



## Application for Licence Amendment

### Part V Division 3 of the *Environmental Protection Act 1986*

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<b>Licence Number</b>	L6110/1990/13
<b>Licence Holder</b>	Australian Gold Reagents Pty Ltd
<b>ACN</b>	009 140 121
<b>File Number</b>	DEC4869/1
<b>Premises</b>	Australian Gold Reagents Lot 20 Kwinana Beach Road KWINANA BEACH WA 6167  Legal description –  Part of Lot 20 on Diagram 78086 Certificate of Title Volume 1918 Folio 244 As defined by the Premises map attached to the Revised Licence
<b>Date of Report</b>	25/08/2022
<b>Decision</b>	Revised licence granted

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## 1. Decision summary

Licence L6110/1990/3 is held by Australian Gold Reagents Pty Ltd (Licence Holder) for the Australian Gold Reagents sodium cyanide plant (the Premises), located at Lot 20 Kwinana Beach Rd, Kwinana Beach.

This Amendment Report documents the assessment of potential risks to the environment and public health from proposed changes to the emissions and discharges during the operation of the Premises. As a result of this assessment, Revised Licence L6110/1990/3 has been granted.

## 2. Scope of assessment

### 2.1 Regulatory framework

In completing the assessment documented in this Amendment Report, the department has considered and given due regard to its Regulatory Framework and relevant policy documents which are available at <https://dwer.wa.gov.au/regulatory-documents>.

### 2.2 Application summary

The Licence Holder applied for a licence amendment to Licence L6110/1990/13 on 23 December 2020. The Licence authorises emissions and discharges from the prescribed premises; the Kwinana Sodium Cyanide Manufacturing Facility located on a portion of Lot 20 on Diagram 78086, Kwinana Beach Road, Kwinana (the premises).

The premises consists of two liquid sodium cyanide plants (SCP) and a downstream sodium cyanide solids plant. Waste gases generated from the liquid cyanide production process consist of elevated concentrations of ammonia ( $\text{NH}_3$ ), nitrous oxide ( $\text{N}_2\text{O}$ ) and hydrogen cyanide (HCN). During normal operations, waste gases are directed to the SCP 1 and SCP 2 incinerators where natural gas is used to oxidise the waste gases into nitrogen ( $\text{N}_2$ ), carbon dioxide ( $\text{CO}_2$ ) and nitrogen oxides ( $\text{NO}_x$ ). Currently, waste gas from each of the liquid SCPs is directed to its own dedicated incinerator, i.e., waste gas from SCP 1 is directed to the John Zink incinerator and waste gas from SCP 2 is directed to the Maxitherm incinerator.

Maintenance of the incinerators is usually scheduled to coincide with a shutdown of the SCP to avoid the need to vent waste gas to atmosphere, however there are instances when this isn't possible or when emergency unplanned maintenance is required. During periods where an incinerator is offline due to maintenance or an incinerator trip, waste gas from the SCPs downstream of the absorber column is vented directly to atmosphere (without treatment) via the shutdown stack.

The amendment application seeks to amend the licence (condition 7) to allow waste gas from each liquid SCP to be directed to a combined header prior to treatment by either of the incinerators; John Zink incinerator or Maxitherm incinerator. The amendment will allow waste gases from both SCP 1 and SCP 2 to be directed to either of the two incinerators during incinerator maintenance or during an incinerator trip. Implementation of the change requires the joining of the waste gas lines from both SCP 1 and SCP 2 via piping and a 750mm valve so that they can discharge via either incinerator as show in red in Figure 1.

The Licence Holder has advised that venting of untreated gas prior to these changes can take place for periods of up to a few hours. The proposed modifications will allow waste gas that is typically vented during incinerator maintenance or trips to be treated via the other operational incinerator. This will reduce the duration of venting events from potentially hours to a maximum of 10 mins.

The proposal does not change the waste gas composition or alter the emissions profile for

SCP start up activities. Measures in place to manage SCP start ups will continue per the Licence and the *Sodium Cyanide Plant Start Up and Waste Gas Venting Management Plan*. No change to the overall premises production throughput has been proposed as part of this amendment.

