



MAJOR Amendment Notice 2

Licensee Argyle Diamonds Limited

ACN 009 102 621

Licence Number L4459/1987/13

File Number: DER2013/000649

Premises Argyle Diamond Mine
Mineral Lease 259SA, L80/11, L80/24, L80/31,
M80/114
Lissadell Road
ARGYLE WA 6743

Date of amendment 9 June 2017

Amendment

The Chief Executive Officer (CEO) of the Department of Environment Regulation (DER) has amended the above licence in accordance with section 59 of the *Environmental Protection Act 1986* as set out in this Amendment Notice. This Amendment Notice constitutes written notice of the amendment in accordance with section 59B(9) of the EP Act and follows.

Date signed: 9 June 2017

Alana Kidd

Manager Licensing – Resource Industries

an officer delegated under section 20 of the *Environmental Protection Act 1986* (WA)

Amendment Notice

This amendment is made pursuant to section 59 of the *Environmental Protection Act 1986* (EP Act) to amend the licence issued under the EP Act for a prescribed premises as set out below. This notice of amendment is given under section 59B(9) of the EP Act.

This notice is limited only to an amendment for Category 64. No changes to the aspects of the original licence have been implemented as this licence is currently subject to a full review which will be issued within the next three months.

The following DER Guidance Statements have informed the decision made on this amendment:

- *Guidance Statement: Regulatory Principles* (July 2015)
- *Guidance Statement: Setting Conditions* (October 2015)
- *Guidance Statement: Land Use Planning* (October 2015)
- *Guidance Statement: Licence Duration* (November 2015)
- *Guidance Statement: Decision Making* (February 2017)
- *Guidance Statement: Risk Assessment* (February 2017)
- *Guidance Statement: Environmental Siting* (November 2016)

Amendment Description

This Amendment Notice is the result of a Licensee initiated amendment to construct a new putrescible and inert category 64 landfill at the site of the decommissioned Wandarrie campsite. The current landfills will be decommissioned. This will result in a change to the approved throughput of category 64, as shown in Table 1 below.

Table 1: Proposed design or throughput capacity changes requested in amendment

Category	Current Design Throughput Capacity	Proposed Design Throughput Capacity	Description of proposed amendment
64	810 tonnes per annual period	4,810 tonnes per annual period	Construction of new landfill facility

Location, environmental siting and potential receptors

Table 2 below lists the relevant sensitive land uses in the vicinity of the prescribed premises which may be receptors relevant to the proposed amendment.

Table 2: Receptors and distance from prescribed premises

Residential and sensitive premises	Distance from Prescribed Premises
Lissadell Station Homestead	13.5 km

Table 3 below lists the relevant environmental receptors in the vicinity of the prescribed premises which may be receptors relevant to the proposed amendment.

Table 3: Environmental receptors and distance from prescribed premises

Environmental receptors	Distance from Prescribed Premises
Lake Argyle	35 km east of the mine. Forms part of the Ord River Irrigation Scheme and is a Ramsar protected wetland
Limestone Creek	1 km to the south of Jacko's Dam. 1km to the south of the Waste Rock Dump. 2 km to the south of the AK1 TSF. Drains to the east along the southern margin of the pit area. Drains to Lake Argyle.
Groundwater	Groundwater depth measured in the 2015 reporting period varies from 2.23 – 6.95 metres below ground level and Total Dissolved Solids ranges from 533 – 2,524 mg/L so is fresh-brackish.

Risk assessment

Tables 4 and 5 below describe the Risk Events associated with the amendment consistent with the *Guidance Statement: Risk Assessments*. Both tables identify whether the emissions present a material risk to human health or the environment, requiring regulatory controls.

