



Application for Works Approval

Division 3, Part V *Environmental Protection Act 1986*

Works Approval Number W6210/2019/1

Applicant Agnew Gold Mining Company Ltd Pty

ACN 098 385 883

File Number DER2018/001699

Premises Agnew Village Waste Water Treatment Plant
Part of Mining Lease M36/171
Leinster WA 6437
As defined by the coordinates in Schedule 1

Date of Report 17 May 2019

Status of Report Final

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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
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.
EP Act	<i>Environmental Protection Act 1986 (WA)</i>
EP Regulations	<i>Environmental Protection Regulations 1987 (WA)</i>
m ³	cubic metres
Minister	the Minister responsible for the EP Act and associated regulations
NEPM	National Environmental Protection Measure
Noise Regulations	<i>Environmental Protection (Noise) Regulations 1997 (WA)</i>
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
Primary Activities	as defined in Schedule 2 of the Revised Licence
Risk Event	As described in <i>Guidance Statement: Risk Assessment</i>
UDR	<i>Environmental Protection (Unauthorised Discharges) Regulations 2004 (WA)</i>

2. Purpose and scope of assessment

Agnew Gold Mining Company Pty Limited (AGMC) has applied for a works approval to construct a wastewater treatment plant and irrigation area within mining tenement M36/171.

The application specifically requests approval for the construction of:

- a Waste Water Treatment Plant (WWTP) to accommodate the requirements of the 800 person accommodation village (camp); and
- an irrigation area for the disposal of the treated wastewater.

2.1 Application details

Table 2 lists the documents submitted during the assessment process.

Table 2: Documents and information submitted during the assessment process

Document/information description	Date received
AGMC Application form including; Attachment 1A – ASIC Company Extract; Attachment 1B – Tenement Details; Attachment 3B – Proposed disturbance area; Attachment 3C – Flora report; DMIRS approval; DoH application; General Query DPLH; Premises location map; Sensitive receptors; Supporting information document titled “ Agnew Gold Mine Works Approval Application M36/171”- 18 December 2018 Cost of project	19 December 2019
Email: Response from Matt Collier to request for further information received.	21 February 2019
Email: Response from Matt Collier to request for further information received.	22 February 2019
Email: Revised WWTP design from Matt Collier	1 April 2019
Email: Boundary Map from Ashleigh Shelton	29 April 2019

3. Background

The Applicant (AGMC), a wholly owned subsidiary of Gold Fields Australia Pty Ltd (GFA), own and operate the Agnew Gold Mine (L4611/1987/11). AGMC proposes to construct an 800 person accommodation village/camp within mining tenements M36/171 and M36/27.

On 19 December 2018, AGMC submitted an application for a works approval under the EP Act for a wastewater treatment plant and irrigation area for the disposal of treated wastewater within mining tenement M36/171. Following the completion of the works AGMC proposes to

apply to amend licence L4611/1987/11 to include the WWTP (category 54).

Table 3 lists the prescribed premises categories that have been applied for.

Table 3: Prescribed Premises Categories in the Existing Licence

Classification of Premises	Description	Approved Premises production or design capacity or throughput
Category 54	Sewage facility: premises – (a) on which sewage is treated (excluding septic tanks); or (b) from which treated sewage is discharged onto land or into waters.	200m ³ per day

4. Overview of Premises

4.1 Operational aspects

The operational aspects as defined within Agnew Gold Mine Works Approval Application M36/171 Supporting Document Road, 18 December 2018 are detailed below.

Category 54 – Sewage facility

A WWTP will be constructed to treat wastewater from the ablutions and other facilities at the accommodation village. Wastewater from the camp will be collected via buried piping in a wastewater pump station and pumped to the WWTP. The WWTP will consist of a 200 kL sequencing batch reactor (SBR) system. The application details the following relating to the operation of the SBR systems (refer to fig 1 below):

1. Filling of the reactor basin (2 anoxic fill periods per cycle);

Raw wastewater, once collected by the gravity sewer system, is pumped to the WWTP via a duty/standby sewage pump system. The pumps remove large solids so that they do not cause blockages, wastewater is pumped into the plants Equalisation Tank sewage from the pump station after being processed by the inlet bar screen. The Equalisation tank also provides a buffer against peak inflows and provides a steady inflow into the SBR aeration tanks.

2. Reaction phase (combination of aerobic and anoxic phases to achieve high levels of BOD and nitrogen removal);

An aerobic and anaerobic process occurs in SBR tanks where other micro-organisms, such as Zoogloea, Protozoas and Rotifers treat all wastewater. The anoxic period provide de-nitrification (nitrogen removal). The Aerobic period provides the biological oxidation of the organic matter (BOD removal and nitrification).

3. Settling phase;

The settling period allows for time where all solids settle to the base of the SBR tank.

4. Decant phase;

The decant period is where clear liquor is decanted from the top of the SBR tank and discharged to the irrigation tank. The decant pumps are controlled based on time and the low level float switch located in the SBR tank.

5. Idle phase.

During this phase, a small amount of activated sludge at the bottom of the SBR tank is pumped out (a process called wasting). Sludge will be held in sludge tank. The sludge is then drawn from the sludge storage tank, dosed with polymer (Coagulant) and transferred to the geobags for dewatering. The dry sludge cake from the geobag is then removed from site or

disposed to site landfill area. The supernatant from the dewatering area is collected by the return sump and transferred back to the WWTP for reprocessing. Overflowing supernatant from the sludge tank is transferred by gravity to underground sewage transfer station and pumped to the Equalisation tank.

6. Dosing

A sodium hypochlorite dosing pump is used to pump chlorine to the recirculation stream in the irrigation tank. An online chlorine analyser will provide a reading of chlorine levels in the irrigation tank. The chlorine will be stored in the 1000L sodium hypochlorite tank.

7. Irrigation

The irrigation tank will store treated effluent and reverse osmosis (RO) reject water (brine waste). The RO plant is in the same facility as the WWTP. The applicant intends to transfer a maximum of 100m³/day of brine waste (3099mg/L of total dissolved solids) to the WWTP irrigation tank. The brine waste will be diluted with a maximum of 200m³/day of effluent. The preferred method of disposal would be buried dripper irrigation for a mining camp lawn with the warning signs (but not fenced) and on wet days or if the area appears to be sufficiently watered, the treated effluent tank will discharge by pump to a 93,000m² (inclusive of a spray field buffer) spray field. The total maximum discharge to the irrigation area will be approximately 300m³/day (1164mg/L of total dissolved solids). The online chlorine analyser will measure the chlorine levels in the tank. The chlorine analyser will send the reading directly to the chlorine dosing pump and will provide chlorine should it be required.

8. Effluent quality

Effluent from the WWTP will be treated to a secondary level of treatment (Category D) in accordance with Water Quality Protection Note 22 (WQPN 22) and to comply with a Low Exposure Risk Level (level of human contact) in accordance with *DoH, 2011*, with effluent achieving the specifications detailed in Table 4.

Table 4: Effluent specifications

Analyte	Units	Value
Biochemical Oxygen Demand	mg/L	<20
Total Suspended Solids	mg/L	<30
Total Dissolved Solids	mg/L	<1164
Total Nitrogen	mg/L	<40
Total Phosphorus	mg/L	<8
Chlorine Residual	mg/L	>0.2-2
pH	pH units	6.5-8.5
<i>E.coli</i>	cfu/100mL	<1000

9. Commissioning

The commissioning process for the WWTP will have the following phases:

- Pre-commissioning- comprising static checks on un-powered equipment to confirm that the infrastructure has been built according to specification,

- Wet commissioning- comprising test operation of equipment and facilities with water;
and
- Waste water commissioning- comprising test operation of equipment and facilities with waste water.

