

Clyde Terminal – SSD 5147

Annual Environmental Performance Review

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1 Introduction

Viva Energy Australia Pty Ltd (Viva Energy) operates the Clyde Terminal which receives, stores, doses and distributes finished petroleum products.

Following the closure of the Clyde Refinery at the Clyde Terminal in late 2012 and the cessation of refining activities, Viva Energy proposed to undertake the following works at the terminal:

- **Demolition works** The removal of redundant refinery processing units, tanks and other infrastructure.
- Construction works The carrying out of works including excavation, upgrades to tanks, bunds, drainage and instrumentation, replacement of electrical substations, upgrades to the fire water system and revised pumping and piping works, covered by this consent.

The main objectives of the conversion project are:

- To improve the efficiency of the Clyde Terminal by upgrading existing facilities and structures; and
- To improve environmental and safety performance of the Clyde Terminal while continuing to operate as a viable and efficient finished petroleum product receipt, storage and distribution terminal.

On 14 January 2015, the Planning Assessment Commission of NSW (as delegate of the Minister for Planning) granted Development Consent (SSD 5147) for the project subject to a number of conditions. The Clyde Terminal currently receives finished petroleum products from the Gore Bay Terminal. These products are distributed by pipeline from the Clyde Terminal to the adjacent Parramatta Terminal road gantry, to Sydney Airport, to Silverwater terminal and to Newcastle via existing infrastructure. Butane will be transported into the Clyde Terminal via truck. During the conversion works, the current terminal operations will continue and will be subject to the conditions and requirements under the existing Environment Protection Licence (EPL) No. 570 under the Protection of Environment Operations Act 1997 (POEO Act).

Operational activities undertaken during the reporting period are not discussed in this report.

1.1 Scope

This Annual Environmental Performance Review (AEPR) has been prepared in accordance with Development Consent SSD 5147, Condition D4. Table 1-1 lists the requirements of condition D4 and the corresponding sections where each specific requirement is addressed.

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Table 1-1 Annual review reporting requirements

Condition D4 requirement	AEPR Section				
By the end of July each year, or other timing as may be agreed by the Secretary, the Applicant shall review the environmental performance of the Development to the satisfaction of the Secretary. This review must:					
(a) describe the construction and demolition activities that were carried out in the previous calendar year, and the construction and demolition activities proposed to be carried out in the coming calendar year;					
 (b) include a comprehensive review of the monitoring results and complaints records of the Development over the previous calendar year, which includes a comparison of these results against: the relevant statutory requirements, limits or performance measures/criteria; the monitoring results of previous years; and the relevant predictions in the EIS; 	Section 3				
(c) identify any non-compliance over the last year, and describe what actions were (or are being) taken to ensure compliance;					
(d) identify any trends in the monitoring data over the life of the Development;	Section 4.2				
(e) identify any discrepancies between the predicted and actual impacts of the Development, and analyse the potential cause of any significant discrepancies; and					
(f) describe what measures will be implemented over the current calendar year to improve the environmental performance of the Development.	Section 5				

Given that no works were undertaken in the previous calendar year (2014) Viva propose to review their performance, as per condition D4, in accordance with the following schedule for the first calendar year:

- Reporting Period 1: 1 January 2015 to 30 June 2015 (referred to as 'this reporting period'), included in this
 report
- Reporting Period 2: 1 July 2015 to 31 December 2015 (referred to as the 'next reporting period'), to be reported by 31 July 2016

Following the two reports, the AEPR will be submitted for each full calendar year by the 31 July each year, starting from 2017.

This AEPR relates to demolition and construction activities only and does not include the review of the environmental performance associated to operational activities since the surrender of all existing development consents is effective from 14 July 2015 (i.e. next reporting period).

1.2 Actions from last AECR

Not applicable for this reporting period.

2 Development activities

This Section describes the works undertaken in accordance with Development Consent SSD 5147 during the reporting period, and those works proposed for the next reporting period (1 July 2015 to 31 December 2015).

2.1 Works undertaken during this reporting period

2.1.1 Demolition works

Table 2-1 shows % progress on demolition works undertaken during this reporting period for each of the designated areas. Refer to Appendix A.1 for location of demolition areas.

