land system database.

4.8 Water

(c) Surface water

Surface water resources are minimal. All streams in the area are ephemeral, due to the arid climate. The main water course is Leigh Creek, originally flowing through the Coalfield area and discharging to Lake Eyre to the north. The 'Retention Dam', constructed following the Coalfield's expansion, now restricts flow across the lease and serves as a wildlife refuge and recreation area.

The earliest piped water supply for Leigh Creek came from old mine shafts at Sliding Rock located some 43 km south of the old township of Leigh Creek. Aroona Dam, situated 10 km west of the new township, was completed in 1955 and has since provided the principal potable water supply.

(d) Groundwater

A series of bores sunk in the 1980s in the Aroona catchment, supplement water supplies in drier times or when the water in Aroona dam is unsuitable for use following flood events. Water from these bores is processed by a reverse osmosis plant located next to the township.

The groundwater resource within Lobe B is poorly defined, of poor quality (**Table 1**) and is confined to porous units within the Triassic Basin containing the coal measures. Accordingly the effects of de-watering on piezometric levels are confined within the basin and the Coalfield lease.

Industrial water for the Coalfield is sourced mainly from old open pits, sumps and de-watering bores located in the centre of the basin to facilitate mining.

Table 1 – Water quality in Lobe B

Water Source		Cond. (uS/cm)	T.D.S. (mg/l)	pH	Ca (mg/l)	Mg (mg/l)	Na (mg/l)	HCO_3 (mg/l)	Cl (mg/l)	SO_4 (mg/l)
Groundwater		30,000 to 40,000	20,000 to 25,000	6.8 to 7.6	700 to 800	500 to 600	7,000 to 9,000	250 to 300	11,000 to 12,000	3,000 to 4,000
Potable Water	[1]RO	1600	880	7.7	18.4	18.9	250	37	401	113
	[2]AD	652	360	7.4	78.3	12.5	37.5	221	92	10.6
Waste Water	L6 cut	38,500	24,000	7.8	850	773	8460	256	12100	5960
	L5 cut	23,800	14,000	7.3	669	495	4760	181	6570	4170

Notes: [1]RO – Reverse Osmosis Plant [2]AD – Aroona Dam

Source: Leigh Creek water quality database.

5. Environmental Issues

5.1 Current Operations

In order to ensure that the environmental impacts of the current mining operations are properly managed, Flinders Power has developed a planning process to guide and control mining practices. In addition, it has implemented an environmental management system so that the environmental aspects of the mining operations are properly assessed, reviewed and progressed.

The type of mining used, the terrace mining method, reduces its environmental impacts by dumping most of the overburden back into the mined out areas. However, this method reduces flexibility in both digging and dumping.

Flinders Power is committed to carrying out monitoring to ensure that there is compliance with the mine plan, relevant legislation and applicable standards. The standards and frequency of such monitoring is set out in the environmental management plan for Leigh Creek Coalfields which is reviewed annually.

Additionally, Flinders Power carries out applied research to determine the success of rehabilitation practices and to seek to enhance mining rehabilitation and environmental management practices.

5.2 Waste Rock Dumps

The terrace mining method results in most of the waste rock generated being dumped into the mined out areas. Accordingly, it is only proposed that there will be a relatively small increase to the existing waste rock dumps generated by previous mining activities. The major impact of increasing the waste rock dumps' size is to increase the area of top soil that is made unavailable. This will be addressed by harvesting the top soil prior to any expansion of the existing waste rock dumps. The

major impact of the waste rock dumps is their visual intrusion upon the users of the Leigh Creek to Lyndhurst highway.

At the cessation of mining, there will be an unfilled area (*final void*) in both the Main and Upper Series pits. Given the high levels of evaporation and the local groundwater regime, any water which enters these pits will not create any environmental impact beyond a localised increase in salinity within the final voids.

There is always some risk to public safety arising from any hole in the ground. However, given the final void's remote location, the lack of any major population centre nearby, and the existing security arrangements in respect of the rest of the mine, this risk is considered small and capable of being managed by practical measures to hinder the public's access to the final void.

5.3 Water

Natural water courses on the mining lease have been dammed to prevent flooding of the pits. The remaining surface water on the site is managed so as to ensure that water contaminated with suspended solids is not released off the mining site. The only other significant water management issue during the operating mine life arises from waste water from the plant and maintenance areas which has the potential to be contaminated with oil from the activities carried out in these areas.

At mine closure it will be necessary to address the long term future of the retention dam, being the structure which captures most of the existing surface water entering the mine site.

5.4 Top Soil

The availability of top soil is essential to ensure that any recontouring exercise has a lasting environmental benefit. If top soil is not available then the changes of revegetation occurring are greatly reduced. A lack of topsoil would expose any recontoured area to an increased risk of erosion over the longer term.

The previous mining practices, while complying with the applicable practices of the time, have resulted in the majority of the top soil from the areas already mined being lost by being buried in the existing waste rock dumps. It is impractical to source top soil from other areas as this simply relocates the problem of an increased risk of erosion.

Wherever possible, the current mining operations conserve and manage top soil so as to make it available for rehabilitation works.

5.5 Air Quality

Given the nature of the operations and the lack of any permanent residents living nearby to them, air quality is not an issue. It is primarily dealt with as an occupational health and safety issue with specific sources of dust or other airborne material managed appropriately.

5.6 Other Issues

The current operations also address a number of other issues. Some of the specific issues addressed are:

- ensuring that fuel storage largely complies with applicable standards

- having appropriate strategies to address the impact of feral predators and competitors on flora and fauna
- to address cultural heritage issues at the mine site
- limiting impact upon native vegetation.

5.7 Final Land Use

The final land use for the site is critically limited by the lack of available top soil overlaying the proposed open cut locations. As has been detailed in Section 2, previously accepted and approved mining methods resulted in the removal of all top soil which previously covered the area where the Lobe B resources were. Accordingly, to achieve objectives of minimising disturbance of topsoil, the only top soil available for future rehabilitation works would come from any future mining works or the recontouring of established dumps which would enable top soil to be harvested from that area.

6. Objectives of this Plan

6.1 Objectives

1. To ensure environmental impacts are managed by having a mine plan, appropriate monitoring and research programs and an environmental management system to identify issues of concern and address them.
2. To appropriately manage the major rehabilitation issue which is the visual amenity impact upon users of the highway by contouring the front face of the dumps visible from the Leigh Creek to Lyndhurst highway by revegetation involving the spreading of topsoil over the recontoured dumps.
3. To appropriately manage other areas requiring rehabilitation by recontouring the other dump faces shown in Figure 17 to a slope of 1:2½.
4. To appropriately manage the topsoil resources in the Leigh Creek area by, where possible, using topsoil disturbed by mining operations for rehabilitation and ensuring that the planning process for operation involves consideration of alternatives that would ensure that the development of any infrastructure involve the minimum practicable clearance of vegetation and disturbance of topsoil.
5. To appropriately manage surface water at the mine site by using the existing water management structures to separate stormwater from disturbed areas.
6. To appropriately manage spontaneous combustion issues by using the mines policy regarding spontaneous combustion, coal and shale fires.
7. To appropriately manage dust issues at the mine by using water carts on roads and other trafficable surfaces.
8. To appropriately manage noise issues by ensuring that any complaints received will be investigated.

9. To appropriately manage waste management operations by ensuring that the mine has and maintains EPA licences in respect of any dumps that require licensing under the Environment Protection Act.

10. To appropriately manage fuel storage issues at the mine by ensuring that all storages are generally in accordance with AS1940.

11. To appropriately manage flora conservation issues at the mine by having and implementing a control strategy to reduce the impact of feral herbivores.

12. To appropriately manage fauna conservation by having and implementing a strategy to limit the impact of feral competitors and predators and considering as part of its rehabilitation planning to include works which promote the creation of habitats for native fauna.

13. To appropriately manage cultural heritage issues at the site by ensuring that identified significant cultural heritage sites will be protected from mining operations and that the mine will develop an operating instruction for dealing with any significant item of cultural heritage discovered during its operations.

14. Ensuring that mine closure is appropriately managed to achieve appropriate environmental impacts by complying with the obligations set out in section 8.2 of this Development Programme.

6.2 Criteria

Provide a report to the Chief Inspector of Mines on the works to be undertaken to comply with the summary of obligations in section 9 of this Development Programme.

7. Immediate and Ongoing Obligations During the Mine Life

7.1 Carrying out of Operations

In order to manage the environmental impacts of the current mining operations the mine has an environmental management system to enable it to identify environmental issues, set in place appropriate policies, procedures and targets and monitor its performance against its targets.

The terrace mining method used in the Main Series and in a modified form in the Upper Series results in a more efficient and environmentally sensitive outcome due to the dumping of overburden back into the mined out areas. This mining method, however, limits the future flexibility for digging and dumping.

Future flexibility is further limited in that the dumping of overburden back into the pit effectively sterilises the coal resources lying under that overburden. While adjustments can be made to the high wall position, these will not significantly alter the environmental impacts of the operations.

The current mine plan will be provided to PIRSA. In addition to the areas that there is a current intention to mine, there are also other areas which are being investigated for possible future mining. Before any mining is undertaken in these areas, a revised mine plan will be provided to PIRSA.

7.2 Waste Rock Dumps

Historical mining operations have resulted in waste rock dumps (***dumps***) surrounding the current mining pits. The move to terrace mining has meant that there will only be small additions to these historical dumps. The expected area of these dumps is shown in the current mine plan.

The design of the existing dumps and water management structures is such that water carrying soil running off the existing and proposed dumps will either report to the pit or be contained on the mine site.

The major impact of these dumps is the visual impact of their faces on users of the Leigh Creek to Lyndhurst highway. There is not enough top soil available from the proposed open cuts to viably cover all dump faces. It is therefore proposed to recontour and top soil faces of the dumps visible from the highway. This process is illustrated in **Figures 15 and 16** below. The areas to be recontoured and revegetated are shown in **Figure 17**. Given the limited environmental impact of the existing waste rock dumps, their remote location and the difficulties, if not impossibility, of achieving any significant rehabilitation of other areas it is proposed that all other areas of the dumps apart from the front faces of the dumps visible from the highway (shown in **Figure 17**) will be contoured to a slope of 1 in 2½ but no other work whatsoever will be done on these dumps. An indicative cross section of the dumps on the northern side of the Main Series pit is shown in **Figure 17A**.

7.3 Water Management

Since the first strip mining commenced in 1943, streams have been diverted so as to avoid flooding the mine workings. Current structures to divert surface water and the resultant surface water flows are shown in **Figure 18** below.

The only other issue with respect to surface waters is the run-off from the plant and maintenance areas. In order to prevent the escape of any oil contaminated water an oil water separator has been installed so as to separate oil from any run-off waters from this area. The clean water is then recycled for washing down mine equipment.

7.4 Soil Management

The mine site and its surrounding districts are extremely limited in the availability of top soil. Past mining practices have removed large volumes of top soil and buried them in the dumps which surround the current mining operations. It is not an option to remove top soil from non mining areas as this is merely transferring an erosion problem to the areas stripped of top soil. Accordingly, the limited amount of top soil that is available will be used to rehabilitate the front faces of the most external dumps which are visible from the Leigh Creek to Lyndhurst highway. This work will be completed as part of mine rehabilitation before the end of the mine.

Figure 15 – Drainage Concept

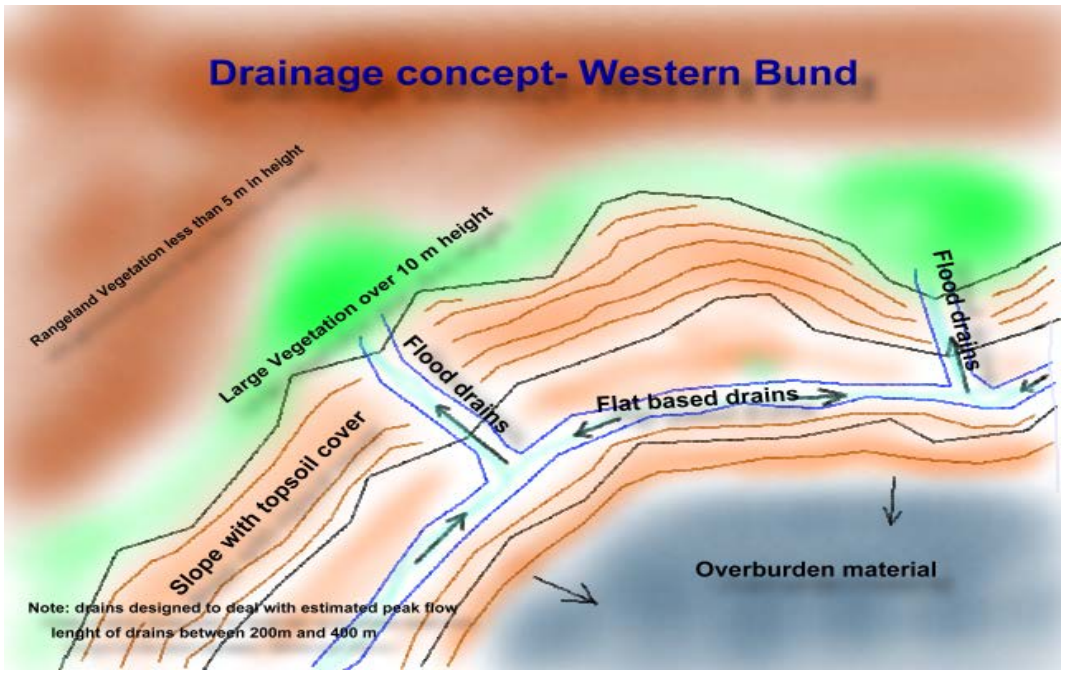


Figure 16

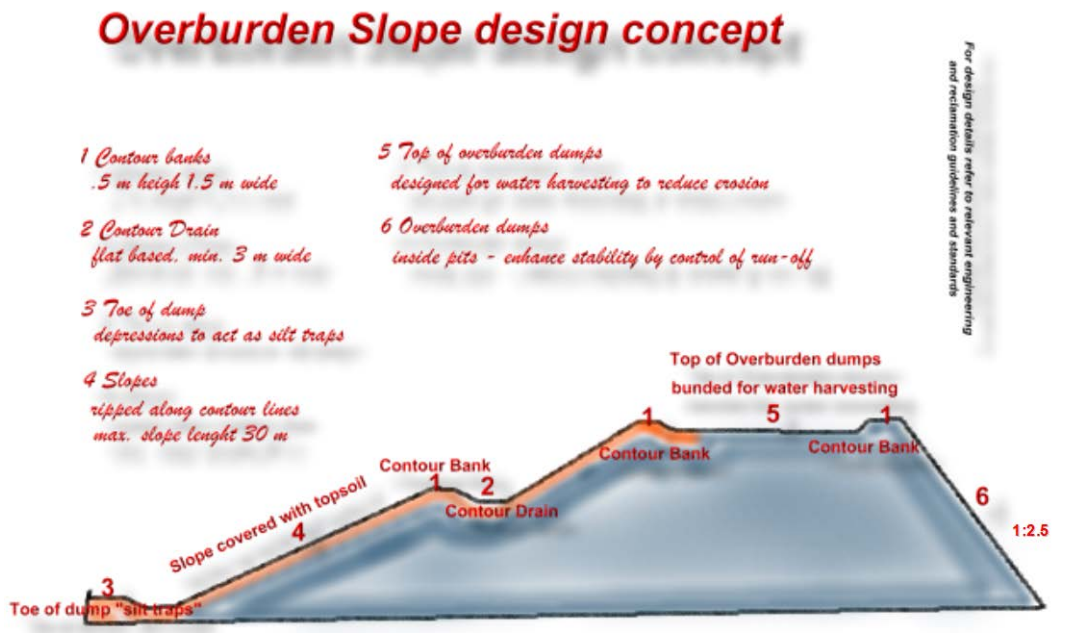


Figure 17

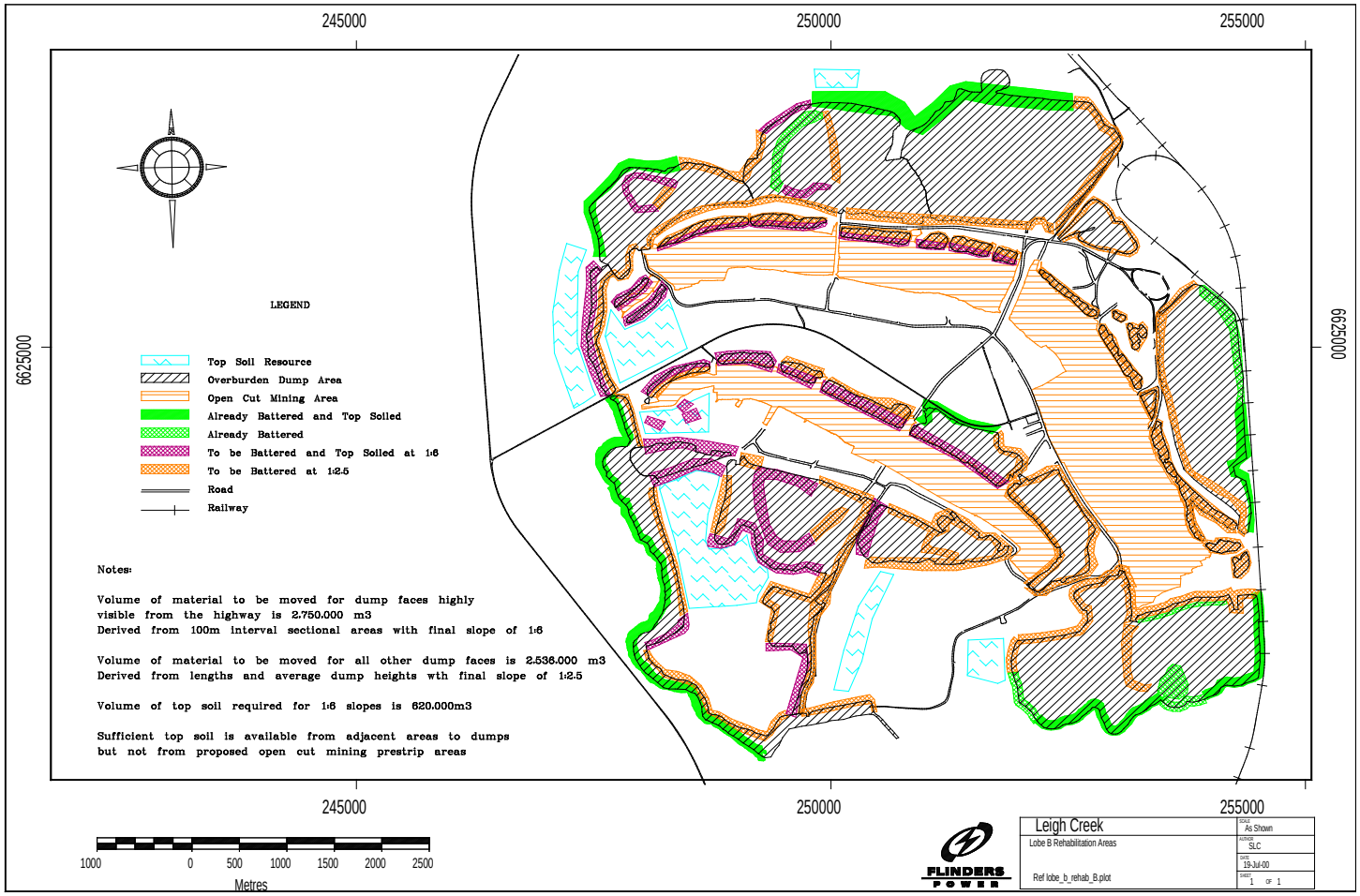
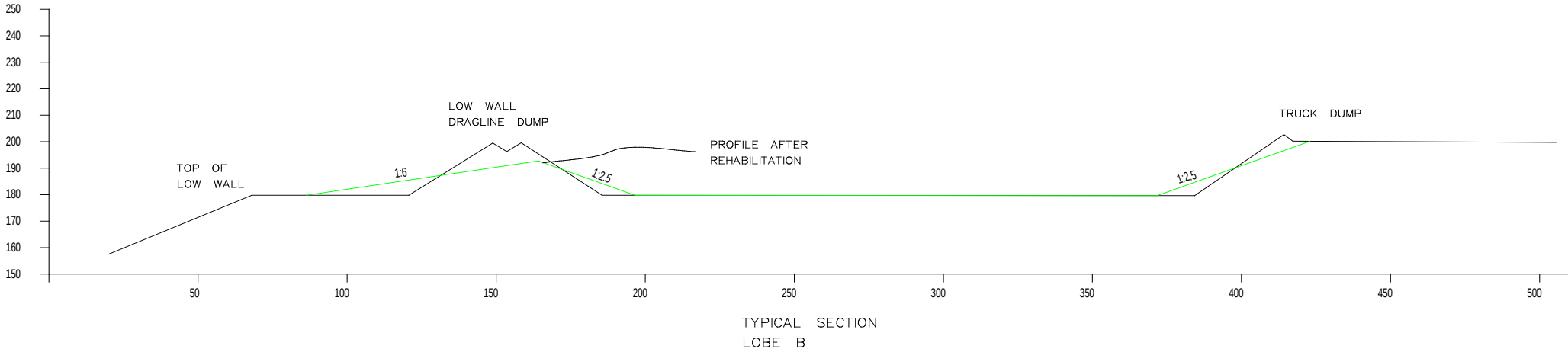

245000
250000
255000
6625000
LEGEND
Top Soil Resource
Overburden Dump Area
Open Cut Mining Area
Already Battered and Top Soiled
Already Battered
To be Battered and Top Soiled at 1:6
To be Battered at 1:2.5
Road
Railway
Notes:
Volume of material to be moved for dump faces highly visible from the highway is 2.750.000 m3 Derived from 100m interval sectional areas with final slope of 1:6
Volume of material to be moved for all other dump faces is 2.536.000 m3 Derived from lengths and average dump heights wth final slope of 1:2.5
Volume of top soil required for 1:6 slopes is 620.000m3
Sufficient top soil is available from adjacent areas to dumps but not from proposed open cut mining prestrip areas
1000 0 500 1000 1500 2000 2500
Metres
FLINDERS POWER
Leigh Creek
Lobe B Rehabilitation Areas
Ref lobe_b_rehab_B.plot
As Shown
SLC
19-Jul-00
1 OF 1

Figure 17a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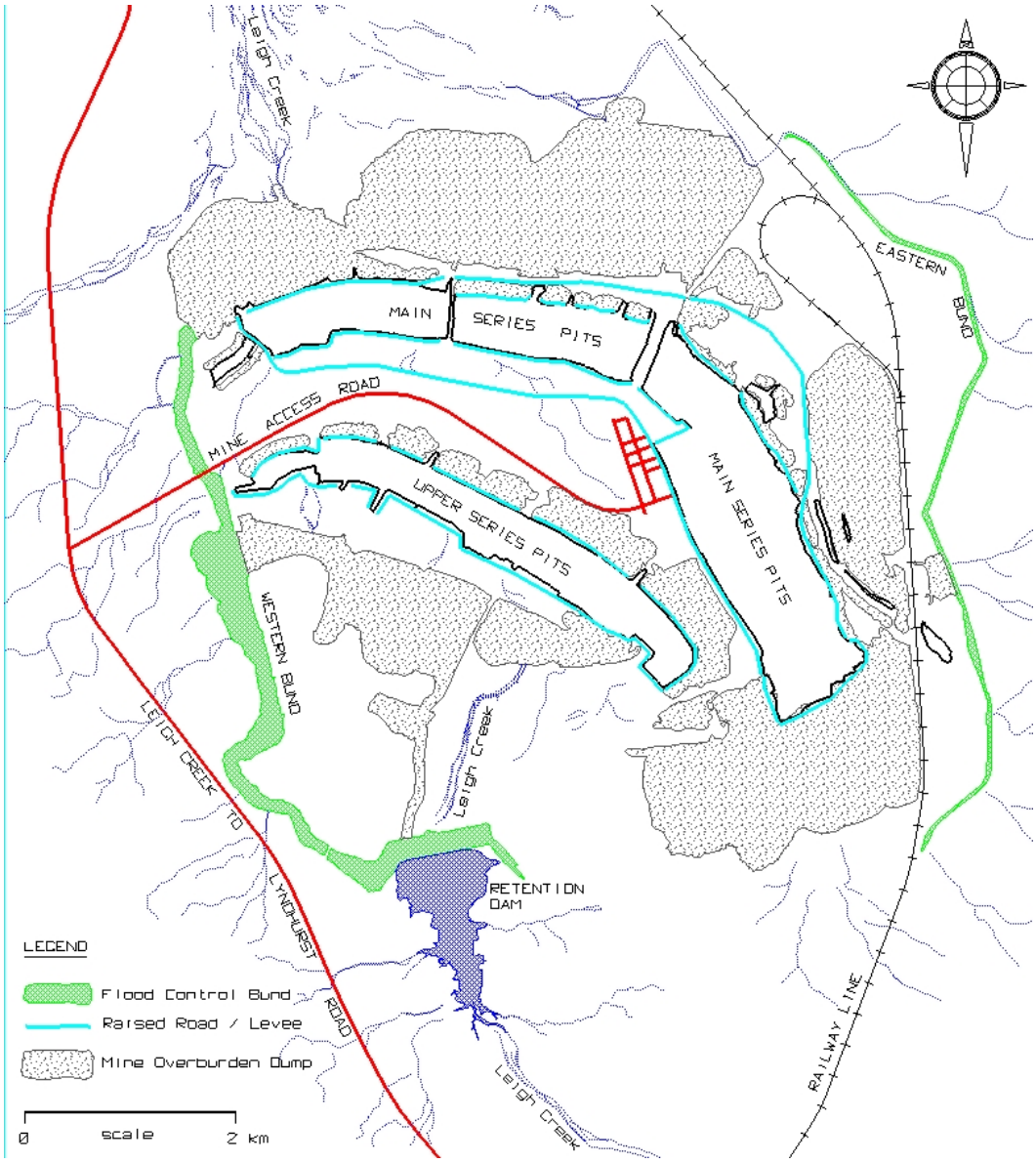
500
LOW WALL
DRAGLINE DUMP
TOP OF
LOW WALL
1:6
1:2.5
PROFILE AFTER
REHABILITATION
1:2.5
TRUCK DUMP
TYPICAL SECTION
LOBE B

Figure 18



7.5 Air Quality

No person lives close enough to the mine site to be affected by air or noise impacts. These issues are therefore addressed primarily from the occupational health and safety perspective. Specific issues are:

- Spontaneous combustion which is addressed by the policy regarding spontaneous combustion, coal and shale fires.
- Dust on the haul road which is addressed by use of water carts.
- The dust at the coal plant is localised and does not create off-site impacts. The sprinkler at the train loading point is to suppress dust as the train passes through the township of Copley.

The major source of noise is blasting at the mining operations. This is controlled by complying with applicable air blast and ground vibration limits.

7.6 Other Environmental Impacts

(a) Fuel Storage

Significant volumes of fuel are used in the mining operations. Fuel storage is carried out largely in accordance with AS1940 to manage its potential to escape and cause contamination.

(b) Flora

This issue is addressed primarily by rehabilitation works being carried out in accordance with this mine plan. In addition, the mine has implemented a control strategy with the assistance of surrounding pastoralists to reduce the impact of feral herbivores.

(c) Fauna

Again, this issue is addressed by the mine's programs with the cooperation of adjoining land owners to remove feral competitors and predators. In addition, the mine has entered into an agreement to create a fauna reserve for the recovery of the yellow-footed rock wallaby. It will, as part of its mine rehabilitation planning, consider whether it is cost effective as part of required rehabilitation to include works which promote the creation of habitats for native fauna.

(d) Cultural Preservation

The mine has identified sites of indigenous cultural heritage which will be protected in this and any future mine plan. The mine is also committed to developing a policy for dealing with any significant item of cultural heritage which is discovered during future mining operations.

(e) Research

Flinders will as part of its continuous improvement program determine the success of its rehabilitation practices and to investigate realistic possibilities of enhancing mine rehabilitation practices or environmental management.

(f) Monitoring

Monitoring is carried out by employees and contractors.

All monitoring is designed to meet the requirements of the Flinders Power Environmental Management Plan and all necessary reporting by Flinders Power is determined by the relevant works plans.

(g) Native Vegetation

Prior to any clearing of native vegetation the mine considers whether there is any practical alternative to avoid such clearing. If there is no practical alternative then the clearing is kept to the minimum practicable consistent with the carrying out of the requisite works.

8. End of Life Obligations

8.1 Waste Rock Dumps

Dumps will be progressively rehabilitated as detailed in section 6.2 towards the end of the mine life so that no additional works are required at final closure.

8.2 Water Bodies

The major water management structure on the mining lease is the Retention Dam. This dam represents a significant storage of water in an arid area. However, the earthen construction of the dam wall means that it will require maintenance or else it will be subject eventually to catastrophic failure. Given the importance of water in the area, the preference is for some person or body to take over the responsibility for the ongoing maintenance of the dam. However, given the remoteness of the location there is a possibility that no such person or body might be found.

If no-one is prepared to undertake the long term management of the dam then at the end of mining operations the water in the dam will be released in a controlled manner. This will be done by breaching the dam at its lowest point so as to enable it to fully empty. Water released will flow into the Upper Series final void.

As the water level in the Retention Dam can take up to 18 months to fall after a major rainfall/good wet season the timing of the breaching of the dam will be scheduled to coincide with a low water level in the dam. This will serve to limit the amount of water that flows into the final void in the Upper Series.

The end result of these activities is that there will be a volume of water in the Upper Series final void which will, subject to any inflow from the localised catchment around that void, evaporate over time. The Retention Dam historically has held between 2,500 ML and 6,000 ML. The unlikely event of a 1:1000 flood event has the potential to add between 15,000 and 21,500 ML. All of these volumes could be adequately contained within the Upper Series final void which will have a capacity to hold up to 30,000 ML. This is particularly so if the timing of the breaching of the Retention Dam is managed to coincide with a low water level in the dam.

There is a sequence of sandstone aquifers within the Upper Series coal measures. These sandstone aquifers will outcrop approximately half way up the high wall of the final void in the Upper Series. This groundwater is highly saline and is a closed system, which does not connect with the surrounding groundwater systems. While it is expected that the salinity of the water in the final void will rise due to evaporation, it is unlikely that this water would either come into contact with the groundwater or have a significant impact on its salinity levels if it did.

The waste rock dumps surrounding the Upper Series final void will contain low concentration of sulphurs in the rocks in those dumps. Specifically, the total sulphur content (as received) will be no greater than 0.40%, which is the average sulphur content of Upper Series rocks. Given the low quantity of sulphur involved, the waste rock dumps are not expected to produce a significant acid mine drainage.

8.3 Final Voids

Terrace mining, while returning overburden to the mined out areas, will result in both the Upper and Main Series pits having an area (a final void) which will not be

filled by overburden. The final voids will not affect groundwater and will not overflow with poor quality water after the Retention Dam is breached.

The voids will occur within the general perimeter fence. Additionally, it is proposed to remove access roads so as to further limit public access to these areas. While the final voids will have the potential to be a safety hazard, the risk will be small given the reduced access and the remote location of the voids. Nonetheless it is considered appropriate to further limit access to these voids by the erection of an additional internal fence around the voids in both the Upper Series and Main Series.

The exposed coal seams in the final voids will be buried or otherwise treated to prevent spontaneous combustion. The final face of the in-pit dumping will be graded to a slope of approximately 1 in 2½. The highwall will be left at an angle that will be stable in the long-term.

8.4 Infrastructure Areas

It is proposed at the end of mining to remove all significant man-made structures from the mining lease unless agreement is reached for an alternative use. This will be done by undertaking the following works:

Table 2

Structure	**Works to be undertaken**
Mine buildings	All offices, maintenance workshops and storage buildings are to be removed including concrete slabs, foundations and associated services such as septic tanks, water, power and telephone.
Fixed plant	All fixed plant is to be removed. The principal items are the coal handling plant, rail loop and the fuel storage tanks.
Power supply	All overhead power lines and sub-stations of the mine area are to be removed. Buried sections will be disconnected and left in place.
Potable water supply	The mine's potable water pipeline continues through the mine area to supply the town at Lyndhurst. As it is probable that this arrangement will continue to operate after the mine closes, the work involved will be restricted to isolating and the removal (if above ground) of branch lines that were provided to specifically serve the mine activities.
Groundwater de-watering system	All remaining bores at closure are to be capped and all above-ground collection pipelines are to be removed. Buried lines will be left where they are.
Stormwater drainage system	All mine pumps and above-ground pipelines are to be removed. Open drains that divert run-off around the mine area are to be left operational.
Telephone and radio communications	All overhead lines and communication towers will be removed at closure. Buried services will be left where they are.

Structure	Works to be undertaken
Roads, paved areas and compacted areas	All roads in the mine area are to be removed except for those providing access to the disused cemetery and to retained infrastructure such as the potable water pipeline. The roads existing at the cessation of mining will be ripped and scarified and left to return to a native state. No further work will be undertaken to rehabilitate these roads. Paved areas adjacent to mine facilities are to be removed. Areas disturbed and compacted by mining operations are to be ripped and scarified but no further rehabilitation works are to be undertaken.
Mobile equipment and movable plant	All mine movable equipment such as trucks, excavators, dozers and loaders and movable plant such as workshop equipment, electrical motors, transformers, etc will be disposed of by sale. Any items not sold will be buried in the appropriate dump site.
Fencing	Existing fencing around the mine site perimeter will remain. Fences associates with facilities that have been demolished will be removed.
Burial of demolition material	All demolition material will be placed in one of the final voids and covered with a minimum of 2 metres of overburden. In practice, some material with a scrap value, for example, steel and copper wire, may be removed from the site if it is economical.

8.5 Final Land Use

The final land use is constrained by the lack of available top soil. In addition, given the remoteness of the area and the cost involved in any attempt to reprofile the dump on top of the in-pit dumps, it is inappropriate to attempt such activities. It is therefore proposed that most of the land at the mine site will be left in the condition it is in as at the end of mining unless there is some specific requirement in this plan to undertake further works in respect of that area.

9. Intermediate and Ongoing Obligations During Mining at the Leigh Creek Coalfield

9.1 Current Operations

Mining Operations

1. Mining operations will be carried out generally in accordance with a mine plan. A copy of the current mine plan has been provided to PIRSA. If any alteration that causes a significant environmental impact is made to the plan an updated mine plan will be provided to PIRSA.
2. Flinders Power has developed an environmental management system which has been provided to PIRSA. It will provide an updated copy of the management system when any significant alteration is made.

Overburden Waste Rock Dumps

3. The front faces of the dumps in the areas highlighted in **Figure 17** shall be:
   - generally recontoured as illustrated in **Figures 15 and 16**
   - covered by approximately 30 cm of top soil recovered from the area to be buried when the dumps are recontoured or alternatively recovered from existing mining operations
   - if there is insufficient top soil to cover all areas recontoured then native seeds (collected within 20 kms of the Leigh Creek Mine) shall be opportunistically spread over the areas not top soiled.

4. All other dump faces apart from the front face of the dumps visible from the highway in those areas highlighted on **Figure 17** are to be recontoured to a slope of 1 in 2½ but no other rehabilitation work will be undertaken. These areas are also shown in **Figure 17**.

Top Soil Management

5. Wherever possible, top soil will be collected to be used in rehabilitation activities. If possible, top soil should be directly placed onto areas available for revegetation.

6. As part of any proposal to construct infrastructure, roads or for further mining or dumping a review will be carried out to ensure that clearing shall be kept to the minimum practicable.

Water Management

7. Surface water within the Coalfield shall be managed via a mine water management system which is generally outlined in **Figure 18**.

8. Within one month of making any alteration that causes a significant environmental impact, an updated plan of the system shall be provided to PIRSA.

9. Waste water from the maintenance and storage areas currently passes through an oil separation pit prior to being recycled as washed down water.

Air Quality and Noise

10. Mining operations shall be conducted in accordance with the mine's policy regarding spontaneous combustion coal and shale fires.

11. Water carts shall be used on roads and other trafficable surfaces to control dust.

12. Any complaints as to noise will be investigated.

Waste Management

13. The mine operations shall have and maintain EPA Licences in respect of any environmentally significant waste disposal activity (as defined in the Environment Protection Act) carried out on the site.

Fuel Management

14. Fuel stored in the mining operations shall be done generally in accordance with AS1940.

Flora

15. The mine shall have and implement a control strategy to reduce the impact of feral herbivores.

Fauna

16. The mine shall have and implement a strategy to limit the impact of feral competitors and predators.

17. The mine will, as part of its rehabilitation, consider whether it is cost effective to incorporate in the rehabilitation works to promote the generation of habitats for native fauna.

Cultural Heritage

18. Identified significant cultural heritage sites will be protected.

19. The mine shall develop an operating instruction for dealing with any significant item of cultural heritage discovered during its operations.

Monitoring

20. Monitoring is to be carried out in accordance with the Environmental Management Plan Leigh Creek, a copy of the plan will be provided to PIRSA upon request.

Research

21. Flinders will as part of its continuous improvement program determine the success of its rehabilitation practices and to investigate realistic possibilities of enhancing mine rehabilitation practices or environmental management.

9.2 Mine Closure Obligations

Rehabilitation

1. Areas to be rehabilitated are set out in Current Obligations 9.1.3 and 9.1.4.

22. Areas not specifically required by this mine plan to be rehabilitated shall be left as they are at the end of mining.

Water Management

23. If at the end of mining no person or body is willing to assume the responsibilities for operating and maintaining the retention dam it shall be emptied of water and the embankment shall be breached so that it no longer acts as a dam. The timing of such breaching shall be coordinated to coincide with a low level of water in the dam.

24. Levee banks will be completed so as to form a continuous barrier to limit the escape of contaminated water off site.

Final Voids

25. Final voids will be left at the end of mining. Access to them is to be restricted by erecting a fence around the outer edges. The exposed coal seams in the final voids will be buried or otherwise treated so as to prevent spontaneous combustion. The high wall will be left at an angle that is stable in the long term. The final face of the in-pit dumps will be left at a slope of

approximately 1 in 2½. No other work to fill the voids, to limit or prevent the ingress of water into the pits, or to remove any water that accumulates in the voids shall be required.

Infrastructure

26. Infrastructure areas will be addressed as detailed in **Table 2**.

6.3 Leigh Creek Coalfield Infrastructure Condition Report and Asset Management Plan

Leigh Creek Coal Field Infrastructure
Condition Report and Asset Management Plan

ID	Version Date	Comments	Prepared By	Reviewed	Approved By
	Sept-2015		Amanda Jones		

1 Executive Summary

Alinta Energy announced its decision June 2015 to close the Port Augusta Power Station as early as March 2016. This will see the Leigh Creek Coalfields cease coal production as early as November 2015.

Operation and closure of the Leigh Creek Coalfields is subject to approved Mine Development Plans (MDPs).[1][2][3]

There are key infrastructure assets associated with these MDPs. This report sets out the conditions of these assets, current management practices and any major works expected.

Alinta has made significant ongoing investment to ensure the assets are available to reliably support its production requirements and that all requirements of relevant legislation are met.

The mine operations comply with the relevant mining legislation and the Environmental Protection Act, as well as the Mine Development Compliance Program of the Department of State Development.

All material assets required for mining operations are in good condition and have been maintained in accordance with OEM specifications. There is only limited work forecast to be required to bring assets to acceptable condition standards.

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2 Flinders Overview

2.1 Alinta Energy and Flinders Operations

Alinta Energy (AE) is an Australian energy company with interests in power station assets which are diversified by geographic region, fuel type, customers and operating mode. AE also provides gas and electricity to retail, commercial and industrial (C&I) and small to medium enterprise (SME) customers.

Alinta Energy's generation portfolio includes nine operating power stations, representing approximately 2,500MW of base load, intermediate and peaking power generation.

Flinders Operations is responsible for the South Australian assets including the Augusta Power Stations that consists of two coal-fired power stations in Port Augusta SA, providing over 30% of SA's energy, together with the Leigh Creek Coalfield, township and railway.

2.2 Leigh Creek Mine

The Leigh Creek Coalfield is located in the northern extension of the Adelaide Geosynclines about 550km north of Adelaide. The coal resource occurs in five small, isolated Triassic (220-240 million years old) bowl shaped deposits spread over about 18km along a north-south axis. Starting with the most southern, the deposits are named: Lobe E, Lobe A (Copley Basin), Lobe B (Telford Basin) and Lobes C and D (North Field).

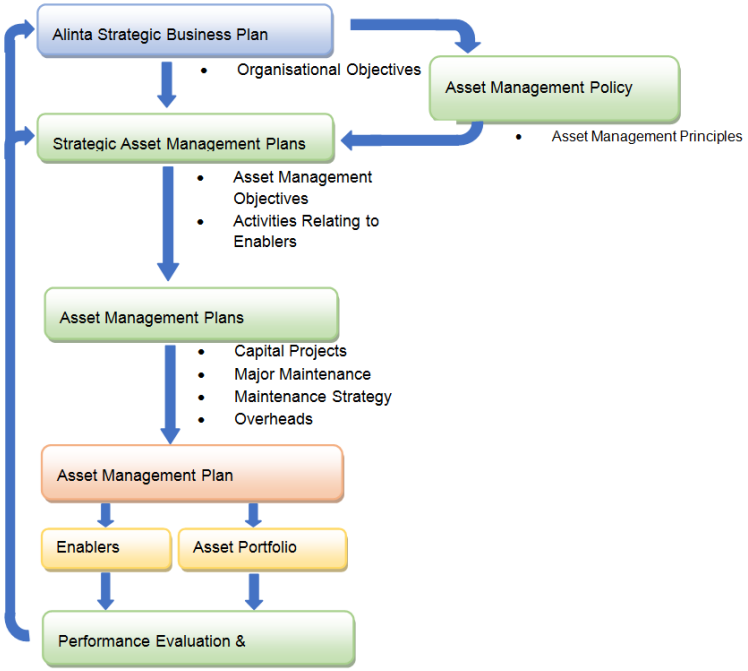
Lobe B is the largest deposit covering some 25km^2. It is an elliptical shaped basin measuring 7.5km by 4.5km having an asymmetric cross-section with the shallowest coal seams dipping on the northern and eastern sides. The sedimentary sequence comprises abundant grey carbonaceous mudstone with common hard siderite bands. The coal occurs in three zones known as the Main, Upper and Lower Series.

LEIGH CREEK COALFIELDS – LOBE B AND SURROUNDS

3 Asset Management Overview

3.1 Asset Management System Overview

The asset management system is designed to support the delivery of the Alinta Strategic Business Plan. This plan is the driver for the development of the asset management policy, strategic asset management plans (including definition of the asset management objectives) and asset management plans (and their included activities)



3.2 Asset Management Plans

The asset management plans (AMPs):

- Are derived from the Strategic Asset Management Plan and are consistent with the asset management policy
- Confirm expenditure requirements for the next financial year, whilst providing visibility of expected expenditure for the following 5 years;
- Are formed by consideration of the costs, risks and performance impacts of key asset activities, including
    - Capital Projects
    - Major Maintenance Projects
    - The Maintenance Strategy for existing assets
    - Operational overheads
- Document the impact for activities set in the strategic asset management plan
- Consider all assets identified as part of the asset portfolio and consider all life cycle activities inclusive of construction, refurbishment, maintenance, operation and decommissioning;
- Consider the impact of the previous and current asset life cycle phases on the planned future asset life cycle phases;
- Consider and document the legal and compliance requirements;
- Include contingency plans designed to mitigate the business impact of incidents or emergencies arising as a result of realised asset related risks;
- Are optimised and the actions prioritised at the individual asset level and across the asset fleet taking into account overall value, resource requirements, interdependencies, risks and performance impacts;
- Are developed, maintained and improved by the assigned asset management group on behalf of the Executive Director Power Generation;
- Are approved annually by the Executive Director Power Generation;
- Are stored in SharePoint as documented information.

The AMP can be considered as the coordinating mechanism for ensuring activities on the physical assets are aligned with the Alinta Strategic Business Plan requirement.

4 Asset Overview

4.1 Key Asset Details

4.1.1 Coalfield Structures and Buildings

BUILDINGS	
ADMIN	FIELD ADMINISTRATION BUILDING
CORE SHED	PLANNING BRANCH CORE SHED
CRIBROOM 1	M7 EAST CRIB SITE CR-1
CRIBROOM 2	M17 WESTERN BUND CRIB SITE CR-2
CRIBROOM 3	CRUSHER CRIBROOM CR-3
CRIBROOM 4	MOBILE CRIBROOM CR-4 PRODUCTION
CRIBROOM 5	M10 CRIB SITE CR-5
CRIBROOM 7	DRILL & BLAST CRIB SITE CR-7
CRIBROOM 8	MOBILE CRIBROOM CR-8 PRODUCTION
CRIBROOM 9	MINE SERVICES SUPPORT TEAM CR-9
DRILL SHED	DRILL MAINTENANCE WORKSHOP
EXPLO MAG	EXPLOSIVE MAGAZINE
EXPLO SHEDS	EXPLOSIVE STORES & COMPOUND
FEMS WKSHOP	FIELD EQUIPMENT MAINTENANCE SECTION
FIELD MESS	FIELD MESS BUILDING
FIELDFIRESTN	FIELD FIRE STATION
MEMS WKSHOP	MOBILE EQUIPMENT MAINTENANCE WORKSHOP
PAINT SHOP	PAINT SHOP - COAL FIELD
PMS WKSHOP	OLD PLANT MAINTENANCE WORK SHOP
PROD OFFICES	PRODUCTION OFFICE BUILDING
PUMP SHED	PUMP GANG WORKSHOP & BUILDINGS
SUN125	COAL FIELD PABX
TSERV OFFICE	TECHNICAL SERVICES OFFICE MAINTENANCE
COMPRESSED AIR	
SUN026	COMPRESSOR AIR - CHAMPION CSF22
SUN027	COMPRESSOR AIR - CHAMPION CSF22
SUN028	COMPRESSED AIR DRYER - CHAMPION CRD110
SUN029	COMPRESSOR AIR - CHAMPION CSE45
SUN031	COMPRESSOR AIR - CHAMPION CSF30 R.O. Plant (Ex 624)
SUN032	COMPRESSOR AIR - CHAMPION CSF30

SUN033	COMPRESSOR AIR - CHAMPION CSF30	
SUN105	NITROGEN PLANT - MAINTENANCE COMPOUND	
CRANES		
EMS1.5T	CRANE - MEM WORKSHOP (1.5 TONNE EMS) [Has been removed from service and replaced with a chain block.]	
EMS15T	CRANE - MEM WORKSHOP (EARTHMOVING)	DEMAG P SERIES - 15T
CK14088	CRANE - FEM WORKSHOP (LIGHT VEHICLES)	KONECRANES CK14088
FMS6-3T	CRANE - FEMS WORKSHOP (PLANT)	KONECRANES UN2 - 6.3T
HMS6-3T	CRANE - MEM WORKSHOP (ANNEX)	KONECRANES UN2 - 6.3T
MEM36/6.3T	CRANE - MEMS WORK SHOP	KONECRANES 36T XL & 6.3T XL
PAINTSHOP CR	PAINT SHOP - CRANE	
PMS10T	CRANE - OLD PMS WORKSHOP	DEMAG P50 - 10T
SMS15T	CRANE - FEM WORKSHOP (BOILER SHOP)	DEMAG P SERIES - 15T
CK14087	CRANE - FEM WORKSHOP (MACHINE SHOP)	KONECRANES CK14087

4.1.2 Roads

ACCESS ROAD WORKSHOP ROADS HAUL ROADS	Coal Field roads consist of a 6.5 km sealed access road leading in from the highway to access the administration complex, maintenance compound and also provide access to the cemetery. There are also unsealed haulage roads within the pit and surrounds suitable for heavy traffic and light vehicle tracks used to inspect power lines, pipelines and fences.

4.1.3 Retention Dam

Retention Dam Crest	226.5mEL
Retention Dam bypass channel	219mEL
Base of Dam wall at breach point	~211mEL
Retention Dam (capacity to spillway 219mEL)	~11 000 ML
Retention Dam (capacity at 225mEL)	~26 500 ML
Secondary Storage	~12 600 ML (though this is peak and will mainly drain)

4.1.4 Railway Loop

Ballast	Ballast conditions varies throughout the loop, with much replaced in 2014 during rerailing & turnout renewals
Sleepers	Predominantly timber sleepers with some steel sleepers in various patterns between the loading bins & the old Telford turnout site
Fastening type	Various fastenings exist but predominantly dog-spike with some rex-lock fastenings
Rail	Originally 47kg plain carbon rail Rail through the loading bins has been renewed with new 50kg plain carbon The bypass loop has been renewed with new 50kg plain carbon rail Much of the rail on the southern side of the loading bins has been replaced. Various sections of rail between the loading bins & the Telford turnout site have been renewed with new 50kg plain carbon
Turnouts	The two turnouts for the bypass loop have been renewed with 50kg plain carbon fixed heel 1 in 10 turnouts with trail-able switch stands The turnout at the start of the balloon loop has been renewed with 50kg plain carbon fixed heel 1 in 10 turnout with an M23 switch machine & locking device

4.1.5 Electrical Distribution

	Qty	Details
Poles	450	Varying sizes, predominantly 13m x 5" line poles with larger brace poles and clearance poles at strategic locations
Conductor	~30km	Mainly consisting of 6/1/3.75 SCAC. (approximately 5km of 30/7/2.50 SCAC conductor)
Transformers	35	Distribution type transformers ranging from 50kV up to 300kVA
Sub Stations	2 2	1000kVA 33000/415 sub station transformers 1000kVA 33000/1100 sub station transformers
Pad Mounts	1 1	1000kV 11000/415 pad mount transformer 500kVA 11000/415 transformer
Air Break Switches	18	33kV – across both feeders
Load Switch Disconnects	7	Across both feeders
X Arm & Fuse Arms		General line construction is the 2 part "pitch form" cross arm construction with brace arm and fuse arms installed at strategic locations
Insulators		Generally porcelain construction with some glass disc insulators and a few light weight polymer insulators

33kV Circuit Breakers	2	Installed 2015
500 KW Generators	3	Feed into SA Power Networks during breakdown situations. Located in the Leigh Creek South Substation.

4.1.6 Telephone and Radio Communications

Main Telephone Equipment	222 x Messaging voice mail basic SW Assurance 1 year 1 x MD DISA number 1 system 1 x MD music on hold 1 MOH port 1 x MD O&M 1 Ethernet session 2 x MD 1 LIM 2 x MD Public ISDN U-side 1 port 4 x MD Analog external line 1 port 222 x MD Analog extension 1 port 1 x MD system upgrade BC9->TSW 252 x MD upgrade BC9->TSW 222 x OneBox 5.0 Basic user upgrade 1 x OneBox 5.0 Voice Mail system SW key 1 x MX board ASU ComExpress 8GB
	1 x Windows 2008 Server 32bit Telecom Standard Edition 1 x OneBox Customize ASU 1 x MX HW SSD incl sledge ASU 2 x OneBox 5.0 Media Kit 5 x ELU31/33/34 - MDF 2 x MX board GS GJUL4/11 2 x Fan unit 1 x MX Magazine LBP25 1U chassis
Additional Telephone Equipment	1 x Install 100 Pair Tie Cable 1 x Cablelink Installation and NJT 2 x 27RU Cabinets fully installed 12 x Oricom Analogue Phones 2 x Emerson UPS for Mine and Village 2 x Thermostatically Controlled Fan for Cabinets 1 x Krone Frame Expansion

4.1.7 Fuel Distribution System

TELFORD TANKS	TELFORD DIESEL STORAGE TANKS & AREA (4.2 million litre capacity, 2 x 2.1 million litre tanks)
SUN139	PETRO TANK REFUELING MODULE (3,000 litre capacity)
SUN142	CEMETERY REFUELLING SITE (100,000 litre capacity)
SUN144	RING ROUTE REFUELLING SITE (108,000 litre capacity)
SUN147	T68 TRANSTANK SELF BUNDED FUEL SYSTEM (64,000 litre capacity)
SUN148	DURO TANK REFUELING MODULE (6,000 litre capacity)
SUN149	P69 TRANSTANK SELF BUNDED FUEL SYSTEM (67,000 litre capacity)

Stores Fuel Tanks 6 off	2 TANKS STILL IN USE (Diesel tank 27,800 litre capacity ULP tank 27,800 litre capacity)

4.1.8 Fencing

PERIMETER FENCING	The perimeter of the mine lease is fenced with a stock fence. Access to Lobe B operational area is via the main sealed mine access road with automated security boom gates or limited access via the railway access track and locked gate in the south eastern corner near Copley.
NORTHFIELD FENCING	The historic mining area of the Northfield is fenced separately and limited access is only via a locked gate in the north western corner adjacent the highway or a locked gate in the south eastern corner connecting through to the north eastern corner of Lobe B operational area.
MAINTENANCE COMPOUND FENCING	There are separate internal fenced off areas associated with mine infrastructure such as the maintenance compound, explosive compound and magazine, supply compound, Switch yards etc.

5 Asset Management Strategy

5.1 Introduction

The Alinta Asset Management Framework requires the planning process to consider the previous, current and future life cycle asset management requirement as part of developing and documenting the AMP asset management strategy.

Accordingly the development and documentation of the asset management strategy has considered the historical outcome, issues and risks; and the core asset status.

5.2 Historical Issues Actions List

Among other things, the Alinta Asset Management Framework requires the planning process to "consider the impact of previous and current asset life cycles on the planned asset life cycle phase".

5.2.1 Timeline of Leigh Creek Township and Coalfield Major Historical Events

1942	Coal first mined at Leigh Creek
1948	Electricity Trust of South Australia assumes control of the Coalfield
1955	First consignment of coal to Port Augusta Power Station
1956	Standard gauge railway completed to Northfield
1956	Transfer of coal operations to Northfield
1976	Mining resumed in the Telford Basin
1977	Mining ceased at Northfield
1978	Change from dragline to truck and shovel for overburden removal
1993	Development of box-cut and start of terrace mining
2007	3.9Mt/year of coal produced. Commencement of investigation into Lower Series coal reserves
2015	Closure of mine announced

5.3 Overarching Asset Management Strategy and Compliance

The Leigh Creek Coalfield is maintained in accordance with approved standards and with appropriate risk management strategies and mitigation to ensure safe operation at all times.

Leigh Creek's compliance to environmental and mine development regulations is assessed annually via an independent audit by a third party, EnviroManagement Pty Ltd. This audit encompasses EPA licence requirements and the relevant conditions from the mine development programmes, including the town operations, mine area and Northfield, with the exception of the rail operations.

Whilst opportunities for improvement were identified during the 2015 audit, there were no significant unaddressed environmental risks identified.[11]

The Department of State Development have also recently assessed Leigh Creek's compliance with legislative requirements (Mines and Works Inspection Act 1920), requirements under the Perpetual Leases, Requirements under the Development Programs for Lobe B, and requirements under the Development Programs for Lobes C and D. This report noted one item of concern (regarding maintaining coverage of the historical tyre dump at Lobe D), four opportunities for improvement, and no items of non-compliance.[12]

5.4 Coalfield Structures and Buildings

5.4.1 Description

Coalfield Structures and Buildings include the maintenance, supply and administration buildings as well as the crib room facilities, coal crushing plant and some sheds and storage facilities.

The two main maintenance buildings – Mobile Equipment Maintenance Services (MEMS) and Field Equipment Maintenance Services (FEMS) – are significant structures incorporating many ancillary components – eg. cranes, oil storage, drainage, waste oil drainage and storage facilities and significant electrical infrastructure – and are best viewed as an integrated asset unique to the region.

Maintenance, Supply and Administration buildings are grouped within walking distance, and provide the bulk of the services and administration for the coalfield. Most buildings, except for the main administration have been extensively remodelled and renovated as the requirements for the mine have changed.

The main administration building is made up of modules with concrete floors, and was constructed in Adelaide and trucked and assembled on site.

5.4.2 Historical Actions and Improvements

The various maintenance buildings and supply buildings have undergone fit-outs and modifications to suit the changing needs of staff and equipment and are all in a “fit for use” condition.

The grit blasting and paint shed facilities have been recently upgraded.

Overhead cranes in the various workshops have recently been checked and replaced and/or upgraded to current standards.

5.4.3 Key Risks

Generally, all buildings and structures are in good condition, being subject to ongoing regular inspections and checks.

5.4.4 Management Strategy

During mine operation the structures and buildings will still be subject to ongoing regular inspections and checks as part of the maintenance management system.

Cranes are serviced by a licensed contractor every 3 months and detailed annual inspections.

The following table shows the maintenance strategy for the compressed air systems which are shared between the FEMS and MEMS buildings

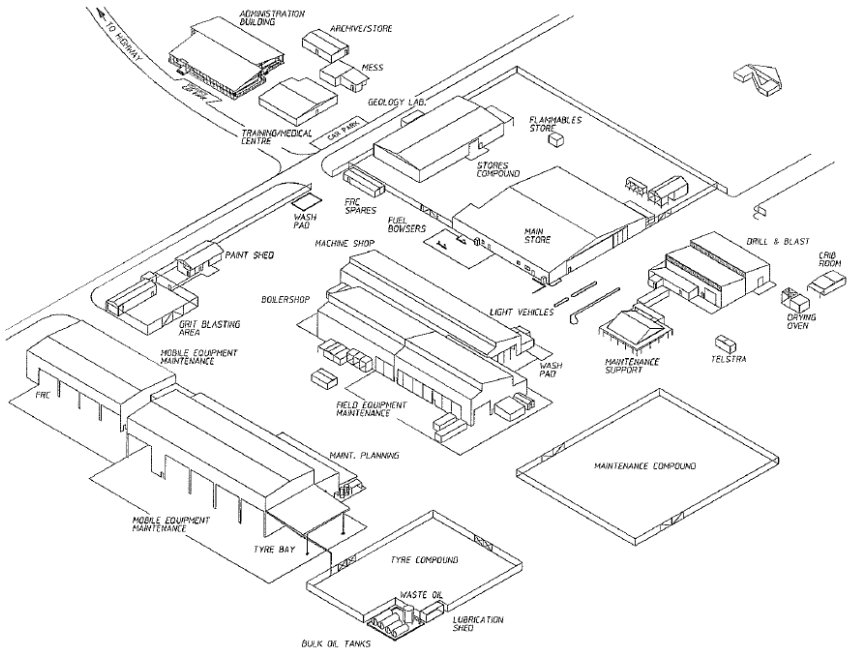
SUN026	COMPRESSOR AIR - CHAMPION CSF22	Compressor is serviced annually by a qualified and trained Alinta employee
SUN027	COMPRESSOR AIR - CHAMPION CSF22	Compressor is serviced annually by a qualified and trained Alinta employee
SUN028	COMPRESSED AIR DRYER - CHAMPION CRD110	Compressor is serviced by a qualified and trained Alinta employee 1, 3, 6 and 12 monthly
SUN029	COMPRESSOR AIR - CHAMPION CSE45	Compressor is serviced by a qualified and trained Alinta employee every 1000, 3000 and 6000Hrs

SUN031	COMPRESSOR AIR - CHAMPION CSF30 R.O. Plant (Ex 624)	Compressor is serviced by a qualified and trained Alinta employee every 1000, 3000 and 6000Hrs
SUN032	COMPRESSOR AIR - CHAMPION CSF30	Compressor is serviced by a qualified and trained Alinta Employee every 1000, 3000 and 6000Hrs
SUN033	COMPRESSOR AIR - CHAMPION CSF30	Compressor is serviced by a qualified and trained Alinta employee every 500, 1000 and 3000Hrs
SUN105	NITROGEN PLANT - MAINTENANCE COMPOUND	Compressor is serviced by a qualified and trained Alinta employee 3 and 12 monthly

5.4.5 Decommissioning

Under the current Approved Mine Development Plan these assets are listed to be decommissioned and removed.

5.4.6 Drawings and Photos



Workshop and Admin Buildings Schematic

Main Equipment workshops including wash down pads

On Site Mess Facilities

Main Administration Building – modular and opened in July 2001

Archive building

Training / medical / Shift supervisors Building

Access road by Main Administration building showing the two large supply / stores buildings on the left and the two high buildings of Plant / Light vehicle / Fabrication area with the smaller Paint and Grit blasting compound to the extreme right. (See Schematic)

5.5 Roads

5.5.1 Description

Coal Field roads consist of a 6.5 km sealed access road leading in from the highway to access the administration complex, maintenance compound and also provide access to the cemetery.

There are also unsealed haulage roads within the pit and surrounds suitable for heavy traffic and light vehicle tracks used to inspect power lines, pipelines and fences.

5.5.2 Historical Actions and Improvements

When the old Leigh Creek Township was relocated the cemetery remained and access is still required as a condition of the Approved Mine Development Plan.[2]

The access roads have been routinely maintained and improved by Town Services. All other roads on site have been maintained by Production.

5.5.3 Key Risks

Generally, all roads are in good condition, being subject to ongoing regular inspections and checks.

5.5.4 Management Strategy

During ongoing mining operation the roads are subject to ongoing regular inspections and checks as part of the operations management system.

5.5.5 Decommissioning

Under the current Approved Mine Development Plan these assets – except for the road to the cemetery – are listed to be decommissioned and removed.

5.6 Retention Dam

5.6.1 Description

The Retention Dam is an earthen dam with rock beaching over the impervious lining on the upstream face:

The Retention Dam Key Features (Current)	
Retention Dam Crest	226.5mEL
Retention Dam bypass channel	219mEL
Base of Dam wall at breach point	~211mEL
Retention Dam (capacity to spillway 219mEL)	~11 000 ML
Retention Dam (capacity at 225mEL)	~26 500 ML
Secondary Storage	~12 600 ML (though this is peak and will mainly drain)

5.6.2 Historical Actions and Improvements

The Retention Dam has been managed as part of the Geotechnical Management System at Leigh Creek using the following procedures:

- GMSP-407_Retention Dam Inspections [5]
  - Regular monthly inspections when the water level is above 218m and 6 monthly when the water level is below 218m
  - Additional inspections after significant storm events
  - Minor works are carried out as required but would average quarterly. These works principally involve filling small tunnel erosion in the wall crest and minor erosion on the dam's upstream face.
- GMSP-503_Retention Dam - Heavy Rainfall Procedures[6]
  - The Geotechnical Management System requires that a controlled breach needs to be considered if the water level reaches 225mEL (full supply level). A controlled breach would be undertaken at this time to prevent Retention Dam failure and the potential flooding of the Upper Series.

5.6.3 Key Risks

Currently there is no adequate spillway on the Retention Dam that will allow safe passage of large floods without endangering and/or damaging the dam embankment through either an uncontrolled breach or a controlled breach.[4]

The key risks for the Retention Dam in the future will be dependent on the decision of which decommissioning option to pursue (See 5.6.4)

5.6.4 Management Strategy

During mine operation the Retention Dam will be managed according to procedures GMSP-407 and GMSP-503. This will require the following resources.

Dams Engineer	• Monthly inspections when dam water level is above 218m AHD • Six monthly inspection when dam water is below 218m AHD • Storm inspection after every 20mm rain event (within 1 week) • On call (24hr) during significant rain events (eg when the Dam is spilling)
Survey	Check dam water level monthly and daily during spill events
Minor Works	Minor works to maintain the dam wall's integrity (currently this work is carried out quarterly)

The Retention Dam spillway was scheduled to be upgraded in September/October 2015 to 1 in 1000 year capacity. This has been deferred until a decommissioning option has been confirmed.

5.6.5 Decommissioning

Following plant closure there are several options for decommissioning the Retention Dam

Option 1 as per MDP – (least preferred)

Breaching the dam wall and allow drainage into Upper Series.

- Risks: "Option 1: Impact of breaching dam as required in MDP In the event of high rainfall events consequences are accelerated":
- Consequences
    - Destroy the ecosystem of the dam
    - Destroy the water resource
    - Cut off water to northern pastoralists
    - Potential impact to rehab work (long term)
    - Potential long term spon com trigger

Option 2 – Install spillway to 1:1000 year level (Practical Option)

Allow for floodway overflow, potential for failure of dam wall if not monitored.

