METROPOLITAN COAL WASTE MANAGEMENT PLAN

















METROPOLITAN COAL

WASTE MANAGEMENT PLAN

Revision Status Register

Section/Page/ Annexure	Revision Number	Amendment/Addition	Distribution	DP&E Approval Date
All	WstMP-R01-A	Original	DoP	26 August 2010
Sections 4.2, 7.2 and Appendix A	WstMP-R01-B	Revised to reflect modified Project Approval	DoP	14 April 2011
All	WstMP-R01-C	Minor amendments and formatting to include the transport of coal reject to the Calderwood Urban Development Project	DP&E	-

February 2016

TABLE OF CONTENTS

1	INTROD	DUCTION	1
	1.1	PURPOSE AND SCOPE	1
	1.2	STRUCTURE OF THE WstMP	1
2	WSTMF	PREVIEW AND UPDATE	5
	2.1	DISTRIBUTION REGISTER	5
3	STATU	TORY REQUIREMENTS	6
	3.1	EP&A ACT APPROVAL	6
	3.2	LICENCES, PERMITS AND LEASES	9
	3.3	OTHER LEGISLATION	9
4	DESCR	IPTION OF METROPOLITAN COAL WASTE	10
	4.1	DEFINITION OF WASTE	10
	4.2	WASTE PRODUCTION AND CLASSIFICATION	11
5	BASELI	NE DATA	14
6	WASTE	MANAGEMENT PERFORMANCE INDICATORS	14
7	WASTE	MANAGEMENT	15
	7.1	WASTE HIERACHY	15
	7.2	WASTE STORAGE, HANDLING AND DISPOSAL	16
		7.2.1 Special Waste	18
		7.2.2 Liquid Waste 7.2.3 Hazardous Waste	18 19
		7.2.4 General Solid Waste (Non-Putrescible)	19
		7.2.5 General Solid Waste (Putrescible)	21
	7.3	WASTE TRACKING	21
	7.4	MANAGEMENT MEASURES REVIEW	21
	7.5	PERSONNEL EDUCATION	21
8	MONITO	ORING	22
9	CONTIN	NGENCY PLAN	23
10	ANNUA	L REVIEW AND IMPROVEMENT OF ENVIRONMENTAL PERFORMANCE	23
11	REPOR	TING	24
	11.1	INCIDENTS	24
	11.2	COMPLAINTS	24
	11.3	NON-COMPLIANCES WITH STATUTORY REQUIREMENTS	25
12	REFERENCES		25

Metropolitan Coal – Waste Management Plan			
Revision No. WstMP-R01-C Page i			
Document ID: Waste Management Plan			

TABLE OF CONTENTS (continued)

LIST OF TABLES

Table 1	Management Plan Requirements
Table 2	Waste Classification
Table 3	Production and Classification of Metropolitan Coal Waste
Table 4	Waste Management Performance Indicators
Table 5	Waste Storage, Handling and Disposal

LIST OF FIGURES

Figure 1	Project General Arrangement
Figure 2	General Arrangement of the Major Surface Facilities Area
Figure 3	Environmental Management Structure
Figure 4	Transport Route to Glenlee Washery and Calderwood Urban Development Project

LIST OF APPENDICES

Appendix A Metropolitan Coal Waste Register

Metropolitan Coal – Waste Management Plan			
Revision No. WstMP-R01-C		Page ii	
Document ID: Waste Management Plan			

1 INTRODUCTION

Metropolitan Coal is a wholly owned subsidiary of Peabody Energy Australia Pty Ltd. Metropolitan Coal was granted approval for the Metropolitan Coal Project (the Project) under Section 75J of the New South Wales (NSW) *Environmental Planning and Assessment Act, 1979* (EP&A Act) on 22 June 2009 (the Approval). A copy of the Project Approval is available on the Peabody website (http://www.peabodyenergy.com.au).

The Project comprises the continuation, upgrade and extension of underground coal mining operations and surface facilities at Metropolitan Coal. The underground mining Project layout is shown on Figure 1. The extent of the mine's Major Surface Facilities Area is shown on Figure 2.