Table 4. Identification of emissions, pathway and receptors during construction

Risk Events					Consequence rating	Likelihood rating	Risk	Reasoning		
Sources/Activities		Potential Emissions	Potential Receptors	Potential Pathway					Potential Adverse Impacts	
Construction of landfill trenches	Vehicle movements on unsealed access roads	Noise	No residences or other sensitive receptors in proximity (13.5km to Lissadell Station Homestead)	Air / wind dispersion	Amenity impacts	Slight	Rare	Low	No receptor present	
		Dust			Amenity impacts	Slight	Rare	Low	No receptor present	
	Construction of landfill trenches	Noise	No residences or other sensitive receptors in proximity(13.5k m to Lissadell Station Homestead)	Air / wind dispersion	Amenity impacts	Slight	Rare	Low	No receptor present	
		Dust			Amenity impacts	Slight	Rare	Low	No receptor present	

Table 5: Identification of emissions, pathway and receptors during operation

Risk Events						Consequence rating	Likelihood rating	Risk	Reasoning
Sources/Activities		Potential Emissions	Potential Receptors	Potential Pathway	Potential Adverse Impacts				
Landfill operation	Waste disposal to trenches	Gaseous emissions (from decomposition of putrescible waste)	No residences or other sensitive receptors in proximity	Air / wind dispersion	None	Slight	Rare	Low	No receptor present
		Waste (wind-blown)	Vegetation adjacent to waste trenches and fauna in the vicinity	Air / wind dispersion	Potential suppression of photosynthetic and respiratory functions of vegetation Fauna ingestion of waste or becoming entangled in waste items	Slight	Rare	Low	The Delegated Officer has considered that impacts from waste disposal would not be expected. The following management measures are to be implemented by the Licensee: <ul style="list-style-type: none">•Waste is to only be placed within a defined trench;•The tipping area is to be less than 30 m in length;•A wire fence is to be maintained around the perimeter of the landfill to control windblown waste; and•Waste is to be covered on a weekly basis with 150 mm of cover material. Conditions 27-35 of the current licence specify management requirements of the landfill and outline these management measures to be implemented. The Delegated Officer considers that impacts from

Risk Events						Consequence rating	Likelihood rating	Risk	Reasoning
Sources/Activities		Potential Emissions	Potential Receptors	Potential Pathway	Potential Adverse Impacts				
Landfill operation cont.	Waste disposal to trenches cont.								waste disposal will be slight as the landfill is located onsite (so offsite impacts are not expected) and impacts would be expected to be minimal. The Delegated Officer has considered the operator controls and considers the likelihood of an occurrence to be rare . The risk rating for waste disposal is therefore low .
		Dark smoke (from fire)	Vegetation adjacent to waste trenches and fauna in the vicinity	Air / wind dispersion	Reduction in air quality impacting upon fauna and vegetation	Slight	Rare	Low	The Delegated Officer has considered that fires would not be expected during normal operations. The following management measures are implemented by the Licensee: <ul style="list-style-type: none">• The Licensee has committed to notifying DER of any proposed burning;• There are three fire tenders (vehicles) onsite that have foam/water tanks and pumps to fight fires;• Used tyres are only stacked on level ground;• Used tyres in the open are to be arranged in rows with at least three metres separating each row to allow access for firefighting equipment;• Used tyre stacks will not exceed 100 square metres in area of three metres in height;

Risk Events					Consequence rating	Likelihood rating	Risk	Reasoning
Sources/Activities	Potential Emissions	Potential Receptors	Potential Pathway	Potential Adverse Impacts				
Landfill operation cont.	Waste disposal to trenches cont.							<ul style="list-style-type: none"> •Tyres are to be covered at regular intervals such that no more than 1,000 car tyre equivalents are left exposed at any one time; •A minimum depth of 500mm of clean fill is maintained over the buried tyres following disposal; •Batches of tyres will be separated from each other by at least 100mm of soil; •Each batch shall consist of no more than 1,000 car tyre equivalents; •Putrescible waste is to be covered on a weekly basis with 150mm of cover material; and •Putrescible waste will be placed within a defined trench and the tipping area be less than 30 m in length. <p>Conditions 17, 25-26 and 36-38 of the current licence specify management requirements of the landfill and address these management measures.</p> <p>The Delegated Officer considers that impacts from dark smoke will be slight as the landfill is located onsite (so</p>

