Government of Western Australia
Department of Water and Environmental Regulation

Licence

Licence number	L9315/2022/1
Licence holder	Puma Energy (Australia) Bitumen Pty Ltd
ACN	147 981 020
Registered business address	49 Port Road KWINANA BEACH WA 6167
DWER file number	DER2020/000002
Duration	14/07/2022 to 10/05/2041
Date of issue	13/07/2022
Premises details	Puma Energy Kwinana Bitumen Terminal 49 Port Road KWINANA BEACH WA 6167 Legal description – Part of Lot 108 on Plan 400167

Prescribed premises category description (Schedule 1, Environmental Protection Regulations 1987)	Assessed design throughput
Category 36: Bitumen manufacturing: premises on which bitumen is mixed or prepared for use at places or premises other than those premises.	116,000 tonnes per year

This licence is granted to the licence holder, subject to the attached conditions, on 13 July 2022, by:

Daniel Hartnup

Digitally signed by Daniel Hartnup
Date: 2022.07.13 13:22:27 +08'00'

Daniel Hartnup
A/MANAGER, PROCESS INDUSTRIES
REGULATORY SERVICES
an officer delegated under section 20 of the *Environmental Protection Act 1986* (WA)

Licence and works approval history

Date	Instrument	Summary of changes
03/07/2021	W6349/2020/1	Works approval granted.
21/10/2021	W6349/2020/1	CEO initiated amendment to extend the duration by 5 years and time limited operations by 10 months.
14/03/2022	W6349/2020/1	CEO initiated amendment to extend the duration of time limited operations by a further 18 months.
13/07/2022	L9315/2022/1	Licence issued for Stage 1 operations.

Interpretation

In this licence:

(a) the words 'including', 'includes' and 'include' in conditions mean "including but not limited to", and similar, as appropriate;
(b) where any word or phrase is given a defined meaning, any other part of speech or other grammatical form of that word or phrase has a corresponding meaning;
(c) where tables are used in a condition, each row in a table constitutes a separate condition;
(d) any reference to an Australian or other standard, guideline, or code of practice in this licence:
    (i) if dated, refers to that particular version; and
    (ii) if not dated, refers to the latest version and therefore may be subject to change over time;
(e) unless specified otherwise, any reference to a section of an Act refers to that section of the EP Act; and
(f) unless specified otherwise, all definitions are in accordance with the EP Act.

NOTE: This licence requires specific conditions to be met but does not provide any implied authorisation for other emissions, discharges, or activities not specified in this licence.

Licence conditions

The licence holder must ensure that the following conditions are complied with:

Infrastructure and equipment

1. The licence holder must ensure the site infrastructure and equipment listed in Table 1 is maintained and operated in accordance with the corresponding operational requirements set out in that table.

Table 1: Infrastructure and equipment requirements

Site infrastructure and equipment	Operational requirement	Infrastructure location
Hot bitumen storage tanks (TK-103 to TK-106)	- 4 x 250 tonne hot bitumen storage tanks; - Tanks must be located within a low permeability (1 x 10^{-9} m/s or less) compound with secondary containment that complies with the requirements of AS 1940 and comprises a collection sump for recovering contaminated stormwater; - Each tank must have an operational overflow alarm;	"Existing hot bitumen storage tanks", as depicted in the 'Map of infrastructure' in Schedule 1
CRMB mixing unit	- 1 x 25 tonne trailer-mounted mixing unit;	"CRMB mixing unit", as depicted in the

Site infrastructure and equipment	Operational requirement	Infrastructure location
	- Mixing unit must be operated within a low permeability (1 x 10^{-9} m/s or less) compound with secondary containment that complies with the requirements of AS 1940 and comprises a collection sump for recovering contaminated stormwater; - When operating, vapours from the mixing unit vent must be directed to the vapour treatment system via an extraction fan	'Map of infrastructure' in Schedule 1
PMB mixing unit	- 1 x 25 tonne trailer-mounted mixing unit; - Mixing unit must be operated within a low permeability (1 x 10^{-9} m/s or less) compound with secondary containment that complies with the requirements of AS 1940 and comprises a collection sump for recovering contaminated stormwater; - When operating, vapours from the mixing unit vent must be directed to the vapour treatment system via an extraction fan	"PMB mixing unit", as depicted in the 'Map of infrastructure' in Schedule 1