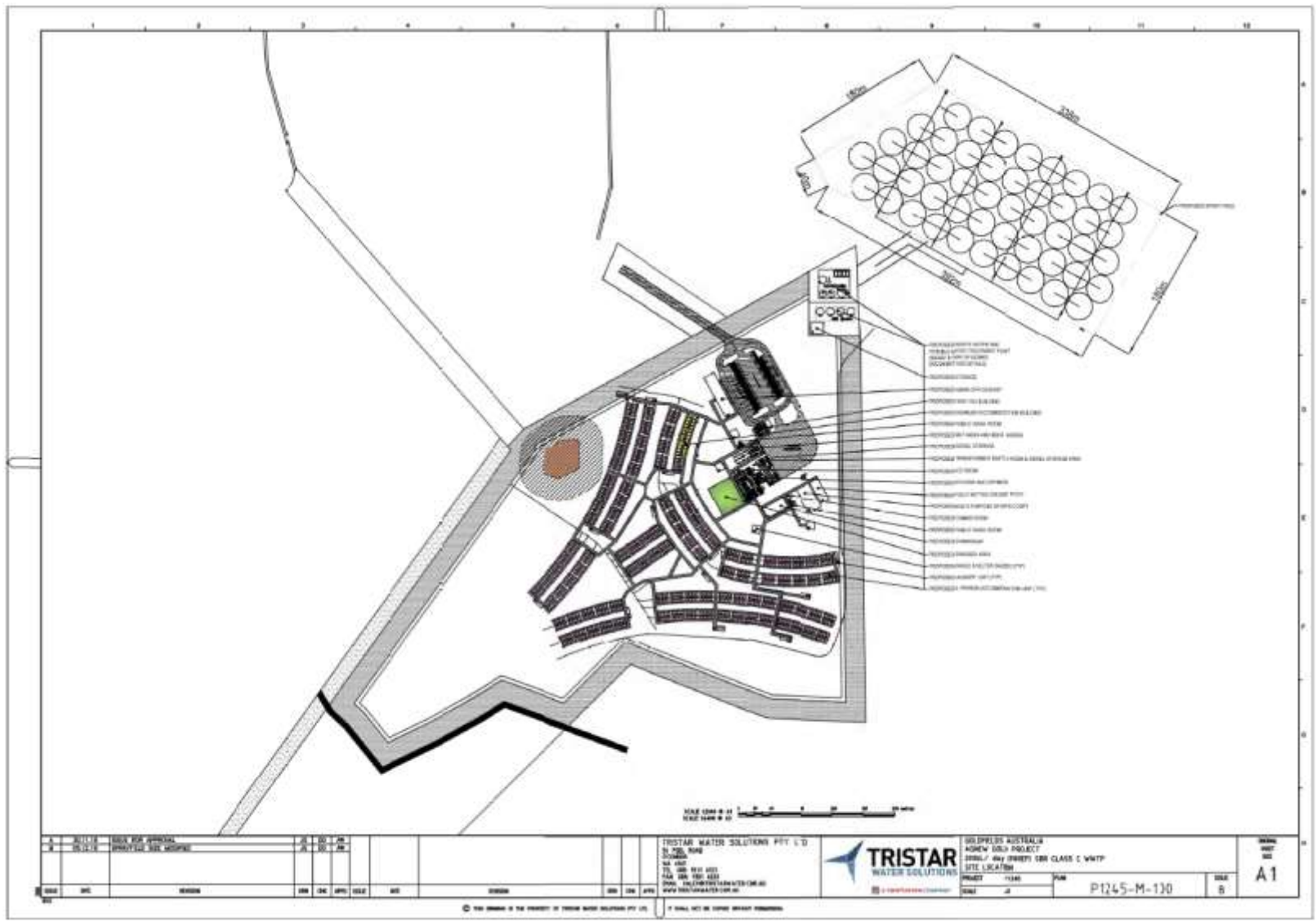


Fig 2: Site layout 2

4.2 Infrastructure

The WWTP facility infrastructure, as it relates to Category 54 activities, is detailed in Table 5 and with reference to the Site Plan.

Table 5 lists infrastructure associated with each prescribed premises category.

Table 5: Category 54 infrastructure

	Infrastructure	Site Plan Reference
	Prescribed Activity Category 54	
<p>Wastewater from the camp site ablutions will be treated in a sequencing batch reactor system WWTP before being discharged to a dedicated spray field. The plant will have capacity to treat 200 m³/day of sewage.</p>		
1	<ul style="list-style-type: none"> • Pump station (TK-109) • 2 x Sewage pumps (PU-101 and PU-102) • Pipelines will be HDPE with welded joints 	As shown in Figures 1 and 2: WWTP and Sprayfield
2	<ul style="list-style-type: none"> • Inlet Screen (SS-101) • Equalisation tank (TK-101) • Mixer pump (PU-103) • Balance pump (PU-104/105) • Pipelines will be HDPE with welded joints 	
3	<ul style="list-style-type: none"> • 2 x Aeration tanks (TK-103) • Submersible aerator/mixer (PU-107) • Dissolved oxygen sensor • Level switches • 2 x Decant pumps (PU-108 and PU-109) • Pipelines will be HDPE with welded joints 	
4	<ul style="list-style-type: none"> • 1 x Sludge tank (TK-107) • 2 x Sludge pumps (PU-110 and PU-111) • Underground sewage transfer station (TK-110) • Pipelines will be HDPE with welded joints 	
5	<ul style="list-style-type: none"> • 1 x sodium hypochlorite storage tank (TK-106) • Sodium hypochlorite dosing pumps (PU-112 and PU-119) • Pipelines will be HDPE with welded joints 	
6	<ul style="list-style-type: none"> • Irrigation tank (TK-108) • Irrigation pumps (PU-115 and PU-116) • Stop filter backwash pumps (PU-117 and PU-118) • Chlorine dosing pump (PU-119) • Recirculation pump (P-120) • On-line chlorine analyser (CT-101) 	

	Infrastructure	Site Plan Reference
	<ul style="list-style-type: none"> Pipelines will be HDPE with welded joints 	
7	<ul style="list-style-type: none"> A fenced spray field (1200mm high 2 strand steel wire fencing) Pipelines will be HDPE with welded joints Safety signage every 50m of fencing irrigation field sized to 93,000m², inclusive of a spray drift buffer Individual branch line flush valves 	

4.3 Exclusions to the Premises

The Applicant will also be constructing the following infrastructure at the Premises which is not within the scope of this assessment:

- Single person quarters;
- Mess facilities;
- Swimming pool;
- Gymnasium;
- Laundry facilities;
- Workshops
- Fuel storage area
- Access roads and power networks;
- Borefields;
- Laydown areas used during construction activities;
- Bioremediation pad;
- Topsoil stockpile;
- An alternative access track to the Lawlers lookout;
- Water storage dams;
- Borrow pits and stockpiles; and
- Roads and parking areas.

5. Legislative context

Table 6 summarises approvals relevant to the assessment.

