

# **Decision Report**

# **Application for Works Approval**

#### Division 3, Part V Environmental Protection Act 1986

Works Approval Number	W6752/2022/1
Works Approval Holder ACN	De Grey Mining Ltd 094 206 292
File Number	DER2022/000465
Premises	Wingina Exploration Mining Camp and Coreyard
	PORT HEDLAND WA 6721
	PORT HEDLAND WA 6721 Legal description -
	PORT HEDLAND WA 6721 Legal description - Miscellaneous lease L45/578 As defined by the coordinates in Schedule 2 of the works approval
Date of Report	PORT HEDLAND WA 6721 Legal description - Miscellaneous lease L45/578 As defined by the coordinates in Schedule 2 of the works approval

Adam Green

A/MANAGER, WASTE INDUSTRIES REGULATORY SERVICES

Officer delegated under section 20 of the Environmental Protection Act 1986

## **Table of Contents**

1.	Definitions of terms and acronyms1				
2.	Application Summary3				
3.	Bac	kground	3		
4.	Exc	lusions to Premises	6		
5.	Ove	rview of Premises	7		
	5.1	Infrastructure	7		
6.	Leg	islative context	10		
7.	Loc	ation and siting	11		
	7.1	Residential and sensitive receptors	11		
	7.2	Specified ecosystems	12		
	7.3	Groundwater and water sources	12		
	7.4	Soil type	13		
	7.5	Climate	13		
	7.6	Applicant controls	14		
8.	Risł	k assessment	15		
	8.1	Determination of emission, pathway and receptor	15		
9.	Арр	licant's comments	22		
10.	Con	clusion	22		
App	endix	x 1: Key documents	23		
App	endix	x 2: Application validation summary	24		
Table	e 1: D	Pefinitions	1		
Table	e 2: P	rescribed premises category	3		
Table	e 3: D	ocuments and information submitted during the assessment process	3		
Table	e 4: E	xpected water quality for the WWTP under standard testing conditions	4		
Table	e 5: T	otal Dissolved Solids (TDS) in local bore water and RO reject water	6		
Table	e 6: W	/WTP facility Category 85 infrastructure	7		
Table	e 7: S	ummary of approvals relevant to the assessment	10		
Table	e 8: R	eceptors and distance from activity boundary	11		
Table	9: E	nvironmental values	12		
Table	e 10: (	Groundwater and water sources	12		
Table	e 11: \$	Soil and sub-soil characteristics	13		
Table	e 12: I	Proposed controls / management measures	14		
Table	e 13: I	Identification of emissions, pathway and receptors	15		
Table	e 14: I	Risk assessment – Time limited operation and operation	19		

# 1. Definitions of terms and acronyms

In this decision report, the terms in Table 1 have the meanings defined.

#### Table 1: Definitions

Term	Definition		
AACR	Annual Audit Compliance Report.		
ACN	Australian Company Number.		
AER	Annual Environment Report.		
Category / Categories / Cat.	Categories of prescribed premises as set out in Schedule 1 of the EP Regulations.		
CFU	Colony forming units.		
CS Act	Contaminated Sites Act 2003 (WA)		
decision report	refers to this document.		
Delegated Officer	an officer under section 20 of the EP Act.		
Department	means the department established under section 35 of the <i>Public Sector Management Act 1994</i> and designated as responsible for the administration of Part V, Division 3 of the EP Act.		
DWER	Department of Water and Environmental Regulation.		
	As of 1 July 2017, the Department of Environment Regulation (DER), the Office of the Environmental Protection Authority (OEPA) and the Department of Water (DoW) amalgamated to form the Department of Water and Environmental Regulation (DWER). DWER was established under section 35 of the <i>Public Sector Management Act 1994</i> and is responsible for the administration of the <i>Environmental Protection Act 1986</i> along with other legislation.		
emission	has the same meaning given to that term under the EP Act.		
environmental commissioning phase	a period of time allowing for stabilisation and optimisation of the process following input of raw materials under operating conditions (including emissions) to confirm that emissions meet predicted levels prior to ongoing operation.		
Environmental Compliance Report	means a report used to satisfy that works have been constructed in accordance with a works approval.		
EPA	Environmental Protection Authority.		
EP Act	Environmental Protection Act 1986 (WA)		

Term	Definition
EP Regulations	Environmental Protection Regulations 1987 (WA)
EPBC Act	Environment Protection and Biodiversity Conservation Act 1999 (Cth)
existing licence	the licence issued under Part V Division 3 of the EP Act and in force prior to the commencement of, and during this review.
licence holder	De Grey Mining Ltd.
m³	cubic metres.
Minister	the Minister responsible for the EP Act and associated regulations.
MS	Ministerial Statement.
mtpa	million tonnes per annum.
NEPM	National Environmental Protection Measure.
Noise Regulations	Environmental Protection (Noise) Regulations 1997 (WA)
occupier	has the same meaning given to that term under the EP Act.
prescribed premises	has the same meaning given to that term under the EP Act.
premises	refers to the premises to which this decision report applies, as specified at the front of this decision report.
risk event	as described in Guideline: Risk Assessments.
time limited operations phase	operations permitted under a works approval, subject to conditions, while an application for a licence/licence amendment is assessed.
TSS	means total suspended solids.
works approval holder	De Grey Mining Ltd.
WWTP	means wastewater treatment plant.

# 2. Application Summary

De Grey Mining Ltd. (the applicant) has submitted this works approval (application) for the construction and operation of a temporary Wastewater Treatment Plant (WWTP) and sprayfield at the Wingina Exploration Mining Camp and Coreyard site (the site). The proposed WWTP is located on miscellaneous lease L45/578 which provides the boundary for the prescribed premises (Figures 2 & 3).

This decision report presents an assessment of potential environmental and public health risks from emissions and discharges from WWTP and sprayfield construction and operation. As a result of this assessment, a works approval has been granted.

The application was received on 8 September 2022 for construction of a WWTP and sprayfield (Category 85 prescribed premises sewage facility). Table 2 lists the prescribed premises category that has been applied for. Table 3 lists the documents submitted during the assessment process.

Classification of Premises	Description	Approved Premises production or design capacity or throughput
Category 85	<ul> <li>Sewage facility: premises -</li> <li>(a) on which sewage is treated (excluding septic tanks); or</li> <li>(b) from which treated sewage is discharged onto land or into waters.</li> </ul>	<ul><li>35 cubic metres per day design capacity</li><li>15 cubic metres per day annual average throughput</li></ul>

 Table 2: Prescribed premises category

Table 3: Docum	ents and information	n submitted during	a the assessment	process
			g accessine	p

Document/information description	Date received
Attachment 1A: Proof of Occupier Status Attachment 1B: ASIC Company Extract Attachment 1C: Authorisation to act as representative of the occupier Attachment 2A: Premises Map Attachment 2B: Premises Map + Infrastructure_Site Layout Attachment 2C: Premises Map + Site Layout_Monitoring Bores Attachment 3A: Environmental Commissioning Plan Attachment 3B: Mak Water Design Specifications Attachment 5: Other Approvals Attachment 6A: Emissions and Controls Attachment 7: Siting Location Premises Map + Sensitive Receptors Attachment 10: Fee Calculations	8/09/2022

Wingina camp is located on cleared land on the Indee Pastoral Station which was purchased with an old wastewater treatment plant already in place. The applicant proposes to upgrade the existing camp and wastewater treatment plant to accommodate an average occupancy of 70 personnel per day and a maximum capacity of 100 personnel per day (occupancy is dependent on operational requirements).