In January 2016, Metropolitan Coal requested the Department of Planning and Environment (DP&E) confirm that the transport of coal reject material to the Lend Lease Calderwood Urban Development Project near Albion Park would be generally in accordance with the Project Approval. In February 2016, the DP&E indicated that it supported the proposed sustainable and beneficial re-use of the coal reject and did not object to the trucking of coal reject to the Calderwood Urban Development Project.

1.1 PURPOSE AND SCOPE

This Waste Management Plan (WstMP) has been prepared for the Project in accordance with Condition 25, Schedule 4 of the Project Approval. This WstMP details procedures for the management of waste generated during operation of the mine.

This WstMP has been prepared to:

- identify waste streams and monitor the quantities generated;
- identify waste management measures to minimise waste generation; and
- ensure that waste generated by Metropolitan Coal is appropriately stored, handled and disposed
 of.

The relationship of this WstMP to the Metropolitan Coal Environmental Management Structure is shown on Figure 3.

1.2 STRUCTURE OF THE WstMP

The remainder of the WstMP is structured as follows:

IP.
l

Section 3: Outlines the statutory requirements applicable to the WstMP.

Section 4: Provides a description of Metropolitan Coal waste.

Section 5: Provides baseline data.

Section 6: Details the performance indicators that will be used to assess the Project.

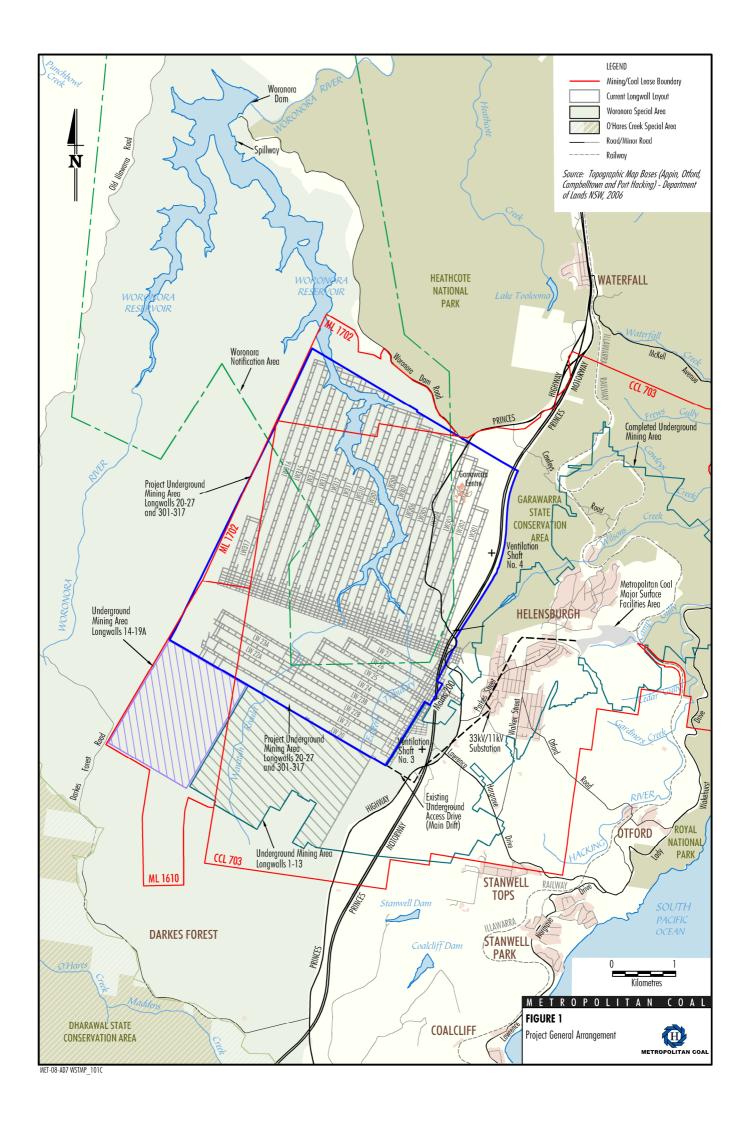
Section 7: Describes waste management.

