

Environment & Community Broad Brush Risk Assessment: Wilpinjong July 2013

Key Element	Process Area	Risk Description	Caused By	Consequence	Current Controls (are in place)	Expected Risk Consequence	Risk Likelihood	Current Risk Rating
Noise	Production	Mine generated noise that exceeds criteria or results in a complaint	General ill will towards mining from the community Mobile equipment - non-attenuated Cumulative Impact (other mines, infrastructure, extractive industries) Drilling Climatic Conditions can amplify effects Changed Community expectations Elevated waste dumps Equipment modification	Non-compliance Community complaint Compulsory acquisition Delay/constrained/no approvals Business interruption Impact on social licence to operate	Real time monitors CROs Noise and Dust Procedure Limited equipment noise attenuated Modification of operations Buffer lands Noise Management Plan Attended noise monitoring for compliance Community consultation Complaints management procedure Data sharing agreement x3 mines Change Management	2	B	M
Noise	Constrained Infrastructure	Mine generated noise that exceeds criteria or results in a complaint	Mobile equipment (on stockpiles) Equipment modification Washery Coal stockpiles (ROM product) Train load out Rail loop MIA Climatic Conditions can amplify effects Changed Community expectations	Non-compliance Community complaint Compulsory acquisition Delay/constrained/no approvals Business interruption Impact on social licence to operate	Real time monitors CROs Noise and Dust Procedure Limited equipment noise attenuated Modification of operations Buffer lands Noise Management Plan Attended noise monitoring for compliance Community consultation Community Complaints Procedure Complaints management procedure Data sharing agreement x3 mines Change Management	2	C	M
Noise	Exploration	Mine generated noise that exceeds criteria or results in a complaint	Exploration Drills Drill pad and access road preparation Climatic Conditions can amplify effects Changed Community expectations	Community complaint Business interruption Impact on social licence to operate	Peabody own all land within exploration areas Drill only during daylight hours Community consultation Community Complaints Procedure Complaints management procedure	2	D	L
Dust/Air Quality (particulates)	Production, constrained infrastructure	Mine generated dust that exceeds criteria or results in a complaint	Mine activities that generate dust Traffic on unsealed roads Exposed areas Stockpiles out of pit dumps Land clearing activities Changed Community expectations Addition of lime to CHPP Blasting Spon Com Climatic conditions (seasonal variations)	Non-compliance Community complaint (visible dust, health, aesthetics) Delay/constrained/no approvals Business interruption Cumulative impacts	Real time monitors CROs Noise and Dust Procedure Dust suppression systems (drill rigs, ROM bin) Water carts Air quality monitoring program Progressive rehabilitation Modification of operations Buffer lands Air and GHG Management Plan Community consultation Community Complaints Procedure Complaints management procedure Data sharing agreement x3 mines Air quality modelling Workforce training and inductions Speed limits	2	B	M

Spontaneous Combustion	Production, constrained infrastructure	Spontaneous combustion of carbonaceous material	Incorrect classification of material (Spon com not previously identified as an issue) LTA focus on inert material at start of project due to incorrect classification LTA placement of material Coal stockpile and out of pit dumps Stockpile duration Stockpile management	Community complaints Loss of social licence to operate Health risks on community Risk of securing future approvals Increased costs of operating through methodology Increased mine closure costs Reputational loss Legal action from the community Failed rehab	Mine planning Spon Com Management Plan Monitoring age of coal stockpiles Air Quality Monitoring Program	4	B	H
Blasting	Production	Blasting at the mine exceeds criteria or results in a complaint	Vibration / Overpressure as a result of blasting Fumes as a result of blasting	Community complaints Non-compliance Poor community perception Damage to property (mine owned) Damage to property (non-mine owned) Real and/or Perceived health impacts Increased regulator attention Increased media attention Impact on Aboriginal sites Impact on public and utility infrastructure (rail, sewers)	Continual update of blast design site laws Blast monitoring network Vibration/overpressure model Buffer lands Blast Management Plan Blast notifications Information on website and road side signs Additional monitoring near complainants Community Complaints Procedure	2	C	M
Blasting	Production	Increasing frequent closure of public utility	Proximity of road to Pit Several pits advancing to the North Wind direction Cumulative road closure with other operations	Community complaints Possible exposure to gases	Blast notifications Information/advertising in paper, on website and on road side signs Road and rail possession process Community Complaints Procedure	2	C	M
Flora and Fauna	Production, Exploration	Breach of legislation or site procedure	Clearing of land without approval Surface disturbance outside areas that are approved Changes in legislation (EEC) LTA planning of the works Lack of awareness Not following Management Plan requirements	Non-compliance Prosecution Community dis-satisfaction Future approvals jeopardised	Ground Disturbance Permit (GDP) Mining lease conditions and environmental approvals Rehabilitation Management Plan	2	A	M
Erosion & Sediment Control	Production, Exploration	Pollution of surface or ground water	Significant rainfall event or uncontrolled discharge Pollution LTA design of Erosion/sedimentation controls Construction activities LTA monitoring LTA design of final landforms - size of sediment retention basins etc. Unknown material characterisation Aggressive topsoil stripping Failed or LTA rehabilitation Climatic events (wind, drought, flooding)	Community dis-satisfaction Non-compliance & fines Licence Breach Business interruption Impact on receiving environment and community	ESC Plan Surface Water Management Plan GDP Process OCE Inspections	3	C	M