Vapour treatment system	- 2 x treatment systems comprising:
	  - a knockout pot for removal of moisture in the vapour flow stream;
	  - a stainless steel treatment chamber containing AC filter beds designed to remove 95% of VOCs;
	  - an extraction fan; and
	  - a 4 m high stack fitted with a sampling port that complies with AS 4323.1;
	- compaction of AC filter medium must be inspected at least once every 4,000 tonnes of production per mixing unit;
	- AC filter medium must be replaced once there is a 20% pressure drop across the filter bed;
	- condensate must be drained from the KO pots at least once per day whilst the scrubber unit(s) are operating
		As per design requirements

Additive storage tank and unloading bay	- 1 x 70 kL self-bunded storage tank, located adjacent to a 25 m^2 concrete unloading bay, which comprises a collection sump that is connected to the OWS via underground pipeline	"Additive storage tank", as depicted in the 'Map of infrastructure' in Schedule 1

Oily water separator (OWS)	- Design specifications:
	  - 40 m^3/hr treatment capacity;
	  - reduces total recoverable hydrocarbons (TRH) <10 ppm;
	- System must be inspected at least once every 3 months for the presence of retained hydrocarbons, silt and sediment, etc.;
	- Where any inspection identifies an issue that is, or has the potential to, reduce the OWS performance, corrective action must be taken to mitigate the issue.
		"06", as depicted in the 'Map of emission points' in Schedule 1

Emissions and discharges

Authorised emission and discharge points

2. The licence holder must ensure that all emissions and discharges of the type listed in Table 2 are only emitted or discharged in accordance with the corresponding requirements set out in that table.

Table 2: Authorised discharge points

Emission point ref[1]	Emission point	Emission	Emission point height (m AGL)
Emissions to air			
4A	CRMB mixing tank scrubber vent stack	VOCs, PAHs, H_2S, PM	4.0
4B	PMB mixing tank scrubber vent stack		
7	Oil heater stack	VOCs, PAHs, H_2S	10.0
8	Truck loading facility vent		8.0
9	TK-103 storage tank vent		20.0
10	TK-104 storage tank vent		
11	TK-105 storage tank vent		
12	TK-106 storage tank vent		
Discharges to land			
6	Infiltration basin	Stormwater runoff from containment areas, OWS treated water	N/A

Note 1: Emission point reference locations are depicted in Schedule 1: 'Map of emission points'.

Discharge to land limits

3. The licence holder must ensure that all stormwater is confirmed by monitoring conducted in accordance with condition 11 as meeting the following discharge criteria:

(a) ≤ 10 mg/L TRH; and
(b) pH between 6 and 9.

4. Where any monitoring event conducted in accordance with condition 11 identifies the treated water as not meeting the discharge criteria specified in condition 3, the licence holder must cease discharging and:

(a) retreat the water until it complies with the discharge criteria specified in condition 3; or
(b) arrange off-site disposal of the water with a licensed controlled waste carrier.

Monitoring

General monitoring

5. The licence holder must 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.

6. The licence holder must, where the requirements for calibrations 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 made to the methods.

Monitoring of point source emissions to air

7. The licence holder must, at least once every 4,000 tonnes of production per mixing unit, undertake the monitoring in Table 3 according to the specifications in that table.

Table 3: Monitoring of emissions to air

Emission point ref	Monitoring point ref	Parameter	Units	Averaging period	Method
4A, 4B	Scrubber vent stack	Stack flow	m^3/min	60 minutes	USEPA Method 2
		Stack velocity	m^3/sec		
		Particulates	mg/m^3, g/s		USEPA Method 5 or 17
		Hydrogen sulfide			USEPA Method 11
		Total VOCs			USEPA Method 18
		PAHs			

Note 1: Emission point reference locations are depicted in Schedule 1: 'Map of emission points'.

8. The licence holder must record the results of all monitoring activity required by condition 7.

9. The licence holder must ensure that sampling required by condition 7 is conducted at a location that complies with the requirements of AS 4323.1.

10. The licence holder must ensure all non-continuous sampling and analysis undertaken in accordance with Table 3 is undertaken by a holder of NATA accreditation for the relevant methods of sampling and analysis.

Monitoring of point source discharges to land

11. The licence holder must undertake the monitoring in Table 4 according to the specifications in that table.

Table 4: Monitoring of discharges to land

Emission point ref	Monitoring point ref	Parameter	Units	Averaging period	Frequency	Method
6	OWS sampling point	TRH	mg/L	Spot sample	Monthly[1], during May to September	Water must be tested with hydrocarbon detection strips that are capable of detecting ≤ 10 mg/L TRH, or an equivalent testing method

Note 1: Monthly monitoring must be undertaken at least 15 days apart.

