Amendment Report

Application for Licence Amendment

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

Licence Number	L9017/2016/1
Licence Holder	Mud Logic Fluid Solutions Pty Ltd
ACN	615 038 376
File Number	DER2016/002331
Premises	Mud Logic WA 1/35 Crocker Drive MALAGA WA 6062 Legal land description – Lot 9 on Plan 13931
Date of Report	15 June 2021
Status of Report	Final

1. Decision summary

Licence L9017/2016/1 is held by Mud Logic Fluid Solutions Pty Ltd (Licence Holder) for Mud Logic WA (the Premises), located at Unit 1, 35 Crocker Drive, Malaga.

This 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 L9017/2016/1 has been granted.

The Revised Licence issued as a result of this amendment consolidates and supersedes the existing Licence previously granted in relation to the Premises. The Revised Licence has been granted in a new format with existing conditions being transferred, but not reassessed, to the new format.

2. Scope of assessment

2.1 Regulatory framework

In completing the assessment documented in this report, the delegated officer has considered and given due regard to the department's regulatory framework and relevant policy documents which are available at https://dwer.wa.gov.au/regulatory-documents.

2.2 Amendment summary

On 24 February 2021 the Licence Holder submitted an application to the department to amend Licence L9017/2016/1 under section 59 and 59B of the *Environmental Protection Act 1986* (EP Act).

The application seeks to install two additional chemical manufacturing mixing vessels with the intent of increasing production to cater for the additional demand in the drilling industry.

The Premises relates to the categories and assessed production/design capacity under Schedule 1 of the Environmental Protection Regulations 1987 which are defined in Licence L9017/2016/1. The infrastructure and equipment relating to the premises category and any associated activities which the department has considered in line with *Guideline: Risk Assessments* (DWER 2020a) are outlined in L9017/2016/1.

Table 1 below outlines the proposed changes to the existing Licence.

Table 1: Proposed production capacity changes

Category	Current production capacity	Proposed production capacity
31 - Chemical manufacturing	225 tonnes per year	2000 tonnes per year
75 – Chemical blending or mixing not causing a discharge	225 tonnes per year	2000 tonnes per year

2.3 Overview of premises

The Licence Holder currently operates a chemical manufacturing and chemical blending facility under licence L9017/2016/1 at the Premises.

The facility produces drilling mud, drilling foam and drilling lubricants and includes storage and repackaging drilling mud powdered products from bulk to smaller bags or containers for the drilling industry.

These products are produced by blending liquids such as castor oils, esters of canola oil and sunflower oil, with emulsifiers, surfactants and water to create water soluble drilling products. The raw materials are pumped at the required ratio into the mixing vessel and mixed to allow ingredients to homogenize to ensure finish product is compliant. Final product is decanted

using semi-automatic filling stations into containers ranging from 15 L to 100 L units for sale.

Vessels are cleaned after each batch, wash water generated is collected in an IBC (Intermediate Bulk Container) and reused for subsequent production runs. Unusable discharge is collected in IBC's and disposed off site by a licensed contractor. There are no process related emissions associated with the chemical blending activity.

Chemical manufacturing using exothermic reaction is not currently undertaken at the Premises, which requires the product to be heated to ensure the product achieves the required quality. Also, the blending of powders is no longer undertaken at the Premises.

Blending activities are undertaken within a bunded area which has been sealed with a chemically resistant epoxy waterproof sealant with a raised concrete barrier located within the perimeter of the warehouse. The storage of raw materials and final product is also stored with the bunded area.

A Dangerous Goods licence is not required due to limited amount of Class 8 (Corrosive) products stored on site (under 7,000 kg/L). Chemically incompatible liquid products (acids and alkalis) are stored in separate bunds and at least 5m apart.

Installation of key infrastructure was undertaken in accordance with works approval W6016/2016/1 (granted 3 March 2017) with specified design and construction requirements relating to the blending vessels and chemical storage. A licence to operate the Premises was issued on 5 December 2019.

2.4 Existing infrastructure

The existing infrastructure and equipment relevant to the Premises are outlined in Table 2 below and the site layout plan shown in Figure 1 of this decision report.