- Risks:
    - Leave the wall intact. Establish floodway to return overflow to Leigh Creek further north along western bund wall.
- Consequences
    - Catastrophic failure of dam wall
    - On-going management of the wall and the dam
    - Public safety of Retention Dam"

Option 3 – Reduce dam size and divert Leigh Creek around mine through secondary storage (Preferred Option as it balances risks, costs and environmental issues)

Reduce the level of the wall to allow creek to run again during floods. Return to natural water course.

- Risks
    - Impact on existing dam ecosystem
- Consequences
    - On-going management of the wall and dam – lesser than Option 2
    - Loss of water resource for southern pastoralists.
    - Changes to retention dam ecosystem
    - Increased flows a positive for northern pastoralists

5.6.6 Actions Required

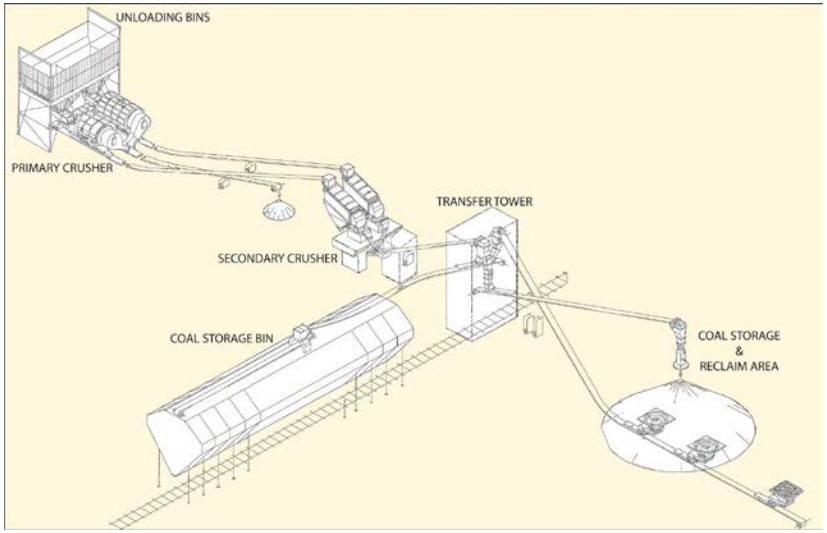
- Determine with the regulators the preferred option for Retention Dam decommissioning
- Engage consultant to finalise option design
- Cost options
- Construct design

5.7 Coal Crushing Plant

5.7.1 Description

The Coal Crushing Plant is located in the North Eastern Sector of the operational Lobe B area and it also incorporates the train loading facility.

As per the drawing below the Plant consists of 5 sections plus associated conveyor belts, a control tower with switch room below, a high voltage switchyard as well as a transportable crib room, a plant cleaning equipment storage shed and a few minor storage sheds.



Mined coal is delivered to the crushing plant where it is crushed to less than 40 mm lump size and placed either in the coal storage bin or on the reclaim stockpile to be recovered later.

- The Primary Crusher is made up of a truck unloading structure with two vibrating feeders, two rotary breakers as primary crushers, two conveyors (conv 3 east & 3 west) feeding the secondary crushers and one shorter reject conveyor (conv 4).
- The Secondary Crusher is made up of two vibrating screens and two kittle crushers; a single conveyor (conv 2) moves the crushed coal to the Transfer Tower.
- The Transfer Tower distributes the incoming coal from the secondary crusher to either the coal storage bins via a single conveyor (conv 1) or to the reclaim stockpile via conv 5.
- Coal at the Reclaim stockpile is feed back to the transfer tower via a conveyor (conv 6) situated in a tunnel below the stockpile. 3 rotating feeders draw the coal onto the conveyor. A Deluge system of two water tanks and pumping infrastructure is associated with the reclaim tunnel.
- The Coal Storage Bin has a design capacity of 9,000 t. Coal is distributed across the top of the bins via a tripper conveyor, train loading is controlled manually via the control tower and takes about 3 hours.
- The Control tower is built on top of the Electrical switch room, it is situated in front of the coal bins in a line with the secondary crusher. All sections of the coal plant controlled by the operator are visible from here.

Crushed Coal storage bins and main control building

Secondary crushers with conveyer leading down to primary rotary breakers and truck tipping station

Shed for coal cleaning contractor – Terry's Dingos

5.7.2 Historical Actions and Improvements

Year	Event
1978	Commissioned
1999	Unloading hopper built
2013	Replaced West primary
2014	Uploaded isolation system
2014	New deluge water tanks

Reclaim Fire Suppression tanks and pumps housed in sheds

5.7.3 Key Risks

Following mine closure, access to the area by members of the public may pose a risk to public safety.

5.7.4 Management Strategy

During mine operation the coal crushing plant is subject to routine inspections and preventive maintenance as it is critical infrastructure for shipment of coal from the mine.

5.7.5 Actions Required

Under the current Approved Mine Development Plan these assets are listed to be decommissioned and removed.

As it is unlikely that alternate use for the coal handling plant will be found, unless another future mine in the vicinity has a requirement for the train loading bins and conveyors, it is planned to remove the coal plant.

5.8 Railway Loop

5.8.1 Description

The Leigh Creek Coalfield Balloon Loop consists of the Balloon Loop and a Bypass Loop that goes around the loading facilities

The rail is predominantly 47kg plain carbon rail rated at 23t axle loads continuously welded (CWR). The sleepers are predominantly timber with some steel sleepers in various patterns between the loading bins and the old Telford turnout site.

Various fastenings exist but they are predominantly dog-spike with some rex-lock fastenings.

Ballast conditions vary throughout the loop, with much replaced in 2014 during rerailing & turnout renewals.

5.8.2 Historical Actions and Improvements

Track geometry testing was carried out by the ARTC AK-Car on the 30th of October 2014 with one high priority defect detected in the LCK loop that was remedied.

Ultrasonic rail testing was carried out by RTI between the 23rd and the 27th of October 2014 over the entire network. No rail defects were detected in the balloon loop.

Three Coalfield bypass turnouts were replaced in 2014/15. As part of the installation new National Trackworks 1002RG "back-saver" levers were installed to reduce the risk of manual handling injuries when operating.

Turnout Location	Turnout type	Lever Type
Coalfield - North End bypass loading bins (Renewal)	Vossloh - 1 in 10 Fixed heel turnout 50kg plain carbon with fabricated V-Xing	New - National Track-works 1002RG – Back-saver
Coalfield - South End bypass loading bins (Renewal)	Vossloh - 1 in 10 Fixed heel turnout 50kg plain carbon with fabricated V-Xing	New - National Track-works 1002RG – Back-saver
Coalfield – Loop entry from Mainline (Renewal)	1 in 10 Fixed heel turnout 50kg plain carbon with fabricated V-Xing	M23 Point machine

Much of the rail on the southern side of the loading bins has been replaced.

Rail through the loading bins has been renewed with new 50kg plain carbon.

The FY15 AMP identified several areas for rail renewal. Further re-railing was completed to manage the risk of rail failure when poor rail condition south of the bypass loop in the Coalfield was identified during major sleeper renewal works.

Location	Reason	Rail Installed
Coalfield Bypass loop	Extreme corrosion	600m of 50kg plain Carbon
Coalfield Loop – North of bins	80lb Rail removed insufficient load rating	610m of 50kg plain Carbon
Coalfield Loop – South of the bypass loop	Extreme corrosion	320m of 47kg plain Carbon

All rail renewal works detailed above were completed and tested.

5.8.3 Key Risks

Sleeper and fastening condition can be unpredictable in coal affected areas but currently sleeper condition meets standards and is currently fit for purpose.

5.8.4 Management Strategy

During mine operation

- Track inspection of the LCC balloon loop takes place daily / before every train operation via hi-rail patrol vehicle.
- Walking inspection of the loop is conducted annually
- Permanent speed restrictions exist throughout the loop

5.8.5 Decommissioning

Under the current Approved Mine Development Plan this asset is listed to be decommissioned and removed.

However, given the requirement to handback the railway line in an operating condition the requirement to remove the railway loop at the end of the line should be reconsidered.

5.9 Electrical Distribution

5.9.1 Description

The Electrical Distribution system for the Leigh Creek Coal Mine consists of the Leigh Creek Coalfield Substation and high voltage infrastructure.

The electricity supply to the Leigh Creek Coalfield Substation is provided through the 132kV line from the ElectraNet Davenport Substation at Port Augusta with a spur off to the Leigh Creek South Substation, 5km to the south of the Coalfield Substation.

The 132/33kW Coalfield Substation is provided by ElectraNet and the Leigh Creek connection point is located on the supply side of the Alinta Energy 33kV disconnectors A4837 and A4838 located within the substation. These disconnectors supply the mine East and West 33kV Feeders, each with its own 33kV circuit breaker. From the Leigh Creek connection point two independent feeds run through East and West of the mine, both terminating at the Coal Crushing facility which can run independently on either feed.

5.9.2 Historical Actions and Improvements

Date	Event
12 Sept 2014	Severe flash over of the 33kV Coal Field West Feeder Ferguson Palin circuit breaker (4483) at the Coal Field Substation. The flash over caused the 132kV Circuit breaker to trip and lock out Davenport Sub Station, causing extensive loss of power to Leigh Creek Coal Field, Leigh Creek Township and district, Hawker and surrounding districts. One circuit breaker 33kV bushing was severely damaged, adjacent bushings on the same circuit breaker suffered minor consequential damage. The failed circuit breaker was isolated and the 132kV line re-energized in liaison with ElectraNet.
2015	Decommissioning of electric diggers has reduced the need and criticality of electricity on site.
June and October 2015	New 33kV circuit breakers installed to replace failed circuit breaker.

5.9.3 Key Risks

The Electrical Distribution system is in good condition, being subject to ongoing regular inspections and maintenance to ensure operational reliability.

5.9.4 Management Strategy

ElectraNet has a contract with SA Power Networks for the maintenance of their entire transmission infrastructure, including the Leigh Creek 132kV, 132/33kV transformers, 33kV reactors, 33kV/415V station transformer, substation protection and Coalfield Substation.

SA Power Networks (previously ETSA Utilities) provides maintenance services to Alinta Energy through specific project contracts.[7]

Other maintenance carried out by site personnel include:

- Routine inspections managed through CMMS (Ellipse)
- Detailed inspection of 20% of equipment every 5 years
- Routine oil sampling of transformers.

5.9.5 Decommissioning

Under the current Approved Mine Development Plan these assets are listed to be decommissioned and removed.

Should the administration or maintenance buildings remain part of the electrical distribution system will also need to remain in place.

An option has been identified to isolate the coalfield electrical infrastructure from the main transmission line at the substation to retain the asset post closure.

5.10 Telephone Communications

5.10.1 Description

The telephone system which services the coal mine consists of optical fibre which runs along the north side of the access road and is terminated at the administration building. It is then distributed around the workshops and administration building by copper.

The optical fibre is in very good condition and the copper varies from aged underground wiring to relatively new overhead wiring.

There is a wireless link between the workshops and the production M7 crib site allowing them network access. The crushing plant is serviced by old copper which follows the railway north from Copley.

5.10.2 Historical Actions and Improvements

Year	Event
<1990	Installation of underground copper
2003	Optical fibre installed
2003	Copper between the distribution board at Maintenance Support and the Field Equipment Maintenance workshop replaced overhead

5.10.3 Key Risks

Many pairs in the underground wiring are unusable due to corrosion.

5.10.4 Management Strategy

During mine operation the following asset management strategy will exist for telephone communications:

- Service agreement with Data Mobility Voice (4th March 2015 – 3rd March 2016)[8]
- Repair telephone system on an as needs basis as demand on the underground wiring isn't large so there are a lot of spare pairs
- IT department schedule replacements on PABX equipment

5.10.5 Decommissioning

Under the current Approved Mine Development Plan the overhead infrastructure and PABX building are to be decommissioned and removed.

Should the administration building and workshop facilities remain it makes sense to consider leaving telecommunications infrastructure in place.

5.10.6 Actions Required

- Underground copper between the Field Equipment and Mobile Equipment workshops may need replacing in the next few years.

5.11 Fuel Distribution System

5.11.1 Description

The fuel distribution system consists of a supply contract for fuel with BP Australia, where fuel is delivered to Leigh Creek by road freight.

The fuel is unloaded into “Telford” storage tanks (2 tanks) which provide a main storage capacity of 4.2 million litres. The fuel is then distributed to the various satellite tanks around the mine lease using a road tanker.

5.11.2 Historical Actions and Improvements

Prior to the 1980’s fuel was delivered to Leigh Creek by train and unloaded into Telford Tanks using a rail siding, which was constructed alongside the Telford railway station.

Replacement of the single skinned satellite tanks by skid mounted, self bunded tanks, complete with fuel delivery systems, allowed delivery of fuel close to the operations. Two self bunded tanks were purchased in December 2007 and 2012 as part of this replacement program.

5.11.3 Key Risks

The key risks for the Fuel Distribution System in the future include:

- Inspection and repair costs for Telford Tanks (one of which is exposed to air from being empty)
- Deterioration of the underground Stores fuel tanks no longer in use

5.11.4 Management Strategy

During mine operation the fuel distribution system will be subject to routine inspections and preventive maintenance.

The following actions will also be required

- Maximise use and storage capacity of the two self bunded tanks in use
- Consider decommissioning all single skin satellite tanks, using the two self bunded tanks for future fuel supply during rehabilitation phase
- Consider direct unloading of fuel into self bunded tanks

5.11.5 Decommissioning

Under the current Approved Mine Development Plan these assets are listed to be decommissioned and removed.

During the rehabilitation phases the following actions will be required

- Minimise fuel inventory storage on site
- Consider decommissioning of Telford tanks
- Remove Stores fuel tanks no longer in use. This also involves decommissioning underground diesel and unleaded tanks still in use and providing alternate diesel supply for LV during rehabilitation phase.

5.11.6 Photos

Telford Tanks showing Atkins Freight road train (RHS) discharging fuel into tanks and Alinta Energy Fuel tanker (LHS) loading fuel up for delivery to satellite fuel tanks around the mine lease. Capacity is 4.2 million litres of diesel.

Main Series In Pit self bunded tank - 64,000 litres capacity

Upper Series In Pit self bunded tank - 67,000 litres capacity

5.12 Ground Water De-Watering Systems

5.12.1 Description

Upper Series
The Upper Series pit is actively dewatered and there is an ongoing dewatering program to maintain a dry pit for operations. There are currently 2 active bores in the Upper Series and approximately 8 other bores that are currently not in use (some of these bores have failed).

The Upper Series bores have been used to maintain a dry working environment in the Upper Series and have been cleaned and pumps relocated between the bores to ensure appropriate conditions within the pit.

Lower Series
There are 3 bores that intersect the Telford basin and the basement, 2 bores situated entirely within the basement and 14 passive drains in the LT07 low wall.

The Lower Series bores and drains were installed to manage low wall stability for the Lower Series development.

Main Series
The Main Series pit is generally a tight formation with little groundwater. There is no active dewatering program for the pit.

5.12.2 Key Risks
There are no key risks for the Ground Water De-Watering Systems in the future. The system needs to be decommissioned as per the Mine Development Plan for the bores and *LCC-SA-SOP-015 Lower Series Vertical Lowwall Drains.*[13]

5.12.3 Management Strategy
Operate the bore pumps continuously to maintain groundwater levels so that the Upper Series pit is operational.

Maintenance is carried out as required.

5.12.4 Decommissioning
Under the current Approved Mine Development Plan all open bores need to be decommissioned. This will entail all infrastructure being removed and the bores capped.

The 3 Lower Series bores between Telford basin and basement have already been grouted.

During decommissioning the following actions will be required:

- All pump infrastructure removed from the 9160 and 9100 bores – this may be done after the completion of works in the Upper Series terrace sUT03, UT04, UT05 and maybe UT06
- All Upper Series bores need to be capped
- Lower Series Bores (un-grouted) need to be capped
- Lower Series drains need to be sealed as per Environmental Management procedure.

5.13 Asbestos

5.13.1 Description

As part of the relocation of the Leigh Creek Township in the early 1980's an asbestos register was developed and updated as the buildings were removed.[9]

There are some pre 1980's buildings still on site which may contain asbestos and these are recorded in the asbestos register.

There is asbestos fibre in the remaining 26.1 kilometres of AC pipe which forms the Mine Water Reticulation System. It is estimated that 19.6 kilometres of this pipe remains on the mine lease plus another 6.5 kilometres of pipe from the Reverse Osmosis plant at Leigh Creek which pumps the brine onto the mine lease for storage in one of the disused cuts.

The main asbestos type is Chrysotile which comprises about 15% by weight in the asbestos cement pipelines which make up the Mine Water Reticulation System (MWRS).

5.13.2 Historical Actions and Improvements

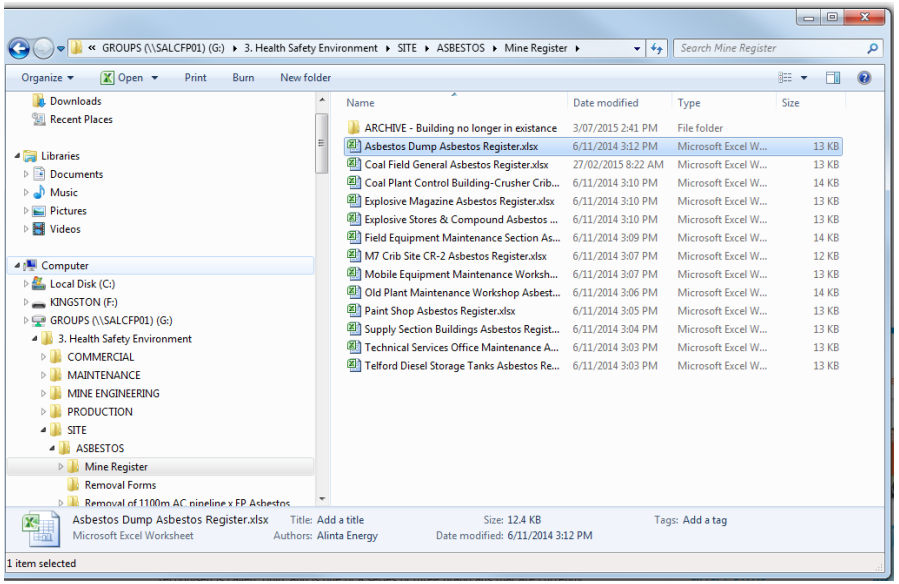
Year	Event
Early 1980s	New township of Leigh Creek South constructed outside the mining lease to allow mining activities to pass through the old township of Leigh Creek. Prior to building demolition an asbestos register was developed and progressively adjusted as the remaining buildings were removed.

Recent trials have established a rapid way of removing AC pipeline and transporting it to the registered Asbestos dump located on the mine site.

5.13.3 Key Risks

The key risks regarding Asbestos in Coalfield Infrastructure Assets in the future include:

- Removal / Demolition of any remaining buildings without referral to the current Asbestos register for the Coalfield.



- Removal of AC pipeline that is not part of the working pipeline. These are in the areas of:
    - Sunday Creek flood plain where separated but intact lengths of pipeline remain.
    - Isolated lengths of pipeline that cannot be integrated into the current MWRS. An example is the section of pipe alongside the original road to Telford railway siding to Sunday Creek outfall.

Typical above ground AC pipeline with earth ballast on it.

- Deterioration of the pipeline through exposure to the elements.
- Asbestos cladding and roofs on Ammonium Nitrate storage shed and Explosives magazine that will require separate removal and disposal.
- Removal of the gravity flow pipeline from the RO plant to the outfall at L5/6 pit by the railway line corridor

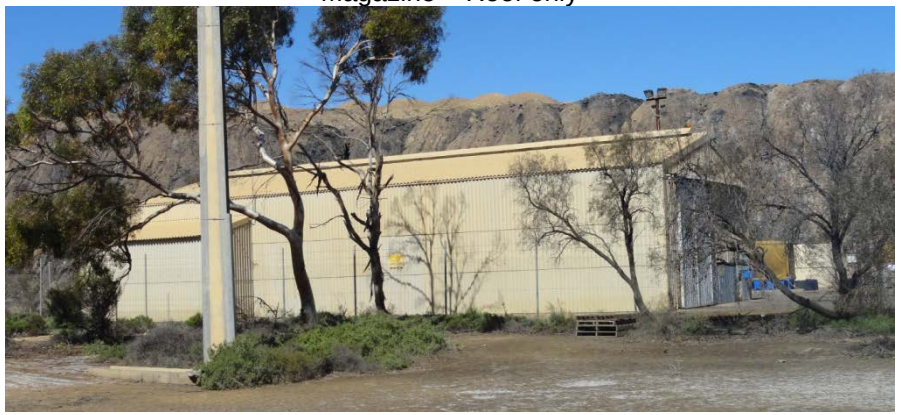
5.13.4 Management Strategy

- Maintain up to date Asbestos register for mine lease and buildings.

5.13.5 Actions Required

- Expand existing Asbestos dump to cater for additional waste.
- Identify AC pipeline that is key to future water removal after mine closure.
- Investigate covering remaining AC pipeline to preserve its integrity.
- Remove Ammonium Nitrate shed and magazine as they are clad in asbestos sheeting.

Magazine – Roof only



Ammonium Nitrate Bulk Storage Shed – Walls and Roof

5.14 Fencing

5.14.1 Description

The perimeter of the mine lease is fenced with a stock fence. Access to Lobe B operational area is via the main sealed mine access road with automated security boom gates or limited access via the railway access track and locked gate in the south eastern corner near Copley.

There are also separate internal fenced off areas associated with mine infrastructure such as the Maintenance compound, Explosive compound and magazine, Supply compound, Switch yards etc.

The historic mining area of the Northfield is fenced separately and limited access is only via a locked gate in the north western corner adjacent the highway or a locked gate in the south eastern corner connecting through to the north eastern corner of Lobe B operational area.

5.14.2 Historical Actions and Improvements

2014 new automated boom gate installed on mine access road at entry off main highway.

5.14.3 Key Risks

Fencing deteriorates over time due to age or extreme weather event.

5.14.4 Management Strategy

Alinta Energy has a maintenance contract with Ian Ferguson of North Moolooloo Pastoral Co. for monthly inspection and maintenance of fences at the coalfield.[10]

5.14.5 Decommissioning

The Lobe B MDP document [2] states that on mine closure the existing fence around the mine site perimeter will remain, fences associated with facilities that have been demolished will be removed. The erection of additional internal fencing around final pit voids is also mentioned in the document.

Mine operations consider a trench and safety bund option as a better long term solution.

The Lobe C&D MDP document[3] states 12 months prior to ceasing operations the Chief Inspector of Mines shall be provided with a report on the effectiveness of existing security arrangements preventing access to the Northfield area.

6 Key Asset Risks

6.1 Overarching Asset Risks

Equipment	Key Issue	Proposed Action
Coalfield Structures and Buildings	Generally, all buildings and structures are in good condition, being subject to ongoing regular inspections and checks.	Ongoing regular inspections and preventive maintenance.
Roads	Generally, all roads are in good condition, being subject to ongoing regular inspections and checks.	Ongoing regular inspections and checks.
Retention Dam	Currently there is no adequate spillway on the Retention Dam that will allow safe passage of large floods without endangering and/or damaging the dam embankment through either an uncontrolled breach or a controlled breach.[4]	The Retention Dam spillway was scheduled to be upgraded in September/October 2015 to a 1 in 1000 capacity. This has been deferred until a decommissioning option has been confirmed.
Retention Dam	The key risks for the Retention Dam in the future will be dependent on the decision of which decommissioning option to pursue (See 5.6.4)	Determine with the regulators the preferred option for Retention Dam decommissioning.
Coal Crushing Plant	Following mine closure, access to the area by members of the public may pose a risk to public safety.	Under the current Approved Mine Development Plan these assets are listed to be decommissioned and removed. As it is unlikely that alternate use for the coal handling plant will be found, unless another future mine in the vicinity has a requirement for the train loading bins and conveyors, it is planned to remove the coal plant.
Railway Loop	Sleeper and fastening condition can be unpredictable in coal affected areas but currently sleeper condition meets standards and is currently fit for purpose.	Under the current Approved Mine Development Plan this asset is listed to be decommissioned and removed. However, given the requirement to handback the railway line in an operating condition the requirement to remove the railway loop at the end of the line should be reconsidered.
Electrical Distribution	The Electrical Distribution system is in good condition, being subject to ongoing regular inspections and maintenance to ensure operational reliability.	Under the current Approved Mine Development Plan these assets are listed to be decommissioned and removed. Should the administration or maintenance buildings remain part of the electrical distribution system will also need to remain in place.

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		An option has been identified to isolate the coalfield electrical infrastructure from the main transmission line at the substation to retain the asset post closure.
Telephone and Radio Communication	Underground copper between the Field Equipment and Mobile Equipment workshops may need replacing in the next few years.	Under the current Approved Mine Development Plan the overhead infrastructure and PABX building are to be decommissioned and removed. Should the administration building and workshop facilities remain it makes sense to consider leaving telecommunications infrastructure in place.
Fuel Distribution System	Inspection and repair costs for Telford Tanks (one of which is exposed to air from being empty) Deterioration of the underground Stores fuel tanks no longer in use	During mine operation the fuel distribution system will be subject to routine inspections and preventive maintenance. The following actions will also be required • Maximise use and storage capacity of the two self bunded tanks in use • Consider decommissioning all single skin satellite tanks, using the two self bunded tanks for future fuel supply during rehabilitation phase • Consider direct unloading of fuel into self bunded tanks Under the current Approved Mine Development Plan these assets are listed to be decommissioned and removed. During the rehabilitation phases the following actions will be required • Minimise fuel inventory storage on site • Consider decommissioning of Telford tanks • Remove Stores fuel tanks no longer in use. This also involves decommissioning underground diesel and unleaded tanks still in use and providing alternate diesel supply for LV during rehabilitation phase.
Asbestos	The key risks regarding Asbestos in Coalfield Infrastructure Assets in the future include:	• Maintain up to date Asbestos register for mine lease and buildings.

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	• Removal / Demolition of any remaining buildings without referral to the current Asbestos register for the Coalfield. • Removal of AC pipeline that is not part of the working pipeline. These are in the areas of: • Deterioration of the pipeline through exposure to the elements changing it status from non-friable to friable. • Asbestos cladding and roofs on Ammonium Nitrate storage shed and Explosives magazine that will require separate removal and disposal. • Removal of the gravity flow pipeline from the RO plant to the outfall at L5/6 pit by the railway line corridor	• Expand existing Asbestos dump to cater for additional waste • Identify AC pipeline that is key to future water removal after mine closure. • Investigate covering remaining AC pipeline to preserve its integrity • Remove Ammonium Nitrate shed and magazine as they are clad in asbestos sheeting
Fencing	Fencing deteriorates over time due to age or extreme weather event.	Maintain maintenance contract for monthly inspection and maintenance of fences at the coalfield.

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7 Appendixes

7.1 Document Register

Ref	Section	Area	Document Title
1	1	Executive Summary	Leigh Creek Mine Development Plans Approval - 19 Jan 2004.pdf
2	1	Executive Summary	Leigh Creek Mine Development Program - Lobe B.pdf
3	1	Executive Summary	Leigh Creek Mine Development Program - Lobes C & D.pdf
4	5.6	Retention Dam	Kinhill_RetentionDam Spillway design.pdf
5	5.6	Retention Dam	Procedure GMSP-407_Retention Dam Inspections.doc
6	5.6	Retention Dam	Procedure GMSP-503_Retention Dam - Heavy Rainfall Procedures.doc
7	5.9	Electrical Distribution	15013 - ETSA Works and Design Services 2010 to 2015 EC.pdf
8	5.10	Telephone and Radio Communication	Date Voice Mobility Service Agreement 4-3-15 to 3-3-16.pdf
9	5.13	Asbestos	Mines Asbestos Register
10	5.14	Fencing	FencePatrolContract.pdf
11	5.3	Overarching Asset Management Strategy and Compliance	LC Compliance audit 15 final.pdf
12	5.3	Overarching Asset Management Strategy and Compliance	2014 04 15 Leigh Creek CMP Inspection Report DSD.xls
13	5.12	Ground Water De-Watering Systems	LCC-SA-SOP-015 Lower Series Vertical Lowwall Drains.jpg

7.2 Drawings

Ref	Section	Area	Document Title
	5.4	Coalfield Structure and Buildings	Leigh Creek Coalfield Maintenance Workshops and Admin Buildings.pdf
	5.4	Coalfield Structure and Buildings	Workshop Floor Plans (3 dwgs).pdf
	5.4	Coalfield Structure and Buildings	Vehicle Wash-down Facility Workshop Compound Lobe B Leigh Creek
	5.9	Electrical Distribution	33kV East Feeder - Leigh Creek Coalfield Sheet 1.pdf
	5.9	Electrical Distribution	33kVWestFeed.pdf
	5.9	Electrical Distribution	SthSub2.pdf
	5.9	Electrical Distribution	SthSub1.pdf
	5.9	Electrical Distribution	PrepPlantSub.pdf
	5.9	Electrical Distribution	CoalfieldSub.pdf

24.15 Appendix O – Notification of Mining Operations (Transition Period) (December 2015)

Letter from Peter Kelly (FPP) to Paul De Ionno (DSD/DPC) dated 1 December 2015

1 December 2015

Mr Paul De Ionno
Manager, Mining Compliance and Regulation
Mining Regulation
Department of State Development

By email: Paul.Delonno2@sa.gov.au

Dear Paul

NOTIFICATION OF MINING OPERATIONS – LEIGH CREEK COALFIELDS

As part of ceasing coal mining at the Leigh Creek Coalfields, Alinta Energy is now embarking on a process to safely transition from Mine Operations Closure through to commencement of Mine Rehabilitation. This letter aims to provide an update on operations at the mine prior to finalisation and approval of the Mine Closure Plan.

In conjunction with the Department of State Development (DSD), the Environment Protection Authority (EPA), and SafeWork SA, work has commenced on developing a Mine Closure Plan that will confirm the specific details of closure activities (including, where appropriate, ratification of such by necessary technical experts) ensuring the activities meet the requirements of key stakeholders.

Expediting the completion of the Mine Closure Plan, and subsequent commencement of such works (the Rehabilitation Phase), is important to Alinta and stakeholders. However, some of the information required, including external technical evaluations, will likely result in a draft plan being available in January 2016, a final plan available in mid February 2016 with final signoff in March 2016. This timing aligns with Alinta's resource planning to commence the Rehabilitation Phase April 2016. The Transition Phase is thus nominally defined from late November 2015 to the commencement of the rehabilitation works in April 2016.

TRANSITION PHASE ACTIVITIES

During the Transition Phase and prior to the commencement of rehabilitation, Alinta will continue to maintain the mine in a safe condition, under the existing Leigh Creek Coalfields Safety Management System and in compliance with statutory obligations. Mine Emergency Services personnel will remain on site through this phase.

Flinders Operating Services Pty Ltd ABN 36 094 130 837
A Leigh Creek Coalfield PO Box 21, Leigh Creek SA 5731 Australia
T +61 8 8675 4320 **F** +61 8 8675 4015 **W** **alintaenergy**.com.au

The transition activities will primarily comprise two key areas:

- Spontaneous combustion management / rehabilitation planning and preparation; and
- Run of Mine (ROM) stockpile crushing and coal railing.

Spontaneous Combustion management / rehabilitation planning and preparation

Spontaneous combustion management ensures that any spontaneous combustion hot spots are controlled before they escalate. In pit dumps will continue to be profiled in accordance with Alinta's existing Spontaneous Combustion Hazard Management Plan. Rehabilitation planning and preparation activities are required in preparation for design and implementation of the Mine Closure Plan. Conducting this work during the Transition Phase enables these activities to be resourced in an effective and timely manner (e.g. soil sampling for soil characterisation program).

The recent mine closure risk assessment workshops conducted in conjunction with the DSD and the EPA confirmed spontaneous combustion as one of the higher risk components of mine closure. It has been long recognised as a hazard of normal operations, with the Leigh Creek Coalfield Spontaneous Combustion Hazard Plan (Hazard Plan) specifying the actions required to control spontaneous combustion, in particular, the need to manage hot spots before they are affected by known triggers (e.g. rain, humidity) that increase the temperature, leading to oxidation and combustion. Spontaneous combustion events have been, and will continue to be, managed immediately as per the Hazard Plan.

The profiling of in pit dump faces to grades specified in the Hazard Plan, and coverage with inert material, is another spontaneous combustion management activity that will continue to be undertaken during the Transition Phase to control and prevent further spontaneous combustion events.

Alinta's intent (supported by significant experience and successful outcomes in the treatment of spontaneous combustion) is to manage the in pit dump faces sufficiently so as to avoid the need to re-address any treated areas in the future. Baseline monitoring will provide information on the efficacy of this treatment, and will be invaluable to the work being done by external technical experts (such as MWH) on closure design for spontaneous combustion management.

The following picture illustrates the profiling of Main Series Terrace 20/21 in-pit dumps and areas that have been covered with inert material to manage spontaneous combustion in this area.

Figure 1: Main Series Terrace 20/21 In-pit dumps – profiling and sealing

The rapid response to any spontaneous combustion, their locations (e.g. in pit) and the inert material available for use in the process, means that these activities do not pose any threat to future closure designs.

ROM Stockpile Crushing and Railing

The Run of Mine (ROM) stockpiles will be crushed and, in conjunction with re-claiming from the existing crushed stockpile, all mined coal stocks will be railed to Augusta Power Stations (APS). It is expected that railing of current stocks will continue until the end of March 2016, however, this is contingent upon coal consumption at APS, and may extend slightly should consumption at APS be low, or more coal be required.

The above mentioned risk assessment workshops also identified the following mitigating action for the ROMs that comprise Domain 4:

- Optimised operational plan to haul all coal to APS or removal of all coal from ROM area (reburied) and area covered with 2m of inert material.

Stockpiled coal is also susceptible to spontaneous combustion, which, in conjunction with the requirements to remove all stockpiled coal and the business imperative of ceasing power generation around April 2016, makes it imperative that coal crushing and railing continues through the Transition Phase to be able to move the required volumes in the available timeframe. The stockpile crushing and railing activities will not impact on future closure designs and plans.

TRAINING

These Transition Phase activities are consistent with "business as usual" for the Leigh Creek workforce, for which all personnel are trained and have the required competencies to conduct the relevant activities (including, Conduct Shovel Excavator Operations RIMPO301D, Suppress Dust Truck Operations MNMOMS 20A, Crusher Module 1 - P077, Safe Access Rail Corridor). Training records are current as of 10th November 2015 and available upon request.

HUMAN RESOURCES

The Transition Phase will utilise a total of 91 personnel, including those required for Town Services. Mine Operations will require 45 personnel, as detailed below, and are based around two Production crews:

1. Crushing and train loading (Coal Loading), rostered 37.5hrs, Night Shift Sunday – Thursday. (This shift arrangement may be required to be extended, dependent upon railing requirements).
2. Spontaneous combustion / rehabilitation planning, rostered 37.5hrs, Day Shift Monday – Thursday. (Emergency Management Officers will be on site at other times to manage any spontaneous combustion or to contact on-call resources to assist.)

Positions (excluding Town Services) are detailed below:

Role	Number personnel
Coal Crushing and Train Loading	**6**
Supervisors	2
Operators	4
Spontaneous Combustion / Rehab Preparation	**11**
Supervisor	1
Pump Crew Team Leader	1
Operators	9
Operations and Technical Support	**28**
Statutory Mine Manager	1
Manager Health Safety Security and Environment	1
Emergency Services and Security Officers	4
Production Manager	1
Maintenance & Supply Supervisor	1
Preventative Maintenance Technical Officer	1
Breakdown Maintenance Team Leader	1
Coal Quality Officer	1

Geologist and Spontaneous Combustion Officer	1
Surveyor and Spontaneous Combustion Officer	1
Commercial Manager	1
Accountant	1
Administration assistant	1
Purchasing / inventory officer	1
Supply officers	2
People and Culture Business Partner	1
People and Culture Officer	1
Trade repair officer	1
Security officer (casual)	4
Mine Planner (contract, as required)	1
Senior Geotechnical Engineer (contract, as required)	1
Total	**45**

This resourcing is designed to allow for some expansion upon commencement of rehabilitation works. An organizational structure for the Transition Phase is available upon request.

CHANGES TO MINING FLEET AND EQUIPMENT

There will be a surplus of mining equipment for the Transition Phase and subsequent Rehabilitation Phase, and selected equipment not required will be retained for redundancy to ensure that mining equipment availability does not constrain transition and closure activities.

Two of the existing four large excavators will be retained. All six dozers are required, some of the truck fleet (in excess of actual numbers required so as to ensure some redundancy), water carts, graders and loaders will also be retained. Additional support equipment will also be retained, including a fuel truck, maintenance support vehicles, a mobile crane, a 27t excavator, a tyre handler, a forklift and light vehicles as required.

Please don't hesitate to contact me directly should you require further information or clarification on any of the above matters in relation to the Leigh Creek mine transition activities.

Yours sincerely

Peter Kelly
Manager - Leigh Creek Coalfields

24.16 Appendix P – Lease Information - Perpetual Leases

PL 18578 Original

PL 18578 Amended

PL 19393 Original

PL 19393 Amended

PL 20239 Original

PL 20239 Amended

PL 20311 Original

PL 20311 Amended

CT 5457F708

CT 5457F897

The Registrar-General certifies that this Title Register Search displays the records maintained in the Register Book and other notations at the time of searching.

Registrar-General

Certificate of Title - Volume 5457 Folio 708

REAL PROPERTY ACT, 1886
South Australia

Parent Title(s)	CT 2729/24
Dealing(s) Creating Title	CONVERTED TITLE
Title Issued	14/10/1997
Edition	6
Edition Issued	25/06/2008

Estate Type

FEE SIMPLE

Registered Proprietor

FLINDERS POWER HOLDINGS GMBH
OF C/- 168 GREENHILL ROAD PARKSIDE SA 5063
2 / 4 SHARE

FLINDERS LABUAN (NO.1) LTD. (ACN: 094 284 812)
OF C/- LEVEL 22/307 QUEEN STREET BRISBANE QLD 4000
1 / 4 SHARE

FLINDERS LABUAN (NO.2) LTD. (ACN: 094 284 769)
OF C/- LEVEL 22/307 QUEEN STREET BRISBANE QLD 4000
1 / 4 SHARE

Description of Land

ALLOTMENTS 91, 92, 93, 94, 95, 96, 97, 98, 99, 100, 101, 102, 103, 104, 105, 106, 107, 108, 109, 110, 111 AND 112
FILED PLAN 207508
IN THE AREA NAMED COPLEY
OUT OF HUNDREDS (COPLEY)

Easements

TOGETHER WITH RIGHT(S) OF WAY OVER THE LAND MARKED A (TT 8378056)

Schedule of Dealings

NIL

Notations

Dealings Affecting Title

NIL

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Priority Notices

NIL

Notations on Plan

NIL

Registrar-General's Notes

NIL

Administrative Interests

NIL

* Denotes the dealing has been re-lodged.

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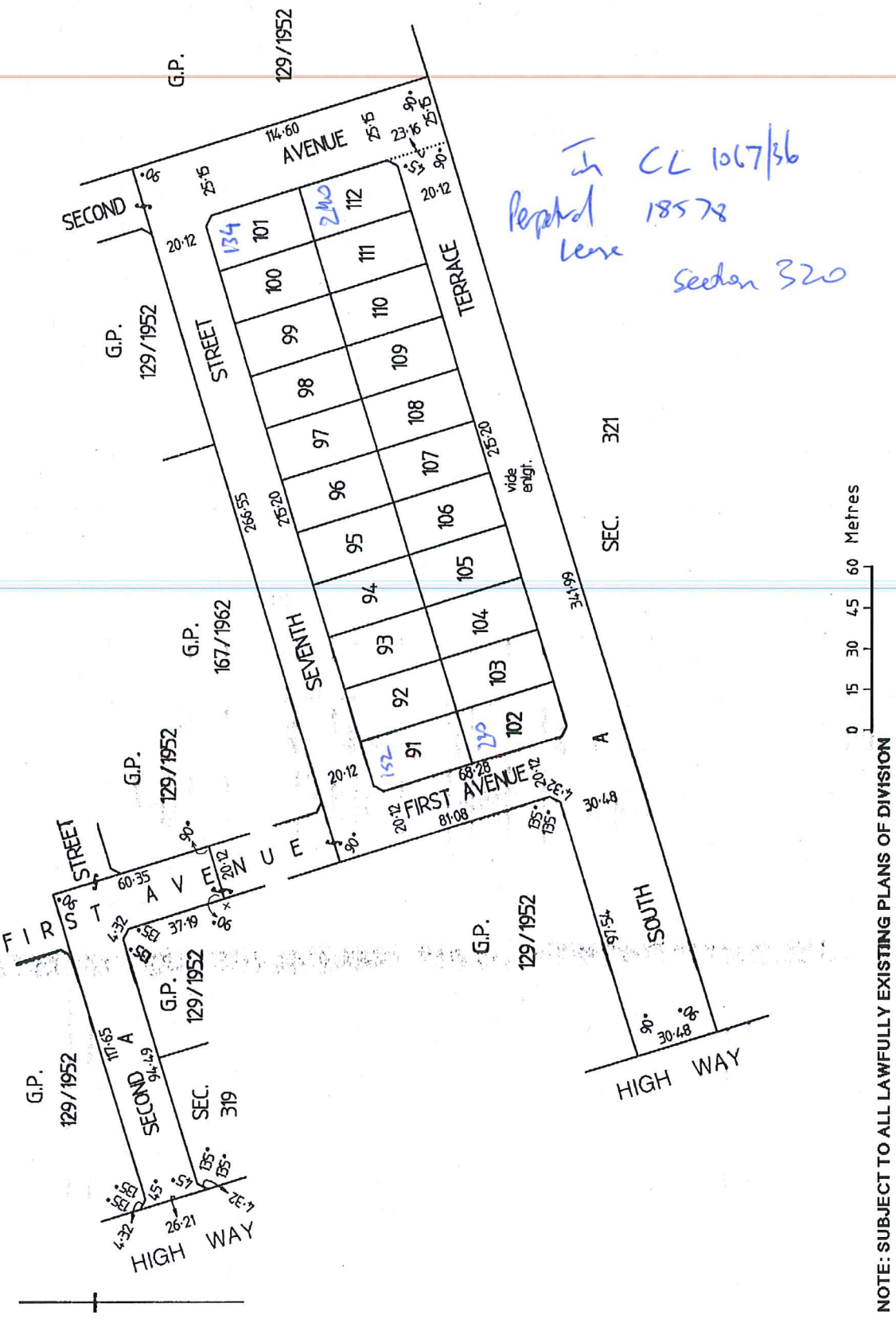

In CL 1067/36
Perpetual 18578
Lease
Section 320

THIS PLAN IS SCANNED FOR CERTIFICATE OF TITLE 2729/24 LAST PLAN REF: G.P. 129/1952
SEE TITLE TEXT FOR EASEMENT DETAILS

NOTE: SUBJECT TO ALL LAWFULLY EXISTING PLANS OF DIVISION

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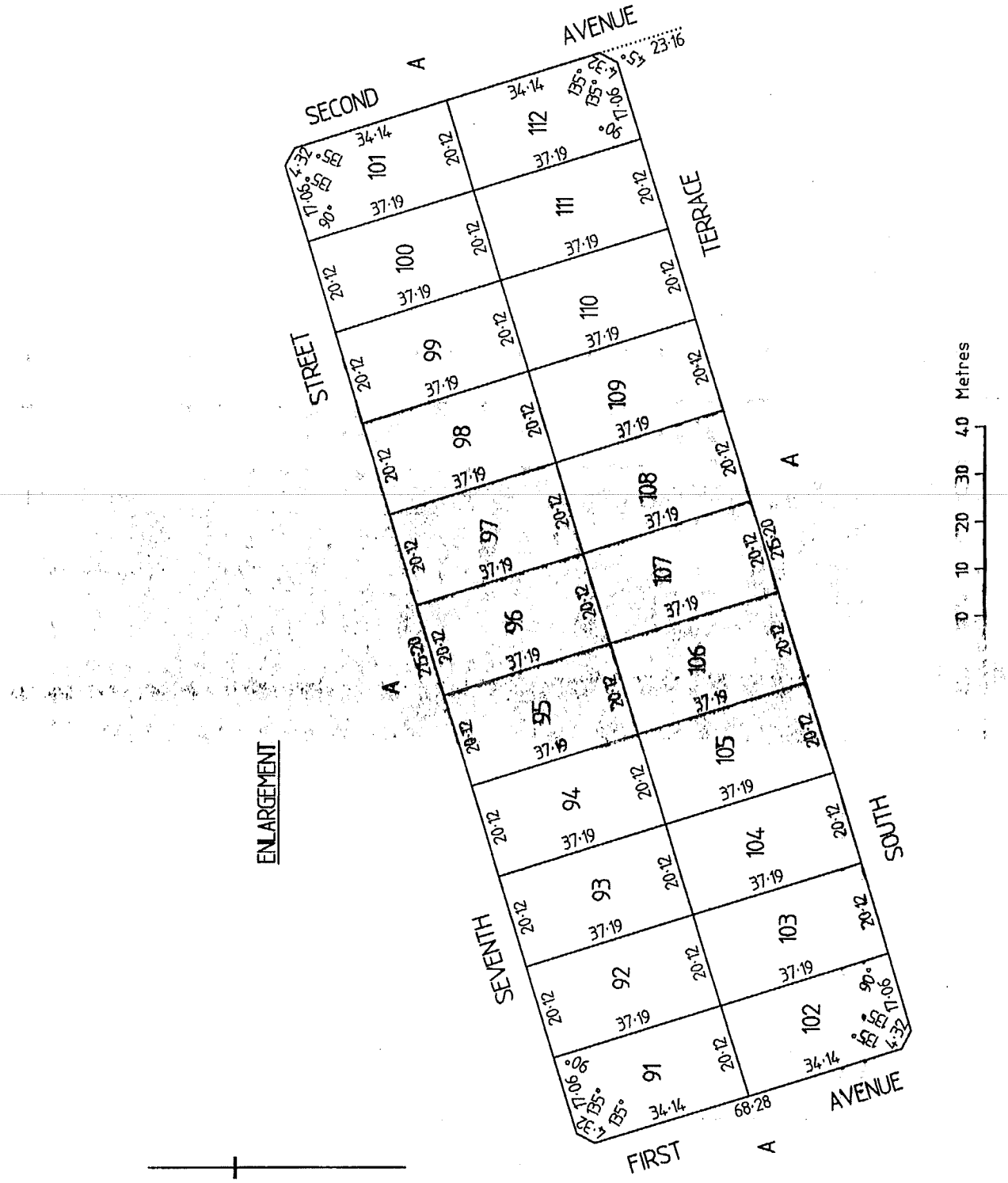

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Registrar-General

Certificate of Title - Volume 5457 Folio 897

REAL PROPERTY ACT, 1886
South Australia

Parent Title(s) CT 2756/187

Dealing(s) Creating Title CONVERTED TITLE

Title Issued 14/10/1997

Edition 6

Edition Issued 25/06/2008

Estate Type

FEE SIMPLE

Registered Proprietor

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FLINDERS LABUAN (NO.2) LTD. (ACN: 094 284 769)
OF C/- LEVEL 22/307 QUEEN STREET BRISBANE QLD 4000
1 / 4 SHARE

Description of Land

ALLOTMENT 91 FILED PLAN 207463
IN THE AREA NAMED COPLEY
OUT OF HUNDREDS (COPLEY)

Easements

NIL

Schedule of Dealings

NIL

Notations

Dealings Affecting Title

NIL

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Priority Notices

NIL

Notations on Plan

NIL

Registrar-General's Notes

NIL

Administrative Interests

NIL

* Denotes the dealing has been re-lodged.

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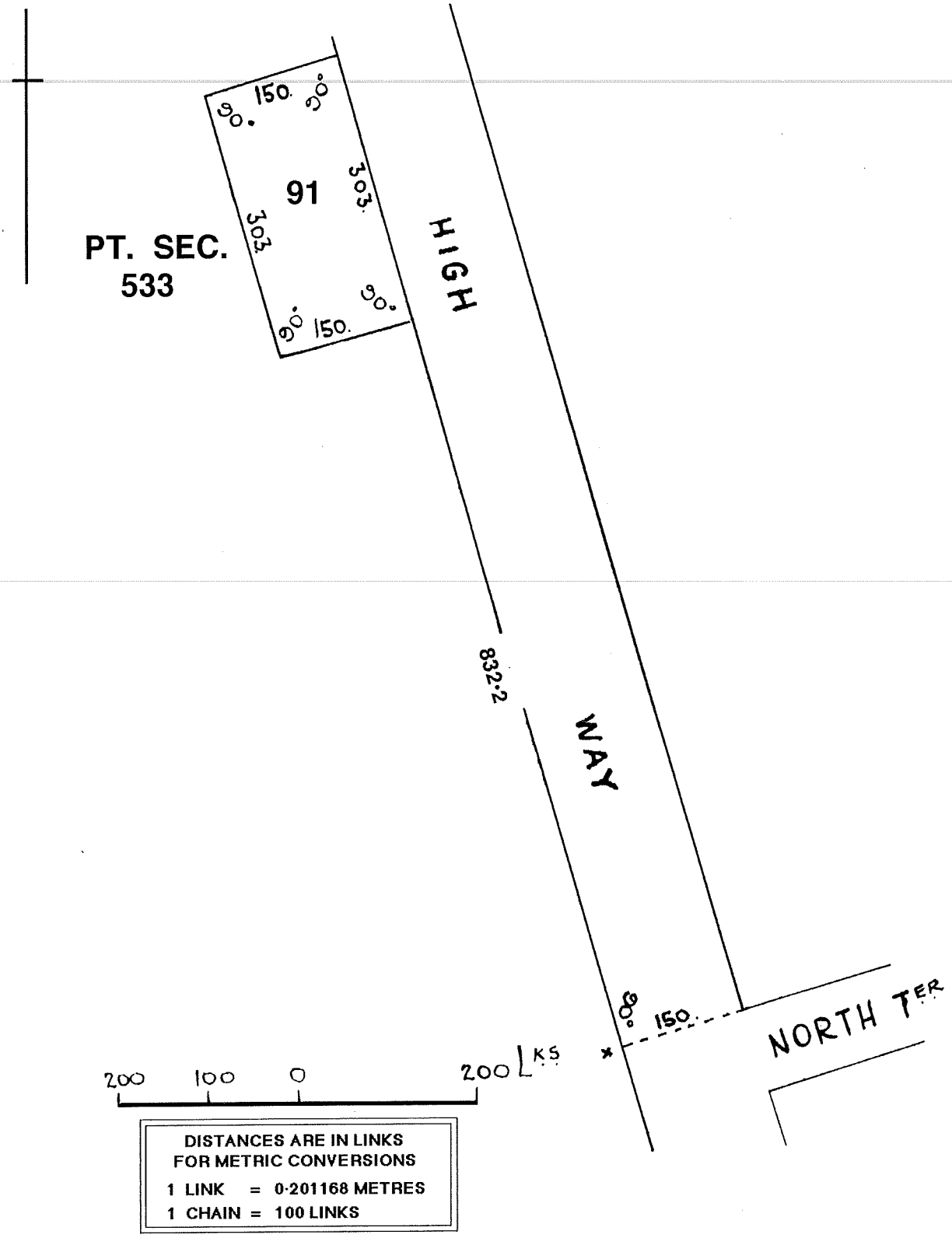
THIS PLAN IS SCANNED FOR CERTIFICATE OF TITLE 2756/187



DISTANCES ARE IN LINKS
FOR METRIC CONVERSIONS
1 LINK = 0·201168 METRES
1 CHAIN = 100 LINKS

NOTE: SUBJECT TO ALL LAWFULLY EXISTING PLANS OF DIVISION

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S0004

LANDS TITLES REGISTRATION OFFICE

SOUTH AUSTRALIA

FORM APPROVED BY THE REGISTRAR-GENERAL

9243176

Series No.	Prefix
12	AL

BELOW THIS LINE FOR AGENT USE ONLY

CERTIFIED CORRECT FOR THE PURPOSES OF THE CROWN LANDS ACT 1929

REGISTERED CONVEYANCER

R.J. GAMBLE

AGENT CODE

Lodged by:)
) CHIEF DOCUMENTARY OFFICER
) CROWN TENURE UNIT LTAB
Correction to:) BOX 52

TITLES, CROWN LEASES, DECLARATIONS ETC. LODGED WITH INSTRUMENT (TO BE FILLED IN BY PERSON LODGING)

1. CL 7067/36
2.
3.
4.
5.

Assessor

~~PLEASE ISSUE NEW CERTIFICATE OF TITLES AS FOLLOWS~~

1. ~~Lands Titl 11:30 20/12/01 129900~~
2. REGISTRATION FEE $87.00
3.

BELOW THIS LINE FOR OFFICE USE ONLY

Date: 20 DEC 2001	Time: 11.2(	
FEES		
R.G.O.	POSTAGE	NEW C.T.
87		

CORRECTION	PASSED
	.B

REGISTERED 21 OCT 2002

REGISTRAR-GENERAL

DELIVERY INSTRUCTIONS (Agent to complete)
PLEASE DELIVER THE FOLLOWING ITEM(S) TO THE UNDERMENTIONED AGENT(S)

ITEM(S)	AGENT CODE

FLI.525.166

CERTIFICATE OF ALTERATION

(Pursuant to Section 35(1) of the Crown Lands Act 1929)

CROWN RECORD(S)/CROWN LEASE(S) AFFECTED

The whole of the land comprised in Perpetual Lease No.18578
Registered in the Crown Lease Register Book Volume 1067 Folio 36

LAND DESCRIPTION OF PARCEL BEING MERGED/ADDED

NOT APPLICABLE

APPLICANT **MINISTER FOR ENVIRONMENT AND HERITAGE**

DELETE WHICHEVER IS INAPPLICABLE

~~(a) Hereby certifies that the said land having been allotted on recommendation of the Land Board to the Lessee(s) is hereby included in the abovementioned Crown Lease.~~

(b) Hereby on recommendation of the Land Board authorises the following alterations:

ALTERATION TO LEASE

The terms and conditions of the lease are amended as per the attached document.

EXECUTION

The Common Seal of: MINISTER FOR ENVIRONMENT AND HERITAGE was affixed hereto this 17th day of December 2001 by the authority of the Minister in the presence of :

MINISTER FOR ENVIRONMENT AND HERITAGE
COMMON SEAL
SOUTH AUSTRALIA

.....

TOTHE REGISTRAR-GENERAL
ADELAIDE

DEH 14/0202
MWOP18578.REDCA

FLI.525.167

South Australia
Perpetual Crown Lease
No. 18578

Governor of South Australia as lessor

Electricity Trust of South Australia as lessee

525481

FLI.525.168

Perpetual Lease No. 18578

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FLI.525.170

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Recital:

I LIEUTENANT-GENERAL SIR CHARLES WILLOUGHBY MOKE NORRIS, GOVERNOR in and over the State of South Australia and its dependencies in the Commonwealth of Australia (hereinafter with my successors in office designated by the term the *Lessor*), acting pursuant to the powers conferred upon me by section 43g of the Electricity Trust of South Australia Act, 1946, and for and on behalf of His Majesty the King DO HEREBY LEASE to THE ELECTRICITY TRUST OF SOUTH AUSTRALIA, a body corporate incorporated under the said Electricity Trust of South Australia Act, 1946, and having its office at North Terrace, Adelaide in the said State (hereinafter designated by the term the *Lessee*) ALL THAT land containing one hundred and seventy two and one half acres or thereabouts and being Section numbered 320 North out of Hundreds out of Counties as the same is delineated in the public maps deposited in the Land Office in the City of Adelaide together with all the seams, beds and deposits of coal as well opened as unopened lying within and under the said lands (the said lands and said seams, beds and deposits of coal being hereinafter designated by the term the *Land*) TO BE HELD in perpetuity at the Rent and subject to the covenants and conditions set out below.

1. Definitions and Interpretation

1.1 Definitions

The following definitions apply unless the context requires otherwise.

Aboriginal Heritage Law means a law regulating or otherwise relating to the protection of matters of Aboriginal cultural heritage significance including, without limitation, the Aboriginal and Torres Strait Islander Heritage Protection Act 1984 (Cth) and the Aboriginal Heritage Act 1988 (SA).

Aboriginal Item means any object, remains or site which is protected under any Aboriginal Heritage Law.

Authorisation includes:

(a) any consent, authorisation, registration, filing, lodgement, agreement, notarisation, certificate, permission, licence, approval, authority or exemption from, by or with a Government Agency; or

(b) in relation to anything which will be fully or partly prohibited or restricted by law if a Government Agency intervenes or acts in any way within a specified period after lodgement, filing, registration or notification, the expiry of that period without intervention or action.

Authorised Officer in relation to a party to this Lease means any person from time to time nominated as an Authorised Officer by the party by a notice to the other party accompanied by certified copies of signatures of all new persons so appointed.

Business Day means a weekday on which banks are open for business in South Australia.

Chief Inspector of Mines means the Chief Inspector of Mines (or equivalent person or entity or delegate of any of them) appointed for the time being under the Mines and Works Inspection Act.

Completion has the meaning given in the Flinders Power Sale Agreement.

Completion Date has the meaning given in the Flinders Power Sale Agreement.

Crown means the Crown in right of the State of South Australia and includes any agency, instrumentality or emanation of it.

Determination means any notice, order, judgement or declaration issued or made by any Judicial Body that Native Title exists.

Development Programme means the development programme or programmes for, among other things, the carrying on of Mining Operations on, and/or the rehabilitation of, the Land as approved from time to time by the Chief Inspector of Mines.

Director of Mines means the Director of Mines (or equivalent person or entity or delegate of any of them) appointed for the time being under the Mining Act.

External Administration Event means:

(a) an administrator of the Lessee is appointed under the Corporations Law (or a similar officer is appointed under the law of South Australia or of another jurisdiction) and is not removed within 45 days following the making of the appointment; or

(b) a receiver, receiver and manager, administrative receiver or similar officer is appointed (either under the law of South Australia or of another jurisdiction) to all or substantially all of the assets and undertaking of the Lessee and is not removed within 45 days following the making of the appointment.

Flinders Power Sale Agreement means the Flinders Power Generation Business Sale Agreement dated [#]August 2000 made between (among others) the Lessee and the Treasurer.

Force Majeure Event means:

(a) any event (other than a change of law or the application or operation of a law) which is beyond the reasonable control of the Lessee and which bona fide prevents the Lessee from performing an obligation under this Lease, excluding:

  (i) an obligation to pay Rent or any other money as required under this Lease; and

  (ii) an obligation under clause 9,

  where that event could not have been prevented, overcome or remedied by the exercise of a standard of care and diligence consistent with that of a prudent person undertaking the obligation, including the expenditure of all reasonable sums of money; or

(b) any change to legislation enacted by the Parliament of South Australia or the Commonwealth of Australia or any change to any Statutory Instrument made thereunder which has the effect of either:

  (i) prohibiting the doing of some act or thing; or

  (ii) requiring the doing, cessation or omission of some act or thing,

where compliance with that changed legislation or Statutory Instrument would prevent the Lessee from performing any obligation under this Lease.

Generator Sub-lease has the meaning given in the Northern Generating Plant Lease.

GLC means Generation Lessor Corporation, a subsidiary of the Treasurer established under the Public Corporations (Generation Lessor Corporation) Regulations 1999 (SA).

Government Agency means any government or any governmental, semi-governmental, local government, administrative, quasi-judicial or judicial entity or authority and includes a person or entity exercising powers under the Regulatory Regime. It also includes any self regulatory organisation established under statute or any stock exchange.

GST means the goods and services tax, as governed by A New Tax System (Goods and Services Tax) Act 1999 (Cth) and related legislation.

Improvements means all improvements that are deemed to be included in the Land under clause 6.3.

Independent Expert means a person appointed to determine the matters referred to him or her in accordance with clause 21.

Insolvency Event means, except for the purpose of a solvent reconstruction or amalgamation previously approved by the Lessor, an order is made by a court that the Lessee be wound up and that order is not overturned, quashed or permanently stayed within 14 days following the making of the order.

Judicial Body means any judicial or quasi-judicial body or tribunal.

Land has the meaning given in the Recital.

Lease End Date means the date on which this Lease comes to an end for any reason (including as a result of any surrender of this Lease by the Lessee) or the date on which this Lease is transferred to GLC or its nominee in accordance with clause 12, 13 or 14 (whichever occurs first).

Lease End Obligations means the obligations of the Lessee set out in clause 16.

Leigh Creek Line has the meaning given in the Leigh Creek Railways Sub-lease.

Leigh Creek Railways Sub-lease means the sub-lease of the Leigh Creek Line dated [*] September 2000 made between (among others) the Lessee and GLC pursuant to the Leigh Creek Sale/Lease Agreement.

Leigh Creek Sale/Lease Agreement means the Sale/Lease Agreement pursuant to which the Treasurer has granted to the Lessee the lease of the Leigh Creek Line and the lease of the Township.

Lessee has the meaning given in the Recital.

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Lessor has the meaning given in the Recital.

Linked Leases means this Lease, the Other Perpetual Leases, the Northern Generating Plant Lease, the Generator Sub-lease, the Unit 1 Boiler Sub-lease, the Unit 2 Boiler Sub-lease, the Northern Land Lease, the Leigh Creek Railways

Sub-lease, the Playford B Generating Plant Lease, the Playford B Land Lease and the Township Lease.

Loss means any and all losses (including loss of profit and loss of expected profit), actions, liabilities, damages, costs, expenses, diminutions in value or deficiencies of any kind or character (whether consequential or otherwise) including all interest and other amounts payable to third parties, all liabilities on account of taxes and all legal (on a full indemnity basis) and other expenses reasonably incurred in connection with investigating or defending any claims or actions, whether or not resulting in any liability and all amounts paid in settlement of claims or actions.

Mines and Works Inspection Act means the Mines and Works Inspection Act 1920 (SA).

Mining Act means the Mining Act 1971 (SA).

Mining Operations has the meaning given in clause 5.1(a).

Native Title has the meaning given in the NTA.

Northern Generating Plant means the Generating Plant as that term is defined in the Northern Generating Plant Lease.

Northern Generating Plant Lease means the lease of the Northern Generating Plant from GLC to the Lessee granted by the Treasurer on [*] September 2000 pursuant to the Northern Sale/Lease Agreement.

Northern Land has the meaning given in the Northern Land Lease.

Northern Land Lease means the lease of the land on which the Northern Generating Plant (among other things) is situated from GLC to the Lessee granted by the Treasurer on [ ] September 2000 pursuant to the Northern Sale/Lease Agreement.

Northern Sale/Lease Agreement has the meaning given in the Northern Generating Plant Lease.

NTA means the Native Title Act 1993 (Cth).

Other Perpetual Leases means Perpetual Leases No. 19393 (Register Book Volume 1234 Folio 37), No.20311 (Register Book Volume 1589 Folio 2) and No.20239 (Register Book Volume 1545 Folio 20) granted by the Lessor to the Lessee pursuant to Section 43g of the Electricity Trust of South Australia Act 1946 (SA) as modified under the Flinders Power Sale Agreement pursuant to sections 14(8) and 14(9) of the Restructuring and Disposal Act.

Overdue Rate on any day means 2% per annum plus the arithmetic mean of the mid rates shown at or about 10.30am (Adelaide time) on the Reuters BBSW page (or any page or service which replaces it) for bills of exchange with a tenor of 90 days on that day.

Permitted Lien means:

(a) a repairer's lien arising in the ordinary course of business; or

(b) a lien or charge which arises by operation of law,

which, in either case, relates to a payment obligation that is:

(c) not yet due for payment; or

(d) due for payment but being contested in good faith.

Permitted Security Interest means:

(a) a Permitted Lien; and

(b) any other Security Interest permitted under clause 27.1.

Playford B Generating Plant means the Generating Plant as that term is defined in the Playford B Generating Plant Lease.

Playford B Generating Plant Lease means the lease of the Playford B Generating Plant from GLC to the Lessee granted by the Treasurer on [#] September 2000 pursuant to the Playford B Sale/Lease Agreement.

Playford B Land has the meaning given in the Playford B Land Lease.

Playford B Land Lease means the lease of the land on which the Playford B Generating Plant (among other things) is situated from GLC to the Lessee granted by the Treasurer on [*] September 2000 pursuant to the Playford B Sale/Lease Agreement.

Playford B Sale/Lease Agreement has the meaning given in the Playford B Generating Plant Lease.

