GEMCO – Excess Water Disposal Project: Pre-referral Screening Tool

The pre-referral screening was undertaken with reference to the questions outlined in Figure 1. Checklist answers are provided in Table 1.

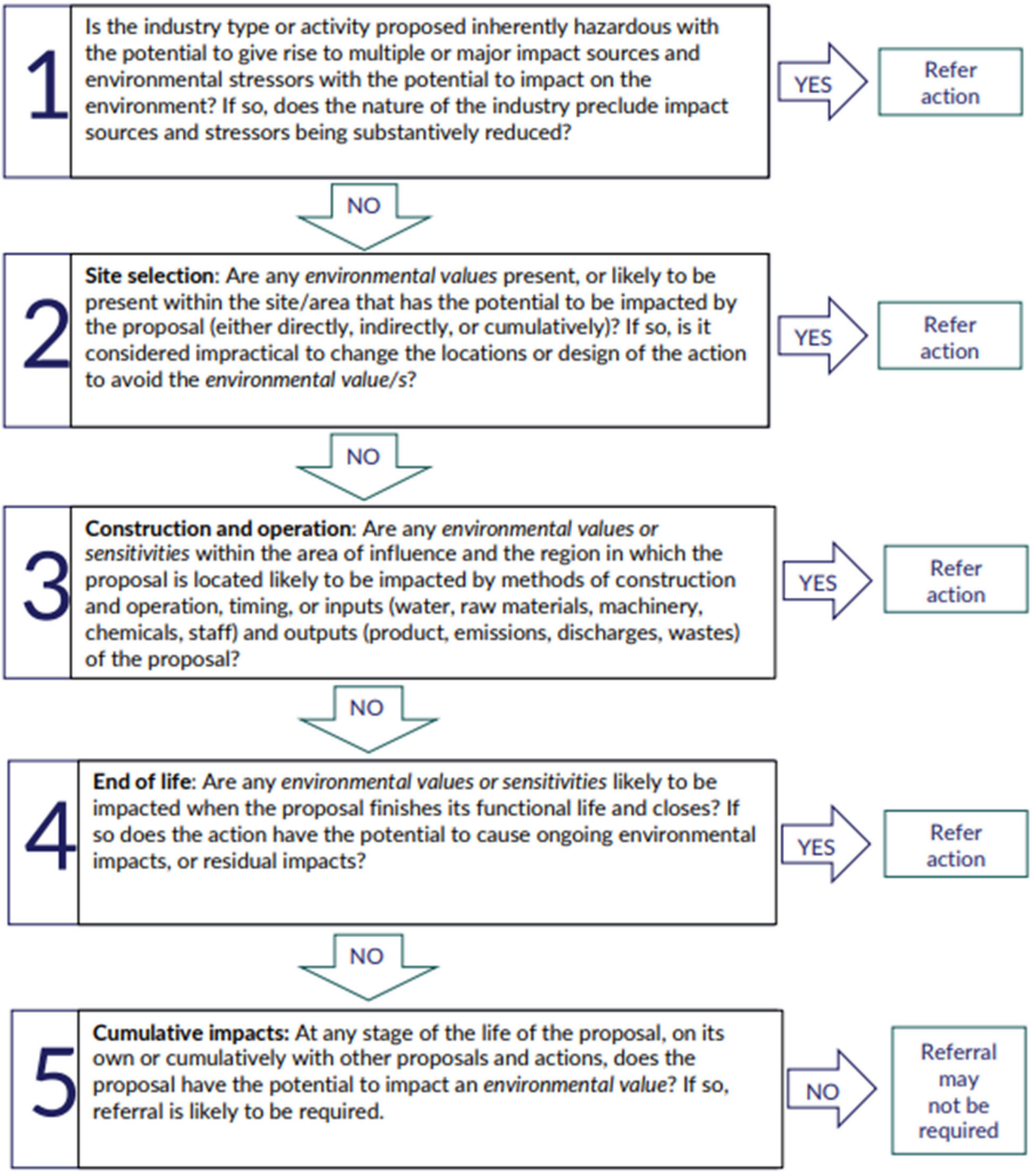

Figure 1 Pre-referral screening tool questions (Source: NT EPA, 2022[1])

[1] NT EPA (2022) Referring a Proposal to the NT EPA. Environmental Impact Assessment Guidance for Proponents.