Table 2: Premises existing infrastructure

Existing Infrastructure	Site Layout Plan Reference
One 6,000 L mixing vessel, fitted with batch controller with heating and cooling system for exothermic reaction	#1 - Vessel 1 as shown in Figure 1 – Existing premises layout
One 6,000 L mixing vessel, fitted with batch controller to prevent overflow of the vessel.	#2 - Vessel 2 as shown in Figure 1 – Existing premises layout
Bunded, chemical storage and packaging building	Figure 1

2.5 Proposed works

The Licence Holder proposes to install the following infrastructure on the Premises as it relates to categories 31 and 75 which is detailed in Table 3 below with the layout for the infrastructure shown in Figure 2. The additional mixing vessels will be installed and connected to existing infrastructure within the bunded area in the warehouse.

Table 3: Proposed works

Proposed Infrastructure	Design specifications	Site Layout Plan Reference
One 4,000L mixing vessel	Fitted with batch controller to prevent overflow of the vessel.	#3 - Vessel 3 as shown in Figure 2
One 6,000L mixing vessel	Fitted with batch controller to prevent overflow of the vessel.	#4 - Vessel 4 as shown in Figure 2

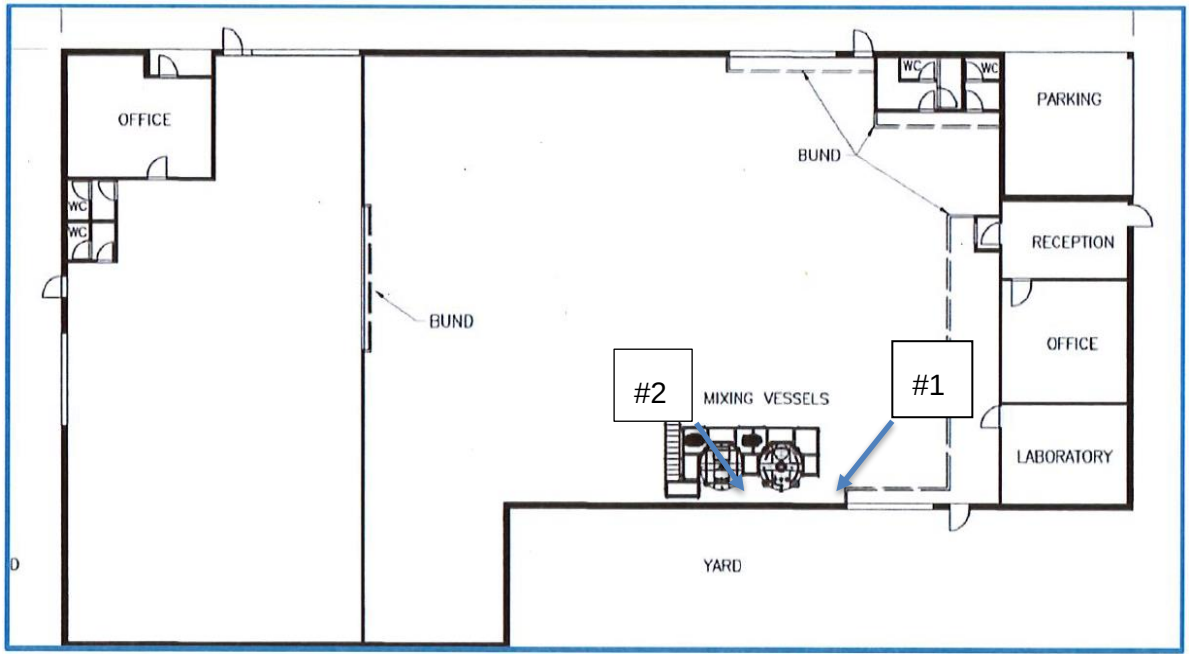

Figure 1: Existing Premises layout

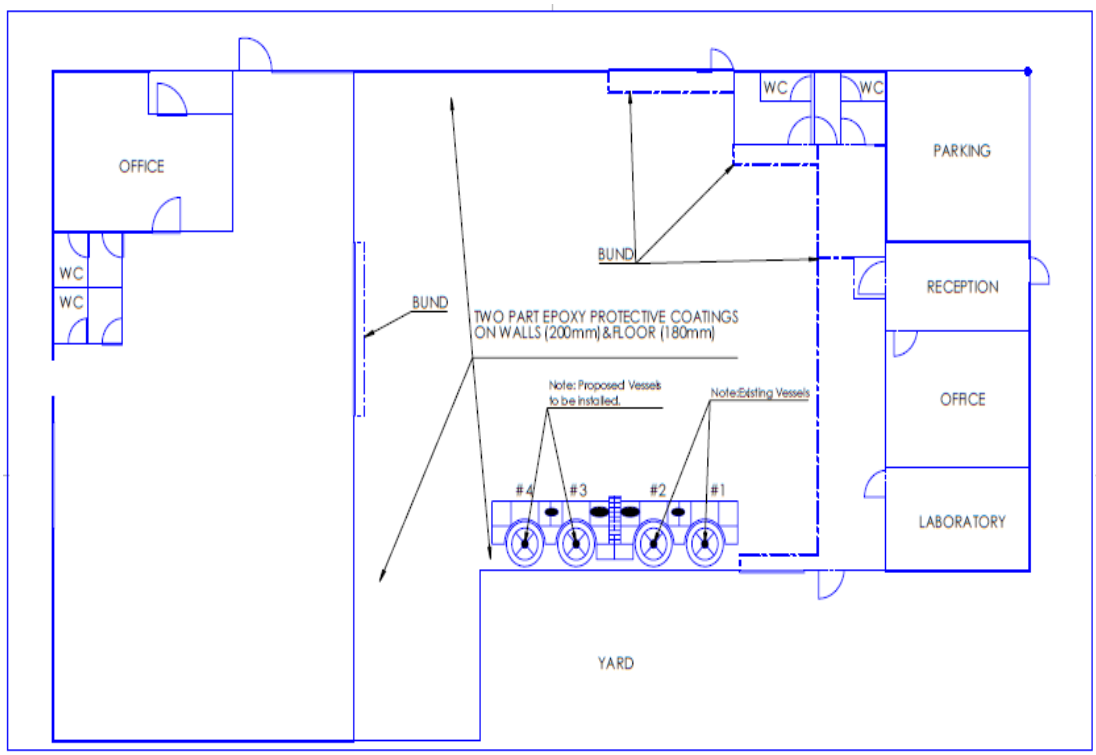

Figure 2: Premises layout

3. Risk assessment

The delegated officer assesses the risks of emissions from prescribed premises and identifies the potential source, pathway and impact to receptors in accordance with the *Guideline: Risk Assessments* (DWER 2020a).

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.

3.1 Source-pathways and receptors

3.1.1 Emissions and controls

The key emissions and associated actual or likely pathway during premises operation which have been considered in this report are detailed in Table 4 below. Table 4 also details the proposed control measures the Licence Holder has proposed to assist in controlling these emissions, where necessary.

Table 4: Licence Holder controls

Emission	Sources	Potential pathways	Proposed controls
Odour	Chemical blending and chemical manufacturing process	Air/windborne pathway causing impacts to health and amenity	Blending activities carried out within an enclosed building. Chemicals as raw materials and as blended final products are inert with minimal odour potency. Blending activities only occur during business hours 6.30am and 3.30pm Monday to Thursday and 6.30am – 2pm on Friday.