Table 6: Relevant approvals and tenure

Legislation	Number	Subsidiary	Approval
<i>Mining Act 1978</i>	<i>Reg ID 74915</i> <i>Reg ID 76455</i>	AGMC	<i>Mining proposal submitted to DMIRS ON 4 July 2018 and approved on 30 July 2018. Mining proposal to several minor amendments was received on 3 October 2018 and approved on 12 October 2018.</i>

Legislation	Number	Subsidiary	Approval
<i>Environment Protection Act 1986 – IV (DWER)</i>	NA	AGMC	<i>Consultation was taken to ascertain whether Part IV or Part V is relevant to this project. Advice from DWER that the project could be managed under Part IV.</i>
<i>Environment Protection Act 1986 Part V (DWER)</i>	NA	AGMC	<i>A Native Vegetation Clearing Permit (NVCP) is not required due to the 10ha exemption per year on each mining tenement. 8.68ha will be cleared from mining tenement M36/171.</i>
<i>Rights in Water and Irrigation Act 1914</i>	<i>GWL 63840 and GWL55840</i>	AGMC	<i>Groundwater abstraction activities</i>
<i>Health (Treatment of Sewage and Disposal of Effluent and Liquid Waste) Regulations 1974</i>	<i>Approval No:264.18</i>	AGMC	<i>Approval from the Department of Health to construct or install an apparatus for the treatment of sewage- 200kL Sequence Batch Reactor (SBR) WWTP to 69485m² fenced surface irrigation.</i>
<i>Part IV of the EP Act (WA)</i>	<i>W6210/2019/1</i>	AGMC	<i>Approval Part IV of the EP Act to construct a wastewater treatment plant and irrigation field</i>

5.1 Part V of the EP Act

5.1.1 Applicable regulations, standards and guidelines

The overarching legislative framework of this assessment is the EP Act and EP Regulations.

The guidance statements which inform this assessment are:

- *Guidance Statement: Regulatory Principles (July 2015)*
- *Guidance Statement: Setting Conditions (October 2015)*
- *Guidance Statement: Land Use Planning (February 2017)*
- *Guidance Statement: Licence Duration (August 2016)*
- *Guidance Statement: Publication of Annual Audit Compliance Reports (May 2016)*
- *Guidance Statement: Decision Making (February 2017)*
- *Guidance Statement: Risk Assessments (February 2017)*
- *Guidance Statement: Environmental Siting (November 2016)*

5.1.2 Works approval and licence history

Table 7 summarises the works approval and licence history for the premises.

Table 7: Works approval and licence history

Instrument	Issued	Nature and extent of works approval, licence or amendment
W6210/2016/1	17/05/2019	New works approval for category 54 (sewage facility).

5.1.3 Clearing

The applicant has confirmed that no clearing permit will be required since the Mining Act 1978 allows clearing of upto 10 hectares per financial year. A total of 18.26 ha of land will be cleared across the two tenements (M36/171 and M36/2), 8.68ha will be cleared within M36/171.

6. Consultation

The original works approval application was advertised in the West Australian on 11 February 2019 for a comment period ending on 22 March 2019.

A letter of referral was sent to the Department of Mines, Industry Regulation and Safety (DMIRS) on 22 February 2019.

DWER received the following comment from DMIRS on 7 March on 2019:

- DMIRS received a Mining Proposal for the project on 4 July 2018 and approved on 30 July 2018 (Reg 1D 74915). Mining proposal to several minor amendments to the project layout was received by DMIRS on 3 October 2018 and approved on 12 October 2018 (Reg ID 76455). DMIRS considers that the environmental impacts of the project and proposed management strategies were assessed and considered appropriate and has no comments in relations to, or objections to the granting of the Works Approval.

7. Location and siting

7.1 Siting context

Agnew Gold Mine (AGM) is located approximately 630km north east of Perth, 9km south of the Agnew town site, 26km south west of Leinster and 360km north of Kalgoorlie, Western Australia. The proposed WWTP and the irrigation field will be within mining tenement

7.2 Residential and sensitive Premises

The distances to residential and sensitive receptors are detailed in Table 8.

Table 8: Receptors and distance from activity boundary

Sensitive Land Uses	Distance from Prescribed Activity
<i>Residential – Township of Leinster</i>	<i>Approximately 26km south west.</i>
<i>Residential – Township of Agnew</i>	<i>Approximately 9km south.</i>

7.3 Specified ecosystems

Specified ecosystems are areas of high conservation value and special significance that may be impacted as a result of activities at or 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 *Guidance Statement: Environmental Siting*.

Table 9: Environmental values

Specified ecosystems	Distance from the Premises
Goldfields Groundwater Area (Goldfields GWA)	Agnew Mine is located in the Lake Carey subarea of the Goldfields GWA
Depot Springs Water Reserve	Premises is located 15 km east of Reserve.
Clearing Regulation - Environmentally Sensitive Areas (ESAs)	Premises is located 30 km east and 75 km south of the restricted clearing areas.

7.4 Groundwater and water sources

The distances to groundwater and water sources are shown in Table 10.

Table 10: Groundwater and water sources

Groundwater and water sources	Distance from Premises	Environmental value
Groundwater	<p>Depth to groundwater encountered at approximately 20 – 30 mbgl.</p> <p>No bores located within 1km of Premises (based on available GIS dataset –WIN Groundwater Sites).</p>	<p>Salinity in the region ranges from less than 1000 mg/L TDS up to over 10,000mg/L</p> <p>Water is not for potable use. There are elevated levels of arsenic in the groundwater.</p>

7.5 Soil type

The application details that AGM is located in the Murchison region within the Austin Botanical District of the Eremaean Botanical Province. This region is typified by undulating soils with occasional ranges of low hills and extensive sand plains in the eastern half. The principal soil types are shallow earthy loam overlying a red-brown hardpan, shallow stony loams on hills and red earthy sands on sand plains.

7.6 Meteorology

7.6.1 Regional climatic aspects

Leinster lies within the arid climatic zone of Western Australia, receiving an annual average of 215mm rainfall. Rainfall occurs year-round, however is considered to be low and unreliable with most falls occurring in the summer months between January to April. Summer temperatures can reach can reach 45°C, with winter temperatures ranging between 10-15°C. Annual evaporation is approximately 3750mm, and will range from 550mm per month in summer to 120mm per month in winter (*Agnew Gold Mine Works Approval Application Supporting Document M36/171”- 18 December 2018*)

7.6.2 Rainfall and temperature

BOM, 2019 provides the mean rainfall and maximum temperatures for Leinster (mean maximum temperature 1994-2019 and mean rainfall 1994-2019) as shown in Figure 1 below.