Risk Events						Consequence rating	Likelihood rating	Risk	Reasoning
Sources/Activities		Potential Emissions	Potential Receptors	Potential Pathway	Potential Adverse Impacts				
Landfill operation cont.	Waste disposal to trenches cont.								offsite impacts are not expected) and impacts would be expected to be minimal due to the remote location. The Delegated Officer has considered the operator controls and considers the likelihood of an occurrence to be rare . The risk rating for dark smoke is therefore low .
		Leachate to groundwater	Groundwater dependent ecosystems, subterranean fauna	Direct discharge	Groundwater contamination	Slight	Unlikely	Low	The Delegated Officer has considered the following management measures are to be implemented by the Licensee: <ul style="list-style-type: none">• Only wastes that comply with class II criteria outlined in the Landfill waste Classification and Waste Definitions 1996 (as amended December 2009) will be disposed of at the landfill;• Waste will be placed within defined trenches or enclosed earthen bunds with a separation distance of at least 3 m between the base of the deepest excavation and the highest seasonal level of the groundwater; and• The Licensee has sought advice from their Hydrogeologist and has

Risk Events					Consequence rating	Likelihood rating	Risk	Reasoning
Sources/Activities	Potential Emissions	Potential Receptors	Potential Pathway	Potential Adverse Impacts				
Landfill operation cont.	Waste disposal to trenches cont.							<p>determined that two additional groundwater monitoring bores should be installed prior to operations of the landfill to enable baseline monitoring to be conducted. This will enable monitoring for potential leachate during operations.</p> <p>Groundwater monitoring bore 53 is approximately 500 m away from the proposed landfill, so has been determined to be too far away to be of use. The parameter suite will also be more comprehensive as this is currently only monitored for Total Nitrogen, Total Phosphorus, pH, Standing Water Level and Total Dissolved Solids.</p> <p>Conditions 24, 27, 28, 32 of the current licence specify management requirements of the landfill and address these management measures.</p> <p>Groundwater depth measured in the last four years at groundwater monitoring bore 53 varies from 2.19 – 6.31 metres below ground level. As the landfill is proposed to be constructed at 180 – 186m</p>

Risk Events					Consequence rating	Likelihood rating	Risk	Reasoning
Sources/Activities	Potential Emissions	Potential Receptors	Potential Pathway	Potential Adverse Impacts				
Landfill operation cont. Waste disposal to trenches cont.								<p>Reduced Level, the depth to groundwater is estimated to be approximately 12 – 18 mbgl. Total Dissolved Solids at groundwater monitoring bore 53 ranges from 560 – 660 mg/L (a groundwater review provided to DER on 8 July 2016, which summarised data from other groundwater monitoring bores onsite showed an average TDS of 1007 mg/L, with a maximum of 3,400 mg/L) so is fresh-brackish.</p> <p>The Delegated Officer considers that impacts from the leachate to groundwater will be slight as the landfill is located onsite (so offsite impacts are not expected) and impacts would be expected to be minimal. The Delegated Officer has considered the operator controls and considers the likelihood of an occurrence to be unlikely. The risk rating for leachate to groundwater is therefore low.</p>

Decision

The Delegated Officer has determined that the key emissions associated with the new landfill facility are potential for gaseous emissions, waste disposal (wind-blown waste), dark smoke and leachate infiltrating to groundwater. The Delegated Officer considers that the risks associated with these emissions are low due to the types of wastes to be disposed of and the Licensee's controls in place.

The addition of the Infrastructure Requirements and Compliance Requirements conditions are required to be included on the licence. No other additional conditions are required on the licence. Condition 27 has been updated to refer to the new landfill map in new Attachment 6. Attachments 3 and 4 have been updated to show the putrescible and inert landfills are being decommissioned. The Prescribed Premises Category table has been updated in the licence to increase the premises production or design capacity for category 64 from 810 tonnes per year to 4,810 tonnes per year.

