Government of Western Australia
Department of Environment Regulation

Partial Decision Document

Environmental Protection Act 1986, Part V

Proponent: **Aragon Resources Pty Ltd**
Licence: **L8103/1989/3**

Registered office:	Level 3 18-32 Parliament Place WEST PERTH WA 6005
ACN:	114 714 662
Premises address:	Fortnum Gold Mine Mining Tenements M52/95, M52/96, M52/98, M52/99, M52/132 and M52/133 MEEKATHARRA WA 6642
Issue date:	Thursday, 26 May 2011
Commencement date:	Wednesday, 15 June 2011
Expiry date:	Thursday, 14 June 2035

Decision:

Based on the assessment detailed in this document the Department of Environment Regulation

Decision Document prepared by:	Paul Anderson Licensing Officer
Decision Document authorised by:	Alana Kidd Manager Licensing - Resources

(DER) has decided to issue an amended licence. DER considers that in reaching this decision, it has taken into account all relevant considerations and legal requirements and that the licence and its conditions will ensure that an appropriate level of environmental protection is provided.

Contents

1 Purpose of this Document

This decision document explains how DER has assessed and determined the application and provides a record of DER's decision-making process and how relevant factors have been taken into account. Stakeholders should note that this document is limited to DER's assessment and decision making under Part V of the *Environmental Protection Act 1986.* Other approvals may be required for the proposal, and it is the proponent's responsibility to ensure they have all relevant approvals for their Premises.

2 Administrative summary

Administrative details		
Application type	Works Approval ☐ New Licence ☐ Licence amendment ☒ Works Approval amendment ☐	
Activities that cause the premises to become prescribed premises	**Category number(s)**	**Assessed design capacity**
	5	1,000,000 tonnes per annual period
	6	2,500,000 tonnes per annual period
	89	52 tonnes per annual period
Application verified Application fee paid	Date: 10 March 2016 Date: N/A	
Works Approval has been complied with Compliance Certificate received	Yes☒ No☐ N/A☐ Yes☒ No☐ N/A☐	
Commercial-in-confidence claim	Yes☐ No☒	
Commercial-in-confidence claim outcome		
Is the proposal a Major Resource Project?	Yes☒ No☐	
Was the proposal referred to the Environmental Protection Authority (EPA) under Part IV of the *Environmental Protection Act 1986*?	Yes☐ No☒	Referral decision No: Managed under Part V ☐ Assessed under Part IV ☐
Is the proposal subject to Ministerial Conditions?	Yes☐ No ☒	Ministerial statement No: EPA Report No:
Does the proposal involve a discharge of waste into a designated area (as defined in section 57 of the *Environmental Protection Act 1986*)?	Yes☐ No ☒ Department of Water consulted Yes ☐No ☒	
Is the Premises within an Environmental Protection Policy (EPP) Area Yes ☐ No ☒ If Yes include details of which EPP(s) here.		
Is the Premises subject to any EPP requirements? Yes☐ No ☒ If Yes, include details here, eg Site is subject to SO_2 requirements of Kwinana EPP.		

3 Executive summary of proposal and assessment

Fortnum Gold Mine (Fortnum) is located in the Peak Hill region of Western Australia, approximately 170 kilometres (km) north of Meekatharra, on Mining Tenements M52/96 and M52/132. The land within the project area has historically been used for grazing and is located on the Milgun Station.

Aragon Resources Pty Ltd (Aragon Resources) has recently bought Fortnum from Grosvenor Gold Pty Ltd. *Environmental Protection Act 1986* Licence L8103/1989/3 for Fortnum was transferred to Aragon Resources on the 24 March 2016. *Environmental Protection Act 1986* Works Approvals W5297/2012/1, W5367/2013/1 and W5491/2013/1 for Fortnum were also transferred to Aragon.

Aragon Resources applied to DER on the 3 March 2016 to have their Licence L8103/1989/3 amended to include recent works completed at Fortnum through Works Approval W5491/2013/1, and to increase the throughput for category 5.

