



Licence number	L7353/1996/10
Licence holder	Monadelphous Energy Services Pty Ltd
ACN	081 037 121
Registered business address	59 Albany Highway VICTORIA PARK WA 6100
DWER file number	2010/008360
Licence Duration	23/01/2023 to 22/01/2024
Date of amendment	13/07/2020
Premises details	KMK Cogeneration Facility Part Lot 22 on Diagram 88339 Mason Road KWINANA BEACH WA 6167

Prescribed premises category description (Schedule 1, <i>Environmental Protection Regulations 1987</i>)	Assessed production or design capacity
Category 52: Electric power generation	38 MWe

This licence is granted to the licence holder, subject to the attached conditions, on 13 July 2020 by:

**MANAGER, PROCESS INDUSTRIES
REGULATORY SERVICES**

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

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Introduction

This Introduction is not part of the Licence conditions.

DWER's industry licensing role

The Department of Water and Environmental Regulation (DWER) is a government department for the state of Western Australia in the portfolio of the Minister for Environment DWER's purpose is to advise on and implement strategies for a healthy environment for the benefit of all current and future Western Australians.

DWER has responsibilities under Part V of the Environmental Protection Act 1986 (the Act) for the licensing of prescribed premises. Through this process DWER works with the business owners, community, consultants, industry and other representatives to prevent, control and abate pollution and environmental harm to conserve and protect the environment. DWER also monitors and audits compliance with works approvals and licence conditions, takes enforcement action as appropriate and develops and implements licensing and industry regulation policy.

Licence requirements

This Licence is issued under Part V of the Act. Conditions contained within the Licence relate to the prevention, reduction or control of emissions and discharges to the environment and to the monitoring and reporting of them.

Where other statutory instruments impose obligations on the Premises/Licence Holder the intention is not to replicate them in the licence conditions. You should therefore ensure that you are aware of all your statutory obligations under the Act and any other statutory instrument. Legislation can be accessed through the State Law Publisher website using the following link: <https://legislation.wa.gov.au/>.

For your Premises relevant statutory instruments include but are not limited to obligations under the:

- *Environmental Protection (Unauthorised Discharges) Regulations 2004* – these Regulations make it an offence to discharge certain materials such as contaminated stormwater into the environment other than in the circumstances set out in the Regulations.
- *Environmental Protection (Controlled Waste) Regulations 2004* - these Regulations place obligations on you if you produce, accept, transport or dispose of controlled waste.
- *Environmental Protection (Noise) Regulations 1997* – these Regulations require noise emissions from the Premises to comply with the assigned noise levels set out in the Regulations.

You must comply with your licence. Non-compliance with your licence is an offence and strict penalties exist for those who do not comply.

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Licence holders are also reminded of the requirements of section 53 of the Act which places restrictions on making certain changes to prescribed premises unless the changes are in accordance with a works approval, licence, closure notice or environmental protection notice.

Licence fees

If you have a licence that is issued for more than one year, you are required to pay an annual licence fee prior to the anniversary date of issue of your licence. Non payment of annual licence fees will result in your licence ceasing to have effect meaning that it will no longer be valid and you will need to apply for a new licence for your Premises.

Ministerial conditions

If your Premises has been assessed under Part IV of the Act you may have had conditions imposed by the Minister for Environment. You are required to comply with any conditions imposed by the Minister.

Premises description and Licence summary

The KMK Cogeneration Facility provides electricity directly into Western Power's South West Interconnected System (SWIS) and process steam to Tronox. Natural gas from the Dampier to Bunbury gas pipeline is provided to a 38MW gas turbine (GT) where the turbine exhaust gas provides energy to a 76 tonne per hour heat-recovery steam-generating plant (HRSG).

The Gas Turbine is capable of being operated in two modes:

- Cogeneration Mode: The exhaust of the GT is directed into the HRSG. The HRSG converts the waste heat from the GT exhaust into process steam for Tronox and NOx suppression steam for the GT; and
- Open Cycle Mode: The GT exhaust is diverted directly to the atmosphere via the HRSG bypass damper. This operating mode is used whenever the HRSG is unavailable for service.

Steam injection is used to limit the combustion temperature of the GT. This temperature reduction reduces NOx emissions. When the plant is operating in open-cycle mode, steam is unavailable for NOx suppression.