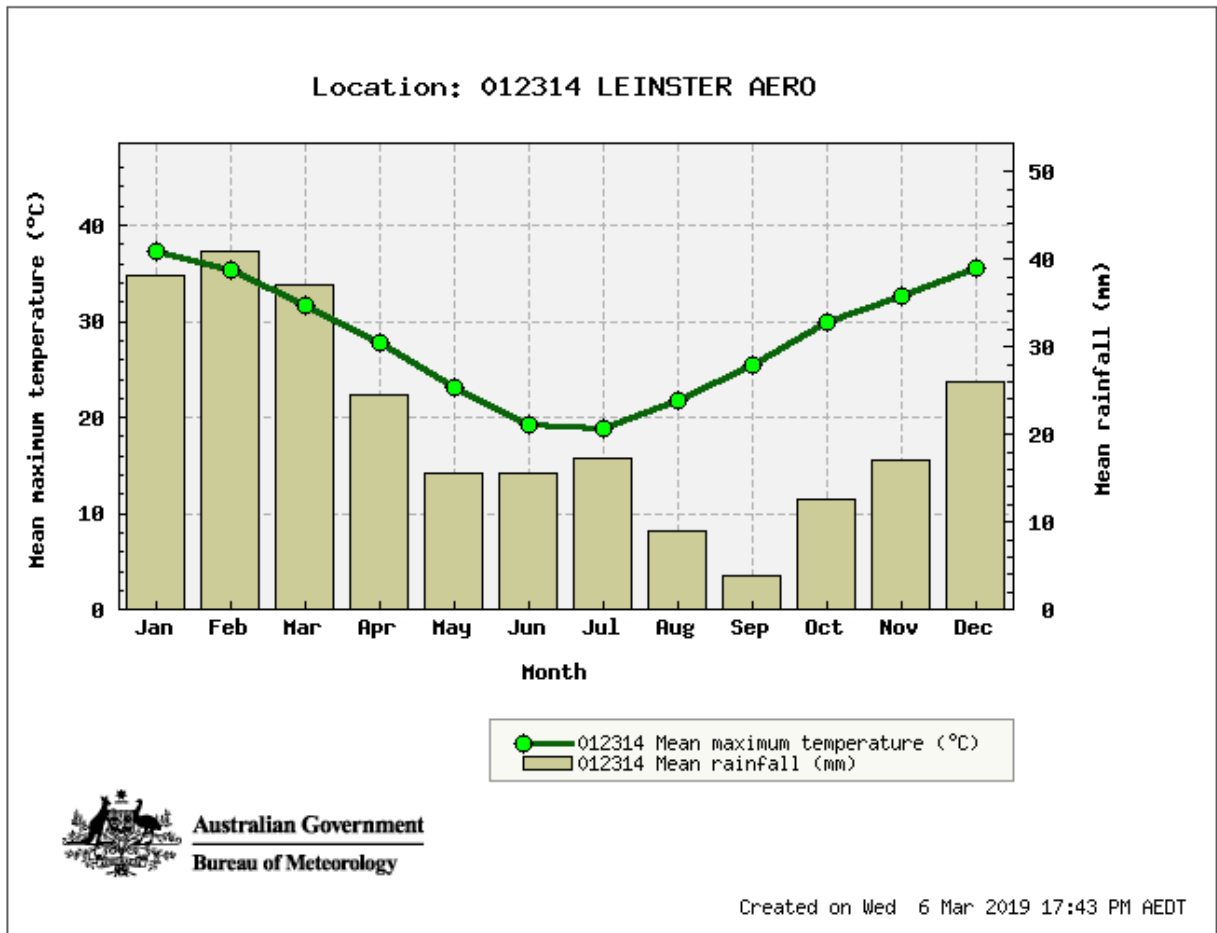


Figure 1: Mean temperatures and rainfall, Laverton Aero

Source: Bureau of Meteorology website www.bom.gov.au

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 Tables 11 and 12 below.

Table 11: Identification of emissions, pathway and receptors during construction

Risk Events					Continue to detailed risk assessment	Reasoning	
Sources/Activities	Potential emissions	Potential receptors	Potential pathway	Potential adverse impacts			
Construction, mobilisation and positioning of infrastructure	Vehicle movements on unsealed access roads	Noise	No residences or other sensitive receptors in proximity	Air / wind dispersion	None	No	No receptor present
		Dust			None	No	No receptor present
	Earthworks, Construction of WWTP and infrastructure Use and storage of hydrocarbons	Noise	No residences or other sensitive receptors in proximity	Air / wind dispersion	None	No	No receptor present
					None	No	No receptor present
		Dust	Flora and vegetation		Potential to be deposited on vegetation and may prevent photosynthesis and plant respiration	No	The Delegated Officer considers the minor amount of dust potentially generated will not cause vegetation impacts. There are also no Declared Rare Flora, Threatened Ecological Communities or Priority Ecological Communities within or in a 30 km radius of the Premises.

Risk Events					Continue to detailed risk assessment	Reasoning
Sources/Activities		Potential emissions	Potential receptors	Potential pathway		
		<p><i>Contaminated stormwater runoff</i></p> <p><i>Spills and breach of containment causing hydrocarbon, chemical and increased sediment load due to ground disturbance</i></p>	<p><i>Soil, surface water drainage and vegetation adjacent to the areas of spill or breach.</i></p>	<p><i>Stormwater runoff</i></p> <p><i>Direct discharges to land</i></p>	<p><i>Soil contamination inhibiting vegetation growth and survival, and health impacts to fauna and increased sedimentation</i></p> <p><i>Soil contamination inhibiting vegetation growth and survival, and health impacts to fauna</i></p>	<p><i>Contaminated storm water runoff</i></p> <p><i>Potential soil contamination inhibiting vegetation growth and temporary loss of habitat.</i></p>
					<p><i>Yes refer to section 8.4</i></p>	

Table 12: Identification of emissions, pathway and receptors during operation

Risk Events					Continue to detailed risk assessment	Reasoning	
Sources/Activities	Potential emissions	Potential receptors	Potential pathway	Potential adverse impacts			
Waste Water Treatment Plant	<i>Treatment of sewage</i>	<i>Odour</i>	<i>No residences or other sensitive receptors in proximity</i>	<i>Air / wind dispersion</i>	<i>None</i>	<i>No</i>	<i>No receptor present</i>
	<i>Sewage pipes and holding tanks</i>	<i>Rupture of pipes / overtopping of holding tanks resulting in sewage discharge to land</i>	<i>Vegetation adjacent to discharge area</i>	<i>Direct discharge</i>	<i>Soil contamination inhibiting vegetation growth and survival</i>	<i>Yes – Refer to section 8.5</i>	<i>Potential soil contamination from the release of untreated effluent.</i>
	<i>Storage of chemicals</i>	<i>Breach of containment causing chlorine discharge to land</i>	<i>Human receptors</i>	<i>Inhalation, Ingestion and dermal contact</i>	<i>Health</i>	<i>No</i>	<i>Regulated by Department of Mines, Industry Regulation and Safety (DMIRS)</i>
Re-use Scheme	<i>Irrigation of treated effluent</i>	<i>Treated effluent discharged to spray field for irrigation containing elevated Nitrogen and Phosphorous</i>	<i>Terrestrial ecosystems</i>	<i>Direct discharge</i>	<i>Facilitated growth of weeds; Increase in nutrient levels in soil; Change in soil chemistry; Ponding in the irrigation area; and Impacts to surrounding vegetation.</i>	<i>Yes – Refer to section 8.6</i>	<i>Potential for ponding in the irrigation area and increase in nutrient levels in soil if effluent is not treated to recommended levels.</i>

Risk Events					Continue to detailed risk assessment	Reasoning	
Sources/Activities	Potential emissions	Potential receptors	Potential pathway	Potential adverse impacts			
		<i>Release of pathogens via airborne, direct contact or irrigation mist (ingestion).</i>	<i>Human receptors</i>	<i>Direct contact and ingestion of harmful pathogens</i>	<i>Pathogens in the wastewater may cause gastroenteritis, spread disease or create other public health impacts</i>	<i>No</i>	<i>The Department of Health regulates public health impacts from the wastewater scheme. The Delegated Officer has reviewed the Department of Health approval for the reuse scheme and considers it appropriate for the regulation of public health impacts. The Delegated Officer considers that the treatment standard and the quality of water expected prior to irrigation will allow appropriate use of treated waste water with a low risk to public health with operational control.</i>
	<i>Failure of disinfection system</i>	<i>Treated wastewater containing harmful pathogens</i>	<i>Human receptors at the WWTP facility coming in contact with the treated wastewater.</i>	<i>Direct contact and ingestion of harmful pathogens</i>	<i>Pathogens in the wastewater may cause gastroenteritis, spread disease or create other public health impacts</i>	<i>No</i>	<i>The Department of Health regulates public health impacts from the wastewater scheme.</i>

8.2 Consequence and likelihood of risk events

A risk rating will be determined for risk events in accordance with the risk rating matrix set out in Table 13 below.