Water	Production	Pollution of surface water	Pipeline failure Dam failure Tailings spill (dam and/or pipelines) Uncontrolled discharge Offsite discharge of water from the water cart Hydrocarbon/ chemical leaks/spills AMD	Community dis-satisfaction Non-compliance & fines Licence Breach Business interruption Impact on receiving environment and community	Inspections Surface Water Management Plan EPL POEO Act Annual inspection for tailings dams undertaken by certified engineer Pump Crew have Dam Safety Committee training Site water management design DO Plant	3	B	H
Water	Production	Pollution of ground water	Tailings leaching Hydrocarbon/chemical spills/leaks AMD Potential recharge from pit water 1 in 100 Year Flood Event	Community dis-satisfaction (quality or quantity impacts) Non-compliance & fines EPL Licence Breach Business interruption Impact on receiving environment and community	Inspections Groundwater Management Plan (includes groundwater monitoring network) POEO Act	3	D	M
Water	Production	Final void water quality	LTA understanding of final void water quality	Significant change to current approved void configuration or water management system Inability to execute mine closure	Final Void Management Plan Surface Water Management Plan	3	C	M
Traffic	Community	Increased community concerns about mine related traffic (including damage to road)	Speeding vehicles Mine use of public roads Equipment to and from the mine (float) Increased cumulative traffic Increased traffic incidences Increased rubbish/littering	Breach of road rules Damage to public roads Sediment on public roads Community complaints Traffic accident Loss of social licence to operate Reputational damage	Ulan Road Strategy Communication to workforce through site inductions Car-pooling program Project Communication Strategy Restriction on heavy vehicle movement in school bus hours Coordination of shift change hours with other mines. Community Complaints Procedure Revised traffic assessment Wilpinjong Employee Handbook	2	B	M
Aboriginal Cultural Heritage	Production, Exploration	Damage/destruction/storage of Aboriginal heritage known/unknown sites (prosecution)	LTA planning for known sites Non-compliance with GDP Disturbance by unauthorised mine related and exploration activities Blasting impacts Dust impacts Inadequate Archaeological consultant LTA resources	Damage or loss to items of Aboriginal cultural heritage Delay in mining activities/construction where clearance is required Objections from Aboriginal community Prosecution / Fines Lack of trust from the Community More onerous conditions in Management Plans Reputational damage Loss of social licence to operate Non-compliance with ACHMP and National parks and Wildlife Act	ACHMP GDP Process Induction training program Native Title Liaison Officer Cultural Heritage Surveys over the disturbance areas Aboriginal site database Air Quality Monitoring Blast Monitoring Routine monitoring Cultural Heritage Liaison Sub-Committee Implementation of the Native Title Agreement	2	C	M
Aboriginal Cultural Heritage	Community	Inadequate engagement of Aboriginal Stakeholders (including the Native Title Party)	LTA communication from the mine (quality and quantity) LTA communication within the community and to the mine Not meeting Native Title Agreement commitments Legacy of historical relationships Internal relationships within the Aboriginal Community (poorly defined succession planning process)	Poor relationships Lack of trust Objections from the Aboriginal Community Reputational damage Loss of social licence to operate Risk of delayed closure from not meeting Aboriginal Stakeholder expectations	Native Title Agreement ACHMP Native Title Liaison Officer Engagement of a competent archaeologist	2	C	M