Registered Native Title Body Corporate has the meaning given in the NTA.

Regulatory Regime means a scheme established to regulate the conduct of the mining industry in South Australia and is constituted at the Completion Date by the Mining Act, the Mines and Works Inspection Act and the Environment Protection Act 1993 (SA) and the Statutory Instruments and licences made and issued thereunder.

Rent means:

(a) for the period commencing 1 January 1949 to the Completion Date, an annual amount of $2.00; and

(b) from the Completion Date until the Lease End Date, $0.25.

Representative Aboriginal/Torres Strait Islander Body has the meaning given in the NTA.

Reserved Rights means all rights of any nature whatever in respect of all gold, silver, copper, tin and other metals, all ores and other substances containing metals, all minerals, all gems and precious stones, and all mineral oils upon in or under the Land (other than any seams, beds or deposits of coal upon in or under the Land) which are reserved to His Majesty the King, His heirs and successors and all persons lawfully claiming under or authorised by Him or them.

Restructuring and Disposal Act means the Electricity Corporations (Restructuring and Disposal) Act 1999 (SA).

Sale/Lease Agreement has the same meaning as in section 13 of the Restructuring and Disposal Act.

Security Interest means any mortgage, pledge, lien, charge, encumbrance or any security or preferential interest or arrangement of any kind. It includes:

(a) anything which gives a creditor priority to other creditors with respect to any asset; and

(b) retention of title other than in the ordinary course of day-to-day trading and a deposit of money by way of security but it excludes a charge or lien arising in favour of a Government Agency by operation of statute unless there is a default in payment of moneys secured by that charge or lien.

State NTA means the Native Title (South Australia) Act 1994 (SA).

Statutory Instrument has the same meaning as in the Acts Interpretation Act 1915 (SA).

Tax includes any tax, levy, impost, deduction, charge, rate, duty, compulsory loan or withholding which is levied or imposed by a Government Agency, and any related interest, penalty, charge, fee or other amount.

Term means, subject to transfer of this Lease to GLC or its nominee in accordance with clauses 12, 13 or 14 or surrender in accordance with this Lease, in perpetuity.

Termination by GLC Event has the meaning given in the Northern Generating Plant Lease.

Termination by Lessor Event has the meaning given in clause 13.1.

Township has the meaning given in the Township Lease.

Township Lease means the lease of the Township from GLC to the Lessee granted by the Treasurer on [ ] September 2000 pursuant to the Leigh Creek Sale/Lease Agreement.

Track Infrastructure has the meaning given in the Leigh Creek Railways Sub-lease.

Treasurer means the Treasurer of the State of South Australia acting as a body corporate.

Unit 1 Boiler Sub-lease has the meaning given in the Northern Generating Plant Lease.

Unit 2 Boiler Sub-lease has the meaning given in the Northern Generating Plant Lease.

1.2 Interpretation

Headings are for convenience only and do not affect interpretation. The following rules apply unless the context requires otherwise.

(a) The singular includes the plural and the converse.

(b) A gender includes all genders.

(c) Where a word or phrase is defined, its other grammatical forms have a corresponding meaning.

(d) A reference to a person, corporation, trust, partnership, unincorporated body or other entity includes any of them.

(e) A reference to a clause, annexure or schedule is a reference to a clause of, or annexure or schedule to, this Lease.

(f) A reference to an agreement or document (including, without limitation, any reference to this Lease) is to the agreement or document as

amended, varied, supplemented, novated or replaced, except to the extent prohibited by this Lease or that other agreement or document.

(g) A reference to a party includes the party's successors and permitted substitutes or assigns.

(h) A reference to any Act or Statutory Instrument or particular provision of an Act or Statutory Instrument is taken to include:

(i) all regulations, orders or instruments issued under the Act, Statutory Instrument or provision;

(ii) any modification, consolidation, amendment, re-enactment, replacement or codification of the Act or Statutory Instrument or provision; and

(iii) any substituted Act or Statutory Instrument or substituted provision.

(i) A reference to dollars and $ is a reference to Australian currency.

(j) A reference to ***writing*** includes a facsimile transmission and any means of reproducing words in a tangible and permanently visible form.

(k) A reference to ***conduct*** includes any omission and any statement or undertaking, whether or not in writing.

(l) Mentioning anything after ***include***, ***includes*** or ***including*** does not limit what else might be included.

(m) The Recital is an operative provision in this Lease.

1.3 Obligations of partners

(a) This clause applies where the Lessee is a partnership.

(b) Except where expressly stated otherwise, the obligations, undertakings, representations, warranties, indemnities and liabilities of the Lessee under this Lease bind all partners jointly and severally. Except where expressly stated otherwise, all references to the "Lessee" are to the partners jointly in partnership and to each partner severally. Any notice by or to, or act of, any one or more of them binds all of them.

(c) This Lease will continue to bind the partners jointly and severally notwithstanding the dissolution, or any change at any time in the constitution, of the Lessee, or any change at any time in the law regarding partnerships, and will continue to bind a partner even if it ceases to be a partner.

2. Lease

2.1 Grant

The Land is leased by the Lessor to the Lessee for the Term on the terms of this Lease and the Reserved Rights are reserved as set out in this Lease.

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2.2 Registration

(a) The Lessor and the Lessee must co-operate with each other to enable the registration at the Lands Titles Office of any amendments to this Lease which are registrable.

(b) The Lessor must, at the Lessee's written request, produce the duplicate Crown Lease for the Land at the Land Titles Office to enable the Lessee to register any Security Interest.

(c) Any costs which may be necessarily incurred:

(i) in the production of such duplicate Crown Lease; or

(ii) any costs which may be necessarily incurred in connection with the registration of amendments to this Lease,

will be borne by the Lessee.

3. Rent

Rent under this Lease will, if demanded by the Lessor, be payable by the Lessee to the Lessor:

(a) for the period commencing 1 January 1949 to the Completion Date, by way of annual amounts, payable in advance on 1 January in each year commencing on 1 January 1949 or, if that day is not a Business Day, the next Business Day; and

(b) from the Completion Date until the Lease End Date, on the Completion Date.

4. No Abatement

Despite any law or rule to the contrary, the obligation of the Lessee to pay Rent will not abate for any reason.

5. Use and Maintenance

5.1 Purpose

(a) To the extent of the rights conferred upon the Lessee under this Lease and subject to clause 5.1(b), the Lessee may only:

(i) use the Land or any part of it; or

(ii) permit the Land or any part of it to be used,

for the following purposes (the *Mining Operations*):

(iii) to mine (whether by open or closed working) any seams of coal, vested in the Lessor or the Lessee, at or near Leigh Creek;

(iv) to treat, grade or otherwise prepare for sale, and use, sell or otherwise dispose of any coal so mined;

(v) to do any of the following things which the Lessee considers it necessary or convenient to do for the purpose of carrying the provisions of this Lease into effect:

(A) erect houses, buildings and other improvements, and grant leases or tenancies of, or rights to use or occupy, any land, house or building belonging to the Lessee;

(B) construct, repair and maintain streets and roads;

(C) plant, develop, improve and maintain public parks, squares, recreation grounds and other places of public resort;

(D) construct, acquire, maintain and manage sewerage systems and provide sewers and drainage for any premises;

(E) construct, acquire, maintain and manage waterworks, buy water, and sell and supply water;

(F) construct any works;

(G) make reasonable charges for any commodity or service sold or supplied by the Lessee;

(H) do or execute any other act, matter or thing, or enter into and carry out any transaction; and

(vi) from any main used by the Lessee, to supply water to persons at Leigh Creek and to sell and supply water to any other persons who can be conveniently supplied with water from that main.

(b) The Lessee must not permit any house, building, shop or store at any time to be erected or used on the Land as a public supply of intoxicating liquors without the prior written consent of the Lessor.

5.2 Use and Maintenance

(a) The Lessee must use and maintain the Land:

(i) in accordance with all applicable laws the breach of which would result in the Lessor or the Crown suffering or incurring material civil or criminal liability for which the Lessor or the Crown is not fully insured either under an insurance policy required to be taken out under clause 9.1(a) or under another insurance policy which the Lessee has notified the Lessor it has taken out and of which the Lessor and the Crown have the benefit; and

(ii) in a manner and to the extent necessary to comply with the requirements specified in any insurance policy relating to the Land required to be held under this Lease.

(b) The Lessee must ensure that Mining Operations on the Land are carried out:

(i) in an orderly, workmanlike and skilful manner; and

(ii) in accordance with the Development Programme.

(c) The Lessee must pay all costs, expenses, Taxes, fees and charges in connection with the use and maintenance of the Land, but not any income tax, fringe benefits tax, capital gains tax or any similar Tax payable by the Lessor on its overall net income or in relation to its own employees.

5.3 Destruction of Certain Animals and Plants

At all times between the Completion Date and the date on which this Lease is transferred to GLC or its nominee in accordance with clauses 12, 13 or 14 or surrendered, the Lessee must destroy on the Land and will to the satisfaction of the Lessor keep the Land free from:

(a) all classes of animals within any control area for that class to which the provisions of section 47 of the Animal and Plant Control (Agricultural Protection and Other Purposes) Act 1986 (SA) apply; and

(b) all classes of plants within any control area for that class to which the provisions of section 57 of the Animal and Plant Control (Agricultural Protection and Other Purposes) Act 1986 (SA) apply.

5.4 Information

(a) The Lessee must provide the Lessor with information on the condition of any part of the Land within a reasonable period after any reasonable request by the Lessor.

(b) The Lessor must not, unless the circumstances require, request information under clause 5.4(a) more frequently than 6 monthly.

5.5 Plans, Records and Returns

The Lessee must:

(a) make and keep proper and accurate plans and records of:

(i) all works carried out by it on the Land; and

(ii) all leases, tenancies or rights granted by it to use and occupy the Land (or any part of it) or any house or building on the Land (or any part of it);

(b) make and keep records and samples as prescribed in regulation 97 of the Mining Regulations or as required by a notice to the Lessee from any Government Agency;

(c) furnish returns to the Director of Mines as prescribed by section 76(1) of the Mining Act which must include the information required pursuant to any determination for the time being in force made by the Minister responsible for the administration of the Mining Act (or his delegate) pursuant to section 17(8) of the Mining Act; and

(d) submit to the Director of Mines from time to time at the Director's request a current plan of survey of the Land in the form reasonably required by the Director.

5.6 Access rights and Inspection

(a) The Lessee must permit the Lessor and its authorised representatives, if the Lessor requires, at reasonable times and having given the Lessee reasonable notice, to enter any part of the Land:

(i) to exercise the Lessor's rights, or carry out any of the Lessor's obligations, under this Lease; or

(ii) to determine, at the Lessor's expense, whether the Lessee is complying with its obligations under this Lease.

(b) When exercising its rights under clause 5.6(a), the Lessor and its authorised representatives:

(i) must not interfere with the operations or business of the Lessee;

(ii) will be subject to the same limitations upon and conditions of access as apply to any third party visitors to the site; and

(iii) must comply with all safety requirements and other reasonable directions of the Lessee in relation to such access.

(c) The Lessee must:

(i) permit the Lessor and its authorised representatives, if the Lessor requires, at reasonable times and having given the Lessee reasonable notice, access to all information made and kept by the Lessee under clause 5.5; and

(ii) make no charge for access to such information, records, samples, returns and plans but the Lessee is entitled to charge a fee to cover costs involved in supplying any other information under clause 5.4.

(d) The Lessor must not, unless the circumstances require, require inspections under clause 5.6(a) more frequently than 6 monthly.

5.7 Laws and Regulatory Compliance

The Lessee must comply with all laws and regulatory requirements (including all Authorisations) applicable to the use, possession of or access to the Land and the exercise of any rights or the discharge of any obligations arising under this Lease.

5.8 Acting Through Third Parties

The Lessee may discharge its obligations through the actions of employees, contractors and agents but the Lessee will be liable for the acts or omissions of such employees, contractors and agents as if they were the acts or omissions of the Lessee.

6. Title

6.1 Lessor's title

(a) The Lessee acknowledges that:

(i) the Land is and remains the property of the Lessor; and

(ii) the Lessee has no rights in relation to the Land other than the rights under this Lease and the rights conferred on the Lessee by applicable laws or the Regulatory Regime.

(b) The Lessor must, if requested by the Lessee and at the expense and risk of the Lessee, exercise its rights and entitlements in or arising from the Land to assist the Lessee in respect of any matter relating to the Land where:

(i) the Lessee is unable to act itself by reason of the Lessor's interest in the Land;

(ii) the matter to be undertaken by the Lessee is one permitted by the terms of this Lease; and

(iii) in doing so:

(A) the Lessor assumes or incurs no obligations or present or contingent liabilities to a third party (including the Lessee) for which the Lessor is not fully insured either under an insurance policy required to be taken out under clause 9.1(a) or under another insurance policy which the Lessee has notified the Lessor it has taken out and of which the Lessor has the benefit; or

(B) the Lessor is, to the reasonable satisfaction of the Lessor, adequately indemnified by the Lessee in respect of such obligations and liabilities and the liability of the Lessee under such indemnity is the subject of adequate security in favour of the Lessor.

6.2 Protection of title

The Lessee must, to the extent practicable having regard to its legal capacity and its obligations under this Lease:

(a) safeguard and protect the property, title and rights of the Lessor in and to the Land; and

(b) not do or permit to be done any act, omission or thing which might jeopardise the property, title or rights of the Lessor in or to the Land.

6.3 Fixtures

If any improvements to the Land (whether structural and/or permanent or not, existing at the date of commencement of this Lease or not or erected by the Lessee or not) are fixtures to the Land then:

(a) for the purposes of this Lease, a reference to the Land will be taken to include a reference to such improvements; and

(b) property in those improvements vests in the Lessor upon erection and without compensation to the Lessee or any other person.

6.4 Native Title Claims

Unless this Lease has been registered at the Lands Titles Office, the Lessor must notify the Lessee in writing of any Native Title claims which are lodged over any of the Land after the Completion Date, within 1 month of the Lessor receiving

notice of such claim pursuant to section 66(3) of the NTA or section 16(1)(b) of the State NTA.

6.5 Determination of Native Title

(a) As at the Completion Date, the Crown does not acknowledge that any Native Title exists in any of the Land.

(b) If any claim is made that Native Title exists in any of the Land, the Crown will have the right, by written notice given to the Lessee, to represent the Lessee and, as the representative of the Lessor or both the Lessor and the Lessee as the case requires, to have the exclusive conduct of any negotiations or proceedings relevant to any claim of Native Title over any of the Land.

(c) The right of the Crown to represent the Lessee under clause 6.5(b):

(i) includes the right to represent the Lessee in any proceedings in the nature of any Determination application or other claim that Native Title exists or existed over the whole or any part of the Land and in any negotiations in connection with those proceedings;

(ii) does not include the right to represent the Lessee in any proceedings brought or made against the Lessee relating solely to any claim for compensation as referred to in clauses 6.5(d)(ii) or 6.5(d)(iii) or in any negotiations in connection with those proceedings;

(iii) includes the right to make admissions, concessions or agreements prejudicial to the interests of the Lessee in relation to the Land:

(A) if the Crown has obtained the prior consent of the Lessee to the relevant admission, concession or agreement, which consent must not be unreasonably withheld;

(B) if the admission, concession or agreement would not materially adversely affect the carrying on of Mining Operations on and from the Land (including by having regard to anything that the Crown offers to the Lessee to do or to refrain from doing) and the Crown has consulted with the Lessee regarding the relevant admission, concession or agreement; or

(C) otherwise than in the instances referred to in clauses 6.5(c)(iii)(A) and 6.5(c)(iii)(B), on the basis that the Crown will be responsible for any losses incurred by the Lessee to the extent caused directly as a result of the relevant admission, concession or agreement; and

(iv) does not include the right to represent the Lessee in any proceedings made or brought by or against the Lessee for injunctive relief or in any negotiations in connection with those proceedings except where those proceedings are made or brought in the course of any proceedings referred to in clause 6.5(c)(i).

(d) As between the Crown and the Lessee:

(i) subject to clause 6.5(d)(ii) the Crown, and not the Lessee, will be responsible for the payment of compensation and any other monies payable to the Native Title holders of, or Native Title claimants to, any of the Land as a result of:

(A) the transfer of this Lease to the Lessee pursuant to the Flinders Power Sale Agreement or the grant or exercise by the Lessee or anyone claiming through or under the Lessee of the rights conferred on the Lessee in respect of the Land pursuant to this Lease; or

(B) the use of the Land for the purposes of Mining Operations or any other use where that other use was being conducted at the Completion Date;

(ii) the Lessee, and not the Crown, will be responsible for the payment of compensation and any other monies payable as a result of any exercise of rights which constitutes a future act (as defined in the NTA) in respect of the Land which is attributable to the Lessee or anyone claiming through or under the Lessee and which takes place on or after the Completion Date; and

(iii) the Lessee, and not the Crown, will be responsible for the payment of compensation or any other monies so payable if the obligation to pay does not fall within clause 6.5(d)(i) and arises as a result of the use to which the Lessee or anyone claiming through or under the Lessee puts the Land or any act or omission of, or breach of this Lease by, the Lessee or anyone claiming through or under the Lessee.

(e) Except as otherwise required by law, the Crown must keep the Lessee informed of all material matters relevant to any negotiations or proceedings referred to in clause 6.5(b).

6.6 Artefacts and Aboriginal Items

(a) Any fossils, artefacts, historical coins or articles of historical value or antiquity and any remains or things of geological, historical or archaeological interest found or discovered on or under the surface of the Land (other than any Aboriginal Item) will be deemed to be the property of the Crown.

(b) In relation to any thing which is the subject of clause 6.6(a), the Lessee must do the following acts, matters or things:

(i) notify the Lessor immediately of any such discovery;

(ii) not do, or permit to be done, any act which may damage any such thing;

(iii) use its reasonable endeavours to prevent any such thing being removed from the Land;

(iv) at the Lessor's reasonable expense, carry out the Lessor's instructions or orders in respect of the excavation, removal, delivery up or disposal of any such thing; and

(v) permit the Lessor and any person authorised by the Lessor either to excavate, remove or dispose of any such thing or to watch, examine, manage or supervise any such excavations, disposals or removals.

(c) The Lessee must comply with the Aboriginal Heritage Law in relation to any Aboriginal Item on, under or comprising all or any part of the Land.

6.7 Caveats

(a) Subject to clause 6.7(b) and for so long as the lessor under this Lease is or forms part of the Crown, the Lessee must not lodge or cause to be lodged a caveat over the Land or any portion of the Land.

(b) If the Lessee reasonably considers that the Lessor has breached or may breach this Lease and that the Lessee's rights pursuant to this Lease may be adversely affected by that breach, then the Lessee may lodge a caveat over the Land, or any portion of the Land, to the extent necessary to protect a caveatable interest of the Lessee under or pursuant to this Lease which may be adversely affected by any such breach of the Lessor.

7. Easements and Reservation of Rights

7.1 Easements

(a) The Lessor may at any time on or after the Completion Date for the purpose of:

(i) installing, maintaining or repairing any service or utility to the Land; or

(ii) maintaining, operating, repairing, modifying, installing or replacing any infrastructure used to carry out any Mining Operations,

dedicate land to, or transfer, amend, grant or create or take the benefit of any easement or other similar right to or from, any person, or enter into any similar arrangement or agreement with:

(iii) any adjoining owner, lessee or occupier or other person who has an interest in any land (including the Land) other than any Native Title holder, Native Title claimant, Registered Native Title Body Corporate or Representative Aboriginal/Torres Strait Islander Body; or

(iv) any Government Agency (other than with respect to any Native Title rights and interests in relation to the Land),

as the Lessor thinks fit.

(b) When exercising its rights under clause 7.1(a), the Lessor must not materially interfere with:

(i) the carrying on of Mining Operations on the Land by the Lessee or anyone claiming through the Lessee; or

(ii) any improvements (including the Improvements) on the Land.

(c) The Lessee may, by notice in writing, request that the Lessor, at the Lessee's risk and expense, create or grant an easement or other right, or enter into an arrangement or agreement, in accordance with clause 7.1(a). Subject to clause 7.1(d), the Lessor must comply with that request.

(d) The Lessor is not obliged to create or grant an easement or other right, or enter into an arrangement or agreement, at the Lessee's request if:

(i) by doing so, the Lessor assumes or incurs obligations or present or contingent liabilities to a third party (including the Lessee) which are not, to the reasonable satisfaction of the Lessor, adequately indemnified by the Lessee. The liability of the Lessee under such indemnity must be the subject of adequate security in favour of the Lessor; or

(ii) the Lessor is of the view that the proposed creation or granting of the easement or other right, or the proposed arrangement or agreement, is not reasonably necessary for the purposes of the carrying on of Mining Operations on the Land or some aspect of Mining Operations.

(e) This Lease will be taken to be subject to any easement or other right that is created or granted pursuant to this clause 7.1.

7.2 Reservation of Rights

(a) The Lessor reserves, and this Lease is granted subject to, the Reserved Rights.

(b) The Lessor must not, and must ensure that persons authorised by the Lessor do not, carry out any activities in relation to any of the Reserved Rights in a manner that would materially interfere with the carrying on of Mining Operations on the Land by the Lessee or any person claiming through the Lessee.

8. Third Party Rights

The Lessee accepts this Lease subject to:

(a) any statutory or registered rights existing at the Completion Date;

(b) any easements or other similar rights created after the Completion Date in accordance with clause 7.1; and

(c) the Reserved Rights.

9. Insurance

9.1 Insurance Obligations

(a) Except as otherwise agreed by the Lessor, the Lessee must ensure that at all times between the Completion Date and the date on which this Lease is transferred to GLC or its nominee in accordance with clauses 12, 13 or 14 or surrendered:

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(i) all improvements (including the Improvements) on the Land are insured for reinstatement; and

(ii) there is taken out and kept in force other insurance that relates to the potential liability of the Lessor or the Lessee to third parties arising out of the use or possession of the Land,

in the manner and to the extent which a prudent lessee of the Land and a prudent lessor of the Land bound by the terms of this Lease would require, as agreed by the Lessor and the Lessee, or failing agreement, as determined by an Independent Expert.

(b) The Lessor and the Lessee acknowledge that schedule 7 to the Flinders Power Sale Agreement specifies the insurances which they agree will satisfy the requirements of clauses 9.1(a) and 9.2 until the date that a different requirement as to such insurances is agreed or determined under clause 9.1(a).

9.2 Conditions

The Lessee must ensure that each insurance policy required to be taken out under clause 9.1(a) (other than workers' compensation) is on terms and conditions reasonably satisfactory to the Lessor and, without limitation, the Lessor may require such an insurance policy to provide that:

(a) the Lessor and the Crown are each specified as an insured party;

(b) breach or non disclosure by one insured will not affect the cover of any other insured;

(c) the insurer waives all rights of subrogation in relation to claims between the insureds;

(d) the amount of any excess or deductible payable by an insured in respect of a claim will not exceed the amount determined by the Lessor as customary for similar policies;

(e) all claims for insurance premiums, levies, stamp duties, charges or commissions against the Lessor and the Crown are waived; and

(f) the insurer will not terminate the policy unless the relevant default or breach remains unremedied for at least 30 days after notice by the insurer to the Lessor specifying that default or breach.

9.3 Remedy for Default

If the Lessee fails to take out or to keep in force an insurance policy required to be taken out under clause 9.1(a) which complies with clause 9.2, the Lessor may do anything which it determines is advisable or necessary to take out or keep in force that policy or to take out a new policy that complies with clauses 9.1(a) and 9.2 at the cost of the Lessee and in the name of the Lessor and/or others (including the Lessee). The Lessor is not obliged to do anything under this clause 9.3.

9.4 Compliance and Enforcement

(a) The Lessee must:

(i) comply with the terms of each insurance policy required to be taken out under clause 9.1(a);

(ii) take all steps to claim, and to collect or recover, money due to it under or in respect of such an insurance policy; and

(iii) do everything (including providing documents, evidence and information) necessary or desirable in the opinion of the Lessor to enable the Lessor or the Crown to claim, and to collect or recover, money due to either of them under or in respect of such an insurance policy.

(b) The Lessor must do everything (including providing documents, evidence and information) necessary or desirable to enable the Lessee to claim, and to collect or recover, money due to it under or in respect of an insurance policy required to be taken out under clause 9.1(a).

9.5 Notice of Claims

The Lessee must notify the Lessor as soon as possible of:

(a) a cancellation of, a change in or a reduction in the coverage of, an insurance policy required to be taken out under clause 9.1(a);

(b) such an insurance policy becoming void or voidable; or

(c) any other material circumstance or correspondence relating to such an insurance policy.

9.6 Use of Insurance Proceeds

Except as otherwise agreed by the Lessor, the Lessee must:

(a) use the proceeds of the insurance policy required to be taken out under clause 9.1(a)(i) in reinstatement of so much of the improvements (including the Improvements) on the Land as will ensure that the Lessee complies with its obligations under this Lease except:

(i) to the extent that the Lessor and the Lessee agree, or failing agreement, an Independent Expert determines, that it is not economically viable for the Lessee to reinstate those improvements; or

(ii) if a lessor or lessee under any Other Perpetual Lease has served a valid notice under clause 12 of that Other Perpetual Lease to transfer that Other Perpetual Lease,

and, to the extent the insurance proceeds exceed the amount required to reinstate those improvements or are not required to be used to reinstate those improvements, the Lessee may retain those proceeds; and

(b) use the proceeds of all insurance policies required to be taken out under clause 9.1(a)(ii) and received by it to discharge the liability or make good the loss covered by the insurance policy.

9.7 Premiums

The Lessee must pay when due all premiums, commissions, levies, stamp duties, charges and other expenses necessary for taking out and keeping in force the

insurance policies required to be taken out under clause 9.1(a) (including a policy taken out under clause 9.3).

9.8 Insurers

The Lessee must take out each insurance policy required to be taken out under clause 9.1(a) with independent and reputable insurers reasonably acceptable to the Lessor.

9.9 Information

The Lessee must provide the Lessor with annual certificates of currency in respect of all insurance policies required to be taken out under clause 9.1(a) and, on reasonable request, other details on such insurance policies which the Lessor reasonably requires.

9.10 No prejudicial action

The Lessee must not do, permit, or omit to do, anything which may prejudice an insurance policy required to be taken out under clause 9.1(a).

10. Indemnities

10.1 General Indemnities

To the full extent permitted by law, the Lessee must, subject to clause 10.2, indemnify the Lessor and the Crown on demand against all Losses of the Lessor or the Crown:

(a) in either case, incurred in its capacity as a lessor of the Land under this Lease or an owner or previous owner or an occupier or previous occupier of the Land or an operator or previous operator of any Mining Operations, as the case may be;

(b) incurred or arising during the period from the Completion Date to the date on which all of the Lessee's Lease End Obligations have been discharged; and

(c) directly or indirectly relating to or arising out of the Land or any part of it, or as a result of acts or omissions of the Lessee, including by reason of or relating to:

(i) the possession, condition, use, maintenance or return of the Land or any part of it;

(ii) any damage to property or death of or injury to any person which may be or is alleged to be suffered or sustained in, on or in relation to the Land or any part of it;

(iii) all claims and demands made against the Lessor or the Crown by any third party in respect of the Land or any part of it, or the possession, condition, use, maintenance or return of the Land or any part of it, excluding any claim or demand:

(A) in relation to any past act, intermediate period act, previous exclusive possession act or previous non-exclusive possession act (all as defined in the NTA) in

respect of the Land or any part of it, or to which clause 6.5(d)(i) applies; or

(B) in relation to any future act (other than an intermediate period act) (both as defined in the NTA) in respect of the Land or any part of it and which is attributable to the Lessor or the Crown and took place prior to the Completion Date; or

(C) for the payment of compensation or other monies as referred to in clause 6.5(d)(i);

(iv) the occurrence of any Termination by Lessor Event;

(v) any breach of or non-compliance by the Lessee with any applicable law or regulatory requirement relating to the Land or any part of it or the possession, condition, use, maintenance or return of the Land or any part of it but excluding any breach of or non-compliance with the NTA or the State NTA relating to the Land arising prior to the Completion Date, or to which clause 6.5(d)(i) applies;

(vi) any other breach by the Lessee of its obligations under this Lease (including any of its Lease End Obligations),

except to the extent caused by or otherwise primarily a result of:

(d) a wilful act of the Lessor other than in the exercise of its rights or the performance in accordance with this Lease of its obligations under this Lease or the exercise of its rights or the performance of its obligations under any applicable law; or

(e) a breach by the Lessor of its obligations under this Lease.

10.2 Prior Events

Clause 10.1 does not apply to a Loss relating to or arising out of an event occurring prior to the Completion Date.

10.3 Claims

Where the Lessor or the Crown makes a claim under the indemnity provided to the Lessor and the Crown under clause 10.1 and:

(a) the Lessee has provided an unqualified acknowledgement that such indemnity applies to the claim; and

(b) the Lessee has provided security to the reasonable satisfaction of the Lessor as to any payment that may fall due under such an indemnity,

the Lessee will have the right, subject to the terms of any insurance policy which indemnifies in relation to that claim, by written notice to the Lessor to represent the Lessor or the Crown (as the case may be) in relation to the claim (at the expense and risk of the Lessee) and will have the exclusive conduct of any proceedings relevant to any claim referred to in clause 10.1. The Lessee must not make any admissions or concessions prejudicial to the interests of the Lessor or the Crown without the prior written approval of the Lessor, which must not be unreasonably withheld.

10.4 Release

The Lessee unconditionally and irrevocably releases the Lessor and the Crown from any liability which the Lessor or the Crown may have to the Lessee for any consequence arising from:

(a) the Lessee's use, possession of or access to the Land or any part of it;

(b) regulatory change in the electricity supply industry or that affects the coal mining industry; or

(c) the exercise of any rights by, or the performance in accordance with this Lease of any obligations of, the Lessor arising under this Lease.

10.5 Other Agreements

Nothing in this clause 10 has the effect of releasing the Lessor from any express liability that the Lessor may have to the Lessee under this Lease.

11. Exclusion of Warranties

11.1 Exclusion of warranties

(a) The Lessee acknowledges and agrees to the full extent permitted by law that the Lessee:

(i) has not relied in any way on the skill or judgment of the Lessor or the Crown as to the condition of the Land or the suitability or fitness of the Land or any part of it for the Lessee's or any purpose;

(ii) accepts the Land and each part of it in its condition, age, capacity, quality, dimensions, configuration, suitability, fitness, limitations and compliance with laws current at the Completion Date;

(iii) takes this Lease and the Land subject to any restrictions imposed by or under the provisions of all applicable laws. The Lessor and the Crown do not give any implied warranty as to any uses permitted on the Land or that any improvements (including the Improvements) have been made and maintained in compliance with all applicable laws; and

(iv) takes this Lease and the Land subject to and will not make any objection, requisition or claim for compensation against the Lessor or the Crown in respect of or arising out of:

(A) any encroachment by or on the Land;

(B) any breach of any statute, ordinance or regulation applicable to or affecting the Land;

(C) any outstanding or unsatisfied notice, order or requirement made by any Government Agency applicable to or in respect of Land; or

(D) any installation or services (including sewers, drains, pipes, cables and wires) which:

(1) are on or pass through or over the Land; or

(2) are used in common with any adjoining land or pass through any other land,

whether or not there are easements or rights in respect of such installations that affect or benefit the Land.

(b) The Lessee acknowledges and agrees to the full extent permitted by law that all conditions, warranties and representations relating to the Land (whether expressed, implied, statutory, collateral or otherwise) are excluded, and that the Lessee must accept the Land as it is with all faults and defects (if any).

11.2 Other Agreements

Nothing in this clause 11 has the effect of releasing the Lessor from any express liability that the Lessor may have to the Lessee under this Lease.

12. Transfer on Notice

(a) The Lessee may, and the Lessor may require the Lessee to, transfer this Lease to GLC or its nominee by giving 1 month's notice to the other at any time after:

(i) the Lessee and any person claiming through the Lessee have permanently ceased to carry on Mining Operations on both:

(A) the Land; and

(B) the land the subject of the Other Perpetual Leases; and

(ii) the Lessee has complied with the provisions of the Development Programme,

in which case the Lessee must transfer this Lease to GLC or its nominee, and the Lessor must procure that GLC or its nominee accepts that transfer, such transfer to take effect on the expiry of the 1 month period of notice.

(b) This Lease shall be transferred to GLC or its nominee if any Other Perpetual Lease is transferred to GLC or its nominee.

(c) On the transfer of this Lease pursuant to this clause 12, and except as otherwise expressly provided in this Lease, the Lessee is released from its obligations under this Lease except to the extent that the Lessee has not performed any obligations which it was required to perform on or prior to the date of the transfer of this Lease.

13. Transfer on Termination by Lessor Event

13.1 Termination by Lessor Event

Each of the following is a Termination by Lessor Event where it occurs after the Completion Date.

(a) (**Non-payment of Monies**) The Lessee does not, within a period of 45 days following delivery to the Lessee of a written demand from the Lessor requiring the Lessee to pay that amount, pay to the Lessor an amount which is due and payable to the Lessor under this Lease.

(b) (**Insolvency or External Administration Events**):

(i) An Insolvency Event occurs and the rights and obligations of the Lessee under this Lease have not, within 12 months following the date of occurrence of the Insolvency Event, been assigned or transferred to a person that is solvent.

(ii) An External Administration Event occurs and the rights and obligations of the Lessee under this Lease have not, within 18 months following the date of occurrence of the External Administration Event, been assigned or transferred to a person that is solvent.

(c) (**Unauthorised dealing**) Except with the prior consent of the Lessor or as expressly permitted under this Lease, the Lessee:

(i) sells, transfers or otherwise disposes of; or

(ii) creates or allows to exist a Security Interest (other than a Permitted Security Interest) over,

its interest in this Lease or all or part of the Land.

(d) (**Use and Maintenance**) Each of the following has occurred:

(i) the Lessee has committed a breach of any of its obligations under clauses 5.1, 5.2(a), 5.2(b), 5.3 or 5.5 or has failed to comply with the Development Programme;

(ii) the Lessor has notified the Lessee in writing that the breach referred to in clause 13.1(d)(i) has occurred and has provided details of the circumstances constituting that breach to the Lessee; and

(iii) the Lessee has not remedied or rectified the consequences of the breach (including by way of the payment or expenditure of all reasonable sums of money) within 3 months following the date of delivery of the notice under clause 13.1(d)(ii).

13.2 Transfer to GLC or its Nominee

(a) The Lessor is entitled to require the Lessee to transfer this Lease to GLC or its nominee while a Termination by Lessor Event subsists.

(b) A requirement to transfer under clause 13.2(a) must be made by delivery of a written notice to the Lessee which details the circumstances constituting the Termination by Lessor Event.

(c) The Lessee must transfer this Lease to GLC or its nominee on the date specified in the notice given pursuant to clause 13.2(b), and the Lessor must procure that GLC or its nominee accepts that transfer.

(d) On the transfer of this Lease pursuant to this clause 13.2, and except as otherwise expressly provided in this Lease, the Lessee is released from its obligations under this Lease except to the extent that the Lessee has not

performed any obligations which it was required to perform on or prior to the date of the transfer of this Lease.

13.3 Notification

The Lessee must promptly notify the Lessor in writing of the occurrence of any Termination by Lessor Event.

14. Other Transfer Events

14.1 Linked Leases to be Co-terminous

(a) This Lease will:

(i) be deemed to be transferred to the Lessor if any of the Other Perpetual Leases are transferred to the Lessor; or

(ii) be deemed to be surrendered if any of the Other Perpetual Leases are surrendered.

(b) If:

(i) the Lease End Date under the Northern Generating Plant Lease or the Northern Land Lease occurs as a result of a Termination by GLC Event under either of them; or

(ii) the Lease End Date under the Northern Generating Plant Lease occurs as a result of a termination under clauses 2.3(c), 15.4(f), 16.1(b)(i) or 33(a)(i) of the Northern Generating Plant Lease,

then the Lessee must transfer this Lease to GLC or its nominee, and the Lessor must procure that GLC or its nominee accepts that transfer, such transfer to take effect on the Lease End Date under the Northern Generating Plant Lease or the Northern Land Lease (as the case may be).

(c) If:

(i) the Lease End Date under any Linked Lease (other than the Other Perpetual Leases) occurs as a result of a Termination by Lessee Event under that Linked Lease; and

(ii) the lessee under each of the Linked Leases (other than this Lease or the Other Perpetual Leases) has elected by written notice to the relevant lessor to terminate all of those Linked Leases,

then the Lessee must transfer this Lease to GLC or its nominee, and the Lessor must procure that GLC or its nominee accepts that transfer, such transfer to take effect on the date that the notice referred to in clause 14.1(c)(ii) is given (or such later date as is specified in that notice).

14.2 Transfer following termination of other Linked Leases

(a) If this Lease is transferred in accordance with clause 14.1(b) then the rights, entitlements, duties and obligations of the Lessor and the Lessee under this Lease will be the same as if this Lease were transferred under clause 13;

(b) If this Lease is transferred in accordance with clause 14.1(c) then the Lessee may make no claim of any nature whatever against the Lessor arising from the transfer of this Lease.

14.3 Effect of Transfer

On the transfer of this Lease pursuant to this clause 14, and except as otherwise expressly provided in this Lease, the Lessee is released from its obligations under this Lease except to the extent that the Lessee has not performed any obligations which it was required to perform on or prior to the date of the transfer of this Lease.

15. No Termination or Surrender

Despite any law or rule to the contrary and except as otherwise agreed between the Lessor and the Lessee:

(a) neither the Lessor nor the Lessee may terminate or has any right to terminate or obtain any order with the effect of terminating this Lease;

(b) this Lease will not terminate, be frustrated (whether at common law or by statute), be repudiated or be taken to have been repudiated for any reason; and

(c) subject to clause 14.1(a) the Lessee may not surrender, and does not have any right to surrender or obtain any order with the effect of requiring the Lessor to accept a surrender of, this Lease.

16. Return of Land on Transfer, Expiry or Termination

16.1 Return

On and with effect from the Lease End Date, the Lessee must:

(a) return and surrender the Land to the Lessor or its nominee in a condition which complies with all laws applicable at that time and the Development Programme;

(b) provide the Lessor or its nominee with an indemnity and security acceptable to the Lessor in respect of any material litigation or similar proceedings pending with respect to all or part of the Land other than in respect of any such litigation or proceedings caused by or otherwise primarily as a result of anything referred to in clauses 10.1(d) or 10.1(e);

(c) pay all the costs and expenses of the Lessor or its nominee in relation to the return of the Land;

(d) procure the release and discharge of all Security Interests over all or any part of the Land (other than any Permitted Liens);

(e) within 2 months after the Lease End Date, remove from the Land all of the property of the Lessee or any person claiming through the Lessee. The Lessee must not, in any such removal, damage the Land or any improvements (including the Improvements) on the Land or other items of property. If the Lessee causes any such damage then the Lessee must

promptly repair that damage. If the Lessee fails to remove such property in accordance with this clause 16.1(e) then all the Lessee's right, title and interest in that property not removed will vest in the Lessor absolutely and the Lessor will not be liable in any way or manner to compensate the Lessee in respect of any such property. The Lessor will be entitled to recover from the Lessee any costs incurred in the removal and disposal of any property of the Lessee which the Lessor determines not to be of value to the Lessor;

(f) deliver to the Lessor or its nominee up to date, complete and accurate copies of all reports, documents, plans and specifications and all other materials that are required by applicable laws to be retained in respect of the Land or that relate to the ownership, use or maintenance of the Land; and

(g) use its best endeavours to procure the transfer to the Lessor or its nominee of such Authorisations relating to the Land as are capable of being transferred and, in respect of those which are not capable of being transferred, do all things reasonably necessary to assist the Lessor or its nominee in obtaining all other necessary Authorisations relating to the Land;

(h) except where the Lease End Date occurs as a result of the transfer of this Lease to GLC or its nominee in accordance with clause 12, clause 14.1(a)(i) (where this Lease is transferred to the Lessor as a result of the transfer to the Lessor of any Other Perpetual Lease under clause 12 of that Other Perpetual Lease) or clause 14.1(c) or as a result of surrender of this Lease:

(i) deliver to the Lessor or its nominee a certificate from 2 directors of the Lessee that as of the Lease End Date all services, facilities, agreements and other instruments necessary for the use and maintenance of the Land have been obtained or are readily commercially available on reasonable terms;

(ii) use its best endeavours to assign to the Lessor or its nominee or provide the benefit to the Lessor or its nominee of all services, facilities, agreements and other instruments referred to in clause 16.1(h)(i) which are not readily commercially available on reasonable terms; and

(iii) in so far as any confidential proprietary data information or technology of the Lessee or any person has become effectively integrated into the Improvements or any of the records, documents, instruments or systems used for the operation of Improvements (***confidential information***) the Lessee must, or must use its best endeavours to cause the relevant owner of such confidential information to, enter into such arrangements as are reasonable requested by the Lessor to permit the Lessor or its nominee to use and enjoy the benefits of such confidential information without being obliged to make any royalty or similar payment.

16.2 Condition

If the Lessee does not comply with any of its obligations under clause 16.1, the Lessor may take any action it considers necessary to ensure that the Lessee's obligations are fulfilled. The Lessor is appointed the attorney of the Lessee for this purpose. All costs and expenses of doing so must be paid by the Lessee on demand by the Lessor.

16.3 Actions during the Term

During the period from the Completion Date to the date on which this Lease is transferred to GLC or its nominee in accordance with clauses 12, 13 or 14 or surrendered, the Lessee must use its best endeavours to acquire intellectual property, goods and services of the type the subject of clause 16.1 on terms and conditions that will permit the Lessee to comply with the terms of clause 16.1 as applicable.

17. Force Majeure Events

17.1 Notice of Force Majeure Event

If a Force Majeure Event occurs, the Lessee must promptly upon becoming aware of the Force Majeure Event provide a written notice to the Lessor specifying the following:

(a) the event which is said to be a Force Majeure Event;

(b) the obligations of the Lessee under the Lease the performance of which are said to be prevented;

(c) the steps which the Lessee has taken or will take to overcome the effect of the event;

(d) the time period the Lessee expects will elapse before it will be able to resume performance of the relevant obligations; and

(e) any other information reasonably requested by the Lessor.

17.2 Excused from performance

The Lessee will be excused from performance of an obligation under this Lease (other than an obligation to pay Rent or any other money as required under this Lease or an obligation under clause 9) for so long as the performance of the obligation is prevented by a Force Majeure Event, but only if the Lessee:

(a) has complied with its obligations under clauses 17.1, 17.3 and 17.4; and

(b) undertakes with all due expedition all reasonable steps to overcome the effect of the Force Majeure Event.

17.3 Notice of Potential Force Majeure Event

(a) The Lessee must promptly notify the Lessor of any circumstances of which it is aware which may become a Force Majeure Event.

(b) The Lessee must provide to the Lessor information relating to those circumstances requested by the Lessor.

17.4 Conference

The Lessor may require the Lessee to confer with the Lessor in relation to any circumstances which may become a Force Majeure Event or any event which the Lessee claims to be a Force Majeure Event.

18. Taxes and Costs

18.1 Stamp duty and costs

(a) Subject to clause 18.2, the Lessee must pay and indemnify the Lessor and the Crown against any liabilities for stamp, transaction, registration and similar Taxes (including fines and penalties resulting from delay or omission to pay these Taxes) which may be payable in relation to this Lease or the registration of this Lease or the performance or enforcement of this Lease or any payment or receipt or other transaction contemplated by it, except:

(i) to the extent that any payment by the Lessee is prohibited by law;

(ii) for any fines or penalties arising out of late payment by the Lessor where the Lessee has paid to the Lessor before the date on which the relevant fine or penalty arose the moneys required to be paid by it under this clause 18.1(a); and

(iii) for any Taxes on or in respect of the overall net income of the Lessor.

(b) The Lessee must reimburse the Lessor and the Crown on demand for all costs and expenses properly incurred in relation to the actual or attempted enforcement of, or actual or attempted exercise or preservation of, any rights powers or remedies under this Lease including, in each case, reasonable legal costs and expenses on a full indemnity basis.

(c) Unless this Lease otherwise provides, all costs, expenses and liabilities associated with the Land or the performance of the Lessee's obligations under this Lease, or an applicable law, must be borne by the Lessee.

(d) Unless this Lease otherwise provides, the Lessee must reimburse the Lessor's reasonable costs of or associated with:

(i) considering and determining whether anything done or proposed to be done by the Lessee in the exercise of any right or entitlement under this Lease complies with the terms of this Lease;

(ii) considering, granting or refusing to grant an approval under this Lease; and

(iii) considering, doing or refusing to do anything at the request of the Lessee.

18.2 Goods and Services Tax

(a) If the Lessor is required to pay GST in respect of all or part of any payment or transaction under, or pursuant to, or by reason of a breach

(not being a breach by the Lessor) of, this Lease (*relevant payment or transaction*), then the Lessee must pay to the Lessor such additional amount (*GST gross-up*) as is necessary in order that the net amount retained by the Lessor in respect of the relevant payment or transaction after deduction of GST equals the amount the Lessor would have retained had the GST not been payable. If the Lessor also receives a sum by way of a GST gross-up in respect of the relevant payment or transaction from a person other than the Lessee, and the Lessor is entitled absolutely to retain the sum, then an amount equal to the lesser of that sum and the GST gross-up otherwise due from the Lessee will be either refunded to the Lessee (if the full GST gross-up has already been paid by the Lessee) or allowed as a reduction from the amount due from the Lessee (if the full GST gross-up has not been paid by the Lessee at the time the sum is received from the other party).

(b) If a GST gross-up is payable, then the Lessor will in good faith issue to the Lessee a tax invoice with respect to the GST gross-up on, or as soon as practicable after, receipt of the GST gross-up.

(c) The GST gross-up must be paid on the date demanded by the Lessor provided no demand may be made for payment earlier than 5 Business Days prior to the date which the Lessor in good faith determines to be the last date on which it may lawfully pay to the Commissioner of Taxation the GST to which the GST gross-up relates. Subject to any change of law after the Completion Date, the last date on which the GST may be lawfully paid shall be taken to be the last date (for GST purposes) on which a GST return may be lodged with the Commissioner of Taxation for the tax period to which the taxable supply giving rise to the GST is attributable. Where a GST gross-up relates to GST which is attributable to two or more tax periods, a separate GST gross-up shall be paid in respect of so much of the GST as is attributable to each period.

(d) If there is any dispute between the Lessor and the Lessee as to when, whether, or how much, GST is due and payable in respect of a relevant payment or transaction, the following provisions apply:

(i) The Lessee must pay the GST gross-up required by the Lessor on the date required in clause 18.2(c).

(ii) The Lessee will be entitled to seek a private binding ruling as to the GST payable, or to seek a refund of the GST on behalf of the Lessor. The Lessee must do so at its own risk and expense, must indemnify the Lessor against any Loss suffered or incurred in connection with the private binding ruling or refund claim, and must keep the Lessor fully informed of all action it takes in respect of the private binding ruling or refund claim.

(iii) If, prior to the GST being paid, a private binding ruling is obtained (on terms satisfactory to the Lessor) that less or no GST is payable, the Lessor must refund the appropriate amount of the GST to the Lessee, together with interest on the sum calculated at the Overdue Rate minus 2% per annum from the date the GST gross-up is paid to the date of the refund.

(iv) If the GST has been paid, and a refund of all or part of the GST is obtained (on terms satisfactory to the Lessor), the Lessor must refund the appropriate amount of the GST to the Lessee, together with any interest paid by the Commissioner of Taxation in respect of the refund, plus for that part of the period (if any) from the date the GST gross-up is paid to the date of the refund which falls between the Completion Date and the date the GST is paid, interest on the refund calculated at the Overdue Rate minus 2% per annum for that part of the period.

(e) If the following conditions are both satisfied:

(i) the Lessee is required to pay GST in respect of all or part of any payment from the Lessor under, or pursuant to, or by reason of a breach of, this Lease (*Lessor payment*); and

(ii) the Lessor is entitled to an input tax credit for GST purposes for all or part of the GST payable by the Lessee on the Lessor payment (*creditable GST*),

then the following provisions apply:

(iii) the Lessor will pay to the Lessee such additional amount as is necessary in order that the net amount retained by the Lessee after deduction of the creditable GST in respect of the Lessor payment equals the amount the Lessee would have retained had the creditable GST not been payable;

(iv) unless otherwise agreed by the Lessor, before the GST gross-up is paid, the Lessor will seek a private binding ruling on whether the GST is creditable on behalf of the Lessor;

(v) if the private binding ruling confirms (on terms satisfactory to the Lessor) that the Lessor will obtain an input tax credit for the GST, the Lessor will pay the GST gross-up to the Lessee;

(vi) the Lessor will not be obliged to pay any GST gross-up before the date the Lessor lodges (for GST purposes) a GST return in which the GST is claimed as an input tax credit for a tax period. Where the GST gives rise to an input tax credit which is attributable to two or more tax periods, a separate GST gross-up shall be paid in respect of so much of the GST as is attributable to each period. ; and

(vii) the Lessee must, on demand by the Lessor, provide the Lessor with a tax invoice for the amount of the relevant payment plus the amount of the GST gross-up.

(f) In this clause 18.2, a reference to a payment includes money or any form of consideration other than money, and a reference to a transaction includes anything which constitutes a supply or a taxable supply for the purposes of the GST.

(g) The parties agree that in this Lease all references to payments and other obligations to pay money, and all references to pricing, value and compensation (whether by way of reimbursement, indemnity or otherwise), are exclusive of GST.

(h) If one party seeks a private binding ruling as to GST for the purposes of this clause, the other party (at the cost and expense of the first party) shall provide such assistance as is reasonably required to obtain the ruling.

19. Compensation

19.1 Liability to Pay

The Lessee must pay compensation for any economic loss, hardship and inconvenience suffered by the owner (as defined in the Mining Act) of any Land on which Mining Operations are being carried out, by reason of the Lessee failing to:

(a) comply with the Development Programme; or

(b) carry on Mining Operations in accordance with the provisions of this Lease or all applicable laws, the breach of which would result in the owner suffering or incurring material civil or criminal liability for which the owner is not fully insured.

19.2 Amount of Compensation

The amount of the compensation will be as agreed between the owner and the Lessee or, in default of agreement within 30 days of agreement being sought by either party, as determined by the appropriate court (as defined in section 6(1) of the Mining Act) on the application of either party.

19.3 Relevant Factors

The appropriate court in determining compensation must take into consideration any work that the Lessee has carried out or undertakes to carry out to rehabilitate the Land.

19.4 Remediation

To the full extent permitted by law, the Lessee must indemnify the Lessor and the Crown on demand against all Losses incurred directly or indirectly by the Lessor or the Crown as a result of the Lessor or the Crown (each in its capacity as a lessor of the Land under this Lease or an owner or previous owner or an occupier or previous occupier of the Land or an operator or previous operator of any Mining Operations, as the case may be) being required to remediate the Land by reason of any failure by the Lessee to comply with the Development Programme.

20. Interest on Overdue Amounts

20.1 Accrual

Interest accrues on each unpaid amount which is due and payable by a party under or in respect of this Lease:

(a) on a daily basis up to the date of actual payment from (and including) the due date or, in the case of an amount payable by way of reimbursement or indemnity, the date of disbursement or loss, if earlier;

(b) both before and after judgment (as a separate and independent obligation); and

(c) at the Overdue Rate applicable to that amount at that time.

20.2 Payment

The relevant party must pay interest accrued under this clause 20 on the last Business Day of each calendar month and at such other times as the other party may demand.

21. Independent Expert

21.1 Matters Subject to Determination

The following matters must be dealt with under this clause 21:

(a) any disagreement between the parties as to any matter in relation to this Lease which is expressed to be subject to review or determination by an Independent Expert (a *Disagreement*); and

(b) any other matter in relation to this Lease which is required to be referred to or determined by an Independent Expert (a *Relevant Matter*).

21.2 Initiation of Determination

(a) If a Disagreement arises between the parties, a party may give a notice to the other party specifying the nature of the Disagreement in as much detail as is reasonably practicable. If the Disagreement has not been settled within 10 Business Days of the delivery of the notice, the party giving the notice may require that the Disagreement be referred to an Independent Expert in accordance with this clause 21, by giving further notice to that effect to the other party.

(b) If a Relevant Matter arises, a party may initiate the process for referring that matter to an Independent Expert by giving a notice to the other party specifying the nature of the Relevant Matter in as much detail as is reasonably necessary and practicable.

21.3 Appointment of Independent Expert

The parties must endeavour to agree on the Independent Expert within 10 Business Days of the giving of a notice requiring that a Disagreement or Relevant Matter be referred to an Independent Expert under clause 21.2. If the parties fail to appoint an Independent Expert within 10 Business Days, either party may ask:

(a) if the Disagreement or Relevant Matter is one of a mechanical or technical nature, the President for the time being of the Association of Consulting Engineers of Australia or a body which is a successor of it; and

(b) if the Disagreement or Relevant Matter is one of a financial nature, the President for the time being of the Institute of Chartered Accountants in Australia or a body which is a successor of it,

to appoint a suitably qualified person to act as the Independent Expert and the Disagreement or Relevant Matter will then be referred to the person so appointed.

21.4 Qualifications of Independent Expert

The Independent Expert appointed to act under this clause 21 must:

(a) be qualified by his or her education, training and experience to pass a reasoned judgment upon the particular matters the subject of the Disagreement or Relevant Matter; and

(b) not have any relationship or association with a party which might jeopardise his or her impartiality.

21.5 Binding Decision

A decision of the Independent Expert under this clause 21 will be absolute and final and will bind the parties accordingly.

21.6 Expert Not an Arbitrator

The Independent Expert will determine a Disagreement as an expert and not as an arbitrator.

21.7 Evidence and Representation

Each of the parties agrees that it will:

(a) make available to the Independent Expert all materials requested by him or her and all other materials which are relevant to any determination by the Independent Expert;

(b) be entitled to produce to the Independent Expert any materials or evidence which the party believes is relevant to a Disagreement or Relevant Matter; and

(c) be entitled to appoint a legal representative to represent its interest at any hearing before the Independent Expert.

21.8 Costs

(a) Each party must bear its own costs incurred in the preparation and presentation of any submissions or evidence to the Independent Expert.

(b) Unless the parties otherwise agree before the submission of a Disagreement or Relevant Matter to the Independent Expert, the parties must require the Independent Expert to determine the proportions in which each party must bear the costs of determination of the Disagreement or Relevant Matter by the Independent Expert, in the case of a Disagreement having regard to the degree to which he or she considers such party was at fault or unreasonable in failing to agree to the matter under reference to him or her, and that party must bear the costs accordingly.

22. Confirmation of Compliance With Lease

The parties may, in order to clarify the meaning or operation of a provision of this Lease, or to clarify whether a particular act, matter or thing did or would constitute an act, matter or thing carried out in accordance with or did or would satisfy the terms of this Lease, confirm in writing the meaning or operation of that provision or the effect of that act, matter or thing. Any such confirmation will take effect in accordance with its terms.

23. Entitlement to Receive Rent

If any person other than the Lessor becomes entitled to receive the Rent or exercise any of the Lessor's other rights and entitlements under this Lease, whether by assignment, operation of law or otherwise, that person will have the benefit of the covenants and obligations to be performed by the Lessee. Further, if required by the Lessor, the Lessee must enter into a deed with that person expressly covenanting to pass the benefit of those covenants and obligations to that person in a form reasonably required by the Lessor and not inconsistent with the provisions of this Lease.

24. Set-Off

24.1 Linked Leases

The Lessor or the Lessee may set-off any amounts due and payable to it under a Linked Lease as a credit against any amounts due and payable by it to the other party under another Linked Lease.

24.2 Set-off

(a) If:

(i) an amount (the ***Payment Amount***) is due and payable by a party (the ***First Party***) to the other party (the ***Second Party***) as a result of the expiry or termination of a Linked Lease; and

(ii) the Second Party is obliged to either:

(A) pay an unascertained amount to the First Party; or

(B) perform an undetermined obligation or duty in favour of the First Party,

the First Party may withhold the Payment Amount to the extent it considers necessary (in its reasonable opinion) to allow for the likely amount of:

(iii) payment of the amount referred to in clause 24.2(a)(ii)(A) when ascertained; or

(iv) any payment required or loss recoverable as a result of any non-performance of the duty or obligation referred to in clause 24.2(a)(ii)(B) when ascertained,

as the case may be.

(b) When the amount of any payment referred to in clause 24.2(a)(iii) or 24.2(a)(iv) is ascertained:

(i) the First Party may exercise its rights under clause 24.1 taking into account any amount withheld under clause 24.2(a); and

(ii) following the exercise of those rights, any balance of an amount withheld under clause 24.2(a) will be paid to the Second Party.

(c) Any dispute as to the operation of this clause 24 may be referred to an Independent Expert for determination.

25. Survival of Indemnities, Rights and Obligations

25.1 Indemnities

Each indemnity:

(a) is a continuing obligation;

(b) is a separate and independent obligation; and

(c) survives the transfer of this Lease to GLC or its nominee in accordance with clauses 12, 13 or 14 or the surrender or discharge of this Lease.

25.2 Other rights and obligations

The rights and obligations of the Lessor and the Lessee under clauses 6.5(d)(i), 9, 10, 16, 18 and 19 survive the transfer of this Lease to GLC or its nominee in accordance with clauses 12, 13 or 14 or the surrender or discharge of this Lease.

26. Moratorium Legislation

To the full extent permitted by law all legislation which at any time directly or indirectly:

(a) lessens, varies or affects in favour of the Lessee any obligation under this Lease; or

(b) delays, prevents or prejudicially affects the exercise by the Lessor of any right, power or remedy conferred by this Lease,

has no application in relation to this Lease.

27. Assignment, Security Interests and Subletting

27.1 Security Interests

(a) Subject to clause 27.1(b), the Lessee must not create or allow to subsist a Security Interest (other than a Permitted Lien) over:

(i) any of its rights under this Lease; or

(ii) any of its right, title and interest in the Land or any part of it,

unless the Lessee first obtains the written consent of the Lessor.

(b) The Lessee may grant a Security Interest over all (but not part only) of its right, title and interest in this Lease if:

(i) the Security Interest also extends over all (but not part only) of its right, title and interest in the Other Perpetual Leases; and

(ii) the enforcement of the Security Interest is subject to the restrictions on assignment in clause 27.2.

27.2 Permitted assignments

(a) Subject to clause 27.2(b) and clause 27.4, the Lessee must not assign or transfer its right, title and interest in this Lease unless the Lessee first obtains the written consent of the Lessor.

(b) The Lessee may assign or transfer all (but not part only) of its right, title and interest in this Lease to a person (the *Assignee*) if:

(i) it assigns or transfers at the same time and to the same person:

(A) all (but not part only) of its right, title and interest in each Other Perpetual Lease; and

(B) in a form reasonably satisfactory to the Lessor, such of its rights and obligations under the Flinders Power Sale Agreement as are necessary to ensure that the obligations that are to continue to be imposed on the Lessee under that Agreement, taken together with the obligations under that Agreement which are to be assigned to the Assignee, will continue to be enforceable to the maximum extent and effect as provided for in that Agreement as if that assignment did not occur;

(ii) the Assignee, or a person who is authorised or approved by the Assignee to use the Land and the land the subject of each Other Perpetual Lease, has all Authorisations necessary for the purpose for which the Assignee intends to use, or permit the use of, the Land and the land the subject of each Other Perpetual Lease;

(iii) the Assignee has provided to the Lessor a duly executed deed under which the Assignee undertakes to the Lessor to be bound by the terms of this Lease and the Other Perpetual Leases as if it were the Lessee and the terms of the Flinders Power Sale Agreement on the basis set out in clause 27.2(b)(i)(B), including in respect of any accrued obligations of the Lessee under this Lease and the Other Perpetual Leases and, to the extent required under clause 27.2(b)(i)(B), the Purchaser under the Flinders Power Sale Agreement as at the date of assignment; and

(iv) the Lessee has granted a valid assignment of each Other Perpetual Lease and, to the extent required under clause 27.2(b)(i)(B), the Flinders Power Sale Agreement to the Assignee.

(c) On an assignment under this clause 27.2, the Lessee is released from all obligations under this Lease.

27.3 Subletting

(a) The Lessee may sublease, or grant a licence in respect of, all (but not part only) its interest in the Land to a person to whom the Lessee has granted a sublease or licence respectively of all (but not part only) of its interest in the land the subject of each Other Perpetual Lease.

(b) Despite any sublease or licence permitted under clause 27.3(a), as between the Lessor and the Lessee the Lessee continues to be bound to comply with all its obligations under this Lease and the Other Perpetual Leases.

27.4 Partnership

If the Lessee is a partnership:

(a) a partner may at any time assign or transfer any of its rights or obligations under this Lease to another partner without the consent of the Lessor; and

(b) the partners may permit any other person to become a partner in the partnership (including prior to Completion) if those partners and that person have first provided to the Lessor a duly executed deed substantially in the form set out in Annexure A under which the partnership constituted by the inclusion of that person undertakes to be bound by this Lease as if it were the Lessee and the requirements set out in clause 27.2(b) are satisfied.

27.5 Restructure

Clause 27.2(b) does not prevent the assignment of the right, title and interest of the Lessee in this Lease to more than one person, but each such person must be a party to the deed referred to in clause 27.2(b)(iii) pursuant to which those persons jointly and severally undertake to be bound by the terms of this Lease and the Other Perpetual Leases as if they were the Lessee and by the terms of the Flinders Power Sale Agreement on the basis set out in clause 27.2(b)(i)(B), including in respect of any accrued obligations of the Lessee under this Lease and the Other Perpetual Leases and, to the extent required under clause 27.2(b)(i)(B), the Purchaser under the Flinders Power Sale Agreement as at the date of assignment.

28. Notices

28.1 Notices

All notices, requests, demands, consents, approvals, agreements or other communications to or by a party:

(a) must be in writing;

(b) must be signed by an Authorised Officer of the sender; and

(c) will be taken to be duly given or made when delivered, received or left at the address or fax number which the recipient has notified to the sender for that purpose but, if delivery or receipt is on a day on which business is not generally carried on in the place to which the communication is

sent or is later than 4pm (local time), it will be taken to have been duly given or made at the commencement of business on the next day on which business is generally carried on in that place.

28.2 Authorised Officers

Each party irrevocably authorises the other party to rely on a certificate by a person purporting to be its director or secretary as to the identity and signatures of its Authorised Officers. Each party warrants that those persons notified in respect of it have been authorised to give notices and communications under or in connection with this Lease.

29. General

29.1 Entire Agreement

This Lease contains the entire agreement between the parties as at the Completion Date with respect to its subject matter and supersedes all earlier conduct by the parties with respect to its subject matter.

29.2 Amendments

Amendments of this Lease may only be made by a deed made under seal by the Lessor and the Lessee which is expressed to be an instrument amending this Lease under this clause 29.2.

29.3 Further Assurances

Each party will take all steps, execute all documents and do everything reasonably required by the other party to give effect to any of the transactions contemplated by this Lease.

29.4 No Waiver

No failure to exercise and no delay in exercising any right, power or remedy under this Lease operates as a waiver. Nor does any single or partial exercise of any right, power or remedy preclude any other or further exercise of that or any other right, power or remedy. Except as otherwise expressly provided in this Lease, the rights, powers and remedies provided to a party in this Lease are in addition to, and do not exclude or limit, any right, power or remedy provided by law.

29.5 Severability

Any provision of this Lease which is prohibited or unenforceable in any jurisdiction is ineffective as to that jurisdiction to the extent of the prohibition or unenforceability. That does not invalidate the remaining provisions of this Lease nor affect the validity or enforceability of that provision in any other jurisdiction.

29.6 No Merger

The rights and obligations of the parties will not merge on completion of any transaction under this Lease. They will survive the execution and delivery of any

assignment or other document entered into for the purpose of implementing any transaction.

30. Governing Law and Jurisdiction

(a) This Lease is governed by the laws of South Australia.

(b) Each party irrevocably and unconditionally submits to the non-exclusive jurisdiction of the courts of South Australia and courts of appeal from them for determining any dispute concerning this Lease but subject to the dispute resolution mechanisms set out in clause 21. Each party waives any right it has to object to an action being brought in those courts, to claim that the action has been brought in an inconvenient forum, or to claim that those courts do not have jurisdiction.