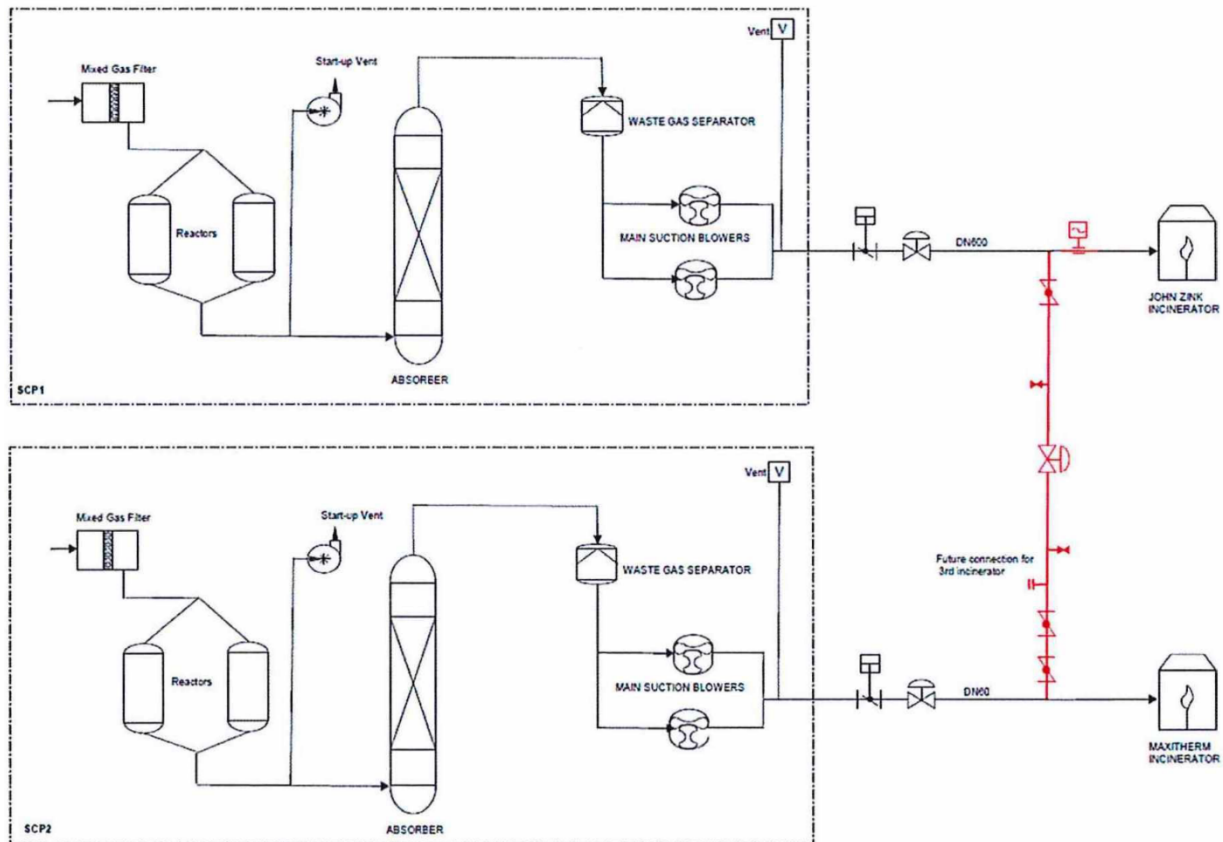


Figure 1: The proposed changes to the waste gas line as shown in red

## 2.3 Part IV of the EP Act

The premises is operated under Ministerial Statement 700. The approved proposal is for the operation of a liquid and solid sodium cyanide production plant at Kwinana and the transport of sodium cyanide by road and rail from Kwinana. The liquid SCPs are approved to produce a combined output of 91,000 tonnes of cyanide, and the solids plant is authorised to produce up to 45,000 tonnes of solid sodium cyanide briquettes.

The modifications proposed under the Licence amendment application were referred to the EPA under section 38 of the EP Act on 2 December 2020. In addition to the proposed modifications relating to the incineration waste gas, the referral also sought approval for the expansion to increase production to 110,000 tonnes of liquid cyanide and 60,000 tonnes of solid sodium cyanide.

The EPA determined to assess the proposal at a level of Referral Information with additional information required under section 40(2)(a) of the EP Act. EPA Report 1725 was released on 27 June 2022. The proposed modifications were approved by the Minister for Environment subject to the conditions of Ministerial Statement (MS) 1196 (published on 23 August 2022).

In its report, the EPA noted that air emissions from the premises are currently regulated under the Licence (L6110/1990/13) with conditions specifying atmospheric discharge points, emission limits and targets, monitoring and reporting requirements and emissions controls during start up and shut down events. The EPA determined that regulation of emissions to air can continue to be managed under Part V to meet the EPA's objectives for maintaining air

quality however considered that the Licence, and the *Start up and Waste Gas Venting Management Plan*, should be updated to include the proposed additional avoidance and management measures relating to start-ups. One of these additional measures includes not undertaking start-up operations when the wind conditions originate from 57-80 degrees (towards Wells Park).

