Project: Rover 1



The NT EPA have developed a pre-referral screening tool to assist proponents determine whether their Proposal has potential to have a significant impact on the environment and therefore requires referral under the *Environment Protection Act* 2019. The tool is also used to identify the key environmental factors that are relevant to a Proposal that may require more detailed consideration during site selection and project planning. The tool has two parts:

- Part 1 Screening Questions
- Part 2 Answer Checklist

The tool is provided in the *Guideline – Referring a Proposal to the NT EPA* https://ntepa.nt.gov.au/publications-and-advice/environmental-management.

EcOz Environmental Consultants were engaged by Castile Resources Ltd to undertake pre-referral screening of Rover 1. The screening was undertaken with reference to the screening questions shown in Figure 1 and the results are documented in Table 1 below.

Figure 1. Pre-screening tool screening questions (Source: NT EPA 2021)

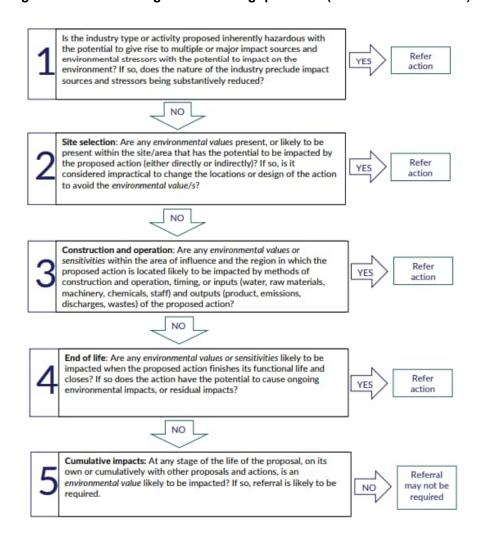




Table 1. Pre-referral screening tool checklist prepared for the Rover 1 Project

				Pre-referral screening questions						Comments on whether or not referral required
Theme	Factor and Objective	Background information (about the project)	Environmental values, sensitivities (based on		Q1	Q2	Q3	Q4	Q5	
		(,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	desktop and/or surveys)	Yes No						
	Landforms Objective: Conserve the variety and integrity of distinctive physical landforms.	The Project is located on the eastern edge of the Tanami bioregion, comprising flat or gently undulating spinifex sandplains. The topography in the broader Project area is low relief with occasional low rises and broad swales, with a general, low decline northward. Elevation ranges from 290 to 295 m AHD.	 No distinct natural landforms. No environmental values or sensitivities identified. 	Yes No Uncertain N/A						Does not trigger referral due to: There are no distinct natural landforms in the Project area or surrounding area.
Land	Terrestrial Environmental Quality Objective: Protect the quality and integrity of land and soils so that environmental values are supported and maintained.	Disturbance footprint The total area of disturbance is estimated to be approximately 177 ha. The proposed gas pipeline corridor represents 120 ha of the total area to be cleared. The pipeline alignment is yet to be confirmed. Soils will be disturbed by land clearing and development. Hazardous material storage Bulk hazardous material will be stored onsite. Dangerous goods will be bulk stored including diesel, LPG, cyanide, xanthate, oxygen, sulphuric acid, other solvents and reagents and explosives (emulsion). Oxidation of waste rock and tailings A portion of the waste rock (and possibly tailings) will be acid forming. There is currently insufficient information to understand the potential acid, neutral or saline drainage.	 15 ha of existing disturbance across the Project area from exploration, however, most land is uncleared and intact. Soils comprise red sands and red clayey sands. Erosion risk is very low due to generally low topographic relief (<1% slope throughout). No contaminated soils present. There are no acid sulfate soils present on the surface layer. 	Yes No Uncertain N/A				⊠ □ □		Triggers referral due to: Potential for erosion due to wind and rain causing loss of topsoil. Potential erosion impacting constructed landforms (including TSF and waste rock dump). Potential impacts to land and soil quality due to hazardous materials storage. Potential impacts to land and soil quality due to oxidation of stockpiled waste materials (AMD/NMD or saline drainage).
	Terrestrial Ecosystems Objective: Protect terrestrial habitats to maintain environmental values including biodiversity, ecological integrity and ecological functioning.	 Disturbance footprint The total area of disturbance is estimated to be approximately 177 ha. The proposed gas pipeline corridor represents 120 ha of the total area to be cleared. The pipeline alignment is yet to be confirmed. Soils will be disturbed by land clearing and development. Increased volumes of road traffic, including along the access road will increase the potential for animal mortalities due to roadkill. Project activities, particularly those that generate noise, light and dust, may disturb fauna using habitat within and adjacent to the project area. 	 Flora There are no listed threatened flora species identified within the Project area. Vegetation communities in the Project area comprise low open hummock grassland and sparse to open Acacia shrubland comprising predominantly low isolated Eucalyptus and Acacia Two locally important habitat tree species were observed (large Bloodwoods and Ghost Gums) in the Project area, which should be considered when designing the project to minimise impacts. Significant vegetation There are no significant vegetation types within the Project area. Fauna One listed threatened fauna species was identified within the Project area - NT and EPBC listed Greater Bilby (Macrotis lagotis). 	Yes No Uncertain N/A						Triggers referral due to: • Localised habitat loss will occur. • There is potential for impacts to the Greater bilby from Project activities.