(c) The parties agree that neither of them will institute or attempt to institute any proceedings in relation to any dispute or any matter or thing arising out of or in connection with this Lease other than in a court of South Australia or, in respect of any proceedings in a Federal court, in the Adelaide registry of the relevant Federal court but subject to the dispute resolution mechanisms set out in clause 21. A party will not, without the consent of the other party, request that proceedings instituted in a Federal court in South Australia be heard outside South Australia.

(d) Without preventing any other mode of service, any document in an action (including, but not limited to, any writ of summons or other originating process or any third party or other party notice) may be served on a party by being delivered to that party in accordance with clause 28.

EXECUTED in South Australia.

In witness whereof His Excellency the Governor hath caused the public seal of the State of South Australia to be affixed hereto and also set his hand and the common seal of the Lessee was hereunto affixed on thesecond day of June one thousand and nine hundred and forty nine.

The Common Seal of THE ELECTRICITY TRUST OF SOUTH AUSTRALIA was affixed hereto in the presence of:

(sgd)

... ... Member

(sgd)

... ... Secretary

Annexure A

Partnership Assumption Deed

Assumption Deed

The Governor of South Australia

and

[# the First Partner]

and

[# the Second Partner]

[Include details of any Additional Partners]

Date

Parties

1. The Governor of South Australia (the *Lessor*)
2. *[#]* (the *First Partner*)
3. *[#]* (the *Second Partner*)
4. *[Include details of any Additional Partners]*

Recitals

A The Lessor (or the Lessor's predecessor) granted:

(i) Perpetual Crown Lease No. 19393
Register Book Volume 1234 Folio 37;

(ii) Perpetual Crown Lease No. 18578;
Register Book Volume 1067 Folio 36;

(iii) Perpetual Crown Lease No. 20311;
Register Book Volume 1589 Volume Folio 2;

(iv) Perpetual Crown Lease No. 20239;
Register Book Volume 1545 Folio 20;

to the Electricity Trust of South Australia (the ***Perpetual Leases***).

B Immediately prior to Completion the right, title and interest previously held by the Electricity Trust of South Australia in each Perpetual Lease was held by Flinders Power Pty Limited (ACN 082 988 270) (***Flinders***).

C The right, title and interest of Flinders in each Perpetual Lease has been transferred to the Purchaser pursuant to the Flinders Power Sale Agreement.

D Clause 27.4(b) of each Perpetual Lease has the effect that the First Partner and the Second Partner may permit an Additional Partner to become a partner in the partnership known, as at the date of this Deed, as the "*[#]* Partnership" if the First Partner, the Second Partner and that Additional Partner have first provided to the Lessor a duly executed deed under which the partnership as constituted by the inclusion of the Additional Partner undertakes to be bound by each Perpetual Lease as if it were the Lessee under the relevant Perpetual Lease.

E Subject to the provision to the Lessor of the deed referred to in Recital D, the First Partner, the Second Partner and the Additional Partners have agreed that the Additional Partners will become partners in the

[#] Partnership.

F Under this Deed the First Partner, the Second Partner and the Additional Partners undertake to be bound by each Perpetual Lease as if they were the Lessee under the relevant Perpetual Lease.

G The requirements set out in clauses 27.2(b) of each Perpetual Lease (other than as set out in clause 27.2(b)(iii)) have been satisfied in relation to the assignment or transfer of rights and obligations under each Perpetual Lease to the Additional Partners.

It is agreed as follows.

1. Definitions and interpretation

1.1 Definitions

The following definitions apply unless the context requires otherwise.

Additional Partners means [ ].

Effective Date means the date of this Deed.

1.2 Terms defined in the Perpetual Lease

Words that are defined in the Perpetual Lease referred to in paragraph A(i) of the Recitals and that are used in this Deed have the same meaning in this Deed as in that Perpetual Lease.

1.3 Interpretation

The provisions of clause 1.2 of the Perpetual Lease referred to in paragraph A(i) of the Recitals form part of this Deed as if set out at length in this Deed.

2. Assumption

(a) The First Partner, the Second Partner and the Additional Partners each agree that, on and from the Effective Date, the obligations, undertakings, representations, warranties, indemnities and liabilities of the Lessee under each Perpetual Lease bind all of them jointly and severally as if they were the Lessee under the relevant Perpetual Lease.

(b) The parties agree that, on and from the Effective Date, the First Partner, the Second Partner and the Additional Partners enjoy the rights and benefits of, the undertakings, representations, warranties and indemnities in favour of and the liabilities to, the Lessee under each Perpetual Lease jointly and severally as if they were the Lessee under the relevant Perpetual Lease.

(c) The parties each agree that, on and from the Effective Date, each Perpetual Lease shall be construed as if references in it to the Lessee

were references to the First Partner, the Second Partner and the Additional Partners jointly in partnership and to each of them severally.

(d) Each Additional Partner undertakes to the Lessor that it will be bound by the terms of each Perpetual Lease as if it were the Lessee and the terms of the Flinders Power Sale Agreement on the basis set out in clause 27.2(b)(i)(B) of the relevant Perpetual Lease, including in respect of any accrued obligations of the Lessee under the relevant Perpetual Lease and, to the extent required under clause 27.2(b)(i)(B) of the relevant Perpetual Lease, the Purchaser under the Flinders Power Sale Agreement as at the Effective Date.

3. Costs and Stamp Duty

3.1 The parties will bear their own costs arising out of the negotiation, preparation and execution of this Deed.

3.2 The Treasurer acknowledges that:

(a) this Deed; and

(b) any document executed pursuant to this Deed,

each falls within the scope of a sell down, re-organisation or restructure within the meaning of clause 9(c) of the Flinders Power Sale Agreement.

4. Governing law

This Deed is governed by the laws of South Australia. Each party submits to the non-exclusive jurisdiction of courts exercising jurisdiction there in connection with matters concerning this Deed.

5. Counterparts

This Deed may be executed in any number of counterparts. All counterparts together will be taken to constitute one instrument.

Executed as a Deed in Adelaide, South Australia.

Each attorney executing this Deed states that he or she has no notice of revocation or suspension of his or her power of attorney.

Assumption Deed

The Public Seal of **The State of South Australia** was duly affixed hereto:

[insert name]

The Governor of South Australia

Witness

Signed sealed and delivered for and on behalf of **[the First Partner]** by its duly authorised attorney/attorneys in the presence of:

Attorney/Attorneys

Print Name(s)

Witness

Print Name

Signed sealed and delivered for and on behalf of **[the Second Partner]** by its duly authorised attorney/attorneys in the presence of:

Attorney/Attorneys

Print Name(s)

Witness

Print Name

[Include execution clauses for the Additional Partners]

SOUTH AUSTRALIA

S0030

Register Book,

CROWN LEASE

Vol. 1067 Folio 36

PERPETUAL LEASE NO. 18578.

Registrar-General.

I LIEUTENANT-GENERAL SIR CHARLES WILLOUGHBY MOKE NORRIE, Governor in and over the State of South Australia and its dependencies in the Commonwealth of Australia (hereinafter with my successors in office designated by the term "the Lessor"), acting pursuant to the powers conferred upon me by section 43g of the Electricity Trust of South Australia Act, 1946, and for and on behalf of His Majesty the King DO HEREBY LEASE to THE ELECTRICITY TRUST OF SOUTH AUSTRALIA, a body corporate incorporated under the said Electricity Trust of South Australia Act, 1946, and having its office at North Terrace, Adelaide in the said State (hereinafter designated by the term "the Lessee") ALL THAT land containing one hundred and seventy two and one half acres or thereabouts and being Section numbered 320 North out of Hundreds out of Counties as the same is delineated in the public maps deposited in the Land Office in the City of Adelaide together with all the seams, beds and deposits of coal as well opened as unopened lying within and under the said lands TO BE HELD in perpetuity at the yearly rent of one pound (£1: 0: 0) to be paid in advance on the first day of January commencing the first day of January one thousand nine hundred and forty nine Subject to the liberties, reservations, covenants and conditions set out hereunder.

Minister of Lands.

LIBERTIES.

1. The lessee shall be at liberty to exercise in relation to the said land hereby demised all and any of the powers conferred upon the lessee by section 43d of the Electricity Trust of South Australia Act, 1946, subject however to the restrictions upon the power of transferring mortgaging and encumbering the said land hereinafter appearing.

Director of Lands.

RESERVATIONS.

2. Except and reserved out of this lease all gold, silver, copper, tin and other metals, all ores and other substances containing metals, all minerals, all gems and precious stones, and all mineral oils upon, in or under the said land (but not including any seams, beds or deposits of coal upon in or under the said land) to His Majesty the King, His heirs and successors and all persons lawfully claiming under or authorised by Him or them AND the lessor and all persons lawfully claiming under or authorised by him, shall have full and free liberty of access, ingress, egress and regress, with or without horses, cattle, carts, drays, carriages, engines and all other necessary implements and things, into upon and from the said land for all reasonable purposes, and to cut, dig, sink, try, search, work, remove and dispose of all or any of the said excepted and reserved things, full compensation being made to the Lessee for any loss or damage sustained by it.

J.W. 160/47

Xd.

FLI.525.295

3. The Lessee will forthwith commence to destroy all such vermin on the said land as are by or under the Vermin Act, 1931-1945, or by or under any other Act for the time being in force in the said State declared to be vermin and will keep the said land free of all vermin to the satisfaction of the Lessor during the lease and will destroy all noxious weeds growing upon the said land.

4. The Lessee will not transfer, encumber, mortgage or part with the possession of the said land, or any part thereof, (except in the exercise of the powers conferred upon it by Section 43d (2) (a) of the Electricity Trust of South Australia Act, 1946) without the written consent of the Lessor first had and obtained in each case.

5. The Lessee will permit the Lessor or his agents with or without miners surveyors workmen or other persons at all reasonable times to enter upon inspect and examine the land and premises hereby demised and every part thereof for the purpose of examining the same and of ascertaining the condition thereof.

6. The Lessee will make and keep proper and accurate plans and records of all works carried out by it, and of all leases or tenancies or rights to use and occupy any land, house or building granted by it, pursuant to the powers conferred upon it by Section 43d of the Electricity Trust of South Australia Act, 1946, and will permit the lessor or his agents at all reasonable times to inspect the said plans and records and take copies of or extracts from the same.

7. The Lessee will not permit suffer or allow any house, building shop or store at any time to be erected or used upon the said land as a public house, wine shop or otherwise for the sale or supply of intoxicating liquors, without the consent of the Lessor first had and obtained.

CONDITIONS.

8. PROVIDED ALWAYS that if in the opinion of the lessor (whose decision upon the matter shall be final)

(a) the said land shall cease to be used or required for the purpose of the Lessee working and getting coal from the said land or from other land in its vicinity or purposes incidental thereto; or

(b) it is necessary or convenient that any portion or portions of the said land should be resumed for use as roads or railways, or as sites for towns or for park lands, or for mining purposes, or for any public work or purpose,

then and in any such case it shall be lawful for the Lessor, upon giving three calendar months' notice in writing to the Lessee to determine this lease and to resume possession of the said land, either wholly or partially, as the case may be and to such extent as may be specified in the said notice, and upon publication by the lessor in the Government Gazette of notice of such determination the tenancy shall cease, determine and be void as to all or such parts of the said land as shall be specified in such notice save in respect of anything which ought to be performed or observed upon the determination of the tenancy AND in the event of the determination of the tenancy wholly or partially in accordance with the foregoing provisions no compensation shall be payable to the lessee except that if any portion or portions of the land be resumed for use as public roads or any other public purpose the lessee shall be entitled to claim and receive from the lessor compensation for any improvements made by it upon the said portion or portions of the land. IF the amount of such compensation cannot be agreed

FLI.525.296

determined by two arbitrators, one to be appointed by each party or in case the arbitrators are not able to agree, by an umpire to be appointed by them before entering upon the consideration of the amount of compensation or payment. IN case either of the parties entitled to nominate an arbitrator neglects to do so for fourteen days next after a notice in writing has been given him by the other party, or names an arbitrator who refuses or neglects to act, the arbitrator named by the other party may make a final decision alone.

9. AND further PROVIDED ALWAYS and this lease is upon this express condition, that if default shall be made in payment of any rent in arrear for six months after the same falls due, the lessee having had at least three months' previous notice in writing demanding its payment, or if default shall be made in the performance of any covenant on the part of the lessee; or if the lessee shall, (except in the exercise of the powers conferred upon it by Section 43d (2) (a) of the Electricity Trust of South Australia Act, 1946) without the written consent of the lessor first had and obtained, transfer, mortgage, encumber or sub-let the premises or any part thereof, the lessor, after three months' written notice may re-enter and take possession of the said lands; and it shall be lawful for the lessor, before or after re-entry to cancel and determine this lease, and the lessor may thereupon insert a notice in the Government Gazette declaring this lease to be forfeited, and such notice appearing in the Government Gazette shall, in all courts and elsewhere, and under all circumstances, be taken to be conclusive evidence that such lease has been legally cancelled and forfeited; PROVIDED, however, that the lessor shall not (except in the case of rent being in arrear as aforesaid or of the transfer, mortgage, encumbrance or subletting of the premises without such consent as aforesaid) exercise the powers expressed in this clause in the case of default in the performance of a covenant before the expiration of the period of three months after notice has been given to the lessee of such default and requiring the performance of the covenant: PROVIDED nevertheless that if notice has been given to the lessee of any default in the performance of a covenant, no notice of any future default in the performance of the same covenant, or of the continuance of the same default, shall be necessary before the exercise of such powers.

10. AND IT IS HEREBY EXPRESSLY DECLARED that any notice to be served or given to the lessee under this lease shall be deemed to have been duly served or given if the same be sent through the post office enclosed in an envelope addressed to the lessee at its head or principal office and such notice shall be deemed to have been served or given and time shall run from the date of the posting thereof as aforesaid.

In witness whereof His Excellency the Governor hath caused the public seal of the State of South Australia to be affixed hereto and also set his hand and the common seal of the lessee was hereunto affixed on the second day of June one thousand nine hundred and forty nine.

The Common Seal of the ELECTRICITY TRUST OF SOUTH AUSTRALIA was affixed hereto in the presence of:

Member

FLI.525.297

Vol 1733862

Under Lease No 1733862 from the Electricity Trust of South Australia to James William Hasse of Blocks 221 and 222 of Section No 320 (plan G.R.O. 129/1952) of the within Lease No. 18578. Term 38 years from the 1 day of January 1950. Produced for Registration the 20 day of June 1952 at 2.20 p.m.

Dep Reg Genl

Vol 1790547 Vol 1790584

TRANSFER No. 1794557 FROM

James William Hasse to Richard Cecil Hasse of Leigh Creek agent and Beryl Maud Hasse his wife

OF THE WITHIN Underlease No. 1733862

PRODUCED FOR REGISTRATION THE 18 DAY OF August 1953 AT 3 pm

DEP. REG. GENL.

11.3.54

MORTGAGE No. 1817961 FROM

Richard Cecil Hasse and Beryl Maud Hasse to The State Bank of South Australia, of the within Underlease No. 1733862

PRODUCED FOR REGISTRATION THE 3 DAY OF February 1954 AT 11.40 am.

G. E. Rowell DEP. REG. GENL.

Vol 1794557

LEASE No. 1749063 FROM

The Electricity Trust of South Australia

The Parkinson Association Incorporated

of Blocks 58 59 60 in G.R.O. Plan 129 of 1952 of the within Lease No. 18578. Term 99 years from the 1 day of January 1950.

PRODUCED FOR REGISTRATION THE 7 DAY OF October 1952 AT 2.50 pm

DEP. REG. GENL.

Vol 1749063

LEASE No. 1749064 FROM

The Electricity Trust of South Australia

The Lutheran Church in Australia and Evangelical Lutheran Church in South Australia Incorporated

of Blocks 103 and 104 in G.R.O. Plan No. 129 of 1952 of the within Lease No. 18578. Term 99 years from the 1 day of January 1950.

PRODUCED FOR REGISTRATION THE 7 DAY OF October 1952 AT 2.50 pm

DEP. REG. GENL.

Vol 1749064

Under LEASE No. 1852721 FROM

The Electricity Trust of South Australia to The Commonwealth of Australia of portion of the within Land (Block 3 in G.R.O. Plan 129 of 1952.) Term commencing on the 1 day of June 1954 and expiring on the 31 day of December 2049.

PRODUCED FOR REGISTRATION THE 9 DAY OF September 1954 AT 11 am

DEP. REG. GENL.

LEASE No. 1751165 FROM

The Electricity Trust of South Australia to The Roman Catholic Diocese of Port Pirie Incorporated

of Blocks 55 and 62 in G.R.O. Plan 129 of 1952 being portion of the within Lease No. 18578 term 99 years from the 1 day of January 1950

PRODUCED FOR REGISTRATION THE 23 DAY OF October 1952 AT 2.30 p.m.

DEP. REG GENL.

Vol 1751165

Portion of

THE WITHIN LAND HAS BEEN ACQUIRED BY THE COMMONWEALTH VIDE L.T.O. NO. 87 OF 1955

DEP. REG. GENL.

LEASE No. 1761219 FROM

The Electricity Trust of South Australia to The Salvation Army (South Australia) Property Trust of Block 109 in G.R.O. Plan No. 129 of 1952 of the within Lease No. 18578 Term 99 years from the 1 day of January 1950

PRODUCED FOR REGISTRATION THE 9 DAY OF January 1953 AT 11.45 am

DEP. REG. GENL.

Vol 1761219

UNDER LEASE No. 1918565 FROM

The Electricity Trust of South Australia to Eric Beal of portion

OF THE WITHIN LAND being pt. Block 3 in G.R.O. plan 129 of 1952 Term 30 years from the 1 day of January 1954.

PRODUCED FOR REGISTRATION THE 9 DAY OF November 1955 AT 11.20 am.

DEP. REG. GENL

Under LEASE No. 1979052 FROM

The Electricity Trust of South Australia to The Synod of the Church of England in the Diocese of Willochra Incorporated of portion of the within Land (Block 116 in G.R.O. Plan 129 of 1952) Term 99 years from the 1 day of July 1955

PRODUCED FOR REGISTRATION THE 25 DAY OF January 1956 AT 11.40 am

DEP. REG. GENL.

Underlease No. 1790547 from The Electricity Trust of South Australia to The Commonwealth of Australia of Portion of the within land (being Blocks 6, 7, 39, 40, 123 and 46 of Section 320 deposited in G.R.O. 129 of 1952) Term 99 years from the 1 day of January 1950 Produced for registration the 23 day of July at 12.40 p.m.

FLI.525.298

UNDER LEASE No. 1957930 FROM
The Electric Trust of South Australia
to Leigh Creek and Far Northern Sub-Branch
of the Returned Sailors' Soldiers' and Airmens
Imperial League of Australia
Incorporated of portion of the west
land (being Block 17 in GRO Plan 129 of 1952
TERM 99 years from the 1 day of January 1957
PRODUCED FOR REGISTRATION THE 21 DAY OF
June 1956 AT 12.55 pm
J.G. Bennetts
DEP REG GENL

TRANSFER No. 2462471 to Lance Daulby
of Leigh Creek Business Proprietor and
Irene Enid Daulby his wife
UNDER LEASE No 1733862.
OF THE WITHIN LAND PRODUCED 23.8.1963 AT 11am
B.L. Nairn
DEP. REG. GEN.

MORTGAGE No. 2462472 to Richard Cecil
Clarke and Beryl Maud Clarke
of the within Underlease No. 1733862.
PRODUCED 23.8.1963 AT 11 am
B.L. Nairn
DEP. REG. GEN.

Portion of Block 116 to Surrendered from

Under Lease No. 1929053
VIDE No. 2089652 PRODUCED 24-10-1958 AT 12-20 pm
Clarke
DEP. REG. GEN.

U/L 1733862

Certificate No. 2110382 of the Minister
of Lands whereby 4 A 2 R 7 P in the
within Lease No. 18578 having been
acquired by the Commonwealth on
19/5/55 the area of land remaining
in the said Lease shall be 168 acres.
Produced 25/7/59 at 3 pm
Clarke

TRANSFER No. 2532611 to Donkell Pty Ltd.
of 272 Melbourne Street North Adelaide under Lease No 2395089
OF THE WITHIN LAND PRODUCED 26/5/60 AT 11.45 am
B. Nelson Registrar
DEP. REG. GEN.

U/L 2765824

UNDER LEASE No. 2768024 To
The Commonwealth of Australia
(being Block 73A in G.R.C
of portion of Plan 167 of 1962)
THE WITHIN LAND TERM commencing on 1.1.1967
and ending on 31.12.2049
PRODUCED 19.10.1966 AT 11.35 am
J.A. Hughes.
DEP. REG. GEN.

Under Lease 1761219
2161287 2-11-59 11.45 am
Earl Nairn

U/L 2395126

UNDER LEASE No. 2857622 to
The Catholic Diocese of Port Pirie Incorporated
(being portion of Block 57)
portion of
OF THE WITHIN LAND TERM commencing on 1.10.1967
and ending on 31.12.2049.
PRODUCED 29.9.1967 AT 11.25 am
J.G. Bowman
DEP. REG. GEN.

SURRENDER OF Underlease No. 1761219
VIDE No. 2012126 PRODUCED 2-11-59 AT 11.45 am
Earl Nairn
REG. GEN.

U/L 2395089

U/L 2857622

UNDER LEASE No. 2395089
to Margaret Jane Wakefield
of portion of
OF THE WITHIN LAND in the within lease No 18578
being Blocks 24 1901 and A R S A in GRO plan 103/1962 and
portion of Block A9 in GRO plan 129/1952 for 10 years from 10.5.1962.
PRODUCED 12.11.1962 AT 2.20 pm
DEP. REG. GEN.

UNDER LEASE No. 2893976
To The Commonwealth of Australia
of portion (being Block 73A)
GRO Plan 167 of 1961
OF THE WITHIN LAND TERM commencing on 1.1.1968
and ending 31.12.2049
PRODUCED 7.1.1969 AT 2.40 pm
J.A. Hughes.
DEP. REG. GEN.

UNDER LEASE No. 2401359 to
The Commonwealth of Australia
portion of
OF THE LAND in the within Lease No. 18578
TERM for 99 years commencing on 1.11.1962
PRODUCED 7.12.1962 AT 10.30 am
B.L. Nairn
DEP. REG. GEN.

TRANSFER No. 2893735 to
Earnshaw Pty. Ltd. of 21 Franklin
Street Adelaide
UNDER LEASE No. 2395089
OF THE WITHIN LAND. PRODUCED 28.2.1969 at 10.45
DEP. REG. GEN.

Underlease No. 1733862
THE WITHIN LAND IS DISCHARGED FROM MORTGAGE No.
2817961 BY ENDORSEMENT THEREON.
PRODUCED 22.3.1963 AT 1.45 pm
L.K. Anderson
DEP. REG. GEN.

CHANGE OF NAME No. 3092268
NAME OF THE WITHIN Association IS CHANGED TO The Leigh Creek and Far Northern Sub-Branch of the Returned Sailors' Soldiers' and Airmens Imperial League of Australia (Incorporated) to Returned Servicemen's League (Leigh Creek and Far Northern Sub-Branch) Incorporated
PRODUCED 3.3.1970 AT 11.45 am
DEP. REG. GEN.

FLI.525.299

D/F 3182646

UNDER

LEASE No. 3182646
to The Commonwealth of Australia
as to portion being Block 761 in GRO plan No. 167/1962
OF THE WITHIN LAND. TERM commencing on 1.1.1971
and ending on 31/12/2049
PRODUCED 8/3 1971 AT 3.20PM
DEP. REG. GEN.

UL 3320138

UNDER

LEASE No. 3320138
to Barnshaw Pty. Ltd.
as to portion being Portion of Blocks No. 2A, 190A, 195A in GRO Plan 403/1962 and Portion of Block 194 in GRO Plan 129/1952
OF THE WITHIN LAND. TERM of 6 years from 20.5.1972
PRODUCED 24.5.1972 AT 1.5pm
DEP. REG. GEN.

U/L ~~3458862~~

LEASE No. 3458862
to The Commonwealth of Australia
as to portion
OF THE WITHIN LAND. TERM commencing on 1.1.1973
and ending on 31.12.2049
PRODUCED 17.5.1973 AT 11.10am
DEP. REG. GEN.

H/L 3589772

TRANSFER No. 3589772 to Peter Charles Wardell Storekeeper and Tracy Marie Wardell Storekeeper both of Leigh Creek as to Lease No. 3320138
OF THE WITHIN LAND. PRODUCED
DEP. REG. GEN.

D 1736L457 ~~1736L058~~

DISCHARGE OF MORTGAGE No. 246247 VIDE No. 3621057
PRODUCED 22.5.1974 AT 12.45 P.M.
DEP. REG. GEN.

TRANSFER No. 3621058
to Wolfgang Joachim Ruhdorf of 15 The Highway Leigh Creek 5731 Storekeeper and Roma Agnes Ruhdorf his wife
OF THE WITHIN LAND. PRODUCED 22.5.1974 AT 12.45pm
DEP. REG. GEN.

~~SL 5535792~~

SURRENDER OF UNDER LEASE No. 1918565
VIDE No. 4633592 PRODUCED 23.10.1980 AT 11.30

SL 5691631

SURRENDER OF LEASE No. 1951930
VIDE No. S-091631 PRODUCED 17.8.1983 AT 10.50
(Lessees Copy Lost)

~~TL 6303485 (1749063)~~ ~~SL 6303485~~ ~~SL 6366431~~ ~~5063/664~~

TRANSFER No. 6303485 To
The Uniting Church in Australia Property Trust (SA) of 33 Pine Street Adelaide 5000
OF THE WITHIN LAND. PRODUCED 22.1.1987 AT 11.45
underlease 1749063

SURRENDER OF underlease 1749063
VIDE No. 6303486 PRODUCED 22.1.1987 AT 11.45

SURRENDER OF Underlease No. 1999053
VIDE No. 6310643 PRODUCED 9.2.1987 AT 11.05

SURRENDER OF Underleases No. 1751105 and 2857622
VIDE No. 6310644 PRODUCED 9.2.1987 AT 11.05

SURRENDER OF Underlease No. 2401339
VIDE No. 6473844 PRODUCED 22.1.1988 AT 14.40

SURRENDER OF Underleases Nos 1790547, 1852721, 2768584, 2883976, 3182646 - 3458862
VIDE No. 6484440 PRODUCED 17.2.1988 AT 11.55

Application 53-4380 The within land is vested in SA Generation Corporation of 168 Greenhill Road Parkside 5063 pursuant to clause 4(4) of Schedule 3 of the Electricity Corporations Act 1994 Produced 20.6.1997 at 10:50

Application 8670759 The within land is vested in Flinders Power Pty. Ltd. of 168 Greenhill Road Parkside 5063 pursuant to Clause 4(1) of Schedule 3 of The Electricity Corporations Act 1994 Produced 23.4.1999 at 14.50

CAVEAT No. 8958583 LODGED BY NR Generating Holdings (No 1) Flinders Labuan (No 1) Ltd. Flinders Labuan (No 2) Ltd. and CMBH OVER THE WITHIN LAND. PRODUCED 8.9.2000 AT 11.50

CAVEAT No. 8958661 LODGED BY National Australia Bank Ltd. OVER THE WITHIN LAND. PRODUCED 8.9.2000 AT 15.30

CHANGE OF NAME No. 9243169 THE NAME OF THE WITHIN COMPANY IS CHANGED TO Resi FP Pty. Ltd. of Level 5, 200 Victoria Square Adelaide 5000
PRODUCED 20.12.2002 at 11.25

FLI.525.300

CROWN LEASE VOLUME 1067 FOLIO 36

The within Terms and Conditions are amended vide 9243176 Produced 20-11-2002 at 11:25

APPLICATION 9264948 the within land is
3. vested in NRGenerating Holdings (No.2) GmbH of 2 undivided 4th parts Flinders Labuan (No.1) Ltd. of 1 undivided 4th part and Flinders Labuan (No.2) Ltd. of 1 undivided 4th part all c/- Level 2 307 Queen Street Brisbane 4000 Produced 25.1.2002 at 12:40

4. MORTGAGE No 9264950TO
NATIONAL AUSTRALIA BANK LTD.
PRODUCED 25.1.2002 at 12:40

1. CAVEAT No 8958583 HAS BEEN WITHDRAWN VIDE 9264940 PRODUCED 25.1.2002 AT 12:40

2. CAVEAT No 8958661 HAS BEEN WITHDRAWN VIDE 9264941 PRODUCED 25.1.2002 AT 12:40

FLI.525.301

Xd.

S0003

LANDS TITLES REGISTRATION OFFICE
SOUTH AUSTRALIA

FORM APPROVED BY THE REGISTRAR-GENERAL

9243177

Series No.	Prefix
172	AL

BELOW THIS LINE FOR AGENT USE ONLY

CERTIFIED CORRECT FOR THE PURPOSES OF THE CROWN LANDS ACT 1929

REGISTERED CONVEYANCER

R.J. GAMBLE

AGENT CODE

Lodged by:)
) CHIEF DOCUMENTARY OFFICER
) CROWN TENURE UNIT LTAB
Correction to:) BOX 52

TITLES, CROWN LEASES, DECLARATIONS ETC. LODGED WITH INSTRUMENT (TO BE FILLED IN BY PERSON LODGING)

1. CL 1234/37
2.
3.
4.
5.

Assessor

~~PLEASE ISSUE NEW CERTIFICATE OF TITLES AS FOLLOWS~~

1.
2.
3.

Lands Titl 11:59 20/12/01 129900
Registration FEE $87.00

BELOW THIS LINE FOR OFFICE USE ONLY

Date: 20 DEC 2001	Time: 11.25	
FEES		
R.G.O.	POSTAGE	NEW C.T.
87		

CORRECTION	PASSED
	78

REGISTERED 21 OCT 2002

REGISTRAR-GENERAL

DELIVERY INSTRUCTIONS (Agent to complete)
PLEASE DELIVER THE FOLLOWING ITEM(S) TO THE UNDERMENTIONED AGENT(S)

ITEM(S)	AGENT CODE

FLI.525.111

CERTIFICATE OF ALTERATION

(Pursuant to Section 35(1) of the Crown Lands Act 1929)

CROWN RECORD(S)/CROWN LEASE(S) AFFECTED

The whole of the land comprised in Perpetual Lease No.19393
Registered in the Crown Lease Register Book Volume 1234 Folio 37

LAND DESCRIPTION OF PARCEL BEING MERGED/ADDED

NOT APPLICABLE

APPLICANT **MINISTER FOR ENVIRONMENT AND HERITAGE**

DELETE WHICHEVER IS INAPPLICABLE

~~(a) Hereby certifies that the said land having been allotted on recommendation of the Land Board to the Lessee(s) is hereby included in the abovementioned Crown Lease.~~

(b) Hereby on recommendation of the Land Board authorises the following alterations:

ALTERATION TO LEASE

The terms and conditions of the lease are amended as per the attached document.

EXECUTION

The Common Seal of: MINISTER FOR ENVIRONMENT AND HERITAGE was affixed hereto this 17th day of December 2001 by the authority of the Minister in the presence of :

MINISTER FOR ENVIRONMENT AND HERITAGE
COMMON SEAL
SOUTH AUSTRALIA

.....

TOTHE REGISTRAR-GENERAL
ADELAIDE

FLI.525.112

DEH 14/0202
MWOP19393.REDCA

South Australia
Perpetual Crown Lease
No. 19393

Lieutenant-Governor of South Australia as lessor

Electricity Trust of South Australia as lessee

525477

FLI.525.113

Perpetual Lease No. 19393

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Perpetual Lease No. 19393

Recital:

I SIR JOHN MELLIS NAPIER, Lieutenant-Governor in and over the State of South Australia and its dependencies in the Commonwealth of Australia (hereinafter with my successors in office designated by the term the *Lessor*), acting pursuant to the powers conferred upon me by section 43g of the Electricity Trust of South Australia Act, 1946, and for and on behalf of Her Majesty the Queen DO HEREBY LEASE to THE ELECTRICITY TRUST OF SOUTH AUSTRALIA, a body corporate incorporated under the said Electricity Trust of South Australia Act, 1946, and having its office at North Terrace, Adelaide in the said State (hereinafter designated by the term the *Lessee*) ALL THAT land containing three roods and thirty nine perches ($0^A:3^R:39^P$) or there-abouts and being Section numbered 319 North out of Hundreds out of Counties as the same is delineated in the public maps deposited in the Land Office in the City of Adelaide together with all the seams, beds and deposits of coal as well opened as unopened lying within and under the said lands (the said lands and said seams, beds and deposits of coal being hereinafter designated by the term the *Land*) TO BE HELD in perpetuity at the Rent and subject to the covenants and conditions set out below.

1. Definitions and Interpretation

1.1 Definitions

The following definitions apply unless the context requires otherwise.

Aboriginal Heritage Law means a law regulating or otherwise relating to the protection of matters of Aboriginal cultural heritage significance including, without limitation, the Aboriginal and Torres Strait Islander Heritage Protection Act 1984 (Cth) and the Aboriginal Heritage Act 1988 (SA).

Aboriginal Item means any object, remains or site which is protected under any Aboriginal Heritage Law.

Authorisation includes:

(a) any consent, authorisation, registration, filing, lodgement, agreement, notarisation, certificate, permission, licence, approval, authority or exemption from, by or with a Government Agency; or

(b) in relation to anything which will be fully or partly prohibited or restricted by law if a Government Agency intervenes or acts in any way within a specified period after lodgement, filing, registration or notification, the expiry of that period without intervention or action.

Authorised Officer in relation to a party to this Lease means any person from time to time nominated as an Authorised Officer by the party by a notice to the other party accompanied by certified copies of signatures of all new persons so appointed.

Business Day means a weekday on which banks are open for business in South Australia.

Chief Inspector of Mines means the Chief Inspector of Mines (or equivalent person or entity or delegate of any of them) appointed for the time being under the Mines and Works Inspection Act.

Completion has the meaning given in the Flinders Power Sale Agreement.

Completion Date has the meaning given in the Flinders Power Sale Agreement.

Crown means the Crown in right of the State of South Australia and includes any agency, instrumentality or emanation of it.

Determination means any notice, order, judgement or declaration issued or made by any Judicial Body that Native Title exists.

Development Programme means the development programme or programmes for, among other things, the carrying on of Mining Operations on, and/or the rehabilitation of, the Land as approved from time to time by the Chief Inspector of Mines.

Director of Mines means the Director of Mines (or equivalent person or entity or delegate of any of them) appointed for the time being under the Mining Act.

External Administration Event means:

(a) an administrator of the Lessee is appointed under the Corporations Law (or a similar officer is appointed under the law of South Australia or of another jurisdiction) and is not removed within 45 days following the making of the appointment; or

(b) a receiver, receiver and manager, administrative receiver or similar officer is appointed (either under the law of South Australia or of another jurisdiction) to all or substantially all of the assets and undertaking of the Lessee and is not removed within 45 days following the making of the appointment.

Flinders Power Sale Agreement means the Flinders Power Generation Business Sale Agreement dated [#] August 2000 made between (among others) the Lessee and the Treasurer.

Force Majeure Event means:

(a) any event (other than a change of law or the application or operation of a law) which is beyond the reasonable control of the Lessee and which bona fide prevents the Lessee from performing an obligation under this Lease, excluding:

  (i) an obligation to pay Rent or any other money as required under this Lease; and

  (ii) an obligation under clause 9,

  where that event could not have been prevented, overcome or remedied by the exercise of a standard of care and diligence consistent with that of a prudent person undertaking the obligation, including the expenditure of all reasonable sums of money; or

(b) any change to legislation enacted by the Parliament of South Australia or the Commonwealth of Australia or any change to any Statutory Instrument made thereunder which has the effect of either:

  (i) prohibiting the doing of some act or thing; or

  (ii) requiring the doing, cessation or omission of some act or thing,

  where compliance with that changed legislation or Statutory Instrument would prevent the Lessee from performing any obligation under this Lease.

Generator Sub-lease has the meaning given in the Northern Generating Plant Lease.

GLC means Generation Lessor Corporation, a subsidiary of the Treasurer established under the Public Corporations (Generation Lessor Corporation) Regulations 1999 (SA).

Government Agency means any government or any governmental, semi-governmental, local government, administrative, quasi-judicial or judicial entity or authority and includes a person or entity exercising powers under the Regulatory Regime. It also includes any self regulatory organisation established under statute or any stock exchange.

GST means the goods and services tax, as governed by A New Tax System (Goods and Services Tax) Act 1999 (Cth) and related legislation.

Improvements means all improvements that are deemed to be included in the Land under clause 6.3.

Independent Expert means a person appointed to determine the matters referred to him or her in accordance with clause 21.

Insolvency Event means, except for the purpose of a solvent reconstruction or amalgamation previously approved by the Lessor, an order is made by a court that the Lessee be wound up and that order is not overturned, quashed or permanently stayed within 14 days following the making of the order.

Judicial Body means any judicial or quasi-judicial body or tribunal.

Land has the meaning given in the Recital.

Lease End Date means the date on which this Lease comes to an end for any reason (including as a result of any surrender of this Lease by the Lessee) or the date on which this Lease is transferred to GLC or its nominee in accordance with clause 12, 13 or 14 (whichever occurs first).

Lease End Obligations means the obligations of the Lessee set out in clause 16.

Leigh Creek Line has the meaning given in the Leigh Creek Railways Sub-lease.

Leigh Creek Railways Sub-lease means the sub-lease of the Leigh Creek Line dated [*] September 2000 made between (among others) the Lessee and GLC pursuant to the Leigh Creek Sale/Lease Agreement.

Leigh Creek Sale/Lease Agreement means the Sale/Lease Agreement pursuant to which the Treasurer has granted to the Lessee the lease of the Leigh Creek Line and the lease of the Township.

Lessee has the meaning given in the Recital.

Lessor has the meaning given in the Recital.

Linked Leases means this Lease, the Other Perpetual Leases, the Northern Generating Plant Lease, the Generator Sub-lease, the Unit 1 Boiler Sub-lease, the Unit 2 Boiler Sub-lease, the Northern Land Lease, the Leigh Creek Railways Sub-lease, the Playford B Generating Plant Lease, the Playford B Land Lease and the Township Lease.

Loss means any and all losses (including loss of profit and loss of expected profit), actions, liabilities, damages, costs, expenses, diminutions in value or deficiencies of any kind or character (whether consequential or otherwise) including all interest and other amounts payable to third parties, all liabilities on account of taxes and all legal (on a full indemnity basis) and other expenses reasonably incurred in connection with investigating or defending any claims or actions, whether or not resulting in any liability and all amounts paid in settlement of claims or actions.

Mines and Works Inspection Act means the Mines and Works Inspection Act 1920 (SA).

Mining Act means the Mining Act 1971 (SA).

Mining Operations has the meaning given in clause 5.1(a).

Native Title has the meaning given in the NTA.

Northern Generating Plant means the Generating Plant as that term is defined in the Northern Generating Plant Lease.

Northern Generating Plant Lease means the lease of the Northern Generating Plant from GLC to the Lessee granted by the Treasurer on [*] September 2000 pursuant to the Northern Sale/Lease Agreement.

Northern Land has the meaning given in the Northern Land Lease.

Northern Land Lease means the lease of the land on which the Northern Generating Plant (among other things) is situated from GLC to the Lessee granted by the Treasurer on [ ] September 2000 pursuant to the Northern Sale/Lease Agreement.

Northern Sale/Lease Agreement has the meaning given in the Northern Generating Plant Lease.

NTA means the Native Title Act 1993 (Cth).

Other Perpetual Leases means Perpetual Leases No.18578 (Register Book Volume 1067 Folio 36), No.20311 (Register Book Volume 1589 Folio 2) and No.20239 (Register Book Volume 1545 Folio 20) granted by the Lessor to the Lessee pursuant to Section 43g of the Electricity Trust of South Australia Act 1946 (SA) as modified under the Flinders Power Sale Agreement pursuant to sections 14(8) and 14(9) of the Restructuring and Disposal Act.

Overdue Rate on any day means 2% per annum plus the arithmetic mean of the mid rates shown at or about 10.30am (Adelaide time) on the Reuters BBSW page (or any page or service which replaces it) for bills of exchange with a tenor of 90 days on that day.

Permitted Lien means:

(a) a repairer's lien arising in the ordinary course of business; or

(b) a lien or charge which arises by operation of law,

which, in either case, relates to a payment obligation that is:

(c) not yet due for payment; or

(d) due for payment but being contested in good faith.

Permitted Security Interest means:

(a) a Permitted Lien; and

(b) any other Security Interest permitted under clause 27.1.

Playford B Generating Plant means the Generating Plant as that term is defined in the Playford B Generating Plant Lease.

Playford B Generating Plant Lease means the lease of the Playford B Generating Plant from GLC to the Lessee granted by the Treasurer on [#] September 2000 pursuant to the Playford B Sale/Lease Agreement.

Playford B Land has the meaning given in the Playford B Land Lease.

Playford B Land Lease means the lease of the land on which the Playford B Generating Plant (among other things) is situated from GLC to the Lessee granted by the Treasurer on [*] September 2000 pursuant to the Playford B Sale/Lease Agreement.

Playford B Sale/Lease Agreement has the meaning given in the Playford B Generating Plant Lease.

Registered Native Title Body Corporate has the meaning given in the NTA.

Regulatory Regime means a scheme established to regulate the conduct of the mining industry in South Australia and is constituted at the Completion Date by the Mining Act, the Mines and Works Inspection Act and the Environment Protection Act 1993 (SA) and the Statutory Instruments and licences made and issued thereunder.

Rent means:

(a) for the period commencing 13 January 1960 to the Completion Date, an annual amount of $2.00; and

(b) from the Completion Date until the Lease End Date, $0.25.

Representative Aboriginal/Torres Strait Islander Body has the meaning given in the NTA.

Reserved Rights means all rights of any nature whatever in respect of all gold, silver, copper, tin and other metals, all ores and other substances containing metals, all minerals, all gems and precious stones, and all mineral oils upon in or under the Land (other than any seams, beds or deposits of coal upon in or under the Land) which are reserved to Her Majesty the Queen, Her heirs and successors and all persons lawfully claiming under or authorised by Her or them.

Restructuring and Disposal Act means the Electricity Corporations (Restructuring and Disposal) Act 1999 (SA).

Sale/Lease Agreement has the same meaning as in section 13 of the Restructuring and Disposal Act.

Security Interest means any mortgage, pledge, lien, charge, encumbrance or any security or preferential interest or arrangement of any kind. It includes:

(a) anything which gives a creditor priority to other creditors with respect to any asset; and

(b) retention of title other than in the ordinary course of day-to-day trading and a deposit of money by way of security but it excludes a charge or lien arising in favour of a Government Agency by operation of statute unless there is a default in payment of moneys secured by that charge or lien.

State NTA means the Native Title (South Australia) Act 1994 (SA).

Statutory Instrument has the same meaning as in the Acts Interpretation Act 1915 (SA).

Tax includes any tax, levy, impost, deduction, charge, rate, duty, compulsory loan or withholding which is levied or imposed by a Government Agency, and any related interest, penalty, charge, fee or other amount.

Term means, subject to transfer of this Lease to GLC or its nominee in accordance with clauses 12, 13 or 14 or surrender in accordance with this Lease, in perpetuity.

Termination by GLC Event has the meaning given in the Northern Generating Plant Lease.

Termination by Lessor Event has the meaning given in clause 13.1.

Township has the meaning given in the Township Lease.

Township Lease means the lease of the Township from GLC to the Lessee granted by the Treasurer on [ ] September 2000 pursuant to the Leigh Creek Sale/Lease Agreement.

Track Infrastructure has the meaning given in the Leigh Creek Railways Sub-lease.

Treasurer means the Treasurer of the State of South Australia acting as a body corporate.

Unit 1 Boiler Sub-lease has the meaning given in the Northern Generating Plant Lease.

Unit 2 Boiler Sub-lease has the meaning given in the Northern Generating Plant Lease.

1.2 Interpretation

Headings are for convenience only and do not affect interpretation. The following rules apply unless the context requires otherwise.

(a) The singular includes the plural and the converse.

(b) A gender includes all genders.

(c) Where a word or phrase is defined, its other grammatical forms have a corresponding meaning.

(d) A reference to a person, corporation, trust, partnership, unincorporated body or other entity includes any of them.

(e) A reference to a clause, annexure or schedule is a reference to a clause of, or annexure or schedule to, this Lease.

(f) A reference to an agreement or document (including, without limitation, any reference to this Lease) is to the agreement or document as amended, varied, supplemented, novated or replaced, except to the extent prohibited by this Lease or that other agreement or document.

(g) A reference to a party includes the party's successors and permitted substitutes or assigns.

(h) A reference to any Act or Statutory Instrument or particular provision of an Act or Statutory Instrument is taken to include:

(i) all regulations, orders or instruments issued under the Act, Statutory Instrument or provision;

(ii) any modification, consolidation, amendment, re-enactment, replacement or codification of the Act or Statutory Instrument or provision; and

(iii) any substituted Act or Statutory Instrument or substituted provision.

(i) A reference to dollars and $ is a reference to Australian currency.

(j) A reference to *writing* includes a facsimile transmission and any means of reproducing words in a tangible and permanently visible form.

(k) A reference to *conduct* includes any omission and any statement or undertaking, whether or not in writing.

(l) Mentioning anything after *include*, *includes* or *including* does not limit what else might be included.

(m) The Recital is an operative provision in this Lease.

1.3 Obligations of partners

(a) This clause applies where the Lessee is a partnership.

(b) Except where expressly stated otherwise, the obligations, undertakings, representations, warranties, indemnities and liabilities of the Lessee under this Lease bind all partners jointly and severally. Except where expressly stated otherwise, all references to the "Lessee" are to the partners jointly in partnership and to each partner severally. Any notice by or to, or act of, any one or more of them binds all of them.

(c) This Lease will continue to bind the partners jointly and severally notwithstanding the dissolution, or any change at any time in the constitution, of the Lessee, or any change at any time in the law regarding partnerships, and will continue to bind a partner even if it ceases to be a partner.

2. Lease

2.1 Grant

The Land is leased by the Lessor to the Lessee for the Term on the terms of this Lease and the Reserved Rights are reserved as set out in this Lease.

2.2 Registration

(a) The Lessor and the Lessee must co-operate with each other to enable the registration at the Lands Titles Office of any amendments to this Lease which are registrable.

(b) The Lessor must, at the Lessee's written request, produce the duplicate Crown Lease for the Land at the Land Titles Office to enable the Lessee to register any Security Interest.

(c) Any costs which may be necessarily incurred:

(i) in the production of such duplicate Crown Lease; or

(ii) in connection with the registration of amendments to this Lease,

will be borne by the Lessee.

3. Rent

Rent under this Lease will, if demanded by the Lessor, be payable by the Lessee to the Lessor:

(a) for the period commencing 13 January 1960 to the Completion Date, by way of annual amounts, payable in advance on 13 January in each year commencing on 13 January 1960 or, if that day is not a Business Day, the next Business Day; and

(b) from the Completion Date until the Lease End Date, on the Completion Date.

4. No Abatement

Despite any law or rule to the contrary, the obligation of the Lessee to pay Rent will not abate for any reason.

5. Use and Maintenance

5.1 Purpose

(a) To the extent of the rights conferred upon the Lessee under this Lease and subject to clause 5.1(b), the Lessee may only:

(i) use the Land or any part of it; or

(ii) permit the Land or any part of it to be used,

for the following purposes (the ***Mining Operations***):

(iii) to mine (whether by open or closed working) any seams of coal, vested in the Lessor or the Lessee, at or near Leigh Creek;

(iv) to treat, grade or otherwise prepare for sale, and use, sell or otherwise dispose of any coal so mined;

(v) to do any of the following things which the Lessee considers it necessary or convenient to do for the purpose of carrying the provisions of this Lease into effect:

(A) erect houses, buildings and other improvements, and grant leases or tenancies of, or rights to use or occupy, any land, house or building belonging to the Lessee;

(B) construct, repair and maintain streets and roads;

(C) plant, develop, improve and maintain public parks, squares, recreation grounds and other places of public resort;

(D) construct, acquire, maintain and manage sewerage systems and provide sewers and drainage for any premises;

(E) construct, acquire, maintain and manage waterworks, buy water, and sell and supply water;

(F) construct any works;

(G) make reasonable charges for any commodity or service sold or supplied by the Lessee;

(H) do or execute any other act, matter or thing, or enter into and carry out any transaction; and

(vi) from any main used by the Lessee, to supply water to persons at Leigh Creek and to sell and supply water to any other persons who can be conveniently supplied with water from that main.

(b) The Lessee must not permit any house, building, shop or store at any time to be erected or used on the Land as a public supply of intoxicating liquors without the prior written consent of the Lessor.

5.2 Use and Maintenance

(a) The Lessee must use and maintain the Land:

(i) in accordance with all applicable laws the breach of which would result in the Lessor or the Crown suffering or incurring material civil or criminal liability for which the Lessor or the Crown is not fully insured either under an insurance policy required to be taken out under clause 9.1(a) or under another insurance policy which the Lessee has notified the Lessor it has taken out and of which the Lessor and the Crown have the benefit; and

(ii) in a manner and to the extent necessary to comply with the requirements specified in any insurance policy relating to the Land required to be held under this Lease.

(b) The Lessee must ensure that Mining Operations on the Land are carried out:

(i) in an orderly, workmanlike and skilful manner; and

(ii) in accordance with the Development Programme.

(c) The Lessee must pay all costs, expenses, Taxes, fees and charges in connection with the use and maintenance of the Land, but not any income tax, fringe benefits tax, capital gains tax or any similar Tax payable by the Lessor on its overall net income or in relation to its own employees.

5.3 Destruction of Certain Animals and Plants

At all times between the Completion Date and the date on which this Lease is transferred to GLC or its nominee in accordance with clauses 12, 13 or 14 or surrendered, the Lessee must destroy on the Land and will to the satisfaction of the Lessor keep the Land free from:

(a) all classes of animals within any control area for that class to which the provisions of section 47 of the Animal and Plant Control (Agricultural Protection and Other Purposes) Act 1986 (SA) apply; and

(b) all classes of plants within any control area for that class to which the provisions of section 57 of the Animal and Plant Control (Agricultural Protection and Other Purposes) Act 1986 (SA) apply.

5.4 Information

(a) The Lessee must provide the Lessor with information on the condition of any part of the Land within a reasonable period after any reasonable request by the Lessor.

(b) The Lessor must not, unless the circumstances require, request information under clause 5.4(a) more frequently than 6 monthly.

5.5 Plans, Records and Returns

The Lessee must:

(a) make and keep proper and accurate plans and records of:

(i) all works carried out by it on the Land; and

(ii) all leases, tenancies or rights granted by it to use and occupy the Land (or any part of it) or any house or building on the Land (or any part of it);

(b) make and keep records and samples as prescribed in regulation 97 of the Mining Regulations or as required by a notice to the Lessee from any Government Agency;

(c) furnish returns to the Director of Mines as prescribed by section 76(1) of the Mining Act which must include the information required pursuant to any determination for the time being in force made by the Minister responsible for the administration of the Mining Act (or his delegate) pursuant to section 17(8) of the Mining Act; and

(d) submit to the Director of Mines from time to time at the Director's request a current plan of survey of the Land in the form reasonably required by the Director.

5.6 Access rights and Inspection

(a) The Lessee must permit the Lessor and its authorised representatives, if the Lessor requires, at reasonable times and having given the Lessee reasonable notice, to enter any part of the Land:

(i) to exercise the Lessor's rights, or carry out any of the Lessor's obligations, under this Lease; or

(ii) to determine, at the Lessor's expense, whether the Lessee is complying with its obligations under this Lease.

(b) When exercising its rights under clause 5.6(a), the Lessor and its authorised representatives:

(i) must not interfere with the operations or business of the Lessee;

(ii) will be subject to the same limitations upon and conditions of access as apply to any third party visitors to the site; and

(iii) must comply with all safety requirements and other reasonable directions of the Lessee in relation to such access.

(c) The Lessee must:

(i) permit the Lessor and its authorised representatives, if the Lessor requires, at reasonable times and having given the Lessee reasonable notice, access to all information made and kept by the Lessee under clause 5.5; and

(ii) make no charge for access to such information, records, samples, returns and plans but the Lessee is entitled to charge a fee to cover costs involved in supplying any other information under clause 5.4.

(d) The Lessor must not, unless the circumstances require, require inspections under clause 5.6(a) more frequently than 6 monthly.

5.7 Laws and Regulatory Compliance

The Lessee must comply with all laws and regulatory requirements (including all Authorisations) applicable to the use, possession of or access to the Land and the exercise of any rights or the discharge of any obligations arising under this Lease.

5.8 Acting Through Third Parties

The Lessee may discharge its obligations through the actions of employees, contractors and agents but the Lessee will be liable for the acts or omissions of such employees, contractors and agents as if they were the acts or omissions of the Lessee.

6. Title

6.1 Lessor's title

(a) The Lessee acknowledges that:

(i) the Land is and remains the property of the Lessor; and

(ii) the Lessee has no rights in relation to the Land other than the rights under this Lease and the rights conferred on the Lessee by applicable laws or the Regulatory Regime.

(b) The Lessor must, if requested by the Lessee and at the expense and risk of the Lessee, exercise its rights and entitlements in or arising from the

Land to assist the Lessee in respect of any matter relating to the Land where:

(i) the Lessee is unable to act itself by reason of the Lessor's interest in the Land;

(ii) the matter to be undertaken by the Lessee is one permitted by the terms of this Lease; and

(iii) in doing so:

(A) the Lessor assumes or incurs no obligations or present or contingent liabilities to a third party (including the Lessee) for which the Lessor is not fully insured either under an insurance policy required to be taken out under clause 9.1(a) or under another insurance policy which the Lessee has notified the Lessor it has taken out and of which the Lessor has the benefit; or

(B) the Lessor is, to the reasonable satisfaction of the Lessor, adequately indemnified by the Lessee in respect of such obligations and liabilities and the liability of the Lessee under such indemnity is the subject of adequate security in favour of the Lessor.

6.2 Protection of title

The Lessee must, to the extent practicable having regard to its legal capacity and its obligations under this Lease:

(a) safeguard and protect the property, title and rights of the Lessor in and to the Land; and

(b) not do or permit to be done any act, omission or thing which might jeopardise the property, title or rights of the Lessor in or to the Land.

6.3 Fixtures

If any improvements to the Land (whether structural and/or permanent or not, existing at the date of commencement of this Lease or not or erected by the Lessee or not) are fixtures to the Land then:

(a) for the purposes of this Lease, a reference to the Land will be taken to include a reference to such improvements; and

(b) property in those improvements vests in the Lessor upon erection and without compensation to the Lessee or any other person.

6.4 Native Title Claims

Unless this Lease has been registered at the Lands Titles Office, the Lessor must notify the Lessee in writing of any Native Title claims which are lodged over any of the Land after the Completion Date, within 1 month of the Lessor receiving notice of such claim pursuant to section 66(3) of the NTA or section 16(1)(b) of the State NTA.

6.5 Determination of Native Title

(a) As at the Completion Date, the Crown does not acknowledge that any Native Title exists in any of the Land.

(b) If any claim is made that Native Title exists in any of the Land, the Crown will have the right, by written notice given to the Lessee, to represent the Lessee and, as the representative of the Lessor or both the Lessor and the Lessee as the case requires, to have the exclusive conduct of any negotiations or proceedings relevant to any claim of Native Title over any of the Land.

(c) The right of the Crown to represent the Lessee under clause 6.5(b):

(i) includes the right to represent the Lessee in any proceedings in the nature of any Determination application or other claim that Native Title exists or existed over the whole or any part of the Land and in any negotiations in connection with those proceedings;

(ii) does not include the right to represent the Lessee in any proceedings brought or made against the Lessee relating solely to any claim for compensation as referred to in clauses 6.5(d)(ii) or 6.5(d)(iii) or in any negotiations in connection with those proceedings;

(iii) includes the right to make admissions, concessions or agreements prejudicial to the interests of the Lessee in relation to the Land:

(A) if the Crown has obtained the prior consent of the Lessee to the relevant admission, concession or agreement, which consent must not be unreasonably withheld;

(B) if the admission, concession or agreement would not materially adversely affect the carrying on of Mining Operations on and from the Land (including by having regard to anything that the Crown offers to the Lessee to do or to refrain from doing) and the Crown has consulted with the Lessee regarding the relevant admission, concession or agreement; or

(C) otherwise than in the instances referred to in clauses 6.5(c)(iii)(A) and 6.5(c)(iii)(B), on the basis that the Crown will be responsible for any losses incurred by the Lessee to the extent caused directly as a result of the relevant admission, concession or agreement; and

(iv) does not include the right to represent the Lessee in any proceedings made or brought by or against the Lessee for injunctive relief or in any negotiations in connection with those proceedings except where those proceedings are made or brought in the course of any proceedings referred to in clauses 6.5(c)(i).

(d) As between the Crown and the Lessee:

(i) subject to clause 6.5(d)(ii) the Crown, and not the Lessee, will be responsible for the payment of compensation and any other

monies payable to the Native Title holders of, or Native Title claimants to, any of the Land as a result of:

(A) the transfer of this Lease to the Lessee pursuant to the Flinders Power Sale Agreement or the grant or exercise by the Lessee or anyone claiming through or under the Lessee of the rights conferred on the Lessee in respect of the Land pursuant to this Lease; or

(B) the use of the Land for the purposes of Mining Operations or any other use where that other use was being conducted at the Completion Date;

(ii) the Lessee, and not the Crown, will be responsible for the payment of compensation and any other monies payable as a result of any exercise of rights which constitutes a future act (as defined in the NTA) in respect of the Land which is attributable to the Lessee or anyone claiming through or under the Lessee and which takes place on or after the Completion Date; and

(iii) the Lessee, and not the Crown, will be responsible for the payment of compensation or any other monies so payable if the obligation to pay does not fall within clause 6.5(d)(i) and arises as a result of the use to which the Lessee or anyone claiming through or under the Lessee puts the Land or any act or omission of, or breach of this Lease by, the Lessee or anyone claiming through or under the Lessee.

(e) Except as otherwise required by law, the Crown must keep the Lessee informed of all material matters relevant to any negotiations or proceedings referred to in clause 6.5(b).

6.6 Artefacts and Aboriginal Items

(a) Any fossils, artefacts, historical coins or articles of historical value or antiquity and any remains or things of geological, historical or archaeological interest found or discovered on or under the surface of the Land (other than any Aboriginal Item) will be deemed to be the property of the Crown.

(b) In relation to any thing which is the subject of clause 6.6(a), the Lessee must do the following acts, matters or things:

(i) notify the Lessor immediately of any such discovery;

(ii) not do, or permit to be done, any act which may damage any such thing;

(iii) use its reasonable endeavours to prevent any such thing being removed from the Land;

(iv) at the Lessor's reasonable expense, carry out the Lessor's instructions or orders in respect of the excavation, removal, delivery up or disposal of any such thing; and

(v) permit the Lessor and any person authorised by the Lessor either to excavate, remove or dispose of any such thing or to watch,

examine, manage or supervise any such excavations, disposals or removals.

(c) The Lessee must comply with the Aboriginal Heritage Law in relation to any Aboriginal Item on, under or comprising all or any part of the Land.

6.7 Caveats

(a) Subject to clause 6.7(b) and for so long as the lessor under this Lease is or forms part of the Crown, the Lessee must not lodge or cause to be lodged a caveat over the Land or any portion of the Land.

(b) If the Lessee reasonably considers that the Lessor has breached or may breach this Lease and that the Lessee's rights pursuant to this Lease may be adversely affected by that breach, then the Lessee may lodge a caveat over the Land, or any portion of the Land, to the extent necessary to protect a caveatable interest of the Lessee under or pursuant to this Lease which may be adversely affected by any such breach of the Lessor.

7. Easements and Reservation of Rights

7.1 Easements

(a) The Lessor may at any time on or after the Completion Date for the purpose of:

(i) installing, maintaining or repairing any service or utility to the Land; or

(ii) maintaining, operating, repairing, modifying, installing or replacing any infrastructure used to carry out any Mining Operations,

dedicate land to, or transfer, amend, grant or create or take the benefit of any easement or other similar right to or from, any person, or enter into any similar arrangement or agreement with:

(iii) any adjoining owner, lessee or occupier or other person who has an interest in any land (including the Land) other than any Native Title holder, Native Title claimant, Registered Native Title Body Corporate or Representative Aboriginal/Torres Strait Islander Body; or

(iv) any Government Agency (other than with respect to any Native Title rights and interests in relation to the Land),

as the Lessor thinks fit.

(b) When exercising its rights under clause 7.1(a), the Lessor must not materially interfere with:

(i) the carrying on of Mining Operations on the Land by the Lessee or anyone claiming through the Lessee; or

(ii) any improvements (including the Improvements) on the Land.

(c) The Lessee may, by notice in writing, request that the Lessor, at the Lessee's risk and expense, create or grant an easement or other right, or

enter into an arrangement or agreement, in accordance with clause 7.1(a). Subject to clause 7.1(d), the Lessor must comply with that request.

(d) The Lessor is not obliged to create or grant an easement or other right, or enter into an arrangement or agreement, at the Lessee's request if:

(i) by doing so, the Lessor assumes or incurs obligations or present or contingent liabilities to a third party (including the Lessee) which are not, to the reasonable satisfaction of the Lessor, adequately indemnified by the Lessee. The liability of the Lessee under such indemnity must be the subject of adequate security in favour of the Lessor; or

(ii) the Lessor is of the view that the proposed creation or granting of the easement or other right, or the proposed arrangement or agreement, is not reasonably necessary for the purposes of the carrying on of Mining Operations on the Land or some aspect of Mining Operations.

(e) This Lease will be taken to be subject to any easement or other right that is created or granted pursuant to this clause 7.1.

7.2 Reservation of Rights

(a) The Lessor reserves, and this Lease is granted subject to, the Reserved Rights.

(b) The Lessor must not, and must ensure that persons authorised by the Lessor do not, carry out any activities in relation to any of the Reserved Rights in a manner that would materially interfere with the carrying on of Mining Operations on the Land by the Lessee or any person claiming through the Lessee.

8. Third Party Rights

The Lessee accepts this Lease subject to:

(a) any statutory or registered rights existing at the Completion Date;

(b) any easements or other similar rights created after the Completion Date in accordance with clause 7.1; and

(c) the Reserved Rights.

9. Insurance

9.1 Insurance Obligations

(a) Except as otherwise agreed by the Lessor, the Lessee must ensure that at all times between the Completion Date and the date on which this Lease is transferred to GLC or its nominee in accordance with clauses 12, 13 or 14 or surrendered:

(i) all improvements (including the Improvements) on the Land are insured for reinstatement; and

(ii) there is taken out and kept in force other insurance that relates to the potential liability of the Lessor or the Lessee to third parties arising out of the use or possession of the Land,

in the manner and to the extent which a prudent lessee of the Land and a prudent lessor of the Land bound by the terms of this Lease would require, as agreed by the Lessor and the Lessee, or failing agreement, as determined by an Independent Expert.

(b) The Lessor and the Lessee acknowledge that schedule 7 to the Flinders Power Sale Agreement specifies the insurances which they agree will satisfy the requirements of clauses 9.1(a) and 9.2 until the date that a different requirement as to such insurances is agreed or determined under clause 9.1(a).

9.2 Conditions

The Lessee must ensure that each insurance policy required to be taken out under clause 9.1(a) (other than workers' compensation) is on terms and conditions reasonably satisfactory to the Lessor and, without limitation, the Lessor may require such an insurance policy to provide that:

(a) the Lessor and the Crown are each specified as an insured party;

(b) breach or non disclosure by one insured will not affect the cover of any other insured;

(c) the insurer waives all rights of subrogation in relation to claims between the insureds;

(d) the amount of any excess or deductible payable by an insured in respect of a claim will not exceed the amount determined by the Lessor as customary for similar policies;

(e) all claims for insurance premiums, levies, stamp duties, charges or commissions against the Lessor and the Crown are waived; and

(f) the insurer will not terminate the policy unless the relevant default or breach remains unremedied for at least 30 days after notice by the insurer to the Lessor specifying that default or breach.