Table 1 *NT EPA pre-referral screening tool checklist*

Theme	Environmental factor and objective	Indicative environmental values and sensitivities relevant to each environmental factor	Relevance to Project	Proponent's answer to screening questions 1-5				
				Q1	**Q2**	**Q3**	**Q4**	**Q5**
Is the industry type or activity proposed inherently hazardous with the potential to give rise to multiple or major impact sources and environmental stressors with the potential to impact on the environment? If so, does the nature of the industry preclude impact sources and stressors being substantively reduced?				No ☒ Yes ☐				
LAND	1) Landforms	Distinctive features in the landscape, either geological or anthropogenic	Refer Section 6.1.3.1 of the Environmental Referral Report.	Yes	☐	☐	☐	☐
	Objective: Conserve the variety and integrity of distinctive physical landforms.	Subterranean karstic terrain and faults		No	☒	☒	☒	☒
		Craters, gorges, ranges, caves massifs, escarpments, plateaus		Uncertain	☐	☐	☐	☐
		Monuments		N/A	☐	☐	☐	☐
		Tourism related to landforms						
	If you answered No to any screening questions for Landforms, provide justification here: No distinctive landforms were identified within the Proposal footprint, therefore the Proposal is not likely to significantly affect landforms. Therefore, it is concluded that the NT EPA's objective for the Terrestrial Environment factor will be met. Refer Section 6.1.3.1 of the Environmental Referral Report.							
	2) Terrestrial environmental quality	High quality soils, including chemical, physical, biological and aesthetic qualities that support life	Refer Section 6.1.3.2 of the Environmental Referral Report.	Yes	☒	☐	☐	☐
	Objective: Protect the quality and integrity of land and soils so that environmental values are supported and maintained.			No	☐	☒	☒	☒
		The biological processes that depend on soil quality		Uncertain	☐	☐	☐	☐
				N/A	☐	☐	☐	☐
	If you answered No to any screening questions for Terrestrial environmental quality, provide justification here:							

Theme	Environmental factor and objective	Indicative environmental values and sensitivities relevant to each environmental factor	Relevance to Project	Proponent's answer to screening questions 1-5				
				Q1	**Q2**	**Q3**	**Q4**	**Q5**
	With effective implementation of mitigation measures, including the CEMP, GEMCO standard operating procedures and ASS management plan (if required), the Proposal is not likely to significantly affect terrestrial environmental quality. Therefore, it is concluded that the NT EPA's objective for the terrestrial environmental quality factor will be met. Refer Section 6.1.3.2 of the Environmental Referral Report.							
	3) Terrestrial ecosystems	"Sensitive or significant" vegetation or buffers (as defined in the NT Land Clearing Guidelines)	Refer Section 6.2 of the Environmental Referral Report.	Yes	☒	☒	☐	☐
	Objective: Protect terrestrial habitats to maintain environmental values including biodiversity, ecological integrity, and ecological functioning.	Listed threatened species and their habitat (NT and Cth.)		No	☐	☐	☒	☒
		Listed migratory species and their habitat (NT and Cth.)		Uncertain	☐	☐	☐	☐
		Listed threatened ecological communities (NT and Cth.)		N/A	☐	☐	☐	☐
		Locally endemic or restricted species and their habitat						
		Species that are data deficient with unknown protection status						
		Protected area or reserve, including Indigenous Protected Area						
		Biosecurity						
		High quality biological and functional diversity, integrity, and services						
	If you answered No to any screening questions for Terrestrial ecosystems, provide justification here: Overall the significant impact assessments conducted in the Terrestrial Ecology Assessment Report (Appendix C) on threatened species identified a low likelihood of significant impact resulting from the Proposal, and consideration of the impacts on Terrestrial Ecosystem values in Section 6.2 of the Environmental Referral Report concluded that with effective design of the pipeline corridor and crossings; and implementation of a CEMP, ALC Quarantine and Biosecurity program and GEMCO standards the NT EPA's objective for terrestrial ecosystems will be met. Refer Section 6.2 of the Environmental Referral Report.							
WATER	1) Hydrological processes	The supply and quantity of water in surface water features including rivers, lakes, wetlands, swamps, creeks, billabongs, intermittent streams, floodplains, mangroves and drainage lines	Refer Section 6.1.3.3 of the Environmental Referral Report.	Yes	☐	☐	☐	☐
	Objective: Protect the hydrological regimes of groundwater and surface water so that environmental	The supply and quantity of water in groundwater features including aquifers, aquitards, water tables and the ecosystems they support (stygofauna, vegetation and groundwater dependent ecosystems)		No	☒	☒	☒	☒
		Declared beneficial uses		Uncertain	☐	☐	☐	☐