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Theme	Factor and Objective	Background information (about the project)	Environmental values, sensitivities (based on desktop and/or surveys)		Q1	Q2	Q3	Q4	Q5	
				Yes						
	Hydrological Processes Objective: Protect the hydrological regimes of groundwater and surface water so that environmental including ecological health, land uses and the welfare and amenity of people are maintained.	 Surface water There are no permanent surface water features within or close to the Project area. No surface water will be extracted during construction or operation of the Project. Groundwater Groundwater will be intercepted by the underground mine, most of which will be pumped to the surface. Groundwater will be used in the processing plant, underground operation, and for dust suppression. The total estimated daily water demand is approximately 4,000 m³. A small bore field will be required to supplement groundwater inflows. Groundwater levels will be lowered by dewatering and groundwater extraction. There is currently insufficient information to understand the spatial and temporal extent of 	Surface water The project area is within the Tennant Creek Water Control District. The Project area is outside any Water Plan Management Zones and Water Plan Protection Areas. There are no declared surface water beneficial uses in the vicinity of the Project area. Groundwater Airlift water yields during bore development in 2012, range from 0.7L/s to about 25.5L/s. Deeper confined sedimentary sequences, particularly between 90 m and 120 m, contain large quantities of groundwater, but yields may be low. Groundwater flows in a northeasterly direction. There are no known groundwater users near the	Yes No Uncertain N/A						Triggers referral due to: • Potential lowering of groundwater levels due to dewatering and groundwater extraction.
Water		understand the spatial and temporal extent of the drawdown.	Project area. The nearest bore is an old unused, salty airstrip bore approximately 800 m southeast of the Project area. • The nearest potential GDE is approximately 10 km southwest of the Project area, upgradient of the box cut and decline. This GDE is unlikely to be affected by any drawdown associated with the Project given the distance and the location upgradient. • There are no declared groundwater beneficial uses in the vicinity of the Project area.							
	Inland Water Environmental Quality Objective: Protect the quality of groundwater and surface water so that environmental values including ecological health, land uses and the welfare and amenity of people are maintained.	 Hazardous material storage Bulk hazardous material will be stored onsite. Dangerous goods will be bulk stored including diesel, LPG, cyanide, xanthate, oxygen, sulphuric acid, other solvents and reagents and explosives (emulsion). Oxidation of waste rock and tailings A portion of the waste rock (and possibly tailings) will be acid forming. There is currently insufficient information to understand the potential acid, neutral or saline drainage. 	 Groundwater generally has a circum-neutral pH with elevated salinity (TDS 1,250 to 2,800 mg/L) making it non-potable (NHMRC/NRMMC, 2011 assessment levels). There are no known groundwater users near the Project area. The nearest bore is an old unused, salty airstrip bore approximately 800 m southeast of the Project area. There are no declared groundwater beneficial uses in the vicinity of the Project area. The Tennant Creek West bore field is located over 20 km northeast (of the Rover 1 airport strip bore RN011575) at its closet point. 	Yes No Uncertain N/A						Triggers referral due to: Potential impacts to land and soil quality due to hazardous materials storage. Potential impacts to land and soil quality due to oxidation of stockpiled waste materials (AMD/NMD or saline drainage).
	Aquatic Ecosystems Objective: Protect aquatic habitats to maintain environmental values including biodiversity, ecological integrity and ecological functioning.	There are no permanent surface water features within or close to the Project area.	There is no riparian vegetation nearby and there is no expectation of either aquatic or terrestrial GDE's in the Project area. There are no sites of botanical significance within or close to the Project area.	Yes No Uncertain N/A						Does not trigger referral due to: There are no permanent surface water features within or close to the Project area.



