



Application for Licence

Division 3, Part V *Environmental Protection Act 1986*

Licence Number	L9184/2018/1
Applicant	SAMI Bitumen Technologies Pty Ltd Unit 2, 3-5 Gibbon Road, Winston Hills NSW 2153 PO Box A2621, SYDNEY NSW 1235
ACN	ACN 001 089 416
File Number	DER2018/001632
Premises	SAMI Bitumen Kwinana Part Lot 108 on deposited plan 400167 Port Road, Kwinana Beach WA 6167 As defined by the coordinates in Schedule 1 of the Licence
Date of Report	23 September 2019
Status of Report	Final

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1. Definitions of terms and acronyms

In this Decision Report, the terms in Table 1 have the meanings defined.

Table 1: Definitions

Term	Definition
AACR	Annual Audit Compliance Report
ACN	Australian Company Number
AER	Annual Environment Report
AS 2885	Refers to AS 2885.0-2008 Pipelines – Gas and liquid petroleum General requirements
dB _A	refers to A-weighted decibels according to the relative loudness of sounds in air, as perceived by the human ear
Decision Report	refers to this document.
Delegated Officer	an officer under section 20 of the EP Act.
Department	means the department established under section 35 of the <i>Public Sector Management Act 1994</i> and designated as responsible for the administration of Part V, Division 3 of the EP Act.
DWER	Department of Water and Environmental Regulation
EP Act	<i>Environmental Protection Act 1986 (WA)</i>
EP Regulations	<i>Environmental Protection Regulations 1987 (WA)</i>
L _{A10}	Refers to the assigned noise level which is not to be exceeded for more than 10 percent of the time, as noted in the Noise Regulations.
Licence Holder	SAMI Bitumen Technologies Pty Ltd
Noise Regulations	<i>Environmental Protection (Noise) Regulations 1997 (WA)</i>
PM	Particulate Matter
PM ₁₀	used to describe particulate matter that is smaller than 10 microns (µm) in diameter
PMB	polymer modified bitumen
Premises	refers to the premises to which this Decision Report applies, as specified at the front of this Decision Report
TRH	means Total Recoverable Hydrocarbons
tpa	tonnes per annum
VOCs	refers to volatile organic compounds, which are organic chemicals with a high vapour pressure at ordinary room temperature

2. Purpose and scope of assessment

SAMI Bitumen Technologies Pty Ltd (the Applicant) submitted an application for a licence on 22 November 2018. The application is for the operation of a Category 36 bitumen manufacturing facility, constructed under Works Approval W5934/2015/1 at Kwinana Beach. Works Approval W5934 allowed for 3 stages of construction and commissioning of installed equipment. A copy of Works Approval W5934/2015/1 is set out in Attachment 2. The current licence application relates to the operation of Stage 1.

Emissions and discharges during operation of the facility were assessed when the works approval was granted. The scope of that assessment included the environmental risk associated with bitumen manufacturing, in particular the emission of VOCs and consequent odours. The current licence will address the infrastructure installed as part of Stage 1 and a licence amendment will be required when Stages 2 and 3 are completed.

3. Background

The Applicant has been operating a bitumen storage and processing facility at Lot N75 Port Beach Road, North Fremantle since 2009 under Licences L8393/2009/1 and L8886/2015/1.

On 12 November 2015, the Applicant submitted a works approval application to construct the SAMI Bitumen Kwinana Terminal (W5934/2015/10). The assessed design capacity for W5934/2015/1 was based on 90,000 tonnes per annum, comprising 75,000 tonnes per annum (tpa) of bitumen and 15,000 tonnes per annum of modified bitumen products.

The Applicant advised DWER by email on 9 June 2016 that they were progressing with a joint venture with their neighbour, Puma Energy (Australia) Bitumen Pty Ltd (Puma). The joint venture supplies the Applicant with bitumen under commercial arrangements. The Applicant further advised that the bulk storage tanks for unprocessed bitumen as detailed in the works approval would be excluded from the licence application because they are on premises occupied by the Joint Venture, not under the control of the Applicant. Storage of bitumen is not a prescribed under activity as Category 73 of the EP Regulations because bitumen is not a liquid at standard temperature and pressure. The bitumen tanks are subject to Dangerous Goods legislation and the general provisions of the EP Act.