Historic (European) Heritage	Production, Exploration	Damage/destruction of European heritage known / unknown sites (prosecution)	LTA planning for known sites Non-compliance with GDP Incomplete heritage survey across mine (historical oil shale mine shafts) Disturbance by unauthorised mine related and exploration activities Blasting impacts LTA resources	Damage or loss of European heritage. Loss of community trust Reputational damage Loss of social licence to operate	European Heritage Survey across current mining lease Location of sites recorded on electronic database	2	C	M
Stakeholders (Community)	Community	Increased community concerns Changes in community expectations	Increased focus on the industry Other non Peabody approvals and activities Poor Performance (i.e. Spon Com, noise) Historical land acquisition/consultation programs Lack of understanding in the community Unrealistic expectations from the public/community. Planning process Wilpinjong Extension Project plans Social Media/ media attention	Community complaints Increased regulator attention Objections to approvals No/constrained approvals Loss of trust with community Requests for unrealistic acquisitions Management distractions (time) Increased monitoring costs	Project consultation strategy (includes current operations) CCC Donations program Lloyd Coleman (Land and Property Officer) Minerals Council publicity campaign - 'this is our story' Company newsletters Peabody public relations department Wollar 'Have a Chat' day - monthly	3	B	H
Stakeholders (Government)	Community	Delays in future approvals Increase scrutiny by regulators	Increased community expectations Change in legislation Perception of poor performance Actual poor performance	Delay in approval No/constrained approval Non-compliance Increased regulator attention Prosecution Increased non-routine workload Changes in policy and legislation Increased cost of monitoring	Project consultation strategy (includes current operations) Annual Review Environmental Monitoring Programs External reporting Peabody public relations department Peabody State and Federal Government Public Relations Manager	3	C	M
Stakeholders (other non Peabody mining projects)	Community	Negative perception towards Mining as a result of cumulative impacts	Cumulative Impacts (perceived or real) LTA performance by non Peabody mining companies Different approach in community engagement/interactions Influence of other primary industries/mines (i.e. Coal seam gas, other mines in the region etc.)	Delay in approval No/constrained approval Increased regulator attention Increased community concern Loss of trust Increased cost of monitoring	Data sharing arrangements Quarterly meetings between the three mines Ulan Road Strategy	2	C	M
Stakeholders (NGO's)	Community	Negative impact on licence to operate and continued expansion	Increased participation of NGOs in mining space Social Media/ media attention	Delays in future approvals No/constrained approval Increased regulator attention Increased community concern Loss of trust Increased cost of monitoring Increased cost of operation Legal action	Peabody Public Relations Department Minerals Council Advocacy Groups	2	D	L
Waste Management	Production, constrained infrastructure, exploration	Inappropriate waste disposal resulting in a liability for Peabody Increased cost associated with waste management	LTA training and awareness People bringing waste in from off site not using appropriately licenced waste contractors LTA receptacles LTA hydrocarbon management facilities Illegal dumping of waste LTA resources (human and capital)	Breach of the EPL requirements Prosecution / Fines Loss of social licence to operate Increased cost of waste management	Licenced waste management contractor Inductions/training Tyre burial procedure	2	C	M

Mineral Waste Management	Production	Inappropriate disposal of reactive mineral waste resulting in a liability for Peabody	LTA management of tailings LTA management of reactive material (ARD, saline etc.) LTA dump design	Rehabilitation closure impacts Increased scrutiny from regulators Increased costs Inability to relinquish liability Directive pollution through receiving environment Spon Com Impacts to machinery Insufficient cover material Need to change LOM dump Insufficient tailings dam storage space if belt press filter does not operate correctly.	Tailings management strategy Dumping strategy	4	B	H
Hazardous Materials and Dangerous Goods	Production, constrained infrastructure, exploration	Contamination and/or pollution (e.g. radiation, asbestos etc.)	LTA storage and treatment facilities (oil water separator systems etc.) Spills and Leaks LTA construction of bunded facilities Presence of hazardous materials in current infrastructure (asbestos, radiation sources etc.)	Non-compliance Prosecution Requirement to report to OEH Remediation cost Health and Safety Environmental contamination	New hydrocarbon management facilities are being constructed to Australian Standards New service trucks have been designed to Australian Standards Spill kits within CHPP, drill rigs, refill trucks ChemAlert Chemical Approval Procedure	2	B	M
Land & Property Management	Buffer lands	Loss of reputation with neighbours and community Degradation of the land	LTA property management (includes properties that are rented) Natural Hazard (fire, flood) Lack of resources to management Limited weed and pest management Presence of feral animals Historical management practices LTA resources (human and capital)	Poor community perception Decreased ecological diversity Security/public safety Poor bushfire control Loss of assets on the properties owned/managed by Peabody	Agistment strategy Long-term leases established with a major Agri-business company Significant pasture and infrastructure improvements undertaken on acquired lands Extensive weed control programs undertaken Routine feral animal control program undertaken in partnership with local mines and local land services	2	D	L
Land & Property Management	Community	Loss of rural community	Peabody land purchasing program Consolidation of land holdings	Loss of community services (i.e. mechanical services) Loss of community RFS volunteers Decline in student numbers at local school Loss of community identity/connection	Renovated houses on Peabody Pastoral lands and re-leased to mining families Supported the continued operation of the Wollar General Store Supported the Community Hall through donations program Contribution to maintenance of public areas within the Wollar village and removing other domestic waste. Purchased own fire fighting truck Mine employees trained as RFS volunteers Peabody removal of footpaths from the town	3	B	H
Land & Property Management	Buffer lands	Failure to achieve ECA and regeneration commitments	LTA Rehabilitation Management Plan Poorly defined roles and responsibilities LTA resources (human and capital)	Non-compliance with project approval conditions and voluntary conservation agreement Reputational damage No/delayed approvals	Binding VCA	3	B	H
Green House Gases	Community	Community perception is that Peabody is not addressing the climate change issue Non-compliance with the abatement requirements in the approval	Media (link Climate change with mining) Further changes in the legislation relating to CO2 Community perception	Delay/constrained/no approval Business interruption Non compliance with EIS predictions/commitments Loss of Social Licence to operate	Quantified GHG emissions from coal reserves	3	D	M