Table 13: Risk rating matrix

Likelihood	Consequence				
	Slight	Minor	Moderate	Major	Severe
Almost certain	Medium	High	High	Extreme	Extreme
Likely	Medium	Medium	High	High	Extreme
Possible	Low	Medium	Medium	High	Extreme
Unlikely	Low	Medium	Medium	Medium	High
Rare	Low	Low	Medium	Medium	High

DWER will undertake an assessment of the consequence and likelihood of the Risk Event in accordance with Table 14 below.

Table 14: Risk criteria table

Likelihood		Consequence		
The following criteria has been used to determine the likelihood of the Risk Event occurring.		The following criteria has been used to determine the consequences of a Risk Event occurring:		
			Environment	Public health* and amenity (such as air and water quality, noise, and odour)
Almost Certain	The risk event is expected to occur in most circumstances	Severe	<ul style="list-style-type: none"> onsite impacts: catastrophic offsite impacts local scale: high level or above offsite impacts wider scale: mid-level or above Mid to long-term or permanent impact to an area of high conservation value or special significance[^] Specific Consequence Criteria (for environment) are significantly exceeded 	<ul style="list-style-type: none"> Loss of life Adverse health effects: high level or ongoing medical treatment Specific Consequence Criteria (for public health) are significantly exceeded Local scale impacts: permanent loss of amenity
Likely	The risk event will probably occur in most circumstances	Major	<ul style="list-style-type: none"> onsite impacts: high level offsite impacts local scale: mid-level offsite impacts wider scale: low level Short-term impact to an area of high conservation value or special significance[^] Specific Consequence Criteria (for environment) are exceeded 	<ul style="list-style-type: none"> Adverse health effects: mid-level or frequent medical treatment Specific Consequence Criteria (for public health) are exceeded Local scale impacts: high level impact to amenity
Possible	The risk event could occur at some time	Moderate	<ul style="list-style-type: none"> onsite impacts: mid-level offsite impacts local scale: low level offsite impacts wider scale: minimal Specific Consequence Criteria (for environment) are at risk of not being met 	<ul style="list-style-type: none"> Adverse health effects: low level or occasional medical treatment Specific Consequence Criteria (for public health) are at risk of not being met Local scale impacts: mid-level impact to amenity
Unlikely	The risk event will probably not occur in most circumstances	Minor	<ul style="list-style-type: none"> onsite impacts: low level offsite impacts local scale: minimal offsite impacts wider scale: not detectable Specific Consequence Criteria (for environment) likely to be met 	<ul style="list-style-type: none"> Specific Consequence Criteria (for public health) are likely to be met Local scale impacts: low level impact to amenity
Rare	The risk event may only occur in exceptional circumstances	Slight	<ul style="list-style-type: none"> onsite impact: minimal Specific Consequence Criteria (for environment) met 	<ul style="list-style-type: none"> Local scale: minimal to amenity Specific Consequence Criteria (for public health) met

[^] Determination of areas of high conservation value or special significance should be informed by the *Guidance Statement: Environmental Siting*.

* In applying public health criteria, DWER may have regard to the Department of Health's *Health Risk Assessment (Scoping) Guidelines*.

"onsite" means within the Prescribed Premises boundary.

8.3 Acceptability and treatment of Risk Event

DWER will determine the acceptability and treatment of Risk Events in accordance with the Risk treatment table 15 below:

Table 15: Risk treatment table

Rating of Risk Event	Acceptability	Treatment
Extreme	Unacceptable.	Risk Event will not be tolerated. DWER may refuse application.
High	May be acceptable. Subject to multiple regulatory controls.	Risk Event may be tolerated and may be subject to multiple regulatory controls. This may include both outcome-based and management conditions.
Medium	Acceptable, generally subject to regulatory controls.	Risk Event is tolerable and is likely to be subject to some regulatory controls. A preference for outcome-based conditions where practical and appropriate will be applied.
Low	Acceptable, generally not controlled.	Risk Event is acceptable and will generally not be subject to regulatory controls.

8.4 Risk Assessment – Stormwater runoff

8.4.1 Description of stormwater runoff

Construction and operation

Disturbed land and construction activities may result in turbid water and sediment being discharged on and off the Premises.

8.4.2 Identification and general characterisation of emission

Stormwater at the Premises has the potential to become contaminated with sediments from processing, hydrocarbons, untreated (spillages) and treated (irrigation) wastewater during construction and operation.

8.4.3 Description of potential adverse impact from the emission

Soil contamination may inhibit vegetation growth and cause health impacts to fauna. Stormwater runoff may also pick up sediment from cleared areas and result in smothering of nearby vegetation, impacting growth and survival.

Rainfall events at the Premises are likely to be of short duration and high intensity, and large volume events can be experienced. Contaminated stormwater during rainfall events may be mobilised and transported within minor drainage systems on the Premises, potentially leading to localised or off-site impacts on vegetation.

8.4.4 Criteria for assessment

ANZECC and ARMCANZ, 2000 provide recommended trigger values for environmental water quality and the *Assessment and management of contaminated sites* provides ecological and human health assessment levels for soil.

8.4.5 Applicant controls

This assessment has reviewed the following controls:

Construction:

- Diversion bunds will be constructed to separate clean and potentially contaminated water;
- Sediment load will be controlled by the installation of sediment control structures at locations where high sediment loads are anticipated and progressive rehabilitation of disturbed areas;
- Spill kits will be located at all hydrocarbon and chemical storages on site to ensure immediate clean-up of any spills; and
- Soil contaminated by hydrocarbons will either be treated in-situ or removed to a bioremediation area for treatment.

Operation:

The Applicant's controls in place to reduce and manage stormwater runoff during operation are listed below:

- Where stormwater is likely to be contaminated with hydrocarbons, water will be directed to an oil water separation system prior to discharge to the environment or re-use on-site;
- A Surface Water Management Plan will be implemented;
- All tanks and pipes containing hydrocarbon will be located above ground and bunded;
- Hydrocarbons will be stored and transferred within low permeability compounds designed to contain not less than 110% of the volume of the largest storage vessel and at least 25% of the total capacity of all tanks for a multiple tank system;
- Fuel bowsers and fuel delivery inlets will be located on concrete or HDPE-lined pads to contain any drips and spills. The pads will drain to a sump to allow removal of collected material;
- Hydrocarbon and chemical storage facilities will be inspected daily to ensure compliance with storage requirements contained in Australian Standard 1940-2004;
- Heavy and light vehicle maintenance will be undertaken in designated workshop areas located on concrete pads constructed so that they drain to a clean water recovery system. Where maintenance activities will occur outside of these areas, hydrocarbon spillages and leakages will be captured and appropriately managed through the use of drip trays and hydrocarbon absorbent materials;
- Spill kits will be located at all hydrocarbon and chemical storages on site to ensure immediate clean-up of any spills;
- Oily rags, vehicle filters and other hydrocarbon waste (e.g. waste oil) will be collected and stored in bins, tanks or on bunded pallets for periodic collection and disposal offsite by a licensed contractor; and
- Soil contaminated by hydrocarbons will either be treated in-situ or removed to a bioremediation area for treatment.