Table 2-1 Demolition works progress during this reporting period

Demolition Area	% Progress
7, 8, 9, 10 and 16	100%
CCU Stripper Tower (Area 10)	Blasting completed
3, 11	90%
1	80%
1A	70%
5	Low level asbestos removal
Scrap processing	Ongoing

2.1.2 Construction works

No construction works were undertaken during the reporting period. Early works in preparation for construction undertaken during the reporting period included:

- Demolition of pipes in pipe tracks
- Survey of electrical substation areas
- Frog survey / clearance for Main Transformer Station (MTS) 3 area and Tank Farm B and B1 (refer to Appendix A.2)

2.2 Proposed works for the next reporting period

2.2.1 Demolition works

Complete demolition for area's 1,1A,3, 5,6,11,15,17, 12,13,14,18,19,20 (refer to Appendix A.1)

2.2.2 Construction works

Refer to Appendix A.2 for location of construction areas mentioned below.

- · Demolition of pipes in pipe track and transfer pits
- Construction of substation MTS 3
- · Construction of substation 32
- · Construction of substation 30

- Minor electrical cable runs
- Refurbishment of the following tanks:

→ Tankfarm B: Tank 50

→ Tankfarm B1: Tanks 34, 35

→ Tankfarm B2: Tanks 32, 33

→ Tankfarm E1: Tank 37

- Installation of Geo-domes for tank 34, 35
- Various piping installations and modifications
- · Overall minor civil works for associated equipment

2.3 Operational Activities

As per Condition B8 of SSD 5147, Viva is required to surrender all existing development consents, as listed in Appendix B of SSD 5147, as related to the operational works by 14 July 2015. This requirement falls outside of this reporting period and as such no operational activities associated with SSD 5147 approval are included in this report.

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3 Monitoring results

3.1 Review of monitoring results and complaint records

Environmental monitoring and complaints are associated with demolition activities for this reporting period as no construction activities (other than early works) were undertaken.

Appendix A.3 provides detailed information of the monitoring requirements for the Development and the results for this reporting period.

A review of the relevant results is presented below:

3.1.1 Complaints

One complaint was received from a neighbouring business relating to odour. It involved unpleasant fumes being emitted during cutting works caused by the ignition of pyrophoric residue within a steel box. In response, the area was hosed down with water until the burn ceased and the cutting area moved. The complaint was recorded as an incident and an incident report completed (refer to Appendix A.3).

This complaint is an exceedance of the performance measure / criteria of no odour complaint raised by surrounding businesses related to demolition (See Appendix A.4).

No other complaints were received relating to noise and vibration, air quality or traffic.

3.1.2 Visual Observations

Liberty Industrial, Principal Demolition Contractor, conducted visual observations weekly during the reporting period via Liberty Form 'FRM-013 – Work Area Inspection'.

Visual observations included soil and water discharges, sediment and erosion control measures in place as well as dust levels. No incidents were identified during the weekly inspections.

The above results demonstrate compliance with relevant statutory requirements and performance criteria. The visual observations related to sediment laden water and dust also reflect relevant EIS predictions (See Appendix A.4).

3.1.3 Wastes

Liberty Industrial implemented and maintained a Waste Register during the reporting period (See screenshot in Appendix A.3). This register tracks the amount of waste (in tonnes) generated by the demolition works and details the date of disposal, transport company and disposal facility. A specific Asbestos Register is included in this tracking system.

An audit was performed of Liberty Industrial's waste tracking record by representatives of Viva Energy and Liberty Industrial. The following findings were noted:

- Inconsistencies in spread sheet formulas which prevented updating several waste streams. In some cases it
 was noted that that waste stream totals were inaccurate or absent from the register.
- There was not transport or disposal information embedded in the spreadsheet for specific waste categories
- There was no segregation of waste characterisation (i.e., general, non-hazardous, and hazardous wastes were not tracked in individual categories).
- In addition to exclusion of transport documentation, there was no documentation of final disposition of asbestos containing material.
- · Waste stream totals were inaccurate relative to trucking bills of lading.

Improvement opportunity measures to addressed the above issues are discussed in Section 5

The volume of waste generated during this reporting period, including asbestos is provided in the below table.