Treated water for the KMK Cogeneration facility is provided directly from Tronox. Boiler blowdown water is discharged to the Tronox wastewater treatment plant. Tronox's outfall monitoring program monitors the combined discharge to Cockburn Sound generated by both Tronox and the Cogeneration facility.

The licence is the result of an amendment sought by the Licence Holder to extend the expiry date of licence L7353/1996/10 from 23 January 2023 to 22 January 2024.

The licensing history for the Premises since 2007 is detailed in the Table 1 below:

Table 1: Instrument log		
Instrument	Issued	Description
L7353/1996/9	11/01/2007	Licence re- issue
L7353/1996/10	09/01/2012	Licence re- issue
L7353/1996/10	8/05/2014	Licence amendment to REFIRE format.
L7353/1996/10	13/07/2020	Amendment to extend expiry date of the licence to 22/01/2024

Severance

It is the intent of these Licence conditions that they shall operate so that, if a condition or a part of a condition is beyond the power of this Licence to impose, or is otherwise *ultra vires* or invalid, that condition or part of a condition shall be severed and the remainder of these conditions shall nevertheless be valid to the extent that they are within the power of this Licence to impose and are not otherwise *ultra vires* or invalid.

END OF INTRODUCTION

Licence conditions

1 General

1.1 Interpretation

1.1.1 In the Licence, definitions from the *Environmental Protection Act 1986* apply unless the contrary intention appears.

1.1.2 For the purposes of this Licence, unless the contrary intention appears:

‘Act’ means the *Environmental Protection Act 1986*;

‘AACR’ means Annual Audit Compliance Report, copy of the AACR is accessible from the DWER website;

‘annual period’ means the inclusive period from 1 January until 31 December in the same year;

‘AS 4323.1’ means the Australian Standard AS4323.1 Stationary Source Emissions Method 1: Selection of sampling positions;

‘averaging period’ means the time over which a limit or target is measured or a monitoring result is obtained;

‘CEMS’ means continuous emissions monitoring system;

‘CEMS Code’ means the current version of the Continuous Emission Monitoring system (CEMS) Code for Stationary Source Air Emissions, Department of Environment & Conservation, Government of Western Australia;

‘CEO’ means Chief Executive Officer of the Department of Water and Environmental Regulation;

‘CEO’ for the purpose of correspondence means:

Chief Executive Officer of the Department.

“submit to / notify the CEO” (or similar), means either:

Director General

Department administering the *Environmental Protection Act 1986*

Locked Bag 10

Joondalup DC WA 6919

or:

info@dwer.wa.gov.au

‘code of practice for the storage and handling of dangerous goods’ means the document titled “Storage and handling of dangerous goods: Code of Practice” published by the Department of Mines and Petroleum, as amended from time to time;

‘dangerous goods’ has the meaning defined in the *Dangerous Goods Safety (Storage and Handling of Non-explosives) Regulations 2007*;

‘environmentally hazardous material’ means material (either solid or liquid raw materials, materials in the process of manufacture, manufactured products, products used in the manufacturing process, by-products and waste) which if discharged into the environment from or within the premises may cause pollution or environmental harm. Note: Environmentally hazardous materials include dangerous goods where they are stored in quantities below placard quantities. The storage of dangerous goods above placard quantities is regulated by the Department of Mines and Petroleum;

'fugitive emissions' means all emissions not arising from point sources identified in section-2.2;

'Licence' means this Licence numbered L7353/1996/10 and issued under the Act;

'Licence Holder' means the person or organisation named as Licence Holder on page 1 of the Licence;

'NATA' means the National Association of Testing Authorities, Australia;

'NATA accredited' means in relation to the analysis of a sample that the laboratory is NATA accredited for the specified analysis at the time of the analysis;

'NOx' means oxides of nitrogen, calculated as the sum of nitric oxide and nitrogen dioxide and expressed as nitrogen dioxide;

'Premises' means the area defined in the Premises Map in Schedule 1 and listed as the Premises address on page 1 of the Licence;

'Schedule 1' means Schedule 1 of this Licence unless otherwise stated;

'Schedule 2' means Schedule 2 of this Licence unless otherwise stated;

'stack test' means a discrete set of samples taken over a representative period at normal operating conditions;

'STP dry' means standard temperature and pressure (0°Celsius and 101.325 kilopascals respectively), dry;

'USEPA' means United States (of America) Environmental Protection Agency; and

'usual working day' means 0800 – 1700 hours, Monday to Friday excluding public holidays in Western Australia;

1.1.3 Any reference to an Australian or other standard in the Licence means the relevant parts of the standard in force from time to time during the term of this Licence.