Monitoring & Reporting	Community	LTA monitoring and reporting	LTA review of the monitoring results and monitoring locations LTA resourcing Increased internal and external monitoring and reporting requirements Limited baseline monitoring (noise, water, etc.)	Non compliance with the reporting requirements Non-compliance with regulatory requirements Difficulty in demonstrating compliance when comparing to baseline. Poorly calibrated modelling due to limited actual data	60m met station Environmental monitoring programs	2	C	M
Rehabilitation and Mine Closure	Community	Poor Community and regulator perception towards rehabilitation and final landuse	Not achieving targets LTA rehabilitation strategy integrated into the mine plan LTA landform design Mine plan change failure to engage with stakeholders LTA resources	Decreased land value Poor community perception Decreased ecological diversity Failed lease relinquishment Ongoing liabilities Reduced land capacity Unstable landform Poor drainage Loss of social licence to operate	CCC Government Regulators (e.g. DRE) Commitments in EIS/MOP Conceptual mine closure plan	2	D	L
Rehabilitation and Mine Closure	Production	Inability to relinquish mining lease	Not achieving targets LTA rehabilitation strategy integrated into the mine plan LTA landform design Mine plan change Insufficient accrual for mine closure LTA progressive rehab LTA resources allocated to closure (human and capital) Lack of closure plan LTA material characterisation LTA monitoring program to demonstrate criteria have been met	Decreased land value Decreased ecological diversity Failed lease relinquishment Ongoing liabilities Reduced land capacity Unstable landform Poor drainage Increased cost of closure	Commitments in EIS/MOP Conceptual mine closure plan Rehabilitation provision process (ARO) Annual Review of Rehabilitation cost estimates Progressive Rehab Mine Plan (5-year budget)	4	C	H
Topsoil	Production	LTA rehabilitation	Ineffective topsoil management LTA quantity or quality of topsoil LTA material classification and management Poor stockpile management (temporary vegetation cover, soil amelioration) Weeds Stockpile duration LTA control and stripping depth	Rehabilitation failure Increased cost due to maintenance works being required. Soil erosion Reputational damage Failure to meet completion criteria Failure to relinquish mining lease	Baseline assessments	3	C	M
Approvals and Permitting	Production, constrained infrastructure, exploration	Failure to obtain/maintain appropriate project approvals (State and Federal) and mining leases	Failure to lodge renewals in a timely manner LTA resourcing Poor project definition/ changes Changing government legislation/ expectations Not addressing DGRs adequately Poor environmental performance Capital delays by Peabody	Significant costs Delays to mining operations Impact on mining continuity Premature closure of the mine Mine becomes marginal	Dedicated resource on site Dedicated mine plan support off-site Project approvals schedule Approvals strategy	4	C	H
Approvals and Permitting	Production, constrained infrastructure, exploration	Inability to secure appropriate supplementary approvals (incl. lease renewals, water licenses, s100, MOP, EPL etc.)	Failure to consult and/or reach agreement with appropriate regulatory departments or stakeholders Not planning for Tier 2 approvals LTA resourcing	Significant costs Delays to mining operations Impact on mining continuity	Dedicated resource on site Dedicated mine plan support off-site Project approvals schedule Approvals strategy	4	E	L

Approvals and Permitting	Production, constrained infrastructure, exploration	Failure to comply	No supported compliance management system LTA resourcing	Delayed process in determining a corporate compliance management system Non-compliances with operating approval conditions Government resistance to approve future approvals	EMS Spreadsheets Compliance database that is no longer maintained	4	B	H
Visual Impact	Production, constrained infrastructure, exploration	Poor community and regulator perception	Increased disturbance by mining Industrialisation of the landscape Inability to complete rehab due to future mining options Poor rehabilitation of ground disturbance Rehabilitation Legacy Variation from approved visual impact assessment Lighting (fixed and mobile) Climatic affects and poor design (i.e., reduction in water volumes in final voids exposing highwalls)	Increased complaints Increased scrutiny by regulators Increased costs	Property acquisition Community complaints procedure Screening along main road Property management activities on buffer lands Stakeholder engagement	2	D	L