Table 3-1 Waste generation during this reporting period

Waste stream	Unit	EIS estimate	Actual	Notes
Scrap metal	t	28,000.00	12,893.01	Includes brass, bitumen pipe, heavy steel, fin fan pipes and electric motors. Data provided by Liberty Industrial
Concrete	m3	50,000.00	0.00	
Spend erosion and sediment control materials and geobags	t	2.00	0.00	
Fencing	t	10.00	0.00	
Soil	t	20.00	0.00	
Contaminated soil	m3	1,000.00	0.00	
Timber, glass and plastics	m3	500.00	0.00	
Asbestos	m3	100.00	6.70	Assuming a density of 2.45 ton/m3
General waste	t	4,000.00	167.72	

3.1.4 Blasting event 1

One blast event was undertaken during the reporting period on the 7 June. This was for the demolition of the CCU Stripper Tower.

Air quality, blast overpressure and ground vibration was monitored during the event in accordance with condition E1.1 of the EPL 570. The results are summarised in Table 3- 2 and compared to the adopted Australian and New Zealand Environment Council (ANZEC, 1990) Technical Basis for Guidelines to Minimise Annoyance due to Blasting Overpressure and Ground Vibration (See Appendix A.4)

Table 3-2 Blasting event 1- Environmental monitoring results

Aspect	Indicator	Result	Adopted Criteria	Comments
Air quality	μg/m3 PM10	≤56.1		24 hr average. Heavily influenced by unknown source in the preceding 12 hrs
Blast overpressure	dB	>146	120	Monitoring result at 100 m from nearest industrial receiver. In excess of one km to nearest residential receiver. Adopted criteria applicable to sensitive receiver location.
Vibration	mms	0.99	10	Monitoring result well below adopted criteria. See above notes for monitoring vs criteria locations.

Assessment of monitoring results 4

Compliance with relevant statutory requirements, limits and 4.1 performance measures / criteria

Relevant statutory requirements, limits and performance measures / criteria are listed for each of the reported monitoring results, see Appendix A.4. These include:

- Development Consent SSD-5147
- Environmental Protection License EPL-570
- Relevant Management Plans

An assessment of the monitoring results against the above criteria found the following non-compliances:

- Exceedance of the no odour complaint performance criteria related to demolition / construction
- Potential exceedance of the adopted blast overpressure criteria (120dB). However, blast overpressure was measured at a location in excess of one km to the nearest sensitive receiver (location where the adopted criteria applies to).

4.2 Monitoring data trends

No monitoring data trends are identified as this is the first reporting period.

4.3 Comparison with relevant predictions in the EIS

Relevant EIS predictions are listed for each of the reported monitoring results, see Appendix A.4.

No discrepancy was identified between the predicted and actual impacts for the reporting period.

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5 Improvement opportunity measures

Based on the above assessment the following improvement opportunity measures have been identified:

- Steel cutting process modified to minimise odour emissions. Cutting area moved away from surrounding businesses. Actions already implemented by Liberty Industrial.
- The following corrective actions were identified and implemented as a result of the waste tracking audit undertaken for Liberty Industrial:
 - → Liberty Industrial's on-site quality representative coordinated with the original author of the spreadsheet and all formulae and input errors were corrected.
 - → All transport documentation was arranged by characterised waste and being embedded by category.
 - → Waste is currently being segregated by characterisation, with asbestos containing materials being tracked separately.
 - → All waste stream totals are up to date and are continually being checked for accuracy.
- Blast Monitoring Plan will be reviewed and updated for the Blast Event 2 upon receipt of EPA's comments to the Environmental Performance Report. The second blast event is however scheduled beyond the next reporting period (January 2016).

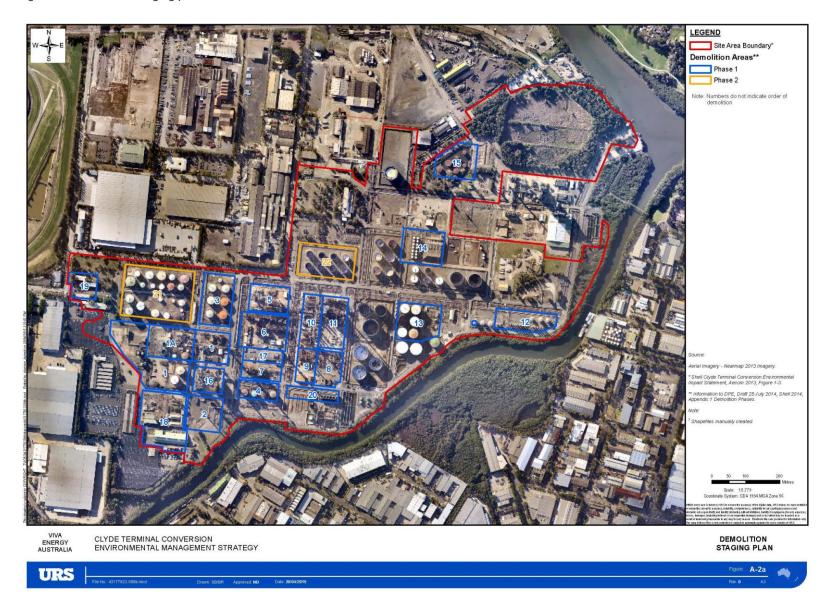
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Appendix A