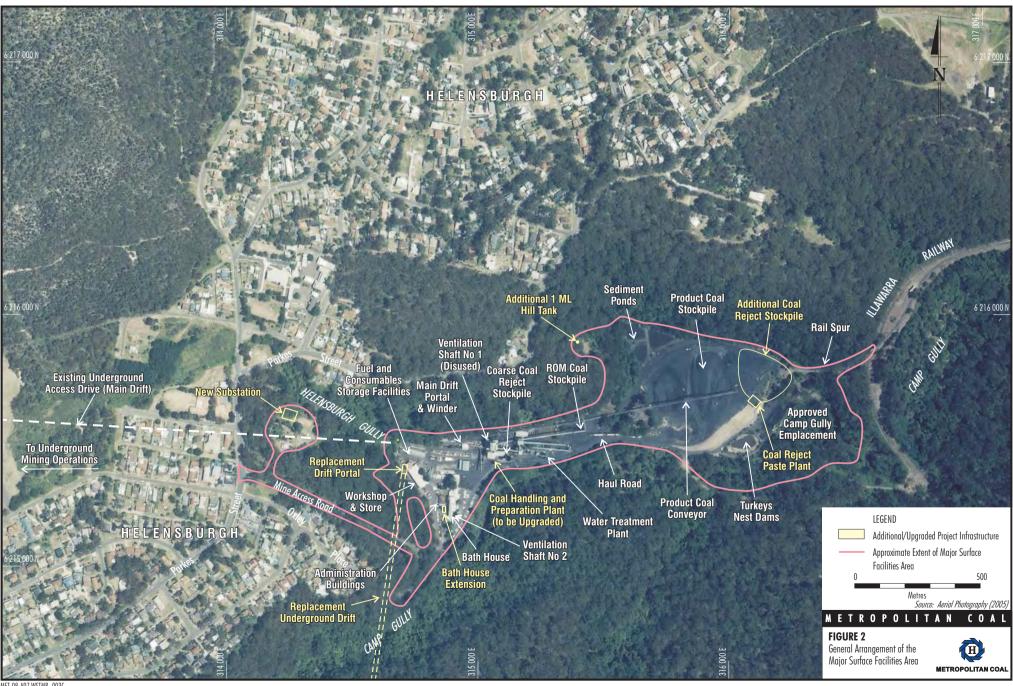
Section 8: Describes the monitoring program.

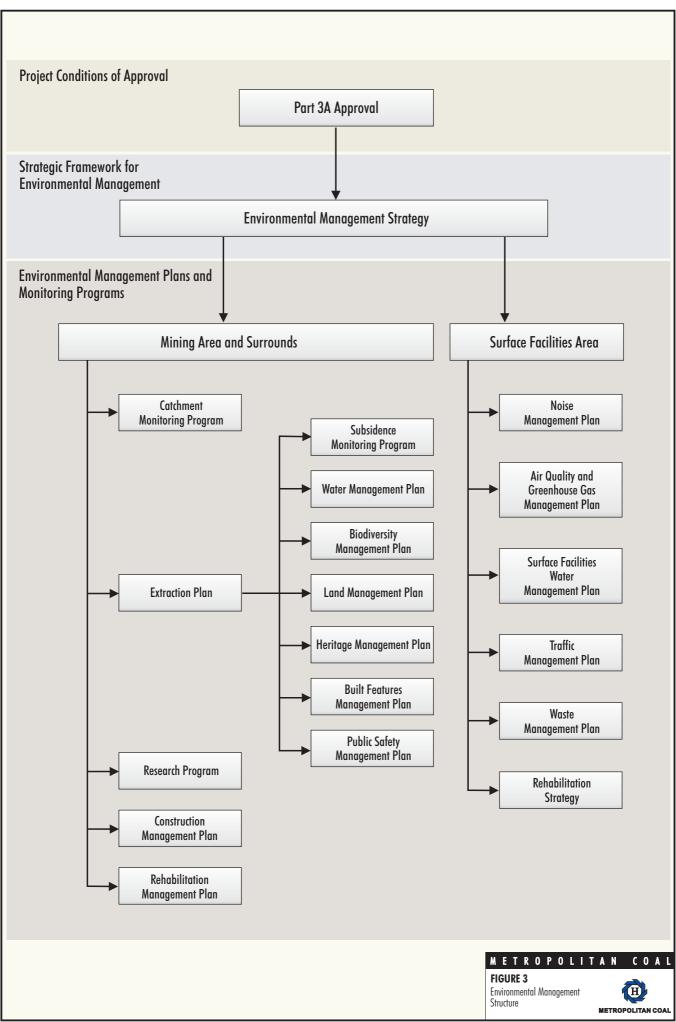
Section 9: Provides a Contingency Plan to manage any unpredicted impacts and their

consequences.