12. The licence holder must maintain a written log of all monitoring results conducted in accordance with condition 11, with each result signed off by the person who conducted the monitoring.

Records and reporting

13. The licence holder must maintain accurate and auditable books including the following records, information, reports and data required by this licence:

(a) the calculation of fees payable in respect of this licence;
(b) the maintenance of infrastructure required to ensure that it is kept in good working order in accordance with condition 1;
(c) monitoring undertaken in accordance with conditions 7 & 11; and
(d) complaints received under condition 16.

14. All information and records required by the licence must:

(a) be legible;
(b) if amended, be amended in such a way that the original and subsequent amendments remain legible and are capable of retrieval;
(c) except for records listed in condition 13(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.

Annual reporting requirements

15. The licence holder must:

(a) undertake an audit of their compliance with the conditions of this licence during the preceding annual period; and
(b) prepare and submit to the CEO, by no later than 1 March in each year, an Annual Audit Compliance Report in the approved form.

16. The licence holder must 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.

Biennial reporting requirements

17. The licence holder must submit to the CEO, by 1 March 2023 and biennially thereafter, an environmental report containing the information listed in Table 5.

Table 5: Environmental report

Condition or table	Parameter
-	Summary of any failure or malfunction of any pollution control equipment and any environmental incidents that have occurred during the preceding biennial period and any action taken
Table 3	Monitoring of point source emissions to air
Condition 12	Written log of monitoring results for discharges to land
Condition 16	Complaints summary

18. The licence holder must ensure the report required by condition 17 also contains an assessment of the information contained within against previous monitoring results and licence limits.

Definitions

In this licence, the terms in Table 6 have the meanings defined.

Table 6: Definitions

Term	Definition
AGL	above ground level
Annual Audit Compliance Report (AACR)	means a report submitted in a format approved by the CEO (relevant guidelines and templates may be available on the Department's website)
annual period	a 12-month period commencing from 1 January until 31 December in the same year
biennial period	the 24-month period commencing from 1 January until 31 December of the second following year
AS/NZS 1940	means the Australian Standard AS/NZS 1940, the storage and handling of flammable and combustible liquids
AS 4323.1	means Australian Standard AS4323.1 *Stationary source emissions method 1: selection of sampling positions*
averaging period	means the time over which a limit is measured or a monitoring result is obtained
books	has the same meaning given to that term under the EP Act
CEO	means Chief Executive Officer of the Department of Water and Environmental Regulation. "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 info@dwer.wa.gov.au
condition	means a condition to which this licence is subject under s.62 of the EP Act
CRMB	crumbed rubber modified bitumen
Department	means the department established under section 35 of the *Public Sector Management Act 1994* and designated as responsible for the administration of the EP Act, which includes Part V, Division 3
discharge	has the same meaning given to that term under the EP Act
emission	has the same meaning given to that term under the EP Act
EP Act	means the *Environmental Protection Act 1986* (WA)
licence	means this document, which evidences the grant of a licence by the CEO under section 57 of the EP Act, subject to the specified conditions contained within
licence holder	refers to the occupier of the premises being the person to whom this licence has been granted, as specified at the front of this 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 specified analysis at the time of the analysis
OWS	oily water separator
PAH	polycyclic aromatic hydrocarbons
PMB	polymer modified bitumen