- A.1 Figure A.1 Demolition staging plan
- A.2 Figure A.2 Construction works plan
- A.3 Monitoring results and complaints records
- A.4 Monitoring results and assessment criteria

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A.1 Figure A.1 Demolition staging plan



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A.2 Figure A.2 Construction works plan



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A.3 Monitoring results and complaints records

Requirement	Aspect	Monitoring Description	Results
Noise and Vibration MP, Air Quality MP, Traffic MP	Complaints	Complaints register maintained in accordance with Section 3.3 of the EMS	One complaint was received from a neighbouring business relating to odour from demolition works. See record below
Noise and Vibration MP	Noise monitoring following complaint	Noise monitoring undertaken at the sensitive receivers if a noise complaint is received	Not triggered
Soil and Water MP	Sediment laden water	Visual observations to ensure sediment laden water is managed properly and not discharged off-site	Visual observations conducted weekly throughout various areas of demolition works. No off-site discharges during the reporting period
Soil and Water MP	Pollutants in water for discharge	Monitoring requirements will be fulfilled as required in EPL 570	Water discharges only from operational activities (not included in this reporting period).
Soil and Water MP	Testing of excavated soil	In accordance with Soil and Water Management Plan	Not required during the reporting period
Soil and Water MP	Testing of groundwater and surface water	In accordance with contractor developed groundwater and surface water management Work Method Statement	Not required during the reporting period
Noise and Vibration MP	Noise monitoring for Out of Hours works	Noise monitoring will be undertaken at the sensitive receivers identified in the EIS should construction or demolition works be required to be undertaken outside normal construction hours	Not required during the reporting period
Air Quality MP	Dust	Visual, no record required. May be noted in toolbox talks or daily log	Visual observations conducted weekly throughout various areas of demolition works. Low and controlled levels of dust during reporting period
Waste and Resource Recovery MP	Demolition and construction waste	Waste tracking system will be implemented in accordance with NSW EPA requirements.	Waste tracking system implemented for demolition works. See screenshot below
Waste and Resource Recovery MP	Demolition and construction waste	Quarterly waste tracking audits to confirm system is being implemented in accordance with NSW EPA requirements	One audit undertaken
Waste and Resource Recovery MP	Asbestos register	Maintain an asbestos register for all asbestos waste generated during demolition and construction	Asbestos Register included in waste tracking system implemented by Liberty Industrial for demolition works.

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Requirement	Aspect	Monitoring Description	Results
			See screenshot below
Biodiversity MP	Weeds	Monitoring of weed infestations to ensure noxious weed infestations found within the area are controlled in accordance with the Noxious Weed Declarations for Parramatta Local Government Area	Operational activity. Not included in this reporting period
Biodiversity MP	GGBF	In accordance with the <i>Plan of Management GGBF Clyde</i> (White, October 2013) or updated approved version	Not started
EPL 570 Condition E1.1	Blasting	Air quality, blast overpressure and ground vibration related to Explosive Demolition Even 1	Dust – PM ₁₀ : Max. of 56.1 μg/m³, 24-hr average Blast overpressure: >146 dB Ground vibration: 0.99 mms

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Improvement and Incident Details