Metropolitan Coal – Waste Management Plan		
Revision No. WstMP-R01-C Page 1		
Document ID: Waste Management Plan		







Section 10: Describes the annual review and improvement of environmental performance.

Section 11: Outlines the management and reporting of incidents, complaints, and

non-compliances.

Section 12: Lists the references cited.

2 WSTMP REVIEW AND UPDATE

In accordance with Condition 4, Schedule 7 of the Project Approval, this WstMP will be reviewed within three months of the submission of:

- an audit under Condition 8 of Schedule 7;
- an incident report under Condition 6 of Schedule 7;
- an annual review under Condition 3 of Schedule 7; and

if necessary, revised to the satisfaction of the Director-General (now Secretary) of the DP&E, to ensure the plan is updated on a regular basis and to incorporate any recommended measures to improve environmental performance.

The WstMP will also be reviewed within three months of approval of any Project modification and if necessary, revised to the satisfaction of the DP&E.

The revision status of this WstMP is indicated on the title page of each copy. The distribution register for controlled copies of the WstMP is described in Section 2.1.

2.1 DISTRIBUTION REGISTER

In accordance with Condition 10, Schedule 7 'Access to Information', Metropolitan Coal will make the WstMP publicly available on the Peabody website. A hard copy of the WstMP will also be maintained at the Metropolitan Coal site.

Metropolitan Coal recognises that various regulators have different distribution requirements, both in relation to whom documents should be sent and in what format. An Environmental Management Plan and Monitoring Program Distribution Register will be established in consultation with the relevant agencies and infrastructure owners that indicates:

- to whom the Metropolitan Coal plans and programs, such as the WstMP, will be distributed;
- the format (i.e. electronic or hard copy) of distribution; and
- the format of revision notification.

Metropolitan Coal will make the Distribution Register publicly available on the Peabody website.

Metropolitan Coal is responsible for maintaining the Distribution Register and for ensuring that the notification of revisions is sent by email or post as appropriate.

In addition, Metropolitan Coal employees with local computer network access will be able to view the controlled electronic version of this WstMP on the Metropolitan Coal local area network. Metropolitan Coal will not be responsible for maintaining uncontrolled copies beyond ensuring the most recent version is maintained on Metropolitan Coal's computer system and the Peabody website.

Metropolitan Coal – Waste Management Plan		
Revision No. WstMP-R01-C Page 5		
Document ID: Waste Management Plan		

3 STATUTORY REQUIREMENTS

Metropolitan Coal's statutory obligations are contained in:

- (i) the conditions of the Project Approval;
- (ii) relevant licences and permits, including conditions attached to mining leases; and
- (iii) other relevant legislation.

These are described below.

3.1 EP&A ACT APPROVAL

Condition 25, Schedule 4 of the Project Approval requires the preparation of a WstMP for the Project. Approval Condition 25 states:

WASTE

25. The Proponent shall prepare and implement a Waste Management Plan for the project to the satisfaction of the Director-General. This plan must be submitted to the Director-General for approval by the end of June 2010.

In addition, Condition 24, Schedule 4 of the Project Approval states:

- 24. The Proponent shall:
 - (a) minimise the waste (including coal reject) generated by the project; and
 - (b) ensure that the waste generated by the project is appropriately stored, handled, and disposed of, to the satisfaction of the Director-General.

Condition 2, Schedule 7 of the Project Approval outlines management plan requirements that are applicable to the preparation of the WstMP. Table 1 indicates where each component of the condition is addressed within this WstMP.

In January 2016, Metropolitan Coal requested the DP&E confirm that the transport of coal reject material to the Lend Lease Calderwood Urban Development Project would be generally in accordance with the Project Approval. In February 2016, the DP&E indicated that it supported the proposed sustainable and beneficial re-use of the coal reject and did not object to the trucking of coal reject to the Calderwood Urban Development Project, on condition that the trucking is undertaken in accordance with the approved trucking limits and adheres to the trucking route shown on Figure 4.