# 3. Background

Wingina Camp is located on Indee Road, 74 km south of Port Hedland. The camp contains accommodation, mess and office facilities to support a Gold Mining Project. De Grey Mining Ltd. proposes to replace the existing WWTP to manage sewage and effluent waste disposal at the site.

Key buildings on-site include:

- Site office
- Kitchen, two laundry buildings and mess
- Fuel storage for 15,000 litres of diesel and generator
- Core processing area and storage shed
- Communications and internet infrastructure
- 2 x toilet blocks
- 3 x 27,000 litre plastic tanks for potable water storage

De Grey mining Ltd. has engaged MAK Water to provide and install an Activated Sludge Bed Bioreactor (ASBR) to replace an existing WWTP. The proposed wastewater treatment plant model is ASBR-035-C-X-A-S-I-P-C and will process up to 35 m<sup>3</sup>/day of wastewater discharge. It is a factory tested, prefabricated, self-contained modular system, assembled onsite by the MAK Water team.

MAK Water's ASBR plants are designed to specifications in accordance with Australian Standards, including AS 3000 for the electrical component.



Figure 1. MAK Water's ASBR Bioreactor

The treated effluent from the WWTP will be discharged through a spray irrigation system. A sprayfield of 0.8 ha already exists on the site and an additional sprayfield of 0.87 ha will be added to increase the discharge capacity.

This sprayfield size is considered sufficient to prevent ponding or runoff of water and is designed to distribute water evenly via 14 sprinklers. It is expected to produce treated effluent to the quality outlined in Table 4.

Table 4: Exi	pected water (	quality fo	r the	WWTP	under	standard	testing	conditions
	pected water	quanty 10			unuer	Standard	testing	contaitions

Parameter	Proposed wastewater treatment quality	Unit
рН	6.5 - 8.5	рН
Biological Oxygen Demand	<20	mg/L
Total Suspended Solids	<30	mg/L
Total Nitrogen	N/A (no reduction)	mg/L
Total Phosphorus	4-12	mg/L
E. coli	<1000	cfu/100 ml

The depth to groundwater beneath the premises is expected to be between 9.6 - 10.9 m. The

nearest sensitive human receptor, Indee Station Homestead, is 376 m east of the northern irrigation sprayfield and approximately 300 m east of the proposed WWTP facility. Given the distance to surface water receptors, the risk to surface waters due to sprayfield irrigation is considered negligible.

The soil in the vicinity of the sprayfield is red loam soil, with an alluvial sandy surface that forms part of the Mallina soil landsystem. The soils have been assessed as Category 'B' (based on soil type and the low risk of surface water eutrophication) in accordance with *Water Quality Protection Note 22 - Irrigation with Nutrient-rich Wastewater (Department of Water, 2008)* (WQPN 22). The Phosphorus Buffering Index (PBI) of the sprayfield soil is 27.1 and is therefore too low for the soils to be to be assessed as Category C or D, which applies to fine grained soils with a PBI greater than 100.

The calculations presented indicate that a minimum irrigation area of 1.61 ha is required for a camp of 70 people with an estimated effluent discharge of 12.6 kL/day, with phosphorus being the limiting factor. A sprayfield area of 1.67 ha is available on the site to comply with the nutrient application rates outlined in *Water Quality Protection Note 22 – Irrigation with Nutrient-rich Wastewater (Department of Water, 2008),* for soil type B (i.e. 180 kg/hectare/year for N and 20 kg/hectare/year for P).

In the initial application, the irrigation area was significantly undersized for an effluent discharge throughput of 35 kL/day (assessed design capacity), as the applicant initially assessed the soil type as Category D (WQPN 22). Further investigation revealed soils to be Category B, requiring a minimum sprayfield size of 5.5 ha for a thoughput of 35 kL/day to be considered sustainable over the long term.

The applicant advised that the proposed irrigation sprayfield size can be retained by limiting average effluent discharge throughput to 12.6 kL/day and reducing total phosphorus output from 8.62 mg/L to 7 mg/L. The applicant proposes to reduce the hydraulic load by collecting Reverse Osmosis (RO) reject water in a tank and re-using it, rather than applying it to the irrigation sprayfield.

It is noted that the revised discharge volumes are reduced over the original application volumes, due in part to limited attenuation of nutrients in the proposed treatment system. Ammonia, total nitrogen (TN) and total phosphorus (TP) concentrations in mining camp effluent discharge can be significantly impacted by the chemical composition of cleaning agents (and the amount) used for housekeeping and other inputs. Where additional future irrigation capacity is required, and treatment/irrigation area upgrades are not proposed, the applicant is advised to investigate the use of low ammonia and low phosphorus inputs in order to improve irrigated wastewater quality.

# 4. Exclusions to Premises

The use and treatment of bore water does not relate to Category 85 activities unless it is discharged to the irrigation sprayfield; therefore the treatment, storage and use of Indee Homestead bore water will not be assessed in this application. Details regarding these activities are provided for information purposes only.

De Grey Mining Ltd. uses water from the Indee Homestead bore as a potable water supply for Wingina Camp. The bore water is brackish so Reverse Osmosis (RO) is used for purification. An average of 8.19 kL/yr of RO reject water is to be collected in a tank on-site for use in dust suppression activities associated with further exploration. Over an annual period, an average of 23.39 kL of water is processed through the RO plant and an average of 15.21 kL of potable water is produced. Table 5 shows Total Dissolved Solids (TDS) in local bore water compared to RO reject water.

Date	Indee Homestead bore	WPB001 bore	RO Plant reject water
05/12/20	-	6920 mg/L	-
22/04/21	1950 mg/L	-	-
10/11/21	-	-	5210 mg/L
19/01/22	1960 mg/L	-	-
11/04/23	-	4530 mg/L	-

Table 5: Total Dissolved Solids (TDS) in local bore water and RO reject water.

To minimise environmental impacts of directly discharging RO reject water to land, the applicant has proposed the following controls:

- Application of a large droplet size when using water for dust suppression;
- Protection of roadside vegetation from over spraying;
- Regular roadside diversion drain maintenance to minimise impacts to vegetation resulting from stormwater run-off; and
- Bore monitoring and monitoring of roadside vegetation health against baseline data enabling impacts to be recognised.

# 5. Overview of Premises

### 5.1 Infrastructure

The WWTP facility infrastructure, as it relates to Category 85 activities, is detailed in Table 6 and with reference to the Site Plan as shown in Figures 1 & 2 of the works approval.