Generated on Wednesday, 15 July 2015

				Generated	on Wednesday, 13 July 2015	
Incident				No.		
Ref No:	El-107	Status: Closed	Type: Er	nvironmenta	al Incident	
Report Filed By			Incident Date	Incident Date/Time/Location		
Name:	Lambert, Peter		Date: 30	Jun 2015	Time: 09:00 AM	
ID No:	1035	External:	Address:			
Location:	(092) Shell		Location: (09	92) Shell		
Note:			State/Ctry: NS		Region: Australia	
Reported:	02 Jul 2015	Job No:	Site Type: De	emolition		
Incident / Impro	ovement Details					
	Compliance - E		Severity 2 -	Minor		
		Fin Fan header ignited py	Section Control of the Control of th		ff uppleasant fumes	
					oxy torch ignited residue in	
Description.	the steel box. A	is the residue burn it gave	off unpleasant fume	es which the	e worker did not notice as he	
	was wearing a	respirator fitted with a ABE	K1 filter.			
					dling: 🔲 Asset Damage: 🗌	
Immed.Act:	Work stopped v other header sto moved ASAP	vater cart used to deluge s eel has been moved and v	teel and kept in pla vill be cut with wate	ce while the r cart being	e cutting was completed. All present. Cutting area to be	
Contractor:	moved ASAP					
Employees:	McCormac, Cor	nnor				
Contractors:						
Division:	Demolition		Function:			
Task:			Contract No:			
Risk Assess:		Audit No:		C	osting:	
Plan. Project:		Proj. Phase:		Projec	t Task:	
Assigned To:	Wall, David	Delegate: La	ambert, Peter	Assigned	d Date: 01 Jun 2015	
		Action By Date: 03	3 Jul 2015	Close-of	f Date: 14 Jul 2015	
Investigation D	etails					
Cause Cat:	The state of the s	Equip N	0.	DI	lant No:	
Cause Desc:		Equip N	0.	F	ant No.	
Likelihood:	C - Possible	Conse	q: 1 - Low	Re-occ	cur Rat: Low	
Exposure:	Infrequently	Sensitivit	y: Not Sensitive	R	lisk No:	
Report Doc:		Survey Answer	s:			
Survey Rating:		Answering Employe	e:			
Sign Off	X4					
Employee:		Signa	ture:	10	Date:	
Manager:	David Wall	Signa	(11 / 17)	/Χ.	Date: 15/7/15	
H&S Rep:	()	l-1	ture: Bill	AT	Date: (5/7/15	

Waste Tracking Screenshot:

4	A	В	С	D	E	F	G
1	Date _1	Waste Description	Docket#	Transport Company 🐷	Truck Rego	Disposal Facility 🐷	Quantity (tonnes)
658	13/07/2015	Heavy Steel	10922089	LIBERTY	1EHB876	Onesteel	22.640
659	13/07/2015	Heavy Steel	10922490	LIBERTY	1EHB876	Onesteel	22.720
660	13/07/2015	Heavy Steel	10922741	LIBERTY	1EHB876	Onesteel	22.680
661	13/07/2015	Heavy Steel	3273	LIBERTY	1EHB876	Onesteel	22.780
662	13/07/2015	Heavy Steel	10923109	LIBERTY	1EHB876	Onesteel	22.700
663	13/07/2015	Heavy Steel	10923402	LIBERTY	1EHB876	Onesteel	22.640
664	14/07/2015	Bitumen	2520	Express Waste	BY 99 TO	Blacktown	9.720
665	14/07/2015	Bitumen	2519	Express Waste	BY 99 TO	Blacktown	8.680
666	14/07/2015	Bitumen	2521	Express Waste	BY 99 TO	Blacktown	9.600
667	14/07/2015	Bitumen	2522	Express Waste	BY 99 TO	Blacktown	12.020
668	14/07/2015	Bitumen	2523	Express Waste	BY 99 TO	Blacktown	12.200
669	14/07/2015	Heavy Steel	10924631	LIBERTY	1EHB876	Onesteel	23.000
670	14/07/2015	Heavy Steel	10924218	LIBERTY	1EHB876	Onesteel	22.540
671	14/07/2015	Heavy Steel	10923979	LIBERTY	1EHB876	Onesteel	22.840
672	14/07/2015	Heavy Steel	10923682	LIBERTY	1EHB876	Onesteel	22.840
673	14/07/2015	Heavy Steel	10924973	LIBERTY	1EHB876	Onesteel	22.740
674	14/07/2015	Heavy Steel	10925326	LIBERTY	1EHB876	Onesteel	23.000
675	15/07/2015	Heavy Steel	10926782	LIBERTY	1EHB876	Onesteel	22.440
676	15/07/2015	Heavy Steel	10926117	LIBERTY	1EHB876	Onesteel	22.920
677	15/07/2015	Heavy Steel	10926537	LIBERTY	1EHB876	Onesteel	22.900
678	15/07/2015	Bitumen	2527	Express Waste	AM50JF	Blacktown	11.560
679	15/07/2015	Bitumen	2528	Express Waste	AM50JF	Blacktown	12.920
680	15/07/2015	Heavy Steel	10925763	LIBERTY	1EHB876	Onesteel	22.920
681	15/07/2015	Bitumen	2526	Express Waste	BY 99 TO	Blacktown	8.260
682	15/07/2015	Bitumen	2524	Express Waste	AM50JF	Blacktown	13.910
683	15/07/2015	Bitumen	2525	Express Waste	AM50JF	Blacktown	12.440
14 4	Instruct	ions for use / Project Summary / Monthly Summary / Load Dat	a Input Asbestos Register	/6/			