1.1.4 Any reference to a guideline or code of practice in the Licence means the version of that guideline or code of practice in force from time to time, and shall include any amendments or replacements to that guideline or code of practice made during the term of this Licence.

1.2 General conditions

1.2.1 Nothing in the Licence shall be taken to authorise any emission that is not mentioned in the Licence, where the emission amounts to:

- (a) pollution;
- (b) unreasonable emission;
- (c) discharge of waste in circumstances likely to cause pollution; or
- (d) being contrary to any written law.

1.2.2 The Licence Holder shall operate and maintain all pollution control and monitoring equipment to the manufacturer's specification or any relevant and effective internal management system.

1.2.3 The Licence Holder except where storage is prescribed in section 1.3, shall ensure that environmentally hazardous materials are stored in accordance with the code of practice for the storage and handling of dangerous goods.

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- 1.2.4 The Licence Holder shall immediately recover, or remove and dispose of spills of environmentally hazardous materials outside an engineered containment system.
- 1.2.5 The Licence Holder shall:
- (a) implement all practical measures to prevent stormwater run-off becoming contaminated by the activities on the Premises; and
 - (b) treat contaminated or potentially contaminated stormwater as necessary prior to being discharged from the Premises.¹

Note1: *The Environmental Protection (Unauthorised Discharges) Regulations 2004* make it an offence to discharge certain materials into the environment.

1.3 Premises operation

- 1.3.1 The Licence Holder maintain a power output/NOx emission calibration for all expected power generation regimes to ensure reliable atmospheric discharge data estimates for gas turbine NOx emissions.
- 1.3.2 The Licence Holder shall ensure that the gas turbine is operated in open-cycle mode for not more than 1% of the time for any 365-day rolling average operating period.

2 Emissions

2.1 General

- 2.1.1 The Licence Holder shall record and investigate the exceedance of any descriptive or numerical limit or target specified in any part of section 2 of this Licence.

2.2 Point source emissions to air

- 2.2.1 The Licence Holder shall ensure that where waste is emitted to air from the emission points in Table 2.2.1 and identified on the map of emission points in Schedule 1 it is done so in accordance with the conditions of this Licence.

Table 2.2.1: Emission points to air		
Emission point reference and location on Map of emission points	Emission Point	Source, including any abatement
A1	Stack 1	Unit 1 (38 MWe) in cogeneration mode with steam injection for NOx control
A2	Bypass stack	Unit 1 (38 MWe) in open cycle mode, or bypass in cogeneration mode with steam injection for NOx control

- 2.2.2 The Licensee shall not cause or allow point source emissions to air greater than the limits listed in Table 2.2.2.

Table 2.2.2: Point source emission limits to air				
Emission point reference	Parameter	Power range	Limit (including units) ^{1,2}	Averaging Period
A1	Nitrogen oxides	<16 MW	80 mg/m ³	60 minutes
		16-25 MW	75 mg/m ³	
		>25MW	72 mg/m ³	

Note 1: All units are referenced to STP dry

Note 2: Concentration units for A5 are referenced to 15% O₂. Correction for continuous monitoring should be made continuously.

3 Monitoring

3.1 General monitoring

- 3.1.1 The Licensee shall ensure that annual monitoring is undertaken at least 9 months apart.
- 3.1.2 The Licensee shall record production or throughput data and any other process parameters relevant to any non-continuous or CEMS monitoring undertaken.
- 3.1.3 The Licensee shall ensure that all monitoring equipment used on the Premises to comply with the conditions of this Licence is calibrated in accordance with the manufacturer's specifications.
- 3.1.4 The Licensee shall, where the requirements for calibration cannot be practicably met, or a discrepancy exists in the interpretation of the requirements, bring these issues to the attention of the CEO accompanied with a report comprising details of any modifications to the methods.

3.2 Monitoring of point source emissions to air

- 3.2.1 The Licensee shall undertake the monitoring in Table 3.2.1 according to the specifications in that table.

Table 3.2.1: Monitoring of point source emissions to air					
Emission point reference	Parameter	Units ^{1, 3}	Averaging period	Frequency ²	Method
A1	Nitrogen oxides	mg/m ³ g/s	Stack Test (30 minute Average)	Annually	USEPA Method 7E or 7D
			30 minute	Continuously	Calculated using Table 3.6.1 monitoring data in accordance with an approved QAP

Note 1: All units are referenced to STP dry

Note 2: Monitoring shall be undertaken to reflect normal operating conditions and any limits or conditions on inputs or production.