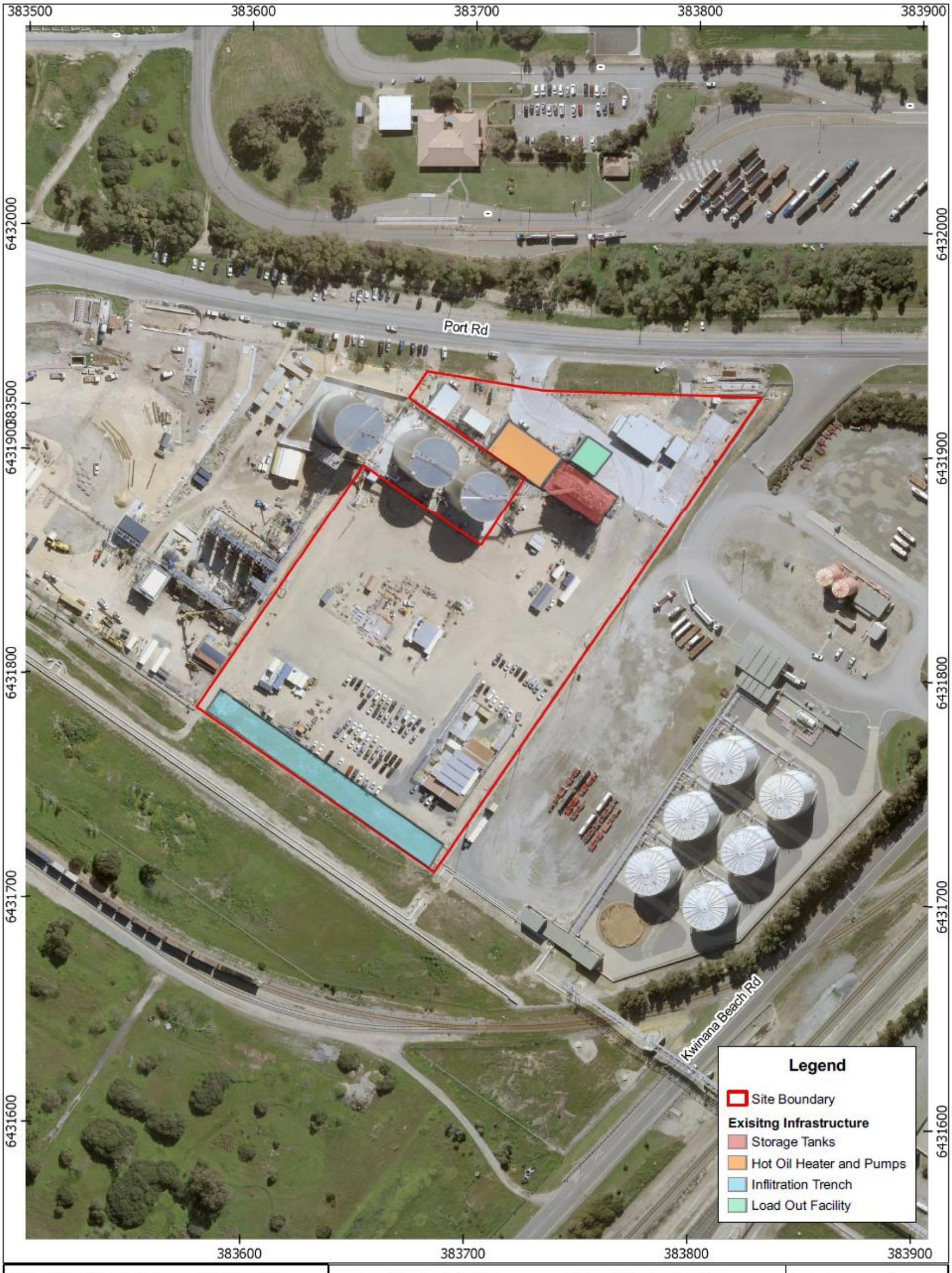
premises	means the premises to which this licence applies, as specified at the front of this licence and as shown on the map in Schedule 1 to this licence
prescribed premises	has the same meaning given to that term under the EP Act
spot sample	means a discrete sample representative of the time and place at which the sample is taken
TRH	Total recoverable hydrocarbons
USEPA	means United States Environmental Protection Authority
USEPA Method 2	means the promulgated Test Method 2 – Determination of Stack Gas Velocity and Volumetric Flow Rate (Type S Pitot Tube)
USEPA Method 5	means the promulgated Test Method 5 – Determination of Particulate Matter Emissions from Stationary Sources
USEPA Method 11	means the promulgated Test Method 11 – Determination of hydrogen sulfide content of fuel gas streams in petroleum refineries
USEPA Method 17	means the CFR promulgated Test Method 17 – Determination of Particulate Matter (PM) Emissions from Stationary Sources
USEPA Method 18	means the promulgated Test Method 18 – Measurement of Gaseous Organic Compound Emissions by Gas Chromatography
VOC	volatile organic compounds

END OF CONDITIONS

Schedule 1: Maps

Premises map

The prescribed premises is shown in the map below. The red line depicts the premises boundary. The blue shaded area depicts the infiltration trench.