9.3 Remedy for Default

If the Lessee fails to take out or to keep in force an insurance policy required to be taken out under clause 9.1(a) which complies with clause 9.2, the Lessor may do anything which it determines is advisable or necessary to take out or keep in force that policy or to take out a new policy that complies with clauses 9.1(a) and 9.2 at the cost of the Lessee and in the name of the Lessor and/or others (including the Lessee). The Lessor is not obliged to do anything under this clause 9.3.

9.4 Compliance and Enforcement

(a) The Lessee must:

(i) comply with the terms of each insurance policy required to be taken out under clause 9.1(a);

(ii) take all steps to claim, and to collect or recover, money due to it under or in respect of such an insurance policy; and

(iii) do everything (including providing documents, evidence and information) necessary or desirable in the opinion of the Lessor to enable the Lessor or the Crown to claim, and to collect or recover, money due to either of them under or in respect of such an insurance policy.

(b) The Lessor must do everything (including providing documents, evidence and information) necessary or desirable to enable the Lessee to claim, and to collect or recover, money due to it under or in respect of an insurance policy required to be taken out under clause 9.1(a).

9.5 Notice of Claims

The Lessee must notify the Lessor as soon as possible of:

(a) a cancellation of, a change in or a reduction in the coverage of, an insurance policy required to be taken out under clause 9.1(a);

(b) such an insurance policy becoming void or voidable; or

(c) any other material circumstance or correspondence relating to such an insurance policy.

9.6 Use of Insurance Proceeds

Except as otherwise agreed by the Lessor, the Lessee must:

(a) use the proceeds of the insurance policy required to be taken out under clause 9.1(a)(i) in reinstatement of so much of the improvements (including the Improvements) on the Land as will ensure that the Lessee complies with its obligations under this Lease except:

(i) to the extent that the Lessor and the Lessee agree, or failing agreement, an Independent Expert determines, that it is not economically viable for the Lessee to reinstate those improvements; or

(ii) if a lessor or lessee under any Other Perpetual Lease has served a valid notice under clause 12 of that Other Perpetual Lease to transfer that Other Perpetual Lease,

and, to the extent the insurance proceeds exceed the amount required to reinstate those improvements or are not required to be used to reinstate those improvements, the Lessee may retain those proceeds; and

(b) use the proceeds of all insurance policies required to be taken out under clause 9.1(a)(ii) and received by it to discharge the liability or make good the loss covered by the insurance policy.

9.7 Premiums

The Lessee must pay when due all premiums, commissions, levies, stamp duties, charges and other expenses necessary for taking out and keeping in force the insurance policies required to be taken out under clause 9.1(a) (including a policy taken out under clause 9.3).

9.8 Insurers

The Lessee must take out each insurance policy required to be taken out under clause 9.1(a) with independent and reputable insurers reasonably acceptable to the Lessor.

9.9 Information

The Lessee must provide the Lessor with annual certificates of currency in respect of all insurance policies required to be taken out under clause 9.1(a) and, on reasonable request, other details on such insurance policies which the Lessor reasonably requires.

9.10 No prejudicial action

The Lessee must not do, permit, or omit to do, anything which may prejudice an insurance policy required to be taken out under clause 9.1(a).

10. Indemnities

10.1 General Indemnities

To the full extent permitted by law, the Lessee must, subject to clause 10.2, indemnify the Lessor and the Crown on demand against all Losses of the Lessor or the Crown:

(a) in either case, incurred in its capacity as a lessor of the Land under this Lease or an owner or previous owner or an occupier or previous occupier of the Land or an operator or previous operator of any Mining Operations, as the case may be;

(b) incurred or arising during the period from the Completion Date to the date on which all of the Lessee's Lease End Obligations have been discharged; and

(c) directly or indirectly relating to or arising out of the Land or any part of it, or as a result of acts or omissions of the Lessee, including by reason of or relating to:

(i) the possession, condition, use, maintenance or return of the Land or any part of it;

(ii) any damage to property or death of or injury to any person which may be or is alleged to be suffered or sustained in, on or in relation to the Land or any part of it;

(iii) all claims and demands made against the Lessor or the Crown by any third party in respect of the Land or any part of it, or the possession, condition, use, maintenance or return of the Land or any part of it, excluding any claim or demand:

(A) in relation to any past act, intermediate period act, previous exclusive possession act or previous non-exclusive possession act (all as defined in the NTA) in respect of the Land or any part of it, or to which clause 6.5(d)(i) applies; or

(B) in relation to any future act (other than an intermediate period act) (both as defined in the NTA) in respect of the Land or any part of it and which is attributable to the Lessor or the Crown and took place prior to the Completion Date; or

(C) for the payment of compensation or other monies as referred to in clause 6.5(d)(i);

(iv) the occurrence of any Termination by Lessor Event;

(v) any breach of or non-compliance by the Lessee with any applicable law or regulatory requirement relating to the Land or any part of it or the possession, condition, use, maintenance or return of the Land or any part of it but excluding any breach of or non-compliance with the NTA or the State NTA relating to the Land arising prior to the Completion Date, or to which clause 6.5(d)(i) applies;

(vi) any other breach by the Lessee of its obligations under this Lease (including any of its Lease End Obligations),

except to the extent caused by or otherwise primarily a result of:

(d) a wilful act of the Lessor other than in the exercise of its rights or the performance in accordance with this Lease of its obligations under this Lease or the exercise of its rights or the performance of its obligations under any applicable law; or

(e) a breach by the Lessor of its obligations under this Lease.

10.2 Prior Events

Clause 10.1 does not apply to a Loss relating to or arising out of an event occurring prior to the Completion Date.

10.3 Claims

Where the Lessor or the Crown makes a claim under the indemnity provided to the Lessor and the Crown under clause 10.1 and:

(a) the Lessee has provided an unqualified acknowledgement that such indemnity applies to the claim; and

(b) the Lessee has provided security to the reasonable satisfaction of the Lessor as to any payment that may fall due under such an indemnity,

the Lessee will have the right, subject to the terms of any insurance policy which indemnifies in relation to that claim, by written notice to the Lessor to represent the Lessor or the Crown (as the case may be) in relation to the claim (at the expense and risk of the Lessee) and will have the exclusive conduct of any proceedings relevant to any claim referred to in clause 10.1. The Lessee must not make any admissions or concessions prejudicial to the interests of the Lessor or the Crown without the prior written approval of the Lessor, which must not be unreasonably withheld.

10.4 Release

The Lessee unconditionally and irrevocably releases the Lessor and the Crown from any liability which the Lessor or the Crown may have to the Lessee for any consequence arising from:

(a) the Lessee's use, possession of or access to the Land or any part of it;

(b) regulatory change in the electricity supply industry or that affects the coal mining industry; or

(c) the exercise of any rights by, or the performance in accordance with this Lease of any obligations of, the Lessor arising under this Lease.

10.5 Other Agreements

Nothing in this clause 10 has the effect of releasing the Lessor from any express liability that the Lessor may have to the Lessee under this Lease.

11. Exclusion of Warranties

11.1 Exclusion of warranties

(a) The Lessee acknowledges and agrees to the full extent permitted by law that the Lessee:

(i) has not relied in any way on the skill or judgment of the Lessor or the Crown as to the condition of the Land or the suitability or fitness of the Land or any part of it for the Lessee's or any purpose;

(ii) accepts the Land and each part of it in its condition, age, capacity, quality, dimensions, configuration, suitability, fitness, limitations and compliance with laws current at the Completion Date;

(iii) takes this Lease and the Land subject to any restrictions imposed by or under the provisions of all applicable laws. The Lessor and the Crown do not give any implied warranty as to any uses permitted on the Land or that any improvements (including the Improvements) have been made and maintained in compliance with all applicable laws; and

(iv) takes this Lease and the Land subject to and will not make any objection, requisition or claim for compensation against the Lessor or the Crown in respect of or arising out of:

(A) any encroachment by or on the Land;

(B) any breach of any statute, ordinance or regulation applicable to or affecting the Land;

(C) any outstanding or unsatisfied notice, order or requirement made by any Government Agency applicable to or in respect of Land; or

(D) any installation or services (including sewers, drains, pipes, cables and wires) which:

(1) are on or pass through or over the Land; or

(2) are used in common with any adjoining land or pass through any other land,

whether or not there are easements or rights in respect of such installations that affect or benefit the Land.

(b) The Lessee acknowledges and agrees to the full extent permitted by law that all conditions, warranties and representations relating to the Land (whether expressed, implied, statutory, collateral or otherwise) are excluded, and that the Lessee must accept the Land as it is with all faults and defects (if any).

11.2 Other Agreements

Nothing in this clause 11 has the effect of releasing the Lessor from any express liability that the Lessor may have to the Lessee under this Lease.

12. Transfer on Notice

(a) The Lessee may, and the Lessor may require the Lessee to, transfer this Lease to GLC or its nominee by giving 1 month's notice to the other at any time after:

(i) the Lessee and any person claiming through the Lessee have permanently ceased to carry on Mining Operations on both:

(A) the Land; and

(B) the land the subject of the Other Perpetual Leases; and

(ii) the Lessee has complied with the provisions of the Development Programme,

in which case the Lessee must transfer this Lease to GLC or its nominee, and the Lessor must procure that GLC or its nominee accepts that transfer, such transfer to take effect on the expiry of the 1 month period of notice.

(b) This Lease shall be transferred to GLC or its nominee if any Other Perpetual Lease is transferred to GLC or its nominee.

(c) On the transfer of this Lease pursuant to this clause 12, and except as otherwise expressly provided in this Lease, the Lessee is released from its obligations under this Lease except to the extent that the Lessee has not performed any obligations which it was required to perform on or prior to the date of the transfer of this Lease.

13. Transfer on Termination by Lessor Event

13.1 Termination by Lessor Event

Each of the following is a Termination by Lessor Event where it occurs after the Completion Date.

(a) (**Non-payment of Monies**) The Lessee does not, within a period of 45 days following delivery to the Lessee of a written demand from the Lessor requiring the Lessee to pay that amount, pay to the Lessor an amount which is due and payable to the Lessor under this Lease.

(b) (**Insolvency or External Administration Events**):

(i) An Insolvency Event occurs and the rights and obligations of the Lessee under this Lease have not, within 12 months following the date of occurrence of the Insolvency Event, been assigned or transferred to a person that is solvent.

(ii) An External Administration Event occurs and the rights and obligations of the Lessee under this Lease have not, within 18 months following the date of occurrence of the External Administration Event, been assigned or transferred to a person that is solvent.

(c) (**Unauthorised dealing**) Except with the prior consent of the Lessor or as expressly permitted under this Lease, the Lessee:

(i) sells, transfers or otherwise disposes of; or

(ii) creates or allows to exist a Security Interest (other than a Permitted Security Interest) over,

its interest in this Lease or all or part of the Land.

(d) (**Use and Maintenance**) Each of the following has occurred:

(i) the Lessee has committed a breach of any of its obligations under clauses 5.1, 5.2(a), 5.2(b), 5.3 or 5.5 or has failed to comply with the Development Programme;

(ii) the Lessor has notified the Lessee in writing that the breach referred to in clause 13.1(d)(i) has occurred and has provided details of the circumstances constituting that breach to the Lessee; and

(iii) the Lessee has not remedied or rectified the consequences of the breach (including by way of the payment or expenditure of all reasonable sums of money) within 3 months following the date of delivery of the notice under clause 13.1(d)(ii).

13.2 Transfer to GLC or its Nominee

(a) The Lessor is entitled to require the Lessee to transfer this Lease to GLC or its nominee while a Termination by Lessor Event subsists.

(b) A requirement to transfer under clause 13.2(a) must be made by delivery of a written notice to the Lessee which details the circumstances constituting the Termination by Lessor Event.

(c) The Lessee must transfer this Lease to GLC or its nominee on the date specified in the notice given pursuant to clause 13.2(b), and the Lessor must procure that GLC or its nominee accepts that transfer.

(d) On the transfer of this Lease pursuant to this clause 13.2, and except as otherwise expressly provided in this Lease, the Lessee is released from its obligations under this Lease except to the extent that the Lessee has not

performed any obligations which it was required to perform on or prior to the date of the transfer of this Lease.

13.3 Notification

The Lessee must promptly notify the Lessor in writing of the occurrence of any Termination by Lessor Event.

14. Other Transfer Events

14.1 Linked Leases to be Co-terminous

(a) This Lease will:

(i) be deemed to be transferred to the Lessor if any of the Other Perpetual Leases are transferred to the Lessor; or

(ii) be deemed to be surrendered if any of the Other Perpetual Leases are surrendered.

(b) If:

(i) the Lease End Date under the Northern Generating Plant Lease or the Northern Land Lease occurs as a result of a Termination by GLC Event under either of them; or

(ii) the Lease End Date under the Northern Generating Plant Lease occurs as a result of a termination under clauses 2.3(c), 15.4(f), 16.1(b)(i) or 33(a)(i) of the Northern Generating Plant Lease,

then the Lessee must transfer this Lease to GLC or its nominee, and the Lessor must procure that GLC or its nominee accepts that transfer, such transfer to take effect on the Lease End Date under the Northern Generating Plant Lease or the Northern Land Lease (as the case may be).

(c) If:

(i) the Lease End Date under any Linked Lease (other than the Other Perpetual Leases) occurs as a result of a Termination by Lessee Event under that Linked Lease; and

(ii) the lessee under each of the Linked Leases (other than this Lease or the Other Perpetual Leases) has elected by written notice to the relevant lessor to terminate all of those Linked Leases,

then the Lessee must transfer this Lease to GLC or its nominee, and the Lessor must procure that GLC or its nominee accepts that transfer, such transfer to take effect on the date that the notice referred to in clause 14.1(c)(ii) is given (or such later date as is specified in that notice).

14.2 Transfer following termination of other Linked Leases

(a) If this Lease is transferred in accordance with clause 14.1(b) then the rights, entitlements, duties and obligations of the Lessor and the Lessee under this Lease will be the same as if this Lease were transferred under clause 13;

(b) If this Lease is transferred in accordance with clause 14.1(c) then the Lessee may make no claim of any nature whatever against the Lessor arising from the transfer of this Lease.

14.3 Effect of Transfer

On the transfer of this Lease pursuant to this clause 14, and except as otherwise expressly provided in this Lease, the Lessee is released from its obligations under this Lease except to the extent that the Lessee has not performed any obligations which it was required to perform on or prior to the date of the transfer of this Lease.

15. No Termination or Surrender

Despite any law or rule to the contrary and except as otherwise agreed between the Lessor and the Lessee:

(a) neither the Lessor nor the Lessee may terminate or has any right to terminate or obtain any order with the effect of terminating this Lease;

(b) this Lease will not terminate, be frustrated (whether at common law or by statute), be repudiated or be taken to have been repudiated for any reason; and

(c) subject to clause 14.1(a) the Lessee may not surrender, and does not have any right to surrender or obtain any order with the effect of requiring the Lessor to accept a surrender of, this Lease.

16. Return of Land on Transfer, Expiry or Termination

16.1 Return

On and with effect from the Lease End Date, the Lessee must:

(a) return and surrender the Land to the Lessor or its nominee in a condition which complies with all laws applicable at that time and the Development Programme;

(b) provide the Lessor or its nominee with an indemnity and security acceptable to the Lessor in respect of any material litigation or similar proceedings pending with respect to all or part of the Land other than in respect of any such litigation or proceedings caused by or otherwise primarily as a result of anything referred to in clauses 10.1(d) or 10.1(e);

(c) pay all the costs and expenses of the Lessor or its nominee in relation to the return of the Land;

(d) procure the release and discharge of all Security Interests over all or any part of the Land (other than any Permitted Liens);

(e) within 2 months after the Lease End Date, remove from the Land all of the property of the Lessee or any person claiming through the Lessee. The Lessee must not, in any such removal, damage the Land or any improvements (including the Improvements) on the Land or other items of property. If the Lessee causes any such damage then the Lessee must

promptly repair that damage. If the Lessee fails to remove such property in accordance with this clause 16.1(e) then all the Lessee's right, title and interest in that property not removed will vest in the Lessor absolutely and the Lessor will not be liable in any way or manner to compensate the Lessee in respect of any such property. The Lessor will be entitled to recover from the Lessee any costs incurred in the removal and disposal of any property of the Lessee which the Lessor determines not to be of value to the Lessor;

(f) deliver to the Lessor or its nominee up to date, complete and accurate copies of all reports, documents, plans and specifications and all other materials that are required by applicable laws to be retained in respect of the Land or that relate to the ownership, use or maintenance of the Land; and

(g) use its best endeavours to procure the transfer to the Lessor or its nominee of such Authorisations relating to the Land as are capable of being transferred and, in respect of those which are not capable of being transferred, do all things reasonably necessary to assist the Lessor or its nominee in obtaining all other necessary Authorisations relating to the Land;

(h) except where the Lease End Date occurs as a result of the transfer of this Lease to GLC or its nominee in accordance with clause 12, clause 14.1(a)(i) (where this Lease is transferred to the Lessor as a result of the transfer to the Lessor of any Other Perpetual Lease under clause 12 of that Other Perpetual Lease) or clause 14.1(c) or as a result of surrender of this Lease:

(i) deliver to the Lessor or its nominee a certificate from 2 directors of the Lessee that as of the Lease End Date all services, facilities, agreements and other instruments necessary for the use and maintenance of the Land have been obtained or are readily commercially available on reasonable terms;

(ii) use its best endeavours to assign to the Lessor or its nominee or provide the benefit to the Lessor or its nominee of all services, facilities, agreements and other instruments referred to in clause 16.1(h)(i) which are not readily commercially available on reasonable terms; and

(iii) in so far as any confidential proprietary data information or technology of the Lessee or any person has become effectively integrated into the Improvements or any of the records, documents, instruments or systems used for the operation of Improvements (***confidential information***) the Lessee must, or must use its best endeavours to cause the relevant owner of such confidential information to, enter into such arrangements as are reasonable requested by the Lessor to permit the Lessor or its nominee to use and enjoy the benefits of such confidential information without being obliged to make any royalty or similar payment.

16.2 Condition

If the Lessee does not comply with any of its obligations under clause 16.1, the Lessor may take any action it considers necessary to ensure that the Lessee's obligations are fulfilled. The Lessor is appointed the attorney of the Lessee for this purpose. All costs and expenses of doing so must be paid by the Lessee on demand by the Lessor.

16.3 Actions during the Term

During the period from the Completion Date to the date on which this Lease is transferred to GLC or its nominee in accordance with clauses 12, 13 or 14 or surrendered, the Lessee must use its best endeavours to acquire intellectual property, goods and services of the type the subject of clause 16.1 on terms and conditions that will permit the Lessee to comply with the terms of clause 16.1 as applicable.

17. Force Majeure Events

17.1 Notice of Force Majeure Event

If a Force Majeure Event occurs, the Lessee must promptly upon becoming aware of the Force Majeure Event provide a written notice to the Lessor specifying the following:

(a) the event which is said to be a Force Majeure Event;

(b) the obligations of the Lessee under the Lease the performance of which are said to be prevented;

(c) the steps which the Lessee has taken or will take to overcome the effect of the event;

(d) the time period the Lessee expects will elapse before it will be able to resume performance of the relevant obligations; and

(e) any other information reasonably requested by the Lessor.

17.2 Excused from performance

The Lessee will be excused from performance of an obligation under this Lease (other than an obligation to pay Rent or any other money as required under this Lease or an obligation under clause 9) for so long as the performance of the obligation is prevented by a Force Majeure Event, but only if the Lessee:

(a) has complied with its obligations under clauses 17.1, 17.3 and 17.4; and

(b) undertakes with all due expedition all reasonable steps to overcome the effect of the Force Majeure Event.

17.3 Notice of Potential Force Majeure Event

(a) The Lessee must promptly notify the Lessor of any circumstances of which it is aware which may become a Force Majeure Event.

(b) The Lessee must provide to the Lessor information relating to those circumstances requested by the Lessor.

17.4 Conference

The Lessor may require the Lessee to confer with the Lessor in relation to any circumstances which may become a Force Majeure Event or any event which the Lessee claims to be a Force Majeure Event.

18. Taxes and Costs

18.1 Stamp duty and costs

(a) Subject to clause 18.2, the Lessee must pay and indemnify the Lessor and the Crown against any liabilities for stamp, transaction, registration and similar Taxes (including fines and penalties resulting from delay or omission to pay these Taxes) which may be payable in relation to this Lease or the registration of this Lease or the performance or enforcement of this Lease or any payment or receipt or other transaction contemplated by it, except:

(i) to the extent that any payment by the Lessee is prohibited by law;

(ii) for any fines or penalties arising out of late payment by the Lessor where the Lessee has paid to the Lessor before the date on which the relevant fine or penalty arose the moneys required to be paid by it under this clause 18.1(a); and

(iii) for any Taxes on or in respect of the overall net income of the Lessor.

(b) The Lessee must reimburse the Lessor and the Crown on demand for all costs and expenses properly incurred in relation to the actual or attempted enforcement of, or actual or attempted exercise or preservation of, any rights powers or remedies under this Lease including, in each case, reasonable legal costs and expenses on a full indemnity basis.

(c) Unless this Lease otherwise provides, all costs, expenses and liabilities associated with the Land or the performance of the Lessee's obligations under this Lease, or an applicable law, must be borne by the Lessee.

(d) Unless this Lease otherwise provides, the Lessee must reimburse the Lessor's reasonable costs of or associated with:

(i) considering and determining whether anything done or proposed to be done by the Lessee in the exercise of any right or entitlement under this Lease complies with the terms of this Lease;

(ii) considering, granting or refusing to grant an approval under this Lease; and

(iii) considering, doing or refusing to do anything at the request of the Lessee.

18.2 Goods and Services Tax

(a) If the Lessor is required to pay GST in respect of all or part of any payment or transaction under, or pursuant to, or by reason of a breach

(not being a breach by the Lessor) of, this Lease (*relevant payment or transaction*), then the Lessee must pay to the Lessor such additional amount (*GST gross-up*) as is necessary in order that the net amount retained by the Lessor in respect of the relevant payment or transaction after deduction of GST equals the amount the Lessor would have retained had the GST not been payable. If the Lessor also receives a sum by way of a GST gross-up in respect of the relevant payment or transaction from a person other than the Lessee, and the Lessor is entitled absolutely to retain the sum, then an amount equal to the lesser of that sum and the GST gross-up otherwise due from the Lessee will be either refunded to the Lessee (if the full GST gross-up has already been paid by the Lessee) or allowed as a reduction from the amount due from the Lessee (if the full GST gross-up has not been paid by the Lessee at the time the sum is received from the other party).

(b) If a GST gross-up is payable, then the Lessor will in good faith issue to the Lessee a tax invoice with respect to the GST gross-up on, or as soon as practicable after, receipt of the GST gross-up.

(c) The GST gross-up must be paid on the date demanded by the Lessor provided no demand may be made for payment earlier than 5 Business Days prior to the date which the Lessor in good faith determines to be the last date on which it may lawfully pay to the Commissioner of Taxation the GST to which the GST gross-up relates. Subject to any change of law after the Completion Date, the last date on which the GST may be lawfully paid shall be taken to be the last date (for GST purposes) on which a GST return may be lodged with the Commissioner of Taxation for the tax period to which the taxable supply giving rise to the GST is attributable. Where a GST gross-up relates to GST which is attributable to two or more tax periods, a separate GST gross-up shall be paid in respect of so much of the GST as is attributable to each period.

(d) If there is any dispute between the Lessor and the Lessee as to when, whether, or how much, GST is due and payable in respect of a relevant payment or transaction, the following provisions apply:

(i) The Lessee must pay the GST gross-up required by the Lessor on the date required in clause 18.2(c).

(ii) The Lessee will be entitled to seek a private binding ruling as to the GST payable, or to seek a refund of the GST on behalf of the Lessor. The Lessee must do so at its own risk and expense, must indemnify the Lessor against any Loss suffered or incurred in connection with the private binding ruling or refund claim, and must keep the Lessor fully informed of all action it takes in respect of the private binding ruling or refund claim.

(iii) If, prior to the GST being paid, a private binding ruling is obtained (on terms satisfactory to the Lessor) that less or no GST is payable, the Lessor must refund the appropriate amount of the GST to the Lessee, together with interest on the sum calculated at the Overdue Rate minus 2% per annum from the date the GST gross-up is paid to the date of the refund.

(iv) If the GST has been paid, and a refund of all or part of the GST is obtained (on terms satisfactory to the Lessor), the Lessor must refund the appropriate amount of the GST to the Lessee, together with any interest paid by the Commissioner of Taxation in respect of the refund, plus for that part of the period (if any) from the date the GST gross-up is paid to the date of the refund which falls between the Completion Date and the date the GST is paid, interest on the refund calculated at the Overdue Rate minus 2% per annum for that part of the period.

(e) If the following conditions are both satisfied:

(i) the Lessee is required to pay GST in respect of all or part of any payment from the Lessor under, or pursuant to, or by reason of a breach of, this Lease (*Lessor payment*); and

(ii) the Lessor is entitled to an input tax credit for GST purposes for all or part of the GST payable by the Lessee on the Lessor payment (*creditable GST*),

then the following provisions apply:

(iii) the Lessor will pay to the Lessee such additional amount as is necessary in order that the net amount retained by the Lessee after deduction of the creditable GST in respect of the Lessor payment equals the amount the Lessee would have retained had the creditable GST not been payable;

(iv) unless otherwise agreed by the Lessor, before the GST gross-up is paid, the Lessor will seek a private binding ruling on whether the GST is creditable on behalf of the Lessor;

(v) if the private binding ruling confirms (on terms satisfactory to the Lessor) that the Lessor will obtain an input tax credit for the GST, the Lessor will pay the GST gross-up to the Lessee;

(vi) the Lessor will not be obliged to pay any GST gross-up before the date the Lessor lodges (for GST purposes) a GST return in which the GST is claimed as an input tax credit for a tax period. Where the GST gives rise to an input tax credit which is attributable to two or more tax periods, a separate GST gross-up shall be paid in respect of so much of the GST as is attributable to each period; and

(vii) the Lessee must, on demand by the Lessor, provide the Lessor with a tax invoice for the amount of the relevant payment plus the amount of the GST gross-up.

(f) In this clause 18.2, a reference to a payment includes money or any form of consideration other than money, and a reference to a transaction includes anything which constitutes a supply or a taxable supply for the purposes of the GST.

(g) The parties agree that in this Lease all references to payments and other obligations to pay money, and all references to pricing, valueand compensation (whether by way of reimbursement, indemnity or otherwise), are exclusive of GST.

(h) If one party seeks a private binding ruling as to GST for the purposes of this clause, the other party (at the cost and expense of the first party) shall provide such assistance as is reasonably required to obtain the ruling.

19. Compensation

19.1 Liability to Pay

The Lessee must pay compensation for any economic loss, hardship and inconvenience suffered by the owner (as defined in the Mining Act) of any Land on which Mining Operations are being carried out, by reason of the Lessee failing to:

(a) comply with the Development Programme; or

(b) carry on Mining Operations in accordance with the provisions of this Lease or all applicable laws, the breach of which would result in the owner suffering or incurring material civil or criminal liability for which the owner is not fully insured.

19.2 Amount of Compensation

The amount of the compensation will be as agreed between the owner and the Lessee or, in default of agreement within 30 days of agreement being sought by either party, as determined by the appropriate court (as defined in section 6(1) of the Mining Act) on the application of either party.

19.3 Relevant Factors

The appropriate court in determining compensation must take into consideration any work that the Lessee has carried out or undertakes to carry out to rehabilitate the Land.

19.4 Remediation

To the full extent permitted by law, the Lessee must indemnify the Lessor and the Crown on demand against all Losses incurred directly or indirectly by the Lessor or the Crown as a result of the Lessor or the Crown (each in its capacity as a lessor of the Land under this Lease or an owner or previous owner or an occupier or previous occupier of the Land or an operator or previous operator of any Mining Operations, as the case may be) being required to remediate the Land by reason of any failure by the Lessee to comply with the Development Programme.

20. Interest on Overdue Amounts

20.1 Accrual

Interest accrues on each unpaid amount which is due and payable by a party under or in respect of this Lease:

(a) on a daily basis up to the date of actual payment from (and including) the due date or, in the case of an amount payable by way of reimbursement or indemnity, the date of disbursement or loss, if earlier;

(b) both before and after judgment (as a separate and independent obligation); and

(c) at the Overdue Rate applicable to that amount at that time.

20.2 Payment

The relevant party must pay interest accrued under this clause 20 on the last Business Day of each calendar month and at such other times as the other party may demand.

21. Independent Expert

21.1 Matters Subject to Determination

The following matters must be dealt with under this clause 21:

(a) any disagreement between the parties as to any matter in relation to this Lease which is expressed to be subject to review or determination by an Independent Expert (a ***Disagreement***); and

(b) any other matter in relation to this Lease which is required to be referred to or determined by an Independent Expert (a ***Relevant Matter***).

21.2 Initiation of Determination

(a) If a Disagreement arises between the parties, a party may give a notice to the other party specifying the nature of the Disagreement in as much detail as is reasonably practicable. If the Disagreement has not been settled within 10 Business Days of the delivery of the notice, the party giving the notice may require that the Disagreement be referred to an Independent Expert in accordance with this clause 21, by giving further notice to that effect to the other party.

(b) If a Relevant Matter arises, a party may initiate the process for referring that matter to an Independent Expert by giving a notice to the other party specifying the nature of the Relevant Matter in as much detail as is reasonably necessary and practicable.

21.3 Appointment of Independent Expert

The parties must endeavour to agree on the Independent Expert within 10 Business Days of the giving of a notice requiring that a Disagreement or Relevant Matter be referred to an Independent Expert under clause 21.2. If the parties fail to appoint an Independent Expert within 10 Business Days, either party may ask:

(a) if the Disagreement or Relevant Matter is one of a mechanical or technical nature, the President for the time being of the Association of Consulting Engineers of Australia or a body which is a successor of it; and

(b) if the Disagreement or Relevant Matter is one of a financial nature, the President for the time being of the Institute of Chartered Accountants in Australia or a body which is a successor of it,

to appoint a suitably qualified person to act as the Independent Expert and the Disagreement or Relevant Matter will then be referred to the person so appointed.

21.4 Qualifications of Independent Expert

The Independent Expert appointed to act under this clause 21 must:

(a) be qualified by his or her education, training and experience to pass a reasoned judgment upon the particular matters the subject of the Disagreement or Relevant Matter; and

(b) not have any relationship or association with a party which might jeopardise his or her impartiality.

21.5 Binding Decision

A decision of the Independent Expert under this clause 21 will be absolute and final and will bind the parties accordingly.

21.6 Expert Not an Arbitrator

The Independent Expert will determine a Disagreement as an expert and not as an arbitrator.

21.7 Evidence and Representation

Each of the parties agrees that it will:

(a) make available to the Independent Expert all materials requested by him or her and all other materials which are relevant to any determination by the Independent Expert;

(b) be entitled to produce to the Independent Expert any materials or evidence which the party believes is relevant to a Disagreement or Relevant Matter; and

(c) be entitled to appoint a legal representative to represent its interest at any hearing before the Independent Expert.

21.8 Costs

(a) Each party must bear its own costs incurred in the preparation and presentation of any submissions or evidence to the Independent Expert.

(b) Unless the parties otherwise agree before the submission of a Disagreement or Relevant Matter to the Independent Expert, the parties must require the Independent Expert to determine the proportions in which each party must bear the costs of determination of the Disagreement or Relevant Matter by the Independent Expert, in the case of a Disagreement having regard to the degree to which he or she considers such party was at fault or unreasonable in failing to agree to the matter under reference to him or her, and that party must bear the costs accordingly.

22. Confirmation of Compliance With Lease

The parties may, in order to clarify the meaning or operation of a provision of this Lease, or to clarify whether a particular act, matter or thing did or would constitute an act, matter or thing carried out in accordance with or did or would satisfy the terms of this Lease, confirm in writing the meaning or operation of that provision or the effect of that act, matter or thing. Any such confirmation will take effect in accordance with its terms.

23. Entitlement to Receive Rent

If any person other than the Lessor becomes entitled to receive the Rent or exercise any of the Lessor's other rights and entitlements under this Lease, whether by assignment, operation of law or otherwise, that person will have the benefit of the covenants and obligations to be performed by the Lessee. Further, if required by the Lessor, the Lessee must enter into a deed with that person expressly covenanting to pass the benefit of those covenants and obligations to that person in a form reasonably required by the Lessor and not inconsistent with the provisions of this Lease.

24. Set-Off

24.1 Linked Leases

The Lessor or the Lessee may set-off any amounts due and payable to it under a Linked Lease as a credit against any amounts due and payable by it to the other party under another Linked Lease.

24.2 Set-off

(a) If:

(i) an amount (the ***Payment Amount***) is due and payable by a party (the ***First Party***) to the other party (the ***Second Party***) as a result of the expiry or termination of a Linked Lease; and

(ii) the Second Party is obliged to either:

(A) pay an unascertained amount to the First Party; or

(B) perform an undetermined obligation or duty in favour of the First Party,

the First Party may withhold the Payment Amount to the extent it considers necessary (in its reasonable opinion) to allow for the likely amount of:

(iii) payment of the amount referred to in clause 24.2(a)(ii)(A) when ascertained; or

(iv) any payment required or loss recoverable as a result of any non-performance of the duty or obligation referred to in clause 24.2(a)(ii)(B) when ascertained,

as the case may be.

(b) When the amount of any payment referred to in clause 24.2(a)(iii) or 24.2(a)(iv) is ascertained:

(i) the First Party may exercise its rights under clause 24.1 taking into account any amount withheld under clause 24.2(a); and

(ii) following the exercise of those rights, any balance of an amount withheld under clause 24.2(a) will be paid to the Second Party.

(c) Any dispute as to the operation of this clause 24 may be referred to an Independent Expert for determination.

25. Survival of Indemnities, Rights and Obligations

25.1 Indemnities

Each indemnity:

(a) is a continuing obligation;

(b) is a separate and independent obligation; and

(c) survives the transfer of this Lease to GLC or its nominee in accordance with clauses 12, 13 or 14 or the surrender or discharge of this Lease.

25.2 Other rights and obligations

The rights and obligations of the Lessor and the Lessee under clauses 6.5(d)(i), 9, 10, 16, 18 and 19 survive the transfer of this Lease to GLC or its nominee in accordance with clauses 12, 13 or 14 or the surrender or discharge of this Lease.

26. Moratorium Legislation

To the full extent permitted by law all legislation which at any time directly or indirectly:

(a) lessens, varies or affects in favour of the Lessee any obligation under this Lease; or

(b) delays, prevents or prejudicially affects the exercise by the Lessor of any right, power or remedy conferred by this Lease,

has no application in relation to this Lease.

27. Assignment, Security Interests and Subletting

27.1 Security Interests

(a) Subject to clause 27.1(b), the Lessee must not create or allow to subsist a Security Interest (other than a Permitted Lien) over:

(i) any of its rights under this Lease; or

(ii) any of its right, title and interest in the Land or any part of it,

unless the Lessee first obtains the written consent of the Lessor.

(b) The Lessee may grant a Security Interest over all (but not part only) of its right, title and interest in this Lease if:

(i) the Security Interest also extends over all (but not part only) of its right, title and interest in the Other Perpetual Leases; and

(ii) the enforcement of the Security Interest is subject to the restrictions on assignment in clause 27.2.

27.2 Permitted assignments

(a) Subject to clause 27.2(b) and clause 27.4, the Lessee must not assign or transfer its right, title and interest in this Lease unless the Lessee first obtains the written consent of the Lessor.

(b) The Lessee may assign or transfer all (but not part only) of its right, title and interest in this Lease to a person (the *Assignee*) if:

(i) it assigns or transfers at the same time and to the same person:

(A) all (but not part only) of its right, title and interest in each Other Perpetual Lease; and

(B) in a form reasonably satisfactory to the Lessor, such of its rights and obligations under the Flinders Power Sale Agreement as are necessary to ensure that the obligations that are to continue to be imposed on the Lessee under that Agreement, taken together with the obligations under that Agreement which are to be assigned to the Assignee, will continue to be enforceable to the maximum extent and effect as provided for in that Agreement as if that assignment did not occur;

(ii) the Assignee, or a person who is authorised or approved by the Assignee to use the Land and the land the subject of each Other Perpetual Lease, has all Authorisations necessary for the purpose for which the Assignee intends to use, or permit the use of, the Land and the land the subject of each Other Perpetual Lease;

(iii) the Assignee has provided to the Lessor a duly executed deed under which the Assignee undertakes to the Lessor to be bound by the terms of this Lease and the Other Perpetual Leases as if it were the Lessee and the terms of the Flinders Power Sale Agreement on the basis set out in clause 27.2(b)(i)(B), including in respect of any accrued obligations of the Lessee under this Lease and the Other Perpetual Leases and, to the extent required under clause 27.2(b)(i)(B), the Purchaser under the Flinders Power Sale Agreement as at the date of assignment; and

(iv) the Lessee has granted a valid assignment of each Other Perpetual Lease and, to the extent required under clause 27.2(b)(i)(B), the Flinders Power Sale Agreement to the Assignee.

(c) On an assignment under this clause 27.2, the Lessee is released from all obligations under this Lease.

27.3 Subletting

(a) The Lessee may sublease, or grant a licence in respect of, all (but not part only) its interest in the Land to a person to whom the Lessee has granted a sublease or licence respectively of all (but not part only) of its interest in the land the subject of each Other Perpetual Lease.

(b) Despite any sublease or licence permitted under clause 27.3(a), as between the Lessor and the Lessee the Lessee continues to be bound to comply with all its obligations under this Lease and the Other Perpetual Leases.

27.4 Partnership

If the Lessee is a partnership:

(a) a partner may at any time assign or transfer any of its rights or obligations under this Lease to another partner without the consent of the Lessor; and

(b) the partners may permit any other person to become a partner in the partnership (including prior to Completion) if those partners and that person have first provided to the Lessor a duly executed deed substantially in the form set out in Annexure A under which the partnership constituted by the inclusion of that person undertakes to be bound by this Lease as if it were the Lessee and the requirements set out in clause 27.2(b) are satisfied.

27.5 Restructure

Clause 27.2(b) does not prevent the assignment of the right, title and interest of the Lessee in this Lease to more than one person, but each such person must be a party to the deed referred to in clause 27.2(b)(iii) pursuant to which those persons jointly and severally undertake to be bound by the terms of this Lease and the Other Perpetual Leases as if they were the Lessee and by the terms of the Flinders Power Sale Agreement on the basis set out in clause 27.2(b)(i)(B), including in respect of any accrued obligations of the Lessee under this Lease and the Other Perpetual Leases and, to the extent required under clause 27.2(b)(i)(B), the Purchaser under the Flinders Power Sale Agreement as at the date of assignment.

28. Notices

28.1 Notices

All notices, requests, demands, consents, approvals, agreements or other communications to or by a party:

(a) must be in writing;

(b) must be signed by an Authorised Officer of the sender; and

(c) will be taken to be duly given or made when delivered, received or left at the address or fax number which the recipient has notified to the sender for that purpose but, if delivery or receipt is on a day on which business is not generally carried on in the place to which the communication is

sent or is later than 4pm (local time), it will be taken to have been duly given or made at the commencement of business on the next day on which business is generally carried on in that place.

28.2 Authorised Officers

Each party irrevocably authorises the other party to rely on a certificate by a person purporting to be its director or secretary as to the identity and signatures of its Authorised Officers. Each party warrants that those persons notified in respect of it have been authorised to give notices and communications under or in connection with this Lease.

29. General

29.1 Entire Agreement

This Lease contains the entire agreement between the parties as at the Completion Date with respect to its subject matter and supersedes all earlier conduct by the parties with respect to its subject matter.

29.2 Amendments

Amendments of this Lease may only be made by a deed made under seal by the Lessor and the Lessee which is expressed to be an instrument amending this Lease under this clause 29.2.

29.3 Further Assurances

Each party will take all steps, execute all documents and do everything reasonably required by the other party to give effect to any of the transactions contemplated by this Lease.

29.4 No Waiver

No failure to exercise and no delay in exercising any right, power or remedy under this Lease operates as a waiver. Nor does any single or partial exercise of any right, power or remedy preclude any other or further exercise of that or any other right, power or remedy. Except as otherwise expressly provided in this Lease, the rights, powers and remedies provided to a party in this Lease are in addition to, and do not exclude or limit, any right, power or remedy provided by law.

29.5 Severability

Any provision of this Lease which is prohibited or unenforceable in any jurisdiction is ineffective as to that jurisdiction to the extent of the prohibition or unenforceability. That does not invalidate the remaining provisions of this Lease nor affect the validity or enforceability of that provision in any other jurisdiction

29.6 No Merger

The rights and obligations of the parties will not merge on completion of any transaction under this Lease. They will survive the execution and delivery of any

assignment or other document entered into for the purpose of implementing any transaction.

30. Governing Law and Jurisdiction

(a) This Lease is governed by the laws of South Australia.

(b) Each party irrevocably and unconditionally submits to the non-exclusive jurisdiction of the courts of South Australia and courts of appeal from them for determining any dispute concerning this Lease but subject to the dispute resolution mechanisms set out in clause 21. Each party waives any right it has to object to an action being brought in those courts, to claim that the action has been brought in an inconvenient forum, or to claim that those courts do not have jurisdiction.

(c) The parties agree that neither of them will institute or attempt to institute any proceedings in relation to any dispute or any matter or thing arising out of or in connection with this Lease other than in a court of South Australia or, in respect of any proceedings in a Federal court, in the Adelaide registry of the relevant Federal court but subject to the dispute resolution mechanisms set out in clause 21. A party will not, without the consent of the other party, request that proceedings instituted in a Federal court in South Australia be heard outside South Australia.

(d) Without preventing any other mode of service, any document in an action (including, but not limited to, any writ of summons or other originating process or any third party or other party notice) may be served on a party by being delivered to that party in accordance with clause 28.

EXECUTED in South Australia.

In witness whereof His Excellency the Lieutenant Governor hath caused the public seal of the State of South Australia to be affixed hereto and also set his hand and the common seal of the Lessee was hereunto affixed on the fifth day of July one thousand nine hundred and sixty.

The Common Seal of THE ELECTRICITY TRUST OF SOUTH AUSTRALIA was affixed hereto in the presence of:

(sgd)

... ... Member

(sgd)

... ... Secretary

Annexure A

Partnership Assumption Deed

Assumption Deed

The Governor of South Australia

and

[# the First Partner]

and

[# the Second Partner]

[Include details of any Additional Partners]

Date

Parties

1. The Governor of South Australia (the *Lessor*)
2. *[#]* (the *First Partner*)
3. *[#]* (the *Second Partner*)
4. *[Include details of any Additional Partners]*

Recitals

A The Lessor (or the Lessor's predecessor) granted:

(i) Perpetual Crown Lease No. 19393
Register Book Volume 1234 Folio 37;

(ii) Perpetual Crown Lease No. 18578;
Register Book Volume 1067 Folio 36;

(iii) Perpetual Crown Lease No. 20311;
Register Book Volume 1589 Volume Folio 2;

(iv) Perpetual Crown Lease No. 20239;
Register Book Volume 1545 Folio 20;

to the Electricity Trust of South Australia (the *Perpetual Leases*).

B Immediately prior to Completion the right, title and interest previously held by the Electricity Trust of South Australia in each Perpetual Lease was held by Flinders Power Pty Limited (ACN 082 988 270) (*Flinders*).

C The right, title and interest of Flinders in each Perpetual Lease has been transferred to the Purchaser pursuant to the Flinders Power Sale Agreement.

D Clause 27.4(b) of each Perpetual Lease has the effect that the First Partner and the Second Partner may permit an Additional Partner to become a partner in the partnership known, as at the date of this Deed, as the "*[#]* Partnership" if the First Partner, the Second Partner and that Additional Partner have first provided to the Lessor a duly executed deed under which the partnership as constituted by the inclusion of the Additional Partner undertakes to be bound by each Perpetual Lease as if it were the Lessee under the relevant Perpetual Lease.

E Subject to the provision to the Lessor of the deed referred to in Recital D, the First Partner, the Second Partner and the Additional Partners have agreed that the Additional Partners will become partners in the

	[#] Partnership.
F	Under this Deed the First Partner, the Second Partner and the Additional Partners undertake to be bound by each Perpetual Lease as if they were the Lessee under the relevant Perpetual Lease.
G	The requirements set out in clauses 27.2(b) of each Perpetual Lease (other than as set out in clause 27.2(b)(iii)) have been satisfied in relation to the assignment or transfer of rights and obligations under each Perpetual Lease to the Additional Partners.

It is agreed as follows.

1. Definitions and interpretation

1.1 Definitions

The following definitions apply unless the context requires otherwise.

Additional Partners means [ ].

Effective Date means the date of this Deed.

1.2 Terms defined in the Perpetual Lease

Words that are defined in the Perpetual Lease referred to in paragraph A(i) of the Recitals and that are used in this Deed have the same meaning in this Deed as in that Perpetual Lease.

1.3 Interpretation

The provisions of clause 1.2 of the Perpetual Lease referred to in paragraph A(i) of the Recitals form part of this Deed as if set out at length in this Deed.

2. Assumption

(a) The First Partner, the Second Partner and the Additional Partners each agree that, on and from the Effective Date, the obligations, undertakings, representations, warranties, indemnities and liabilities of the Lessee under each Perpetual Lease bind all of them jointly and severally as if they were the Lessee under the relevant Perpetual Lease.

(b) The parties agree that, on and from the Effective Date, the First Partner, the Second Partner and the Additional Partners enjoy the rights and benefits of, the undertakings, representations, warranties and indemnities in favour of and the liabilities to, the Lessee under each Perpetual Lease jointly and severally as if they were the Lessee under the relevant Perpetual Lease.

(c) The parties each agree that, on and from the Effective Date, each Perpetual Lease shall be construed as if references in it to the Lessee

were references to the First Partner, the Second Partner and the Additional Partners jointly in partnership and to each of them severally.

(d) Each Additional Partner undertakes to the Lessor that it will be bound by the terms of each Perpetual Lease as if it were the Lessee and the terms of the Flinders Power Sale Agreement on the basis set out in clause 27.2(b)(i)(B) of the relevant Perpetual Lease, including in respect of any accrued obligations of the Lessee under the relevant Perpetual Lease and, to the extent required under clause 27.2(b)(i)(B) of the relevant Perpetual Lease, the Purchaser under the Flinders Power Sale Agreement as at the Effective Date.

3. Costs and Stamp Duty

3.1 The parties will bear their own costs arising out of the negotiation, preparation and execution of this Deed.

3.2 The Treasurer acknowledges that:

(a) this Deed; and

(b) any document executed pursuant to this Deed,

each falls within the scope of a sell down, re-organisation or restructure within the meaning of clause 9(c) of the Flinders Power Sale Agreement.

4. Governing law

This Deed is governed by the laws of South Australia. Each party submits to the non-exclusive jurisdiction of courts exercising jurisdiction there in connection with matters concerning this Deed.

5. Counterparts

This Deed may be executed in any number of counterparts. All counterparts together will be taken to constitute one instrument.

Executed as a Deed in Adelaide, South Australia.

Each attorney executing this Deed states that he or she has no notice of revocation or suspension of his or her power of attorney.

The Public Seal of **The State of South Australia** was duly affixed hereto:

[insert name]

The Governor of South Australia

Witness

Signed sealed and delivered for and on behalf of **[the First Partner]** by its duly authorised attorney/attorneys in the presence of:

Attorney/Attorneys

Print Name(s)

Witness

Print Name

Assumption Deed

Signed sealed and delivered for and on behalf of **[the Second Partner]** by its duly authorised attorney/attorneys in the presence of:

_____

Attorney/Attorneys

_____

Print Name(s)

_____

Witness

_____

Print Name

[Include execution clauses for the Additional Partners]

S0048

J W H Napier
LIEUTENANT-GOVERNOR,
SOUTH AUSTRALIA

South Australia

Register Book,
Vol. 1234 Folio 37
Registrar-General.

Crown Lease

PARTICULAR LEASE NO. 19393.

I SIR JOHN MELLIS NAPIER, Lieutenant-Governor in and over the State of South Australia and its dependencies in the Commonwealth of Australia (hereinafter with my successors in office designated by the term "the Lessor"), acting pursuant to the powers conferred upon me by section 43g of the Electricity Trust of South Australia Act, 1946, and for and on behalf of Her Majesty the Queen DO HEREBY LEASE to THE ELECTRICITY TRUST OF SOUTH AUSTRALIA, a body corporate incorporated under the said Electricity Trust of South Australia Act, 1946, and having its office at North Terrace, Adelaide in the said State (hereinafter designated by the term "the Lessee") ALL THAT land containing three roods and thirty nine perches ($0^A:3^R:39^P$) or thereabouts and being Section numbered 319 North out of Hundreds out of Counties as the same is delineated in the public maps deposited in the Land Office in the City of Adelaide together with all the seams, beds and deposits of coal as well opened as unopened lying within and under the said lands TO BE HELD in perpetuity at the yearly rent of one pound (£1:0:0) to be paid in advance on the thirteenth day of January commencing the thirteenth day of January one thousand nine hundred and sixty Subject to the liberties, reservations, powers, rights and conditions set out hereunder.

The Minister of Lands.

LIBERTIES.

1. The lessee shall be at liberty to exercise in relation to the said land hereby demised all and any of the powers conferred upon the lessee by section 43d of the Electricity Trust of South Australia Act 1946, subject however to the restrictions upon the power of transferring mortgaging and encumbering the said land hereinafter appearing.

Assistant Director of Lands.

RESERVATIONS.

2. Except and reserved out of this lease all gold, silver, copper, tin and other metals, all ores and other substances containing metals, all minerals, all gems and precious stones, and all mineral oils upon, in or under the said land (but not including any seams, beds or deposits of coal upon in or under the said land) to Her Majesty the Queen, Her heirs and successors and all persons lawfully claiming under or authorised by her or them AND the lessor and all persons lawfully claiming under or authorised by him, shall have full and free liberty of access, ingress, egress and regress, with or without horses, cattle, carts, drays, carriages, engines and all other necessary implements and things, into upon and from the said land for all reasonable purposes, and to cut, dig, sink, try, search, work, remove and dispose of all or any of the said excepted and reserved things, full compensation being made to the Lessee for any loss or damage sustained by it.

EXD.

M.W.

FLI.524.396

COVENANTS.

3. The Lessee will forthwith commence to destroy all such vermin on the said land as are by or under the Vermin Act, 1931-1957 or by or under any other Act for the time being in force in the said State declared to be vermin and will keep the said land free of all vermin to the satisfaction of the Lessor during the lease and will destroy and keep the land free from all weeds which are declared by regulation under the Weeds Act 1956 to be dangerous or noxious weeds.

4. The Lessee will not transfer, encumber, mortgage or part with the possession of the said land, or any part thereof (except in the exercise of the powers conferred upon it by Section 43d (2) (a) of the Electricity Trust of South Australia Act, 1946, without the written consent of the Lessor first had and obtained in each case.

5. The Lessee will permit the Lessor or his agents with or without mineral surveyors workmen or other persons at all reasonable times to enter upon inspect and examine the land and premises hereby demised and every part thereof for the purpose of examining the same and of ascertaining the condition thereof.

6. The Lessee will make and keep proper and accurate plans and records of all works carried out by it, and of all leases or tenancies or rights to use and occupy any land, house or building granted by it, pursuant to the powers conferred upon it by Section 43d of the Electricity Trust of South Australia Act, 1946, and will permit the lessor or his agents at all reasonable times to inspect the said plans and records and take copies of or extracts from the same.

7. The Lessee will not permit suffer or allow any house, building shop or store at any time to be erected or used upon the said land as a public house, wine shop or otherwise for the sale or supply of intoxicating liquors, without the consent of the Lessor first had and obtained.

CONDITIONS.

8. PROVIDED ALWAYS that if in the opinion of the lessor (whose decision upon the matter shall be final)

(a) the said land shall cease to be used or required for the purpose of the Lessee working and getting coal from the said land or from other land in its vicinity or purposes incidental thereto; or

(b) it is necessary or convenient that any portion or portions of the said land should be resumed for use as roads or railways, or as sites for towns or for park lands, or for mining purposes, or for any public work or purpose,

then and in any such case it shall be lawful for the Lessor, upon giving three calendar months' notice in writing to the Lessee to determine this lease and to resume possession of the said land, either wholly or partially, as the case may be and to such extent as may be specified in the said notice, and upon publication by the lessor in the Government Gazette of notice of such determination the tenancy shall cease, determine and be void as to all or such parts of the said land as shall be specified in such notice save in respect of anything which ought to be performed or observed upon the determination of the tenancy AND in the event of the determination of the tenancy wholly or partially in accordance with the foregoing provisions no compensation shall be payable to the lessee except that if any portion or portions of the land be resumed for use as public roads or any other public purpose the lessee shall be entitled to claim and receive from the lessor compensation for any improvements made by it upon the said portion or portions of the land. IF the amount of such compensation cannot be agreed between the lessor and the lessee, the amount of such compensation shall be determined by two arbitrators, one to be appointed by each party or in case the arbitrators are not able to agree, by an umpire to be appointed by them before entering upon the consideration of the amount of

FLI.524.397

compensation or payment. IN case either of the parties entitled to nominate an arbitrator neglects to do so for fourteen days next after a notice in writing has been given him by the other party, or names an arbitrator who refuses or neglects to act, the arbitrator named by the other party may make a final decision alone.

9. AND further PROVIDED ALWAYS and this lease is upon this express condition, that if default shall be made in payment of any rent in arrear for six months after the same falls due, the lessee having had at least three months' previous notice in writing demanding its payment, or if default shall be made in the performance of any covenant on the part of the lessee; or if the lessee shall, (except in the exercise of the powers conferred upon it by Section 43d (2) (a) of the Electricity Trust of South Australia Act, 1946) without the written consent of the lessor first had and obtained, transfer, mortgage, encumber or sub-let the premises or any part thereof, the lessor, after three months' written notice may re-enter and take possession of the said lands; and it shall be lawful for the lessor, before or after re-entry to cancel and determine this lease, and the lessor may thereupon insert a notice in the Government Gazette declaring this lease to be forfeited, and such notice appearing in the Government Gazette shall, in all courts and elsewhere, and under all circumstances, be taken to be conclusive evidence that such lease has been legally cancelled and forfeited; PROVIDED, however, that the lessor shall not (except in the case of rent being in arrear as aforesaid or of the transfer, mortgage, encumbrance or subletting of the premises without such consent as aforesaid) exercise the powers expressed in this clause in the case of default in the performance of a covenant before the expiration of the period of three months after notice has been given to the lessee of such default and requiring the performance of the covenant: PROVIDED nevertheless that if notice has been given to the lessee of any default in the performance of a covenant, no notice of any future default in the performance of the same covenant, or of the continuance of the same default, shall be necessary before the exercise of such powers.

10. AND IT IS HEREBY EXPRESSLY DECLARED that any notice to be served or given to the lessee under this lease shall be deemed to have been duly served or given if the same be sent through the post office enclosed in an envelope addressed to the lessee at its head or principal office and such notice shall be deemed to have been served or given and time shall run from the date of the posting thereof as aforesaid.

In witness whereof His Excellency the Lieutenant Governor hath caused the public seal of the State of South Australia to be affixed hereto and also set his hand and the common seal of the lessee was hereunto affixed on the fifth day of July one thousand nine hundred and sixty.

The Common Seal of THE ELECTRICITY TRUST OF SOUTH AUSTRALIA was affixed hereto in the presence of:

.....Member

.....Secretary.

pplication 8314380 The within land is
ested in SA Generation Corporation of
8 Greenhill Road Parkside 5063
ursuant to Clause 4(1) of schedule 3
the Electricity Corporations Act 1994
roduced 20.6.1997 at 10:50

Application 8670759 The within land is vested in Flinders Power Pty. Ltd. of 168 Greenhill Road. Parkside. 5063 pursuant to Clause 4(1) of Schedule 3 of The Electricity Corporations Act 1994 Produced 23.4.1999 at 14:50

FLI.524.398

CAVEAT No. 8958583 LODGED BY NRGenerating Holdings (No 2) Flinders Labuan (No 1) Ltd. Flinders Labuan (No 2) Ltd. and GMBH OVER THE WITHIN LAND. PRODUCED 8.9.2000 AT 14:50

CAVEAT No. 8958661 LODGED BY National Australia Bank Ltd. OVER THE WITHIN LAND. PRODUCED 8.9.2000 AT 15:30

CHANGE OF NAME NO. 9247269 THE NAME OF THE WITHIN COMPANY IS CHANGED TO Resi FP Pty. Ltd. of Level 5, 200 Victoria Square Adelaide 5000 PRODUCED 20.12.2002 AT 11:25

The within Terms and Conditions are amended vide 9243177 Produced 20.12.2002 at 11:25

APPLICATION 9269495 the within land is vested in NRGenerating Holdings (No. 2) GMBH of 2 undivided 4th Parts Flinders Labuan (No.1) Ltd. of 1 undivided 4th part and Flinders Labuan (No. 2) Ltd. of 1 undivided 4th part all c/- Level 2 307 Queen Street Brisbane 4000 Produced 25.1.2002 at 12:40

3.

MORTGAGE No. 9269495 TO NATIONAL AUSTRALIA BANK LTD. PRODUCED 25.1.2002 at 12:40

4.

1. CAVEAT No. 8958583 HAS BEEN WITHDRAWN VIDE 9269495 PRODUCED 25.1.2002 AT 12:40

2. CAVEAT No. 8958661 HAS BEEN WITHDRAWN VIDE 9269494 PRODUCED 25.1.2002 AT 12:40

FLI.524.399

S0002

LANDS TITLES REGISTRATION OFFICE

SOUTH AUSTRALIA

FORM APPROVED BY THE REGISTRAR-GENERAL

9243175

Series No.	Prefix
1/10	AL_

BELOW THIS LINE FOR AGENT USE ONLY

CERTIFIED CORRECT FOR THE PURPOSES OF THE CROWN LANDS ACT 1929

REGISTERED CONVEYANCER

R.J. GAMBLE

AGENT CODE

Lodged by:)
) CHIEF DOCUMENTARY OFFICER
) CROWN TENURE UNIT LTAB
Correction to:) BOX 52

TITLES, CROWN LEASES, DECLARATIONS ETC. LODGED WITH INSTRUMENT (TO BE FILLED IN BY PERSON LODGING)

1. CL 1545/20
2.
3.
4.
5.

Assessor

~~PLEASE ISSUE NEW CERTIFICATE OF TITLES AS FOLLOWS~~

1.
2.
3.

Lands Titl 11:39 20/12/01 129900
REGISTRATION FEE $87.00

BELOW THIS LINE FOR OFFICE USE ONLY

Date: 20 DEC 2001	Time: 11.25	
FEES		
R.G.O.	POSTAGE	NEW C.T.
87		

CORRECTION	PASSED
	✓

REGISTERED 21 OCT 2002

REGISTRAR-GENERAL

DELIVERY INSTRUCTIONS (Agent to complete)
PLEASE DELIVER THE FOLLOWING ITEM(S) TO THE UNDERMENTIONED AGENT(S)

ITEM(S)	AGENT CODE

FLI.525.056

CERTIFICATE OF ALTERATION

(Pursuant to Section 35(1) of the Crown Lands Act 1929)

CROWN RECORD(S)/CROWN LEASE(S) AFFECTED

The whole of the land comprised in Perpetual Lease No.20239
Registered in the Crown Lease Register Book Volume 1545 Folio 20

LAND DESCRIPTION OF PARCEL BEING MERGED/ADDED

NOT APPLICABLE

APPLICANT **MINISTER FOR ENVIRONMENT AND HERITAGE**

DELETE WHICHEVER IS INAPPLICABLE

~~(a) Hereby certifies that the said land having been allotted on recommendation of the Land Board to the Lessee(s) is hereby included in the abovementioned Crown Lease.~~

(b) Hereby on recommendation of the Land Board authorises the following alterations:

ALTERATION TO LEASE

The terms and conditions of the lease have been amended as per the attached document.

EXECUTION

The Common Seal of: MINISTER FOR ENVIRONMENT AND HERITAGE was affixed hereto this 17th day of December 2001 by the authority of the Minister in the presence of :

MINISTER FOR ENVIRONMENT AND HERITAGE
COMMON SEAL
SOUTH AUSTRALIA

.....

TOTHE REGISTRAR-GENERAL
ADELAIDE

FLI.525.057

DEH 14/0202
MWOP20239.REDCA

South Australia
Perpetual Crown Lease
No. 20239

Governor of South Australia as lessor

Electricity Trust of South Australia as lessee

525484

FLI.525.058

Perpetual Lease No. 20239

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Perpetual Lease No. 20239

Recital:

HIS EXCELLENCY THE GOVERNOR in and over the State of South Australia and its dependencies in the Commonwealth of Australia (hereinafter with his successors in office designated by the term the *Lessor*), acting pursuant to the powers conferred upon him by section 43g of the Electricity Trust of South Australia Act, 1946 as amended, and for and on behalf of Her Majesty the Queen DO HEREBY LEASE to THE ELECTRICITY TRUST OF SOUTH AUSTRALIA, a body corporate incorporated under the said Electricity Trust of South Australia Act, 1946 as amended, and having its office at 220 Greenhill Road, Eastwood in the said State (hereinafter designated by the term the *Lessee*) ALL THAT land containing approximately four thousand five hundred and thirty two (4 532) hectares and being Sections numbered 321, 324, 416, 417, 418, 419, 420, 485, 486 and 489 OUT OF HUNDREDS (Copley) as the same is delineated in the public maps deposited in the Department of Lands at Adelaide TOGETHER with all the seams, beds and deposits of coal as well opened as unopened lying within and under the said lands (the said lands and said seams, beds and deposits of coal being hereinafter designated by the term the *Land*) TO BE HELD in perpetuity at the Rent and subject to the covenants and conditions set out below.

1. Definitions and Interpretation

1.1 Definitions

The following definitions apply unless the context requires otherwise.

Aboriginal Heritage Law means a law regulating or otherwise relating to the protection of matters of Aboriginal cultural heritage significance including, without limitation, the Aboriginal and Torres Strait Islander Heritage Protection Act 1984 (Cth) and the Aboriginal Heritage Act 1988 (SA).

Aboriginal Item means any object, remains or site which is protected under any Aboriginal Heritage Law.

Authorisation includes:

(a) any consent, authorisation, registration, filing, lodgement, agreement, notarisation, certificate, permission, licence, approval, authority or exemption from, by or with a Government Agency; or

(b) in relation to anything which will be fully or partly prohibited or restricted by law if a Government Agency intervenes or acts in any way within a specified period after lodgement, filing, registration or notification, the expiry of that period without intervention or action.

Authorised Officer in relation to a party to this Lease means any person from time to time nominated as an Authorised Officer by the party by a notice to the other party accompanied by certified copies of signatures of all new persons so appointed.

Business Day means a weekday on which banks are open for business in South Australia.

Chief Inspector of Mines means the Chief Inspector of Mines (or equivalent person or entity or delegate of any of them) appointed for the time being under the Mines and Works Inspection Act.

Completion has the meaning given in the Flinders Power Sale Agreement.

Completion Date has the meaning given in the Flinders Power Sale Agreement.

Crown means the Crown in right of the State of South Australia and includes any agency, instrumentality or emanation of it.

Determination means any notice, order, judgement or declaration issued or made by any Judicial Body that Native Title exists.

Development Programme means the development programme or programmes for, among other things, the carrying on of Mining Operations on, and/or the rehabilitation of, the Land as approved from time to time by the Chief Inspector of Mines.

Director of Mines means the Director of Mines (or equivalent person or entity or delegate of any of them) appointed for the time being under the Mining Act.

External Administration Event means:

(a) an administrator of the Lessee is appointed under the Corporations Law (or a similar officer is appointed under the law of South Australia or of another jurisdiction) and is not removed within 45 days following the making of the appointment; or

(b) a receiver, receiver and manager, administrative receiver or similar officer is appointed (either under the law of South Australia or of another jurisdiction) to all or substantially all of the assets and undertaking of the Lessee and is not removed within 45 days following the making of the appointment.

Flinders Power Sale Agreement means the Flinders Power Generation Business Sale Agreement dated [#] August 2000 made between (among others) the Lessee and the Treasurer.

