



# Decision Document

## *Environmental Protection Act 1986, Part V*

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**Proponent:** Independence Long Pty Ltd

**Licence:** L8575/2011/1

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**Registered office:** Durkin Road  
KAMBALDA WA 6442

**ACN:** 098 270 789

**Premises address:** Long Victor Nickel Complex  
Part of Lot 13 on Plan 48932 (within coordinates 373,122.20 E 6,550,741.97 N, 374,292.19 E 6,550,741.96 N, 374,292.17 E 6,550,541.97 N, 374,648.19 E 6,550,541.97 N, 374,847.28 E 6,550,455.91 N, 374,949.83 E 6,549,577.97 N, 374,310.18 E 6,549,569.96 N, 373,422.20 E 6,550,151.96 N and 373,083.18 E 6,550,151.96 N) and mining tenements M15/1761, M15/1762 and M15/1763  
COOLGARDIE WA 6442

**Issue date:** Thursday, 14 July 2011

**Commencement date:** Thursday, 14 July 2011

**Expiry date:** Friday, 13 July 2018

### Decision

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

Decision Document prepared by: Fiona Sharpe  
Licensing Officer

Decision Document authorised by: Danielle Eyre  
Delegated Officer



## Contents

Decision Document	1
Contents	2
1 Purpose of this Document	2
2 Administrative summary	2
3 Executive summary of proposal and assessment	3
4 Decision table	4
5 Advertisement and consultation table	9
6 Risk Assessment	10
Appendix A	11

## 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 <input type="checkbox"/>	
	New Licence <input type="checkbox"/>	
	Licence amendment <input checked="" type="checkbox"/>	
	Works Approval amendment <input type="checkbox"/>	
Activities that cause the premises to become prescribed premises	<b>Category number(s)</b>	<b>Assessed design capacity</b>
	6	600 000 tonnes per year
	61(A)	110 000 tonnes per year
Application verified	Date: N/A	
Application fee paid	Date: N/A	
Works Approval has been complied with	Yes <input type="checkbox"/>	No <input type="checkbox"/> N/A <input checked="" type="checkbox"/>
Compliance Certificate received	Yes <input type="checkbox"/>	No <input type="checkbox"/> N/A <input checked="" type="checkbox"/>
Commercial-in-confidence claim	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
Commercial-in-confidence claim outcome		
Is the proposal a Major Resource Project?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Was the proposal referred to the Environmental Protection Authority (EPA) under Part IV of the <i>Environmental Protection Act 1986</i> ?	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"/>
Is the proposal subject to Ministerial Conditions?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
		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 <i>Environmental Protection Act 1986</i> )?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Department of Water consulted Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Is the Premises within an Environmental Protection Policy (EPP) Area Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> If Yes include details of which EPP(s) here.	
Is the Premises subject to any EPP requirements? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> If Yes, include details here, eg Site is subject to SO <sub>2</sub> requirements of Kwinana EPP.	

### 3 Executive summary of proposal and assessment

Lightning Nickel Pty Ltd was re-named in May 2014 as Independence Long Pty Ltd (Independence Long) and is a wholly owned subsidiary of the Independence Group NL (IGO) that owns and operates the Long Operation. This includes the Long, Victor South, Moran and McLeay underground deposits located on Part of Lot 13 on Plan 48932, and mining leases M15/1761, M15/1762, M15/1763, M26/317 and M26/491.

Long Operation is located about 2.7 km from the BHPB Nickel West Kambalda Nickel Concentrator, which is located immediately northeast of the Kambalda East town site. Kambalda is connected to the regional centre of Kalgoorlie-Boulder, 55 km to the north, by the Goldfields Highway.

Long Operation is an underground nickel mine located underneath the shores of, and below Lake Lefroy in Kambalda. Mining methods range from long-hole open stoping with mullock and paste backfill and mechanised Jumbo flat-back stoping, to hand-held mining, which is utilised to extract blocks in narrow stopes not suitable for mechanisation.

Ore from the mine is brought to the surface and trucked to the adjacent BHP Billiton's Kambalda Nickel Concentrator for toll treatment. A small amount of copper is also extracted from the ore.

The current depth of mining is more than 1 000 metres below ground level (mbgl). To maintain safe mining conditions, the Long Operation is dewatered. Dewatering is predominantly recycled underground, with excess being pumped to either the Long Dam or Victor Dam and then discharged via a pipeline to Lake Lefroy. In the past, discharge has been mainly from the Long Dam with dewatering water transferred via pipeline from Victor Dam to Long Dam. However, due to difficulties maintaining leak detection equipment in the pipeline (due to hypersaline conditions), water is not currently transferred between the dams, and the Victor Dam is used as the main discharge point.