8.4.6 Key findings

The Delegated Officer has reviewed the information regarding contaminated stormwater runoff and has found:

1. *The Applicant has committed that hydrocarbon and chemical storage areas will comply with relevant Australian Standards.*
2. *All pipelines (raw water pipelines, potable water pipelines, effluent and treated effluent pipelines, process pipelines and brine pipelines) will be HDPE with welded joints.*
3. *Sediment load will be controlled by the installation of sediment control structures at locations where high sediment loads are anticipated and progressive rehabilitation of disturbed areas;*
4. *Sumps will be located to contain any hydrocarbon spills to allow for the removal of the material.*

8.4.7 Consequence

The impact from contaminated stormwater runoff at the Premises could result in low level on-site impacts and minimal off-site impacts at a local scale. Therefore, the consequence is **minor**.

8.4.8 Likelihood of Risk Event

Based upon the distance to receptors, groundwater located 20-30 m below ground level, the Delegated Officer has determined that an environmental impact from stormwater runoff will probably not occur in most circumstances. Therefore, the likelihood of the risk event to be **unlikely**.

8.4.9 Overall rating of contaminated stormwater runoff

The Delegated Officer has compared the consequence and likelihood ratings described above with the risk rating matrix (Table 13) and determined that the overall rating of risk for stormwater runoff at the Premises is **medium**.

8.5 Risk Assessment – WWTP rupture of pipes, breakdown of pumps and storage tank failure during operation

8.5.1 Description of WWTP rupture of pipes, storage tank failure and irrigation during operation

Sewage from the processing area will be treated through a WWTP with treated wastewater then discharged to an irrigation area. If the WWTP was to have a breakdown of pumps, rupture of pipes and tank failure, there is the potential for partially treated/untreated wastewater to be released to the environment.

8.5.2 Identification and general characterisation of emission

Treated/untreated wastewater may contain high levels of pathogens and nutrients which have been identified as key environmental hazards.

8.5.3 Description of potential adverse impact from the emission

Wastewater accidentally discharged to the environment during the treatment process may cause soil contamination.

8.5.4 Criteria for assessment

The Applicant has provided a commitment that the WWTP will comply with a Low Exposure Risk Level (level of human contact) in accordance with *DoH, 2011* and Water Quality Protection Note (WQPN) 22 (refer to Table 4 for the effluent specifications).

General provisions of the *EP Act* and the *Environmental Protection (Unauthorised Discharges) Regulations 2004* apply as well.

8.5.5 Applicant controls

This assessment has reviewed the controls set out in Table 16 below.

Table 16: Risk treatment table

Control	Description
WWTP infrastructure	<p>Submerged Aerated Filter (SAF) biological WWTP with a treatment capacity of 200m³/day;</p> <p>Will incorporate a two train aeration tanks that will allow the ability to ramp up and down from the minimum levels to peak flow;</p> <p>The WWTP will include alarms for the aerobic treatment tank air blower and discharge pump;</p> <p>All pipelines will be HDPE with welded joints;</p> <p>Water pipelines and bund integrity will be inspected twice every 24 hours;</p> <p>Freeboard will be inspected twice every 24 hours;</p> <p>Should have contingency storage capacity for up to two days of normal flow if discharge is suspended while any problems are fixed;</p> <p>Collection pits will be installed at the WWTP to capture any possible overflow;</p> <p>Remote monitoring and control capabilities; and</p> <p>Standby pumps, during emergencies.</p>

8.5.6 Key findings

The Delegated Officer has reviewed the information regarding the risk of sewage discharge from WWTP rupture of pipes, storage tank failure and irrigation and has found that:

- 1. The WWTP should have contingency for storage capacity if discharge is suspended while any problems are fixed; and*
- 2. Untreated sewage should be appropriately stored with sumps located at low points along pipeline routes to capture and contain spills and leaks.*

8.5.7 Consequence

Based on the information detailed above and distance to the nearest sensitive receptors and that the wastewater will undergo treatment prior to discharge, the impact of WWTP pipe

rupture, tank failure and the irrigation of treated wastewater will result in low level on-site impacts. Therefore, the consequence is **minor**.

8.5.8 Likelihood of Risk Event

Based upon the treatment applied to the wastewater prior to irrigation and Applicant controls, an environmental impact from WWTP pipe ruptures, tank failure and the irrigation of treated wastewater will not occur in most circumstances. Therefore, the likelihood of the consequence is **unlikely**.

8.5.9 Overall rating for WWTP rupture of pipes, storage tank failure and irrigation

Comparison of the consequence and likelihood ratings described above with the risk rating matrix (Table 13) determines the overall rating of risk for discharges to land from the WWTP and spray field on sensitive receptors during operation to be **medium**.

8.6 Risk Assessment – Reuse of treated wastewater

8.6.1 Description of reuse of treated wastewater

Effluent from the WWTP will be treated to a secondary level of treatment (Category D) in accordance with Water Quality Protection Note 22 (WQPN 22) and to comply with a Low Exposure Risk Level (level of human contact) in accordance with *DoH, 2011*, with effluent achieving the specifications detailed in Table 4.

The irrigation tank will store treated effluent and reverse osmosis (RO) reject water (brine waste). The RO plant is in the same facility as the WWTP. The applicant intends to transfer a maximum of 100m³/day of brine waste (3099mg/L of total dissolved solids) to the WWTP irrigation tank. The brine waste will be diluted with a maximum of 200m³/day of effluent. The preferred method of disposal would be buried dripper irrigation for a mining camp lawn with the warning signs (but not fenced) and on wet days or if the area appears to be sufficiently watered, the treated effluent tank will discharge by pump to a 93,000m² (inclusive of a spray field buffer) spray field. The total maximum discharge to the irrigation area will be approximately 300m³/day (1164mg/L of total dissolved solids). The online chlorine analyser will measure the chlorine levels in the tank. The chlorine analyser will send the reading directly to the chlorine dosing pump, and will provide chlorine should it be required.

The applicant is proposing an application rate of 40mg/L for nitrogen and 8 mg/L of phosphorus based on calculations from the “Water Quality Protection Note 22, July 2008, Risk Category D”.

8.6.2 Identification and general characterisation of emission

Treated wastewater may contain high levels of pathogens and nutrients which have been identified as key environmental hazards.

8.6.3 Description of potential adverse impact from the emission

If wastewater is discharged to the irrigation area prior to meeting emission standards, this could lead to the facilitated growth of weeds, increase in nutrient levels in soil and ponding in the irrigation area.

8.6.4 Criteria for assessment

The following criteria have been used to evaluate the risk associated to reuse of treated wastewater:

- Department of Health’s *Guidelines for the non-potable uses of recycled water in Western*

Australia, low exposure risk for surface irrigation with some restricted access and application.

- Heavy metals in wastewater should not exceed the quality criteria for irrigation use given in the *Australian and New Zealand guidelines for fresh and marine water quality*.
- Australian water quality guidelines (*ANZECC and ARMCANZ 2000*) provide recommended trigger values for fresh and marine water.
- *Turf Guideline (2014)*.
- *DER Guideline: Assessment and Management of Contaminated Sites (2014)* provides ecological and human health assessment levels for soil.
- *Water Quality Protection Note 22*

8.6.5 Applicant controls

This assessment has reviewed the controls set out in Table 17 below.

