

**Clyde Terminal Conversion Project –Environmental Management Strategy  
Construction and Demolition Air Quality Management Plan**

<b>Air Quality and Odour</b>					
<b>Document Control</b>	<b>Revision</b>	<b>Date</b>	<b>Description</b>	<b>Author</b>	<b>Approved</b>
	3	30/11/2016	Revised to reflect contractual arrangements for construction. Acronym “PC” refers to “Principal Contractor”	JS/SL	JS
<b>Background</b>	This Air Quality Management Plan (AQMP) is one of the environmental plans under the Environmental Management Strategy for the Clyde Terminal Conversion Project.				
<b>Objectives</b>	<ul style="list-style-type: none"> <li>Identify potential sources of air emissions, dust and odour and minimise and manage potential air quality impacts throughout the demolition and construction phases of the Development;</li> <li>Ensure compliance with relevant legislative and other requirements including the DC conditions, mitigation measures in the Environmental Impact Statement (EIS) and Response to Submissions (RTS) Report; and Environment Protection Licence (EPL) 570.</li> </ul>				
<b>Performance Criteria</b>	<ul style="list-style-type: none"> <li>No complaints raised by the community / surrounding businesses / stakeholders with regards to air emissions, dust or odour related to demolition / construction;</li> <li>Carry out all reasonable and feasible measures to minimise dust generated during demolition and construction.</li> </ul>				
<b>Key Performance Indicators</b>	<ul style="list-style-type: none"> <li>No complaints raised by the community / surrounding businesses / stakeholders with regards to air emissions, dust or odour in relation to demolition and construction.</li> </ul>				
<b>Legislative Requirements</b>	<b>Development Consent SSD 5147 [14 January 2015]</b>				
	Operation Of Plant And Equipment	B11. The Applicant shall ensure that all plant and equipment used for the Development is: (a) maintained in a proper and efficient condition; and (b) operated in a proper and efficient manner			
	Asbestos Management	C16. The Applicant shall ensure that any asbestos encountered during construction and demolition is monitored, handled, transported and disposed of by appropriately qualified and licensed contractors in accordance with the requirements of WorkCover and relevant guidelines, including: (a) Work Health and Safety Regulation 2011; (b) Model Code of Practice – How to Manage and Control Asbestos in the Workplace, 2011 Safe Work Australia; (c) Model Code of Practice – How to Safely Remove Asbestos, 2011 Safe Work Australia; and (d) Protection of the Environment Operations (Waste) Regulation 2005.			
	Dust Minimisation	C28. The Applicant shall carry out all reasonable and feasible measures to minimise dust generated during construction, demolition and operation.			
	Offensive Odour	C29. The Applicant shall not cause or permit the emission of offensive odours from the site, as defined under Section 129 of the POEO Act.			

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	Construction & Demolition Air Quality Management Plan	C31. The Applicant shall prepare and implement an Air Quality Management Plan for the construction and demolition. The plan shall: <ul style="list-style-type: none"> <li>(a) be prepared and implemented by a suitably qualified and experienced expert;</li> <li>(b) be approved by the Secretary prior to the commencement of construction and demolition and be provided to the EPA;</li> <li>(c) describe the measures that would be implemented on site to ensure:               <ul style="list-style-type: none"> <li>• the control of air quality and odour impacts of the Development;</li> <li>• that these controls remain effective over time;</li> <li>• that all reasonable and feasible air quality management practice is employed;</li> <li>• the air quality impacts are minimised during adverse meteorological conditions and extraordinary events; and</li> <li>• compliance with the relevant conditions of this consent,</li> </ul> </li> <li>(d) includes record keeping, a complaints register and compliance reporting.</li> </ul>
	Meteorological Monitoring	C32. During the life of the Development, the Applicant shall ensure that there is a suitable meteorological station operating in the vicinity of the site that complies with the requirements of the EPA
	Energy efficiency and greenhouse gas emissions	C33. The Applicant shall implement all reasonable and feasible measures to minimise energy use and greenhouse gas emissions during construction, demolition and operation.
<b>Environment Protection Licence EPL 570 [21 May 2015]</b>		
	L6 Potentially offensive odour	L6.1 No condition in this licence identifies a potentially offensive odour for the purposes of section 129 of the <i>Protection of Environment Operations Act 1997</i> . Note: Section 129 of the <i>Protection of Environment Operations Act 1997</i> provides that the licensee must not cause or permit the emission of any offensive odour from the premises but provides a defence if the emission is identified in the relevant environment protection licence as a potentially offensive odour and the odour was emitted in accordance with the conditions of a licence directed at minimising odour.
	O2 Maintenance of plant and equipment	O2.1 All plant and equipment installed at the premises or used in connection with the licensed activity: <ul style="list-style-type: none"> <li>(a) must be maintained in a proper and efficient condition; and</li> <li>(b) must be operated in a proper and efficient manner.</li> </ul>
	O3 Dust	O3.1 The premises must be maintained in a condition which minimises or prevents the emission of dust from the premises.