Metropolitan Coal – Waste Management Plan		
Revision No. WstMP-R01-C	Page 6	
Document ID: Waste Management Plan		

Table 1 Management Plan Requirements

		Project Approval Condition	WstMP Section
Co	nditi	on 2 of Schedule 7	
2.		e Proponent shall ensure that the management plans required under this proval are prepared in accordance with any relevant guidelines, and include:	
	a)	detailed baseline data;	Section 5
	b)	a description of:	
		 the relevant statutory requirements (including any relevant approval, licence or lease conditions); 	Section 3
		any relevant limits or performance measures/criteria;	Not applicable
		 the specific performance indicators that are proposed to be used to judge the performance of, or guide the implementation of, the project or any management measures; 	Section 6
	c)	a description of the measures that would be implemented to comply with the relevant statutory requirements, limits, or performance measures/criteria;	Sections 7, 8 and 9
	d)	a program to monitor and report on the:	Sections 7, 8 and 10
		impacts and environmental performance of the project;	
		effectiveness of any management measures (see c above);	
	e)	a contingency plan to manage any unpredicted impacts and their consequences;	Section 9
	f)	a program to investigate and implement ways to improve the environmental performance of the project over time;	Section 10
	g)	a protocol for managing and reporting any;	
		• incidents;	Section 11
		• complaints;	Section 11
		non-compliances with statutory requirements; and	Section 11
		 exceedances of the impact assessment criteria and/or performance criteria; and 	Not applicable
	h)	a protocol for periodic review of the plan.	Section 2

Metropolitan Coal – Waste Management Plan			
Revision No. WstMP-R01-C		Page 7	
Document ID: Waste Management Plan			



3.2 LICENCES, PERMITS AND LEASES

In addition to the Project Approval, all activities at or in association with Metropolitan Coal will be undertaken in accordance with the following licences, permits and leases which have been issued or are pending issue.

- The conditions of mining leases issued by the Division of Resources and Energy (DRE), within
 the NSW Department of Trade and Investment, Resources and Energy (NSW T&I), under the
 NSW Mining Act, 1992 (e.g. Consolidated Coal Lease [CCL] 703, Mining Lease [ML] 1610,
 ML 1702, Coal Lease 379, Mining Purpose Lease 320 and Authorisation 200).
- The Metropolitan Coal Mining Operations Plan 1 October 2012 to 30 September 2019 approved by NSW T&I.
- The conditions of Environment Protection Licence (EPL) No. 767 issued by the NSW Environment Protection Authority (EPA) under the NSW Protection of the Environment Operations Act, 1997. Revision of the EPL will be required prior to the commencement of Metropolitan Coal activities that differ from those currently licensed.
- The prescribed conditions of specific surface access leases within CCL 703 for the installation of surface facilities as required.
- Water extraction licences issued by the NSW Office of Water under the Water Act, 1912, were converted to licences under the Water Management Act, 2000. The existing licences were converted to licences under the Water Sharing Plan for the Greater Metropolitan Region Groundwater Sources, 2011 (i.e. WAL36475 was converted on 1 May 2014) and the Water Sharing Plan for the Greater Metropolitan Region Unregulated River Water Sources, 2011 (i.e. WAL25410 was converted on 28 November 2012).
- Mining and occupational health and safety related approvals granted by NSW T&I and WorkCover NSW.
- Supplementary approvals obtained from the WaterNSW for surface activities within the Woronora Special Area (e.g. fire road maintenance activities).

3.3 OTHER LEGISLATION

Metropolitan Coal will conduct the Project consistent with the Project Approval and any other legislation that is applicable to an approved Part 3A Project under the EP&A Act.

The following Acts may be applicable to the conduct of the Project (Helensburgh Coal Pty Ltd [HCPL], 2008):

- Contaminated Land Management Act, 1997;
- Dangerous Goods (Road and Rail Transport) Act, 2008;
- Mining Act, 1992;
- Noxious Weeds Act, 1993;
- Rail Safety (Adoption of National Law) Act, 2012;
- Roads Act, 1993;
- Protection of the Environment Operations Act, 1997 (POEO Act);
- Threatened Species Conservation Act, 1995;

Metropolitan Coal – Waste Management Plan			
Revision No. WstMP-R01-C		Page 9	
Document ID: Waste Management Plan			

- Sydney Water Catchment Management Act, 1998;
- Crown Lands Act, 1989;
- Dams Safety Act, 1978;
- Energy and Utilities Administration Act, 1987;
- Fisheries Management Act, 1994;
- Water Act, 1912;
- Water Management Act, 2000; and
- Work Health and Safety (Mines) Act, 2013.