Table 6: WWTP facility Category 85 infrastructure

	Infrastruct	Site Plan Reference		
1	Activa	ited Sludge Bed Bioreactor (ASBR)	Activated Sludge	
	<ul> <li>Influei</li> </ul>	Influent Screen		
	<ul> <li>Balan</li> </ul>	ce Tanks, Aerobic Tank, Treated Effluent Tank, Sludge Tank		
	<ul> <li>Subm</li> </ul>	ersible Aerator, Clarifier		
	Concr	ete pad and Plant Room including:		
	0	Motor control centre (MCC) and Programmable Logic Controller (PLC) System with Touch Screen HMI		
	0	Balance Tank Mixing Pump		
	0	Bioreactor Feed Pump		
	0	Return Activated Sludge (RAS)/Wasting Activated Sludge (WAS) Pump		
	0	Irrigation Pump		
	0	Coagulant Dosing Pump and 200L Dosing tank		
	0	Supernatant Transfer Tank and pump		
2	Irrigation sprayfield extension area including: Sprayfield		Sprayfield	
	0	370 m pipeline		
	0	800 m fence line		
	0	Access gate		
	0	Above ground sprinklers		



#### Figure 2. Location and site layout.



#### Figure 3. Site layout

#### **Construction activities**

The MAK Water team will install and commission the plant. Following delivery to the site, WWTP construction activities are expected over 10 days, establishing civil-work foundations, a concrete base and compacted earth for tanks, and a containerised plant room.

The sprayfield construction activities involves clearing of the perimeter fence, access track, pipeline installation, trenching (including valves), risers and sprinklers.

The plant will be commissioned once the mechanical and electrical installation has been completed (for tanks, piping, pumps, bioreactors and container), influent is available and required chemicals are onsite.

Overall, WWTP construction and sprayfield extension will take up to 28 days and environmental commissioning will commence thereafter.

#### Commissioning

WWTP will be commissioned for up to 120 days with monitoring undertaken to ensure the effluent water quality parameters are achieved. During the commissioning period, weekly effluent monitoring will be conducted until target water quality parameters are met for at least two consecutive monitoring events.

Following commissioning, the system will continue to operate under time limited operations. During this time, effluent sampling will continue in accordance with works approval conditions.

Commissioning and time limited operations will be undertaken under the works approval, to allow for the assessment and determination of a licence application.

### 6. Legislative context

The legislative framework for this assessment is the *Environmental Protection Act 1986* (EP Act) and *Environmental Protection Regulations 1987* (EP Regulations).

The premises is located within the Shire of Port Headland. Approvals relevant to the premises are outlined in Table 7 below. Relevant guidance documents are outlined in Appendix 1: Key documents.

Legislation	Number	Approval
Environmental Protection Act 1986	N/A	The applicant does not currently hold any Part V operating licences or works approvals in this location.
Mining Act 1978	Small Mining Proposal Application ID 112458 over L45/578	Mining within approximately 100 m of a yard, garden, airstrip and homestead as well as within 400 m of a bore as per section 20(5) of the Mining Act 1978. Site was already cleared of vegetation.

Table 7: Summary of	f approvals relevant to the assessment.
---------------------	---

# 7. Location and siting

### 7.1 Residential and sensitive receptors

The distances to residential and sensitive receptors are detailed in Table 8 and Figure 4. The risks are outlined in the sections below in relation to the nearest sensitive receptors.

Sensitive Land Uses	Distance from Prescribed Activity
Residential Premises	Indee Station Homestead is 376 m east of the northern irrigation sprayfield (the closest emission discharge point) and 300 m east of the Wastewater Treatment Plant facility. A letter dated July 2022 was submitted to DMIRS by an Indee Homestead resident, consenting to the mining proposal application.
Towns / Communities	<ul> <li>Mt Dove Campsite is 20 km south-west</li> <li>Yandeyarra Remote Community is more than 20 km south-west</li> <li>Port Hedland town limit is 40 km to the north.</li> </ul>
Aboriginal and other heritage sites	The Department of Planning, Lands and Heritage (DPLH) Registered Aboriginal Site 11658, was within the premises footprint when assessment began. Heritage surveys with Kariyarra Aboriginal Corporation, involving an extensive search of the area, was conducted, and failed to locate cultural materials and engravings associated with the site. Discussions to reassess the site boundary were carried out between De Grey Mining Ltd. and DPLH. De Grey Mining Ltd. informed the Department of Water and Environmental Regulation (DWER) on 31 January 2023, that the site no longer intersects with the proposal area. Whilst officer level comments from DPLH indicate support for this revised position, no formal notification has been received from DPLH. The site boundary was updated to exclude the premises in DWER records on 4 January 2023.

Table 8: Receptors and distance from activity boundary



Figure 2. Receptor map

### 7.2 Specified ecosystems

Specified ecosystems are areas of high conservation value and special significance that may be impacted as a result of activities at the premises or by emissions and discharges from the premises. The distances to specified ecosystems are shown in Table 9.

Table 9 also identifies the distances to other relevant ecosystem values which do not fit the definition of a specified ecosystem. The table has also been modified to align with the *Guideline: Environmental Siting* (DWER 2020).

	Т	able	9:	Enviro	nmental	values
--	---	------	----	--------	---------	--------

Specified ecosystems	Distance from the Premises		
Threatened Ecological Communities and Priority Ecological Communities	Threatened/Priority Flora - Nil Threatened / Priority Fauna Present on the site especially north, south and east of the site – Mammals - <i>Dasyurus hallucatus</i> - Northern quoll and <i>Dasycercus blyth</i> - Brush-tailed mulgara.		

#### 7.3 Groundwater and water sources

The distances to groundwater and water sources are shown in Table 10. The distance to Indee Homestead well from the irrigation sprayfield is detailed in Figure 2.

Groundwater and water sources	Distance from Premises	Environmental value
Public drinking water source areas (PDWSA).	The Wingina Camp WWTP is not located within a PDWSA. PDWSA is >25 km to the west	Yule River Water Reserve
Major watercourses /waterbodies	Located between fork in the Turner River System at 5.2 km east and 6.2 west	Calculated area is sufficiently sized to receive discharge of treated effluent. The area is not subject to seasonal flooding and the distance to Turner River is not considered a contamination risk.
Groundwater	The groundwater is estimated to be between 9.5-11m below ground level	Water is extracted from two groundwater bores under s.5C of the <i>Rights in Water and Irrigation Act</i> <i>1914</i> (GWL204172(2)): Indee homestead well (groundwater bore WIR site reference no. 70911072) is located 356 m northeast of the south-eastern corner of the southern irrigation sprayfield (Figure 2) and approximately 290 m east of the proposed WWTP facility. Bore water is pumped to storage tanks located at Wingina camp and is processed via reverse osmosis to produce potable water for Wingina camp and Indee Homestead. 8.19 kL/yr of RO reject water to be collected in a tank for use in exploration and dust suppression activities. HPB001 is 18 km southwest of Wingina Camp and DEG bore WPB001 is approximately 90 m southwest of the sprayfield and is not used as potable water.

Table 10: Groundwater and water sources

### 7.4 Soil type

Table 11 details soil types and characteristics relevant to the assessment.

Table 11: Soil and sub-soil characteristics

Soil Type	Premises soil and sub-soil characteristics
Soil type classification	The Wingina camp is located within the Mallina System, typically described as sandy surfaced alluvial plains supporting soft spinifex grasslands and minor hard spinifex and tussock grasslands.
	The soils are described as Alluvial plains, which are frequently badly surface eroded, and levees associated with prior streams:
	Soils are hard alkaline red soils and together with various sandy alkaline red soils.
	Sandy soils occur on levees and prior stream channels, small areas of red dune soils, and some sandy red earths.
	Erosion has removed the sandy surfaces and the resulting clay pans have sandy clay soils
Acid sulfate soil risk	A desktop assessment has shown there are no PASS in the proposed prescribed premise of Wingina Camp.