Map B1 - Aerial Photograph of the Site

Prepared By: Lisa Boulden
Datum: GDA94 (MGA50)
Page Size: A4
Scale: 1:2,500

Date: 17 December 2019

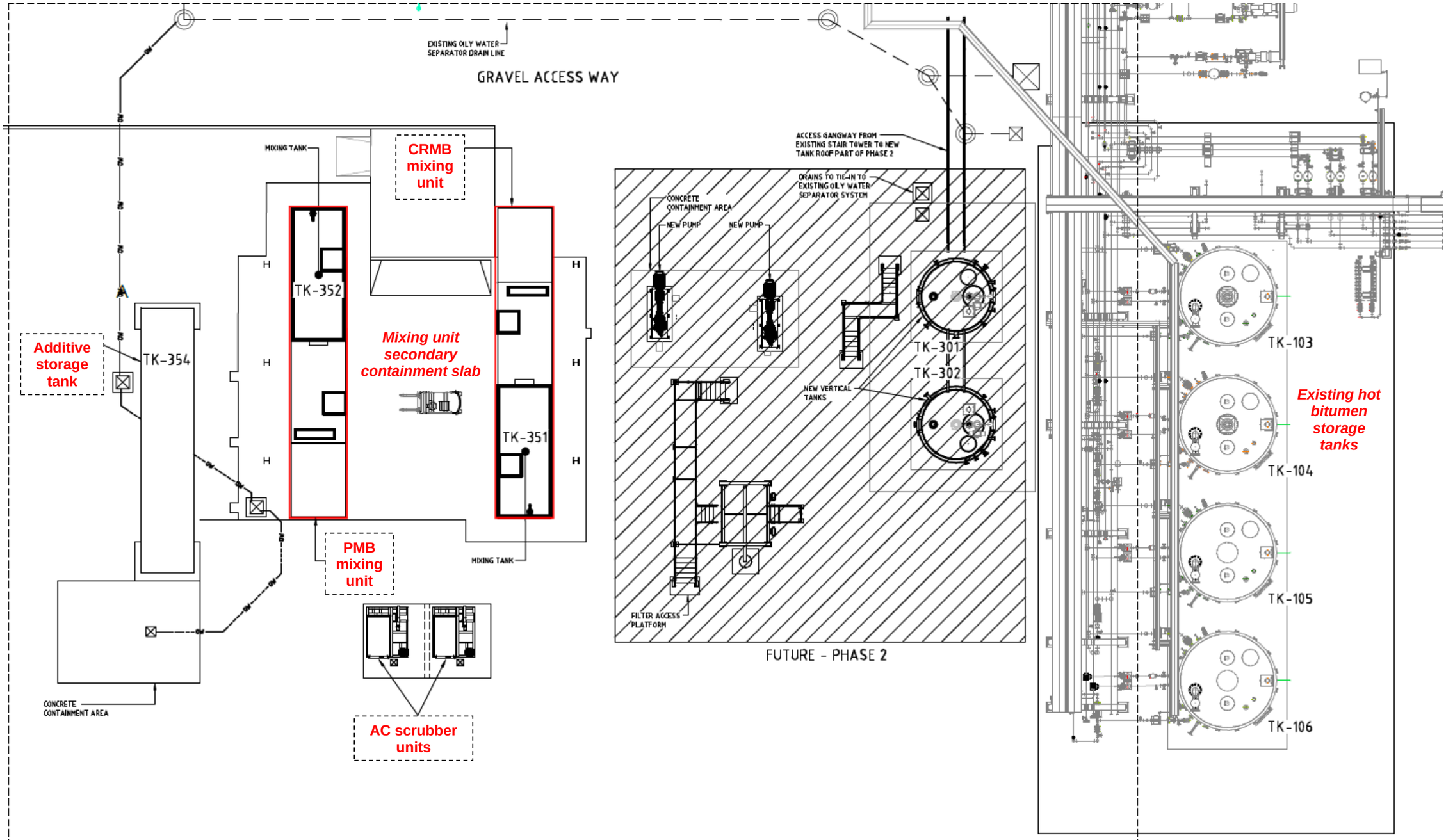
0 25 50 75 100 m

Jacobs
Challenging today.
Reinventing tomorrow.