Force Majeure Event means:

(a) any event (other than a change of law or the application or operation of a law) which is beyond the reasonable control of the Lessee and which bona fide prevents the Lessee from performing an obligation under this Lease, excluding:

  (i) an obligation to pay Rent or any other money as required under this Lease; and

  (ii) an obligation under clause 9,

  where that event could not have been prevented, overcome or remedied by the exercise of a standard of care and diligence consistent with that of a prudent person undertaking the obligation, including the expenditure of all reasonable sums of money; or

(b) any change to legislation enacted by the Parliament of South Australia or the Commonwealth of Australia or any change to any Statutory Instrument made thereunder which has the effect of either:

  (i) prohibiting the doing of some act or thing; or

  (ii) requiring the doing, cessation or omission of some act or thing,

where compliance with that changed legislation or Statutory Instrument would prevent the Lessee from performing any obligation under this Lease.

Generator Sub-lease has the meaning given in the Northern Generating Plant Lease.

GLC means Generation Lessor Corporation, a subsidiary of the Treasurer established under the Public Corporations (Generation Lessor Corporation) Regulations 1999 (SA).

Government Agency means any government or any governmental, semi-governmental, local government, administrative, quasi-judicial or judicial entity or authority and includes a person or entity exercising powers under the Regulatory Regime. It also includes any self regulatory organisation established under statute or any stock exchange.

GST means the goods and services tax, as governed by A New Tax System (Goods and Services Tax) Act 1999 (Cth) and related legislation.

Improvements means all improvements that are deemed to be included in the Land under clause 6.3.

Independent Expert means a person appointed to determine the matters referred to him or her in accordance with clause 21.

Insolvency Event means, except for the purpose of a solvent reconstruction or amalgamation previously approved by the Lessor, an order is made by a court that the Lessee be wound up and that order is not overturned, quashed or permanently stayed within 14 days following the making of the order.

Judicial Body means any judicial or quasi-judicial body or tribunal.

Land has the meaning given in the Recital.

Lease End Date means the date on which this Lease comes to an end for any reason (including as a result of any surrender of this Lease by the Lessee) or the date on which this Lease is transferred to GLC or its nominee in accordance with clause 12, 13 or 14 (whichever occurs first).

Lease End Obligations means the obligations of the Lessee set out in clause 16.

Leigh Creek Line has the meaning given in the Leigh Creek Railways Sub-lease.

Leigh Creek Railways Sub-lease means the sub-lease of the Leigh Creek Line dated [*] September 2000 made between (among others) the Lessee and GLC pursuant to the Leigh Creek Sale/Lease Agreement.

Leigh Creek Sale/Lease Agreement means the Sale/Lease Agreement pursuant to which the Treasurer has granted to the Lessee the lease of the Leigh Creek Line and the lease of the Township.

Lessee has the meaning given in the Recital.

Lessor has the meaning given in the Recital.

Linked Leases means this Lease, the Other Perpetual Leases, the Northern Generating Plant Lease, the Generator Sub-lease, the Unit 1 Boiler Sub-lease, the Unit 2 Boiler Sub-lease, the Northern Land Lease, the Leigh Creek Railways

Sub-lease, the Playford B Generating Plant Lease, the Playford B Land Lease and the Township Lease.

Loss means any and all losses (including loss of profit and loss of expected profit), actions, liabilities, damages, costs, expenses, diminutions in value or deficiencies of any kind or character (whether consequential or otherwise) including all interest and other amounts payable to third parties, all liabilities on account of taxes and all legal (on a full indemnity basis) and other expenses reasonably incurred in connection with investigating or defending any claims or actions, whether or not resulting in any liability and all amounts paid in settlement of claims or actions.

Mines and Works Inspection Act means the Mines and Works Inspection Act 1920 (SA).

Mining Act means the Mining Act 1971 (SA).

Mining Operations has the meaning given in clause 5.1(a).

Native Title has the meaning given in the NTA.

Northern Generating Plant means the Generating Plant as that term is defined in the Northern Generating Plant Lease.

Northern Generating Plant Lease means the lease of the Northern Generating Plant from GLC to the Lessee granted by the Treasurer on [*] September 2000 pursuant to the Northern Sale/Lease Agreement.

Northern Land has the meaning given in the Northern Land Lease.

Northern Land Lease means the lease of the land on which the Northern Generating Plant (among other things) is situated from GLC to the Lessee granted by the Treasurer on [ ] September 2000 pursuant to the Northern Sale/Lease Agreement.

Northern Sale/Lease Agreement has the meaning given in the Northern Generating Plant Lease.

NTA means the Native Title Act 1993 (Cth).

Other Perpetual Leases means Perpetual Leases No. 18578 (Register Book Volume 1067 Folio 36), No. 19393 (Register Book Volume 1234 Folio 37) and No. 20311 (Register Book Volume 1589 Folio 2) granted by the Lessor to the Lessee pursuant to Section 43g of the Electricity Trust of South Australia Act 1946 (SA) as modified under the Flinders Power Sale Agreement pursuant to sections 14(8) and 14(9) of the Restructuring and Disposal Act.

Overdue Rate on any day means 2% per annum plus the arithmetic mean of the mid rates shown at or about 10.30am (Adelaide time) on the Reuters BBSW page (or any page or service which replaces it) for bills of exchange with a tenor of 90 days on that day.

Permitted Lien means:

(a) a repairer's lien arising in the ordinary course of business; or

(b) a lien or charge which arises by operation of law,

which, in either case, relates to a payment obligation that is:

(c) not yet due for payment; or

(d) due for payment but being contested in good faith.

Permitted Security Interest means:

(a) a Permitted Lien; and

(b) any other Security Interest permitted under clause 27.1.

Playford B Generating Plant means the Generating Plant as that term is defined in the Playford B Generating Plant Lease.

Playford B Generating Plant Lease means the lease of the Playford B Generating Plant from GLC to the Lessee granted by the Treasurer on [#] September 2000 pursuant to the Playford B Sale/Lease Agreement.

Playford B Land has the meaning given in the Playford B Land Lease.

Playford B Land Lease means the lease of the land on which the Playford B Generating Plant (among other things) is situated from GLC to the Lessee granted by the Treasurer on [*] September 2000 pursuant to the Playford B Sale/Lease Agreement.

Playford B Sale/Lease Agreement has the meaning given in the Playford B Generating Plant Lease.

Registered Native Title Body Corporate has the meaning given in the NTA.

Regulatory Regime means a scheme established to regulate the conduct of the mining industry in South Australia and is constituted at the Completion Date by the Mining Act, the Mines and Works Inspection Act and the Environment Protection Act 1993 (SA) and the Statutory Instruments and licences made and issued thereunder.

Rent means:

(a) for the period commencing 14 July 1977 to the Completion Date, an annual amount of $50.00; and

(b) from the Completion Date until the Lease End Date, $0.25.

Representative Aboriginal/Torres Strait Islander Body has the meaning given in the NTA.

Restructuring and Disposal Act means the Electricity Corporations (Restructuring and Disposal) Act 1999 (SA).

Sale/Lease Agreement has the same meaning as in section 13 of the Restructuring and Disposal Act.

Security Interest means any mortgage, pledge, lien, charge, encumbrance or any security or preferential interest or arrangement of any kind. It includes:

(a) anything which gives a creditor priority to other creditors with respect to any asset; and

(b) retention of title other than in the ordinary course of day-to-day trading and a deposit of money by way of security but it excludes a charge or lien arising in favour of a Government Agency by operation of statute unless there is a default in payment of moneys secured by that charge or lien.

State NTA means the Native Title (South Australia) Act 1994 (SA).

Statutory Instrument has the same meaning as in the Acts Interpretation Act 1915 (SA).

Tax includes any tax, levy, impost, deduction, charge, rate, duty, compulsory loan or withholding which is levied or imposed by a Government Agency, and any related interest, penalty, charge, fee or other amount.

Term means, subject to transfer of this Lease to GLC or its nominee in accordance with clauses 12, 13 or 14 or surrender in accordance with this Lease, in perpetuity.

Termination by GLC Event has the meaning given in the Northern Generating Plant Lease.

Termination by Lessor Event has the meaning given in clause 13.1.

Township has the meaning given in the Township Lease.

Township Lease means the lease of the Township from GLC to the Lessee granted by the Treasurer on [ ] September 2000 pursuant to the Leigh Creek Sale/Lease Agreement.

Track Infrastructure has the meaning given in the Leigh Creek Railways Sub-lease.

Treasurer means the Treasurer of the State of South Australia acting as a body corporate.

Unit 1 Boiler Sub-lease has the meaning given in the Northern Generating Plant Lease.

Unit 2 Boiler Sub-lease has the meaning given in the Northern Generating Plant Lease.

1.2 Interpretation

Headings are for convenience only and do not affect interpretation. The following rules apply unless the context requires otherwise.

(a) The singular includes the plural and the converse.

(b) A gender includes all genders.

(c) Where a word or phrase is defined, its other grammatical forms have a corresponding meaning.

(d) A reference to a person, corporation, trust, partnership, unincorporated body or other entity includes any of them.

(e) A reference to a clause, annexure or schedule is a reference to a clause of, or annexure or schedule to, this Lease.

(f) A reference to an agreement or document (including, without limitation, any reference to this Lease) is to the agreement or document as amended, varied, supplemented, novated or replaced, except to the extent prohibited by this Lease or that other agreement or document.

(g) A reference to a party includes the party's successors and permitted substitutes or assigns.

(h) A reference to any Act or Statutory Instrument or particular provision of an Act or Statutory Instrument is taken to include:

(i) all regulations, orders or instruments issued under the Act, Statutory Instrument or provision;

(ii) any modification, consolidation, amendment, re-enactment, replacement or codification of the Act or Statutory Instrument or provision; and

(iii) any substituted Act or Statutory Instrument or substituted provision.

(i) A reference to dollars and $ is a reference to Australian currency.

(j) A reference to ***writing*** includes a facsimile transmission and any means of reproducing words in a tangible and permanently visible form.

(k) A reference to ***conduct*** includes any omission and any statement or undertaking, whether or not in writing.

(l) Mentioning anything after ***include***, ***includes*** or ***including*** does not limit what else might be included.

(m) The Recital is an operative provision in this Lease.

1.3 Obligations of partners

(a) This clause applies where the Lessee is a partnership.

(b) Except where expressly stated otherwise, the obligations, undertakings, representations, warranties, indemnities and liabilities of the Lessee under this Lease bind all partners jointly and severally. Except where expressly stated otherwise, all references to the "Lessee" are to the partners jointly in partnership and to each partner severally. Any notice by or to, or act of, any one or more of them binds all of them.

(c) This Lease will continue to bind the partners jointly and severally notwithstanding the dissolution, or any change at any time in the constitution, of the Lessee, or any change at any time in the law regarding partnerships, and will continue to bind a partner even if it ceases to be a partner.

2. Lease

2.1 Grant

The Land is leased by the Lessor to the Lessee for the Term on the terms of this Lease.

2.2 Registration

(a) The Lessor and the Lessee must co-operate with each other to enable the registration at the Lands Titles Office of any amendments to this Lease which are registrable.

(b) The Lessor must, at the Lessee's written request, produce the duplicate Crown Lease for the Land at the Land Titles Office to enable the Lessee to register any Security Interest.

(c) Any costs which may be necessarily incurred:

(i) in the production of such duplicate Crown Lease;

(ii) in connection with the registration of amendments to this Lease,

will be borne by the Lessee.

3. Rent

Rent under this Lease will, if demanded by the Lessor, be payable by the Lessee to the Lessor:

(a) for the period commencing 14 July 1977 to the Completion Date, by way of annual amounts, payable in advance on 14 July in each year commencing on 14 July 1977 or, if that day is not a Business Day, the next Business Day; and

(b) from the Completion Date until the Lease End Date, on the Completion Date.

4. No Abatement

Despite any law or rule to the contrary, the obligation of the Lessee to pay Rent will not abate for any reason.

5. Use and Maintenance

5.1 Purpose

(a) To the extent of the rights conferred upon the Lessee under this Lease and subject to clause 5.1(b), the Lessee may only:

(i) use the Land or any part of it; or

(ii) permit the Land or any part of it to be used,

for the following purposes (the *Mining Operations*):

(iii) to mine (whether by open or closed working) any seams of coal, vested in the Lessor or the Lessee, at or near Leigh Creek;

(iv) to treat, grade or otherwise prepare for sale, and use, sell or otherwise dispose of any coal so mined;

(v) to do any of the following things which the Lessee considers it necessary or convenient to do for the purpose of carrying the provisions of this Lease into effect:

(A) erect houses, buildings and other improvements, and grant leases or tenancies of, or rights to use or occupy, any land, house or building belonging to the Lessee;

(B) construct, repair and maintain streets and roads;

(C) plant, develop, improve and maintain public parks, squares, recreation grounds and other places of public resort;

(D) construct, acquire, maintain and manage sewerage systems and provide sewers and drainage for any premises;

(E) construct, acquire, maintain and manage waterworks, buy water, and sell and supply water;

(F) construct any works;

(G) make reasonable charges for any commodity or service sold or supplied by the Lessee;

(H) do or execute any other act, matter or thing, or enter into and carry out any transaction; and

(vi) from any main used by the Lessee, to supply water to persons at Leigh Creek and to sell and supply water to any other persons who can be conveniently supplied with water from that main.

(b) The Lessee must not permit any house, building, shop or store at any time to be erected or used on the Land as a public supply of intoxicating liquors without the prior written consent of the Lessor.

5.2 Use and Maintenance

(a) The Lessee must use and maintain the Land:

(i) in accordance with all applicable laws the breach of which would result in the Lessor or the Crown suffering or incurring material civil or criminal liability for which the Lessor or the Crown is not fully insured either under an insurance policy required to be taken out under clause 9.1(a) or under another insurance policy which the Lessee has notified the Lessor it has taken out and of which the Lessor and the Crown have the benefit; and

(ii) in a manner and to the extent necessary to comply with the requirements specified in any insurance policy relating to the Land required to be held under this Lease.

(b) The Lessee must ensure that Mining Operations on the Land are carried out:

(i) in an orderly, workmanlike and skilful manner; and

(ii) in accordance with the Development Programme.

(c) The Lessee must pay all costs, expenses, Taxes, fees and charges in connection with the use and maintenance of the Land, but not any income tax, fringe benefits tax, capital gains tax or any similar Tax payable by the Lessor on its overall net income or in relation to its own employees.

5.3 Destruction of Certain Animals and Plants

At all times between the Completion Date and the date on which this Lease is transferred to GLC or its nominee in accordance with clauses 12, 13 or 14 or surrendered, the Lessee must destroy on the Land and will to the satisfaction of the Lessor keep the Land free from:

(a) all classes of animals within any control area for that class to which the provisions of section 47 of the Animal and Plant Control (Agricultural Protection and Other Purposes) Act 1986 (SA) apply; and

(b) all classes of plants within any control area for that class to which the provisions of section 57 of the Animal and Plant Control (Agricultural Protection and Other Purposes) Act 1986 (SA) apply.

5.4 Information

(a) The Lessee must provide the Lessor with information on the condition of any part of the Land within a reasonable period after any reasonable request by the Lessor.

(b) The Lessor must not, unless the circumstances require, request information under clause 5.4(a) more frequently than 6 monthly.

5.5 Plans, Records and Returns

The Lessee must:

(a) make and keep proper and accurate plans and records of:

(i) all works carried out by it on the Land; and

(ii) all leases, tenancies or rights granted by it to use and occupy the Land (or any part of it) or any house or building on the Land (or any part of it);

(b) make and keep records and samples as prescribed in regulation 97 of the Mining Regulations or as required by a notice to the Lessee from any Government Agency;

(c) furnish returns to the Director of Mines as prescribed by section 76(1) of the Mining Act which must include the information required pursuant to any determination for the time being in force made by the Minister responsible for the administration of the Mining Act (or his delegate) pursuant to section 17(8) of the Mining Act; and

(d) submit to the Director of Mines from time to time at the Director's request a current plan of survey of the Land in the form reasonably required by the Director.

5.6 Access rights and Inspection

(a) The Lessee must permit the Lessor and its authorised representatives, if the Lessor requires, at reasonable times and having given the Lessee reasonable notice, to enter any part of the Land:

(i) to exercise the Lessor's rights, or carry out any of the Lessor's obligations, under this Lease; or

(ii) to determine, at the Lessor's expense, whether the Lessee is complying with its obligations under this Lease.

(b) When exercising its rights under clause 5.6(a), the Lessor and its authorised representatives:

(i) must not interfere with the operations or business of the Lessee;

(ii) will be subject to the same limitations upon and conditions of access as apply to any third party visitors to the site; and

(iii) must comply with all safety requirements and other reasonable directions of the Lessee in relation to such access.

(c) The Lessee must:

(i) permit the Lessor and its authorised representatives, if the Lessor requires, at reasonable times and having given the Lessee reasonable notice, access to all information made and kept by the Lessee under clause 5.5; and

(ii) make no charge for access to such information, records, samples, returns and plans but the Lessee is entitled to charge a fee to cover costs involved in supplying any other information under clause 5.4.

(d) The Lessor must not, unless the circumstances require, require inspections under clause 5.6(a) more frequently than 6 monthly.

5.7 Laws and Regulatory Compliance

The Lessee must comply with all laws and regulatory requirements (including all Authorisations) applicable to the use, possession of or access to the Land and the exercise of any rights or the discharge of any obligations arising under this Lease.

5.8 Acting Through Third Parties

The Lessee may discharge its obligations through the actions of employees, contractors and agents but the Lessee will be liable for the acts or omissions of such employees, contractors and agents as if they were the acts or omissions of the Lessee.

6. Title

6.1 Lessor's title

(a) The Lessee acknowledges that:

(i) the Land is and remains the property of the Lessor; and

(ii) the Lessee has no rights in relation to the Land other than the rights under this Lease and the rights conferred on the Lessee by applicable laws or the Regulatory Regime.

(b) The Lessor must, if requested by the Lessee and at the expense and risk of the Lessee, exercise its rights and entitlements in or arising from the Land to assist the Lessee in respect of any matter relating to the Land where:

(i) the Lessee is unable to act itself by reason of the Lessor's interest in the Land;

(ii) the matter to be undertaken by the Lessee is one permitted by the terms of this Lease; and

(iii) in doing so:

(A) the Lessor assumes or incurs no obligations or present or contingent liabilities to a third party (including the Lessee) for which the Lessor is not fully insured either under an insurance policy required to be taken out under clause 9.1(a) or under another insurance policy which the Lessee has notified the Lessor it has taken out and of which the Lessor has the benefit; or

(B) the Lessor is, to the reasonable satisfaction of the Lessor, adequately indemnified by the Lessee in respect of such obligations and liabilities and the liability of the Lessee under such indemnity is the subject of adequate security in favour of the Lessor.

6.2 Protection of title

The Lessee must, to the extent practicable having regard to its legal capacity and its obligations under this Lease:

(a) safeguard and protect the property, title and rights of the Lessor in and to the Land; and

(b) not do or permit to be done any act, omission or thing which might jeopardise the property, title or rights of the Lessor in or to the Land.

6.3 Fixtures

If any improvements to the Land (whether structural and/or permanent or not, existing at the date of commencement of this Lease or not or erected by the Lessee or not) are fixtures to the Land then:

(a) for the purposes of this Lease, a reference to the Land will be taken to include a reference to such improvements; and

(b) property in those improvements vests in the Lessor upon erection and without compensation to the Lessee or any other person.

6.4 Native Title Claims

Unless this Lease has been registered at the Lands Titles Office, the Lessor must notify the Lessee in writing of any Native Title claims which are lodged over any of the Land after the Completion Date, within 1 month of the Lessor receiving notice of such claim pursuant to section 66(3) of the NTA or section 16(1)(b) of the State NTA.

6.5 Determination of Native Title

(a) As at the Completion Date, the Crown does not acknowledge that any Native Title exists in any of the Land.

(b) If any claim is made that Native Title exists in any of the Land, the Crown will have the right, by written notice given to the Lessee, to represent the Lessee and, as the representative of the Lessor or both the Lessor and the Lessee as the case requires, to have the exclusive conduct of any negotiations or proceedings relevant to any claim of Native Title over any of the Land.

(c) The right of the Crown to represent the Lessee under clause 6.5(b):

(i) includes the right to represent the Lessee in any proceedings in the nature of any Determination application or other claim that Native Title exists or existed over the whole or any part of the Land and in any negotiations in connection with those proceedings;

(ii) does not include the right to represent the Lessee in any proceedings brought or made against the Lessee relating solely to any claim for compensation as referred to in clauses 6.5(d)(ii) or 6.5(d)(iii) or in any negotiations in connection with those proceedings;

(iii) includes the right to make admissions, concessions or agreements prejudicial to the interests of the Lessee in relation to the Land:

(A) if the Crown has obtained the prior consent of the Lessee to the relevant admission, concession or agreement, which consent must not be unreasonably withheld;

(B) if the admission, concession or agreement would not materially adversely affect the carrying on of Mining Operations on and from the Land (including by having regard to anything that the Crown offers to the Lessee to do or to refrain from doing) and the Crown has consulted with the Lessee regarding the relevant admission, concession or agreement;

(C) otherwise than in the instances referred to in clauses 6.5(c)(iii)(A) and 6.5(c)(iii)(B), on the basis that the Crown will be responsible for any losses incurred by the Lessee to the extent caused directly as a result of the relevant admission, concession or agreement; and

(iv) does not include the right to represent the Lessee in any proceedings made or brought by or against the Lessee for injunctive relief or in any negotiations in connection with those proceedings except where those proceedings are made or brought in the course of any proceedings referred to in clauses 6.5(c)(i).

(d) As between the Crown and the Lessee:

(i) subject to clause 6.5(d)(ii) the Crown, and not the Lessee, will be responsible for the payment of compensation and any other monies payable to the Native Title holders of, or Native Title claimants to, any of the Land as a result of:

(A) the transfer of this Lease to the Lessee pursuant to the Flinders Power Sale Agreement or the grant or exercise by the Lessee or anyone claiming through or under the Lessee of the rights conferred on the Lessee in respect of the Land pursuant to this Lease; or

(B) the use of the Land for the purposes of Mining Operations or any other use where that other use was being conducted at the Completion Date;

(ii) the Lessee, and not the Crown, will be responsible for the payment of compensation and any other monies payable as a result of any exercise of rights which constitutes a future act (as defined in the NTA) in respect of the Land which is attributable to the Lessee or anyone claiming through or under the Lessee and which takes place on or after the Completion Date; and

(iii) the Lessee, and not the Crown, will be responsible for the payment of compensation or any other monies so payable if the obligation to pay does not fall within clause 6.5(d)(i) and arises as a result of the use to which the Lessee or anyone claiming through or under the Lessee puts the Land or any act or omission of, or breach of this Lease by, the Lessee or anyone claiming through or under the Lessee.

(e) Except as otherwise required by law, the Crown must keep the Lessee informed of all material matters relevant to any negotiations or proceedings referred to in clause 6.5(b).

6.6 Artefacts and Aboriginal Items

(a) Any fossils, artefacts, historical coins or articles of historical value or antiquity and any remains or things of geological, historical or archaeological interest found or discovered on or under the surface of the Land (other than any Aboriginal Item) will be deemed to be the property of the Crown.

(b) In relation to any thing which is the subject of clause 6.6(a), the Lessee must do the following acts, matters or things:

(i) notify the Lessor immediately of any such discovery;

(ii) not do, or permit to be done, any act which may damage any such thing;

(iii) use its reasonable endeavours to prevent any such thing being removed from the Land;

(iv) at the Lessor's reasonable expense, carry out the Lessor's instructions or orders in respect of the excavation, removal, delivery up or disposal of any such thing; and

(v) permit the Lessor and any person authorised by the Lessor either to excavate, remove or dispose of any such thing or to watch, examine, manage or supervise any such excavations, disposals or removals.

(c) The Lessee must comply with the Aboriginal Heritage Law in relation to any Aboriginal Item on, under or comprising all or any part of the Land.

6.7 Caveats

(a) Subject to clause 6.7(b) and for so long as the lessor under this Lease is or forms part of the Crown, the Lessee must not lodge or cause to be lodged a caveat over the Land or any portion of the Land.

(b) If the Lessee reasonably considers that the Lessor has breached or may breach this Lease and that the Lessee's rights pursuant to this Lease may

be adversely affected by that breach, then the Lessee may lodge a caveat over the Land, or any portion of the Land, to the extent necessary to protect a caveatable interest of the Lessee under or pursuant to this Lease which may be adversely affected by any such breach of the Lessor.

7. Easements and Reservation of Rights

7.1 Easements

(a) The Lessor may at any time on or after the Completion Date for the purpose of:

(i) installing, maintaining or repairing any service or utility to the Land; or

(ii) maintaining, operating, repairing, modifying, installing or replacing any infrastructure used to carry out any Mining Operations,

dedicate land to, or transfer, amend, grant or create or take the benefit of any easement or other similar right to or from, any person, or enter into any similar arrangement or agreement with:

(iii) any adjoining owner, lessee or occupier or other person who has an interest in any land (including the Land) other than any Native Title holder, Native Title claimant, Registered Native Title Body Corporate or Representative Aboriginal/Torres Strait Islander Body; or

(iv) any Government Agency (other than with respect to any Native Title rights and interests in relation to the Land),

as the Lessor thinks fit.

(b) When exercising its rights under clause 7.1(a), the Lessor must not materially interfere with:

(i) the carrying on of Mining Operations on the Land by the Lessee or anyone claiming through the Lessee; or

(ii) any improvements (including the Improvements) on the Land.

(c) The Lessee may, by notice in writing, request that the Lessor, at the Lessee's risk and expense, create or grant an easement or other right, or enter into an arrangement or agreement, in accordance with clause 7.1(a). Subject to clause 7.1(d), the Lessor must comply with that request.

(d) The Lessor is not obliged to create or grant an easement or other right, or enter into an arrangement or agreement, at the Lessee's request if:

(i) by doing so, the Lessor assumes or incurs obligations or present or contingent liabilities to a third party (including the Lessee) which are not, to the reasonable satisfaction of the Lessor, adequately indemnified by the Lessee. The liability of the Lessee under such indemnity must be the subject of adequate security in favour of the Lessor; or

(ii) the Lessor is of the view that the proposed creation or granting of the easement or other right, or the proposed arrangement or agreement, is not reasonably necessary for the purposes of the carrying on of Mining Operations on the Land or some aspect of Mining Operations.

(e) This Lease will be taken to be subject to any easement or other right that is created or granted pursuant to this clause 7.1.

8. Third Party Rights

The Lessee accepts this Lease subject to:

(a) any statutory or registered rights existing at the Completion Date; and

(b) any easements or other similar rights created after the Completion Date in accordance with clause 7.1.

9. Insurance

9.1 Insurance Obligations

(a) Except as otherwise agreed by the Lessor, the Lessee must ensure that at all times between the Completion Date and the date on which this Lease is transferred to GLC or its nominee in accordance with clauses 12, 13 or 14 or surrendered:

(i) all improvements (including the Improvements) on the Land are insured for reinstatement; and

(ii) there is taken out and kept in force other insurance that relates to the potential liability of the Lessor or the Lessee to third parties arising out of the use or possession of the Land,

in the manner and to the extent which a prudent lessee of the Land and a prudent lessor of the Land bound by the terms of this Lease would require, as agreed by the Lessor and the Lessee, or failing agreement, as determined by an Independent Expert.

(b) The Lessor and the Lessee acknowledge that schedule 7 to the Flinders Power Sale Agreement specifies the insurances which they agree will satisfy the requirements of clauses 9.1(a) and 9.2 until the date that a different requirement as to such insurances is agreed or determined under clause 9.1(a).

9.2 Conditions

The Lessee must ensure that each insurance policy required to be taken out under clause 9.1(a) (other than workers' compensation) is on terms and conditions reasonably satisfactory to the Lessor and, without limitation, the Lessor may require such an insurance policy to provide that:

(a) the Lessor and the Crown are each specified as an insured party;

(b) breach or non disclosure by one insured will not affect the cover of any other insured;

(c) the insurer waives all rights of subrogation in relation to claims between the insureds;

(d) the amount of any excess or deductible payable by an insured in respect of a claim will not exceed the amount determined by the Lessor as customary for similar policies;

(e) all claims for insurance premiums, levies, stamp duties, charges or commissions against the Lessor and the Crown are waived; and

(f) the insurer will not terminate the policy unless the relevant default or breach remains unremedied for at least 30 days after notice by the insurer to the Lessor specifying that default or breach.

9.3 Remedy for Default

If the Lessee fails to take out or to keep in force an insurance policy required to be taken out under clause 9.1(a) which complies with clause 9.2, the Lessor may do anything which it determines is advisable or necessary to take out or keep in force that policy or to take out a new policy that complies with clauses 9.1(a) and 9.2 at the cost of the Lessee and in the name of the Lessor and/or others (including the Lessee). The Lessor is not obliged to do anything under this clause 9.3.

9.4 Compliance and Enforcement

(a) The Lessee must:

(i) comply with the terms of each insurance policy required to be taken out under clause 9.1(a);

(ii) take all steps to claim, and to collect or recover, money due to it under or in respect of such an insurance policy; and

(iii) do everything (including providing documents, evidence and information) necessary or desirable in the opinion of the Lessor to enable the Lessor or the Crown to claim, and to collect or recover, money due to either of them under or in respect of such an insurance policy.

(b) The Lessor must do everything (including providing documents, evidence and information) necessary or desirable to enable the Lessee to claim, and to collect or recover, money due to it under or in respect of an insurance policy required to be taken out under clause 9.1(a).

9.5 Notice of Claims

The Lessee must notify the Lessor as soon as possible of:

(a) a cancellation of, a change in or a reduction in the coverage of, an insurance policy required to be taken out under clause 9.1(a);

(b) such an insurance policy becoming void or voidable; or

(c) any other material circumstance or correspondence relating to such an insurance policy.

9.6 Use of Insurance Proceeds

Except as otherwise agreed by the Lessor, the Lessee must:

(a) use the proceeds of the insurance policy required to be taken out under clause 9.1(a)(i) in reinstatement of so much of the improvements (including the Improvements) on the Land as will ensure that the Lessee complies with its obligations under this Lease except:

(i) to the extent that the Lessor and the Lessee agree, or failing agreement, an Independent Expert determines, that it is not economically viable for the Lessee to reinstate those improvements; or

(ii) if a lessor or lessee under any Other Perpetual Lease has served a valid notice under clause 12 of that Other Perpetual Lease to transfer that Other Perpetual Lease,

and, to the extent the insurance proceeds exceed the amount required to reinstate those improvements or are not required to be used to reinstate those improvements, the Lessee may retain those proceeds; and

(b) use the proceeds of all insurance policies required to be taken out under clause 9.1(a)(ii) and received by it to discharge the liability or make good the loss covered by the insurance policy.

9.7 Premiums

The Lessee must pay when due all premiums, commissions, levies, stamp duties, charges and other expenses necessary for taking out and keeping in force the insurance policies required to be taken out under clause 9.1(a) (including a policy taken out under clause 9.3).

9.8 Insurers

The Lessee must take out each insurance policy required to be taken out under clause 9.1(a) with independent and reputable insurers reasonably acceptable to the Lessor.

9.9 Information

The Lessee must provide the Lessor with annual certificates of currency in respect of all insurance policies required to be taken out under clause 9.1(a) and, on reasonable request, other details on such insurance policies which the Lessor reasonably requires.

9.10 No prejudicial action

The Lessee must not do, permit, or omit to do, anything which may prejudice an insurance policy required to be taken out under clause 9.1(a).

10. Indemnities

10.1 General Indemnities

To the full extent permitted by law, the Lessee must, subject to clause 10.2, indemnify the Lessor and the Crown on demand against all Losses of the Lessor or the Crown:

(a) in either case, incurred in its capacity as a lessor of the Land under this Lease or an owner or previous owner or an occupier or previous occupier of the Land or an operator or previous operator of any Mining Operations, as the case may be;

(b) incurred or arising during the period from the Completion Date to the date on which all of the Lessee's Lease End Obligations have been discharged; and

(c) directly or indirectly relating to or arising out of the Land or any part of it, or as a result of acts or omissions of the Lessee, including by reason of or relating to:

(i) the possession, condition, use, maintenance or return of the Land or any part of it;

(ii) any damage to property or death of or injury to any person which may be or is alleged to be suffered or sustained in, on or in relation to the Land or any part of it;

(iii) all claims and demands made against the Lessor or the Crown by any third party in respect of the Land or any part of it, or the possession, condition, use, maintenance or return of the Land or any part of it, excluding any claim or demand:

(A) in relation to any past act, intermediate period act, previous exclusive possession act or previous non-exclusive possession act (all as defined in the NTA) in respect of the Land or any part of it, or to which clause 6.5(d)(i) applies; or

(B) in relation to any future act (other than an intermediate period act) (both as defined in the NTA) in respect of the Land or any part of it and which is attributable to the Lessor or the Crown and took place prior to the Completion Date; or

(C) for the payment of compensation or other monies as referred to in clause 6.5(d)(i);

(iv) the occurrence of any Termination by Lessor Event;

(v) any breach of or non-compliance by the Lessee with any applicable law or regulatory requirement relating to the Land or any part of it or the possession, condition, use, maintenance or return of the Land or any part of it but excluding any breach of or non-compliance with the NTA or the State NTA relating to the Land arising prior to the Completion Date, or to which clause 6.5(d)(i) applies;

(vi) any other breach by the Lessee of its obligations under this Lease (including any of its Lease End Obligations),

except to the extent caused by or otherwise primarily a result of:

(d) a wilful act of the Lessor other than in the exercise of its rights or the performance in accordance with this Lease of its obligations under this Lease or the exercise of its rights or the performance of its obligations under any applicable law; or

(e) a breach by the Lessor of its obligations under this Lease.

10.2 Prior Events

Clause 10.1 does not apply to a Loss relating to or arising out of an event occurring prior to the Completion Date.

10.3 Claims

Where the Lessor or the Crown makes a claim under the indemnity provided to the Lessor and the Crown under clause 10.1 and:

(a) the Lessee has provided an unqualified acknowledgement that such indemnity applies to the claim; and

(b) the Lessee has provided security to the reasonable satisfaction of the Lessor as to any payment that may fall due under such an indemnity,

the Lessee will have the right, subject to the terms of any insurance policy which indemnifies in relation to that claim, by written notice to the Lessor to represent the Lessor or the Crown (as the case may be) in relation to the claim (at the expense and risk of the Lessee) and will have the exclusive conduct of any proceedings relevant to any claim referred to in clause 10.1. The Lessee must not make any admissions or concessions prejudicial to the interests of the Lessor or the Crown without the prior written approval of the Lessor, which must not be unreasonably withheld.

10.4 Release

The Lessee unconditionally and irrevocably releases the Lessor and the Crown from any liability which the Lessor or the Crown may have to the Lessee for any consequence arising from:

(a) the Lessee's use, possession of or access to the Land or any part of it;

(b) regulatory change in the electricity supply industry or that affects the coal mining industry; or

(c) the exercise of any rights by, or the performance in accordance with this Lease of any obligations of, the Lessor arising under this Lease.

10.5 Other Agreements

Nothing in this clause 10 has the effect of releasing the Lessor from any express liability that the Lessor may have to the Lessee under this Lease.

11. Exclusion of Warranties

11.1 Exclusion of warranties

(a) The Lessee acknowledges and agrees to the full extent permitted by law that the Lessee:

(i) has not relied in any way on the skill or judgment of the Lessor or the Crown as to the condition of the Land or the suitability or fitness of the Land or any part of it for the Lessee's or any purpose;

(ii) accepts the Land and each part of it in its condition, age, capacity, quality, dimensions, configuration, suitability, fitness, limitations and compliance with laws current at the Completion Date;

(iii) takes this Lease and the Land subject to any restrictions imposed by or under the provisions of all applicable laws. The Lessor and the Crown do not give any implied warranty as to any uses permitted on the Land or that any improvements (including the Improvements) have been made and maintained in compliance with all applicable laws; and

(iv) takes this Lease and the Land subject to and will not make any objection, requisition or claim for compensation against the Lessor or the Crown in respect of or arising out of:

(A) any encroachment by or on the Land;

(B) any breach of any statute, ordinance or regulation applicable to or affecting the Land;

(C) any outstanding or unsatisfied notice, order or requirement made by any Government Agency applicable to or in respect of Land; or

(D) any installation or services (including sewers, drains, pipes, cables and wires) which:

(1) are on or pass through or over the Land; or

(2) are used in common with any adjoining land or pass through any other land,

whether or not there are easements or rights in respect of such installations that affect or benefit the Land.

(b) The Lessee acknowledges and agrees to the full extent permitted by law that all conditions, warranties and representations relating to the Land (whether expressed, implied, statutory, collateral or otherwise) are excluded, and that the Lessee must accept the Land as it is with all faults and defects (if any).

11.2 Other Agreements

Nothing in this clause 11 has the effect of releasing the Lessor from any express liability that the Lessor may have to the Lessee under this Lease.

12. Transfer on Notice

(a) The Lessee may, and the Lessor may require the Lessee to, transfer this Lease to GLC or its nominee by giving 1 month's notice to the other at any time after:

(i) the Lessee and any person claiming through the Lessee have permanently ceased to carry on Mining Operations on both:

(A) the Land; and

(B) the land the subject of the Other Perpetual Leases; and

(ii) the Lessee has complied with the provisions of the Development Programme,

in which case the Lessee must transfer this Lease to GLC or its nominee, and the Lessor must procure that GLC or its nominee accepts that transfer, such transfer to take effect on the expiry of the 1 month period of notice.

(b) This Lease shall be transferred to GLC or its nominee if any Other Perpetual Lease is transferred to GLC or its nominee.

(c) On the transfer of this Lease pursuant to this clause 12, and except as otherwise expressly provided in this Lease, the Lessee is released from its obligations under this Lease except to the extent that the Lessee has not performed any obligations which it was required to perform on or prior to the date of the transfer of this Lease.

13. Transfer on Termination by Lessor Event

13.1 Termination by Lessor Event

Each of the following is a Termination by Lessor Event where it occurs after the Completion Date.

(a) (**Non-payment of Monies**) The Lessee does not, within a period of 45 days following delivery to the Lessee of a written demand from the Lessor requiring the Lessee to pay that amount, pay to the Lessor an amount which is due and payable to the Lessor under this Lease.

(b) (**Insolvency or External Administration Events**):

(i) An Insolvency Event occurs and the rights and obligations of the Lessee under this Lease have not, within 12 months following the date of occurrence of the Insolvency Event, been assigned or transferred to a person that is solvent.

(ii) An External Administration Event occurs and the rights and obligations of the Lessee under this Lease have not, within 18 months following the date of occurrence of the External Administration Event, been assigned or transferred to a person that is solvent.

(c) (**Unauthorised dealing**) Except with the prior consent of the Lessor or as expressly permitted under this Lease, the Lessee:

(i) sells, transfers or otherwise disposes of; or

(ii) creates or allows to exist a Security Interest (other than a Permitted Security Interest) over,

its interest in this Lease or all or part of the Land.

(d) (**Use and Maintenance**) Each of the following has occurred:

(i) the Lessee has committed a breach of any of its obligations under clauses 5.1, 5.2(a), 5.2(b), 5.3 or 5.5 or has failed to comply with the Development Programme;

(ii) the Lessor has notified the Lessee in writing that the breach referred to in clause 13.1(d)(i) has occurred and has provided details of the circumstances constituting that breach to the Lessee; and

(iii) the Lessee has not remedied or rectified the consequences of the breach (including by way of the payment or expenditure of all reasonable sums of money) within 3 months following the date of delivery of the notice under clause 13.1(d)(ii).

13.2 Transfer to GLC or its Nominee

(a) The Lessor is entitled to require the Lessee to transfer this Lease to GLC or its nominee while a Termination by Lessor Event subsists.

(b) A requirement to transfer under clause 13.2(a) must be made by delivery of a written notice to the Lessee which details the circumstances constituting the Termination by Lessor Event.

(c) The Lessee must transfer this Lease to GLC or its nominee on the date specified in the notice given pursuant to clause 13.2(b), and the Lessor must procure that GLC or its nominee accepts that transfer.

(d) On the transfer of this Lease pursuant to this clause 13.2, and except as otherwise expressly provided in this Lease, the Lessee is released from its obligations under this Lease except to the extent that the Lessee has not performed any obligations which it was required to perform on or prior to the date of the transfer of this Lease.

13.3 Notification

The Lessee must promptly notify the Lessor in writing of the occurrence of any Termination by Lessor Event.

14. Other Transfer Events

14.1 Linked Leases to be Co-terminous

(a) This Lease will:

(i) be deemed to be transferred to the Lessor if any of the Other Perpetual Leases are transferred to the Lessor; or

(ii) be deemed to be surrendered if any of the Other Perpetual Leases are surrendered.

(b) If:

(i) the Lease End Date under the Northern Generating Plant Lease or the Northern Land Lease occurs as a result of a Termination by GLC Event under either of them; or

(ii) the Lease End Date under the Northern Generating Plant Lease occurs as a result of a termination under clauses 2.3(c), 15.4(f), 16.1(b)(i) or 33(a)(i) of the Northern Generating Plant Lease,

then the Lessee must transfer this Lease to GLC or its nominee, and the Lessor must procure that GLC or its nominee accepts that transfer, such

transfer to take effect on the Lease End Date under the Northern Generating Plant Lease or the Northern Land Lease (as the case may be).

(c) If:

(i) the Lease End Date under any Linked Lease (other than the Other Perpetual Leases) occurs as a result of a Termination by Lessee Event under that Linked Lease; and

(ii) the lessee under each of the Linked Leases (other than this Lease or the Other Perpetual Leases) has elected by written notice to the relevant lessor to terminate all of those Linked Leases,

then the Lessee must transfer this Lease to GLC or its nominee, and the Lessor must procure that GLC or its nominee accepts that transfer, such transfer to take effect on the date that the notice referred to in clause 14.1(c)(ii) is given (or such later date as is specified in that notice).

14.2 Transfer following termination of other Linked Leases

(a) If this Lease is transferred in accordance with clause 14.1(b) then the rights, entitlements, duties and obligations of the Lessor and the Lessee under this Lease will be the same as if this Lease were transferred under clause 13;

(b) If this Lease is transferred in accordance with clause 14.1(c) then the Lessee may make no claim of any nature whatever against the Lessor arising from the transfer of this Lease.

14.3 Effect of Transfer

On the transfer of this Lease pursuant to this clause 14, and except as otherwise expressly provided in this Lease, the Lessee is released from its obligations under this Lease except to the extent that the Lessee has not performed any obligations which it was required to perform on or prior to the date of the transfer of this Lease.

15. No Termination or Surrender

Despite any law or rule to the contrary and except as otherwise agreed between the Lessor and the Lessee:

(a) neither the Lessor nor the Lessee may terminate or has any right to terminate or obtain any order with the effect of terminating this Lease;

(b) this Lease will not terminate, be frustrated (whether at common law or by statute), be repudiated or be taken to have been repudiated for any reason; and

(c) subject to clause 14.1(a) the Lessee may not surrender, and does not have any right to surrender or obtain any order with the effect of requiring the Lessor to accept a surrender of, this Lease.

16. Return of Land on Transfer, Expiry or Termination

16.1 Return

On and with effect from the Lease End Date, the Lessee must:

(a) return and surrender the Land to the Lessor or its nominee in a condition which complies with all laws applicable at that time and the Development Programme;

(b) provide the Lessor or its nominee with an indemnity and security acceptable to the Lessor in respect of any material litigation or similar proceedings pending with respect to all or part of the Land other than in respect of any such litigation or proceedings caused by or otherwise primarily as a result of anything referred to in clauses 10.1(d) or 10.1(e);

(c) pay all the costs and expenses of the Lessor or its nominee in relation to the return of the Land;

(d) procure the release and discharge of all Security Interests over all or any part of the Land (other than any Permitted Liens);

(e) within 2 months after the Lease End Date, remove from the Land all of the property of the Lessee or any person claiming through the Lessee. The Lessee must not, in any such removal, damage the Land or any improvements (including the Improvements) on the Land or other items of property. If the Lessee causes any such damage then the Lessee must promptly repair that damage. If the Lessee fails to remove such property in accordance with this clause 16.1(e) then all the Lessee's right, title and interest in that property not removed will vest in the Lessor absolutely and the Lessor will not be liable in any way or manner to compensate the Lessee in respect of any such property. The Lessor will be entitled to recover from the Lessee any costs incurred in the removal and disposal of any property of the Lessee which the Lessor determines not to be of value to the Lessor;

(f) deliver to the Lessor or its nominee up to date, complete and accurate copies of all reports, documents, plans and specifications and all other materials that are required by applicable laws to be retained in respect of the Land or that relate to the ownership, use or maintenance of the Land; and

(g) use its best endeavours to procure the transfer to the Lessor or its nominee of such Authorisations relating to the Land as are capable of being transferred and, in respect of those which are not capable of being transferred, do all things reasonably necessary to assist the Lessor or its nominee in obtaining all other necessary Authorisations relating to the Land;

(h) except where the Lease End Date occurs as a result of the transfer of this Lease to GLC or its nominee in accordance with clause 12, clause 14.1(a)(i) (where this Lease is transferred to the Lessor as a result of the transfer to the Lessor of any Other Perpetual Lease under clause 12 of that Other Perpetual Lease) or clause 14.1(c) or as a result of surrender of this Lease:

(i) deliver to the Lessor or its nominee a certificate from 2 directors of the Lessee that as of the Lease End Date all services, facilities, agreements and other instruments necessary for the use and maintenance of the Land have been obtained or are readily commercially available on reasonable terms;

(ii) use its best endeavours to assign to the Lessor or its nominee or provide the benefit to the Lessor or its nominee of all services, facilities, agreements and other instruments referred to in clause 16.1(h)(i) which are not readily commercially available on reasonable terms; and

(iii) in so far as any confidential proprietary data information or technology of the Lessee or any person has become effectively integrated into the Improvements or any of the records, documents, instruments or systems used for the operation of Improvements (***confidential information***) the Lessee must, or must use its best endeavours to cause the relevant owner of such confidential information to, enter into such arrangements as are reasonable requested by the Lessor to permit the Lessor or its nominee to use and enjoy the benefits of such confidential information without being obliged to make any royalty or similar payment.

16.2 Condition

If the Lessee does not comply with any of its obligations under clause 16.1, the Lessor may take any action it considers necessary to ensure that the Lessee's obligations are fulfilled. The Lessor is appointed the attorney of the Lessee for this purpose. All costs and expenses of doing so must be paid by the Lessee on demand by the Lessor.

16.3 Actions during the Term

During the period from the Completion Date to the date on which this Lease is transferred to GLC or its nominee in accordance with clauses 12, 13 or 14 or surrendered, the Lessee must use its best endeavours to acquire intellectual property, goods and services of the type the subject of clause 16.1 on terms and conditions that will permit the Lessee to comply with the terms of clause 16.1 as applicable.

17. Force Majeure Events

17.1 Notice of Force Majeure Event

If a Force Majeure Event occurs, the Lessee must promptly upon becoming aware of the Force Majeure Event provide a written notice to the Lessor specifying the following:

(a) the event which is said to be a Force Majeure Event;

(b) the obligations of the Lessee under the Lease the performance of which are said to be prevented;

(c) the steps which the Lessee has taken or will take to overcome the effect of the event;

(d) the time period the Lessee expects will elapse before it will be able to resume performance of the relevant obligations; and

(e) any other information reasonably requested by the Lessor.

17.2 Excused from performance

The Lessee will be excused from performance of an obligation under this Lease (other than an obligation to pay Rent or any other money as required under this Lease or an obligation under clause 9) for so long as the performance of the obligation is prevented by a Force Majeure Event, but only if the Lessee:

(a) has complied with its obligations under clauses 17.1, 17.3 and 17.4; and

(b) undertakes with all due expedition all reasonable steps to overcome the effect of the Force Majeure Event.

17.3 Notice of Potential Force Majeure Event

(a) The Lessee must promptly notify the Lessor of any circumstances of which it is aware which may become a Force Majeure Event.

(b) The Lessee must provide to the Lessor information relating to those circumstances requested by the Lessor.

17.4 Conference

The Lessor may require the Lessee to confer with the Lessor in relation to any circumstances which may become a Force Majeure Event or any event which the Lessee claims to be a Force Majeure Event.

18. Taxes and Costs

18.1 Stamp duty and costs

(a) Subject to clause 18.2, the Lessee must pay and indemnify the Lessor and the Crown against any liabilities for stamp, transaction, registration and similar Taxes (including fines and penalties resulting from delay or omission to pay these Taxes) which may be payable in relation to this Lease or the registration of this Lease or the performance or enforcement of this Lease or any payment or receipt or other transaction contemplated by it, except:

(i) to the extent that any payment by the Lessee is prohibited by law;

(ii) for any fines or penalties arising out of late payment by the Lessor where the Lessee has paid to the Lessor before the date on which the relevant fine or penalty arose the moneys required to be paid by it under this clause 18.1(a); and

(iii) for any Taxes on or in respect of the overall net income of the Lessor.

(b) The Lessee must reimburse the Lessor and the Crown on demand for all costs and expenses properly incurred in relation to the actual or

attempted enforcement of, or actual or attempted exercise or preservation of, any rights powers or remedies under this Lease including, in each case, reasonable legal costs and expenses on a full indemnity basis.

(c) Unless this Lease otherwise provides, all costs, expenses and liabilities associated with the Land or the performance of the Lessee's obligations under this Lease, or an applicable law, must be borne by the Lessee.

(d) Unless this Lease otherwise provides, the Lessee must reimburse the Lessor's reasonable costs of or associated with:

(i) considering and determining whether anything done or proposed to be done by the Lessee in the exercise of any right or entitlement under this Lease complies with the terms of this Lease;

(ii) considering, granting or refusing to grant an approval under this Lease; and

(iii) considering, doing or refusing to do anything at the request of the Lessee.

18.2 Goods and Services Tax

(a) If the Lessor is required to pay GST in respect of all or part of any payment or transaction under, or pursuant to, or by reason of a breach (not being a breach by the Lessor) of, this Lease (***relevant payment or transaction***), then the Lessee must pay to the Lessor such additional amount (***GST gross-up***) as is necessary in order that the net amount retained by the Lessor in respect of the relevant payment or transaction after deduction of GST equals the amount the Lessor would have retained had the GST not been payable. If the Lessor also receives a sum by way of a GST gross-up in respect of the relevant payment or transaction from a person other than the Lessee, and the Lessor is entitled absolutely to retain the sum, then an amount equal to the lesser of that sum and the GST gross-up otherwise due from the Lessee will be either refunded to the Lessee (if the full GST gross-up has already been paid by the Lessee) or allowed as a reduction from the amount due from the Lessee (if the full GST gross-up has not been paid by the Lessee at the time the sum is received from the other party).

(b) If a GST gross-up is payable, then the Lessor will in good faith issue to the Lessee a tax invoice with respect to the GST gross-up on, or as soon as practicable after, receipt of the GST gross-up.

(c) The GST gross-up must be paid on the date demanded by the Lessor provided no demand may be made for payment earlier than 5 Business Days prior to the date which the Lessor in good faith determines to be the last date on which it may lawfully pay to the Commissioner of Taxation the GST to which the GST gross-up relates. Subject to any change of law after the Completion Date, the last date on which the GST may be lawfully paid shall be taken to be the last date (for GST purposes) on which a GST return may be lodged with the Commissioner of Taxation for the tax period to which the taxable supply giving rise to the GST is attributable. Where a GST gross-up relates to GST which is

attributable to two or more tax periods, a separate GST gross-up shall be paid in respect of so much of the GST as is attributable to each period.

(d) If there is any dispute between the Lessor and the Lessee as to when, whether, or how much, GST is due and payable in respect of a relevant payment or transaction, the following provisions apply:

(i) The Lessee must pay the GST gross-up required by the Lessor on the date required in clause 18.2(c).

(ii) The Lessee will be entitled to seek a private binding ruling as to the GST payable, or to seek a refund of the GST on behalf of the Lessor. The Lessee must do so at its own risk and expense, must indemnify the Lessor against any Loss suffered or incurred in connection with the private binding ruling or refund claim, and must keep the Lessor fully informed of all action it takes in respect of the private binding ruling or refund claim.

(iii) If, prior to the GST being paid, a private binding ruling is obtained (on terms satisfactory to the Lessor) that less or no GST is payable, the Lessor must refund the appropriate amount of the GST to the Lessee, together with interest on the sum calculated at the Overdue Rate minus 2% per annum from the date the GST gross-up is paid to the date of the refund.

(iv) If the GST has been paid, and a refund of all or part of the GST is obtained (on terms satisfactory to the Lessor), the Lessor must refund the appropriate amount of the GST to the Lessee, together with any interest paid by the Commissioner of Taxation in respect of the refund, plus for that part of the period (if any) from the date the GST gross-up is paid to the date of the refund which falls between the Completion Date and the date the GST is paid, interest on the refund calculated at the Overdue Rate minus 2% per annum for that part of the period.

(e) If the following conditions are both satisfied:

(i) the Lessee is required to pay GST in respect of all or part of any payment from the Lessor under, or pursuant to, or by reason of a breach of, this Lease (***Lessor payment***); and

(ii) the Lessor is entitled to an input tax credit for GST purposes for all or part of the GST payable by the Lessee on the Lessor payment (***creditable GST***),

then the following provisions apply:

(iii) the Lessor will pay to the Lessee such additional amount as is necessary in order that the net amount retained by the Lessee after deduction of the creditable GST in respect of the Lessor payment equals the amount the Lessee would have retained had the creditable GST not been payable;

(iv) unless otherwise agreed by the Lessor, before the GST gross-up is paid, the Lessor will seek a private binding ruling on whether the GST is creditable on behalf of the Lessor;

(v) if the private binding ruling confirms (on terms satisfactory to the Lessor) that the Lessor will obtain an input tax credit for the GST, the Lessor will pay the GST gross-up to the Lessee;

(vi) the Lessor will not be obliged to pay any GST gross-up before the date the Lessor lodges (for GST purposes) a GST return in which the GST is claimed as an input tax credit for a tax period. Where the GST gives rise to an input tax credit which is attributable to two or more tax periods, a separate GST gross-up shall be paid in respect of so much of the GST as is attributable to each period. ; and

(vii) the Lessee must, on demand by the Lessor, provide the Lessor with a tax invoice for the amount of the relevant payment plus the amount of the GST gross-up.

(f) In this clause 18.2, a reference to a payment includes money or any form of consideration other than money, and a reference to a transaction includes anything which constitutes a supply or a taxable supply for the purposes of the GST.

(g) The parties agree that in this Lease all references to payments and other obligations to pay money, and all references to pricing, value and compensation (whether by way of reimbursement, indemnity or otherwise), are exclusive of GST.

(h) If one party seeks a private binding ruling as to GST for the purposes of this clause, the other party (at the cost and expense of the first party) shall provide such assistance as is reasonably required to obtain the ruling.

19. Compensation

19.1 Liability to Pay

The Lessee must pay compensation for any economic loss, hardship and inconvenience suffered by the owner (as defined in the Mining Act) of any Land on which Mining Operations are being carried out, by reason of the Lessee failing to:

(a) comply with the Development Programme; or

(b) carry on Mining Operations in accordance with the provisions of this Lease or all applicable laws, the breach of which would result in the owner suffering or incurring material civil or criminal liability for which the owner is not fully insured.

19.2 Amount of Compensation

The amount of the compensation will be as agreed between the owner and the Lessee or, in default of agreement within 30 days of agreement being sought by either party, as determined by the appropriate court (as defined in section 6(1) of the Mining Act) on the application of either party.

19.3 Relevant Factors

The appropriate court in determining compensation must take into consideration any work that the Lessee has carried out or undertakes to carry out to rehabilitate the Land.

19.4 Remediation

To the full extent permitted by law, the Lessee must indemnify the Lessor and the Crown on demand against all Losses incurred directly or indirectly by the Lessor or the Crown as a result of the Lessor or the Crown (each in its capacity as a lessor of the Land under this Lease or an owner or previous owner or an occupier or previous occupier of the Land or an operator or previous operator of any Mining Operations, as the case may be) being required to remediate the Land by reason of any failure by the Lessee to comply with the Development Programme.

20. Interest on Overdue Amounts

20.1 Accrual

Interest accrues on each unpaid amount which is due and payable by a party under or in respect of this Lease:

(a) on a daily basis up to the date of actual payment from (and including) the due date or, in the case of an amount payable by way of reimbursement or indemnity, the date of disbursement or loss, if earlier;

(b) both before and after judgment (as a separate and independent obligation); and

(c) at the Overdue Rate applicable to that amount at that time.

20.2 Payment

The relevant party must pay interest accrued under this clause 20 on the last Business Day of each calendar month and at such other times as the other party may demand.

21. Independent Expert

21.1 Matters Subject to Determination

The following matters must be dealt with under this clause 21:

(a) any disagreement between the parties as to any matter in relation to this Lease which is expressed to be subject to review or determination by an Independent Expert (a *Disagreement*); and

(b) any other matter in relation to this Lease which is required to be referred to or determined by an Independent Expert (a *Relevant Matter*).

21.2 Initiation of Determination

(a) If a Disagreement arises between the parties, a party may give a notice to the other party specifying the nature of the Disagreement in as much

detail as is reasonably practicable. If the Disagreement has not been settled within 10 Business Days of the delivery of the notice, the party giving the notice may require that the Disagreement be referred to an Independent Expert in accordance with this clause 21, by giving further notice to that effect to the other party.

(b) If a Relevant Matter arises, a party may initiate the process for referring that matter to an Independent Expert by giving a notice to the other party specifying the nature of the Relevant Matter in as much detail as is reasonably necessary and practicable.

21.3 Appointment of Independent Expert

The parties must endeavour to agree on the Independent Expert within 10 Business Days of the giving of a notice requiring that a Disagreement or Relevant Matter be referred to an Independent Expert under clause 21.2. If the parties fail to appoint an Independent Expert within 10 Business Days, either party may ask:

(a) if the Disagreement or Relevant Matter is one of a mechanical or technical nature, the President for the time being of the Association of Consulting Engineers of Australia or a body which is a successor of it; and

(b) if the Disagreement or Relevant Matter is one of a financial nature, the President for the time being of the Institute of Chartered Accountants in Australia or a body which is a successor of it,

to appoint a suitably qualified person to act as the Independent Expert and the Disagreement or Relevant Matter will then be referred to the person so appointed.

21.4 Qualifications of Independent Expert

The Independent Expert appointed to act under this clause 21 must:

(a) be qualified by his or her education, training and experience to pass a reasoned judgment upon the particular matters the subject of the Disagreement or Relevant Matter; and

(b) not have any relationship or association with a party which might jeopardise his or her impartiality.

21.5 Binding Decision

A decision of the Independent Expert under this clause 21 will be absolute and final and will bind the parties accordingly.

21.6 Expert Not an Arbitrator

The Independent Expert will determine a Disagreement as an expert and not as an arbitrator.

21.7 Evidence and Representation

Each of the parties agrees that it will:

(a) make available to the Independent Expert all materials requested by him or her and all other materials which are relevant to any determination by the Independent Expert;

(b) be entitled to produce to the Independent Expert any materials or evidence which the party believes is relevant to a Disagreement or Relevant Matter; and

(c) be entitled to appoint a legal representative to represent its interest at any hearing before the Independent Expert.

21.8 Costs

(a) Each party must bear its own costs incurred in the preparation and presentation of any submissions or evidence to the Independent Expert.

(b) Unless the parties otherwise agree before the submission of a Disagreement or Relevant Matter to the Independent Expert, the parties must require the Independent Expert to determine the proportions in which each party must bear the costs of determination of the Disagreement or Relevant Matter by the Independent Expert, in the case of a Disagreement having regard to the degree to which he or she considers such party was at fault or unreasonable in failing to agree to the matter under reference to him or her, and that party must bear the costs accordingly.

22. Confirmation of Compliance With Lease

The parties may, in order to clarify the meaning or operation of a provision of this Lease, or to clarify whether a particular act, matter or thing did or would constitute an act, matter or thing carried out in accordance with or did or would satisfy the terms of this Lease, confirm in writing the meaning or operation of that provision or the effect of that act, matter or thing. Any such confirmation will take effect in accordance with its terms.

23. Entitlement to Receive Rent

If any person other than the Lessor becomes entitled to receive the Rent or exercise any of the Lessor's other rights and entitlements under this Lease, whether by assignment, operation of law or otherwise, that person will have the benefit of the covenants and obligations to be performed by the Lessee. Further, if required by the Lessor, the Lessee must enter into a deed with that person expressly covenanting to pass the benefit of those covenants and obligations to that person in a form reasonably required by the Lessor and not inconsistent with the provisions of this Lease.

24. Set-Off

24.1 Linked Leases

The Lessor or the Lessee may set-off any amounts due and payable to it under a Linked Lease as a credit against any amounts due and payable by it to the other party under another Linked Lease.

24.2 Set-off

(a) If:

(i) an amount (the *Payment Amount*) is due and payable by a party (the *First Party*) to the other party (the *Second Party*) as a result of the expiry or termination of a Linked Lease; and

(ii) the Second Party is obliged to either:

(A) pay an unascertained amount to the First Party; or

(B) perform an undetermined obligation or duty in favour of the First Party,

the First Party may withhold the Payment Amount to the extent it considers necessary (in its reasonable opinion) to allow for the likely amount of:

(iii) payment of the amount referred to in clause 24.2(a)(ii)(A) when ascertained; or

(iv) any payment required or loss recoverable as a result of any non-performance of the duty or obligation referred to in clause 24.2(a)(ii)(B) when ascertained,

as the case may be.

(b) When the amount of any payment referred to in clause 24.2(a)(iii) or 24.2(a)(iv) is ascertained:

(i) the First Party may exercise its rights under clause 24.1 taking into account any amount withheld under clause 24.2(a); and

(ii) following the exercise of those rights, any balance of an amount withheld under clause 24.2(a) will be paid to the Second Party.

(c) Any dispute as to the operation of this clause 24 may be referred to an Independent Expert for determination.

25. Survival of Indemnities, Rights and Obligations

25.1 Indemnities

Each indemnity:

(a) is a continuing obligation;

(b) is a separate and independent obligation; and

(c) survives the transfer of this Lease to GLC or its nominee in accordance with clauses 12, 13 or 14 or the surrender or discharge of this Lease.

25.2 Other rights and obligations

The rights and obligations of the Lessor and the Lessee under clauses 6.5(d)(i), 9, 10, 16, 18 and 19 survive the transfer of this Lease to GLC or its nominee in accordance with clauses 12, 13 or 14 or the surrender or discharge of this Lease.

26. Moratorium Legislation

To the full extent permitted by law all legislation which at any time directly or indirectly:

(a) lessens, varies or affects in favour of the Lessee any obligation under this Lease; or

(b) delays, prevents or prejudicially affects the exercise by the Lessor of any right, power or remedy conferred by this Lease,

has no application in relation to this Lease.

27. Assignment, Security Interests and Subletting

27.1 Security Interests

(a) Subject to clause 27.1(b), the Lessee must not create or allow to subsist a Security Interest (other than a Permitted Lien) over:

(i) any of its rights under this Lease; or

(ii) any of its right, title and interest in the Land or any part of it,

unless the Lessee first obtains the written consent of the Lessor.

(b) The Lessee may grant a Security Interest over all (but not part only) of its right, title and interest in this Lease if:

(i) the Security Interest also extends over all (but not part only) of its right, title and interest in the Other Perpetual Leases; and

(ii) the enforcement of the Security Interest is subject to the restrictions on assignment in clause 27.2.

27.2 Permitted assignments

(a) Subject to clause 27.2(b) and clause 27.4, the Lessee must not assign or transfer its right, title and interest in this Lease unless the Lessee first obtains the written consent of the Lessor.