Table 2 lists the prescribed premises category that has been applied for.

Table 2: Prescribed Premises Category in the Licence

Classification of Premises	Description	Activities undertaken at the Kwinana Beach facility	Nominal production
Category 36	Bitumen manufacturing: premises on which bitumen is mixed or prepared for use at places or premises other than those premises	A bitumen storage and processing facility involving the transfer of bitumen from ships to bulk storage vessels, modifying the bulk of the bitumen into a range of bituminous products prior out loading onto road tankers for export off site	<90,000 tpa of bitumen products
Non-prescribed activity.	Despatch of unprocessed bitumen	Despatch of unprocessed bitumen into road tankers, sourced from the BSS adjacent to the facility but, despatched through the SAMI site.	<170 000 tpa

Construction on the new site commenced in 2016 and DWER received a Compliance Document for Stage 1 on 14 December 2018. The Compliance Document was reviewed by the Delegated Officer prior to the granting of this licence.

The current licence application relates to Stage 1 of the works that has a design capacity of 90,000 tpa.

4. Overview of Premises

4.1 BSS (Joint Venture with SAMI and Puma)

On 6 June 2016, the Applicant notified the Department that they would be forming a joint venture with a neighbouring company Puma and the resulting joint venture would be referred to as BSS. The location of BSS is highlighted in Figure 1. Various classes of bitumen will be transferred via pipelines from the Kwinana Bulk Jetty to the BSS storage tanks and stored in dedicated primary heated bulk storage tanks with a total capacity of 22,860 kL on the BSS site.

The pipeline from the Bulk Terminal Jetty to the Joint Venture site is controlled by BSS. Air either from the ship or a land-based compressor will be used to clear product from the pipeline at the end of the unloading process. Bunding and containment of the pipeline at the wharf connection point will be able to contain small spills.

The bitumen will be transferred from BSS to storage vessels on SAMI's premises and either directly loaded into trucks or mixed for use elsewhere.

BSS's and SAMI's sites are depicted below.