It is noted that the EPA has considered greenhouse gas (GHG) emissions from the proposal; determining that GHG emissions could be limited through Condition 1 of the Ministerial Statement. Should the limit be exceeded, the EPA highlighted that the Minister for Environment may elect to initiate a section 46 change to the conditions to require a GHG Management Plan. The Delegated Officer has considered the EPA’s assessment of GHG emissions and *Guidance Statement: Setting Conditions* and determined not to unnecessarily duplicate the requirements of MS 700 or reassess GHG emissions as they have already been considered through EPA assessment and conditions applied (Report 1725).

## 2.4 Exclusions

The proposal to increase the production of sodium cyanide through the solid and liquid SCPs as referred under Part IV is not the subject of this Licence amendment application and has not been assessed in this Amendment Report. The scope of this assessment is limited to the changes outlined in section 2.2.

## 3. Consultation

Table 1 provides a summary of the consultation undertaken by the department.

**Table 1: Consultation**

Consultation method	Comments received	Department response
Licence Holder was provided with draft amendment on 30/06/2022	Refer to Appendix 1	

## 4. Conclusion

The proposed modifications aim to reduce the volume of waste gas directly vented to atmosphere during incinerator maintenance and is therefore likely to result in a reduction in risk to sensitive receptors.

The delegated officer notes that the existing Licence limits emissions of Total Cyanide and NH<sub>3</sub> (condition 10) from the incinerator stacks to ensure that the incinerator is operated for the effective destruction of waste gases. Stack testing is required on a quarterly basis to verify compliance with emission limits (condition 7). The Licence also contains limits for NO<sub>x</sub> discharged from the incinerator stacks which is monitored on a continuous basis to confirm the limits are achieved (conditions 10 and 7). The Licence Holder is required to report any exceedances of emission limits before 5pm on the next business day of becoming aware of the exceedance detailing action taken to ensure that emissions remain within the limits of the Licence.

When referring the proposal under Part IV of the EP Act, the Licence Holder acknowledged that, in the event of an incinerator shutdown or trip, both SCPs will have to reduce production rates by approximately half to not exceed the combustion capacity of the remaining running incinerator (AGR 2022). Management of feed material to ensure combustion capacity of the operational incinerator is critical in ensuring that the destruction efficiency of the waste gases is maintained. The delegated officer recognises that quarterly testing may not be able to

demonstrate compliance with emissions limits for Total Cyanide and NH<sub>3</sub> during infrequent and unpredictable events such as incinerator trips or unplanned maintenance periods when waste gases from both SCPs will be directed to a single incinerator. Noting this, a condition has been applied to the Licence requiring that feed material is properly managed to maintain the destruction efficiency of waste gases and therefore ensuring the emission limits are achieved.

The delegated officer considers that the proposed changes do not increase the risk profile of the premises and that they can be managed through existing Licence conditions and application of the above proposed condition regarding management of incinerator feed. On this basis, the delegated officer has determined to grant an Amended Licence with the following changes:

- Conditions have been added (conditions 1 - 3) authorising the works to install the infrastructure required to implement the proposed amendment (i.e. valve and piping) with the Licence Holder required to submit documentation demonstrating that completed works are consistent with the Licence conditions;
- Condition 6 has been amended to allow discharge of waste gas from SCP1 and SCP2 via either of the incinerators, i.e. the John Zink incinerator or Maxitherm incinerator, during periods of incinerator shut down or trips;
- Condition 7 has been amended to include additional start-up requirements committed to in the Part IV referral and current *Sodium Cyanide Plant Start Up and Waste Gas Venting Management Plan* (refer to Appendix 1); and
- A condition (condition 11) has been included requiring that in the event of an incinerator trip or shut down, the Licence Holder shall manage the feed into the operational incinerator to ensure that efficient destruction of gaseous wastes from SCP 1 and/or SCP 2 is maintained.

In granting the Amended Licence, the Delegated Officer has also determined to:

- update the premises map(s);
- arrange the order of conditions to combine reporting conditions into a single section; and
- revise licence condition numbers and realign condition numbers for numerical consistency.

Obligations on the Licence Holder have not changed as a result of the updates and changes made.