(b) The Lessee may assign or transfer all (but not part only) of its right, title and interest in this Lease to a person (the *Assignee*) if:

(i) it assigns or transfers at the same time and to the same person:

(A) all (but not part only) of its right, title and interest in each Other Perpetual Lease; and

(B) in a form reasonably satisfactory to the Lessor, such of its rights and obligations under the Flinders Power Sale Agreement as are necessary to ensure that the obligations that are to continue to be imposed on the Lessee under

that Agreement, taken together with the obligations under that Agreement which are to be assigned to the Assignee, will continue to be enforceable to the maximum extent and effect as provided for in that Agreement as if that assignment did not occur;

(ii) the Assignee, or a person who is authorised or approved by the Assignee to use the Land and the land the subject of each Other Perpetual Lease, has all Authorisations necessary for the purpose for which the Assignee intends to use, or permit the use of, the Land and the land the subject of each Other Perpetual Lease;

(iii) the Assignee has provided to the Lessor a duly executed deed under which the Assignee undertakes to the Lessor to be bound by the terms of this Lease and the Other Perpetual Leases as if it were the Lessee and the terms of the Flinders Power Sale Agreement on the basis set out in clause 27.2(b)(i)(B), including in respect of any accrued obligations of the Lessee under this Lease and the Other Perpetual Leases and, to the extent required under clause 27.2(b)(i)(B), the Purchaser under the Flinders Power Sale Agreement as at the date of assignment; and

(iv) the Lessee has granted a valid assignment of each Other Perpetual Lease and, to the extent required under clause 27.2(b)(i)(B), the Flinders Power Sale Agreement to the Assignee.

(c) On an assignment under this clause 27.2, the Lessee is released from all obligations under this Lease.

27.3 Subletting

(a) The Lessee may sublease, or grant a licence in respect of, all (but not part only) its interest in the Land to a person to whom the Lessee has granted a sublease or licence respectively of all (but not part only) of its interest in the land the subject of each Other Perpetual Lease.

(b) Despite any sublease or licence permitted under clause 27.3(a), as between the Lessor and the Lessee the Lessee continues to be bound to comply with all its obligations under this Lease and the Other Perpetual Leases.

27.4 Partnership

If the Lessee is a partnership:

(a) a partner may at any time assign or transfer any of its rights or obligations under this Lease to another partner without the consent of the Lessor; and

(b) the partners may permit any other person to become a partner in the partnership (including prior to Completion) if those partners and that person have first provided to the Lessor a duly executed deed substantially in the form set out in Annexure A under which the partnership constituted by the inclusion of that person undertakes to be bound by this Lease as if it were the Lessee and the requirements set out in clause 27.2(b) are satisfied.

27.5 Restructure

Clause 27.2(b) does not prevent the assignment of the right, title and interest of the Lessee in this Lease to more than one person, but each such person must be a party to the deed referred to in clause 27.2(b)(iii) pursuant to which those persons jointly and severally undertake to be bound by the terms of this Lease and the Other Perpetual Leases as if they were the Lessee and by the terms of the Flinders Power Sale Agreement on the basis set out in clause 27.2(b)(i)(B), including in respect of any accrued obligations of the Lessee under this Lease and the Other Perpetual Leases and, to the extent required under clause 27.2(b)(i)(B), the Purchaser under the Flinders Power Sale Agreement as at the date of assignment.

28. Notices

28.1 Notices

All notices, requests, demands, consents, approvals, agreements or other communications to or by a party:

(a) must be in writing;

(b) must be signed by an Authorised Officer of the sender; and

(c) will be taken to be duly given or made when delivered, received or left at the address or fax number which the recipient has notified to the sender for that purpose but, if delivery or receipt is on a day on which business is not generally carried on in the place to which the communication is sent or is later than 4pm (local time), it will be taken to have been duly given or made at the commencement of business on the next day on which business is generally carried on in that place.

28.2 Authorised Officers

Each party irrevocably authorises the other party to rely on a certificate by a person purporting to be its director or secretary as to the identity and signatures of its Authorised Officers. Each party warrants that those persons notified in respect of it have been authorised to give notices and communications under or in connection with this Lease.

29. General

29.1 Entire Agreement

This Lease contains the entire agreement between the parties as at the Completion Date with respect to its subject matter and supersedes all earlier conduct by the parties with respect to its subject matter.

29.2 Amendments

Amendments of this Lease may only be made by a deed made under seal by the Lessor and the Lessee which is expressed to be an instrument amending this Lease under this clause 29.2.

29.3 Further Assurances

Each party will take all steps, execute all documents and do everything reasonably required by the other party to give effect to any of the transactions contemplated by this Lease.

29.4 No Waiver

No failure to exercise and no delay in exercising any right, power or remedy under this Lease operates as a waiver. Nor does any single or partial exercise of any right, power or remedy preclude any other or further exercise of that or any other right, power or remedy. Except as otherwise expressly provided in this Lease, the rights, powers and remedies provided to a party in this Lease are in addition to, and do not exclude or limit, any right, power or remedy provided by law.

29.5 Severability

Any provision of this Lease which is prohibited or unenforceable in any jurisdiction is ineffective as to that jurisdiction to the extent of the prohibition or unenforceability. That does not invalidate the remaining provisions of this Lease nor affect the validity or enforceability of that provision in any other jurisdiction.

29.6 No Merger

The rights and obligations of the parties will not merge on completion of any transaction under this Lease. They will survive the execution and delivery of any assignment or other document entered into for the purpose of implementing any transaction.

30. Governing Law and Jurisdiction

(a) This Lease is governed by the laws of South Australia.

(b) Each party irrevocably and unconditionally submits to the non-exclusive jurisdiction of the courts of South Australia and courts of appeal from them for determining any dispute concerning this Lease but subject to the dispute resolution mechanisms set out in clause 21. Each party waives any right it has to object to an action being brought in those courts, to claim that the action has been brought in an inconvenient forum, or to claim that those courts do not have jurisdiction.

(c) The parties agree that neither of them will institute or attempt to institute any proceedings in relation to any dispute or any matter or thing arising out of or in connection with this Lease other than in a court of South Australia or, in respect of any proceedings in a Federal court, in the Adelaide registry of the relevant Federal court but subject to the dispute resolution mechanisms set out in clause 21. A party will not, without the consent of the other party, request that proceedings instituted in a Federal court in South Australia be heard outside South Australia.

(d) Without preventing any other mode of service, any document in an action (including, but not limited to, any writ of summons or other

originating process or any third party or other party notice) may be served on a party by being delivered to that party in accordance with clause 28.

EXECUTED in South Australia.

In witness whereof His Excellency the Governor hath caused the public seal of the State of South Australia to be affixed hereto and also set his hand and the common seal of the Lessee was hereunto affixed on the fourth day of April one thousand nine hundred and seventy eight.

The Common Seal of THE ELECTRICITY TRUST OF SOUTH AUSTRALIA was affixed hereto in the presence of:

(sgd)

... ... Member

(sgd)

... ... Secretary

Annexure A

Partnership Assumption Deed

Assumption Deed

The Governor of South Australia

and

[# the First Partner]

and

[# the Second Partner]

[Include details of any Additional Partners]

Date

Parties

1. **The Governor of South Australia** (the *Lessor*)
2. *[#]* (the *First Partner*)
3. *[#]* (the *Second Partner*)
4. *[Include details of any Additional Partners]*

Recitals

A The Lessor (or the Lessor's predecessor) granted:

(i) Perpetual Crown Lease No. 19393
Register Book Volume 1234 Folio 37;

(ii) Perpetual Crown Lease No. 18578;
Register Book Volume 1067 Folio 36;

(iii) Perpetual Crown Lease No. 20311;
Register Book Volume 1589 Volume Folio 2;

(iv) Perpetual Crown Lease No. 20239;
Register Book Volume 1545 Folio 20;

to the Electricity Trust of South Australia (the *Perpetual Leases*).

B Immediately prior to Completion the right, title and interest previously held by the Electricity Trust of South Australia in each Perpetual Lease was held by Flinders Power Pty Limited (ACN 082 988 270) (*Flinders*).

C The right, title and interest of Flinders in each Perpetual Lease has been transferred to the Purchaser pursuant to the Flinders Power Sale Agreement.

D Clause 27.4(b) of each Perpetual Lease has the effect that the First Partner and the Second Partner may permit an Additional Partner to become a partner in the partnership known, as at the date of this Deed, as the "*[#]* Partnership" if the First Partner, the Second Partner and that Additional Partner have first provided to the Lessor a duly executed deed under which the partnership as constituted by the inclusion of the Additional Partner undertakes to be bound by each Perpetual Lease as if it were the Lessee under the relevant Perpetual Lease.

E Subject to the provision to the Lessor of the deed referred to in Recital D, the First Partner, the Second Partner and the Additional Partners have agreed that the Additional Partners will become partners in the

[#] Partnership.

F Under this Deed the First Partner, the Second Partner and the Additional Partners undertake to be bound by each Perpetual Lease as if they were the Lessee under the relevant Perpetual Lease.

G The requirements set out in clauses 27.2(b) of each Perpetual Lease (other than as set out in clause 27.2(b)(iii)) have been satisfied in relation to the assignment or transfer of rights and obligations under each Perpetual Lease to the Additional Partners.

It is agreed as follows.

1. Definitions and interpretation

1.1 Definitions

The following definitions apply unless the context requires otherwise.

Additional Partners means [ ].

Effective Date means the date of this Deed.

1.2 Terms defined in the Perpetual Lease

Words that are defined in the Perpetual Lease referred to in paragraph A(i) of the Recitals and that are used in this Deed have the same meaning in this Deed as in that Perpetual Lease.

1.3 Interpretation

The provisions of clause 1.2 of the Perpetual Lease referred to in paragraph A(i) of the Recitals form part of this Deed as if set out at length in this Deed.

2. Assumption

(a) The First Partner, the Second Partner and the Additional Partners each agree that, on and from the Effective Date, the obligations, undertakings, representations, warranties, indemnities and liabilities of the Lessee under each Perpetual Lease bind all of them jointly and severally as if they were the Lessee under the relevant Perpetual Lease.

(b) The parties agree that, on and from the Effective Date, the First Partner, the Second Partner and the Additional Partners enjoy the rights and benefits of, the undertakings, representations, warranties and indemnities in favour of and the liabilities to, the Lessee under each Perpetual Lease jointly and severally as if they were the Lessee under the relevant Perpetual Lease.

(c) The parties each agree that, on and from the Effective Date, each Perpetual Lease shall be construed as if references in it to the Lessee

were references to the First Partner, the Second Partner and the Additional Partners jointly in partnership and to each of them severally.

(d) Each Additional Partner undertakes to the Lessor that it will be bound by the terms of each Perpetual Lease as if it were the Lessee and the terms of the Flinders Power Sale Agreement on the basis set out in clause 27.2(b)(i)(B) of the relevant Perpetual Lease, including in respect of any accrued obligations of the Lessee under the relevant Perpetual Lease and, to the extent required under clause 27.2(b)(i)(B) of the relevant Perpetual Lease, the Purchaser under the Flinders Power Sale Agreement as at the Effective Date.

3. Costs and Stamp Duty

3.1 The parties will bear their own costs arising out of the negotiation, preparation and execution of this Deed.

3.2 The Treasurer acknowledges that:

(a) this Deed; and

(b) any document executed pursuant to this Deed,

each falls within the scope of a sell down, re-organisation or restructure within the meaning of clause 9(c) of the Flinders Power Sale Agreement.

4. Governing law

This Deed is governed by the laws of South Australia. Each party submits to the non-exclusive jurisdiction of courts exercising jurisdiction there in connection with matters concerning this Deed.

5. Counterparts

This Deed may be executed in any number of counterparts. All counterparts together will be taken to constitute one instrument.

Executed as a Deed in Adelaide, South Australia.

Each attorney executing this Deed states that he or she has no notice of revocation or suspension of his or her power of attorney.

The Public Seal of **The State of South Australia** was duly affixed hereto:

_____

[insert name]

The Governor of South Australia

_____

Witness

Signed sealed and delivered for and on behalf of **[the First Partner]** by its duly authorised attorney/attorneys in the presence of:

_____

Attorney/Attorneys

_____

Print Name(s)

_____

Witness

_____

Print Name

Signed sealed and delivered for and on behalf of **[the Second Partner]** by its duly authorised attorney/attorneys in the presence of:

Attorney/Attorneys

Print Name(s)

Witness

Print Name

[Include execution clauses for the Additional Partners]

S0046

NO. SD. PAYABLE

South Australia

Register Book,

Vol. 1545 Folio 20

Deputy Registrar-General

comprising 2 sheets

Crown Lease

00754913

PERPETUAL LEASE No. 20239

HIS EXCELLENCY THE GOVERNOR in and over the State of South Australia and its dependencies in the Commonwealth of Australia (hereinafter with his successors in office designated by the term "the Lessor") acting pursuant to the powers conferred upon him by Section 43g of the Electricity Trust of South Australia Act 1946 as amended and for and on behalf of Her Majesty the Queen DOTH HEREBY LEASE to THE ELECTRICITY TRUST OF SOUTH AUSTRALIA a body corporate incorporated under the said Electricity Trust of South Australia Act 1946 as amended and having its office at 220 Greenhill Road Eastwood in the said State (hereinafter designated by the term "the Lessee") ALL THAT land containing approximately four thousand five hundred and thirty two (4 532) hectares and being Sections numbered 321 324 416 417 418 419 420 485 486 and 489 OUT OF HUNDREDS (Copley) as the same is delineated in the public maps deposited in the Department of Lands at Adelaide TOGETHER with all the seams beds and deposits of coal as well opened as unopened lying within and under the said lands TO BE HELD in perpetuity at the yearly rent of fifty dollars ($50-00) to be paid in advance on the fourteenth day of July commencing on the fourteenth day of July One Thousand Nine Hundred and seventy seven Subject to the liberties covenants and conditions set out hereunder

By Command,

The Minister of Lands

LIBERTIES

1. The Lessee shall be at liberty to exercise in relation to the said land and coal hereby demised all and any of the powers conferred upon the Lessee by section 43d of the Electricity Trust of South Australia Act 1946 as amended subject however to the restrictions upon the power of transferring mortgaging encumbering and subletting the said land hereinafter appearing

COVENANTS

2. The Lessee will forthwith commence to destroy all such vertebrate pests on the said land as are by or under the Vertebrate Pests Act 1975 as amended or by or under any other Act for the time being in force in the said State declared to be vertebrate pests and will keep the said land free of all vertebrate pests to the satisfaction of the Lessor during the lease and will destroy all pest plants growing upon the said land

3. The Lessee will not transfer sublet encumber mortgage or part with the possession of the said land or any part thereof without the written consent of the Lessor first had and obtained in each case

4. The Lessee will permit the Lessor or his agents with or without miners surveyors workmen or other persons at all reasonable times to enter upon inspect and examine the land and premises hereby demised and every part thereof for the purpose of examining the same and of ascertaining the condition thereof

5. Permit the owner of any mining claim situated on the land and the holder of any mining lease of the whole or any portion of the land under any law in force for the time being relating to mining with or without workmen full and free liberty of access ingress egress and regress into upon and from the land comprised in such claim or lease

Certified correct

Registrar, Land Office

Exd.

01-20-2006 14:29 FROM- T-106 P.005/008 F-327

FLI.524.388

CHANGE OF NAME 9243169 The name of the within company is changed to RESI FP PTY. LTD. of Level 5, 200 Victoria Square Adelaide 5000
Produced 20.12.2001 at 11:25

The within Terms and Conditions are amended vide 9243175 Produced 20.12.2001 at 11:25

3. APPLICATION 9264948 the within land is vested in NRGENERATING HOLDINGS (No. 2) GMBH of 2 UNDIVIDED 4TH PARTS FLINDERS LABUAN (No. 1) LTD. of 1 UNDIVIDED 4TH PART and FLINDERS LABUAN (No. 2) LTD. of 1 UNDIVIDED 4TH PART all c/- Level 2 307 Queen Street Brisbane 4000
Produced 25.1.2002 at 12:40

4. MORTGAGE 9264950 to NATIONAL AUSTRALIA BANK LTD. of the within land Produced 25.1.2002 at 12:40

1. *CAVEAT 8958583 has been withdrawn vide 9264940 Produced 25.1.2002 at 12:40*

2. *CAVEAT 8958661 has been withdrawn vide 9264941 Produced 25.1.2002 at 12:40*

01-20-2006 14:28 FROM- T-106 P.006/008 F-327

FLI.524.389

CONDITIONS (continued)

exercise the powers expressed in this clause in the case of default in the performance of a covenant before the expiration of the period of three months after notice has been given to the Lessee of such default and requiring the performance of the covenant *PROVIDED NEVERTHELESS* that if notice has been given to the Lessee of any default in the performance of a covenant no notice of any future default in the performance of the same covenant or of the continuance of the same default shall be necessary before the exercise of such powers

10. AND IT IS HEREBY EXPRESSLY DECLARED that any notice to be served or given to the Lessee under this lease shall be deemed to have been duly served or given if the same be sent through the post office enclosed in an envelope addressed to the Lessee at its head or principal office and such notice shall be deemed to have been served or given and time shall run from the day of the posting thereof as aforesaid

IN WITNESS whereof His Excellency the Governor hath caused the public seal of the State of South Australia to be affixed hereto and also set his hand and the common seal of the Lessee was hereunto affixed on the fourth day of April One Thousand Nine Hundred and seventy eight

The Common Seal of the
ELECTRICITY TRUST OF SOUTH AUSTRALIA
was affixed hereto in the presence
of:-

.....Member

.....Secretary

U1 4205590
*14.7.1977
UNDERLEASE 4205590 to THE COMMONWEALTH OF AUSTRALIA of portion of the within Section 324 term commencing on ~~*17.5.1978~~ and ending on 31.12.2049 Produced 25.5.1978 at noon

SURRENDER of Underlease 4205590 vide 6497732 Produced 14.3.1988 at 10:35

APPLICATION 8314380 The within land is vested in SA GENERATION CORPORATION of 168 Greenhill Road Parkside 5063 *pursuant to Clause* 4(1) *of* Schedule 3 of the Electricity Corporations Act 1994 Produced 20.6.1997 at 10:50

APPLICATION 8670759 The within land is vested in FLINDERS POWER PTY. LTD. of 168 Greenhill Road Parkside 5063 *pursuant to* Clause 4(1) of Schedule 3 of the Electricity Corporations Act 1994 Produced 23.4.1999 at 14:50

CAVEAT 8958583 Lodged by NRGENERATING HOLDINGS (NO 2) FLINDERS LABUAN (NO 1) LTD. FLINDERS LABUAN (NO 2) LTD. and GMBH over the within land Produced 8.9.2000 at 14:50

CAVEAT 8958661 Lodged by NATIONAL AUSTRALIA BANK LTD. over the within land Produced 8.9.2000 at 15:30

01-20-2006 14:30 FROM- T-106 P.007/008 F-327

FLI.524.390

COVENANTS (Continued)

6. The Lessee will make and keep at some convenient place upon the demised premises proper and accurate plans showing the progress and actual state of any mines or works upon the said land and will permit the Lessor or his agents at all reasonable times to inspect the said plans and take copies of or extracts from the same.

7. The Lessee will not permit suffer or allow any house building shop or store at any time to be erected or used upon the said land as a public house wine shop or otherwise for the supply of intoxicating liquors without the consent of the Lessor first had and obtained

CONDITIONS

8. PROVIDED ALWAYS that if in the opinion of the Lessor (whose decision upon the matter shall be final)

(a) the said land shall cease to be used or required for the purpose of working and getting coal or purposes incidental thereto or

(b) it is necessary or convenient that any portion or portions of the said land should be resumed for use as roads or railways or as sites for towns or for park lands or for mining purposes or for any public work or purpose

then and in any such case it shall be lawful for the Lessor upon giving three calendar months' notice in writing to the Lessee to determine this lease and to resume possession of the said land either wholly or partially as the case may be and to such extent as may be specified in the said notice and upon publication by the Lessor in the Government Gazette of notice of such determination the tenancy shall cease determine and be void as to all or such parts of the said land as shall be specified in such notice save in respect of anything which ought to be performed or observed upon the determination of the tenancy AND in the event of the determination of the tenancy wholly or partially in accordance with the foregoing provisions no compensation shall be payable to the Lessee except that if any portion or portions of the land be resumed for use as public roads or any other public purpose the Lessee shall be entitled to claim and receive from the Lessor compensation for any improvements made by it upon the said portion or portions of the land IF the amount of such compensation cannot be agreed between the Lessor and the Lessee the amount of such compensation shall be determined by two arbitrators one to be appointed by each party or in case the arbitrators are not able to agree by an umpire to be appointed by them before entering upon the consideration of the amount of compensation or payment IN case either of the parties entitled to nominate an arbitrator neglects to do so for fourteen days next after a notice in writing has been given him by the other party or names an arbitrator who refuses or neglects to act the arbitrator named by the other party may make a final decision alone

9. AND further PROVIDED ALWAYS and this lease is upon this express condition that if default shall be made in payment of any rent in arrear for six months after the same falls due the Lessee having had at least three months' previous notice in writing demanding its payment or if default shall be made in the performance of any covenant on the part of the Lessee or if the Lessee shall without the written consent of the Lessor first had and obtained transfer mortgage encumber or sublet the premises or any part thereof the Lessor after three months' written notice may re-enter and take possession of the said lands and it shall be lawful for the Lessor before or after re-entry to cancel and determine this lease and the Lessor may thereupon insert a notice in the Government Gazette declaring this lease to be forfeited and such notice appearing in the Government Gazette shall in all courts and elsewhere and under all circumstances be taken to be conclusive evidence that such lease has been legally cancelled and forfeited PROVIDED however that the Lessor shall not (except in the case of rent being in arrear as aforesaid or of the transfer mortgage encumbrance or sub-letting of the premises without such consent as aforesaid)

01-20-2006 14:30 FROM- T-106 P.008/008 F-327

FLI.524.391

S0001

LANDS TITLES REGISTRATION OFFICE
SOUTH AUSTRALIA

FORM APPROVED BY THE REGISTRAR-GENERAL

9243174

Series No.	Prefix
109	AL

BELOW THIS LINE FOR AGENT USE ONLY

CERTIFIED CORRECT FOR THE PURPOSES OF THE CROWN LANDS ACT 1929

REGISTERED CONVEYANCER

R.J. GAMBLE

AGENT CODE

Lodged by:)
) CHIEF DOCUMENTARY OFFICER
) CROWN TENURE UNIT LTAB
Correction to:) BOX 52

BELOW THIS LINE FOR OFFICE USE ONLY

Date: 20 DEC 2001	Time: 11.25
FEES	
R.G.O. 87	POSTAGE
NEW C.T.	

TITLES, CROWN LEASES, DECLARATIONS ETC. LODGED WITH INSTRUMENT (TO BE FILLED IN BY PERSON LODGING)

1. CE 1589/2
2.
3.
4.
5.

Assessor

~~PLEASE ISSUE NEW CERTIFICATE OF TITLES AS FOLLOWS~~

1.
2. Lands Titl 11:38 20/12/01 129500 REGISTRATION FEE 40.00
3.

CORRECTION	PASSED

REGISTERED 21 OCT 2002

REGISTRAR-GENERAL

DELIVERY INSTRUCTIONS (Agent to complete)
PLEASE DELIVER THE FOLLOWING ITEM(S) TO THE UNDERMENTIONED AGENT(S)

ITEM(S)	AGENT CODE

FLI.525.001

CERTIFICATE OF ALTERATION

(Pursuant to Section 35(1) of the Crown Lands Act 1929)

CROWN RECORD(S)/CROWN LEASE(S) AFFECTED

The whole of the land comprised in Perpetual Lease No.20311
Registered in the Crown Lease Register Book Volume 1589 Folio 2

LAND DESCRIPTION OF PARCEL BEING MERGED/ADDED

NOT APPLICABLE

APPLICANT **MINISTER FOR ENVIRONMENT AND HERITAGE**

DELETE WHICHEVER IS INAPPLICABLE

~~(a) Hereby certifies that the said land having been allotted on recommendation of the Land Board to the Lessee(s) is hereby included in the abovementioned Crown Lease~~.

(b) Hereby on recommendation of the Land Board authorises the following alterations:

ALTERATION TO LEASE

The terms and conditions of the lease are amended as per the attached document.

EXECUTION

The Common Seal of: MINISTER FOR ENVIRONMENT AND HERITAGE was affixed hereto this 17th day of December 2001 by the authority of the Minister in the presence of :

MINISTER FOR ENVIRONMENT AND HERITAGE
COMMON SEAL
SOUTH AUSTRALIA

.....

TOTHE REGISTRAR-GENERAL
ADELAIDE

DEH 14/0202
MW140202.REDCA

FLI.525.002

South Australia
Perpetual Crown Lease
No. 20311

Governor of South Australia as lessor

Electricity Trust of South Australia as lessee

525485

FLI.525.003

Perpetual Lease No. 20311

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Perpetual Lease No. 20311

Recital:

HIS EXCELLENCY THE GOVERNOR in and over the State of South Australia and its dependencies in the Commonwealth of Australia (hereinafter with his successors in office designated by the term the *Lessor*), acting pursuant to the powers conferred upon him by section 43g of the Electricity Trust of South Australia Act, 1946 as amended, and for and on behalf of Her Majesty the Queen DO HEREBY LEASE to THE ELECTRICITY TRUST OF SOUTH AUSTRALIA, a body corporate incorporated under the said Electricity Trust of South Australia Act, 1946 as amended, and having its office at 220 Greenhill Road, Eastwood in the said State (hereinafter designated by the term the *Lessee*) ALL THAT land containing four thousand two hundred and eight (4 208) hectares and being Sections numbered 325, 534, 685 and 1255 OUT OF HUNDREDS (Copley) exclusive of certain rights detailed in Certificate of Title Register Book Volume 4144 Folio 637 (hereinafter called the *said certificate*) over portions of the within mentioned Section 685 (formerly Block 1110) identified by the letters "A" and "B" on the plans annexed to the said certificate as the same is delineated in the public maps deposited in the Department of Lands at Adelaide TOGETHER with all the seams, beds and deposits of coal as well opened as unopened lying within and under the said lands (the said lands and said seams, beds and deposits of coal being hereinafter designated by the term the *Land*) TO BE HELD in perpetuity at the Rent and subject to the covenants and conditions set out below.

1. Definitions and Interpretation

1.1 Definitions

The following definitions apply unless the context requires otherwise.

Aboriginal Heritage Law means a law regulating or otherwise relating to the protection of matters of Aboriginal cultural heritage significance including, without limitation, the Aboriginal and Torres Strait Islander Heritage Protection Act 1984 (Cth) and the Aboriginal Heritage Act 1988 (SA).

Aboriginal Item means any object, remains or site which is protected under any Aboriginal Heritage Law.

Authorisation includes:

(a) any consent, authorisation, registration, filing, lodgement, agreement, notarisation, certificate, permission, licence, approval, authority or exemption from, by or with a Government Agency; or

(b) in relation to anything which will be fully or partly prohibited or restricted by law if a Government Agency intervenes or acts in any way within a specified period after lodgement, filing, registration or notification, the expiry of that period without intervention or action.

Authorised Officer in relation to a party to this Lease means any person from time to time nominated as an Authorised Officer by the party by a notice to the other party accompanied by certified copies of signatures of all new persons so appointed.

Business Day means a weekday on which banks are open for business in South Australia.

Chief Inspector of Mines means the Chief Inspector of Mines (or equivalent person or entity or delegate of any of them) appointed for the time being under the Mines and Works Inspection Act.

Completion has the meaning given in the Flinders Power Sale Agreement.

Completion Date has the meaning given in the Flinders Power Sale Agreement.

Crown means the Crown in right of the State of South Australia and includes any agency, instrumentality or emanation of it.

Determination means any notice, order, judgement or declaration issued or made by any Judicial Body that Native Title exists.

Development Programme means the development programme or programmes for, among other things, the carrying on of Mining Operations on, and/or the rehabilitation of, the Land as approved from time to time by the Chief Inspector of Mines.

Director of Mines means the Director of Mines (or equivalent person or entity or delegate of any of them) appointed for the time being under the Mining Act.

External Administration Event means:

(a) an administrator of the Lessee is appointed under the Corporations Law (or a similar officer is appointed under the law of South Australia or of another jurisdiction) and is not removed within 45 days following the making of the appointment; or

(b) a receiver, receiver and manager, administrative receiver or similar officer is appointed (either under the law of South Australia or of another jurisdiction) to all or substantially all of the assets and undertaking of the Lessee and is not removed within 45 days following the making of the appointment.

Flinders Power Sale Agreement means the Flinders Power Generation Business Sale Agreement dated [#]August 2000 made between (among others) the Lessee and the Treasurer.

Force Majeure Event means:

(a) any event (other than a change of law or the application or operation of a law) which is beyond the reasonable control of the Lessee and which bona fide prevents the Lessee from performing an obligation under this Lease, excluding:

(i) an obligation to pay Rent or any other money as required under this Lease; and

(ii) an obligation under clause 9,

where that event could not have been prevented, overcome or remedied by the exercise of a standard of care and diligence consistent with that of a prudent person undertaking the obligation, including the expenditure of all reasonable sums of money; or

(b) any change to legislation enacted by the Parliament of South Australia or the Commonwealth of Australia or any change to any Statutory Instrument made thereunder which has the effect of either:

(i) prohibiting the doing of some act or thing; or

(ii) requiring the doing, cessation or omission of some act or thing,

where compliance with that changed legislation or Statutory Instrument would prevent the Lessee from performing any obligation under this Lease.

Generator Sub-lease has the meaning given in the Northern Generating Plant Lease.

GLC means Generation Lessor Corporation, a subsidiary of the Treasurer established under the Public Corporations (Generation Lessor Corporation) Regulations 1999 (SA).

Government Agency means any government or any governmental, semi-governmental, local government, administrative, quasi-judicial or judicial entity or authority and includes a person or entity exercising powers under the Regulatory Regime. It also includes any self regulatory organisation established under statute or any stock exchange.

GST means the goods and services tax, as governed by A New Tax System (Goods and Services Tax) Act 1999 (Cth) and related legislation.

Improvements means all improvements that are deemed to be included in the Land under clause 6.3.

Independent Expert means a person appointed to determine the matters referred to him or her in accordance with clause 21.

Insolvency Event means, except for the purpose of a solvent reconstruction or amalgamation previously approved by the Lessor, an order is made by a court that the Lessee be wound up and that order is not overturned, quashed or permanently stayed within 14 days following the making of the order.

Judicial Body means any judicial or quasi-judicial body or tribunal.

Land has the meaning given in the Recital.

Lease End Date means the date on which this Lease comes to an end for any reason (including as a result of any surrender of this Lease by the Lessee) or the date on which this Lease is transferred to GLC or its nominee in accordance with clause 12, 13 or 14 (whichever occurs first).

Lease End Obligations means the obligations of the Lessee set out in clause 16.

Leigh Creek Line has the meaning given in the Leigh Creek Railways Sub-lease.

Leigh Creek Railways Sub-lease means the sub-lease of the Leigh Creek Line dated [*] September 2000 made between (among others) the Lessee and GLC pursuant to the Leigh Creek Sale/Lease Agreement.

Leigh Creek Sale/Lease Agreement means the Sale/Lease Agreement pursuant to which the Treasurer has granted to the Lessee the lease of the Leigh Creek Line and the lease of the Township.

Lessee has the meaning given in the Recital.

Lessor has the meaning given in the Recital.

Linked Leases means this Lease, the Other Perpetual Leases, the Northern Generating Plant Lease, the Generator Sub-lease, the Unit 1 Boiler Sub-lease,

the Unit 2 Boiler Sub-lease, the Northern Land Lease, the Leigh Creek Railways Sub-lease, the Playford B Generating Plant Lease, the Playford B Land Lease and the Township Lease.

Loss means any and all losses (including loss of profit and loss of expected profit), actions, liabilities, damages, costs, expenses, diminutions in value or deficiencies of any kind or character (whether consequential or otherwise) including all interest and other amounts payable to third parties, all liabilities on account of taxes and all legal (on a full indemnity basis) and other expenses reasonably incurred in connection with investigating or defending any claims or actions, whether or not resulting in any liability and all amounts paid in settlement of claims or actions.

Mines and Works Inspection Act means the Mines and Works Inspection Act 1920 (SA).

Mining Act means the Mining Act 1971 (SA).

Mining Operations has the meaning given in clause 5.1(a).

Native Title has the meaning given in the NTA.

Northern Generating Plant means the Generating Plant as that term is defined in the Northern Generating Plant Lease.

Northern Generating Plant Lease means the lease of the Northern Generating Plant from GLC to the Lessee granted by the Treasurer on [*] September 2000 pursuant to the Northern Sale/Lease Agreement.

Northern Land has the meaning given in the Northern Land Lease.

Northern Land Lease means the lease of the land on which the Northern Generating Plant (among other things) is situated from GLC to the Lessee granted by the Treasurer on [ ] September 2000 pursuant to the Northern Sale/Lease Agreement.

Northern Sale/Lease Agreement has the meaning given in the Northern Generating Plant Lease.

NTA means the Native Title Act 1993 (Cth).

Other Perpetual Leases means Perpetual Leases No. 18578 (Register Book Volume 1067 Folio 36), No. 19393 (Register Book Volume 1234 Folio 37) and No. 20239 (Register Book Volume 1545 Folio 20) granted by the Lessor to the Lessee pursuant to Section 43g of the Electricity Trust of South Australia Act 1946 (SA) as modified under the Flinders Power Sale Agreement pursuant to sections 14(8) and 14(9) of the Restructuring and Disposal Act.

Overdue Rate on any day means 2% per annum plus the arithmetic mean of the mid rates shown at or about 10.30am (Adelaide time) on the Reuters BBSW page (or any page or service which replaces it) for bills of exchange with a tenor of 90 days on that day.

Permitted Lien means:

(a) a repairer's lien arising in the ordinary course of business; or

(b) a lien or charge which arises by operation of law,

which, in either case, relates to a payment obligation that is:

(c) not yet due for payment; or

(d) due for payment but being contested in good faith.

Permitted Security Interest means:

(a) a Permitted Lien; and

(b) any other Security Interest permitted under clause 27.1.

Playford B Generating Plant means the Generating Plant as that term is defined in the Playford B Generating Plant Lease.

Playford B Generating Plant Lease means the lease of the Playford B Generating Plant from GLC to the Lessee granted by the Treasurer on [#] September 2000 pursuant to the Playford B Sale/Lease Agreement.

Playford B Land has the meaning given in the Playford B Land Lease.

Playford B Land Lease means the lease of the land on which the Playford B Generating Plant (among other things) is situated from GLC to the Lessee granted by the Treasurer on [*] September 2000 pursuant to the Playford B Sale/Lease Agreement.

Playford B Sale/Lease Agreement has the meaning given in the Playford B Generating Plant Lease.*Registered Native Title Body Corporate* has the meaning given in the NTA.

Regulatory Regime means a scheme established to regulate the conduct of the mining industry in South Australia and is constituted at the Completion Date by the Mining Act, the Mines and Works Inspection Act and the Environment Protection Act 1993 (SA) and the Statutory Instruments and licences made and issued thereunder.

Rent means:

(a) for the period commencing 1 March 1981 to the Completion Date, an annual amount of $50.00; and

(b) from the Completion Date until the Lease End Date, $0.25.

Representative Aboriginal/Torres Strait Islander Body has the meaning given in the NTA.

Restructuring and Disposal Act means the Electricity Corporations (Restructuring and Disposal) Act 1999 (SA).

Sale/Lease Agreement has the same meaning as in section 13 of the Restructuring and Disposal Act.

Security Interest means any mortgage, pledge, lien, charge, encumbrance or any security or preferential interest or arrangement of any kind. It includes:

(a) anything which gives a creditor priority to other creditors with respect to any asset; and

(b) retention of title other than in the ordinary course of day-to-day trading and a deposit of money by way of security but it excludes a charge or lien arising in favour of a Government Agency by operation of statute unless there is a default in payment of moneys secured by that charge or lien.

State NTA means the Native Title (South Australia) Act 1994 (SA).

Statutory Instrument has the same meaning as in the Acts Interpretation Act 1915 (SA).

Tax includes any tax, levy, impost, deduction, charge, rate, duty, compulsory loan or withholding which is levied or imposed by a Government Agency, and any related interest, penalty, charge, fee or other amount.

Term means, subject to transfer of this Lease to GLC or its nominee in accordance with clauses 12, 13 or 14 or surrender in accordance with this Lease, in perpetuity.

Termination by GLC Event has the meaning given in the Northern Generating Plant Lease.

Termination by Lessor Event has the meaning given in clause 13.1.

Township has the meaning given in the Township Lease.

Township Lease means the lease of the Township from GLC to the Lessee granted by the Treasurer on [ ] September 2000 pursuant to the Leigh Creek Sale/Lease Agreement.

Track Infrastructure has the meaning given in the Leigh Creek Railways Sub-lease.

Treasurer means the Treasurer of the State of South Australia acting as a body corporate.

Unit 1 Boiler Sub-lease has the meaning given in the Northern Generating Plant Lease.

Unit 2 Boiler Sub-lease has the meaning given in the Northern Generating Plant Lease.

1.2 Interpretation

Headings are for convenience only and do not affect interpretation. The following rules apply unless the context requires otherwise:

(a) The singular includes the plural and the converse.

(b) A gender includes all genders.

(c) Where a word or phrase is defined, its other grammatical forms have a corresponding meaning.

(d) A reference to a person, corporation, trust, partnership, unincorporated body or other entity includes any of them.

(e) A reference to a clause, annexure or schedule is a reference to a clause of, or annexure or schedule to, this Lease.

(f) A reference to an agreement or document (including, without limitation, any reference to this Lease) is to the agreement or document as amended, varied, supplemented, novated or replaced, except to the extent prohibited by this Lease or that other agreement or document.

(g) A reference to a party includes the party's successors and permitted substitutes or assigns.

(h) A reference to any Act or Statutory Instrument or particular provision of an Act or Statutory Instrument is taken to include:

(i) all regulations, orders or instruments issued under the Act, Statutory Instrument or provision;

(ii) any modification, consolidation, amendment, re-enactment, replacement or codification of the Act or Statutory Instrument or provision; and

(iii) any substituted Act or Statutory Instrument or substituted provision.

(i) A reference to dollars and $ is a reference to Australian currency.

(j) A reference to ***writing*** includes a facsimile transmission and any means of reproducing words in a tangible and permanently visible form.

(k) A reference to ***conduct*** includes any omission and any statement or undertaking, whether or not in writing.

(l) Mentioning anything after ***include***, ***includes*** or ***including*** does not limit what else might be included.

(m) The Recital is an operative provision in this Lease.

1.3 Obligations of partners

(a) This clause applies where the Lessee is a partnership.

(b) Except where expressly stated otherwise, the obligations, undertakings, representations, warranties, indemnities and liabilities of the Lessee under this Lease bind all partners jointly and severally. Except where expressly stated otherwise, all references to the "Lessee" are to the partners jointly in partnership and to each partner severally. Any notice by or to, or act of, any one or more of them binds all of them.

(c) This Lease will continue to bind the partners jointly and severally notwithstanding the dissolution, or any change at any time in the constitution, of the Lessee, or any change at any time in the law regarding partnerships, and will continue to bind a partner even if it ceases to be a partner.

2. Lease

2.1 Grant

The Land is leased by the Lessor to the Lessee for the Term on the terms of this Lease.

2.2 Registration

(a) The Lessor and the Lessee must co-operate with each other to enable the registration at the Lands Titles Office of any amendments to this Lease which are registrable.

(b) The Lessor must, at the Lessee's written request, produce the duplicate Crown Lease for the Land at the Land Titles Office to enable the Lessee to register any Security Interest.

(c) Any costs which may be necessarily incurred:

(i) in the production of such duplicate Crown Lease; or

(ii) any costs which may be necessarily incurred in connection with the registration of amendments to this Lease,

will be borne by the Lessee.

3. Rent

Rent under this Lease will, if demanded by the Lessor, be payable by the Lessee to the Lessor:

(a) for the period commencing 1 March 1981 to the Completion Date, by way of annual amounts, payable in advance on 1 March in each year commencing on 1 March 1981 or, if that day is not a Business Day, the next Business Day; and

(b) from the Completion Date until the Lease End Date, on the Completion Date.

4. No Abatement

Despite any law or rule to the contrary, the obligation of the Lessee to pay Rent will not abate for any reason.

5. Use and Maintenance

5.1 Purpose

(a) To the extent of the rights conferred upon the Lessee under this Lease and subject to clause 5.1(b), the Lessee may only:

(i) use the Land or any part of it; or

(ii) permit the Land or any part of it to be used,

for the following purposes (the ***Mining Operations***):

(iii) to mine (whether by open or closed working) any seams of coal, vested in the Lessor or the Lessee, at or near Leigh Creek;

(iv) to treat, grade or otherwise prepare for sale, and use, sell or otherwise dispose of any coal so mined;

(v) to do any of the following things which the Lessee considers it necessary or convenient to do for the purpose of carrying the provisions of this Lease into effect:

(A) erect houses, buildings and other improvements, and grant leases or tenancies of, or rights to use or occupy, any land, house or building belonging to the Lessee;

(B) construct, repair and maintain streets and roads;

(C) plant, develop, improve and maintain public parks, squares, recreation grounds and other places of public resort;

(D) construct, acquire, maintain and manage sewerage systems and provide sewers and drainage for any premises;

(E) construct, acquire, maintain and manage waterworks, buy water, and sell and supply water;

(F) construct any works;

(G) make reasonable charges for any commodity or service sold or supplied by the Lessee;

(H) do or execute any other act, matter or thing, or enter into and carry out any transaction; and

(vi) from any main used by the Lessee, to supply water to persons at Leigh Creek and to sell and supply water to any other persons who can be conveniently supplied with water from that main.

(b) The Lessee must not permit any house, building, shop or store at any time to be erected or used on the Land as a public supply of intoxicating liquors without the prior written consent of the Lessor.

5.2 Use and Maintenance

(a) The Lessee must use and maintain the Land:

(i) in accordance with all applicable laws the breach of which would result in the Lessor or the Crown suffering or incurring material civil or criminal liability for which the Lessor or the Crown is not fully insured either under an insurance policy required to be taken out under clause 9.1(a) or under another insurance policy which the Lessee has notified the Lessor it has taken out and of which the Lessor and the Crown have the benefit; and

(ii) in a manner and to the extent necessary to comply with the requirements specified in any insurance policy relating to the Land required to be held under this Lease.

(b) The Lessee must ensure that Mining Operations on the Land are carried out:

(i) in an orderly, workmanlike and skilful manner; and

(ii) in accordance with the Development Programme.

(c) The Lessee must pay all costs, expenses, Taxes, fees and charges in connection with the use and maintenance of the Land, but not any income tax, fringe benefits tax, capital gains tax or any similar Tax payable by the Lessor on its overall net income or in relation to its own employees.

5.3 Destruction of Certain Animals and Plants

At all times between the Completion Date and the date on which this Lease is transferred to GLC or its nominee in accordance with clauses 12, 13 or 14 or surrendered, the Lessee must destroy on the Land and will to the satisfaction of the Lessor keep the Land free from:

(a) all classes of animals within any control area for that class to which the provisions of section 47 of the Animal and Plant Control (Agricultural Protection and Other Purposes) Act 1986 (SA) apply; and

(b) all classes of plants within any control area for that class to which the provisions of section 57 of the Animal and Plant Control (Agricultural Protection and Other Purposes) Act 1986 (SA) apply.

5.4 Information

(a) The Lessee must provide the Lessor with information on the condition of any part of the Land within a reasonable period after any reasonable request by the Lessor.

(b) The Lessor must not, unless the circumstances require, request information under clause 5.4(a) more frequently than 6 monthly.

5.5 Plans, Records and Returns

The Lessee must:

(a) make and keep proper and accurate plans and records of:

(i) all works carried out by it on the Land; and

(ii) all leases, tenancies or rights granted by it to use and occupy the Land (or any part of it) or any house or building on the Land (or any part of it);

(b) make and keep records and samples as prescribed in regulation 97 of the Mining Regulations or as required by a notice to the Lessee from any Government Agency;

(c) furnish returns to the Director of Mines as prescribed by section 76(1) of the Mining Act which must include the information required pursuant to any determination for the time being in force made by the Minister responsible for the administration of the Mining Act (or his delegate) pursuant to section 17(8) of the Mining Act; and

(d) submit to the Director of Mines from time to time at the Director's request a current plan of survey of the Land in the form reasonably required by the Director.

5.6 Access rights and Inspection

(a) The Lessee must permit the Lessor and its authorised representatives, if the Lessor requires, at reasonable times and having given the Lessee reasonable notice, to enter any part of the Land:

(i) to exercise the Lessor's rights, or carry out any of the Lessor's obligations, under this Lease; or

(ii) to determine, at the Lessor's expense, whether the Lessee is complying with its obligations under this Lease.

(b) When exercising its rights under clause 5.6(a), the Lessor and its authorised representatives:

(i) must not interfere with the operations or business of the Lessee;

(ii) will be subject to the same limitations upon and conditions of access as apply to any third party visitors to the site; and

(iii) must comply with all safety requirements and other reasonable directions of the Lessee in relation to such access.

(c) The Lessee must:

(i) permit the Lessor and its authorised representatives, if the Lessor requires, at reasonable times and having given the Lessee reasonable notice, access to all information made and kept by the Lessee under clause 5.5; and

(ii) make no charge for access to such information, records, samples, returns and plans but the Lessee is entitled to charge a fee to cover costs involved in supplying any other information under clause 5.4.

(d) The Lessor must not, unless the circumstances require, require inspections under clause 5.6(a) more frequently than 6 monthly.

5.7 Laws and Regulatory Compliance

The Lessee must comply with all laws and regulatory requirements (including all Authorisations) applicable to the use, possession of or access to the Land and the exercise of any rights or the discharge of any obligations arising under this Lease.

5.8 Acting Through Third Parties

The Lessee may discharge its obligations through the actions of employees, contractors and agents but the Lessee will be liable for the acts or omissions of such employees, contractors and agents as if they were the acts or omissions of the Lessee.

6. Title

6.1 Lessor's title

(a) The Lessee acknowledges that:

(i) the Land is and remains the property of the Lessor; and

(ii) the Lessee has no rights in relation to the Land other than the rights under this Lease and the rights conferred on the Lessee by applicable laws or the Regulatory Regime.

(b) The Lessor must, if requested by the Lessee and at the expense and risk of the Lessee, exercise its rights and entitlements in or arising from the Land to assist the Lessee in respect of any matter relating to the Land where:

(i) the Lessee is unable to act itself by reason of the Lessor's interest in the Land;

(ii) the matter to be undertaken by the Lessee is one permitted by the terms of this Lease; and

(iii) in doing so:

(A) the Lessor assumes or incurs no obligations or present or contingent liabilities to a third party (including the Lessee) for which the Lessor is not fully insured either under an insurance policy required to be taken out under clause 9.1(a) or under another insurance policy which the Lessee has notified the Lessor it has taken out and of which the Lessor has the benefit; or

(B) the Lessor is, to the reasonable satisfaction of the Lessor, adequately indemnified by the Lessee in respect of such obligations and liabilities and the liability of the Lessee under such indemnity is the subject of adequate security in favour of the Lessor.

6.2 Protection of title

The Lessee must, to the extent practicable having regard to its legal capacity and its obligations under this Lease:

(a) safeguard and protect the property, title and rights of the Lessor in and to the Land; and

(b) not do or permit to be done any act, omission or thing which might jeopardise the property, title or rights of the Lessor in or to the Land.

6.3 Fixtures

If any improvements to the Land (whether structural and/or permanent or not, existing at the date of commencement of this Lease or not or erected by the Lessee or not) are fixtures to the Land then:

(a) for the purposes of this Lease, a reference to the Land will be taken to include a reference to such improvements; and

(b) property in those improvements vests in the Lessor upon erection and without compensation to the Lessee or any other person.

6.4 Native Title Claims

Unless this Lease has been registered at the Lands Titles Office, the Lessor must notify the Lessee in writing of any Native Title claims which are lodged over any of the Land after the Completion Date, within 1 month of the Lessor receiving notice of such claim pursuant to section 66(3) of the NTA or section 16(1)(b) of the State NTA.

6.5 Determination of Native Title

(a) As at the Completion Date, the Crown does not acknowledge that any Native Title exists in any of the Land.

(b) If any claim is made that Native Title exists in any of the Land, the Crown will have the right, by written notice given to the Lessee, to represent the Lessee and, as the representative of the Lessor or both the Lessor and the Lessee as the case requires, to have the exclusive conduct of any negotiations or proceedings relevant to any claim of Native Title over any of the Land.

(c) The right of the Crown to represent the Lessee under clause 6.5(b):

(i) includes the right to represent the Lessee in any proceedings in the nature of any Determination application or other claim that Native Title exists or existed over the whole or any part of the Land and in any negotiations in connection with those proceedings;

(ii) does not include the right to represent the Lessee in any proceedings brought or made against the Lessee relating solely to any claim for compensation as referred to in clauses 6.5(d)(ii) or 6.5(d)(iii) or in any negotiations in connection with those proceedings;

(iii) includes the right to make admissions, concessions or agreements prejudicial to the interests of the Lessee in relation to the Land:

(A) if the Crown has obtained the prior consent of the Lessee to the relevant admission, concession or agreement, which consent must not be unreasonably withheld;

(B) if the admission, concession or agreement would not materially adversely affect the carrying on of Mining Operations on and from the Land (including by having regard to anything that the Crown offers to the Lessee to do or to refrain from doing) and the Crown has consulted with the Lessee regarding the relevant admission, concession or agreement; or

(C) otherwise than in the instances referred to in clauses 6.5(c)(iii)(A) and 6.5(c)(iii)(B), on the basis that the Crown will be responsible for any losses incurred by the Lessee to the extent caused directly as a result of the relevant admission, concession or agreement; and

(iv) does not include the right to represent the Lessee in any proceedings made or brought by or against the Lessee for injunctive relief or in any negotiations in connection with those proceedings except where those proceedings are made or brought in the course of any proceedings referred to in clause 6.5(c)(i).

(d) As between the Crown and the Lessee:

(i) subject to clause 6.5(d)(ii) the Crown, and not the Lessee, will be responsible for the payment of compensation and any other monies payable to the Native Title holders of, or Native Title claimants to, any of the Land as a result of:

(A) the transfer of this Lease to the Lessee pursuant to the Flinders Power Sale Agreement or the grant or exercise by the Lessee or anyone claiming through or under the Lessee of the rights conferred on the Lessee in respect of the Land pursuant to this Lease; or

(B) the use of the Land for the purposes of Mining Operations or any other use where that other use was being conducted at the Completion Date;

(ii) the Lessee, and not the Crown, will be responsible for the payment of compensation and any other monies payable as a result of any exercise of rights which constitutes a future act (as defined in the NTA) in respect of the Land which is attributable to the Lessee or anyone claiming through or under the Lessee and which takes place on or after the Completion Date; and

(iii) the Lessee, and not the Crown, will be responsible for the payment of compensation or any other monies so payable if the obligation to pay does not fall within clause 6.5(d)(i) and arises as a result of the use to which the Lessee or anyone claiming through or under the Lessee puts the Land or any act or omission of, or breach of this Lease by, the Lessee or anyone claiming through or under the Lessee.

(e) Except as otherwise required by law, the Crown must keep the Lessee informed of all material matters relevant to any negotiations or proceedings referred to in clause 6.5(b).

6.6 Artefacts and Aboriginal Items

(a) Any fossils, artefacts, historical coins or articles of historical value or antiquity and any remains or things of geological, historical or archaeological interest found or discovered on or under the surface of the Land (other than any Aboriginal Item) will be deemed to be the property of the Crown.

(b) In relation to any thing which is the subject of clause 6.6(a), the Lessee must do the following acts, matters or things:

(i) notify the Lessor immediately of any such discovery;

(ii) not do, or permit to be done, any act which may damage any such thing;

(iii) use its reasonable endeavours to prevent any such thing being removed from the Land;

(iv) at the Lessor's reasonable expense, carry out the Lessor's instructions or orders in respect of the excavation, removal, delivery up or disposal of any such thing; and

(v) permit the Lessor and any person authorised by the Lessor either to excavate, remove or dispose of any such thing or to watch, examine, manage or supervise any such excavations, disposals or removals.

(c) The Lessee must comply with the Aboriginal Heritage Law in relation to any Aboriginal Item on, under or comprising all or any part of the Land.

6.7 Caveats

(a) Subject to clause 6.7(b) and for so long as the lessor under this Lease is or forms part of the Crown, the Lessee must not lodge or cause to be lodged a caveat over the Land or any portion of the Land.

(b) If the Lessee reasonably considers that the Lessor has breached or may breach this Lease and that the Lessee's rights pursuant to this Lease may

be adversely affected by that breach, then the Lessee may lodge a caveat over the Land, or any portion of the Land, to the extent necessary to protect a caveatable interest of the Lessee under or pursuant to this Lease which may be adversely affected by any such breach of the Lessor.

7. Easements and Reservation of Rights

7.1 Easements

(a) The Lessor may at any time on or after the Completion Date for the purpose of:

(i) installing, maintaining or repairing any service or utility to the Land; or

(ii) maintaining, operating, repairing, modifying, installing or replacing any infrastructure used to carry out any Mining Operations,

dedicate land to, or transfer, amend, grant or create or take the benefit of any easement or other similar right to or from, any person, or enter into any similar arrangement or agreement with:

(iii) any adjoining owner, lessee or occupier or other person who has an interest in any land (including the Land) other than any Native Title holder, Native Title claimant, Registered Native Title Body Corporate or Representative Aboriginal/Torres Strait Islander Body; or

(iv) any Government Agency (other than with respect to any Native Title rights and interests in relation to the Land),

as the Lessor thinks fit.

(b) When exercising its rights under clause 7.1(a), the Lessor must not materially interfere with:

(i) the carrying on of Mining Operations on the Land by the Lessee or anyone claiming through the Lessee; or

(ii) any improvements (including the Improvements) on the Land.

(c) The Lessee may, by notice in writing, request that the Lessor, at the Lessee's risk and expense, create or grant an easement or other right, or enter into an arrangement or agreement, in accordance with clause 7.1(a). Subject to clause 7.1(d), the Lessor must comply with that request.

(d) The Lessor is not obliged to create or grant an easement or other right, or enter into an arrangement or agreement, at the Lessee's request if:

(i) by doing so, the Lessor assumes or incurs obligations or present or contingent liabilities to a third party (including the Lessee) which are not, to the reasonable satisfaction of the Lessor, adequately indemnified by the Lessee. The liability of the Lessee under such indemnity must be the subject of adequate security in favour of the Lessor; or

(ii) the Lessor is of the view that the proposed creation or granting of the easement or other right, or the proposed arrangement or agreement, is not reasonably necessary for the purposes of the carrying on of Mining Operations on the Land or some aspect of Mining Operations.

(e) This Lease will be taken to be subject to any easement or other right that is created or granted pursuant to this clause 7.1.

8. Third Party Rights

The Lessee accepts this Lease subject to:

(a) any statutory or registered rights existing at the Completion Date; and

(b) any easements or other similar rights created after the Completion Date in accordance with clause 7.1.

9. Insurance

9.1 Insurance Obligations

(a) Except as otherwise agreed by the Lessor, the Lessee must ensure that at all times between the Completion Date and the date on which this Lease is transferred to GLC or its nominee in accordance with clauses 12, 13 or 14 or surrendered:

(i) all improvements (including the Improvements) on the Land are insured for reinstatement; and

(ii) there is taken out and kept in force other insurance that relates to the potential liability of the Lessor or the Lessee to third parties arising out of the use or possession of the Land,

in the manner and to the extent which a prudent lessee of the Land and a prudent lessor of the Land bound by the terms of this Lease would require, as agreed by the Lessor and the Lessee, or failing agreement, as determined by an Independent Expert.

(b) The Lessor and the Lessee acknowledge that schedule 7 to the Flinders Power Sale Agreement specifies the insurances which they agree will satisfy the requirements of clauses 9.1(a) and 9.2 until the date that a different requirement as to such insurances is agreed or determined under clause 9.1(a).

9.2 Conditions

The Lessee must ensure that each insurance policy required to be taken out under clause 9.1(a) (other than workers' compensation) is on terms and conditions reasonably satisfactory to the Lessor and, without limitation, the Lessor may require such an insurance policy to provide that:

(a) the Lessor and the Crown are each specified as an insured party;

(b) breach or non disclosure by one insured will not affect the cover of any other insured;

(c) the insurer waives all rights of subrogation in relation to claims between the insureds;

(d) the amount of any excess or deductible payable by an insured in respect of a claim will not exceed the amount determined by the Lessor as customary for similar policies;

(e) all claims for insurance premiums, levies, stamp duties, charges or commissions against the Lessor and the Crown are waived; and

(f) the insurer will not terminate the policy unless the relevant default or breach remains unremedied for at least 30 days after notice by the insurer to the Lessor specifying that default or breach.

9.3 Remedy for Default

If the Lessee fails to take out or to keep in force an insurance policy required to be taken out under clause 9.1(a) which complies with clause 9.2, the Lessor may do anything which it determines is advisable or necessary to take out or keep in force that policy or to take out a new policy that complies with clauses 9.1(a) and 9.2 at the cost of the Lessee and in the name of the Lessor and/or others (including the Lessee). The Lessor is not obliged to do anything under this clause 9.3.

9.4 Compliance and Enforcement

(a) The Lessee must:

(i) comply with the terms of each insurance policy required to be taken out under clause 9.1(a);

(ii) take all steps to claim, and to collect or recover, money due to it under or in respect of such an insurance policy; and

(iii) do everything (including providing documents, evidence and information) necessary or desirable in the opinion of the Lessor to enable the Lessor or the Crown to claim, and to collect or recover, money due to either of them under or in respect of such an insurance policy.

(b) The Lessor must do everything (including providing documents, evidence and information) necessary or desirable to enable the Lessee to claim, and to collect or recover, money due to it under or in respect of an insurance policy required to be taken out under clause 9.1(a).

9.5 Notice of Claims

The Lessee must notify the Lessor as soon as possible of:

(a) a cancellation of, a change in or a reduction in the coverage of, an insurance policy required to be taken out under clause 9.1(a);

(b) such an insurance policy becoming void or voidable; or

(c) any other material circumstance or correspondence relating to such an insurance policy.

9.6 Use of Insurance Proceeds

Except as otherwise agreed by the Lessor, the Lessee must:

(a) use the proceeds of the insurance policy required to be taken out under clause 9.1(a)(i) in reinstatement of so much of the improvements (including the Improvements) on the Land as will ensure that the Lessee complies with its obligations under this Lease except:

(i) to the extent that the Lessor and the Lessee agree, or failing agreement, an Independent Expert determines, that it is not economically viable for the Lessee to reinstate those improvements; or

(ii) if a lessor or lessee under any Other Perpetual Lease has served a valid notice under clause 12 of that Other Perpetual Lease to transfer that Other Perpetual Lease,

and, to the extent the insurance proceeds exceed the amount required to reinstate those improvements or are not required to be used to reinstate those improvements, the Lessee may retain those proceeds; and

(b) use the proceeds of all insurance policies required to be taken out under clause 9.1(a)(ii) and received by it to discharge the liability or make good the loss covered by the insurance policy.

9.7 Premiums

The Lessee must pay when due all premiums, commissions, levies, stamp duties, charges and other expenses necessary for taking out and keeping in force the insurance policies required to be taken out under clause 9.1(a) (including a policy taken out under clause 9.3).

9.8 Insurers

The Lessee must take out each insurance policy required to be taken out under clause 9.1(a) with independent and reputable insurers reasonably acceptable to the Lessor.

9.9 Information

The Lessee must provide the Lessor with annual certificates of currency in respect of all insurance policies required to be taken out under clause 9.1(a) and, on reasonable request, other details on such insurance policies which the Lessor reasonably requires.

9.10 No prejudicial action

The Lessee must not do, permit, or omit to do, anything which may prejudice an insurance policy required to be taken out under clause 9.1(a).

10. Indemnities

10.1 General Indemnities

To the full extent permitted by law, the Lessee must, subject to clause 10.2, indemnify the Lessor and the Crown on demand against all Losses of the Lessor or the Crown:

(a) in either case, incurred in its capacity as a lessor of the Land under this Lease or an owner or previous owner or an occupier or previous occupier of the Land or an operator or previous operator of any Mining Operations, as the case may be;

(b) incurred or arising during the period from the Completion Date to the date on which all of the Lessee's Lease End Obligations have been discharged; and

(c) directly or indirectly relating to or arising out of the Land or any part of it, or as a result of acts or omissions of the Lessee, including by reason of or relating to:

(i) the possession, condition, use, maintenance or return of the Land or any part of it;

(ii) any damage to property or death of or injury to any person which may be or is alleged to be suffered or sustained in, on or in relation to the Land or any part of it;

(iii) all claims and demands made against the Lessor or the Crown by any third party in respect of the Land or any part of it, or the possession, condition, use, maintenance or return of the Land or any part of it, excluding any claim or demand:

(A) in relation to any past act, intermediate period act, previous exclusive possession act or previous non-exclusive possession act (all as defined in the NTA) in respect of the Land or any part of it, or to which clause 6.5(d)(i) applies; or

(B) in relation to any future act (other than an intermediate period act) (both as defined in the NTA) in respect of the Land or any part of it and which is attributable to the Lessor or the Crown and took place prior to the Completion Date; or

(C) for the payment of compensation or other monies as referred to in clause 6.5(d)(i);

(iv) the occurrence of any Termination by Lessor Event;

(v) any breach of or non-compliance by the Lessee with any applicable law or regulatory requirement relating to the Land or any part of it or the possession, condition, use, maintenance or return of the Land or any part of it but excluding any breach of or non-compliance with the NTA or the State NTA relating to the Land arising prior to the Completion Date, or to which clause 6.5(d)(i) applies;

(vi) any other breach by the Lessee of its obligations under this Lease (including any of its Lease End Obligations),

except to the extent caused by or otherwise primarily a result of:

(d) a wilful act of the Lessor other than in the exercise of its rights or the performance in accordance with this Lease of its obligations under this Lease or the exercise of its rights or the performance of its obligations under any applicable law; or

(e) a breach by the Lessor of its obligations under this Lease.

10.2 Prior Events

Clause 10.1 does not apply to a Loss relating to or arising out of an event occurring prior to the Completion Date.

10.3 Claims

Where the Lessor or the Crown makes a claim under the indemnity provided to the Lessor and the Crown under clause 10.1 and:

(a) the Lessee has provided an unqualified acknowledgement that such indemnity applies to the claim; and

(b) the Lessee has provided security to the reasonable satisfaction of the Lessor as to any payment that may fall due under such an indemnity,

the Lessee will have the right, subject to the terms of any insurance policy which indemnifies in relation to that claim, by written notice to the Lessor to represent the Lessor or the Crown (as the case may be) in relation to the claim (at the expense and risk of the Lessee) and will have the exclusive conduct of any proceedings relevant to any claim referred to in clause 10.1. The Lessee must not make any admissions or concessions prejudicial to the interests of the Lessor or the Crown without the prior written approval of the Lessor, which must not be unreasonably withheld.

10.4 Release

The Lessee unconditionally and irrevocably releases the Lessor and the Crown from any liability which the Lessor or the Crown may have to the Lessee for any consequence arising from:

(a) the Lessee's use, possession of or access to the Land or any part of it;

(b) regulatory change in the electricity supply industry or that affects the coal mining industry; or

(c) the exercise of any rights by, or the performance in accordance with this Lease of any obligations of, the Lessor arising under this Lease.

10.5 Other Agreements

Nothing in this clause 10 has the effect of releasing the Lessor from any express liability that the Lessor may have to the Lessee under this Lease.

11. Exclusion of Warranties

11.1 Exclusion of warranties

(a) The Lessee acknowledges and agrees to the full extent permitted by law that the Lessee:

(i) has not relied in any way on the skill or judgment of the Lessor or the Crown as to the condition of the Land or the suitability or fitness of the Land or any part of it for the Lessee's or any purpose;

(ii) accepts the Land and each part of it in its condition, age, capacity, quality, dimensions, configuration, suitability, fitness, limitations and compliance with laws current at the Completion Date;

(iii) takes this Lease and the Land subject to any restrictions imposed by or under the provisions of all applicable laws. The Lessor and the Crown do not give any implied warranty as to any uses permitted on the Land or that any improvements (including the Improvements) have been made and maintained in compliance with all applicable laws; and

(iv) takes this Lease and the Land subject to and will not make any objection, requisition or claim for compensation against the Lessor or the Crown in respect of or arising out of:

(A) any encroachment by or on the Land;

(B) any breach of any statute, ordinance or regulation applicable to or affecting the Land;

(C) any outstanding or unsatisfied notice, order or requirement made by any Government Agency applicable to or in respect of Land; or

(D) any installation or services (including sewers, drains, pipes, cables and wires) which:

(1) are on or pass through or over the Land; or

(2) are used in common with any adjoining land or pass through any other land,

whether or not there are easements or rights in respect of such installations that affect or benefit the Land.

