

Beyondie Sulphate of Potash Project

Existing environment/ Impact	Mitigation			Significant Residual Impact	Offset Calculation Methodology				
	Avoid and minimise	Rehabilitation Type	Likely Rehab Success		Type	Risk	Likely offset success	Time Lag	Offset Quantification
Clearing of 1269 ha of vegetation	<p>Avoid: Cleared exploration land utilised where possible. 164 ha of works located on unvegetated salt lake surface</p> <p>Minimise: Implement GDP process. Clear minimum vegetation required for safe operations</p>	<p>1309 ha rehabilitated to native vegetation. Rehabilitation to occur as per MCP.</p>	<p><u>Can the environmental values be rehabilitated / Evidence?</u> The majority of disturbance is generally narrow (access and pipelines) which will result in a greater rehabilitation success. Evaporation ponds are located away from areas of complex vegetation structures such as lake edges and the fresher marsh area of Beyondie Lakes. <u>Operator experience in undertaking rehabilitation?</u> Kalium Lakes is a new company however will utilise experienced rehabilitation operators during the closure phase. <u>What is the type of vegetation being rehabilitated?</u> Little Sandy desert vegetation. <u>Time lag?</u> Desert species may take some time (>10 years) to become established. <u>Credibility of the rehabilitation proposed (evidence of demonstrated success)</u> No potential issues with rehabilitation identified to-date. Managed under the Mining Act via a MCP.</p>	No					
Clearing of 238 ha of <i>Tecticornia</i> shrubland vegetation. Potential indirect health impacts.	<p>Avoid: The majority of mapped <i>Tecticornia</i> shrubland vegetation was excluded from development envelopes. The excess salt stockpile was relocated outside of <i>Tecticornia</i> shrubland vegetation. The development envelope boundaries follow existing tracks and drill pads wherever practicable. The majority of trenches are located on the bare salt lake surface. At least 30% of each concentrator lake has been excluded from the development envelopes</p> <p>Minimise: 238 ha disturbance limit. 20 GL/yr limit on brine abstraction. Limit indirect impact area to 10% of mapped extent of each lake. Conduct further field surveys within potential impact area Implement <i>Tecticornia</i> Monitoring Program</p>	<p>Rehabilitation to occur as per MCP. 238 ha rehabilitated to <i>Tecticornia</i> shrubland vegetation. All bores and trenches decommissioned.</p>	<p><u>Can the environmental values be rehabilitated / Evidence?</u> The majority of disturbance is generally narrow (access and pipelines) which will result in a greater rehabilitation success. <u>Operator experience in undertaking rehabilitation?</u> Kalium Lakes is a new company however will utilise experienced rehabilitation operators during the closure phase. <u>What is the type of vegetation being rehabilitated?</u> <i>Tecticornia</i> shrubland vegetation. <u>Time lag?</u> Reliant on surface water and inundation regimes during rehabilitation. <u>Credibility of the rehabilitation proposed (evidence of demonstrated success)</u> No potential issues with rehabilitation identified to-date. Managed under the Mining Act via a MCP.</p>	No					
Clearing of 238 ha of potential habitat for 4 Priority 1 species (5.7% of mapped extent in survey area) and potential undescribed species. Potential indirect health impacts associated with groundwater drawdown.	<p>Avoid: The majority of mapped habitat was excluded from development envelopes. The excess salt stockpile was relocated outside of <i>Tecticornia</i> shrubland vegetation. The development envelope boundaries follow existing tracks and drill pads wherever practicable. The majority of trenches are located on the bare salt lake surface. At least 30% of each concentrator lake has been excluded from the development envelopes</p> <p>Minimise: 238 ha disturbance limit. 20 GL/yr limit on brine abstraction. Limit indirect impact area to 10% of mapped extent of each lake. Conduct further field surveys within potential impact area Relocate trenches if new species found to be restricted to impact area Implement <i>Tecticornia</i> Monitoring Program</p>	<p>Rehabilitation to occur as per MCP. 238 ha rehabilitated to <i>Tecticornia</i> shrubland vegetation. All bores and trenches decommissioned.</p>	<p><u>Can the environmental values be rehabilitated / Evidence?</u> The majority of disturbance is generally narrow (access and pipelines) which will result in a greater rehabilitation success. <u>Operator experience in undertaking rehabilitation?</u> Kalium Lakes is a new company however will utilise experienced rehabilitation operators during the closure phase. <u>What is the type of vegetation being rehabilitated?</u> <i>Tecticornia</i> shrubland vegetation. <u>Time lag?</u> Reliant on surface water and inundation regimes during rehabilitation. <u>Credibility of the rehabilitation proposed (evidence of demonstrated success)</u> No potential issues with rehabilitation identified to-date. Managed under the Mining Act via a MCP.</p>	No					
Groundwater drawdown within area of GDV	<p>Avoid: Direct impacts to GDV have been avoided</p> <p>Minimise: Limit abstraction to 0.25 GL/yr at Kumarina Limit abstraction at Ten Mile South to 4 m drawdown in accordance with stygofauna requirements</p>	N/A - no impact expected	N/A						