Independence Long Pty Ltd also operates a paste plant at Long Operation which uses dry tailings from the Goldfields St Ives tailings storage facility (south of Long Operation), which are stockpiled adjacent to the plant before being mixed with cement to backfill mined-out stopes within Long, Victor South, Moran and McLeay underground mines. To manage dust the tailings are watered down upon arrival to the stockpile, they are visually inspected daily and if surface dryness indicates the stockpile may be a source of dust or if strong winds are forecast a water truck is used to water the tailings down.

Stormwater and other surface water run-off is captured within the bunded stockpile area and where practical is transferred to the Victor Settling Dam.

This Licence is the result of an amendment sought by the Licensee to increase the throughput for category 61A from 50 000 tonnes per year to 110 000 tonnes per year. The Licence has also been converted into the most recent format during this amendment.



## 4 Decision table

All applications are assessed in line with the *Environmental Protection Act 1986*, the *Environmental Protection Regulations 1987*, DEC's Policy Statement - Limits and targets for prescribed premises (2006), and DER's Operational Procedure on Assessing Emissions and Discharges from Prescribed Premises. Where other references have been used in making the decision they are detailed in the decision document.

<b>DECISION TABLE</b>			
<b>Works Approval / Licence section</b>	<b>Condition number W = Works Approval L = Licence</b>	<b>Justification (including risk description &amp; decision methodology where relevant)</b>	<b>Reference documents</b>
<b>General conditions</b>	L1.2.1 – 1.2.3	Hazardous material storage and stormwater contamination have not been reassessed as part of this amendment. Condition 1.2.1 and 1.2.2 replace previous licence conditions W1(a-d) and 1.2.3 replaces previous condition W6.	Application supporting documentation
<b>Premises operation</b>	L1.3.1 – 1.3.8	Premises operation conditions 1.3.1 – 1.3.7 replaces conditions W2(a-f), W3, W4 and Attachment 2 from previous Licence. A new discharge point has been added to the Licence. This discharge point is from the Victor Fan which captures water vapour from the vent from underground. The water vapour passes up the vent rise and through a drop box which lowers the velocity of the air. It then passes through an evase which directs the vapour into the shroud. This allows the water to condense out of the air and it is then collected within the trench and gravity fed through a flow meter onto Lake Lefroy. This has been captured in Table 2.3.1. DER's assessment and decision making are detailed in Appendix A.	Application supporting documentation  General provisions of the <i>Environmental Protection Act 1986</i> .
<b>Emissions general</b>	L2.1.1	Numerical limits will be set in section 2 of the licence and therefore the condition regarding recording and investigation of exceedances of limits or targets has been included.	N/A
<b>Point source emissions to air including monitoring</b>	L – no conditions	No air emissions are generated from the operations at LVN. No conditions are required.	General provisions of the <i>Environmental Protection Act 1986</i> .
<b>Point source emissions to</b>	L2.2.1, 2.2.2 and 3.2.1	<b>Normal Operation</b> <u>Emission Description</u>	Application supporting



DECISION TABLE			
Works Approval / Licence section	Condition number W = Works Approval L= Licence	Justification (including risk description & decision methodology where relevant)	Reference documents
surface water including monitoring		<p><i>Emission:</i> Dewatering effluent from the Long underground mine will be discharged to Lake Lefroy where it will seep into groundwater and/or evaporate. Dewatering effluent is hypersaline in nature that is typical of sediment and water on Lake Lefroy.</p> <p><i>Impact:</i> Potential impacts may occur to fringing vegetation as a result of the salinity of the effluent. Discharge may result in a localised sediment/salinity plume with potential for the accumulation of nickel and other metals.</p> <p><i>Controls:</i> Discharge is pumped to the lined water dams prior to being discharged to the lake. This reduces potential for erosion and scouring and provides opportunity for settling of suspended solids.</p> <p><u>Risk Assessment</u>  <i>Consequence:</i> Moderate  <i>Likelihood:</i> Possible  <i>Risk Rating:</i> Moderate</p> <p><u>Regulatory Controls</u>            At this time there are no current standards or guidelines DER applies to discharging dewatering water into a hypersaline lake system. However, the following regulatory controls apply:</p> <ul style="list-style-type: none"> <li>• Condition 2.3.1 stipulates the approved discharge points and abatement which include measures to reduce sediment loading in the effluent, ensure erosion and scouring impacts are minimised and to ensure the likelihood of damage to fringing vegetation is minimised. IGO should ensure that sufficient settling is achieved in the holding dams prior to discharge to Lake Lefroy.</li> <li>• Condition 2.3.2 ensures that point source emissions to surface water are limited to 600 000kL per annual period.</li> <li>• Monitoring condition 3.2.1 has been included which requires six monthly monitoring of the dewatering discharge. Major anions and cations have</li> </ul>	<p>documentation</p> <p>General provisions of the <i>Environmental Protection Act 1986</i>.</p>