				Pre-referral screening questions						Comments on whether or not referral required
Theme	Factor and Objective	Background information (about the project)	Environmental values, sensitivities (based on		Q1	Q2	Q3	Q4	Q5	
		, , , , , , , , , , , , , , , , , , ,	desktop and/or surveys)	Yes No						
	Coastal Processes Objective: Protect the geophysical and hydrological processes that shape coastal morphology so that the environmental values of the coast are maintained.	The Project area is 550 km from the nearest coastline/marine environment.	The Project area is 550 km from the nearest coastline/marine environment.	Yes No Uncertain N/A						Does not trigger referral due to: The Project area is 550 km from the nearest coastline/marine environment.
Sea	Marine Environmental Quality Objective: Protect the quality and productivity of water, sediment and biota so that environmental values are maintained.			Yes No Uncertain N/A						
	Marine Ecosystems Objective: Protect marine habitats to maintain environmental values including biodiversity, ecological integrity and ecological functioning.			Yes No Uncertain N/A						
	Air Quality Objective: Protect air quality and minimise emissions and their impact so that environmental values are maintained.	 The Project will produce dust emissions (particulate matter), and nitrogen dioxide and sulphur dioxide from the burning of fossil fuels. The rail siding is located south of the Tennant Creek township. Product to be transported to the rail siding/Darwin will be containerised. 	The nearest sensitive receptor is the Kunayungku outstation, located 26 km to the north of the Project area. This receptor is identified as a family outstation, with several buildings beyond economic repair. The closest outstation is Ngappamilarnu, approximately 45 km from the Project area.	Yes No Uncertain N/A						Does not trigger referral due to: The nearest sensitive receptor is the Kunayungku outstation, located 26 km to the north of the Project area. There is a high level of confidence that the project will comply with the National Environment Protection (Ambient Air Quality) Measure which will be used to evaluate performance.
Air	Atmospheric Processes Objective: Minimise greenhouse gas emissions so as to contribute to the NT Government's aspirational target of achieving net zero greenhouse gas emissions by 2050.	 The preferred option to power the Project is natural gas, taken from the existing AGP located approximately 40 km east of the Project area. An initial assessment has determined that Rover 1 has a relatively low power demand and that a power station of approximately 15 MW will be sufficient to power the operation. A diesel power supply may be needed as a backup system (diesel generator) or to start the system and provide a spinning reserve for a gas system. Solar is the preferred option for powering surface pumps and other auxiliary surface infrastructure to manage water and tailings. The mining fleet will preferably be powered by battery technology. 	An initial greenhouse gas assessment has been completed which indicates that the Project is unlikely to trigger the NT Government (DEPWS) Large Emitters Policy. The assessment is provided as Appendix K of the referral report.	Yes No Uncertain N/A						Does not trigger referral due to: • An initial greenhouse gas assessment has been completed which indicates that the Project is unlikely to trigger the NT Government (DEPWS) Large Emitters Policy.