Theme	Environmental factor and objective	Indicative environmental values and sensitivities relevant to each environmental factor	Relevance to Project	Proponent's answer to screening questions 1-5				
				Q1	**Q2**	**Q3**	**Q4**	**Q5**
	values including ecological health, land uses and the welfare and amenity of people are maintained.	Present and future uses, and users of water		N/A	☐	☐	☐	☐
		Current or potential water supplies, including regional scale aquifers						
		Culturally important water features or other features affected by water level						
	If you answered No to any screening questions for Hydrological processes, provide justification here: With effective implementation of mitigation measures modelled in the Red Earth Engineering (2024) report for the Pipeline, and implementation of an ESCP, CEMP and ASS management plan (if required), the Proposal is not likely to significantly affect hydrological processes. Therefore, it is concluded that the NT EPA's objective for hydrological processes. Refer Section 6.1.3.3 of the Environmental Referral Report.							
	2) Inland water environmental quality	The quality of water in surface water features including rivers, lakes, wetlands, swamps, creeks, billabongs, intermittent streams, floodplains, mangroves and drainage lines	Refer Section 6.1.3.3 of the Environmental Referral Report.	Yes	☒	☐	☐	☐
	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.	The quality of water in groundwater features including aquifers, and water tables.		No	☐	☒	☒	☒
		Declared beneficial uses		Uncertain	☐	☐	☐	☐
		Present and future uses, and users of water		N/A	☐	☐	☐	☐
		Current or potential water supplies, including regional scale aquifers						
		Potability / drinkability						
		Culturally important water features						
	If you answered No to any screening questions for Inland water environmental quality, provide justification here: With effective implementation of mitigation measures modelled in the Red Earth Engineering (2024) report for the Pipeline, and implementation of an ESCP, CEMP and ASS management plan (if required), the Proposal is not likely to significantly affect hydrological processes. Therefore, it is concluded that the NT EPA's objective for hydrological processes. Refer Section 6.1.3.3 of the Environmental Referral Report.							
	3) Aquatic ecosystems	Threatened species	Refer Section 6.1.3.4 of the Environmental Referral Report.	Yes	☒	☐	☐	☐
		The health of the biota in inland waterways		No	☐	☒	☒	☒

Theme	Environmental factor and objective	Indicative environmental values and sensitivities relevant to each environmental factor	Relevance to Project	Proponent's answer to screening questions 1-5				
				Q1	**Q2**	**Q3**	**Q4**	**Q5**
	Objective: Protect aquatic habitats to maintain environmental values including biodiversity, ecological integrity and ecological functioning.	The habitats that support the lifecycle of aquatic biota		Uncertain	☐	☐	☐	☐
		Groundwater dependent ecosystems		N/A	☐	☐	☐	☐
		Ramsar wetlands						
		High quality biological and functional diversity, integrity and services						
	If you answered No to any screening questions for Aquatic ecosystem, provide justification here: Potential impacts to aquatic ecosystems would be from direct habitat disturbance during construction. Construction works are to be staged and reinstated such that works within watercourses / drainage lines occur outside times of flow; impacts to hydrology are not expected. Potential impacts to terrestrial fauna that utilise riparian or aquatic habitat include disruption of behaviour and/or injury or mortality. These impacts are to terrestrial species and assessed in LAND-Terrestrial ecosystems in section 6.2 of the Environmental Referral Report. Refer Section 6.1.3.4 and 6.2 of the Environmental Referral Report.							
SEA	1) Coastal processes	Processes that support marine ecosystems such as coral reefs and mangroves	Refer Section 6.1.3.5 of the Environmental Referral Report.	Yes	☒	☐	☐	☐
	Objective: Protect the geophysical and hydrological processes that shape coastal morphology so that the environmental values of the coast are maintained.	Processes that support coastal morphology such as beaches, rock bars, and sandbars		No	☐	☒	☒	☒
		Tidal creeks, deltas and river mouths		Uncertain	☐	☐	☐	☐
		Storm surge protection		N/A	☐	☐	☐	☐
		Unique coastal landforms			☐	☐	☐	☐
	If you answered No to any screening questions for Coastal processes, provide justification here: With effective design measures for storm surge (including consideration of pipeline burial depths) and implementation of mitigation measures, including the CEMP, GEMCO standard operating procedures and emergency response plans, the Proposal is not likely to significantly affect coastal processes. Therefore, it is concluded that the NT EPA's objective for the coastal processes factor will be met. Refer Section 6.1.3.5 of the Environmental Referral Report.							
	2) Marine environmental quality	Quality of the water, sediment and biota	Refer Section 6.3 of the Environmental Referral Report.	Yes	☒	☒	☐	☐