## References

1. Australia Gold Reagents Pty Ltd (ARG) 2022, *Sodium Cyanide Manufacturing Facility, Referral Supporting Document, Significant Amendment of Approved Proposal*, Kwinana, Western Australia
2. Department of Environment Regulation (DER) 2016, *Guidance Statement: Environmental Siting*, Perth, Western Australia.
3. DER 2017, *Guidance Statement: Risk Assessments*, Perth, Western Australia.
4. DER 2015, *Guidance Statement: Setting Conditions*, Perth, Western Australia.
5. EPA 2022, *Sodium Cyanide Plants (Liquid and Solid) at Kwinana and Transport of Sodium Cyanide by Road and Rail from Kwinana, Report 1725*, Environmental Protection Authority, Perth, Western Australia

## Appendix 1: Summary of Licence Holder's comments on risk assessment and draft conditions

Condition	Summary of Licence Holder's comment	Department's response
<b>6 July 2022</b>		
Cover page	The Licence Holder requested that the duration of the Licence be amended to 20 years per the <i>Guidance Statement: Licence Duration</i> (DER 2016).	The Licence was amended in October 2021 to extend the expiry date from 27 March 2022 to 27 March 2034 so that the aggregate duration of the licence is 20 years in accordance with the <i>Guidance Statement: Licence Duration</i> . No further extension to the duration of the Licence can be made at this time.
Condition 7	<p>The Licence Holder requested that Condition 7 be updated to include the requirement to not allow start-up of SCP 1 and SCP2 when the wind originates from 60° to 79°. This is derived from a commitment made within the referral document submitted under Part IV of the EP Act specifying that start up operations would not occur when the wind conditions originate from 57° to 80°.</p> <p>The slight variation in the wind arc (57° to 80° compared to 60° to 79°) allows the Licence Holder to use common naming (North, East, South and West) that is used in the BOM meteorological system.</p>	<p>The Delegated Officer notes that the additional start-up restriction (i.e. no start-ups when wind originates between 57° to 80°) was a commitment made in the Part IV referral and recommended by the EPA (EPA Report 1725) to be implemented on the Licence. It is also noted that the additional restriction will provide a greater level of protection for receptors to the south, particular at Wells Park. As such the Delegated Officer does not object to inclusion of the additional restriction considering that it will reduce the overall risk to receptors. However, to ensure that the Licence aligns with the commitments made within the Part IV referral, the Delegated Officer has included the additional start-up restriction on the Licence as recommended in EPA Report 1725 (i.e. no start-ups when wind originates between 57° to 80°).</p> <p>Noting that the licence holder uses the BOM Garden Island weather station (ID:95607), the delegated officer has referenced this in condition 8 so that the method for determining wind conditions is clear and consistent.</p>



Condition	Summary of Licence Holder's comment	Department's response
	<p>Similar to the above, the Licence Holder also requested that the wind arc for when wind speed is greater than 2 metres per second (m/s) be adjusted from 70° to 215° to 80° and 210° to allow the use of common naming (i.e. E to SSW). The Licence Holder also suggested increasing the arc to 80° and 219° to provide greater protection to downwind receptors.</p>	<p>The Delegated Officer has considered the following and determined to adjust the wind arc for when wind speed is greater than 2 metres per second (m/s) from 70° to 215° to 80° and 219°:</p> <ul style="list-style-type: none"> <li>• Limited information has been provided by the Licence Holder demonstrating the potential risk of reducing the current wind arc;</li> <li>• Reducing the wind arc from 70° to 80° is required to align with the new requirement above restriction start-ups under wind conditions originating between 57° to 80°; and</li> <li>• Reducing the wind arc from 215° to 210° will provide more opportunity for start-ups when wind conditions are greater than 2m/s and therefore provide a lower level of protection for downstream receptors. As such, the Delegated Officer considers that increasing the wind arc to 219° in line with the Licence Holder's suggestion is most appropriate for managing risk to downstream receptors.</li> </ul> <p>Common naming references have been included in the conditions where appropriate.</p>
<p>Condition 19 and 20</p>	<p>The Licence Holder requested that reporting requirements be updated to align with the <i>Notice of Amendment of Licence Reporting Requirements Section 59(2), Section 59(1)(A) And 59(1)(B) Environmental Protection Act 1986 Licensed Prescribed Premises</i> issued by the Department in May 2022.</p>	<p>Condition 20 regarding the submission of an Annual Environmental Report has been amended to require submission on a biennial basis as per the Notice of Amendment.</p> <p>The Delegated Officer notes that the Notice of Amendment stipulates that the Annual Audit Compliance Report (AACR) is to be submitted on 10 February 2023 and then annually thereafter. As such, no change has been made to requirements for submitting the AACR (Condition 19).</p>
<b>18 August 2022</b>		
<p>Cover page</p>	<p>The Licence Holder requested that production capacity authorised by the Licence be amended to align with the increased production capacity assessed under Part IV.</p>	<p>The Delegated Officer noted that the production increase was not the subject of this amendment application. The proposed increase involves a number of plant upgrades and modifications which have not been considered in the assessment of the amendment application and that an increase in production will require assessment under a separate application.</p>
<p>Condition 7</p>	<p>The Licence Holder requested that common names be removed and the wind arc for condition 7(d) be reverted back to 80° to 219°.</p>	<p>Updates made.</p>