Note 3: Concentration units for A5 are referenced to 15% O₂. Correction for continuous monitoring should be made continuously.

- 3.2.2 The Licensee shall ensure that sampling required under Condition 3.2.1 of the Licence is undertaken at sampling locations in accordance with the AS 4323.1 or relevant part of the CEMS Code.
- 3.2.3 The Licensee shall ensure that all non-continuous sampling and analysis undertaken pursuant to condition 3.2.1 is undertaken by a holder of NATA accreditation for the relevant methods of sampling and analysis.

3.3 Monitoring of inputs and outputs

3.3.1 The Licensee shall undertake the monitoring in Table 3.3.1 according to the specifications in that table.

Table 3.3.1: Monitoring of inputs and outputs			
Parameter	Units	Frequency	Method
Power output	MWe	Continuous	QAP
Power operating mode	-	Continuous	

4 Information

4.1 Records

- 4.1.1 All information and records required by the Licence shall:
- (a) be legible;
 - (b) if amended, be amended in such a way that the original and subsequent amendments remain legible or are capable of retrieval;
 - (c) except for records listed in 4.1.1(d) be retained for at least 6 years from the date the records were made or until the expiry of the Licence or any subsequent licence; and
 - (d) for those following records, be retained until the expiry of the Licence and any subsequent licence:
 - (i) off-site environmental effects; or
 - (ii) matters which affect the condition of the land or waters.
- 4.1.2 The Licence Holder shall ensure that:
- (a) any person left in charge of the Premises is aware of the conditions of the Licence and has access at all times to the Licence or copies thereof; and
 - (b) any person who performs tasks on the Premises is informed of all of the conditions of the Licence that relate to the tasks which that person is performing.
- 4.1.3 The Licence Holder shall complete an Annual Audit Compliance Report indicating the extent to which the Licence Holder has complied with the conditions of the Licence, and any previous licence issued under Part V of the Act for the Premises for the previous annual period.
- 4.1.4 The Licence Holder shall implement a complaints management system that as a minimum records the number and details of complaints received concerning the environmental impact of the activities undertaken at the Premises and any action taken in response to the complaint.

4.2 Reporting

- 4.2.1 The-Licence Holder shall submit to the CEO an Annual Environmental Report within 60 calendar days after the end of the annual period. The report shall contain the information listed in Table 4.2.1 in the format or form specified in that table.

Table 4.2.1: Annual Environmental Report		
Condition or table (if relevant)	Parameter	Format or form ¹
-	Summary of any failure or malfunction of any pollution control equipment and any environmental incidents that have occurred during the annual period and any action taken	None specified
1.3.1	Power-output/NOx emission-calibration plot for the gas turbine atmospheric discharges that also indicates test-points used to derive the curve	None specified
Table 3.2.1	NOx emissions monitoring	AR1
	Cumulative mass of NOx emitted	None specified
4.1.3	Compliance	Annual Audit Compliance Report (AACR)
4.1.4	Complaints summary	None specified

Note 1: Forms are in Schedule 2

4.2.2 The Licence Holder shall ensure that the Annual Environmental Report also contains:

- (a) any relevant process, production or operational data recorded under Condition 3.1.2 ; and
- (b) an assessment of the information contained within the report against previous monitoring results and Licence limits and/or targets.
- (c) a list of any original monitoring reports submitted to the Licensee from third parties for the annual period and make these reports available on request.

4.3 Notification

4.3.1 The Licence Holder shall ensure that the parameters listed in Table 4.3.1 are notified to the CEO in accordance with the notification requirements of the table.

Table 4.3.1: Notification v requirements			
Condition or table (if relevant)	Parameter	Notification requirement ¹	Format or form ²
2.1.1	Breach of any limit specified in the Licence	Part A: As soon as practicable but no later than 5pm of the next usual working day.	N1
-	Any failure or malfunction of any pollution control equipment or any incident, which has caused, is causing or may cause pollution	Part B: As soon as practicable	
3.1.5	Calibration report	As soon as practicable.	None specified