Aspect	Results – This reporting period (See Appendix A.3)	Statutory requirements, limits, performance measures / criteria	Results – Previous reporting period	Relevant EIS predictions
Complaints	One complaint was received from a neighbouring business relating to odour from demolition works	EPL 570: Condition M5 – Recording of pollution complaints Noise and Vibration MP: Effective management of complaints raised by the community / surrounding businesses / stakeholders with regards to noise and vibration related to demolition and construction Air Quality MP: No complaints raised by the community / surrounding businesses / stakeholders with regards to air emissions, dust or odour related to demolition / construction Traffic MP: No traffic related issues raised by the community and stakeholders during demolition and construction	N/A	N/A
Sediment laden water	Visual observations conducted weekly throughout various areas of demolition works. No off-site discharges during the reporting period	SSD 5147: Condition C46 – The Development shall comply with section 120 of the Protection of the Environment Operations Act 1997, which prohibits the pollution of waters, except as expressly provided in an EPL Soil and Water MP: No concentrated overland flows onto adjacent properties	N/A	There is potential for the Project to intercept, disturb, or mobilise contaminated soils, including Acid Sulphate Soils (ASS). If not appropriately managed, this has the potential to impact both on-site and off-site receivers.
Dust	Visual observations conducted weekly throughout various areas of demolition works. Low and controlled levels of dust during reporting period	SSD 5147: Condition C28 – The Applicant shall carry out all reasonable and feasible measures to minimise dust generated during construction, demolition and operation EPL 570: Condition O3.1 The premises must be maintained in a condition which minimises or prevents the emission of dust from the premises	N/A	Construction and demolition works for the Project are likely to generate temporary and negligible impacts to the existing air quality. The primary air quality impact identified for these works is dust generation.
Demolition and construction waste	Waste tracking system implemented for demolition works. One audits of Liberty Industrial's waste tracking system was undertaken	Waste and Resource Recovery MP: Data and reporting to indicate a Waste Tracking System implemented during demolition and construction phases of the Project	N/A	Scrap metal : 28000 t Concrete: 50000 m3 Spent erosion and sediment control

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Aspect	Results – This reporting period (See Appendix A.3)	Statutory requirements, limits, performance measures / criteria	Results – Previous reporting period	Relevant EIS predictions
				material: 2 t Fencing: 10 t Soil: 20 t Contaminated soil: 1000 m3 Asbestos:100 m3
Asbestos register	Asbestos Register included in waste tracking system implemented for demolition works	EPL 570: Condition L5 – note: POEO (Waste) Regulation 2014 – Schedule 1 – Waste to which waste tracking requirements under Part 4 apply	N/A	General waste: 4000 t As above
Blasting	Dust – PM ₁₀ : Max. of 56.1 µg/m ³ , 24-hr average Blast overpressure: >146 dB Ground vibration: 0.99 mms	Noise and Vibration MP: Australian and New Zealand Environment Council (ANZEC, 1990) Technical basis for guidelines to minimise annoyance due to blasting overpressure and ground vibration (measured at noise sensitive sites): Blast overpressure: <120 dB (Lin Peak) Ground vibration: 10 mms	N/A	Demolition blasting is anticipated to comply with the relevant criteria.

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Issue date	Document changes made and approved by owner	MoC # if change to procedure/process						
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Next review:								

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