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<b>Air Quality and Odour</b>	
<b>Activities</b>	<p>During the demolition and construction works, air emissions would be generated from plant, equipment and vehicles used for the works, and dust generated through any minor excavations and other soil disturbances.</p> <p>The following activities that have the potential to generate air quality impacts include, but would not be limited to:</p> <ul style="list-style-type: none"> <li>• Blasting;</li> <li>• Delivery and storage of chemicals;</li> <li>• Demolition and removal of redundant infrastructure such as tanks;</li> <li>• Erosion of spoil, waste materials and exposed ground;</li> <li>• Excavations; and</li> <li>• Use of any plant, vehicles or equipment that are powered by fuel.</li> </ul>
<b>Predicted Impacts</b>	<ul style="list-style-type: none"> <li>• Construction and demolition works for the Development are likely to generate temporary and negligible impacts to the existing air quality as equipment to be demolished has been decontaminated wherever possible. The primary air quality impact identified for these works is dust generation.</li> <li>• From the list of activities above, it can be predicted that the following impacts may result: <ul style="list-style-type: none"> <li>○ Blasting of stack is likely to cause dust from the breaking apart of the concrete stacks as well as dust generation from the ground onto which it collapses due to downdraft;</li> <li>○ Delivery and storage of chemicals may cause minor quantities of evaporation during transfer. This is insignificant but included for completeness;</li> <li>○ Demolition of redundant infrastructure may result in dust during removal of above-ground concrete footings;</li> <li>○ Dust from scrap consolidation;</li> <li>○ Excavations in windy conditions may cause minor airborne dust;</li> <li>○ Truck deliveries may stir up dust in close proximity to the truck from that which has settled on the ground from the activities described above;</li> <li>○ Use of fuel-powered plant will result in the output of products of combustion.</li> </ul> </li> </ul>
<b>Sensitive Receivers</b>	<ul style="list-style-type: none"> <li>• The primary sensitive receivers associated with the converted Clyde Terminal are commercial receivers located adjacent to the Site and residences located greater than 400m from the Site.</li> <li>• The Site is adjacent to commercial and industrial receivers on all sides, although Parramatta River and Duck River separate the Development from receivers to the south and east. The nearest residential receivers are located approximately 400m to the north-east, 1.1km to the south-east, 600m to the south and 800m to the west.</li> <li>• <b>Figure D-4A</b> illustrates the location of the nearest sensitive receivers in relation to the Development.</li> </ul>

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<b>Air Quality and Odour - Mitigation Measures</b>							
Plan Reference	Source Reference	Aspect	Mitigation Measure	Implementation Responsibility			
				Construction		Demolition	Frequency
				Viva Energy as PC	Contractor as PC	Contractor as PC	
AQMP1	B11 EPL 570 O2.1	Plant and Equipment	All plant and equipment used for construction and demolition will be: (a) maintained in a proper and efficient condition; and (b) operated in a proper and efficient manner.	Construction Project Managers (requirements communicated via the Project HSSE Plan)	Saunders Project Manager	Liberty Industrial Project Manager	At all times
AQMP2	C28 EPL 570 O3.1 EIS, AQ5, EIS, AQ9, EIS, AQ11, EIS, AQ12, EIS, SW3	Site roadways	<ul style="list-style-type: none"> <li>• Vehicular access will be controlled through defined road access to minimise dust.</li> <li>• Where practicable, vehicles and machinery will be kept to well defined areas away from excavation sites and the length and use only sealed haul roads where practicable.</li> <li>• Site speed limits are to be observed.</li> </ul>	Construction Project Managers (requirements communicated via the Project HSSE Plan)	Saunders Project Manager	Liberty Industrial Project Manager	At all times
AQMP3	C28 C34(e) EPL 570 O3.1 EIS, AQ1	Truck movements	Loads will be covered during transportation. For demolition material, the Load Restraint Guide by the National Transport Commission will be applicable.	Construction Project Managers (requirements communicated via the Project HSSE Plan)	Saunders Project Manager	Liberty Industrial Project Manager	At all times
AQMP4	C28 EPL 570 O3.1 EIS, AQ2 EIS, SW3	Exposed surfaces / demolition construction activities	Exposed soil surfaces in areas of demolition and construction activities where there is a risk of dust creation will be watered down, as required, in order to suppress the migration of dust.	Construction Project Managers (requirements communicated via the Project HSSE Plan)	Saunders Project Manager	Liberty Industrial Project Manager	At all times