### 7.5 Climate

The climate at the site is characterised as semi-arid to tropical due to occasional severe weather from tropical cyclones and rain bearing depressions (ex-tropical cyclones).

Meteorological data from the Port Hedland airport shows an annual average rainfall of 317.8 mm with most rainfall occurring between December and June.

Average maximum temperatures range from 36.8 °C in March to 27.3 °C in July, with average minimum temperatures ranging from 25.6 °C in January to 12.5 °C in July.

### 7.6 Applicant controls

The applicant has proposed the following management controls as part of the application:

Source	Emission (as identified above)	Proposed controls			
Construction of	Dust	Location of premises is a significant distance from receptors.			
and installation of equipment.	Noise	Location of premises is a significant distance from receptors.			
Commissioning of the WWTP	Discharge of partially treated	• Discharge of untreated water to the sprayfield is not expected during commissioning.			
	land	• Weekly, followed by monthly validation monitoring of effluent quality during the commissioning period.			
		• System will be tested for leaks prior to commissioning by running raw water through the system.			
Operation of	Odour	WWTP has enclosed tanks.			
the WWIP		• Sludge will be removed when required by a licensed contractor and disposed of to an authorised landfill in accordance with the Environmental Protection (Controlled Waste) Regulations 2004.			
		• Effluent treatment to a standard suitable for irrigation based on the Department's <i>Water Quality Protection Note 22</i> to minimise concentration of odorous compounds.			
	Spills/ unintended releases of untreated wastewater	<ul> <li>Location of premises with a significant separation from groundwater.</li> </ul>			
		• WWTP pump-out tank fitted with alarm to enable the system to be managed to prevent the facility overtopping.			
		• Pipes carrying treated wastewater will be buried below ground to minimize disturbance of pipeline.			
		Regular inspection of WWTP			
Operation of the irrigation	Discharge of treated	<ul> <li>Irrigation sprayfield sited in an area with high evaporation rate which will reduce likelihood of pooling/waterlogging.</li> </ul>			
sprayfield	wastewater to land	• Irrigating over an area of sufficient size (as determined by Department's <i>Water Quality Protection Note 22</i> ) to prevent excess nutrient loading.			
		• Flow meter installed at discharge pipe to ensure approved volume to irrigation field is not exceeded.			
		<ul> <li>Monthly monitoring of effluent quality to ensure it meets expected nutrient concentrations.</li> </ul>			
		Fencing around the irrigation area.			

 Table 12: Proposed controls / management measures.

### 8. Risk assessment

### 8.1 Determination of emission, pathway and receptor

In undertaking its risk assessment, DWER will identify all potential emissions pathways and potential receptors to establish whether there is a Risk Event which requires detailed risk assessment.

To establish a Risk Event there must be an emission, a receptor which may be exposed to that emission through an identified actual or likely pathway, and a potential adverse effect to the receptor from exposure to that emission. Where there is no actual or likely pathway and/or no receptor, the emission will be screened out and will not be considered as a Risk Event. In addition, where an emission has an actual or likely pathway and a receptor which may be adversely impacted, but that emission is regulated through other mechanisms such as Part IV of the EP Act, that emission will not be risk assessed further and will be screened out through Table 13.

The identification of the sources, pathways and receptors to determine Risk Events are set out in Table 13 and Table 14 below.

#### Table 13: Identification of emissions, pathway and receptors

Risk Event			Consequence		
Potential emissions	Potential receptors, pathway and impact	Applicant controls	Likelihood rating *	Reasoning	Regulatory controls (refer to conditions of the granted instrument)
		- The potential for dust generation is likely to be negligible and contained within the immediate vicinity of the works.			
Dust Air/windborne pat causing impacts t amenity of closes receptors (Indee Station Ho 376 m east of the sprayfield, Mt Dov 20 km south-west Yandeyarra Remo Community more	Air/windborne pathway causing impacts to health and amenity of closest human receptors	- To control dust emissions during earthworks, water trucks will be used to suppress dust on high traffic areas as required.	N/A	The minor construction works (equipment placement) are not expected to generate significant dust emissions. The general provisions of the EP Act are considered sufficient in regulating dust emissions.	N/A – no additional controls required.
	(Indee Station Homestead 376 m east of the WWTP	- Speed limits will be imposed on unsealed roads			
	sprayfield, Mt Dove Campsite 20 km south-west, Yandeyarra Remote Community more than 20 km	- De Grey's Air Quality Management Procedure (DEG-EN-PR009) will be implemented.			
Noise	south-west, and Port Hedland town limit is 40 km north).	<ul> <li>Noise will be emitted from earthworks, construction and operations associated with the proposed WWTP development.</li> <li>Works are planned to occur during day shift</li> </ul>		Given the short construction time and day shift hours, the limited amount of noise generated from operational activities are not considered to be a significant risk for this proposal. The nearest sensitive receptor (Indee Station Homestead) has been consulted on this aspect	N/A - Environmental Protection (Noise) Regulations 1997 apply.
	Potential emissions Dust Noise	Potential emissionsPotential receptors, pathway and impactDustAir/windborne pathway causing impacts to health and amenity of closest human receptors(Indee Station Homestead 376 m east of the WWTP sprayfield, Mt Dove Campsite 20 km south-west, Yandeyarra Remote Community more than 20 km south-west, and Port Hedland town limit is 40 km north).Noise	Potential emissionsPotential receptors, pathway and impactApplicant controlsDustAir/windborne pathway causing impacts to health and amenity of closest human receptors- The potential for dust generation is likely to be negligible and contained within the immediate vicinity of the works.DustAir/windborne pathway causing impacts to health and amenity of closest human receptors- The potential for dust generation is likely to be negligible and contained within the immediate vicinity of the works.Indee Station Homestead 376 m east of the WWTP sprayfield, Mt Dove Campsite 20 km south-west, Yandeyarra Remote Community more than 20 km south-west, and Port Hedland town limit is 40 km north) Speed limits will be imposed on unsealed roadsNoise- Noise will be emitted from earthworks, construction and operations associated with the proposed WWTP development. - Works are planned to occur during day shift hours and over approximately 14-28 days.	Potential emissionsPotential receptors, pathway and impactApplicant controlsConsequence rating*DustAir/windborne pathway causing impacts to health and amenity of closest human receptors- The potential for dust generation is likely to be negligible and contained within the immediate vicinity of the works To control dust emissions during earthworks, water trucks will be used to suppress dust on high traffic areas as required To control dust emissions during earthworks, water trucks will be used to suppress dust on high traffic areas as required.N/ANoiseNoise will be emitted from earthworks, south-west, and Port Hedland town limit is 40 km north) Noise will be emitted from earthworks, construction and operations associated with the proposed WVTP development.N/A	Potential emissions         Potential receptors, pathway and impact         Applicant controls         Consequence rating* Likelihood rating * Risk*         Reasoning           Dust         Air/windborne pathway causing impacts to health and areceptors (Indee Station Homestead 20 km south-west, and Port HedIan town limit is 40 km north).         - The potential for dust generation is likely to be negligible and contained within the immediate vicinity of the works.         - The potential for dust generation is likely to be negligible and contained within the immediate vicinity of the works.         - To control dust emissions during earthworks, water trucks will be used to suppress dust on high traffic areas as required.         - To control dust emissions during earthworks, water trucks will be used to suppress dust on high traffic areas as required.         - Need limits will be imposed on unsealed roads         - Speed limits will be imposed on unsealed roads         - Speed limits will be imposed on unsealed roads         - Speed limits will be imposed on unsealed roads         - N/A         - Speed limits will be emitted from earthworks, construction and operations associated with the proposed WVITP development.         N/A         - Nise will be emitted from earthworks, construction and operations associated with the proposed WVITP development.         - Works are planned to occur during day shift hours and over approximately 14-28 days.         - Works are planned to occur during day shift hours and over approximately 14-28 days.