Schedule 1: Maps

Map of infrastructure (site layout)

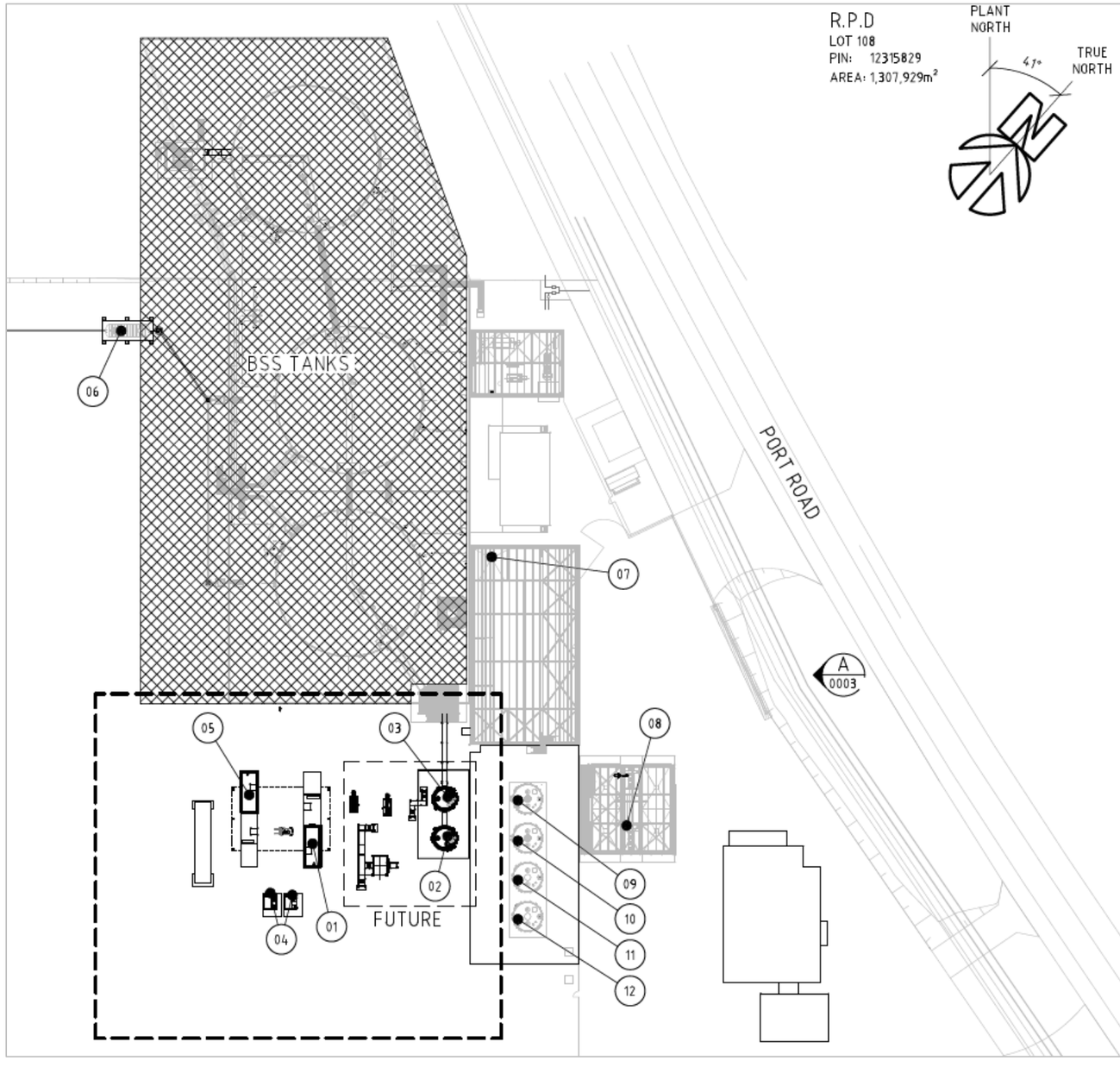
The location of new and existing infrastructure defined in conditions of this licence are shown below.



Schedule 1: Maps

Map of emission points

The location of authorised emission points defined in conditions of this licence are shown below.



STACK/ VENT ID	EMISSION SOURCE DESCRIPTION	RELEASE HEIGHT (m)	NOTES
01	PMB/CR MIXER 351	N/A	4m HIGH VENT PIPED TO FUME SCRUBBER
02	TK-302 (FUTURE)	N/A	14m HIGH VENT TO BE PIPED TO VAPOUR TREATMENT
03	TK-301 (FUTURE)	N/A	14m HIGH VENT TO BE PIPED TO VAPOUR TREATMENT
04	351 FUME SCRUBBER	4m	
04	352 FUME SCRUBBER	4m	
05	PMB/CR MIXER 352	N/A	4m HIGH VENT PIPED TO FUME SCRUBBER
06	OILY WATER TREATMENT	N/A	
07	OIL HEATER STACK	10m	
08	TRUCK LOADING FACILITY VENT	8m	
09	TK-103	20m	
10	TK-104	20m	
11	TK-105	20m	
12	TK-106	20m	