Table 17: Risk treatment table

Control	Description
Infrastructure	<ul style="list-style-type: none"> • The WWTP will be maintained in accordance with the manufacturer's specifications; • The operator will be able to select either manual/off/auto mode to control the operation of the irrigation pumps; • In auto mode, irrigation pump to start/stop based on level switches; • Four float level switches are fitted to the irrigation tank to provide pump control; • The irrigation pump are configured in a 100% duty/100% standby arrangement with the duty pump alternating at the end of every irrigation cycle; • Should the duty pump fail to start the standby pump will start; • The spray field will be fenced with single strand wire that direct the public towards signage. There will be some restricted access and application of treated wastewater in line with DoH guidelines for low exposure risk; and • Control and Alarm system will be implemented to ensure target parameters of treated wastewater are achieved prior to irrigation.
Monitoring	<p>The Works Approval holder will be required to carry out weekly sampling of the effluent prior to disinfection and prior to irrigating the public open space during commissioning;</p> <p>The Applicant will be required to carry out monthly monitoring of the effluent prior to disinfection and prior to irrigating the public open space after a licence has been issued for the site</p> <p>The following parameters will be monitored as required:</p> <ul style="list-style-type: none"> • E. Coli • Biochemical Oxygen Demand • Free Available Chlorine • pH • Total Nitrogen

Control	Description																
	<ul style="list-style-type: none"> Total Phosphorus 																
The applicant will meet the following criteria which is consistent with the quality Standards of Recycled Water guidelines	<table border="1"> <thead> <tr> <th>Parameter</th> <th>Target</th> </tr> </thead> <tbody> <tr> <td>pH</td> <td>6.5 - 8.5</td> </tr> <tr> <td>TSS</td> <td><30 mg/L</td> </tr> <tr> <td>Biochemical Oxygen Demand</td> <td><20 mg/L</td> </tr> <tr> <td>Total Nitrogen</td> <td><40mg/L</td> </tr> <tr> <td>Total Phosphorus</td> <td><8mg/L</td> </tr> <tr> <td>Total Chlorine</td> <td>0.2 - 2.0 mg/L</td> </tr> <tr> <td><i>E. coli</i></td> <td><1000 cfu/100ml</td> </tr> </tbody> </table>	Parameter	Target	pH	6.5 - 8.5	TSS	<30 mg/L	Biochemical Oxygen Demand	<20 mg/L	Total Nitrogen	<40mg/L	Total Phosphorus	<8mg/L	Total Chlorine	0.2 - 2.0 mg/L	<i>E. coli</i>	<1000 cfu/100ml
	Parameter	Target															
	pH	6.5 - 8.5															
	TSS	<30 mg/L															
	Biochemical Oxygen Demand	<20 mg/L															
	Total Nitrogen	<40mg/L															
	Total Phosphorus	<8mg/L															
	Total Chlorine	0.2 - 2.0 mg/L															
<i>E. coli</i>	<1000 cfu/100ml																
Irrigation area	<ul style="list-style-type: none"> Effluent discharge from the WWTP will be managed to allow effluent to infiltrate or evaporate and prevent surface ponding or runoff from the irrigation area; The preferred method of disposal would be buried dripper irrigation for a mining camp lawn with the warning signs (but not fenced); and On wet days or if the area appears to be sufficiently watered, the treated effluent tank will discharge by pump to a 4.86 hectare (ha) fenced spray field. 																
Management	<ul style="list-style-type: none"> Ongoing operation and maintenance management will maintain efficient operation of the WWTP; Irrigation water will be tested for nutrient load; Irrigation water will be monitored online(alarm in place); and No irrigation of the mining camp lawn will be carried out during rainy periods; 																

8.6.6 Key findings

The Delegated Officer has reviewed the information regarding the risk from the re-use of treated wastewater and has found that:

- Effluent discharge should be efficiently managed to allow effluent to infiltrate or evaporate and prevent surface ponding or runoff from the irrigation area;*
- Discharge may result in increased nutrient enrichment within the irrigation area;*
- Nutrient enrichment may cause native vegetation die off, exposing greater areas of soil to wind erosion;*
- Water with a TDS concentration of less than 3,000 mg/L can be considered fresh water¹;*
- Regulatory controls may be proposed within the licence to ensure the management of spills relating to brine waste;*

6. Regulatory controls may be proposed within the licence to ensure there are no surface ponding or runoff from the irrigation area; and
7. The WWTP should have contingency for storage capacity if discharge is suspended while any problems are fixed.

1. https://www.epa.sa.gov.au/environmental_info/water_quality/threats/salinity

8.6.7 Consequence

Based on the information detailed above and that the wastewater will undergo treatment prior to discharge, the Delegated Officer has determined that the consequence from reuse of treated wastewater at the proposed irrigation area will be **minor**.

8.6.8 Likelihood of Risk Event

Based on the information detailed above, the Delegated Officer has determined that the likelihood of the risk event occurring due to reuse of treated wastewater causing minor consequences is **unlikely** as the event will not occur in most circumstances.

8.6.9 Overall rating for WWTP rupture of pipes, storage tank failure and irrigation

The Delegated Officer has compared the consequence and likelihood ratings described above for the Risk Criteria (Table 9) and determined that the overall rating for the risk of discharges to land from the spray field on sensitive receptors during operation is **medium**.

8.7 Summary of acceptability and treatment of Risk Events

A summary of the risk assessment and the acceptability or unacceptability of the risk events set out above, with the appropriate treatment and control, are set out in Table 18 below. Controls are described further in section 9.

Table 18: Risk assessment summary

	Description of Risk Event			Applicant controls	Risk rating	Acceptability with controls (conditions on instrument)
	Emission	Source	Pathway/ Receptor (Impact)			
1.	Contaminated stormwater	Storm-water runoff	Stormwater runoff from cleared and operational area potentially causing soil contamination and sedimentation	Stormwater management as detailed in section 8.4.5	Minor consequence Unlikely likelihood Medium Risk	Acceptable subject to Applicant controls conditioned Diversion bunds to be constructed to separate clean and potentially contaminated water Subject to other regulatory controls, no operational controls required

	Description of Risk Event			Applicant controls	Risk rating	Acceptability with controls (conditions on instrument)
	Emission	Source	Pathway/ Receptor (Impact)			
2.	WWTP rupture of pipes, storage tank failure/over topping and pump breakdown	Rupture of pipelines; storage tank failure/over topping and pump breakdown	Discharges to land potentially causing soil contamination Facilitated growth of weeds Increase in nutrients in soil Ponding in irrigation area.	Refer to Applicant controls as detailed in section 8.5.5	Minor consequence Unlikely likelihood Medium risk	Acceptable subject to proponent and regulatory controls Submission of compliance document
3.	<i>Irrigation of treated wastewater-leaching of nutrients into the groundwater and contaminated runoff of nutrients</i> <i>Key nutrients include phosphorus and nitrogen in wastewater</i>	<i>Irrigation with treated wastewater - mining camp lawn and 4.86 hectare (ha) fenced spray field.</i>	Direct discharge	<i>Infrastructure, application area and frequency</i> <i>Refer to Applicant controls as detailed in section 8.6.5</i>	Minor consequence Unlikely likelihood Medium Risk	Acceptable subject to proponent controls conditioned/ outcomes based controls

9. Regulatory controls

A summary of regulatory controls determined to be appropriate for the Risk Event is set out in Table 19. The risks are set out in the assessment in section 8 and the controls are detailed in this section. DWER will determine controls having regard to the adequacy of controls proposed by the *Applicant*. The conditions of the *Works Approval* will be set to give effect to the determined regulatory controls.