Contaminated process/wash water		Overland runoff potentially causing soil or ground water contamination	Existing bunded area within the internal perimeter of warehouse.
Discharge due to leaks spillage and containment failure	Bulk storage of chemicals	Soil and groundwater contamination	No bulk chemicals (raw materials) stored on the Premises. No chemicals are stored in blending vessels outside the time blending is occurring. Blending activities undertaken within existing bunded area. Procedures in place to ensure chemicals added to mixing vessel is not more than 92% total finished volume. Spills are recovered immediately regardless of severity. Spill response kits are available on site. In the event of leaking valves, hoses, pumps, filling stations, static pipework and blending vessels operator is required to suspend operation and notify Supervisor. Procedures in place to ensure plant/equipment is fit for purpose prior to commencing operation.

3.1.2 Receptors

In accordance with the *Guideline: Risk Assessments* (DWER 2020a), the delegated officer has excluded employees, visitors and contractors of the Licence Holder's from its assessment. Protection of these parties often involves different exposure risks and prevention strategies and is provided for under other state legislation.

Table 5 below provides a summary of potential human and environmental receptors that may be impacted as a result of activities upon or emission and discharges from the prescribed premises *(Guideline: Environmental Siting* (DWER 2020b)).

Table 5: Sensitive human and environmental receptors and distance from the Premises

Human receptors	**Distance from the Premises**
Residential Area - Mirrabooka suburb	350m west of the Premises
Malaga Industrial Area	Adjacent to the Premises
Environmental receptors	**Distance from the Premises**
Bush Forever Site #385 Reid Highway Bushland, Mirrabooka-Malaga	300m west of the Premises

3.2 Risk ratings

Risk ratings have been assessed in accordance with the *Guideline: Risk Assessments* (DWER 2020a) for those emission sources which are proposed to change and takes into account potential source-pathway and receptor linkages as identified in Section 3.1. Where linkages are in-complete they have not been considered further in the risk assessment.