Risk Event				Consequence	
Source/Activities	Potential emissions	Potential receptors, pathway and impact	Applicant controls	Likelihood rating *	Reasoning
Commissioning of wastewater treatment plant Irrigation of treated wastewater to sprayfield during commissioning	Odour	Air/windborne pathway causing impacts to health and amenity The closest human receptor is Indee Station Homestead (376 m east of the closest WWTP sprayfield), Mt Dove Campsite is 20 km south- west, Yandeyarra Remote Community is more than 20 km south-west, and Port Hedland town limit is 40 km north.	<ul> <li>Wingina Camp WWTP is located in a remote area.</li> <li>Sewage sludge will be contained and stored in an enclosed fibre-reinforced plastic sludge tank until disposed of.</li> <li>Effluent periodically pumped to controlled sprinkler irrigation sprayfields on vegetated land.</li> <li>Effluent water is treated in the bioreactor tank where it is mixed, aerated, clarified and dosed with chlorine prior to discharge.</li> <li>Checks for odours outside of the facility will occur on a daily basis.</li> <li>Should odours be detected, the source will be investigated and any identified maintenance or repairs undertaken.</li> <li>Weekly inspections for infrastructure integrity</li> <li>Monthly level inspections.</li> <li>Quarterly scheduled removal offsite by licensed control waste contractor.</li> <li>LS-202 waste sludge tank high level alarm.</li> </ul>	Slight Unlikely Low	Odour caused by tank overtopping is unlikely to occur due to installation of alarm systems to warn of high tank level and tank overtopping. Installation of a flow meter to monitor the volume of efflue discharged onto the sprayfield minimises the risk of efflue discharge volume exceeding 15 m <sup>3</sup> /day (yearly average) therefore minimising the risk of odour emissions due to excessive effluent discharge. Sprinkler arrangement on the sprayfield minimises the ris of pooling and ponding of effluent on the sprayfield surfa Spills and leaks will be cleaned up immediately minimisin odour emissions due to spillage. Weekly monitoring of final effluent for water quality parameters during commissioning minimises the risk of odour emissions as adjustments can be made to the treatment process to reduce contaminants. The final risk rating for this risk event is therefore deeme to be low.
	Discharge of untreated/partially treated wastewater to land as a result of spills/unintended release of wastewater from WWTP	Overtopping/leaks of WWTP infrastructure resulting in discharge of wastewater containing high levels of nutrients to land, impacting soil quality and the health of surrounding vegetation	<ul> <li>Weekly inspections for infrastructure integrity</li> <li>Monthly level inspections – monthly water quality sampling</li> <li>LT-301 treated effluent tank high level alarm.</li> </ul>	Minor Unlikely Medium	<ul> <li>In the event of overtopping of WWTP tanks or leaks of untreated sewage from tanks, low level impacts could occur.</li> <li>The majority of the WWTP facility will be placed in a cleared area and therefore vegetation is unlikely to be affected.</li> <li>Overtopping or leaks from tanks are unlikely to occur due the controls the applicant has proposed (i.e. high level alarms fitted to tanks and visual inspection of facility).</li> <li>The final risk rating for this risk event is therefore deeme to be medium.</li> </ul>

	Regulatory controls (refer to conditions of the granted instrument)
due vels	
fluent fluent ge), o	
rick	Works Approval
rface.	Condition 1 - Infrastructure and equipment specifications.
ISING	Condition 5 - Operational controls during commissioning.
of	Condition 6 - Authorised discharge points.
	Condition 7 - Monitoring
ned	
f	
	Works Approval
	Condition 1 - Infrastructure and equipment specifications.
due to	Condition 5 - Operational controls during commissioning.
	Condition 6 - Authorised discharge points.
ned	

Risk Event				Consequence		
Source/Activities	Potential emissions	Potential receptors, pathway and impact	Applicant controls	Likelihood rating *	Reasoning	Regulatory controls (refer to conditions of the granted instrument)
		Pipeline leaks resulting in treated effluent being released to land which may impact the health of surrounding native vegetation and soils.	<ul> <li>Weekly inspections for infrastructure integrity</li> <li>Monthly level inspections - monthly water quality sampling</li> <li>LT-301 treated effluent tank high level alarm</li> </ul>	Minor Unlikely Medium	During commissioning the quality of treated wastewater discharged may be of a lower standard than that expected during operations. In the event of a leak from the delivery pipelines, low level onsite impacts may occur. Pipelines will be placed within a cleared mining area where little to no native vegetation will be present. Pipeline leaks are unlikely due to pipelines being buried (therefore being protected from damage) and due to the short duration of the commissioning phase. The risk rating for this risk event is therefore deemed to be medium.	Works Approval Condition 1 - Infrastructure and equipment specifications. Condition 5 - Operational controls during commissioning. Condition 6 - Authorised discharge points.
Commissioning of wastewater treatment plant Irrigation of treated wastewater to sprayfield during commissioning	Discharge of treated wastewater to land (irrigation field)	Pooling or waterlogging of soils within irrigation area resulting in runoff into surrounding areas (overland flow).	<ul> <li>Weekly inspections for infrastructure integrity</li> <li>Monthly level inspections - monthly water quality sampling</li> <li>LT-301 treated effluent tank high level alarm</li> </ul>	Minor Unlikely Medium	It is not expected that discharge to the irrigation sprayfield will occur during commissioning as the WWTP tanks are unlikely to fill enough for discharge. The irrigation sprayfield is surrounded by a cleared area within a mine site; however, the sprayfield is vegetated with tall and low open shrubland dominated by <i>Acacia</i> sp. over low hummock grassland, which will minimise runoff and erosion. There are no nearby sensitive surface water features or threatened vegetation. Pooling or waterlogging of soils leading to runoff into surrounding areas will therefore likely have low level onsite impacts if it were to occur during the commissioning period. Low drift sprinkler spray nozzles, placement of sprinklers and number of sprinklers (condition 1, item 1) ensure even distribution of discharge to the sprayfield. Enabling spray zones to be isolated or rotated (condition 1, item 2) allows operators to limit treated wastewater discharge to areas of the sprayfield that experience/are prone to waterlogging or pooling. The risk rating for this event is therefore deemed to be medium.	Works Approval Condition 1 - Infrastructure and equipment specifications. Condition 5 - Operational controls during commissioning. Condition 6 - Authorised discharge points.