Relevant licences or approvals required under these Acts will be obtained as required.

4 DESCRIPTION OF METROPOLITAN COAL WASTE

4.1 DEFINITION OF WASTE

The POEO Act establishes the licensing framework and classification system for managing and regulating waste in NSW. The POEO Act defines waste as:

waste includes:

- (a) any substance (whether solid, liquid or gaseous) that is discharged, emitted or deposited in the environment in such volume, constituency or manner as to cause an alteration in the environment, or
- (b) any discarded, rejected, unwanted, surplus or abandoned substance, or
- (c) any otherwise discarded, rejected, unwanted, surplus or abandoned substance intended for sale or for recycling, processing, recovery or purification by a separate operation from that which produced the substance, or
- (d) any processed, recycled, re-used or recovered substance produced wholly or partly from waste that is applied to land, or used as fuel, but only in the circumstances prescribed by the regulations, or
- (e) any substance prescribed by the regulations to be waste.

A substance is not precluded from being waste for the purposes of this Act merely because it is or may be processed, recycled, re-used or recovered.

Metropolitan Coal – Waste Management Plan		
Revision No. WstMP-R01-C Page 10		
Document ID: Waste Management Plan		

4.2 WASTE PRODUCTION AND CLASSIFICATION

Waste generated at the Project includes:

- tyres;
- oil;
- sewage effluent;
- paint;
- lead acid batteries;
- coal rejects;
- drift waste rock;
- office waste (e.g. paper, plastics, aluminium cans and printer cartridges);
- scrap metal;
- general inert waste (e.g. concrete, timber, pipe, rope, rags);
- underground waste (e.g. packaging, cloths, pipe);
- oil/fuel filters;
- absorbents (e.g. spent oil spill material); and
- food waste.

Waste classification assists with the management and treatment of waste for disposal to ensure the environmental and human health risks associated with it are managed appropriately and in accordance with the POEO Act and its associated regulations. The NSW EPA (2014) Waste Classification Guidelines – Part 1: Classifying waste classifies waste into six classes that pose similar risks to the environment and human health to facilitate their management and appropriate disposal. The six waste classes and their associated definitions are provided in Table 2.

Table 2 Waste Classification

Classification (EPA, 2014)	Definition (POEO Act)	
Special waste	Waste that includes any of the following:	
	(a) clinical and related waste;	
	(b) asbestos waste;	
	(c) waste tyres; or	
	(d) anything that is classified as special waste pursuant to an Environment Protection Authority (EPA) Gazettal notice.	
Liquid waste	Waste (other than special waste) that includes any of the following:	
	(a) anything that:	
	(i) has an angle of repose of less than 5 degrees above horizontal; or	
	(ii) becomes free-flowing at or below 60°C or when it is transported; or	
	(iii) is generally not capable of being picked up by a spade or shovel; or	
	(b) anything that is classified as liquid waste pursuant to an EPA Gazettal notice.	
Hazardous waste	Waste (other than special waste or liquid waste) that includes any of the following:	
	(a) anything that is classified as:	
	(i) a substance of Class 1, 2, 5 or 8 within the meaning of the Transport of Dangerous Goods Code; or	
	(ii) a substance to which Division 4.1, 4.2, 4.3 or 6.1 of the Transport of Dangerous Goods Code applies; or	

Metropolitan Coal – Waste Management Plan			
Revision No. WstMP-R01-C Page 11			
Document ID: Waste Management Plan			