Theme	Environmental factor and objective	Indicative environmental values and sensitivities relevant to each environmental factor	Relevance to Project	Proponent's answer to screening questions 1-5				
				Q1	**Q2**	**Q3**	**Q4**	**Q5**
	Objective: Protect the quality and productivity of water, sediment and biota so that environmental values are maintained.	Physical parameters that support fishing and aquaculture		No	☐	☐	☒	☒
		Physical parameters that support recreation and aesthetics		Uncertain	☐	☐	☐	☐
		Industrial water supply		N/A	☐	☐	☐	☐
		Cultural and spiritual values						
	If you answered No to any screening questions for Marine environmental quality, provide justification here: With effective implementation of avoidance and mitigation measures, including the OEMP, CEMP and GEMCO standard operating procedures, the Proposal is not likely to significantly affect the marine environmental quality. Refer Section 6.3 of the Environmental Referral Report. Overall the significant impact assessments conducted in the Marine Ecology Assessment Report (Appendix D) identified a low likelihood of significant impact resulting from the Proposal on marine ecosystem values and it is concluded that the NT EPA's objective for marine environmental quality will be met.							
	3) Marine ecosystems	Conservation significant marine and coastal fauna and critical habitat such as nesting, breeding or foraging habitat	Refer Section 6.4 of the Environmental Referral Report.	Yes	☒	☒	☐	☐
	Objective: Protect marine habitats to maintain environmental values including biodiversity, ecological integrity and ecological functioning.	Conservation significant marine and coastal benthos (seagrass meadows, sponge gardens, coral reefs, mangrove communities and salt marshes)		No	☐	☐	☒	☒
		Groups of species (species richness and assemblages of species)		Uncertain	☐	☐	☐	☐
		Ecological functions and processes		N/A	☐	☐	☐	☐
		High quality biological and functional diversity, integrity and services						
	If you answered No to any screening questions for Marine ecosystems, provide justification here: With effective implementation of avoidance and mitigation measures, including the OEMP, CEMP and GEMCO standard operating procedures, the Proposal is not likely to significantly affect marine ecosystems. Overall, the significant impact assessments conducted in the Marine Ecology Assessment Report (Appendix D) identified a low likelihood of significant impact resulting from the Proposal on marine ecosystem values and it is concluded that the NT EPA's objective for marine ecosystems will be met. Refer Section 6.4 of the Environmental Referral Report.							
AIR	1) Air quality	Ambient air quality in the local airshed	Refer Section 6.1.3.6 of the Environmental Referral Report.	Yes	☒	☐	☐	☐
	Objective: Protect air quality and	The chemical, physical and biological characteristics of quality air		No	☐	☒	☒	☒

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				Q1	**Q2**	**Q3**	**Q4**	**Q5**
	minimise emissions and their impact so that environmental values are maintained.	The biological processes that depend on the air quality		Uncertain	☐	☐	☐	☐
				N/A	☐	☐	☐	☐
	If you answered No to any screening questions for Air quality, provide justification here: With effective implementation of mitigation measures through in GEMCO standard operating procedures and management plans and implementation of a CEMP capturing mitigation measures identified in the *Air quality impact assessment report* (Appendix E) the Proposal is not likely to significantly affect air quality values. Therefore, it is concluded that the NT EPA's objective for air quality will be met. Refer Section 6.1.3.6 of the Environmental Referral Report.							
	2) Atmospheric processes	A contribution to the NT's greenhouse gas emissions through nearing or reaching emission thresholds for:	Refer Section 6.1.3.7 of the Environmental Referral Report.	Yes	☐	☐	☐	☐
	Objective: Minimise greenhouse gas emissions so as to contribute to the Government's goal of achieving net zero greenhouse gases by 2050	Industrial projects of 100 000 tCO2-e scope 1 emissions per year not counting emissions generated from land clearing		No	☒	☒	☒	☒
		Land use projects of 500 000 tCO2-e scope 1 emissions from single or cumulative land clearing actions		Uncertain	☐	☐	☐	☐
				N/A	☐	☐	☐	☐
	If you answered No to any screening questions for Atmospheric processes, provide justification here: The Proposal is not likely to significantly affect atmospheric process values. Therefore, it is concluded that the NT EPA's objective to minimise greenhouse gas emissions so as to contribute to the Government's goal of achieving net zero greenhouse gases by 2050 will be met. Refer Section 6.1.3.7 of the Environmental Referral Report.							
PEOPLE	1) Community and economy	Communities, towns and suburbs where people live	Refer Section 6.1.3.8 of the Environmental Referral Report.	Yes	☒	☐	☐	☐
	Objective: Enhance communities and the economy for the welfare, amenity and benefit of current and future generations of Territorians.	Community aspirations for liveable environment and healthy lifestyles,		No	☐	☒	☒	☒
		Affordable access to food, water, electricity, transport, and communication networks.		Uncertain	☐	☐	☐	☐
		Good amenity – air quality, noise, aesthetics		N/A	☐	☐	☐	☐
		Access to social infrastructure and services including transport and logistics						