DECISION TABLE			
Works Approval / Licence section	Condition number W = Works Approval L = Licence	Justification (including risk description & decision methodology where relevant)	Reference documents
		<p>been added to the parameters pH, metals, TSS and TDS in this amendment. Total recoverable hydrocarbons has also been included as water from the oily/water separator is discharged into the Long settling dams. Monitoring of these key water quality parameters is required to ensure any impacts to Lake Lefroy can be assessed.</p> <ul style="list-style-type: none"> <li>Condition 1.3.7 in the Premises Operation section of the licence requires an annual assessment of the impacts on Lake Lefroy from the dewatering. The requirements from this condition have been amended to only include the necessary parameters as it previously contained some unachievable and unnecessary conditions.</li> </ul> <p><u>Residual Risk</u> <i>Consequence:</i> Moderate <i>Likelihood:</i> Unlikely <i>Risk Rating:</i> Moderate</p>	
<b>Point source emissions to groundwater including monitoring</b>	L – no conditions	No point source emissions to groundwater are expected from the operations at the Long Operations. No conditions are required.	General provisions of the <i>Environmental Protection Act 1986</i> .
<b>Emissions to land including monitoring</b>	L – no conditions	No emissions to land are generated at the Long Operations. No conditions are required.	General provisions of the <i>Environmental Protection Act 1986</i> .
<b>Fugitive emissions</b>	L2.6.1	DER's assessment and decision making are detailed in Appendix A.	General provisions of the <i>Environmental Protection Act 1986</i> .



<b>DECISION TABLE</b>			
<b>Works Approval / Licence section</b>	<b>Condition number W = Works Approval L= Licence</b>	<b>Justification (including risk description &amp; decision methodology where relevant)</b>	<b>Reference documents</b>
<b>Odour</b>	L – no conditions	No odour emissions are generated at the Long Operations. No conditions are required.	General provisions of the <i>Environmental Protection Act 1986</i> .
<b>Noise</b>	L – no conditions	Minimal noise emissions are generated at the Long Operations and the site is located 2.7 km from the nearest sensitive receptor. No conditions are required for noise emissions.	General provisions of the <i>Environmental Protection Act 1986</i> .
<b>Monitoring general</b>	L3.1.1 – 3.1.2	General monitoring conditions have been included on the licence to support the monitoring relating to surface water emissions. Conditions 3.1.1 and 3.1.2 have been selected to ensure water monitoring is carried out in accordance with appropriate standards.	Australian Standard AS/NZS 5667.1 – Water Quality – Sampling – Guidance on the Design of sampling programs, sampling techniques and the preservation and handling of samples
<b>Monitoring of inputs and outputs</b>	L – no conditions	No specific monitoring of inputs and outputs is required.	General provisions of the <i>Environmental Protection Act 1986</i> .
<b>Process</b>	L3.3.1	Process monitoring has been included to ensure the cumulative dewatering	General



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<b>monitoring</b>		discharge volume is monitored.	provisions of the <i>Environmental Protection Act 1986</i> .
<b>Ambient quality monitoring</b>	L – no conditions	No specific ambient environmental quality monitoring is required.	N/A
<b>Meteorological monitoring</b>	L – no conditions	No specific meteorological monitoring is required.	N/A
<b>Improvements</b>	L4	Improvement condition in Table 4.1.1 has been included following a recent compliance inspection, which identified the South Vent Fan is discharging hypersaline water into the surrounding vegetation. IGO are required to manage the fan to ensure the discharge stops and that any further discharge is directed to an approved discharge point. IGO are required to ensure this is completed by 1 October 2015.	General provisions of the <i>Environmental Protection Act 1986</i> .
<b>Information</b>	L5.1 – 5.3	Conditions relating to the management of records and complaints, notification requirements and the submission of an annual audit compliance report and annual environmental report are included in the licence.	N/A
<b>Licence Duration</b>	N/A	The duration of the licence has been extended by a further two years during this amendment. As the mine site has an approximate life of mine for two years from now, the expiry of this Licence is now July 2018 (previously July 2016), giving the total duration of the Licence seven years. This extension is in accordance with DER's Guidance Statement on Licence Duration.	DER's Guidance Statement on Licence Duration.