Risk Event				Consequence		
Source/Activities	Potential emissions	Potential receptors, pathway and impact	Applicant controls	Likelihood rating *	Reasoning	Regulatory controls (refer to conditions of the granted instrument)
Commissioning of wastewater treatment plant Irrigation of treated wastewater to sprayfield		Excess discharge of treated wastewater onto the sprayfield resulting in nutrient loading of sprayfield soils, reduced soil quality and seepage of treated wastewater to groundwater. Distance to groundwater is ~9.57 – 10.92 mbgl.	The applicant has proposed to undertake monthly water quality monitoring of treated wastewater discharge to ensure it continues to meet the expected design effluent quality values - Weekly inspections for infrastructure integrity - Monthly level inspections - monthly water quality sampling - LT-301 treated effluent tank high level alarm	Minor Unlikely Medium	During commissioning, the quality of treated wastewater discharged may be of a lower standard than that expected during operations. Short term discharge of wastewater to the irrigation sprayfield has the potential to cause low-level onsite impacts. The likelihood of this risk event occurring is unlikely as a result of the applicant's controls. Limiting the final effluent discharge volume to 15 m <sup>3</sup> /day (yearly average), a flow meter installed to monitor the discharge volume, an irrigation sprayfield with an adequate size of 1.67 ha and weekly water quality monitoring during commissioning minimises the risk of excess nutrient loading and reduced soil quality, subsequently minimising risks of impacts to groundwater quality. The proposed irrigation area is vegetated with tall and low open shrubland dominated by <i>Acacia</i> sp. over low hummock grassland. Vegetation on the sprayfield reduces the risk of nutrients present in discharged treated wastewater reaching groundwater, due to plant nutrient uptake. In conditions 1 and 5, the discharge of RO reject water to the irrigation sprayfield is not permitted. If RO water is discharged with treated wastewater to the sprayfield, it has the potential to negatively impact native vegetation growing on the sprayfield, which will subsequently affect the ability of the vegetation to uptake nutrients. An absence or reduction of native vegetation has the potential to increase the risk of impacts to groundwater and surface water. Note: The sprayfield is within an area with a high evaporation rate, is vegetated and has been sized in accordance with WQPN 22 as Category B. Sprinkler arrangement on the sprayfield minimises the risk of pooling and ponding of effluent on the sprayfield surface. Spills and leaks will be cleaned up immediately minimising untreated and treated wastewater emissions impacting groundwater due to spillage. The risk rating for this event is therefore deemed to be medium.	Works Approval Condition 1 - Infrastructure and equipment specifications. Condition 5 - Operational controls during commissioning. Condition 6 - Authorised discharge points. Condition 7 - Monitoring of discharge water quality during commissioning.

\*Consequence ratings, likelihood ratings and risk descriptions are detailed in the Department's Guidance Statement: Risk Assessments (February 2017)

Risk Event			Consequence				
Source/Activities*	Potential emissions	Potential receptors, pathway and impact	Applicant controls	Likelihood rating** Risk**	Reasoning	Regulatory controls (refer to conditions of the granted instrument)	
Operation of wastewater treatment plant Irrigation of treated wastewater to sprayfield	Odour	Air/windborne pathway causing impacts to health and amenity. The closest human receptor is Indee Station Homestead located 376 m east of the closest WWTP sprayfield, Mt Dove Campsite is 20 km south- west, Yandeyarra Remote Community is more than 20 km south-west, and Port Hedland town is 40 km north.	<ul> <li>Weekly inspections for infrastructure integrity - monthly level inspections</li> <li>Monthly water quality sampling</li> <li>LT-301 treated effluent tank high level alarm</li> </ul>	Slight Unlikely Low	Odour caused by tank overtopping is unlikely to occur due to installation of alarm systems to warn of high tank levels and tank overtopping. Installation of a flow meter to monitor the volume of effluent discharged onto the sprayfield minimises the risk of effluent discharge volume exceeding 15 m³/day (yearly average), therefore minimising the risk of odour emissions due to excessive effluent discharge. Sprinkler arrangement on the sprayfield minimises the risk of pooling and ponding of effluent on the sprayfield surface. Spills and leaks will be cleaned up immediately minimising odour emissions due to spillage. Monthly monitoring of final effluent for water quality parameters during time limited operations minimises the risk of odour emissions as adjustments can be made to the treatment process to reduce contaminants. The final risk rating for this risk event is therefore deemed to be low.	Works Approval Condition 1 -Infrastructure and equipment specifications. Condition 13 - Infrastructure and equipment specifications during time limited operations. Condition 14 - Authorised discharge points. Condition 15 – Monitoring.	
	Discharge of untreated/partially treated wastewater to land as a result of spills/unintended release of wastewater from WWTP	Overtopping/leaks of WWTP infrastructure resulting in discharge of wastewater containing high levels of nutrients to land, impacting soil quality and the health of surrounding vegetation	<ul> <li>Weekly inspections for infrastructure integrity</li> <li>Monthly level inspections - monthly water quality sampling</li> <li>LT-301 treated effluent tank high level alarm</li> </ul>	Minor Unlikely Medium	In the event of overtopping of WWTP tanks or leaks of untreated sewage from tanks, low level onsite impacts and minimal offsite impacts may occur. The majority of the WWTP facility pipelines will be buried and placed in a cleared area within an active mine site; therefore vegetation is unlikely to be affected. However, soils surrounding the WWTP may be impacted. This risk event is unlikely to occur due to the controls the applicant has proposed (i.e. high level alarms fitted to tanks and daily visual inspection of the facility). Therefore, the final risk rating for this risk event is deemed to be medium.	Works Approval Condition 1 - Infrastructure and equipment specifications. Condition 13 - Operational controls during time limited operations. Condition 14 - Authorised discharge points. Licence Regulatory controls, if required, will be determined during the licence assessment.	