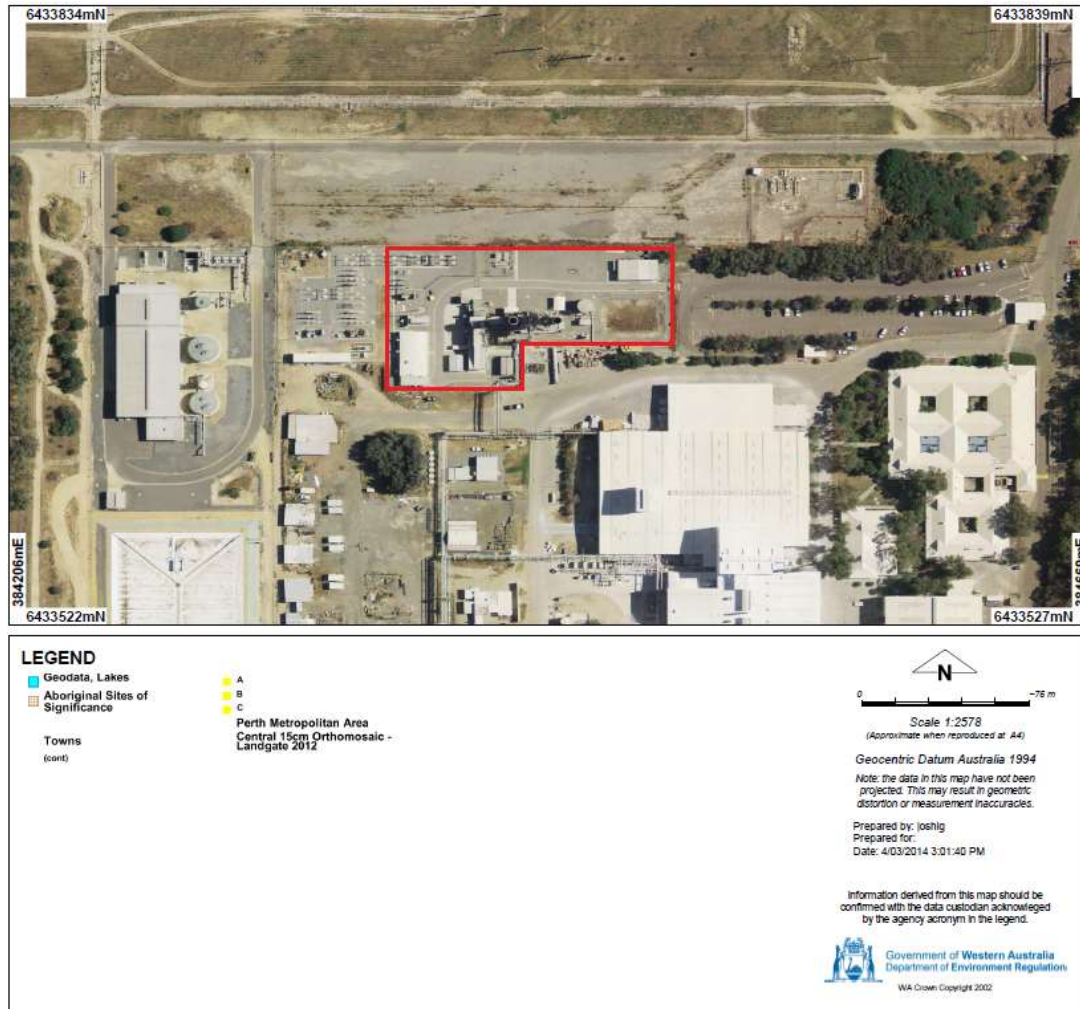
Note 1: Notification requirements in the Licence shall not negate the requirement to comply with s72 of the Act

