

Bullabulling Gold Project - Village WWTP WAA - Att 8A

Risk ID	Environmental factor	Description of unwanted event	Risk pathway / causal factors	Description of impact	Phase	Inherent Risk			Risk treatment	Residual Risk		
						Likelihood	Credible Consequence	Risk Rating		Likelihood	Credible Consequence	Risk Rating
1	Biodiversity	Fauna entrapment in site infrastructure	Infrastructure	Fauna death	Construction & operations	Possible	Minor	Medium	Engineering -Egress points at tanks and ponds. -Fauna fencing of WWTP and spray field area. Admin -Regular inspections of WWTP and spray field area. -Incident reporting and investigations.	Unlikely	Minor	Low
2	Biodiversity	Ponding of discharged effluent	Poor management of irrigation area	Increase in vermin, odour, vegetation damage	Operations	Possible	Minor	Medium	Engineering -Appropriate sizing of disposal area and effluent sprinklers. -Establishment of drainage controls (windrows) to limit surface water ingress to disposal area. Admin -Monitoring of flow quantities to the spray field. -Monitoring of effluent water quality. -Routine inspections of the spray field disposal area. -Incident reporting and investigations.	Unlikely	Minor	Low
3	Biodiversity	Alteration of surface hydrology due to the construction of the Project	Placement of project infrastructure within the landscape	Changes to local flooding extent, and/or duration impacting vegetation communities, including threatened flora species abundance and distribution	Construction & operations	Unlikely	Minor	Low	Engineering -WWTP infrastructure is banded to contain spills and leaks. -Site layout designed to be sited away from natural drainage lines and to minimise major disruptions to surface water flows. Admin -Regular inspections of WWTP equipment, including maintenance of drains. -Inspections and audits. -Incident reporting and investigations.	Rare	Minor	Low
4	Biodiversity	Pipeline failure with release of water to the environment	Process water use/conveyance	Degradation of vegetation	Construction & operations	Possible	Minor	Medium	Engineering -Use of appropriate standard pipe and fittings. -Provide automatic cutoffs in the event of pressure drop in pipeline. -Transfer pipelines are buried or located within v-drains.	Unlikely	Minor	Low
5	Land and soils	Pipeline failure with release of water to the environment	Process water use/conveyance	Contamination, erosion, scour of surface soils	Construction & operations	Possible	Minor	Medium	Admin -Regular inspections of pipelines for damage. -Scheduled Inspections and Audits. -Incident reporting and investigations.	Unlikely	Minor	Low
6	Land and soils	Poor hydrocarbon / chemical management and awareness: Unapproved chemicals brought to site Inadequate or incorrect storage, handling and disposal Spills / leakages	Hydrocarbon / chemical storage and use	Soil contamination	Construction & operations	Possible	Minor	Medium	Engineering Hydrocarbon and chemical storage areas will be appropriately banded in accordance with <i>AS1940:2017 - The storage and handling of flammable and combustible liquids</i> . Admin -Service vehicles to be fitted with spill kits. -Spill kits will be located at all chemical and fuel storage areas. -SDS registers. -Approved chemical handling procedure. -Spill response training/procedure.	Unlikely	Minor	Low
7	Water resources	Poor hydrocarbon / chemical management and awareness: Unapproved chemicals brought to site Inadequate or incorrect storage, handling and disposal Spills / leakages	Hydrocarbon / chemical storage and use	Contamination of water resources	Construction & operations	Possible	Minor	Medium	-Inductions/toolbox training. -All chemicals to be approved prior to dispatch to site. -Contaminated soil will be disposed of at the bioremediation facility or managed by external -Licenced Contractor. -Inspections and audits. -Incident reporting and investigations.	Unlikely	Minor	Low

8	Water resources	Release of poor quality effluent to the environment	Inadequate maintenance of WWTP, overloading of system	Contamination of surface water to the surrounding environment	Construction & operations	Possible	Minor	Medium	<p>Engineering</p> <ul style="list-style-type: none"> - WWTP Tanks and chemical storage are banded consistent with AS1947: 2017 - <i>The storage and handling of flammable and combustible liquids</i> -WWTP drainage designed to accommodate a 1 in 20 year ARI event. <p>Admin</p> <ul style="list-style-type: none"> -Regular inspections of WWTP equipment, including maintenance of drains. -Inspections and audits. -Incident reporting and investigations. 	Unlikely	Minor	Low
9	Water resources	Contaminated storm water	Inadequate spray field area design	Contaminated storm water reaches surface water structures and impacts surface and or groundwater water quality	Operations	Unlikely	Moderate	Medium	<p>Engineering</p> <ul style="list-style-type: none"> -Spray field is designed to contain effluent and surface water runoff within the footprint. -Groundwater is located approximately 50m below surface. <p>Admin</p> <ul style="list-style-type: none"> -As built design reports. -Post-rainfall event inspections of spray field facility. -Inspections and audits. -Incident reporting and investigations. 	Rare	Moderate	Medium
10	Water resources	Release of poor quality effluent to the environment	Inadequate maintenance of WWTP, overloading of system	Contamination of surface and ground water	Operations	Unlikely	Minor	Low	<p>Engineering</p> <ul style="list-style-type: none"> -Appropriate sizing of spray field area using Dept of Health calculator -Groundwater is located approximately 50m below surface. <p>Admin</p> <ul style="list-style-type: none"> -Monitoring of WWTP performance during commissioning and operations. -Routine maintenance of WWTP. -Inspections and audits. -Incident reporting and investigations. 	Unlikely	Minor	Low