				Pre-re	eferral	screer	ning qu	estion	ıs	Comments on whether or not referral required
Theme	Factor and Objective	Background information (about the project)	Environmental values, sensitivities (based on		Q1	Q2	Q3	Q4	Q5	
	i acies ana especiate	Substitution (about the project)	desktop and/or surveys)	Yes No						
People	Communities and Economy Objective: Enhance communities and the economy and foster resilience to a changing climate, for the welfare, amenity and benefit of current and future generations of Territorians.	 The operational life of mine is proposed to be 10 years; however, it could be extended if further deposits are located. The Project is located on Aboriginal land held under the Karlantijpa South Aboriginal Land Trust. Workforce It is expected a large portion of the workforce will be sourced from Darwin and surrounds. On average approximately 73 personnel will be onsite, to a maximum of 77. Site personnel will be housed in the proposed accommodation village. Transport Existing airport facility at Tennant Creek will be used, and flights are likely to be chartered for FIFO workers, who will then travel by bus to the Project area. Existing rail facility at Tennant Creek will be used to convey materials and product. Traffic There will be an increase in traffic south of Tennant Creek between the Stuart Highway and the rail siding. Traffic through Tennant Creek township will be limited to road trains delivering goods. 	 The Project is expected to have limited direct impact on people's way of life in Tennant Creek and surrounding communities. The mine site is remote and isolated, and planned to have a predominately FIFO workforce. The Project will increase traffic on the access road which runs through Tennant Creek station, and on a short section of the Stuart Highway between the mine site turnoff and the rail siding. Impacts on the local community of Tennant Creek are expected to be minimal as traffic through the town for Castile products will be limited to road trains delivering goods. Local people are likely to have concerns about environmental impacts, and impacts to amenity from noise, dust, traffic etc. The Project has potential to improve livelihood for local people from increased jobs and business opportunities. Impact on the business community will be positive, with minor goods and services likely to be sourced preferentially out of Tennant Creek. The population of Tennant Creek as of the 2021 census us 3,080 people, of which 1,707 are Indigenous, and a median age of 33 years. The 2021 unemployment rate of 8.7% is higher than the NT average of 5.6%. 	Yes No Uncertain N/A						Does trigger referral due to: Change in community composition, cohesion or character. Increased traffic on local roads. Potential pressures on emergency and social services Concerns about environmental impacts and impacts to amenities. Inequitable distribution of benefits and lack of decision-making power could negatively impact local community.
	Culture and Heritage Objective: Protect sacred sites, culture and heritage	The Project is located on Aboriginal land held under the Karlantijpa South Aboriginal Land Trust. The extent of use and significance is, at present, not understood.	 A search of the NIAA website identified no Indigenous Protected Areas within the Project area and Abstract of Records obtained by Castile under regulation 7 of the Northern Territory Aboriginal Sacred Sites Regulations 2004, identified no registered or recorded sacred sites, or restricted work areas on ELR29957, ELR29958, EL27372 or EL27292. There are currently no nominated, provisionally declared or declared archaeological places located within the Project area or in the proximity of the Project area, on the NTG Heritage Branch archaeological database. The archaeological predictive model proposed that no archaeological sites would be present within the study area, primarily as a result of its relatively small size and the lack of either semi-permanent or ephemeral water available within the sandplain environment. Further, no geological features exist to procure stone resources for stone tool production. The Archaeological report is provided as Appendix J of the referral report. 	Yes No Uncertain N/A						Triggers referral due to: While existing information indicates there are no significant sites or features present, further consultation with Traditional Owners, site custodians and the Aboriginal community, and surveys are required to identify previously unrecorded sites and/or other cultural values and uses of the land that could be impacted by the Project.



		Background information (about the project)	Environmental values, sensitivities (based on desktop and/or surveys)	Pre-re	eferral	screer	ing qu	estion	s	Comments on whether or not referral required
Theme	e Factor and Objective				Q1	Q2	Q3	Q4	Q5	
				Yes No						
	Human Health Objective: Protect the health of Northern Territory population.	The Project will generate mine site noise and dust emissions.	The Project area is remote, located 26 km from the nearest community and there are no sensitive land uses being undertaken in surrounding areas.	Yes No Uncertain N/A						Does not trigger due to: The Project area is remote; noise and dust emissions are unlikely to be measurable at the nearest community. While not intended, it is noted that there is potential for groundwater or surface water contamination to occur, however, any such occurrence is unlikely to affect human health as there are no consumptive uses occurring in the area.