#### Table 14: Risk assessment – Time limited operation and operation

Risk Event				Consequence		
Source/Activities*	Potential emissions	Potential receptors, pathway and impact	Applicant controls	Likelihood rating** Risk**	Reasoning	Regulatory controls (refer to conditions of the granted instrument)
Operation of wastewater treatment plant Irrigation of treated wastewater to sprayfield		Pipeline leaks resulting in treated effluent being released to land which may impact the health of surrounding native vegetation and soils. - LT-301 trea alarm	<ul> <li>Weekly inspections for infrastructure integrity</li> <li>Monthly level inspections - monthly water quality sampling</li> <li>LT-301 treated effluent tank high level alarm</li> </ul>	Minor Unlikely Medium	In the event of a leak from delivery pipelines, low level onsite and minimal offsite impacts may occur. Pipelines will be buried and placed within a cleared mining area where little to no native vegetation will be present. Wastewater will be treated to meet quality outlined in the <i>Australian Guidelines for</i> <i>Sewage Systems – Effluent Management</i> (ANZECC, 1997). Pipeline leaks are unlikely due to pipelines being buried and therefore being protected from damage. The risk rating for this risk event is therefore deemed to be medium.	<ul> <li>Works Approval</li> <li>Condition 1 - Infrastructure and equipment specifications.</li> <li>Condition 13 - Operational controls during time limited operations.</li> <li>Condition 14 - Authorised discharge points.</li> <li>Licence</li> <li>Regulatory controls if required will be determined during licence assessment.</li> </ul>
	Discharge of treated wastewater to land (irrigation field)	Pooling or waterlogging of soils within irrigation area resulting in runoff into surrounding areas (overland flow)	<ul> <li>Weekly inspections for infrastructure integrity</li> <li>Monthly level inspections - monthly water quality sampling</li> <li>LT-301 treated effluent tank high level alarm</li> </ul>	Minor Possible Medium	<ul> <li>Pooling or waterlogging of soils leading to runoff into surrounding areas may have low level onsite and minimal offsite impacts if it were to occur. The irrigation field is surrounded by a cleared area within a mine site. There are no nearby surface water features.</li> <li>The applicant's controls are considered appropriate to mitigate this risk event in most circumstances; however, during and following heavy rainfall it is possible that treated effluent could pool on the ground surface leading to runoff into the surrounding area.</li> <li>Low drift sprinkler spray nozzles, placement of sprinklers and number of sprinklers (condition 1, item 1) ensure even distribution of discharge to the sprayfield. Enabling spray zones to be isolated or rotated (condition 1, item 2) allows operators to limit treated wastewater discharge to areas of the sprayfield that experience, or are prone to waterlogging or pooling.</li> <li>The risk rating for this event is therefore deemed to be medium.</li> </ul>	Works Approval Condition 1 - Infrastructure and equipment specifications. Condition 13 - Operational controls during time limited operations. Condition 14 - Authorised discharge points. Any additional regulatory controls will be determined during licence assessment.

Risk Event				Consequence			
Source/Activities*	Potential emissions	Potential receptors, pathway and impact	Applicant controls	Likelihood rating** Risk**	Reasoning	Regulatory controls (refer to conditions of the granted instrument)	
Operation of wastewater treatment plant Irrigation of treated wastewater to sprayfield	Discharge of treated wastewater to land (irrigation field)	Excess discharge of treated wastewater onto the sprayfield resulting in nutrient loading of sprayfield soils, reduced soil quality and seepage of treated wastewater to groundwater. Distance to groundwater is ~9.57 – 10.92 mbgl.	The applicant has proposed to undertake monthly water quality monitoring of treated wastewater discharge to ensure it continues to meet the expected design effluent quality values. - The applicant has prepared the application in accordance with WQPN 22. The irrigation area has been sized at 1.67 ha in order to comply with specifications for soil type B (i.e. 180 kg/ha/yr for nitrogen and 20 kg/ha/yr for phosphorus for an effluent discharge of 12.6 kL/day). - Weekly inspections for infrastructure integrity - Monthly level inspections - monthly water quality sampling - LT-301 treated effluent tank high level alarm	Moderate Unlikely Medium	The consequence of long-term discharge to the irrigation sprayfield on the environment is deemed to be moderate. Limiting the final effluent discharge volume to 15 m <sup>3</sup> /day (yearly average), a flow meter installed to monitor the discharge volume, an irrigation sprayfield size of 1.67 ha and weekly water quality monitoring during commissioning, minimises the risk of excess nutrient loading and reduced soil quality, subsequently minimising risks of impacts to groundwater quality. The proposed irrigation area is vegetated with tall and low open shrubland dominated by <i>Acacia</i> sp. over low hummock grassland. Vegetation on the sprayfield reduces the risk of nutrients present in discharged treated wastewater reaching groundwater, due to plant nutrient uptake. In conditions 1 and 13, the discharge of RO reject water to the irrigation sprayfield is not permitted. If RO water is discharged with treated wastewater to the sprayfield, it has the potential to negatively impact native vegetation growing on the sprayfield, which will subsequently affect the ability of the vegetation to uptake nutrients. An absence or reduction of native vegetation has the potential to increase the risk of impacts to groundwater and surface water. Note: The sprayfield is within an area with a high evaporation rate and the sprayfield has been sized in accordance with WQPN 22. Sprinkler arrangement on the sprayfield minimises the risk of pooling and ponding of effluent on the sprayfield surface. Spills and leaks will be cleaned up immediately minimising untreated and treated wastewater emissions impacting groundwater due to spillage. The risk rating for this event is therefore deemed to be medium.	Works Approval Condition 1 - Infrastructure and equipment specifications. Condition 13 - Operational controls during time limited operations. Condition 14 - Authorised discharge points. Condition 15 - Monitoring of emissions during time limited operations. Licence Regulatory controls, if required, will be determined during the licence assessment.	

\*The works approval that accompanies this Report authorises construction and time limited operations only. A licence is required for operations.

\*\*Consequence ratings, likelihood ratings and risk descriptions are detailed in the Department's Guidance Statement: Risk Assessments (February 2017)

## 9. Applicant's comments

The applicant was provided with the draft decision report and draft works approval on 31 May 2023. The applicant provided comments on the draft documents, relating to administrative changes only. No material changes to conditions were requested.

The applicant noted that the works approval holder name in 'Table 1: Definitions' of this Decision Report was incorrect and that the works approval draft condition numbering and condition referencing contained errors. The administrative and formatting errors have been noted and corrected.

## 10. Conclusion

This assessment of the risks of activities on the Premises has been undertaken with due consideration of a number of factors, including the documents and policies specified in this decision report (summarised in Appendix 1).

Based on this assessment, it has been determined that the issued works approval will be granted subject to conditions commensurate with the determined controls and necessary for administration and reporting requirements.

# Appendix 1: Key documents

Document title	Availability
Works approval (W6752/2022/1) application and supporting documentation received on 8/09/2022.	Application – DWERDT656442 Record file - DER2022/000465
National Water Quality Management Strategy, Australian Guidelines for Sewage Systems – Effluent Management, Australian and New Zealand Environment and Conservation Council (ANZECC) 1997.	accessed at www.waterquality.gov.au
DER, July 2015. <i>Guidance Statement: Regulatory principles.</i> Department of Environment Regulation, Perth.	
DER, October 2015. <i>Guidance Statement: Setting conditions.</i> Department of Environment Regulation, Perth.	
DER, August 2016. <i>Guidance Statement: Licence duration.</i> Department of Environment Regulation, Perth.	accessed at <u>www.dwer.wa.gov.au</u>
DER, February 2017 <i>Guidance Statement: Risk</i> Assessments. Department of Environment Regulation, Perth.	
DWER, June 2019 <i>Guideline: Decision Making</i> Department of Water and Environmental Regulation.	
DOW, 2008. Water Quality Protection Note 22: Irrigation with nutrient-rich wastewater. Department of Water, Perth.	accessed at www.dwer.wa.gov.au