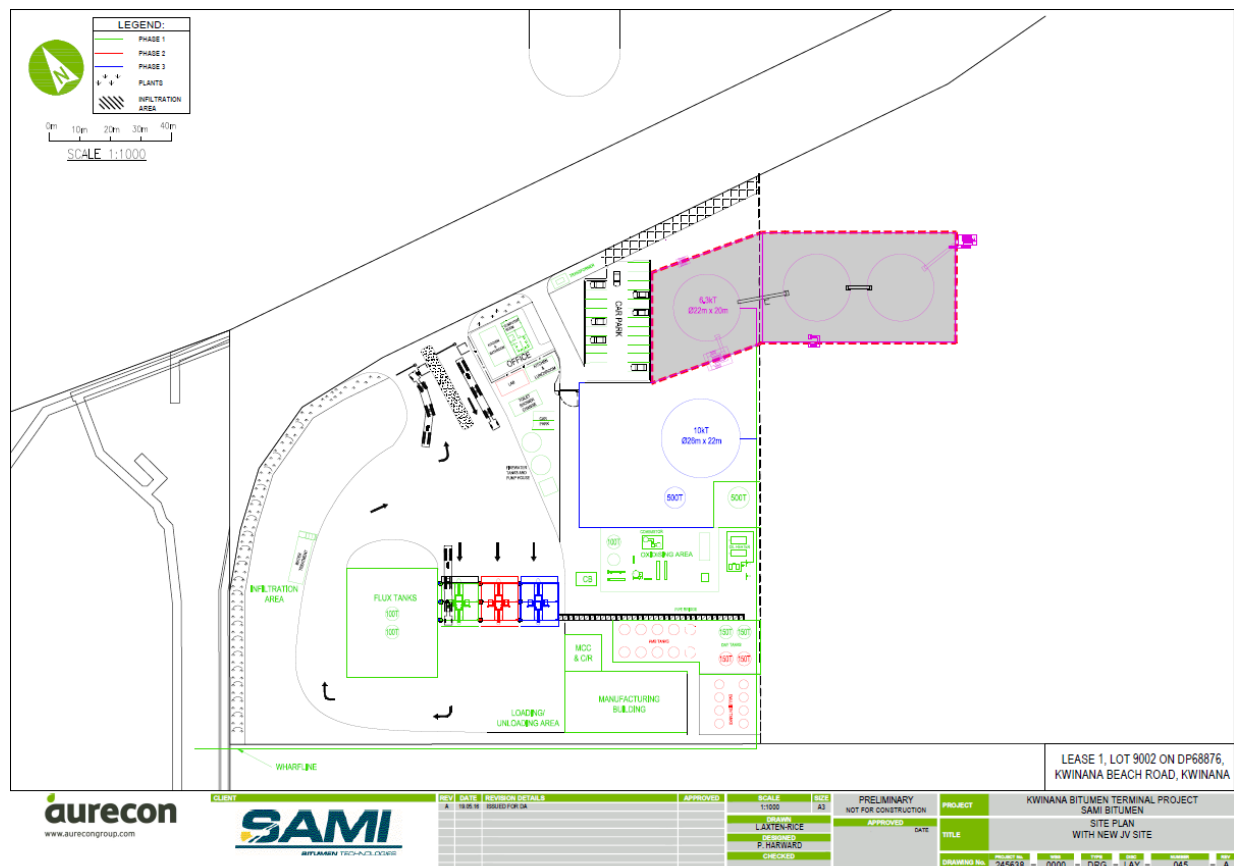


Figure 1: Location of BSS site (highlighted in grey) and storage tanks (Applicant provided)

4.2 Infrastructure

The SAMI Kwinana infrastructure, as it relates to Category 36 activities, is detailed in Table 3 and referenced in Figure 1.

Table 3: SAMI Bitumen Kwinana facility Category 36 infrastructure

#	Infrastructure for Prescribed Activity Category 36	Site Plan Drawing	Site Plan Reference
1.	Process delivery and return pipelines and pumps	NA	NA
2.	9 x 150 tonne capacity storage tanks fitted with heating coils for storage of bitumen products and additives (2 yet to be constructed)	Schedule 1 of issued licence	150T heated tanks
3.	1 x 40m ³ bitumen pre-heat tank	Schedule 1 of issued licence	Pre-heat tank
4.	2 x 68m ³ capacity storage tanks for hydrocarbon storage.	Schedule 1 of issued licence	Flux Tanks
5.	Concrete bunds around tank farms compliant with AS1940:2017.	Schedule 1 of issued licence	NA
6.	2 x oil Heater with thermal oil delivery and return pipelines	Schedule 1 of issued licence	Oil Heaters
7.	Heat Exchangers	Schedule 1 of issued licence	Heat Exchangers
8.	1 x Bitumen oxidation blowing tower (plant)	Schedule 1 of issued licence	Oxidation column
9.	1 x thermal oxidiser (used to treat emissions from the bitumen oxidation plant pre-heat tanks)	Schedule 1 of issued licence	Combustor
10.	3 x Vapour Recovery Units.	Schedule 1 of issued licence	VRU
11.	truck loading gantries	Schedule 1 of issued licence	Loading Gantries
12.	SPEL Puraceptor separator	Schedule 1 of issued licence	Oily water separator
13.	2 x first flush pits	Schedule 1 of issued licence	First Flush Pits
14.	Infiltration basin	Schedule 1 of issued licence	Infiltration Basin

4.2.1 Applicable regulations, standards and guidelines

The overarching legislative framework of this assessment is the EP Act and EP Regulations. The guidance statements which inform this assessment are:

- *Guidance Statement: Regulatory Principles (July 2015);*

- *Guidance Statement: Setting Conditions (October 2015);*
- *Guidance Statement: Land Use Planning (February 2017);*
- *Guideline: Decision Making (June 2019); and*
- *Guidance Statement: Risk Assessments (February 2017).*

4.2.2 Works approval and licence history

Table 4 summarises the works approval and licence history for the premises.

Table 4: Works approval and licence history

Instrument	Issued	Nature and extent of works approval, licence or amendment
W5934/2015/1	11/03/2016	Works Approval to construct the SAMI Bitumen Kwinana Facility
L9184/2018/1	23/9/2019	Licence to operate the SAMI Bitumen Kwinana Facility –Stage 1 of 3.