Note 2: Forms are in Schedule 2

Schedule 1: Maps

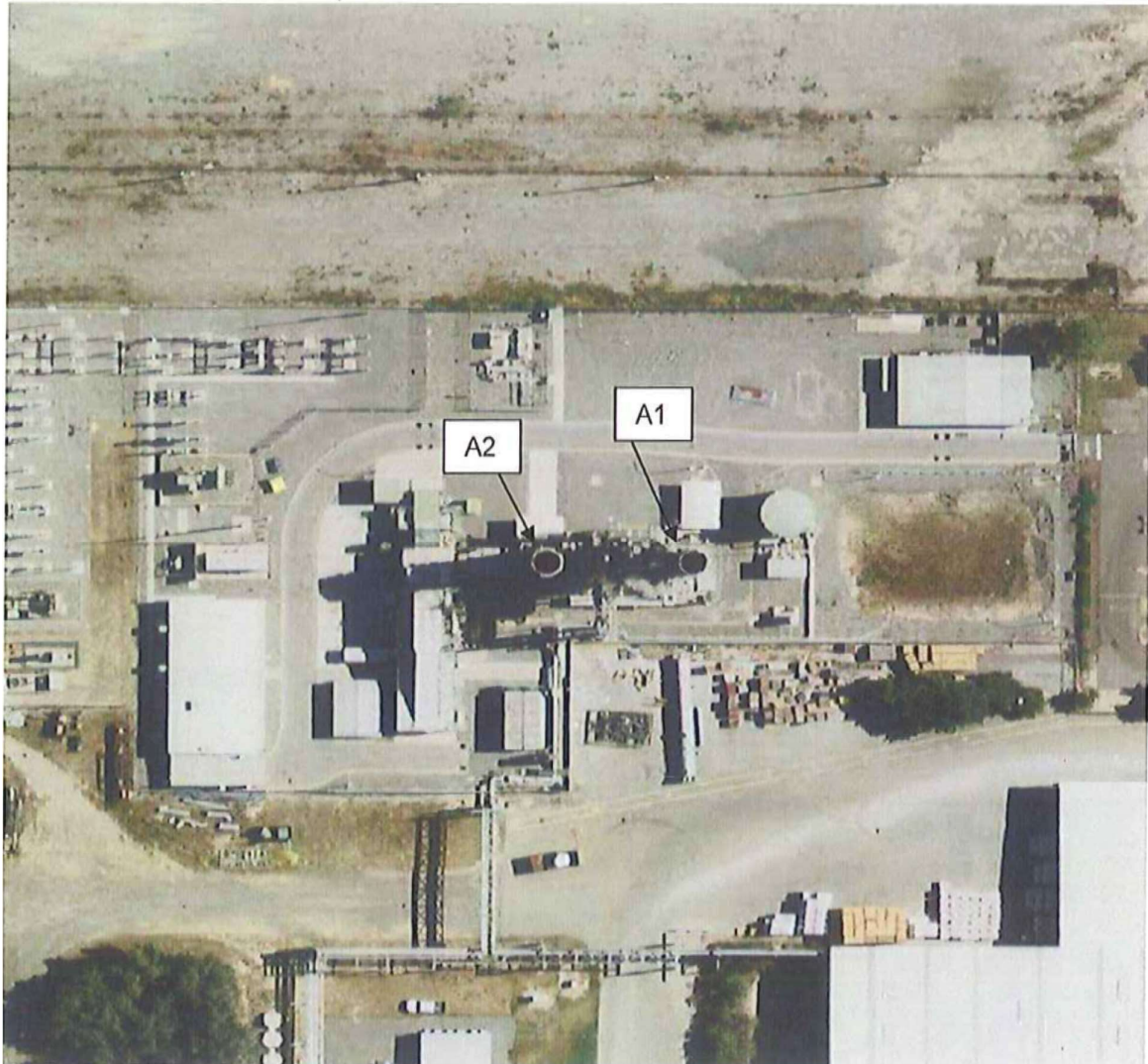
Premises map

The Premises is shown in the map below. The red line depicts the Premises boundary.



Map of emission points

The locations of the emission points defined in Tables 2.2.1 are shown below.



Schedule 2: Reporting & notification forms



Government of **Western Australia**
Department of **Water and Environmental Regulation**

Licence: L7353/1996/10

Licence Holder: Monadelphous Energy Services Pty Ltd

Form: N1

Date of breach:

Notification of detection of the breach of a limit.

These pages outline the information that the operator must provide.

Units of measurement used in information supplied under Part A and B requirements shall be appropriate to the circumstances of the emission. Where appropriate, a comparison should be made of actual emissions and authorised emission limits.

Part A

Licence number	
Name of operator	
Location of premises	
Time and date of the detection	

Notification requirements for the breach of a limit	
Emission point reference/source	
Parameter(s)	
Limit	
Measured value	
Date and time of monitoring	
Measures taken, or intended to be taken, to stop the emission	

Part B

Any more accurate information on the matters for notification under Part A.	
Measures taken, or intended to be taken, to prevent a recurrence of the incident.	
Measures taken, or intended to be taken, to rectify, limit or prevent any pollution of the environment which has been or may be caused by the emission.	
The dates of any previous N1 notifications for the Premises in the preceding 24 months.	

Name	
Post	
Signature on behalf of Licence Holder	
Date	