Table 2 (Continued) Waste Classification

Classification (NSW EPA, 2014)	Definition (POEO Act)
Hazardous waste	(b) containers, having previously contained:
(continued)	(i) a substance of Class 1, 3, 4, 5 or 8 within the meaning of the Transport of Dangerous Goods Code; or
	(ii) a substance to which Division 6.1 of the Transport of Dangerous Goods Code applies, from which residues have not been removed by washing or vacuuming; or
	(c) coal tar or coal tar pitch waste (being the tarry residue from the heating, processing or burning of coal or coke) comprising more than 1% (by weight) of coal tar or coal tar pitch waste;
	(d) lead-acid or nickel-cadmium batteries (being waste generated or separately collected by activities carried out for business, commercial or community services purposes);
	(e) lead paint waste arising otherwise than from residential premises or educational or child care institutions;
	(f) anything that is classified as hazardous waste pursuant to an EPA Gazettal notice;
	(g) anything that is hazardous waste within the meaning of the Waste Classification Guidelines; or
	(h) a mixture of anything referred to in paragraphs (a)-(g).
Restricted solid waste	Waste (other than special waste, hazardous waste or liquid waste) that includes any of the following:
	(a) anything that is classified as restricted solid waste pursuant to the Waste Classification Guidelines; or
	(b) anything that is classified as restricted solid waste pursuant to an EPA Gazettal notice.
General solid waste (putrescible)	Waste (other than special waste, hazardous waste, restricted solid waste or liquid waste) that includes any of the following:
,	(a) household waste containing putrescible organics;
	(b) waste from litter bins collected by or on behalf of local councils;
	(c) manure and nightsoil;
	(d) disposable nappies, incontinence pads or sanitary napkins;
	(e) food waste;
	(f) animal waste;
	(g) grit or screenings from sewage treatment systems that have been dewatered so that the grit or screenings do not contain free liquids;
	(h) anything that is classified as general solid waste (putrescible) pursuant to an EPA Gazettal notice;
	(i) anything that is classified as general solid waste (putrescible) pursuant to the Waste Classification Guidelines; or
	(j) a mixture of anything referred to in paragraphs (a)-(i).
General solid waste (non-putrescible)	Waste (other than special waste, hazardous waste, restricted solid waste, general solid waste (putrescible) or liquid waste) that includes any of the following:
	(a) glass, plastic, rubber, plasterboard, ceramics, bricks, concrete or metal;
	(b) paper or cardboard;
	(c) household waste from municipal clean-up that does not contain food waste;
	(d) waste collected by or on behalf of local councils from street sweeping;
	(e) grit, sediment, litter and gross pollutants collected in, and removed from, stormwater treatment devices or stormwater management systems, that has been dewatered so that it does not contain free liquids;
	(f) grit and screenings from potable water and water reticulation plants that has been dewatered so that it does not contain free liquids;
	(g) garden waste;
	(h) wood waste;
	(i) waste contaminated with lead (including lead paint waste) from residential premises or educational or child care institutions;
	(j) containers, having previously contained dangerous goods, from which residues have been removed by washing or vacuuming;

Metropolitan Coal – Waste Management Plan		
Revision No. WstMP-R01-C Page 12		
Document ID: Waste Management Plan		

Table 2 (Continued) Waste Classification

Classification (NSW EPA, 2014)	Definition (POEO Act)
General solid waste (non-putrescible)	(k) drained oil filters (mechanically crushed), rags and oil absorbent materials that only contain non-volatile petroleum hydrocarbons and do not contain free liquids;
(continued)	(I) drained motor oil containers that do not contain free liquids;
	(m) non-putrescible vegetative waste from agriculture, silviculture or horticulture;
	(n) building cavity dust waste removed from residential premises, or educational or child care institutions, being waste that is packaged securely to prevent dust emissions and direct contact;
	(o) synthetic fibre waste (from materials such as fibreglass, polyesters and other plastics) being waste that is packaged securely to prevent dust emissions, but excluding asbestos waste;
	(p) virgin excavated natural material;
	(q) building and demolition waste;
	r) asphalt waste (including asphalt resulting from road construction and waterproofing works);
	(s) biosolids categorised as unrestricted use, or as restricted use 1, 2 or 3, in accordance with the criteria set out in the Biosolids Guidelines;
	(t) cured concrete waste from a batch plant;
	(u) fully cured and set thermosetting polymers and fibre reinforcing resins;
	(v) fully cured and dried residues of resins, glues, paints, coatings and inks;
	(w) anything that is classified as general solid waste (non-putrescible) pursuant to an EPA Gazettal notice;
	(x) anything that is classified as general solid waste (non-putrescible) pursuant to the Waste Classification Guidelines; or
	(y) any mixture of anything referred to in paragraphs (a)-(x).