(b) The Lessee acknowledges and agrees to the full extent permitted by law that all conditions, warranties and representations relating to the Land (whether expressed, implied, statutory, collateral or otherwise) are excluded, and that the Lessee must accept the Land as it is with all faults and defects (if any).

11.2 Other Agreements

Nothing in this clause 11 has the effect of releasing the Lessor from any express liability that the Lessor may have to the Lessee under this Lease.

12. Transfer on Notice

(a) The Lessee may, and the Lessor may require the Lessee to, transfer this Lease to GLC or its nominee by giving 1 month's notice to the other at any time after:

(i) the Lessee and any person claiming through the Lessee have permanently ceased to carry on Mining Operations on both:

(A) the Land; and

(B) the land the subject of the Other Perpetual Leases; and

(ii) the Lessee has complied with the provisions of the Development Programme,

in which case the Lessee must transfer this Lease to GLC or its nominee, and the Lessor must procure that GLC or its nominee accepts that transfer, such transfer to take effect on the expiry of the 1 month period of notice.

(b) This Lease shall be transferred to GLC or its nominee if any Other Perpetual Lease is transferred to GLC or its nominee.

(c) On the transfer of this Lease pursuant to this clause 12, and except as otherwise expressly provided in this Lease, the Lessee is released from its obligations under this Lease except to the extent that the Lessee has not performed any obligations which it was required to perform on or prior to the date of the transfer of this Lease.

13. Transfer on Termination by Lessor Event

13.1 Termination by Lessor Event

Each of the following is a Termination by Lessor Event where it occurs after the Completion Date.

(a) (**Non-payment of Monies**) The Lessee does not, within a period of 45 days following delivery to the Lessee of a written demand from the Lessor requiring the Lessee to pay that amount, pay to the Lessor an amount which is due and payable to the Lessor under this Lease.

(b) (**Insolvency or External Administration Events**):

(i) An Insolvency Event occurs and the rights and obligations of the Lessee under this Lease have not, within 12 months following the date of occurrence of the Insolvency Event, been assigned or transferred to a person that is solvent.

(ii) An External Administration Event occurs and the rights and obligations of the Lessee under this Lease have not, within 18 months following the date of occurrence of the External Administration Event, been assigned or transferred to a person that is solvent.

(c) (**Unauthorised dealing**) Except with the prior consent of the Lessor or as expressly permitted under this Lease, the Lessee:

(i) sells, transfers or otherwise disposes of; or

(ii) creates or allows to exist a Security Interest (other than a Permitted Security Interest) over,

its interest in this Lease or all or part of the Land.

(d) (**Use and Maintenance**) Each of the following has occurred:

(i) the Lessee has committed a breach of any of its obligations under clauses 5.1, 5.2(a), 5.2(b), 5.3 or 5.5 or has failed to comply with the Development Programme;

(ii) the Lessor has notified the Lessee in writing that the breach referred to in clause 13.1(d)(i) has occurred and has provided details of the circumstances constituting that breach to the Lessee; and

(iii) the Lessee has not remedied or rectified the consequences of the breach (including by way of the payment or expenditure of all reasonable sums of money) within 3 months following the date of delivery of the notice under clause 13.1(d)(ii).

13.2 Transfer to GLC or its Nominee

(a) The Lessor is entitled to require the Lessee to transfer this Lease to GLC or its nominee while a Termination by Lessor Event subsists.

(b) A requirement to transfer under clause 13.2(a) must be made by delivery of a written notice to the Lessee which details the circumstances constituting the Termination by Lessor Event.

(c) The Lessee must transfer this Lease to GLC or its nominee on the date specified in the notice given pursuant to clause 13.2(b), and the Lessor must procure that GLC or its nominee accepts that transfer.

(d) On the transfer of this Lease pursuant to this clause 13.2, and except as otherwise expressly provided in this Lease, the Lessee is released from its obligations under this Lease except to the extent that the Lessee has not performed any obligations which it was required to perform on or prior to the date of the transfer of this Lease.

13.3 Notification

The Lessee must promptly notify the Lessor in writing of the occurrence of any Termination by Lessor Event.

14. Other Transfer Events

14.1 Linked Leases to be Co-terminous

(a) This Lease will:

(i) be deemed to be transferred to the Lessor if any of the Other Perpetual Leases are transferred to the Lessor; or

(ii) be deemed to be surrendered if any of the Other Perpetual Leases are surrendered.

(b) If:

(i) the Lease End Date under the Northern Generating Plant Lease or the Northern Land Lease occurs as a result of a Termination by GLC Event under either of them; or

(ii) the Lease End Date under the Northern Generating Plant Lease occurs as a result of a termination under clauses 2.3(c), 15.4(f), 16.1(b)(i) or 33(a)(i) of the Northern Generating Plant Lease,

then the Lessee must transfer this Lease to GLC or its nominee, and the Lessor must procure that GLC or its nominee accepts that transfer, such

transfer to take effect on the Lease End Date under the Northern Generating Plant Lease or the Northern Land Lease (as the case may be).

(c) If:

(i) the Lease End Date under any Linked Lease (other than the Other Perpetual Leases) occurs as a result of a Termination by Lessee Event under that Linked Lease; and

(ii) the lessee under each of the Linked Leases (other than this Lease or the Other Perpetual Leases) has elected by written notice to the relevant lessor to terminate all of those Linked Leases,

then the Lessee must transfer this Lease to GLC or its nominee, and the Lessor must procure that GLC or its nominee accepts that transfer, such transfer to take effect on the date that the notice referred to in clause 14.1(c)(ii) is given (or such later date as is specified in that notice).

14.2 Transfer following termination of other Linked Leases

(a) If this Lease is transferred in accordance with clause 14.1(b) then the rights, entitlements, duties and obligations of the Lessor and the Lessee under this Lease will be the same as if this Lease were transferred under clause 13;

(b) If this Lease is transferred in accordance with clause 14.1(c) then the Lessee may make no claim of any nature whatever against the Lessor arising from the transfer of this Lease.

14.3 Effect of Transfer

On the transfer of this Lease pursuant to this clause 14, and except as otherwise expressly provided in this Lease, the Lessee is released from its obligations under this Lease except to the extent that the Lessee has not performed any obligations which it was required to perform on or prior to the date of the transfer of this Lease.

15. No Termination or Surrender

Despite any law or rule to the contrary and except as otherwise agreed between the Lessor and the Lessee:

(a) neither the Lessor nor the Lessee may terminate or has any right to terminate or obtain any order with the effect of terminating this Lease;

(b) this Lease will not terminate, be frustrated (whether at common law or by statute), be repudiated or be taken to have been repudiated for any reason; and

(c) subject to clause 14.1(a) the Lessee may not surrender, and does not have any right to surrender or obtain any order with the effect of requiring the Lessor to accept a surrender of, this Lease.

16. Return of Land on Transfer, Expiry or Termination

16.1 Return

On and with effect from the Lease End Date, the Lessee must:

(a) return and surrender the Land to the Lessor or its nominee in a condition which complies with all laws applicable at that time and the Development Programme;

(b) provide the Lessor or its nominee with an indemnity and security acceptable to the Lessor in respect of any material litigation or similar proceedings pending with respect to all or part of the Land other than in respect of any such litigation or proceedings caused by or otherwise primarily as a result of anything referred to in clauses 10.1(d) or 10.1(e);

(c) pay all the costs and expenses of the Lessor or its nominee in relation to the return of the Land;

(d) procure the release and discharge of all Security Interests over all or any part of the Land (other than any Permitted Liens);

(e) within 2 months after the Lease End Date, remove from the Land all of the property of the Lessee or any person claiming through the Lessee. The Lessee must not, in any such removal, damage the Land or any improvements (including the Improvements) on the Land or other items of property. If the Lessee causes any such damage then the Lessee must promptly repair that damage. If the Lessee fails to remove such property in accordance with this clause 16.1(e) then all the Lessee's right, title and interest in that property not removed will vest in the Lessor absolutely and the Lessor will not be liable in any way or manner to compensate the Lessee in respect of any such property. The Lessor will be entitled to recover from the Lessee any costs incurred in the removal and disposal of any property of the Lessee which the Lessor determines not to be of value to the Lessor;

(f) deliver to the Lessor or its nominee up to date, complete and accurate copies of all reports, documents, plans and specifications and all other materials that are required by applicable laws to be retained in respect of the Land or that relate to the ownership, use or maintenance of the Land; and

(g) use its best endeavours to procure the transfer to the Lessor or its nominee of such Authorisations relating to the Land as are capable of being transferred and, in respect of those which are not capable of being transferred, do all things reasonably necessary to assist the Lessor or its nominee in obtaining all other necessary Authorisations relating to the Land;

(h) except where the Lease End Date occurs as a result of the transfer of this Lease to GLC or its nominee in accordance with clause 12, clause 14.1(a)(i) (where this Lease is transferred to the Lessor as a result of the transfer to the Lessor of any Other Perpetual Lease under clause 12 of that Other Perpetual Lease) or clause 14.1(c) or as a result of surrender of this Lease:

(i) deliver to the Lessor or its nominee a certificate from 2 directors of the Lessee that as of the Lease End Date all services, facilities, agreements and other instruments necessary for the use and maintenance of the Land have been obtained or are readily commercially available on reasonable terms;

(ii) use its best endeavours to assign to the Lessor or its nominee or provide the benefit to the Lessor or its nominee of all services, facilities, agreements and other instruments referred to in clause 16.1(h)(i) which are not readily commercially available on reasonable terms; and

(iii) in so far as any confidential proprietary data information or technology of the Lessee or any person has become effectively integrated into the Improvements or any of the records, documents, instruments or systems used for the operation of Improvements (***confidential information***) the Lessee must, or must use its best endeavours to cause the relevant owner of such confidential information to, enter into such arrangements as are reasonable requested by the Lessor to permit the Lessor or its nominee to use and enjoy the benefits of such confidential information without being obliged to make any royalty or similar payment.

16.2 Condition

If the Lessee does not comply with any of its obligations under clause 16.1, the Lessor may take any action it considers necessary to ensure that the Lessee's obligations are fulfilled. The Lessor is appointed the attorney of the Lessee for this purpose. All costs and expenses of doing so must be paid by the Lessee on demand by the Lessor.

16.3 Actions during the Term

During the period from the Completion Date to the date on which this Lease is transferred to GLC or its nominee in accordance with clauses 12, 13 or 14 or surrendered, the Lessee must use its best endeavours to acquire intellectual property, goods and services of the type the subject of clause 16.1 on terms and conditions that will permit the Lessee to comply with the terms of clause 16.1 as applicable.

17. Force Majeure Events

17.1 Notice of Force Majeure Event

If a Force Majeure Event occurs, the Lessee must promptly upon becoming aware of the Force Majeure Event provide a written notice to the Lessor specifying the following:

(a) the event which is said to be a Force Majeure Event;

(b) the obligations of the Lessee under the Lease the performance of which are said to be prevented;

(c) the steps which the Lessee has taken or will take to overcome the effect of the event;

(d) the time period the Lessee expects will elapse before it will be able to resume performance of the relevant obligations; and

(e) any other information reasonably requested by the Lessor.

17.2 Excused from performance

The Lessee will be excused from performance of an obligation under this Lease (other than an obligation to pay Rent or any other money as required under this Lease or an obligation under clause 9) for so long as the performance of the obligation is prevented by a Force Majeure Event, but only if the Lessee:

(a) has complied with its obligations under clauses 17.1, 17.3 and 17.4; and

(b) undertakes with all due expedition all reasonable steps to overcome the effect of the Force Majeure Event.

17.3 Notice of Potential Force Majeure Event

(a) The Lessee must promptly notify the Lessor of any circumstances of which it is aware which may become a Force Majeure Event.

(b) The Lessee must provide to the Lessor information relating to those circumstances requested by the Lessor.

17.4 Conference

The Lessor may require the Lessee to confer with the Lessor in relation to any circumstances which may become a Force Majeure Event, or any event which the Lessee claims to be a Force Majeure Event.

18. Taxes and Costs

18.1 Stamp duty and costs

(a) Subject to clause 18.2, the Lessee must pay and indemnify the Lessor and the Crown against any liabilities for stamp, transaction, registration and similar Taxes (including fines and penalties resulting from delay or omission to pay these Taxes) which may be payable in relation to this Lease or the registration of this Lease or the performance or enforcement of this Lease or any payment or receipt or other transaction contemplated by it, except:

(i) to the extent that any payment by the Lessee is prohibited by law;

(ii) for any fines or penalties arising out of late payment by the Lessor where the Lessee has paid to the Lessor before the date on which the relevant fine or penalty arose the moneys required to be paid by it under this clause 18.1(a); and

(iii) for any Taxes on or in respect of the overall net income of the Lessor.

(b) The Lessee must reimburse the Lessor and the Crown on demand for all costs and expenses properly incurred in relation to the actual or

attempted enforcement of, or actual or attempted exercise or preservation of, any rights powers or remedies under this Lease including, in each case, reasonable legal costs and expenses on a full indemnity basis.

(c) Unless this Lease otherwise provides, all costs, expenses and liabilities associated with the Land or the performance of the Lessee's obligations under this Lease, or an applicable law, must be borne by the Lessee.

(d) Unless this Lease otherwise provides, the Lessee must reimburse the Lessor's reasonable costs of or associated with:

(i) considering and determining whether anything done or proposed to be done by the Lessee in the exercise of any right or entitlement under this Lease complies with the terms of this Lease;

(ii) considering, granting or refusing to grant an approval under this Lease; and

(iii) considering, doing or refusing to do anything at the request of the Lessee.

18.2 Goods and Services Tax

(a) If the Lessor is required to pay GST in respect of all or part of any payment or transaction under, or pursuant to, or by reason of a breach (not being a breach by the Lessor) of, this Lease (***relevant payment or transaction***), then the Lessee must pay to the Lessor such additional amount (*GST gross-up*) as is necessary in order that the net amount retained by the Lessor in respect of the relevant payment or transaction after deduction of GST equals the amount the Lessor would have retained had the GST not been payable. If the Lessor also receives a sum by way of a GST gross-up in respect of the relevant payment or transaction from a person other than the Lessee, and the Lessor is entitled absolutely to retain the sum, then an amount equal to the lesser of that sum and the GST gross-up otherwise due from the Lessee will be either refunded to the Lessee (if the full GST gross-up has already been paid by the Lessee) or allowed as a reduction from the amount due from the Lessee (if the full GST gross-up has not been paid by the Lessee at the time the sum is received from the other party).

(b) If a GST gross-up is payable, then the Lessor will in good faith issue to the Lessee a tax invoice with respect to the GST gross-up on, or as soon as practicable after, receipt of the GST gross-up.

(c) The GST gross-up must be paid on the date demanded by the Lessor provided no demand may be made for payment earlier than 5 Business Days prior to the date which the Lessor in good faith determines to be the last date on which it may lawfully pay to the Commissioner of Taxation the GST to which the GST gross-up relates. Subject to any change of law after the Completion Date, the last date on which the GST may be lawfully paid shall be taken to be the last date (for GST purposes) on which a GST return may be lodged with the Commissioner of Taxation for the tax period to which the taxable supply giving rise to the GST is attributable. Where a GST gross-up relates to GST which is

attributable to two or more tax periods, a separate GST gross-up shall be paid in respect of so much of the GST as is attributable to each period.

(d) If there is any dispute between the Lessor and the Lessee as to when, whether, or how much, GST is due and payable in respect of a relevant payment or transaction, the following provisions apply:

(i) The Lessee must pay the GST gross-up required by the Lessor on the date required in clause 18.2(c).

(ii) The Lessee will be entitled to seek a private binding ruling as to the GST payable, or to seek a refund of the GST on behalf of the Lessor. The Lessee must do so at its own risk and expense, must indemnify the Lessor against any Loss suffered or incurred in connection with the private binding ruling or refund claim, and must keep the Lessor fully informed of all action it takes in respect of the private binding ruling or refund claim.

(iii) If, prior to the GST being paid, a private binding ruling is obtained (on terms satisfactory to the Lessor) that less or no GST is payable, the Lessor must refund the appropriate amount of the GST to the Lessee, together with interest on the sum calculated at the Overdue Rate minus 2% per annum from the date the GST gross-up is paid to the date of the refund.

(iv) If the GST has been paid, and a refund of all or part of the GST is obtained (on terms satisfactory to the Lessor), the Lessor must refund the appropriate amount of the GST to the Lessee, together with any interest paid by the Commissioner of Taxation in respect of the refund, plus for that part of the period (if any) from the date the GST gross-up is paid to the date of the refund which falls between the Completion Date and the date the GST is paid, interest on the refund calculated at the Overdue Rate minus 2% per annum for that part of the period.

(e) If the following conditions are both satisfied:

(i) the Lessee is required to pay GST in respect of all or part of any payment from the Lessor under, or pursuant to, or by reason of a breach of, this Lease (***Lessor payment***); and

(ii) the Lessor is entitled to an input tax credit for GST purposes for all or part of the GST payable by the Lessee on the Lessor payment (***creditable GST***),

then the following provisions apply:

(iii) the Lessor will pay to the Lessee such additional amount as is necessary in order that the net amount retained by the Lessee after deduction of the creditable GST in respect of the Lessor payment equals the amount the Lessee would have retained had the creditable GST not been payable;

(iv) unless otherwise agreed by the Lessor, before the GST gross-up is paid, the Lessor will seek a private binding ruling on whether the GST is creditable on behalf of the Lessor;

(v) if the private binding ruling confirms (on terms satisfactory to the Lessor) that the Lessor will obtain an input tax credit for the GST, the Lessor will pay the GST gross-up to the Lessee;

(vi) the Lessor will not be obliged to pay any GST gross-up before the date the Lessor lodges (for GST purposes) a GST return in which the GST is claimed as an input tax credit for a tax period. Where the GST gives rise to an input tax credit which is attributable to two or more tax periods, a separate GST gross-up shall be paid in respect of so much of the GST as is attributable to each period. ; and

(vii) the Lessee must, on demand by the Lessor, provide the Lessor with a tax invoice for the amount of the relevant payment plus the amount of the GST gross-up.

(f) In this clause 18.2, a reference to a payment includes money or any form of consideration other than money, and a reference to a transaction includes anything which constitutes a supply or a taxable supply for the purposes of the GST.

(g) The parties agree that in this Lease all references to payments and other obligations to pay money, and all references to pricing, value and compensation (whether by way of reimbursement, indemnity or otherwise), are exclusive of GST.

(h) If one party seeks a private binding ruling as to GST for the purposes of this clause, the other party (at the cost and expense of the first party) shall provide such assistance as is reasonably required to obtain the ruling.

19. Compensation

19.1 Liability to Pay

The Lessee must pay compensation for any economic loss, hardship and inconvenience suffered by the owner (as defined in the Mining Act) of any Land on which Mining Operations are being carried out, by reason of the Lessee failing to:

(a) comply with the Development Programme; or

(b) carry on Mining Operations in accordance with the provisions of this Lease or all applicable laws, the breach of which would result in the owner suffering or incurring material civil or criminal liability for which the owner is not fully insured.

19.2 Amount of Compensation

The amount of the compensation will be as agreed between the owner and the Lessee or, in default of agreement within 30 days of agreement being sought by either party, as determined by the appropriate court (as defined in section 6(1) of the Mining Act) on the application of either party.

19.3 Relevant Factors

The appropriate court in determining compensation must take into consideration any work that the Lessee has carried out or undertakes to carry out to rehabilitate the Land.

19.4 Remediation

To the full extent permitted by law, the Lessee must indemnify the Lessor and the Crown on demand against all Losses incurred directly or indirectly by the Lessor or the Crown as a result of the Lessor or the Crown (each in its capacity as a lessor of the Land under this Lease or an owner or previous owner or an occupier or previous occupier of the Land or an operator or previous operator of any Mining Operations, as the case may be) being required to remediate the Land by reason of any failure by the Lessee to comply with the Development Programme.

20. Interest on Overdue Amounts

20.1 Accrual

Interest accrues on each unpaid amount which is due and payable by a party under or in respect of this Lease:

(a) on a daily basis up to the date of actual payment from (and including) the due date or, in the case of an amount payable by way of reimbursement or indemnity, the date of disbursement or loss, if earlier;

(b) both before and after judgment (as a separate and independent obligation); and

(c) at the Overdue Rate applicable to that amount at that time.

20.2 Payment

The relevant party must pay interest accrued under this clause 20 on the last Business Day of each calendar month and at such other times as the other party may demand.

21. Independent Expert

21.1 Matters Subject to Determination

The following matters must be dealt with under this clause 21:

(a) any disagreement between the parties as to any matter in relation to this Lease which is expressed to be subject to review or determination by an Independent Expert (a *Disagreement*); and

(b) any other matter in relation to this Lease which is required to be referred to or determined by an Independent Expert (a *Relevant Matter*).

21.2 Initiation of Determination

(a) If a Disagreement arises between the parties, a party may give a notice to the other party specifying the nature of the Disagreement in as much

detail as is reasonably practicable. If the Disagreement has not been settled within 10 Business Days of the delivery of the notice, the party giving the notice may require that the Disagreement be referred to an Independent Expert in accordance with this clause 21, by giving further notice to that effect to the other party.

(b) If a Relevant Matter arises, a party may initiate the process for referring that matter to an Independent Expert by giving a notice to the other party specifying the nature of the Relevant Matter in as much detail as is reasonably necessary and practicable.

21.3 Appointment of Independent Expert

The parties must endeavour to agree on the Independent Expert within 10 Business Days of the giving of a notice requiring that a Disagreement or Relevant Matter be referred to an Independent Expert under clause 21.2. If the parties fail to appoint an Independent Expert within 10 Business Days, either party may ask:

(a) if the Disagreement or Relevant Matter is one of a mechanical or technical nature, the President for the time being of the Association of Consulting Engineers of Australia or a body which is a successor of it; and

(b) if the Disagreement or Relevant Matter is one of a financial nature, the President for the time being of the Institute of Chartered Accountants in Australia or a body which is a successor of it,

to appoint a suitably qualified person to act as the Independent Expert and the Disagreement or Relevant Matter will then be referred to the person so appointed.

21.4 Qualifications of Independent Expert

The Independent Expert appointed to act under this clause 21 must:

(a) be qualified by his or her education, training and experience to pass a reasoned judgment upon the particular matters the subject of the Disagreement or Relevant Matter; and

(b) not have any relationship or association with a party which might jeopardise his or her impartiality.

21.5 Binding Decision

A decision of the Independent Expert under this clause 21 will be absolute and final and will bind the parties accordingly.

21.6 Expert Not an Arbitrator

The Independent Expert will determine a Disagreement as an expert and not as an arbitrator.

21.7 Evidence and Representation

Each of the parties agrees that it will:

(a) make available to the Independent Expert all materials requested by him or her and all other materials which are relevant to any determination by the Independent Expert;

(b) be entitled to produce to the Independent Expert any materials or evidence which the party believes is relevant to a Disagreement or Relevant Matter; and

(c) be entitled to appoint a legal representative to represent its interest at any hearing before the Independent Expert.

21.8 Costs

(a) Each party must bear its own costs incurred in the preparation and presentation of any submissions or evidence to the Independent Expert.

(b) Unless the parties otherwise agree before the submission of a Disagreement or Relevant Matter to the Independent Expert, the parties must require the Independent Expert to determine the proportions in which each party must bear the costs of determination of the Disagreement or Relevant Matter by the Independent Expert, in the case of a Disagreement having regard to the degree to which he or she considers such party was at fault or unreasonable in failing to agree to the matter under reference to him or her, and that party must bear the costs accordingly.

22. Confirmation of Compliance With Lease

The parties may, in order to clarify the meaning or operation of a provision of this Lease, or to clarify whether a particular act, matter or thing did or would constitute an act, matter or thing carried out in accordance with or did or would satisfy the terms of this Lease, confirm in writing the meaning or operation of that provision or the effect of that act, matter or thing. Any such confirmation will take effect in accordance with its terms.

23. Entitlement to Receive Rent

If any person other than the Lessor becomes entitled to receive the Rent or exercise any of the Lessor's other rights and entitlements under this Lease, whether by assignment, operation of law or otherwise, that person will have the benefit of the covenants and obligations to be performed by the Lessee. Further, if required by the Lessor, the Lessee must enter into a deed with that person expressly covenanting to pass the benefit of those covenants and obligations to that person in a form reasonably required by the Lessor and not inconsistent with the provisions of this Lease.

24. Set-Off

24.1 Linked Leases

The Lessor or the Lessee may set-off any amounts due and payable to it under a Linked Lease as a credit against any amounts due and payable by it to the other party under another Linked Lease.

24.2 Set-off

(a) If:

(i) an amount (the *Payment Amount*) is due and payable by a party (the *First Party*) to the other party (the *Second Party*) as a result of the expiry or termination of a Linked Lease; and

(ii) the Second Party is obliged to either:

(A) pay an unascertained amount to the First Party; or

(B) perform an undetermined obligation or duty in favour of the First Party,

the First Party may withhold the Payment Amount to the extent it considers necessary (in its reasonable opinion) to allow for the likely amount of:

(iii) payment of the amount referred to in clause 24.2(a)(ii)(A) when ascertained; or

(iv) any payment required or loss recoverable as a result of any non-performance of the duty or obligation referred to in clause 24.2(a)(ii)(B) when ascertained,

as the case may be.

(b) When the amount of any payment referred to in clause 24.2(a)(iii) or 24.2(a)(iv) is ascertained:

(i) the First Party may exercise its rights under clause 24.1 taking into account any amount withheld under clause 24.2(a); and

(ii) following the exercise of those rights, any balance of an amount withheld under clause 24.2(a) will be paid to the Second Party.

(c) Any dispute as to the operation of this clause 24 may be referred to an Independent Expert for determination.

25. Survival of Indemnities, Rights and Obligations

25.1 Indemnities

Each indemnity:

(a) is a continuing obligation;

(b) is a separate and independent obligation; and

(c) survives the transfer of this Lease to GLC or its nominee in accordance with clauses 12, 13 or 14 or the surrender or discharge of this Lease.

25.2 Other rights and obligations

The rights and obligations of the Lessor and the Lessee under clauses 6.5(d)(i), 9, 10, 16, 18 and 19 survive the transfer of this Lease to GLC or its nominee in accordance with clauses 12, 13 or 14 or the surrender or discharge of this Lease.

26. Moratorium Legislation

To the full extent permitted by law all legislation which at any time directly or indirectly:

(a) lessens, varies or affects in favour of the Lessee any obligation under this Lease; or

(b) delays, prevents or prejudicially affects the exercise by the Lessor of any right, power or remedy conferred by this Lease,

has no application in relation to this Lease.

27. Assignment, Security Interests and Subletting

27.1 Security Interests

(a) Subject to clause 27.1(b), the Lessee must not create or allow to subsist a Security Interest (other than a Permitted Lien) over:

(i) any of its rights under this Lease; or

(ii) any of its right, title and interest in the Land or any part of it,

unless the Lessee first obtains the written consent of the Lessor.

(b) The Lessee may grant a Security Interest over all (but not part only) of its right, title and interest in this Lease if:

(i) the Security Interest also extends over all (but not part only) of its right, title and interest in the Other Perpetual Leases; and

(ii) the enforcement of the Security Interest is subject to the restrictions on assignment in clause 27.2.

27.2 Permitted assignments

(a) Subject to clause 27.2(b) and clause 27.4, the Lessee must not assign or transfer its right, title and interest in this Lease unless the Lessee first obtains the written consent of the Lessor.

(b) The Lessee may assign or transfer all (but not part only) of its right, title and interest in this Lease to a person (the ***Assignee***) if:

(i) it assigns or transfers at the same time and to the same person:

(A) all (but not part only) of its right, title and interest in each Other Perpetual Lease; and

(B) in a form reasonably satisfactory to the Lessor, such of its rights and obligations under the Flinders Power Sale Agreement as are necessary to ensure that the obligations that are to continue to be imposed on the Lessee under

that Agreement, taken together with the obligations under that Agreement which are to be assigned to the Assignee, will continue to be enforceable to the maximum extent and effect as provided for in that Agreement as if that assignment did not occur;

(ii) the Assignee, or a person who is authorised or approved by the Assignee to use the Land and the land the subject of each Other Perpetual Lease, has all Authorisations necessary for the purpose for which the Assignee intends to use, or permit the use of, the Land and the land the subject of each Other Perpetual Lease;

(iii) the Assignee has provided to the Lessor a duly executed deed under which the Assignee undertakes to the Lessor to be bound by the terms of this Lease and the Other Perpetual Leases as if it were the Lessee and the terms of the Flinders Power Sale Agreement on the basis set out in clause 27.2(b)(i)(B), including in respect of any accrued obligations of the Lessee under this Lease and the Other Perpetual Leases and, to the extent required under clause 27.2(b)(i)(B), the Purchaser under the Flinders Power Sale Agreement as at the date of assignment; and

(iv) the Lessee has granted a valid assignment of each Other Perpetual Lease and, to the extent required under clause 27.2(b)(i)(B), the Flinders Power Sale Agreement to the Assignee.

(c) On an assignment under this clause 27.2, the Lessee is released from all obligations under this Lease.

27.3 Subletting

(a) The Lessee may sublease, or grant a licence in respect of, all (but not part only) its interest in the Land to a person to whom the Lessee has granted a sublease or licence respectively of all (but not part only) of its interest in the land the subject of each Other Perpetual Lease.

(b) Despite any sublease or licence permitted under clause 27.3(a), as between the Lessor and the Lessee the Lessee continues to be bound to comply with all its obligations under this Lease and the Other Perpetual Leases.

27.4 Partnership

If the Lessee is a partnership:

(a) a partner may at any time assign or transfer any of its rights or obligations under this Lease to another partner without the consent of the Lessor; and

(b) the partners may permit any other person to become a partner in the partnership (including prior to Completion) if those partners and that person have first provided to the Lessor a duly executed deed substantially in the form set out in Annexure A under which the partnership constituted by the inclusion of that person undertakes to be bound by this Lease as if it were the Lessee and the requirements set out in clause 27.2(b) are satisfied.

27.5 Restructure

Clause 27.2(b) does not prevent the assignment of the right, title and interest of the Lessee in this Lease to more than one person, but each such person must be a party to the deed referred to in clause 27.2(b)(iii) pursuant to which those persons jointly and severally undertake to be bound by the terms of this Lease and the Other Perpetual Leases as if they were the Lessee and by the terms of the Flinders Power Sale Agreement on the basis set out in clause 27.2(b)(i)(B), including in respect of any accrued obligations of the Lessee under this Lease and the Other Perpetual Leases and, to the extent required under clause 27.2(b)(i)(B), the Purchaser under the Flinders Power Sale Agreement as at the date of assignment.

28. Notices

28.1 Notices

All notices, requests, demands, consents, approvals, agreements or other communications to or by a party:

(a) must be in writing;

(b) must be signed by an Authorised Officer of the sender; and

(c) will be taken to be duly given or made when delivered, received or left at the address or fax number which the recipient has notified to the sender for that purpose but, if delivery or receipt is on a day on which business is not generally carried on in the place to which the communication is sent or is later than 4pm (local time), it will be taken to have been duly given or made at the commencement of business on the next day on which business is generally carried on in that place.

28.2 Authorised Officers

Each party irrevocably authorises the other party to rely on a certificate by a person purporting to be its director or secretary as to the identity and signatures of its Authorised Officers. Each party warrants that those persons notified in respect of it have been authorised to give notices and communications under or in connection with this Lease.

29. General

29.1 Entire Agreement

This Lease contains the entire agreement between the parties as at the Completion Date with respect to its subject matter and supersedes all earlier conduct by the parties with respect to its subject matter.

29.2 Amendments

Amendments of this Lease may only be made by a deed made under seal by the Lessor and the Lessee which is expressed to be an instrument amending this Lease under this clause 29.2.

29.3 Further Assurances

Each party will take all steps, execute all documents and do everything reasonably required by the other party to give effect to any of the transactions contemplated by this Lease.

29.4 No Waiver

No failure to exercise and no delay in exercising any right, power or remedy under this Lease operates as a waiver. Nor does any single or partial exercise of any right, power or remedy preclude any other or further exercise of that or any other right, power or remedy. Except as otherwise expressly provided in this Lease, the rights, powers and remedies provided to a party in this Lease are in addition to, and do not exclude or limit, any right, power or remedy provided by law.

29.5 Severability

Any provision of this Lease which is prohibited or unenforceable in any jurisdiction is ineffective as to that jurisdiction to the extent of the prohibition or unenforceability. That does not invalidate the remaining provisions of this Lease nor affect the validity or enforceability of that provision in any other jurisdiction.

29.6 No Merger

The rights and obligations of the parties will not merge on completion of any transaction under this Lease. They will survive the execution and delivery of any assignment or other document entered into for the purpose of implementing any transaction.

30. Governing Law and Jurisdiction

(a) This Lease is governed by the laws of South Australia.

(b) Each party irrevocably and unconditionally submits to the non-exclusive jurisdiction of the courts of South Australia and courts of appeal from them for determining any dispute concerning this Lease but subject to the dispute resolution mechanisms set out in clause 21. Each party waives any right it has to object to an action being brought in those courts, to claim that the action has been brought in an inconvenient forum, or to claim that those courts do not have jurisdiction.

(c) The parties agree that neither of them will institute or attempt to institute any proceedings in relation to any dispute or any matter or thing arising out of or in connection with this Lease other than in a court of South Australia or, in respect of any proceedings in a Federal court, in the Adelaide registry of the relevant Federal court but subject to the dispute resolution mechanisms set out in clause 21. A party will not, without the consent of the other party, request that proceedings instituted in a Federal court in South Australia be heard outside South Australia.

(d) Without preventing any other mode of service, any document in an action (including, but not limited to, any writ of summons or other

originating process or any third party or other party notice) may be served on a party by being delivered to that party in accordance with clause 28.

EXECUTED in South Australia.

In witness whereof His Excellency the Governor hath caused the public seal of the State of South Australia to be affixed hereto and also set his hand and the common seal of the Lessee was hereunto affixed on the twenty fourth day of August one thousand nine hundred and eighty one.

The Common Seal of THE ELECTRICITY TRUST OF SOUTH AUSTRALIA was affixed hereto in the presence of:

(sgd)

... ... .Member

(sgd)

... ... Secretary

Annexure A

Partnership Assumption Deed

Assumption Deed

The Governor of South Australia

and

[# the First Partner]

and

[# the Second Partner]

[Include details of any Additional Partners]

Date

Parties

1. The Governor of South Australia (the *Lessor*)
2. *[#]* (the *First Partner*)
3. *[#]* (the *Second Partner*)
4. *[Include details of any Additional Partners]*

Recitals

A The Lessor (or the Lessor's predecessor) granted:

(i) Perpetual Crown Lease No. 19393
Register Book Volume 1234 Folio 37;

(ii) Perpetual Crown Lease No. 18578;
Register Book Volume 1067 Folio 36;

(iii) Perpetual Crown Lease No. 20311;
Register Book Volume 1589 Volume Folio 2;

(iv) Perpetual Crown Lease No. 20239;
Register Book Volume 1545 Folio 20;

to the Electricity Trust of South Australia (the *Perpetual Leases*).

B Immediately prior to Completion the right, title and interest previously held by the Electricity Trust of South Australia in each Perpetual Lease was held by Flinders Power Pty Limited (ACN 082 988 270) (*Flinders*).

C The right, title and interest of Flinders in each Perpetual Lease has been transferred to the Purchaser pursuant to the Flinders Power Sale Agreement.

D Clause 27.4(b) of each Perpetual Lease has the effect that the First Partner and the Second Partner may permit an Additional Partner to become a partner in the partnership known, as at the date of this Deed, as the "*[#]* Partnership" if the First Partner, the Second Partner and that Additional Partner have first provided to the Lessor a duly executed deed under which the partnership as constituted by the inclusion of the Additional Partner undertakes to be bound by each Perpetual Lease as if it were the Lessee under the relevant Perpetual Lease.

E Subject to the provision to the Lessor of the deed referred to in Recital D, the First Partner, the Second Partner and the Additional Partners have agreed that the Additional Partners will become partners in the

[#] Partnership.

F Under this Deed the First Partner, the Second Partner and the Additional Partners undertake to be bound by each Perpetual Lease as if they were the Lessee under the relevant Perpetual Lease.

G The requirements set out in clauses 27.2(b) of each Perpetual Lease (other than as set out in clause 27.2(b)(iii)) have been satisfied in relation to the assignment or transfer of rights and obligations under each Perpetual Lease to the Additional Partners.

It is agreed as follows.

1. Definitions and interpretation

1.1 Definitions

The following definitions apply unless the context requires otherwise.

Additional Partners means [ ].

Effective Date means the date of this Deed.

1.2 Terms defined in the Perpetual Lease

Words that are defined in the Perpetual Lease referred to in paragraph A(i) of the Recitals and that are used in this Deed have the same meaning in this Deed as in that Perpetual Lease.

1.3 Interpretation

The provisions of clause 1.2 of the Perpetual Lease referred to in paragraph A(i) of the Recitals form part of this Deed as if set out at length in this Deed.

2. Assumption

(a) The First Partner, the Second Partner and the Additional Partners each agree that, on and from the Effective Date, the obligations, undertakings, representations, warranties, indemnities and liabilities of the Lessee under each Perpetual Lease bind all of them jointly and severally as if they were the Lessee under the relevant Perpetual Lease.

(b) The parties agree that, on and from the Effective Date, the First Partner, the Second Partner and the Additional Partners enjoy the rights and benefits of, the undertakings, representations, warranties and indemnities in favour of and the liabilities to, the Lessee under each Perpetual Lease jointly and severally as if they were the Lessee under the relevant Perpetual Lease.

(c) The parties each agree that, on and from the Effective Date, each Perpetual Lease shall be construed as if references in it to the Lessee

were references to the First Partner, the Second Partner and the Additional Partners jointly in partnership and to each of them severally.

(d) Each Additional Partner undertakes to the Lessor that it will be bound by the terms of each Perpetual Lease as if it were the Lessee and the terms of the Flinders Power Sale Agreement on the basis set out in clause 27.2(b)(i)(B) of the relevant Perpetual Lease, including in respect of any accrued obligations of the Lessee under the relevant Perpetual Lease and, to the extent required under clause 27.2(b)(i)(B) of the relevant Perpetual Lease, the Purchaser under the Flinders Power Sale Agreement as at the Effective Date.

3. Costs and Stamp Duty

3.1 The parties will bear their own costs arising out of the negotiation, preparation and execution of this Deed.

3.2 The Treasurer acknowledges that:

(a) this Deed; and

(b) any document executed pursuant to this Deed,

each falls within the scope of a sell down, re-organisation or restructure within the meaning of clause 9(c) of the Flinders Power Sale Agreement.

4. Governing law

This Deed is governed by the laws of South Australia. Each party submits to the non-exclusive jurisdiction of courts exercising jurisdiction there in connection with matters concerning this Deed.

5. Counterparts

This Deed may be executed in any number of counterparts. All counterparts together will be taken to constitute one instrument.

Executed as a Deed in Adelaide, South Australia.

Each attorney executing this Deed states that he or she has no notice of revocation or suspension of his or her power of attorney.

The Public Seal of **The State of South Australia** was duly affixed hereto:

_____

[insert name]

The Governor of South Australia

_____

Witness

Signed sealed and delivered for and on behalf of **[the First Partner]** by its duly authorised attorney/attorneys in the presence of:

_____

Attorney/Attorneys

_____

Print Name(s)

_____

Witness

_____

Print Name

Signed sealed and delivered for and on behalf of **[the Second Partner]** by its duly authorised attorney/attorneys in the presence of:

Attorney/Attorneys

Print Name(s)

Witness

Print Name

[Include execution clauses for the Additional Partners]

Government of South Australia
Department of Planning, Transport and Infrastructure

Product	Register Search
Date/Time	29/09/2016 10:22AM
Customer Reference	
Order ID	20160929002063
Cost	$27.75

This Crown Lease Register Search is a true and correct extract of the Register of Crown Leases maintained by the Registrar-General.

Registrar-General

Crown Lease - Volume 6163 Folio 703

REAL PROPERTY ACT, 1886
South Australia

Parent Title(s)	CL 1589/2
Dealing(s) Creating Title	RT 12401006
Title Issued	01/10/2015
Edition	1
Edition Issued	01/10/2015

Estate Type

CROWN LESSEE

Owner

THE CROWN

Crown Lessee

FLINDERS LABUAN (NO. 1) LTD. (ACN: 094 284 812)
OF CARE LEVEL 2 307 QUEEN STREET BRISBANE QLD 4000
1 / 4 SHARE

FLINDERS LABUAN (NO. 2) LTD. (ACN: 094 284 769)
OF CARE LEVEL 2 307 QUEEN STREET BRISBANE QLD 4000
1 / 4 SHARE

FLINDERS POWER HOLDINGS GMBH
OF CARE 168 GREENHILL ROAD PARKSIDE SA 5063
2 / 4 SHARE

Description of Land

SECTIONS 325, 534 AND 1255
OUT OF HUNDREDS (COPLEY)
IN THE AREA NAMED COPLEY

ALLOTMENT COMPRISING PIECES 3003, 4003 AND 5003 DEPOSITED PLAN 57039
IN THE AREA NAMED COPLEY
OUT OF HUNDREDS (COPLEY)

TOTAL AREA: 4300HA (APPROXIMATE)

Lease Details

Copyright Privacy Disclaimer: www.sailis.sa.gov.au/home/showCopyright www.sailis.sa.gov.au/home/showPrivacyStatement www.sailis.sa.gov.au/home/showDisclaimer

Lease Number OP020311

Lease Type PERPETUAL

Commencing On 01/03/1981

IN PERPETUITY

Conditions

CROWN LEASE CONDITIONS VIDE CL 1589/2

Easements

SUBJECT TO EASEMENT(S) WITH LIMITATIONS OVER THE LAND MARKED C ON D57039 TO TRANSMISSION LESSOR CORPORATION OF 1 UNDIVIDED 2ND PART (SUBJECT TO LEASE 9061500) AND ELECTRANET PTY. LTD. OF 1 UNDIVIDED 2ND PART EXPIRING ON 19/12/2100 (GU 9243180)

SUBJECT TO RIGHT(S) OF WAY WITH LIMITATIONS OVER THE LAND MARKED A ON D57039 EXPIRING ON 19/12/2100 (GU 9243178)

TOGETHER WITH RIGHT(S) OF WAY WITH LIMITATIONS OVER THE LAND MARKED B ON D57039 EXPIRING ON 19/12/2100 (GU 9243179)

Schedule of Dealings

NIL

Notations

Dealings Affecting Title

NIL

Priority Notices

NIL

Registrar-General's Notes

APPROVED FX42060

Administrative Interests

NIL

Additional Information

This additional information is provided by the Department of Environment, Water and Natural Resources and does not constitute part of the Crown Leases Register maintained by the Registrar-General. Contact the Department of Environment, Water and Natural Resources to verify the currency of this information and to obtain further details.

Annual Rent

Annual Rent: $50

Rent Review: Not subject to rental reviews

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S0047

South Australia

Register Book,

Vol. 1589 Folio 2

Deputy Registrar-General

Crown Lease

comprising 2 sheets

PERPETUAL LEASE NO.20311

HIS EXCELLENCY THE GOVERNOR in and over the State of South Australia and its dependencies in the Commonwealth of Australia (hereinafter with his successors in office designated by the term "the Lessor") acting pursuant to the powers conferred upon him by Section 43g of the Electricity Trust of South Australia Act 1946 as amended and for and on behalf of Her Majesty the Queen DOTH HEREBY LEASE to THE ELECTRICITY TRUST OF SOUTH AUSTRALIA a body corporate incorporated under the said Electricity Trust of South Australia Act 1946 as amended and having its office at 220 Greenhill Road Eastwood in the said State (hereinafter designated by the term "the Lessee") ALL THAT land containing four thousand two hundred and eight (4 208) hectares and being Sections numbered 325 534 685 and 1255 OUT OF HUNDREDS (Copley) exclusive of certain rights detailed in Certificate of Title Register Book Volume 4144 Folio 637 (hereinafter called "the said certificate") over portions of the within mentioned Section 685 (formerly Block 1110) identified by the letters "A" and "B" on the plans annexed to the said certificate of title as the same is delineated in the public maps deposited in the Department of Lands at Adelaide TOGETHER with all the seams beds and deposits of coal as well opened as unopened lying within and under the said lands TO BE HELD in perpetuity at the yearly rent of fifty dollars ($50-00) to be paid in advance on the first day of March commencing on the first day of March one thousand nine hundred and eighty one Subject to the liberties covenants and conditions set out hereunder

By Command, The Minister of Lands

LIBERTIES

1. The Lessee shall be at liberty to exercise in relation to the said land and coal hereby demised all and any of the powers conferred upon the Lessee by section 43d of the Electricity Trust of South Australia Act 1946 as amended subject however to the restrictions upon the power of transferring mortgaging encumbering and subletting the said land hereinafter appearing.

COVENANTS

2. The Lessee will forthwith commence to destroy all such vertebrate pests on the said land as are by or under the Vertebrate Pests Act 1975 as amended or by or under any other Act for the time being in force in the said State declared to be vertebrate pests and will keep the said land free of all vertebrate pests to the satisfaction of the Lessor during the lease and will destroy all pest plants growing upon the said land

Certified correct, Acting Registrar, Land Office

3. The Lessee will not transfer sublet encumber mortgage or part with the possession of the said land or any part thereof without the written consent of the Lessor first had and obtained in each case

4. The Lessee will permit the Lessor or his agents with or without miners surveyors workmen or other persons at all reasonable times to enter upon inspect and examine the land and premises hereby demised and every part thereof for the purpose of examining the same and of ascertaining the condition thereof

5. The Lessee will permit the owner of any mining claim situated on the land and the holder of any mining lease of the whole or any portion of the land under any law in force for the time being relating to mining with or without workmen full and free liberty of access ingress egress and regress into upon and from the land comprised in such claim or lease

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COVENANTS (Continued)

6. The Lessee will make and keep at some convenient place upon the demised premises proper and accurate plans showing the progress and actual state of any mines or works upon the said land and will permit the Lessor or his agents at all reasonable times to inspect the said plans and take copies of or extracts from the same.

7. The Lessee will not permit suffer or allow any house building shop or store at any time to be erected or used upon the said land as a public house wine shop or otherwise for the supply of intoxicating liquors without the consent of the Lessor first had and obtained.

CONDITIONS

8. PROVIDED ALWAYS that if in the opinion of the Lessor (whose decision upon the matter shall be final)

(a) the said land shall cease to be used or required for the purpose of working and getting coal or purposes incidental thereto or

(b) it is necessary or convenient that any portion or portions of the said land should be resumed for use as roads or railways or as sites for towns or for park lands or for mining purposes or for any public work or purpose

then and in any such case it shall be lawful for the Lessor upon giving three calendar months' notice in writing to the Lessee to determine this lease and to resume possession of the said land either wholly or partially as the case may be and to such extent as may be specified in the said notice and upon publication by the Lessor in the Government Gazette of notice of such determination the tenancy shall cease determine and be void as to all or such parts of the said land as shall be specified in such notice save in respect of anything which ought to be performed or observed upon the determination of the tenancy AND in the event of the determination of the tenancy wholly or partially in accordance with the foregoing provisions no compensation shall be payable to the Lessee except that if any portion or portions of the land be resumed for use as public roads or any other public purpose the Lessee shall be entitled to claim and receive from the Lessor compensation for any improvements made by it upon the said portion or portions of the land IF the amount of such compensation cannot be agreed between the Lessor and the Lessee the amount of such compensation shall be determined by two arbitrators one to be appointed by each party or in case the arbitrators are not able to agree by an umpire to be appointed by them before entering upon the consideration of the amount of compensation or payment IN case either of the parties entitled to nominate an arbitrator neglects to do so for fourteen days next after a notice in writing has been given him by the other party or names an arbitrator who refuses or neglects to act the arbitrator named by the other party may make a final decision alone.

9. AND further PROVIDED ALWAYS and this lease is upon this express condition that if default shall be made in payment of any rent in arrear for six months after the same falls due the Lessee having had at least three months' previous notice in writing demanding its payment or if default shall be made in the performance of any covenant on the part of the Lessee or if the Lessee shall without the written consent of the Lessor first had and obtained transfer mortgage encumber or sublet the premises or any part thereof the Lessor after three months' written notice may re-enter and take possession of the said lands and it shall be lawful for the Lessor before or after re-entry to cancel and determine this lease and the Lessor may thereupon insert a notice in the Government Gazette declaring this lease to be forfeited and such notice appearing in the Government Gazette shall in all courts and elsewhere and under all circumstances be taken to be conclusive evidence that such lease has been legally cancelled and forfeited PROVIDED however that the Lessor shall not (except in the case of rent being in arrear as aforesaid or of the transfer mortgage encumbrance or sub-letting of the premises without such consent as aforesaid)

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CONDITIONS (Continued)

exercise the powers expressed in this clause in the case of default in the performance of a covenant before the expiration of the period of three months after notice has been given to the Lessee of such default and requiring the performance of the covenant PROVIDED NEVERTHELESS that if notice has been given to the Lessee of any default in the performance of a covenant no notice of any future default in the performance of the same covenant or of the continuance of the same default shall be necessary before the exercise of such powers

10. AND IT IS HEREBY EXPRESSLY DECLARED that any notice to be served or given to the Lessee under this lease shall be deemed to have been duly served or given if the same be sent through the post office enclosed in an envelope addressed to the Lessee at its head or principal office and such notice shall be deemed to have been served or given and time shall run from the day of the posting thereof as aforesaid

IN WITNESS whereof His Excellency the Governor hath caused the public seal of the State of South Australia to be affixed hereto and also set his hand and the common seal of the Lessee was hereunto affixed on the twenty fourth day of August One Thousand Nine Hundred and eighty one

The Common Seal of the
ELECTRICITY TRUST OF SOUTH AUSTRALIA
was affixed hereto in the presence
of:-

.....Member

.....Secretary

APPLICATION 8314380 The within land is vested in SA GENERATION CORPORATION of 168 Greenhill Road Parkside 5063 pursuant to Clause 4(1) of Schedule 3 of the Electricity Corporations Act 1994 Produced 20.6.1997 at 10:50

APPLICATION 8670759 The within land is vested in FLINDERS POWER PTY. LTD. of 168 Greenhill Road Parkside 5063 pursuant to Clause 4(1) of Schedule 3 of the Electricity Corporations Act 1994 Produced 23.4.1999 at 14:50

CAVEAT 8958583 Lodged by NRGENERATING HOLDINGS (NO 2) FLINDERS LABUAN (NO 1) LTD. FLINDERS LABUAN (NO 2) LTD. and GMBH over the within land Produced 8.9.2000 at 14:50

CAVEAT 8958661 Lodged by NATIONAL AUSTRALIA BANK LTD. over the within land Produced 8.9.2000 at 15:30

CAVEAT 8958583 has been PARTIALLY withdrawn vide 9243167 Produced 20.12.2001 at 11:25

CAVEAT 8958661 has been PARTIALLY withdrawn vide 9243166 Produced 20.12.2001 at 11:25

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FLI.524.394

CHANGE OF NAME 9243169 The name of the within company is changed to RESI FP PTY. LTD. of Level 5, 200 Victoria Square Adelaide 5000 Produced 20.12.2001 at 11:25

PARTIAL SURRENDER 9243170 Portion of the within Section 685 is surrendered as regards 355.94Ha and the area of the within lease reduced to 3858Ha approximately Produced 20.12.2001 at 11:25

CERTIFICATE 9243171 of MINISTER FOR ENVIRONMENT AND HERITAGE whereby portions of Block 752 Out Of Hundreds Copley are hereby included in the within lease and the area is increased to 4306Ha and the description of the land is now Allotment comprising pieces 2014 2015 and 2016 in DP 34087 and Sections 325 534 and 1255 in Out Of Hundreds Copley Produced 20.12.2001 at 11:25

Partial Surrender 9243172 Portion of the within land (Piece 2016) is surrendered as regards 2047m² and the area of the within lease reduced to 4306Ha and the annual rent reduced to $100.00 from 7.9.2001 and the description of the land is now Allotment comprising pieces 3003 4003 and 5003 in DP 57039 and Sections 325 534 and 1255 Out Of Hundreds Copley Produced 20.12.2001 at 11:25

The within Terms and Conditions are amended vide 9243174 Produced 20.12.2001 at 11:25

LEASE 9243178 to TRANSMISSION LESSOR CORPORATION of Level 5/200 Victoria Square Adelaide 5000 of Right of Way over portion of piece 3003 Term of 99 years commencing on 20.12.2001 and expiring on 19.12.2100 held Appurtenant to CL 1647/79 *(Subject to Lease 9061500 of 1 undivided 2nd part)* Produced 20.12.2001 at 11:25

LEASE 9243179 to RESI FP PTY. LTD. of a Right of Way over portion of CL 1647/79 Term commencing on 20.12.2001 and expiring on 19.12.2100 held appurtant hereto. Dealings with this land are to include Lease 9243179 Produced 20.12.2001 at 11:25

LEASE 9243180 to TRANSMISSION LESSOR CORPORATION of an Easement over portion of the within land *(Subject to Lease 9061500 of 1 undivided 2nd part)* Term commencing on 20.12.2001 and expiring on 19.12.2100 Produced 20.12.2001 at 11:25

APPLICATION 9446950 ONE UNDIVIDED 2ND PART in the within Lease 9243180 is vested in ELECTRANET PTY. LTD. Produced 17.10.2002 at 15:25

APPLICATION 9446950A ONE UNDIVIDED 2ND PART in the within Lease 9243178 is vested in ELECTRANET PTY. LTD. Produced 17.10.2002 at 15:25

APPLICATION 9264948 the within land is vested in NRGENERATING HOLDINGS (NO. 2) GMBH of 2 UNDIVIDED 4TH PARTS FLINDERS LABUAN (NO.1) LTD. of 1 UNDIVIDED 4TH PART and FLINDERS LABUAN (NO.2) LTD. of 1 UNDIVIDED 4TH part all c/- Level 2 307 Queen Street Brisbane 4000 Produced 25.1.2002 at 12:40

3.

MORTGAGE 9264950 to NATIONAL AUSTRALIA BANK LTD. ~~of the within pieces 3003 4003 and 5003 in the within land~~ Produced 25.1.2002 at 12:40

4.

1. *CAVEAT 8958583 has been withdrawn vide 9264940 Produced 25.1.2002 at 12:40*

2. *CAVEAT 8958661 has been withdrawn vide 9264941 Produced 25.1.2002 at 12:40*

01-20-2006 14:28 FROM- T-106 P.002/008 F-327

FLI.524.395

24.17 Appendix Q – Soil and Waste Characterisation – Operational Guidelines for Rehabilitation (MWH, 2016c)

Operational Guidelines: Soil and Waste Characterisation for Mine Rehabilitation (MWH, 2016c)

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DOCUMENT CONTROL:

Author	Position	Date	Revised	Signature
K Donaldson	Risk, Compliance Rail and Town Advisor	13/4/2016	Draft	
		11/10/2016	Draft R2 K Donaldson Formatting and inclusion of preferred material criteria	
		7/12/16	Draft R3 K Donaldson Update of preferred material criteria	
		9/2/17	Final B Williams Update of preferred material criteria & document review period	

AUTHORISED:

Peter Kelly
Mine Manager

Date:

Signed: _____ _____

1. PURPOSE

The purpose of this document is to incorporate the key findings of the MWH report, *Leigh Creek Coalfield – Soil and Waste Characterisation,* March 2016, into detailed guidelines for materials selection in mine planning for, and operational implementation of rehabilitation landforms at Leigh Creek.

These guidelines support the closure objective of safe and stable landforms, and address the key aspects of mine closure at Leigh Creek, ie spontaneous combustion and management of surface water across site.

2. SCOPE

These guidelines are to be used when selecting any of the characterised mine materials as suitable materials for mine rehabilitation works, taking into consideration whether they are to be used in externally draining or internally contained areas, and includes materials for:

- inert coverage for spontaneous combustion control
- surface water control bunding, silt traps, road and paddock dumping
- abandonment bunding

3. GUIDELINES

The operational guidelines for material selection for rehabilitation landform activities are summarised below:

- material characteristics will be considered in allocating destinations and applications for rehabilitation landforms
- the best materials available on site must be conserved for use in the right locations (within the constraints of availability and volumes)
- topsoil use should be limited to the low angled slopes of the Main Series Western Bund facing the highway
- materials used for inert coverage as part of spontaneous combustion management for closure will be selected in order of preference with respect to material stability and remnant coal content (as evidenced by % soil organic carbon)

- materials used for water control bunding (crests of dumps, road and paddock dumping) will be selected in order of preference with respect to potential for metals in leachate solutions, potential to generate acid and structural stability
- materials used for silt traps at toes will be selected in order of preference with respect to potential for metals in leachate solutions, potential to generate acid and structural stability
- materials classified as potentially acid forming should be used in order of preference as:
    - Quarantined (preferred);
    - In-pit fill, and then as
    - Coverage only for internally draining surfaces only.
- materials that have demonstrated potential for metals in leachate solutions will be used in order of preference as
    - Quarantined (preferred);
    - In-pit fill, and then as
    - Coverage for internally draining surfaces only.

The *Soil Movement* plot (see reference Section 4) is an example of the materials inventory as used for the planning and efficient use of available soil resources for inert cover rehabilitation landform designs, and in doing so illustrates material sources and destinations.

The verification of volumes of materials available versus volume required has enabled the exclusion of areas for which unfavourable material characteristics were determined by the sampling and analysis. These areas will be contained in-situ, and not used as materials for any rehabilitation earthworks, specifically:

- the Upper Series Dragline dumps characterised
    - as PAF–HC (Potential Acid Forming – High Capacity), and with the potential to generate metals in leachate, by sample LC-C10 (LC027and LC028)
    - as PAF-LC (Potential Acid Forming – Low Capacity) by sample LC-C11 (LC029, LC030, LC031)
    - as highly dispersive by sample LC025
    - as highly dispersive by sample LC029
- the Lower Series Dragline dumps characterised as containing high levels of remnant coal by samples LC-C14 (LC039, LC040, LC047)

- the L6 Southern dumps waste rock landforms characterised as containing high levels of remnant coal by samples LC-C15 (LC041, LC042)
- the Western Bund waste rock landforms characterised with the potential to generate metals in leachate by sample LC-C02 (LC07, LC08)
- the Upper Series waste rock landforms characterised as partially dispersive by sample LC034
- the Upper Series waste rock landforms characterised as PAF-LC, and with the potential to generate metals in leachate, by sample LC033
- the Upper Series waste rock landforms characterised as PAF-LC by sample LC032

Subsequently, the preferred stockpiles allocated for use in rehabilitation landforms (along with the sample locations and resultant characteristics) are illustrated in the *Inert Material* plot (see reference Section 4).

Further characterisation of the design materials will be progressively undertaken during rehabilitation operations, as per the *Cover Material Field Sampling Procedure, LCC-REHAB-SOP-001* (field sampling). Material usage will be subject to meeting acceptable trigger levels (eg soil pH) as specified in the field sampling procedure.

In conjunction with the materials inventory, and subject to the field sampling conducted during rehabilitation, Table 1 can be used as a guide to incorporate the characteristics of materials in selection and allocation for final landforms, and in doing so provide the best overall outcome within the constraints of material availability and characteristics.

Material Characteristic	Preferred Material Criteria	
	Externally Draining	Internally Contained
Dispersion Emerson Class (20hr)	EC ≥ 4*	EC ≥ 4*
Acid Base Accounting classification	NAF	NAF / PAF-LC
Metals in solution (leachate generated from waste rock)	Dissolved metal mg/L < ANZECC Fresh water guidelines or Dissolved metal mg/L ≈ LOR	N/A
Soil pH	pH > 6.0	pH > 6
Clay and silt fractions	> 60% *	> 60% *
Sand and coarser fractions	< 40 % *	< 40 % *

* Criteria on average across minimum of five samples

Table 1: Preferred Material Criteria for Rehabilitation Landforms

Notes to Table 1:

1. There was one sample (LC-017) characterised as PAF-LC in the material selected for inert cover in the Main Series pit. The field sampling process will screen this area further, and better define the extent of the PAF-LC material, and any necessity to quarantine this material.
2. Criteria for metals in solution were based on the Australian and New Zealand Guidelines for Fresh Water and Marine Water Quality ANZECC, as specified in the *Leigh Creek Coalfield – Soil and Waste Characterisation* report. Limit of reporting (LOR) values were used in the instances where the ANZECC value was less than the LOR value, or there was no trigger value data published.

These criteria have been used to classify the sampled materials and their preferred utilisation in rehabilitation landforms in Table 2.

4. RELATED DOCUMENTS

4.1. *Cover Material Field Sampling Procedure*, LCC-REHAB-SOP-001

4.2. *Soil Movement* plot

\\Salcfp01\ProjectEyre\QA Quality\02 Design Register\04 Closure Plan Plots\Soil Movement V2

4.3. *Inert Material* plot

\\Salcfp01\ProjectEyre\QA Quality\02 Design Register\04 Closure Plan Plots\Soil Characterisation

4.4. MWH March 2016 *Leigh Creek Coalfield – Soil and Waste Characterisation*

5. REVIEW

This document shall be reviewed on an annual basis throughout the Closure Program.

Table 2: Soil and Waste Material Characterisation - Operational Guidelines for Mine Rehabilitation – Part A

Landform / activity	Preferred materials	Sample Numbers	Least preferred materials	Sample Numbers	Comment
Western bund facing highway - final coverage	Access Road Topsoil	LC004			Topsoil not to be used in any other locations. Topsoil to be final external layer.
	Access Road Topsoil	LC005			
	Access Road Topsoil	LC006			
	Western Bund Topsoil Stockpile	LC045			
	Western Bund Topsoil Stockpile	LC046			
Western bund facing highway - inert coverage in areas of samples LC007,008	Main Series Dragline	LC014			Any additional material required to complement topsoil as fill/coverage for this area should consider ability to counter PAF-LC rating of LC-C02 (LC-007,008), even though potential for significant further acid generation unlikely.
	Lower Series Dragline	LC050, LC051			
	Main Series Dragline	LC052			
	Main Series Dragline	LC-C03 (LC010, LC012, LC016)			
	Main Series Dragline	LC013			
	Main Series Dragline	LC-C06 (LC043, LC044)			
Water control bunding (crests, large flat areas, roads) Silt traps Pit perimeter bunding Spon comb inert coverage - external facing			Western Bund waste	LC-C02 (LC007, LC008)	Metals in leachate solution, PAF-LC
			Upper Series	LC033	Metals in leachate solution, PAF-LC
			Upper Series	LC034	Partially Dispersive
			Main Series Dragline	LC015	Partially Dispersive
			Upper Series Dragline	LC029	Partially Dispersive
			Upper Series Dragline	LC024	Partially Dispersive
			Main Series Dragline	LC017	PAF-LC
			Upper Series Dragline	LC-C11 (LC029, LC030, LC031)	PAF-LC
			Upper Series Dragline	LC-C10 (LC027, LC028)	Metals in leachate solution, PAF-HC
			Upper Series Dragline	LC025	Highly Dispersive

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Table 2: Soil and Waste Material Characterisation - Operational Guidelines for Mine Rehabilitation – Part B

Landform / activity	Preferred materials	Sample Numbers	Least preferred materials	Sample Numbers	Comment
In pit fill / cover	Main Series Dragline	LC017			PAF- LC encapsulated as fill in eg MT15, MT21
	Upper Series	LC033			
	Upper Series Dragline	LC-C11 (LC029, LC030, LC031)			
	Upper Series Dragline	LC-C10 (LC027,LC028)			
Spon Comb inert coverage			Upper Series	LC034	Partially Dispersive
			Main Series Dragline	LC015	Partially Dispersive
			Upper Series Dragline	LC029	Partially Dispersive
			Upper Series Dragline	LC024	Partially Dispersive
			Upper Series Dragline	LC025	Highly Dispersive
Spon Comb inert coverage			L6	LC-C14 (LC039, LC040, LC047)	Highest levels of remnant coal (inferred from %SOC)
			Lower Series Dragline	LC-C15 (LC041, LC042)	

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