## Appendix 2: Application validation summary

SECTION 1: APPLICATION SUMMARY			
<b>Application type</b>			
Amendment to licence	<input checked="" type="checkbox"/>	Current licence number:	L6110/1990/13
		Relevant works approval number:	N/A <input checked="" type="checkbox"/>
Date application received	23/12/2021		
<b>Applicant and Premises details</b>			
Applicant name/s (full legal name/s)	Australian Gold Reagents Pty Ltd		
Premises name	Australian Gold Reagents		
Premises location	Part Lot 20 on Diagram 78086 Kwinana Beach Road KWINANA BEACH WA 6167		
Local Government Authority	City of Kwinana		
<b>Application documents</b>			
HPCM file reference number:	DEC4869/1		
Key application documents (additional to application form):	N/A		
<b>Scope of application/assessment</b>			
Summary of proposed activities or changes to existing operations.	Connection of incinerators (John Zink and Maxitherm) to allow waste gas from either liquid plant to be treated by either incinerator.		
<b>Category number/s (activities that cause the premises to become prescribed premises)</b>			
<b>Table 1: Prescribed premises categories</b>			
Prescribed premises category and description	Assessed production or design capacity	Proposed changes to the production or design capacity (amendments only)	
Category 31: <i>Chemical manufacturing</i>	136,000 tonnes per year	<i>No change proposed under this application</i>	
<b>Legislative context and other approvals</b>			
Has the applicant referred, or do they intend to refer, their proposal to the EPA under Part IV of the EP Act as a significant proposal?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Referral decision No: Managed under Part V <input type="checkbox"/> Assessed under Part IV <input type="checkbox"/>	
Does the applicant hold any existing Part IV Ministerial Statements relevant to the application?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Ministerial statement No: MS 700 EPA Report No:	
Has the proposal been referred and/or assessed under the EPBC Act?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Reference No:	

Has the applicant demonstrated occupancy (proof of occupier status)?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Certificate of title <input type="checkbox"/> General lease <input checked="" type="checkbox"/> Expiry: 2027 Mining lease / tenement <input type="checkbox"/> Expiry: Other evidence <input type="checkbox"/> Expiry:
Has the applicant obtained all relevant planning approvals?	Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input checked="" type="checkbox"/>	Approval: Expiry date: If N/A explain why? Minor change to infrastructure
Has the applicant applied for, or have an existing EP Act clearing permit in relation to this proposal?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	CPS No: N/A No clearing is proposed.
Has the applicant applied for, or have an existing CAWS Act clearing licence in relation to this proposal?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Application reference No: N/A Licence/permit No: N/A No clearing is proposed.
Has the applicant applied for, or have an existing RIWI Act licence or permit in relation to this proposal?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Application reference No: Licence/permit No: Licence / permit not required.
Does the proposal involve a discharge of waste into a designated area (as defined in section 57 of the EP Act)?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Name: N/A
Is the Premises situated in a Public Drinking Water Source Area (PDWSA)?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	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 <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>
Is the Premises subject to any other Acts or subsidiary regulations (e.g. <i>Dangerous Goods Safety Act 2004, Environmental Protection (Controlled Waste) Regulations 2004, State Agreement Act xxxx</i> )	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	This proposal will not change the existing requirements

Is the Premises within an Environmental Protection Policy (EPP) Area?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Kwinana Air Quality EPP
Is the Premises subject to any EPP requirements?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Within Kwinana EPP area - Kwinana EPP relates to SOx.
Is the Premises a known or suspected contaminated site under the <i>Contaminated Sites Act 2003</i> ?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Classification: N/A / possibly contaminated – investigation required (PC-IR) Date of classification: June 2019