Recent completed works at Fortnum includes the installation of infrastructure for dewatering of mine pit lakes and groundwater to allow mining of ore. Dewatering water will be discharged to the Yarlarweelor Creek. The assessment and approval for these works, including an assessment of the discharge of dewatering effluent to the environment, was assessed and approved through Works Approval W5491/2013/1. A compliance document has been submitted by Aragon for the completed works. Licence category 6 with an approved capacity of 2,500,000 tonnes per annum (tpa) has been included in the Licence.

The approved premises production capacity for category 5 in the Licence has been changed from 851,954 tpa to 1,000,000 tpa. The lower amount was mistakenly referred to in Works Approval W5297/2012/1. The original supporting document for that works approval indicated in several sections that the production capacity for category 5 is 1,000,000 tpa and that the expected tailings stored within the final designed TSF will be 851,954 tpa. Works Approval W5297/2012/1 was amended on the 17 December 2015 to include the correct production capacity of 1,000,000 tpa. Works Approval W5297/2012/1 gives approval for a lift at the existing tailings storage facility (TSF). These works have not started. The current process plant and TSF were already designed and approved to accept 1,000,000 tpa of tailings material. Therefore the submission of compliance document for Works Approval W5297/2012/1, following the completion of the works, is not required as part of this Licence amendment to increase the capacity of category 5.

DER has not re-assessed the acceptability of impacts or emissions and discharges from the Premises or re-visited any existing emission controls, aside from the monitoring of dewatering discharge to the Yarlarweelor Creek and the setting of limits for the discharge. Where conditions have been amended in the existing Licence, these have been justified in Section 4.

4 Decision table

All applications are assessed in line with the *Environmental Protection Act 1986*, the *Environmental Protection Regulations* Operational Procedure on Assessing Emissions and Discharges from Prescribed Premises. Where other references have the decision they are detailed in the decision document.

DECISION TABLE		
Works Approval / Licence section	**Condition number** **W = Works Approval** **L= Licence**	**Justification (including risk description & decision methodology where rele**
Monitoring conditions	L 1(a) – (f)	A management program for water quality monitoring of the dewatering discharge was submitted as part of the works approval application for W5491/2013/1. The monitoring program identified that the discharge water will be monitored quarterly temperature and salinity, and annually for ions and metals. It also identified a flow will be installed to measure the monthly volumes of dewatering water being disch the Yarlarweelor Creek. Additionally, water quality monitoring of the pit lakes and groundwater will also occur as a part of the monitoring program. The commitment in the works approval application for the monitoring of discharge waters only have implemented as conditions in this Licence amendment. **Operation** Condition 1(a) has been amended by including into Table 1 the requirement to m the dewatering discharged to the Yarlarweelor Creek. A risk assessment of the discharge to the Yarlarweelor Creek was undertaken as the assessment for Works Approval W5491/2013/1. The risk assessment identifie significant impacts are expected from dewatering operations at Fortnum and the r the environment is considered low. The majority of the dewatering will occur within the first twelve months of operatio the dewatering of two pit lakes (a total of 2,188,800 kilolitres (kL)). After the initia months, discharge to the Yarlarweelor Creek is expected to drop to 322,800 kL p and only consists of groundwater. Water sampling results from the Toms and

		Yarlarweelor pit lakes indicate the water is fresh to brackish (i.e. Yarlarweelor less than120 mg/L TDS, Toms less than 1,600 mg/L TDS) with a pH range between 6.5 to8.3. Ongoing dewatering of groundwater to facilitate mining of the pits will require only small amounts of water to be discharged to the Yarlarweelor Creek. Groundwater quality at Fortnum is characterised as fresh on average, with TDS typically less than 1,000 mg/L. Previous annual environmental reports prepared for Fortnum indicate that the concentrations of metals (including arsenic, copper and lead), nitrates, sulfates and WAD cyanide have typically remained below guideline values when assessed against ANZECC (2000) and NHMRC (2004) livestock watering and drinking criteria. Monitoring requirements included into Table 1 are quarterly sampling for pH and TDS as was identified in the assessment for Works Approval W5491/2013/1(dewatering). Also included is sampling for Total Recoverable Hydrocarbons (TRH) as there are potential discharges of hydrocarbons to the pit lakes being dewatered through leaks and spills from dewatering pumps and service vehicles. Annual sampling for common ions and metals is also included as was identified in the assessment for Works Approval W5491/2013/1 and commitments made in the works approval application. Condition 1(a) has also been amended by including additional sampling parameters into Table 1 for all groundwater monitoring bores. The additional parameters include arsenic, antimony, cadmium, cobalt, iron, selenium and thallium. These additional parameters complete the list of elements which are commonly sampled and analysed for at gold mines. Condition 1(b) has been amended by including methods required for sampling of wastewater and groundwater, and the minimum time required between annual sampling. Conditions 1(d) has been included to ensure a flow meter is maintained to record cumulative volumes of dewatering water discharged to the Yarlarweelor Creek. The inclusion of this condition was identified in the assessment for Works Approval W5491/2013/1 and was also a commitment made in the application. Condition 1(e) has been included in the Licence to ensure the Licensee records the cumulative discharge from the flow meter on a monthly basis and the results are to be presented in the annual environmental report. Condition 1(f) has been included to ensure the flow meter specified in condition 1(d) is calibrated on an annual basis.	