# **Appendix 2: Application validation summary**

SECTION 1: APPLICATION SUMMARY							
Application type							
Works approval							
Licence		Relevant works approval number:		None	₽		
		Has the works approval been complied with?		<del>Yes □ No □</del>			
		Has time limited operations under the works approval demonstrated acceptable operations?		<del>Yes □ No □</del> N/A □			
		Environmental Compliance Report / Critical Containment Infrastructure Report submitted?		<del>Yes □ No □</del>			
		Date Report receive	Report received:				
Renewal		Current licence number:					
Amendment to works approval		Current works approval number:					
		Current licence number:					
Amendment to licence		Relevant works approval number:		N/A	₽		
Registration		Current works approval number:		None	×		
Date application received	8/09/2022						
Applicant and Premises details							
	De Grey Mining Ltd - ACN 094 206 292						
Applicant name/s (full legal	Glenn Jardine, Managing Director, Phone - (08) 6117 9328						
name/s)	denn.jardine@degreymining.com au						
Premises name		Miscellaneous lease (L45/578; 16.3571 ha) tenement boundary Allocated for exploration mining camp and coreyard. Expiry					
Premises location		Wingina Camp Indee Road, Port Hedland					
Local Government Authority		Town of Port Hedland					

Application documents					
HPCM file reference number:	DER2022/000465				
Key application documents (additional to application form):	<ul> <li>Listed attachments.</li> <li>Attachment 1A: Proof of Occupier Status</li> <li>Attachment 1B: ASIC Company Extract</li> <li>Attachment 1C: Authorisation to act as representative of the occupier</li> <li>Attachment 2A: Premises Map</li> <li>Attachment 2B: Premises Map + Infrastructure_Site Layout</li> <li>Attachment 2C: Premises Map + Site Layout_Monitoring Bores</li> <li>Attachment 3A: Environmental Commissioning Plan</li> <li>Attachment 3B: Mak Water Design Specifications</li> <li>Attachment 6A: Emissions and Controls</li> <li>Attachment 7: Siting Location Premises Map and Sensitive Receptors</li> <li>Attachment 10: Fee Calculations</li> </ul>				
Scope of application	/assessment				
Summary of proposed activities or changes to existing operations.	<ul> <li>De Grey Mining Ltd. intends to construct and replace the wastewater treatment plant (WWTP) at Wingina Camp to manage the treatment of sewage and disposal of effluent and liquid waste.</li> <li>The Wingina Camp is located on Indee Road, 74 km south of Port Hedland and is the main accommodation, messing facilities and office location.</li> <li>Infrastructure lies on existing cleared land on the Indee Pastoral Station, immediately adjacent to Indee Station homestead which includes numerous sheds, machinery and materials accumulated over many years.</li> <li>The Camp occupies an area approximately 16 hectares in size. It has the capacity to accommodate up to 100 staff. Plumbing and infrastructure services were already in place, including the 0.8 ha irrigation sprayfield where treated effluent and liquid waste is disposed.</li> <li>Key buildings on-site include: <ul> <li>A site office</li> <li>Kitchen, two laundry buildings and mess</li> <li>Fuel storage for 15,000 litres of diesel and generator</li> <li>Core processing area and storage shed</li> <li>Communications and internet infrastructure</li> <li>2 x toilet blocks</li> <li>3 x 27,000 litre plastic tanks for potable use</li> </ul> </li> <li>The wastewater treatment plant (WWTP) is a factory tested self-contained, modular system that is assembled onsite. MAK Water is installing an Activated Sludge Bed Bioreactor model (ASBR-035-C-X-A-S-I-P-C) sewage treatment plant at the site. The plant design specifications are outlined in the table below:</li> </ul>				

Daramatar		ASPD 025 Specification				
Parameter		25 m <sup>3</sup> /day				
Palance tank volume	50 kl					
Treated effluent tank volume	30 KL					
Cludge tenk volume						
Thickoned cludge waste	volumo	0.4 m <sup>3</sup> /dov				
Inickened sludge waster	volume	0.4 m/day				
Ambient termeneture (mi		2.9 M-/nr @350 KPa				
Ambient temperature (mi	n/max)	1~35 °C				
Power supply		AC 415 V, 3 Phase, 50 Hz				
Category number/s (activities that cause the premises to become prescribed premises) Table 1: Prescribed premises categories						
Prescribed premises category and d	Proposed production or design capacity					
Category 85: Sewage facility: premises	3	More than 20 but less				
<ul><li>a) on which sewage is treated (exclu</li><li>b) from which treated sewage is disc waters.</li></ul>	ding septic tanks); or harged onto land or into					
Legislative context and other approva	als					
Has the applicant referred, or do they		Referral decision No:				
intend to refer their proposal to the						
EPA under Part IV of the EP Act as a	Yes 🗆 No 🖂	Managed under Part V 🗌				
LEA UNDER FAILTY OF THE LE ACLAS A		Accessed upder Dort IV				
Does the applicant hold any existing		Ministerial statement No:				
Part IV Ministerial Statements	Yes 🗆 No 🖂	Ministerial Statement No.				
relevant to the application?		EPA Report No:				
Has the proposal been referred						
and/or assessed under the EPBC		Reference No:				
Act?						
Has the applicant domonstrated		Mining loase / tenement 🕅				
rias the applicant demonstrated	Yes 🛛 No 🗆					
occupancy (proof of occupier status)?		L45/578 Expiry: 22/02/2042				
		Premises is located on mining				
Has the applicant obtained all	Yes 🛛 No 🗆 N/A	tenement L45/578 and is				
relevant planning approvals?		regulated under the Mining Act				
		1070				
		1910				
Has the applicant applied for, or have		CPS No: N/A				
an existing EP Act clearing permit in	Yes 🗆 No 🖂					
relation to this proposal?		No clearing is proposed.				
		Application reference No: N/A				
Has the applicant applied for, or have						
an existing CAWS Act clearing	Yes 🗆 No 🖂	_icence/permit No: N/A				
licence in relation to this proposal?						
		No clearing is proposed.				

Has the applicant applied for, or have an existing RIWI Act licence or permit in relation to this proposal?	Yes ⊠ No □	Application reference No: Licence/permit No: Applicant holds two existing RIWI Act licences: Licence GWL204172 (2)
Does the proposal involve a discharge of waste into a designated area (as defined in section 57 of the EP Act)?	Yes □ No ⊠	Name: N/A Type: Proclaimed Groundwater Area/Surface Water Area Has Regulatory Services (Water) been consulted? Yes I No I N/A I
Is the Premises situated in a Public Drinking Water Source Area (PDWSA)?	Yes □ No ⊠	Name: N/A Priority: P1 / P2 / P3 / N/A Are the proposed activities/ landuse compatible with the PDWSA (refer to <u>WQPN 25</u> )? Yes □ No □ N/A □
Is the Premises subject to any other Acts or subsidiary regulations (e.g. Dangerous Goods Safety Act 2004, Environmental Protection (Controlled Waste) Regulations 2004, State Agreement Act xxxx)	Yes ⊠ No □	Mining Act 1978 Health Act 1911 Health (Treatment of Sewage and Disposal of Effluent and Liquid Waste) Regulations 1974 Environmental Protection (Unauthorised Discharge) Regulations 2004
Is the Premises within an Environmental Protection Policy (EPP) Area?	Yes □ No ⊠	N/A
Is the Premises subject to any EPP requirements?	Yes □ No ⊠	N/A
Is the Premises a known or suspected contaminated site under the Contaminated Sites Act 2003?	Yes □ No ⊠	N/A