4.2.3 Works Approvals W5934/2015/1

Works Approval W5934/2015/1 was issued on 11 March 2016. The assessed design capacity for SAMI Kwinana was 90,000 tonnes per annum, comprising 75,000 tonnes per annum of bitumen and 15,000 tonnes per annum of modified bitumen products.

On 14 December 2018, the Applicant provided a Commissioning Plan and Compliance documents to DWER for Stage 1.

The Compliance Document confirmed the construction of Stage 1 as assessed in the works approval including details of installed equipment and variations from the plan submitted in the works approval and detailing the management of environmental impacts.

The Commissioning Plan documents the procedure for commissioning the plant including:

- confirmation of construction in accordance with specification;
- dry commissioning confirming the infrastructure is operational before the introduction of product into the plant;
- wet commissioning with product; and,
- operation.

The Compliance Report and Commissioning plan indicates that the ‘as built’ infrastructure has variations to that detailed in the works approval but, it has not altered the risks to the environment in a material way.

5. Consultation

The Licence Application was advertised in the West Australian Newspaper on 24 December 2018 for a period of 21 days. No comments were received.

6. Regulatory controls

A summary of regulatory controls determined at the works approval assessment stage are set out in Table 5. DWER has determined licensing controls after having regard to the adequacy of controls proposed by the Applicant and those foreshadowed at the works approval stage. A summary of the licence controls appears in the table below.

Table 5: Summary of regulatory controls to be applied

		Controls		
		Specified infrastructure	Specified Actions	Monitoring
Risk Event	Contamination of surface or groundwater	•		•
	1. Odour emissions	•	•	•

6.1 Licence controls

6.1.1 Surface water and groundwater protection

Controls for the management of clean stormwater and potentially contaminated stormwater are outlined in Table 6

Table 6: Infrastructure and management of stormwater

Infrastructure	Requirements
Containment areas	- Sealed and maintained such that all spills are prevented from entering the environment; and Fuel and oil spill kits to be available at all times during operation;
Stormwater	- All uncontaminated stormwater is to be directed to the infiltration basins; - Stormwater captured by first flush pits to be directed to oily water separator
	- All contaminated stormwater tank containment areas is to be directed to an oily water separator prior discharge to the infiltration basin on site; and - All contaminated stormwater from load out gantries, yards and access ways are directed to the oily water separator prior to discharge to the infiltration basin. All drains, oil traps and sumps are to be regularly maintained and cleaned of any debris.
Loadout	All loading of products to take place on concrete aprons

6.1.2 Control of odour emissions infrastructure

The following environmental controls, infrastructure and equipment listed in Table 7..

Table 7: Management of odour emissions

Infrastructure	Requirements
Heated bitumen storage tanks for bitumen and bitumen products	Vents for displaced air connected to vapour recovery unit or thermal oxidiser
Bitumen oxidation tower	Emissions directed to thermal oxidiser
Bitumen tanker loading gantry	Emissions directed to a Vapour recovery unit
Vapour Recovery Unit	<ul style="list-style-type: none"> To be maintained at not less than 95% efficiency at all times. Annual monitoring to confirm efficiency and remedial action if less than 95% reduction in odour.
Thermal Oxidiser	<ul style="list-style-type: none"> Combustion chamber temperature to be maintained at 700°C Annual burner inspection.

6.1.3 Specified actions for control of Odour

The actions outlined in Table 8 must be undertaken to control odour.

Table 8: Actions to control odour emissions

Infrastructure or event	Action
Vapour Recovery Unit (VRU)	Activities causing a discharge through the VRU will cease if the VRU is not operating at 95% efficiency
Thermal Oxidiser	Activities causing a discharge to the thermal oxidiser will cease if the thermal oxidiser is not operating.
Pipes seals and joints	Prevent leakage of odours from pipes, seals and joints

6.1.4 Monitoring of treated wastewater discharge

The following monitoring requirements listed in Table 9 are to be included in the licence. All contaminated water discharged to the infiltration basin(s) is to meet the criteria specified prior to discharge to the infiltration basin. The monitoring is to ensure that the oil/water separator is operating efficiently.

Table 9: Monitoring of treated wastewater discharge

Source/sampling location	Parameters to be measured	Frequency
Discharge water from oily water separator	pH	Twice each year
	Hydrocarbons	

6.1.5 Monitoring of VOCs and Odours

The following monitoring detailed in Table 10 is to ensure that the VOC recovery unit is operating efficiently.