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Reporting conditions	3(a) and 3(b), 4 and 5	**Operation** Condition 3(b) Table 4 has been amended by including limits for dewatering discharge to the Yarlarweelor Creek. The assessment for Works Approval W5491/2013/1 identified the establishment of targets for dewatering discharge however targets are no longer applied to licenses. Limits have been set for pH, TDS and TRH and are explained below. An exceedance of a limit in the Licence already requires reporting to DER through condition 3(a) and (b). There are no adopted standards for TRH values for dewatering discharge waters to surface waters. Other DER licensed dewatering operations discharging pit water to similar surface waters like the Yarlarweelor Creek have a TRH limit set at 15 mg/L. Therefore a limit of 15 mg/L for TRH has been included in condition 3(b). Historical sampling of the pit lakes and the groundwater since 2005 has shown the groundwater to be fresh (less than 1,000 mg/L TDS) and the pit lakes being dewatered fresh to slightly saline (less than 1,600 mg/L TDS). A limit of 2,000 mg/L has been established for TDS to ensure potential impacts to the Yarlarweelor Creek are minimised through Licence exceedance response and reporting requirements. A limit range for pH of equal or greater than 6 and less than or equal to 9 is already established in the Licence for groundwater monitoring bores. Groundwater sampling at Fortnum since 2005 has shown the pH to be neutral to slightly alkaline with a pH of between 7 to 8.3. Pit lake sampling indicates a pH range of between 8.5 to 9. Therefore limits in the Licence for pH at groundwater monitoring bores in Table 4 have also been adopted for the mine dewatering discharge.	Licence amendment application for L8103/1989/3 Decision Document for W5491/2013/1 and supporting documentation submitted with works approval application. *Environmental Protection Act 1986* Works Approval W5491/2013/1 *Environmental Protection Act 1986* Licence L8103/1989/3

		DER considers the setting of limits for all other parameters in dewatering discharge quality monitoring is not necessary. Previous annual environmental reports prepared for Fortnum indicate that the concentrations of metals (including arsenic, copper and lead), nitrates, sulfates and WAD cyanide have typically remained below guideline values when assessed against ANZECC (2000) and NHMRC (2004) livestock watering and drinking criteria.	

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Attachments	Attachment 4	Attachment 4 is included as a map to show the dewatering discharge location.	Attachment 4

5 Advertisement and consultation table

Date	Event	Comments received/Notes	How comments were taken into consideration
21/4/2016	Proponent sent a copy of draft instrument	No comments received.	N/A
19/5/2016	Licence amended	N/A	N/A

6 Risk Assessment

Note: This matrix is taken from the DER Corporate Policy Statement No. 07 - Operational Risk Management

Table 1: Emissions Risk Matrix

Likelihood	Consequence				
	Insignificant	Minor	Moderate	Major	Severe
Almost Certain	Moderate	High	High	Extreme	Extreme
Likely	Moderate	Moderate	High	High	Extreme
Possible	Low	Moderate	Moderate	High	Extreme
Unlikely	Low	Moderate	Moderate	Moderate	High
Rare	Low	Low	Moderate	Moderate	High