Where the Licence Holder has proposed mitigation measures/controls (as detailed in Section 3.1), these have been considered when determining the final risk rating. Where the delegated officer considers the Licence Holder's proposed controls to be critical to maintaining an acceptable level of risk, these will be incorporated into the licence as regulatory controls.

Additional regulatory controls may be imposed where the Licence Holder's controls are not deemed sufficient. Where this is the case the need for additional controls will be documented and justified in Table 6.

The Revised Licence L9017/2016/1 that accompanies this Amendment Report authorises emissions associated with the operation of the Premises, i.e., chemical manufacturing and blending activities.

The conditions in the Revised Licence have been determined in accordance with *Guidance Statement: Setting Conditions* (DER 2015).

Table 6: Risk assessment of potential emissions and discharges from the Premises operation

Risk Event					**Risk rating** C = consequence L = likelihood	**Applicant controls sufficient?**	**Conditions of licence**	**Justification for additional regulatory controls**
Source/ Activities	**Potential emissions**	**Potential pathways and impact**	**Receptors**	**Applicant controls**				
Operation								
Chemical blending and chemical manufacturing process	Odour	Air/windborne pathway causing impacts to health and amenity	Residents located 350m west of the Premises. Adjacent industrial area	Refer to Section 3.1	C = Unlikely L = Slight **Low Risk**	Y	Condition 1 Condition 4	N/A
	Contaminated process/wash water	Overland runoff potentially causing soil or ground water contamination			C = Unlikely L = Slight **Low Risk**	Y	Condition 1 Condition 4	N/A
	Discharge due to leaks spillage and containment failure	Soil and groundwater contamination			C = Possible L = Slight **Low Risk**	Y	Condition 1 Condition 4	N/A

Note 1: Consequence ratings, likelihood ratings and risk descriptions are detailed in the *Guideline: Risk Assessments* (DER 2017).

Note 2: Proposed Licence Holder's controls are depicted by standard text. **Bold and underline text** depicts additional regulatory controls imposed by department.

4. Consultation

Table 7 provides a summary of the consultation undertaken by the delegated officer.

Table 7: Consultation

Consultation method	Comments received	Department response
City of Swan advised of proposal 28 April 2021	The City of Swan responded on 13 May 2021 confirming works associated with the installation of the new vessels are exempt from the requirement to obtain development (planning) approval.	NA
Licence Holder provided with a draft Amended Licence and Draft Amendment Report on 21 May 2021	The Licence Holder commented on 2 June 2021 that they agree with the infrastructure and conditions. The Licence Holder clarified that only 1 tank will first be constructed and then next year probably the other. The Licence Holder waived the remainder of the comment period.	The Delegated Officer notes that construction of the tanks as proposed is possible under the conditions of the licence. No changes necessary to the conditions.

5. Decision

The delegated officer has determined to authorise the installation of two additional mixing vessels on the premises. The main considerations supporting this decision are:

- the additional tanks will be located within an existing building and within existing secondary containment infrastructure for existing tanks that are suitable and will remain fit for purpose with the additional tanks; and
- existing licence controls are considered sufficient for ensuring that any leaks or spillages within the building are resolved/cleaned up in such a manner to prevent uncontrolled discharges to the environment.

6. Conclusion

Based on the assessment in this report, the delegated officer has determined that a Revised Licence will be granted, subject to conditions commensurate with the determined controls and necessary for administration and reporting requirements.

6.1 Summary of amendments

Table 8 provides a summary of the proposed amendments and will act as record of implemented changes. All proposed changes have been incorporated into the Revised Licence as part of the amendment process.

Table 8: Summary of licence amendments

Condition no.	Proposed amendments
1	Inclusion of two new chemical blending vessels for operational requirements
4	Inclusion of two new chemical blending vessels for construction/installation requirements
5	Inclusion of compliance reporting

References

1. Department of Environment Regulation (DER) 2016, *Guidance Statement: Setting Conditions*, Perth, Western Australia.
2. Department of Water and Environmental Regulation (DWER) 2020a, *Guideline: Risk Assessments*, Perth, Western Australia.
3. DWER 2020b, *Guideline: Environmental Siting*, Perth, Western Australia.