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Plan Reference	Source Reference	Aspect	Mitigation Measure	Implementation Responsibility			
				Construction		Demolition	Frequency
				Viva Energy as PC	Contractor as PC	Contractor as PC	
AQMP5	C28 C31(c) EPL 570 O3.1 EIS, AQ3	Exposed surfaces	Measures will be implemented to modify or suspend dust-generating activities during periods of high wind speeds or whenever dust plumes from the works are visible. High wind speeds are determined as 8 m/s averaged over a one hour period.	Construction Project Managers (requirements communicated via the Project HSSE Plan)	Saunders Project Manager	Liberty Industrial Project Manager	At all times
AQMP6	C28 EPL 570 O3.1 EIS, SW3	Exposed surfaces	Should any excavation activities be required, scrap exposure will be minimised, where possible, and land disturbance will occur for the shortest time possible.	Construction Project Managers (requirements communicated via the Project HSSE Plan)	Saunders Project Manager	Liberty Industrial Project Manager	At all times
AQMP7	C28 EPL 570 O3.1	Stockpiles	Temporary stockpiles of excavated materials are clearly identified, no more than 5m tall and allow adequate room for management of, and transport around, each stockpile. Stockpiles are watered to maintain, where possible, a moisture content sufficient to minimise dust generation	Construction Project Managers (requirements communicated via the Project HSSE Plan)	Saunders Project Manager	Liberty Industrial Project Manager	At all times
AQMP8	C29 C31(c)	Odour	Measures would be implemented to modify or suspend odour generating activities if it is determined that odour generation is impacting on site staff or impacting on neighbouring properties.	Construction Project Managers (requirements communicated via the Project HSSE Plan)	Saunders Project Manager	Liberty Industrial Project Manager	At all times

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				Construction		Demolition	Frequency
				Viva Energy as PC	Contractor as PC	Contractor as PC	
AQMP9	EIS, AQ7	Material spills	Accidental spills will be immediately cleaned up.	Construction Project Managers (requirements communicated via the Project HSSE Plan)	Saunders Project Manager	Liberty Industrial Project Manager	At all times
AQMP10	C33 EIS, AQ8	Vehicles, plant and equipment	Engines will be turned off while parked onsite when not in use.	Construction Project Managers (requirements communicated via the Project HSSE Plan)	Saunders Project Manager	Liberty Industrial Project Manager	At all times
AQMP11	EIS, AQ10	Vehicles, plant and equipment	Equipment, plant and machinery will be regularly tuned, modified or maintained to minimise visible smoke and emissions.	Construction Project Managers (requirements communicated via the Project HSSE Plan)	Saunders Project Manager	Liberty Industrial Project Manager	At all times
AQMP12	RTS Section 2.1 'EPA- Air Quality'	Demolition activities	Demolition will be undertaken in accordance with the <b>Demolition Work Plan (Appendix D-1)</b> . Blasting will be undertaken in accordance with the <b>Blasting Work Plan</b> to be developed and submitted prior to this activity being undertaken.	N/A	N/A	Liberty Industrial Project Manager	At all times

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<b>Air Quality and Odour - Mitigation Measures</b>								
Plan Reference	Source Reference	Aspect	Mitigation Measure	Implementation Responsibility				
				Construction		Demolition		Frequency
				Viva Energy as PC	Contractor as PC	Contractor as PC	Contractor as PC	
AQMP13	C16 EIS, WM9	Asbestos Management	Asbestos would be managed in accordance with the <b>Demolition Work Plan (Appendix D-1)</b> for demolition Works and <b>Waste Resource and Recovery Plan (Appendix D-6)</b> for construction Works.	Construction Project Managers (requirements communicated via the Project HSSE Plan)	Saunders Project Manager	Liberty Industrial Project Manager	At all times	

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<b>Air Quality and Odour - Monitoring Requirements</b>			
<b>Aspect</b>	<b>Description</b>	<b>Responsibility</b>	<b>Frequency</b>
Complaints	Complaints register maintained in accordance with Section 3.3 of the EMS	Viva Energy Clyde Terminal Operations Manager Liberty Industrial Project Manager (as applicable to area of control).	Ongoing, as required
Dust	Visual, no record required. May be noted in toolbox talks or daily log.	Viva Energy Clyde Terminal Operations Manager Liberty Industrial Project Manager. Saunders Project Manager (as applicable to area of control).	At all times

<b>Air Quality and Odour - Reporting Requirements</b>			
<b>Aspect</b>	<b>Description</b>	<b>Responsibility</b>	<b>Frequency</b>
Complaints	Register of complaints will be maintained and updated. Following receipt of a complaint, actions will be undertaken in accordance with Section 3.3 of the EMS	Viva Energy Clyde Terminal Operations Manager, Liberty Industrial Project Manager (as applicable to area of control).	Ongoing, as required
Daily Log	For demolition activities, a daily log of activities undertaken to be maintained to assist with investigation of complaints. Log of activities suspended during period of high wind speeds.	Liberty Industrial Project Manager	Daily As required



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<b>Air Quality and Odour - Corrective Action</b>			
<b>Aspect</b>	<b>Description</b>	<b>Responsibility</b>	<b>Frequency</b>
Complaints in relation to demolition / construction emissions	Review demolition / construction activities. Modify methods to reduce dust generation or site emissions as required.	Viva Energy Clyde Terminal Operations Manager Liberty Industrial Project Manager (as applicable to area of control).	Ongoing, as required

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Figure D-4A– Map of Sensitive Receivers