197 ha clearing of sand dune habitat potentially utilised by conservation significant fauna.	<p>Avoid: The majority of sand dune habitat was excluded from development envelopes. The development envelope boundaries follow existing tracks and drill pads wherever practicable.</p> <p>Minimise: Implement GDP process. Clear minimum habitat required for safe operations.</p>	Rehabilitation to occur as per MCP. Dunes reinstated and rehabilitated at closure.	<p><u>Can the environmental values be rehabilitated / Evidence?</u> No potential issues / impediments with rehabilitation identified to-date.</p> <p><u>Operator experience in undertaking rehabilitation?</u> Kalium Lakes is a new company however will utilise experienced rehabilitation operators during the closure phase.</p> <p><u>What is the type of vegetation being rehabilitated?</u> Sand dune habitat.</p> <p><u>Time lag?</u> Desert species may take some time (>10 years) to become established.</p> <p><u>Credibility of the rehabilitation proposed (evidence of demonstrated success)</u> No potential issues with rehabilitation identified to-date. Managed under the Mining Act via a MCP.</p>	No
Clearing of potential Night Parrot habitat	<p>Avoid: No Night Parrot records have been identified</p> <p>Minimise: Prepare Night Parrot Management Plan to detail actions to be taken if a Night Parrot is recorded on site</p>	Rehabilitation to occur as per MCP.	<p><u>Can the environmental values be rehabilitated / Evidence?</u> No potential issues / impediments with rehabilitation identified to-date.</p> <p><u>Operator experience in undertaking rehabilitation?</u> Kalium Lakes is a new company however will utilise experienced rehabilitation operators during the closure phase.</p> <p><u>What is the type of vegetation being rehabilitated?</u> General Night Parrot habitat.</p> <p><u>Time lag?</u> Desert species may take some time (>10 years) to become established.</p> <p><u>Credibility of the rehabilitation proposed (evidence of demonstrated success)</u> No potential issues with rehabilitation identified to-date. Managed under the Mining Act via a MCP.</p>	No
Loss of stygofauna habitat from groundwater abstraction	<p>Avoid: None able to be committed to.</p> <p>Minimise: Limit abstraction at Kumarina to 0.25 GL/yr. Limit abstraction at Ten Mile South calcrete aquifer to 4 m drawdown at every bore. Compliance with 5C Licence and GWOS</p>	Abstraction to cease and bores capped and closed if not required by pastoralist.	<p><u>Can the environmental values be rehabilitated / Evidence?</u> Yes, aquifer will reinstate once pumping ceases.</p> <p><u>Operator experience in undertaking rehabilitation?</u> None required, simple process.</p> <p><u>What is the type of vegetation being rehabilitated?</u> N/A</p> <p><u>Time lag?</u> Reinstatement of aquifer dependant on rainfall events. Likely to take >10 years to be fully reinstated.</p> <p><u>Credibility of the rehabilitation proposed (evidence of demonstrated success)</u> Credible, aquifer will recharge from rainfall events.</p>	No
Alteration of salt lake hydrological processes and water quality	<p>Avoid: Kalium has avoided impacts to the Beyondie Lakes in Project design. At least 30% of each concentrator lake has been excluded from the development envelopes. Produce saleable products from waste salt and bitterns if possible</p> <p>Minimise: Limit abstraction of brine to 20 GL/yr. Compliance with 5C Licence and GWOS Limit abstraction as per the 10% indirect impact limit for Tecticornia Develop and implement Tecticornia Monitoring Program. Line evaporation ponds with HDPE to prevent seepage and mounding. Install earth bund around excess salt stockpile Sample and treat any PASS if excavated from trenches</p>	Abstraction to cease, trenches will be filled and bores capped and closed if not required by pastoralist.	<p><u>Can the environmental values be rehabilitated / Evidence?</u> Yes, aquifers will gradually reinstate once pumping ceases. Salt lake processes will return to normal once aquifers become reinstated.</p> <p><u>Operator experience in undertaking rehabilitation?</u> None required, simple process.</p> <p><u>What is the type of vegetation being rehabilitated?</u> N/A.</p> <p><u>Time lag?</u> Reinstatement of processes dependant on rainfall events. Likely to take >20 years to be fully reinstated.</p> <p><u>Credibility of the rehabilitation proposed (evidence of demonstrated success)</u> Credible, aquifer will recharge from rainfall events, however over a long period of time.</p>	No