Table 10: Monitoring of VOCs and Odours

Source/sampling location	Parameters to be measured	Sampling / Analysis method	Units	Frequency
<ul style="list-style-type: none"> • Inlet to VRU • Outlet of VRU 	Odour	AS4323.3	Odour Units (ou)	6 monthly
	Volumetric flow rate	USEPA Method 2	m ³ /s	

7. Determination of Licence conditions

The conditions in the Licence set out in Attachment 1 have been determined in accordance with the *Guidance Statement: Setting Conditions*.

The *Guidance Statement: Licence Duration* has been applied and the Licence has been granted for a 20 year period based on the installed pollution control devices, the location of the premises in a heavy industry zone and the low level of risks to the environment (including amenity).

The issued licence applies only to Stage 1 of the 3 Stages approved via Works Approval W5934/2015/1. The Applicant will need to apply for a licence amendment in respect of Stages 2 and 3 once construction and commissioning are completed.

DWER notes that it may review the appropriateness and adequacy of controls at any time and that, following a review, DWER may initiate amendments to the licence under the EP Act.

8. Applicant's comments

The Applicant was provided with a draft Licence on 2 August 2019 for early comments.

The Applicant advised on:

- the description of and the number of vapour recovery units;
- the location of emission points;
- the number of tanks to be included in the licence; and,
- changes in details of the oily water separator.

The Applicant was provided with a second draft licence and decision report on 27 August 2019. The applicant replied on 13 September 2019 requesting minor wording changes and updated Figure 1 in the decision report. DWER accepted the wording changes however, while acknowledging that Figure 1 is out of date, its purpose is to show the boundary change for the BSS Joint Venture which was not shown in the alternative plan.

9. Conclusion

This assessment of the Application has been undertaken with due consideration of the assessment that occurred at the works approval stage, installed infrastructure and other matters, including the documents and policies specified in this Decision Report (summarised in Appendix 1). The licence as set out in attachment 1 has been granted, subject to conditions commensurate with the determined controls and those which are necessary for the management and administration of the licence.

The assessment was also informed by a site inspection by DWER officers on 20 December 2018 and 9 August 2019.

Paul Byrnes
MANAGER, PROCESS INDUSTRIES
REGULATORY SERVICES

an Officer delegated under section 20 of the *Environmental Protection Act 1986*

Appendix 1: Key documents

	Document title	Availability
1.	Licence L9184/2018/1 SAMI Kwinana Bitumen <i>Licence application</i>	DWER records A1741748
2.	SAMI Bitumen Technologies Pty Ltd - <i>Bitumen Storage and Processing Facility Works Approval Application – Supporting Information</i> (GHD October 2015)	DWER records A1004132
3.	SAMI Bitumen Technologies Pty Ltd – Bitumen Storage and Processing Facility, Works Approval Compliance Document (Part A) – Stage 1	DWER Records A1749420
4.	<i>Kwinana Bitumen Terminal Pre-commissioning and commissioning plan outline</i> 8 August 2018	DWER Records A1749416
5.	<i>Assessment of VOC & Odour Emissions from Sami Bitumen Plant: Rous Head, Fremantle Western Australia.</i> The Odour Unit 31 July 2011	DWER records A428112
6.	<i>Sami Bitumen Technologies Pty Ltd bitumen storage and processing facility works approval application supporting documentation</i> GHD October 2015	DWER records A1004132
7.	Email : <i>Works Approval application – additional information regarding stormwater management at SAMI Bitumen</i>	DWER records A1058963
8.	State Environmental (Cockburn Sound) Policy 2015 sets the environmental values for the Cockburn sound marine area	accessed at www.dwer.wa.gov.au
9.	DER, October 2015. <i>Guidance Statement: Setting conditions.</i> Department of Environment Regulation, Perth	
10.	DER, November 2016. <i>Guidance Statement: Risk Assessments.</i> Department of Environment Regulation, Perth	
11.	DWER, June 2019. <i>Guideline: Decision Making.</i> Department of Water and Environmental Regulation, Perth	

Attachment 1: Issued Licence L9184/2018/1

Attachment 2: Works Approval W5934/2015/1