Table 19: Summary of regulatory controls to be applied

		Controls		
		9.1.1 – 9.1.4 Infrastructure and Equipment	9.2.1 – 9.2.3 Operational requirements	9.2.4 – 9.2.5 Monitoring
Risk Items (see risk analysis in section 8)	1. Contaminated stormwater runoff	•		
	2. WWTP rupture of pipes, storage tank failure/over topping and pump breakdown	•	•	•
	3. Irrigation	•	•	•

9.1 Works Approval controls

9.1.1 Stormwater infrastructure and equipment

The following infrastructure shall be constructed as proposed by the Applicant, as controls for stormwater management:

- Diversion bunds and culverts to separate clean and potentially contaminated water at the Premises.

9.1.2 WWTP infrastructure and equipment

The WWTP infrastructure and equipment should be constructed as required in table 5 to manage pipeline ruptures, tank failure and irrigation at the WWTP.

9.1.3 Works Approval reporting

The Applicant has stated that the infrastructure will be constructed in accordance with Table 20 (Agnew Gold Mine Works Approval Application M36/171- 18 December 2018)

Works will be completed, with compliance reporting required for the WWTP. A suitably qualified person will be required to confirm that each item of infrastructure specified in the works approval, has been constructed to the specified requirements.

Commissioning of the process plant WWTP is authorised under the Works Approval for a three month period following the submission of the compliance report. The Applicant will need to amend L4611/1987/11 prior to the operation of the WWTP.

Table 20: Proposed construction schedule

Stage	Infrastructure	Proposed Commencement
1	WWTP and pipelines	Quarter 1 2019

9.1.4 Monitoring requirements

Works approval

In order to validate that conditions are being complied with by the Works Approval Holder, the following monitoring conditions are required in the Works Approval during commissioning.

Table 21: Monitoring requirements

Monitoring point reference	Parameter	Units	Averaging period	Frequency
Final effluent to irrigation storage tank	<i>E.coli</i>	cfu/100ml	Spot sample	Monthly (NATA accredited analysis)
	Total Nitrogen	mg/L		
	Total Phosphorous			
	Biochemical Oxygen Demand			
	Total dissolved solids	Monthly (in-field non-NATA accredited analysis permitted); and Monthly NATA accredited testing for verification purposes.		
	Total suspended solids (as turbidity)			
	pH ¹	pH units	N/A	Monthly (in-field non-NATA accredited analysis permitted)
	Volumetric flow rate	m ³ /day	24 hours	Continuous

Note 1: In-field non-NATA accredited analysis permitted.

Table 22: Wastewater Irrigation Quality

Parameter	Limit Value
pH	6.5 - 8.5 ¹
Biochemical Oxygen Demand	<20 mg/L ¹
Total suspended solid	<30 mg/L ¹
Total Nitrogen	<40mg/L ²
Total Phosphorus	<8 mg/L ²
Total Chlorine	0.2 - 2.0 mg/L ¹
E. coli	<1000 cfu/100ml ¹

Note 1: Guidelines for Non-potable uses of recycled Water in Western Australia 2011, Department of Health

Note 2: WQPN 22 Risk Category D

9.2 Licence controls

Prior to commissioning, the following controls will be imposed as conditions on the Existing Licence to manage the risk of emissions during operation at the Premises. It should be noted that these controls are not final and will be subject to compliance with conditions of the Works Approval and may change if additional information becomes available to further inform the risk assessment (as per *Guidance Statement: Risk Assessments*).

9.2.1 Operational requirements for the WWTP

The Licence will authorise irrigation of treated wastewater from the Premises to the spray field subject to compliance with Licence conditions, which will include infrastructure and equipment controls, waste acceptance, throughput restrictions, disposal requirements and treated wastewater limits for the WWTP.

9.2.2 Licence reporting

An Annual Audit Compliance Report will be required to be submitted as a condition of the proposed Licence.

9.2.3 Monitoring

Following the completion of the works AGMC will be required to amend the Existing Licence L4611/1987/11 to include the WWTP (category 54) assessed under this Decision Report prior to its operation. The Licence will authorise treated wastewater from the Premises to be discharged to the Spray Field subject to compliance with monitoring condition added to the licence.

10. Determination of Works Approval conditions

The conditions in the issued Works Approval in Attachment 1 have been determined in accordance with the *Guidance Statement: Setting Conditions*.

The issued works approval expires in 5 years from date of issue.

Table 23 provides a summary of the conditions to be applied to this works approval.

Table 23: Summary of conditions to be applied

Condition Ref	Grounds
Infrastructure and Equipment 1, 2, 3, 4 and 5	These conditions are valid, risk-based and contain appropriate controls.
Emissions 6	This condition is valid, risk-based and consistent with the EP Act.
Monitoring 7, 8 and 9	This condition is valid, risk-based and consistent with the EP Act.
Record keeping 10 and 11	These conditions are valid and are necessary administration and reporting requirements to ensure compliance.

DWER notes that it may review the appropriateness and adequacy of controls at any time and that, following a review, DWER may initiate amendments to the *works approvals* under the EP Act.

11. Applicant's comments

The Applicant was provided with the draft Decision Report and draft issued Works Approval on 10 May 2019. The Applicant advised on 13 May 2019 that they have no further comments on the draft Works Approval and waived the remaining consultation period.

12. 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.

Steve Checker

MANAGER WASTE INDUSTRIES

Delegated Officer under section 20 of the *Environmental Protection Act 1986*

Appendix 1: Key documents

	Document title	In text ref	Availability
1.	<p>Licence application and supporting information received from Matt Collier on 19 December 2018.</p> <p>AGMC Application form including;</p> <p>Attachment 1A – Asic Company Extract;</p> <p>Attachment 1B – Tenement Details;</p> <p>Attachment 3B – Proposed disturbance area;</p> <p>Attachment 3C – Flora report;</p> <p>DMIRS approval;</p> <p>DoH application;</p> <p>General Query DPLH;</p> <p>Premises location map;</p> <p>Sensitive receptors;</p> <p>Supporting information document titled “ Agnew Gold Mine Works Approval Application M36/171”- 18 December 2018</p> <p>Cost of project</p>	Works approval application and supporting information	DWER records (A1750447)
2.	Email: Response from Matt Collier on 21 February 2019 to request for further information received.	Supporting information	DWER records (A1773190)
3.	Email: Response from Matt Collier on 22 February 2019 to request for further information received.	Supporting information	DWER records (A1773194)
4.	Email: Updated Boundary Map from Environment Advisor Ashleigh Shelton	Supporting information	DWER records (A1784090)
5.	DER, July 2015. <i>Guidance Statement: Regulatory principles</i> . Department of Environment Regulation, Perth.	DER 2015a	accessed at www.dwer.wa.gov.au
6.	DER, October 2015. <i>Guidance Statement: Setting conditions</i> . Department of Environment Regulation, Perth.	DER 2015b	
7.	DER, August 2016. <i>Guidance Statement: Licence duration</i> .	DER 2016a	

	Department of Environment Regulation, Perth.		
8.	DER, November 2016. <i>Guidance Statement: Risk Assessments.</i> Department of Environment Regulation, Perth.	DER 2016b	
9.	DER, November 2016. <i>Guidance Statement: Decision Making.</i> Department of Environment Regulation, Perth.	DER 2016c	

Attachment 1: Issued Works Approval W6210/2019/1