As this licence is currently subject to a full risk review by DER, no other modifications to the licence have been conducted. This amendment will also form part of the updated licence which will be issued within the next 3 months. As a result, no other changes to the licence have been implemented as part of this amendment.

Amendment History

Table 6 provides the amendment history for Licence L4459/1987/13.

Table 6: Licence amendments

Instrument	Issued	Amendment
L4459/1987/12	28/05/2013	The licence was amended 28 May 2013 to include construction related conditions for the oily water separator at the Lower decline workshop. A compliance report was provided to DER on 14 January 2015 and compliance certificate signed off by DER on 16 February 2015.
L4459/1987/12	07/02/2014	The licence was amended on 7 February 2014 as a DER initiated amendment to correct administrative errors including the due date of the Annual Environmental Report and Annual Audit Compliance Report and the expiry date.
L4459/1987/13	18/09/2014	The latest licence was reissued on 18 September 2014 with the only significant modification being the addition of category 73 - Bulk storage of chemicals, etc., as this was mistakenly removed during a previous amendment.
L4459/1987/13	9/06/2017	Amendment Notice 1 to include construction/operation of the new landfill and increase the category 64 capacity from 810 tonnes per annual period to 4,810 tonnes per annual period.

Licence Holder's Comments

The Licensee was provided with the draft Amendment Notice on 1 June 2017. Comments received from the Licensee have been considered by the Delegated Officer as shown in Appendix 2.

Amendment

1. The Prescribed Premises Category table on page 1 of the licence is updated as shown by the insertion of text in **bold underline** below:

CATEGORY NUMBER	CATEGORY DESCRIPTION	CATEGORY PRODUCTION OR DESIGN CAPACITY	PREMISES PRODUCTION OR DESIGN CAPACITY
05	Processing or beneficiation of metallic or non-metallic ore.	50,000 tonnes or more per year	10,000,000 tonnes per year
06	Mine Dewatering: premises on which water is extracted and discharged into the environment to allow mining of ore.	50,000 tonnes or more per year	9,000,000 tonnes per year
39	Chemical or oil recycling: premises on which waste liquid hydrocarbons or chemicals are refined, purified, reformed, separated or processed.	N/A	18,000 tonnes per year
52	Electric Power Generation: premises (other than premises within category 53 or an emergency or standby generating plant) on which electrical power is generated using a fuel.	20 megawatts or more in aggregate (using natural gas) 10 megawatts or more in aggregate (using a fuel other than natural gas)	32 megawatts
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.	100 cubic metres or more per day	300 cubic metres per day
57	Used tyre storage (general): premises (other than premises within category 56) on which used tyres are stored	100 tyres or more	N/A
63	Class I Inert landfill site	500 tonnes or more per year	4,000 tonnes per year
64	Class II putrescible landfill site	20 tonnes or more per year	<u>4,810 tonnes per year</u>
73	Bulk storage of chemicals, etc: premises on which acids, alkalis or chemicals that- (a) contain at least one carbon to carbon bond; and (b) are liquid at STP (standard temperature and pressure) are stored.	1 000 cubic metres in aggregate	3.7 million litres

2. Condition 24 is updated by the removal of text in strikethrough and insertion of text in bold underline below:

- 24 The licensee shall dispose of only the following types of waste, as defined in the document titled '*Landfill Waste Classification and Waste Definitions*' 1996 (as amended December 2009), at the premises inert disposal area as depicted in attachment ~~4~~**6** of this licence:
- (i) clean fill;
 - (ii) type 1 inert wastes; and
 - (iii) type 2 inert wastes.