Theme	Environmental factor and objective	Indicative environmental values and sensitivities relevant to each environmental factor	Relevance to Project	Proponent's answer to screening questions 1-5				
				Q1	**Q2**	**Q3**	**Q4**	**Q5**
		Access to natural resources including bush food						
		Recreational use of the natural or built environment (e.g., fishing, cycling, sports, picnics)						
		Species of social, cultural, livelihood and or economic importance (terrestrial, aquatic and marine biota)						
		Participation in jobs, businesses, and education						
		Existing industries such as agriculture, pastoralism, tourism, fisheries						
		Vulnerable sectors of the community						
	If you answered No to any screening questions for Community and economy, provide justification here: The NT EPA's objective to enhance communities and the economy for the welfare, amenity and benefit of current and future generation of Territorians will be met through the continued operations of the GEMCO mine on Groote Eylandt. Refer Section 6.1.3.8 of the Environmental Referral Report.							
	2) Culture and heritage	Aboriginal cultural values	Refer Section 6.1.3.9 of the Environmental Referral Report.	Yes	☐	☐	☐	☐
	Objective: Protect culture and heritage.	Sacred sites		No	☒	☒	☒	☒
		The Territory's natural and built heritage		Uncertain	☐	☐	☐	☐
		Declared heritage places and objects protected under the Heritage Act 2011 (NT) such as:		N/A	☐	☐	☐	☐
		Any Aboriginal or Macassan archaeological place or object (coastal mounds and middens, rock art, stone arrangements, quarries, artefacts, graves, burial sites and ancestral remains)						
		Underwater cultural heritage (isolated objects, shipwrecks, plane wrecks, underwater cables and evidence of Aboriginal occupation prior to sea level rise)						
		Built heritage (colonial buildings and other historic buildings)						
		Defence structures (defensive positions and airfields)						
		Natural features (meteorite impact sites, palaeontological sites, springs, trees)						

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				Q1	**Q2**	**Q3**	**Q4**	**Q5**
		World heritage						
		Underwater cultural heritage protected under the Underwater Cultural Heritage Act 2018 (Cth)						
		Aboriginal rights and interests, including right of access						
	If you answered No to any screening questions for Culture and heritage, provide justification here: With effective implementation of avoidance measures documented in the referral through selection of the Proposal option and implementation of a CEMP capturing inductions and unexpected finds protocols the Proposal is not likely to significantly affect cultural and heritage values. Therefore, it is concluded that the NT EPA's objective for protecting culture and heritage will be met. Refer Section 6.1.3.9 of the Environmental Referral Report.							
	3) Human health	Drinking water	Refer Section 6.1.3.10 of the Environmental Referral Report.	Yes	☒	☐	☐	☐
	Objective: Protect the health of the Northern Territory population.	Air quality		No	☐	☒	☒	☒
		Bush tucker		Uncertain	☐	☐	☐	☐
		Radiological limits		N/A	☐	☐	☐	☐
		Biting insects						
	If you answered No to any screening questions for Human health, provide justification here: With effective implementation of avoidance measures documented in the referral through selection of the Proposal option and implementation of a CEMP the Proposal is not likely to significantly affect human health including drinking water, air quality, bush tucker, radiological limits or biting insects. Therefore, it is concluded that the NT EPA's objective for protecting the health of the NT population will be met. Refer Section 6.1.3.10 of the Environmental Referral Report.							