## 5 Advertisement and consultation table

Date	Event	Comments received/Notes	How comments were taken into consideration
11/07/2011	Application advertised in West Australian (or other relevant newspaper)	No comments received	N/A
11/07/2011	Application referred to interested parties listed Shire of Coolgardie Department of Water	No comments received	N/A
24/09/2015	Proponent sent a copy of draft amended instrument	Clarification of legal land description	Legal land description amended to Certificate of Title reference and include co-ordinates



## 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



## Appendix A

### Premises operation

#### Normal Operation

##### Emission description

*Emission:* Black and grey water from septic tanks is discharged into the small evaporation pond located outside the administrative building.

*Impact:* Black and grey water has high nutrient level and could potentially seep and cause vegetation stress and the promotion of weeds.

*Controls:* The pond is fenced off and has raised sides. Vegetation is removed on a regular basis. The pond is clay lined.

##### Risk Assessment

*Consequence:* Minor

*Likelihood:* Possible

*Risk Rating:* Moderate

##### Regulatory Controls

The previous licence did not contain any conditions for this pond. Therefore, the pond has been added to condition 1.3.3 as containment infrastructure and condition 1.3.8 has been included to ensure the pond is managed appropriately.

##### Residual Risk

*Consequence:* Minor

*Likelihood:* Unlikely

*Risk Rating:* Moderate

### Emergency Operation

##### Emission description

*Emission:* Hypersaline water is transported in pipelines through areas of native vegetation. Emissions would occur if the pipelines were to rupture and/or leak.

*Impact:* Impact from hypersaline water would on vegetation would likely cause death due to the total dissolved solids concentration of groundwater ranging from 150 000 mg/L to 360 000 mg/L. There are declared rare flora species in the project area.

*Controls:* Adequate siting, design, construction and maintenance of pipelines. Regular inspections of pipeline integrity.

##### Risk Assessment

*Consequence:* Moderate

*Likelihood:* Possible

*Risk Rating:* Moderate

##### Regulatory Controls

Condition 1.3.1 has been applied to ensure saline effluent is adequately contained and managed, including corrective actions to be taken in the event of pipeline spills/ruptures. Daily inspections of pipelines is also required through condition 1.3.5.

##### Residual Risk

*Consequence:* Insignificant

*Likelihood:* Possible

*Risk Rating:* Low



## Fugitive emissions

### Normal operation

#### Emission description

*Emission:* There is potential for dust emissions to occur from the tailings stockpiles.

*Impact:* Dust emissions can be harmful to human health and the environment. Elevated total suspended particles (TSP) impacts ambient environmental quality which can result in amenity impacts and can smother vegetation and result in contamination of soils. Particulate matter that is less than 10 (PM10) or 2.5 (PM2.5) micrometers in diameter can be drawn deep into the lungs creating health impacts. The chemical and physical properties of the particles, the size of the particles and the duration of exposure are all factors which may affect human health impacts from dust. Tailings stockpiles may have elevated levels of arsenic and heavy metals, giving the consequence of dust emissions a moderate risk rating.

*Controls:* IGO have committed to controlling the dust emissions from the tailings stockpiles through the following methods:

- Watering of the tailings upon arrival at the tailings stockpile;
- Daily visual inspections of the tailings stockpile and watering down using water trucks if surface dryness indicates the stockpile may be a source of dust or if strong winds are forecast;
- Photographic vegetation monitoring will be undertaken around the paste plant; and
- Water trucks will be available at all times.

#### Risk Assessment

*Consequence:* Moderate

*Likelihood:* Possible

*Risk Rating:* Moderate

#### Regulatory Controls

Condition 2.4.1 has been added to the Licence which references the specific Dust Management Procedure within the proponents Environmental Management Plan 2009. The procedure specifies that water sprays are to be used on stockpiles during strong wind events (if conditions are dry) and when there is visible dust lift-off.

#### Residual Risk

*Consequence:* Insignificant

*Likelihood:* Possible

*Risk Rating:* Low