3. Condition 27 is updated by the removal of text in strikethrough and insertion of text in bold underline below:

- 27 The licensee shall bury only the following types of waste, as defined in the document titled '*Landfill Waste Classification and Waste Definitions*' 1996 (as amended December 2009), at the premises putrescible landfill as depicted in attachment ~~3~~**6** of this licence:
- (i) clean fill;
 - (ii) type 1 inert wastes;
 - (iii) type 2 inert wastes;
 - (iv) putrescible wastes;
 - (v) type 1 special wastes;
 - (vi) type 2 special wastes; and
 - (vii) other wastes that comply with Class II criteria as outlined in the above document.

4. Condition 57 is included onto the licence as shown in bold underline below:

- 57 The Licensee shall construct the landfill in accordance with the requirements specified in the infrastructure requirements detailed in Table 7. The Licensee must not depart from the design and construction requirements specified in Table 7 except:**
- (a) where such departure is minor in nature and does not materially change or affect the infrastructure; or**
 - (b) where such departure improves the functionality of the infrastructure and does not increase risks to public health, public amenity or the environment;**
 - (c) and all other conditions in this Licence are still satisfied.**

Table 7: Infrastructure requirements	
<u>Infrastructure</u>	<u>Requirements (Design and construction)</u>
<u>Landfill</u>	<ul style="list-style-type: none"> - <u>The landfill shall be constructed at the location in Attachment 6;</u> - <u>The tipping area is to be less than 30 m in length;</u> - <u>Waste is to be placed within defined trenches or enclosed earthen bunds with a separation distance of at least 3 m between the base of the deepest excavation the highest seasonal level of the groundwater; and</u> - <u>A wire fence is to be maintained around the perimeter of the landfill.</u>

Note 1: Where the details and commitments of the documents listed in condition 57 are inconsistent with any other condition of this Licence, the conditions of this Licence shall prevail.

5. Condition 58 is included onto the licence as shown in bold underline below:

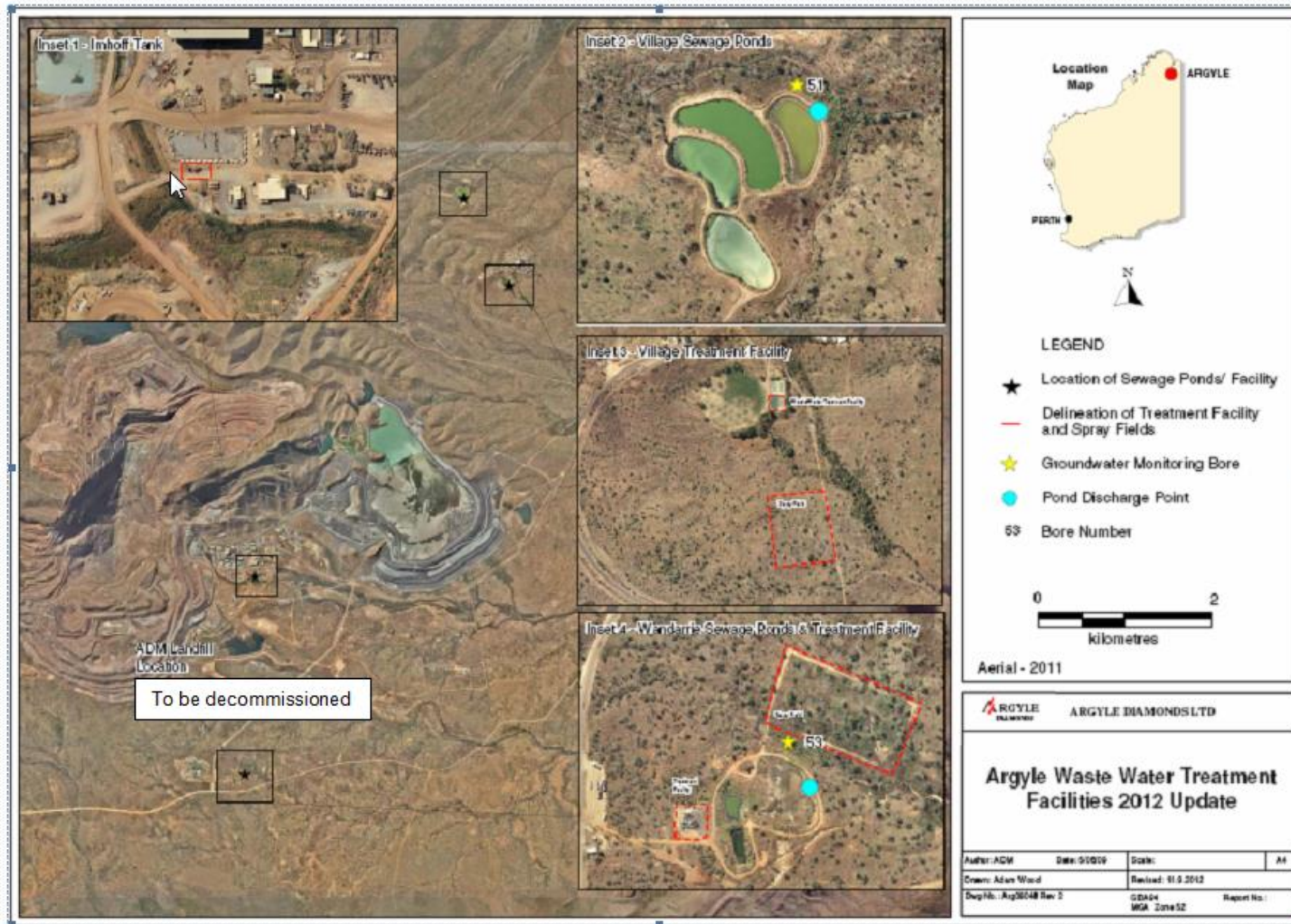
58. The Licensee shall submit a compliance document to the CEO, following the construction of the landfill. The compliance document/s shall:

