



MANNERING COLLIERY

ENVIRONMENTAL ASSESSMENT

APPENDIX F **REVISED ENVIRONMENTAL RISK ASSESSMENT**

Table 1
Revised Environmental Risk Assessment

Ref	Environmental Issue	Activity / Contributors	Consequence	Probability	Risk Rating
1	Groundwater	Loss of groundwater aquifers/ dewatering due to mining	3	C	Medium (9 M)
		Impacts to adjoining groundwater users	3	C	Medium (9 M)
		Groundwater inflow/seepage into workings	3	B	Medium (6 M)
		Contamination of groundwater due to fuel or chemical spill	2	D	Low (14 L)
		Potential for heavy metals and saline ingress to groundwater supply	2	D	Low (14 L)
2	Surface Water	Fuel or chemical spill	3	C	Medium (9 M)
		Sedimentation of local waterways	3	C	Medium (9 M)
		Machine and vehicle wash down	3	D	Low (15 L)
		Dirty water management	2	D	Low (14 L)
		Potential subsidence effects on Lake Macquarie, wetlands and the surrounding catchment area	4	E	Very Low (24 VL)
3	Acoustics	Coal Crushing Facility	3	B	Medium (6 M)
		Operation of ventilation fans	3	B	Medium (6 M)
		Road traffic travelling to and from the mine	3	B	Medium (6 M)
4	Air Quality	Coal Crushing Facility dust generation	3	C	Medium (9 M)
		Greenhouse gas emissions	2	C	Medium (8 M)
		Exhaust emissions from plant and equipment	4	B	Low (11 L)
		Dust generation from coal stockpile	4	B	Low (11 L)
5	Subsidence	Mining in the conceptual mine plan leading to surface impacts	4	B	Low (11 L)
		Potential impacts on existing mine workings leading to	4	B	Low (11 L)

Ref	Environmental Issue	Activity / Contributors	Consequence	Probability	Risk Rating
		subsidence			
6	Traffic and Transport	Mine employees travelling to work	4	A	Low (10 L)
		Deliveries to the mine	4	A	Low (10 L)
7	Visual and Lighting	Mannering Surface Facilities visible from public locations	4	D	Low (16 L)
		Lighting impacts on neighbouring residents during 24 hour operations	4	D	Low (16 L)
8	Social and Economics	Revenue & employment	3	D	Low (15 L)
		Deliveries to the mine	4	A	Low (10 L)
9	Waste Management	Storage of hydrocarbons and other hazardous materials on-site	2	D	Low (14 L)
		Radiation source management	2	D	Low (14 L)
		General waste management	2	D	Low (14 L)
10	Rehabilitation and Final Land Use	Rehabilitation of the surface facilities when mining ceases and Mannering closes	2	D	Low (14 L)
11	Flora & Fauna	Surface impacts on flora and fauna	4	E	Very Low (24 VL)
		Vegetation Clearing	5	E	Very Low (25 VL)
12	Aboriginal Heritage	Damage to Aboriginal artefacts or sites	3	E	Very Low (23 VL)
13	Non - Aboriginal Heritage	Damage to heritage items	3	E	Very Low (23 VL)

Ref	Environmental Issue	Activity / Contributors	Consequence	Probability	Risk Rating
14	Blasting and Vibration	Blasting and vibration impacts due to mining activities	3	E	Very Low (23 VL)

Table 2
Environmental Risk Assessment Matrix

Potential Consequences or Impacts			Probability				
			A Almost Certain	B Likely	C Possible	D Unlikely	E Rare
Consequence	1 Catastrophic	Broad scale environmental impact	High (1)	High (3)	Medium (7)	Low (13)	Very Low(21)
	2 Major	Regional environmental impact	High (2)	High (4)	Medium (8)	Low (14)	Very Low(22)
	3 Moderate	Local environmental impact	Medium (5)	Medium (6)	Medium (9)	Low (15)	Very Low(23)
	4 Minor	Minor environmental Impact	Low (10)	Low (11)	Low (12)	Low (16)	Very Low(24)
	5 Insignificant	Insignificant environmental impact	Very Low(17)	Very Low(18)	Very Low(19)	Very Low(20)	Very Low(25)

Table 3
Risk Rating

Risk Matrix Result	Risk Rating	Level of Corrective Action Required
1 to 4	High Risk	Immediate intervention required to eliminate or reduce this risk prior to activity proceeding.
5 to 9	Medium Risk	Apply immediate risk management controls before activity commences.
10 to 16	Low Risk	Corrective action where practicable, manage by routine procedures and controls throughout life of activity.
17 to 25	Very Low Risk	Very little, if any corrective action is anticipated to be required as it is highly unlikely that this event could occur and if it did the consequences would be of minor concern.