- (a) **be certified by a suitably qualified engineer and certify that the works were constructed in accordance with the construction requirements specified in Table 7;**
- (b) **provide a list of departures from the specified works certified by a suitably qualified engineer; and**
- (c) **be signed by a person authorised to represent the Licensee and contain the printed name and position of that person within the company.**

6. Condition 59 is included onto the licence as shown in bold underline below:

59. The Licensee shall operate the landfill in accordance with the conditions of this Licence, following submission of the compliance document required under condition 58.

7. The map in Attachment 3 has been updated to state that the putrescible landfill is to be decommissioned.

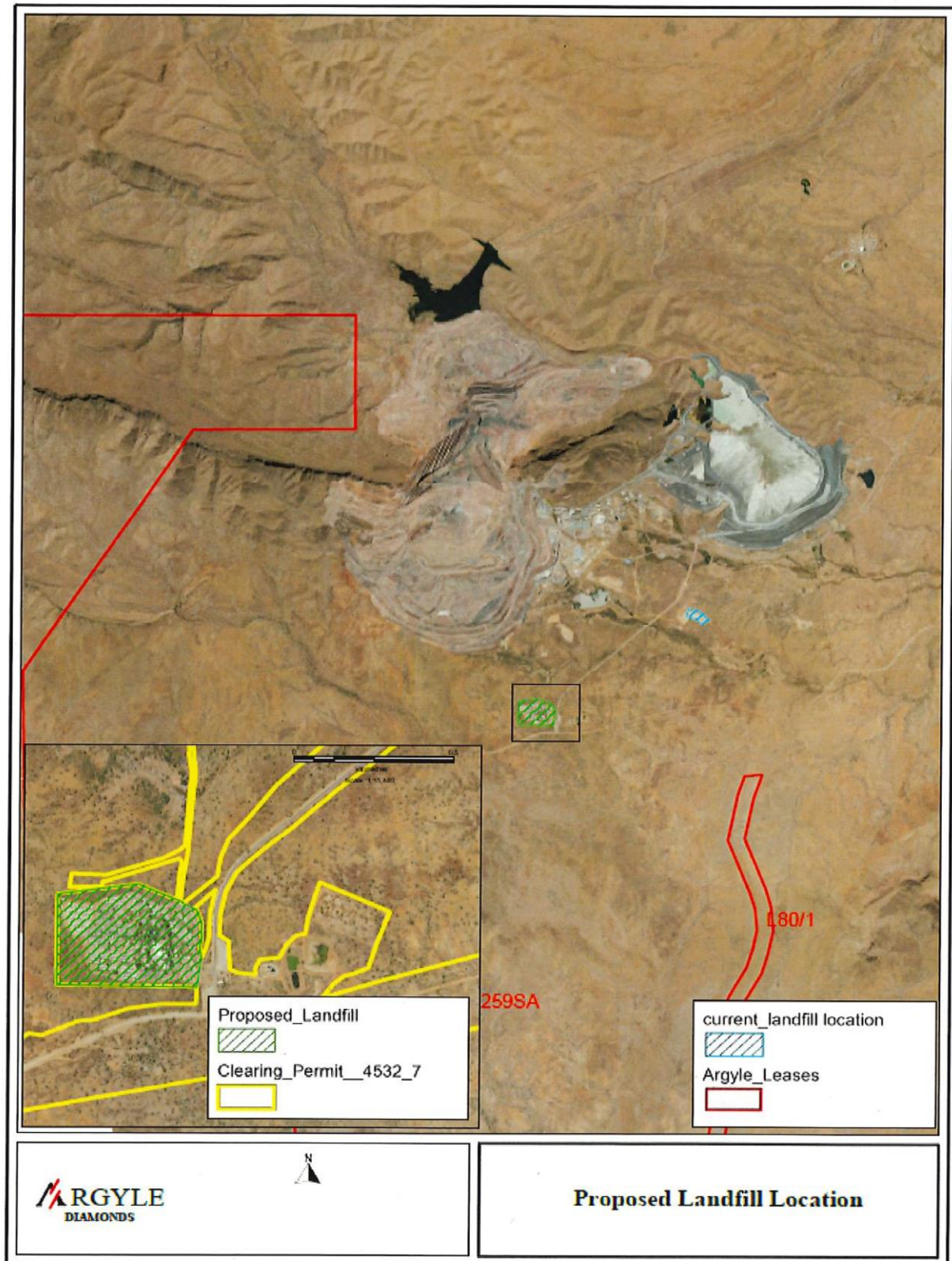


8. The map in Attachment 4 has been updated to state that the inert landfill is to be decommissioned.



9. A new map in Attachment 6 has been included that shows the location of the new landfill.

ATTACHMENT 6: NEW LANDFILL LOCATION SHOWN IN GREEN



Appendix 1: Key Documents

	Document Title	In text ref	Availability
1	Licence L4459/1987/13 – Argyle Diamond Mine	L4459/1987/13	accessed at http://www.der.wa.gov.au
2	DER, July 2015. <i>Guidance Statement: Regulatory principles</i> . Department of Environment Regulation, Perth.	DER 2015a	accessed at http://www.der.wa.gov.au
3	DER, October 2015. <i>Guidance Statement: Setting conditions</i> . Department of Environment Regulation, Perth.	DER 2015b	
4	DER, August 2016. <i>Guidance Statement: Licence duration</i> . Department of Environment Regulation, Perth.	DER 2016a	
5	DER, November 2016. <i>Guidance Statement: Risk Assessments</i> . Department of Environment Regulation, Perth.	DER 2016b	
6	DER, November 2016. <i>Guidance Statement: Decision Making</i> . Department of Environment Regulation, Perth.	DER 2016c	

Appendix 2: Summary of Licensee comments

The Licensee was provided with the draft Amendment Notice on 1 June 2017 for review and comment. The Licensee responded on 6 June 2017 waiving the remaining comment period. No comments were submitted on the draft Amendment Notice.

Comments received	DER consideration of risk
N/A	N/A