Table 3 provides a summary of waste materials produced by Metropolitan Coal and their relevant classification.

Table 3 Production and Classification of Metropolitan Coal Waste

Waste	Waste Classification
Tyres	Special
Oil	Liquid
Sewage from Major Surface Facilities Area	Liquid
Paint	Liquid
Lead acid batteries	Hazardous
Coal reject material	General solid waste (non-putrescible)
Drift waste rock	General solid waste (non-putrescible)
Office waste (e.g. paper, plastics, aluminium cans and printer cartridges)	General solid waste (non-putrescible)
Scrap metal	General solid waste (non-putrescible)
General inert waste (e.g. concrete, timber, pipe, rope, rags)	General solid waste (non-putrescible)
Underground waste (e.g. packaging, cloths, pipe)	General solid waste (non-putrescible)
Oil/fuel filters	General solid waste (non-putrescible)
Absorbents (e.g. spent oil spill material)	General solid waste (non-putrescible)
Nightsoil (sewage) from underground mining area	General solid waste (putrescible)
Food waste	General solid waste (putrescible)

Metropolitan Coal – Waste Management Plan		
Revision No. WstMP-R01-C Page 13		
Document ID: Waste Management Plan		

5 BASELINE DATA

The type and quantity of waste generated at Metropolitan Coal is tracked on a monthly basis through waste disposal receipts issued by the mine's waste contractors. In 2009, 265,515 tonnes (t) of coal reject was generated by the Project. Approximately 91,000 t of waste were recycled and 382,000 t were disposed of in 2009.

6 WASTE MANAGEMENT PERFORMANCE INDICATORS

Consistent with Condition 2, Schedule 7 of the Project Approval, Table 4 outlines the performance indicators that will be used to assess the performance of the WstMP, and in particular whether suitable measures are in place to:

- minimise the waste (including coal reject) generated by Metropolitan Coal; and
- ensure waste is appropriately stored, handled and disposed of.

The waste management performance indicators are described in Table 4.

Table 4
Waste Management Performance Indicators

Aspect	Performance Indicator	
Waste generation	Waste generation has been minimised, as evidenced by:	
	- an increase in the amount or type of waste recycled;	
	 a decrease in the amount of waste generated that is disposed of to licensed landfill facilities; and/or 	
	- no practicable opportunities for additional waste minimisation have been identified to those currently being implemented.	
Storage of waste	Waste has been separated and stored according to type in appropriate storage facilities (e.g. sealed containers for liquid waste).	
Handling and disposal of waste	The transport of particular waste types has been tracked in accordance with NSW EPA waste tracking requirements.	
	Metropolitan Coal's waste management contracts, where relevant, specify that the waste is to be transported by an appropriately licensed contractor and disposed of at an appropriately licensed facility.	

Monitoring that will be conducted to assess the performance indicators is described in Section 8.

Metropolitan Coal – Waste Management Plan			
Revision No. WstMP-R01-C Page 14			
Document ID: Waste Management Plan			

7 WASTE MANAGEMENT

7.1 WASTE HIERACHY

Metropolitan Coal will implement the waste hierarchy established under the NSW *Waste Avoidance* and *Resource Recovery Act, 2001* to manage Project waste generation. The waste hierarchy ensures that management measures are considered against the following priorities:

- 1. Avoidance of unnecessary resource consumption.
- 2. Resource recovery.
- 3. Disposal, including management of disposal options in the most environmentally responsible manner.

The highest priority, avoidance, involves reducing the amount of virgin materials to reduce the amount of waste generation, and being more efficient in the use of resources. Metropolitan Coal will endeavour to utilise products that generate minimal waste, use alternate materials that are non-toxic and non-hazardous where possible and avoid excessive use through the mistreatment of product or over supply.

Examples of avoidance of unnecessary resource consumption include:

- procuring products that generate minimal waste;
- the avoidance of excessive use with mistreatment of product or over supply;
- double-sided printing to reduce paper consumption;
- reducing the amount of printing (e.g. sending electronic copies of memos, minutes as an alternative);
- the use of crockery instead of polystyrene or paper cups, plates etc.;
- purchasing products in bulk to minimise packaging (e.g. coffee, stationary and cleaning supplies);
- the use of durable materials to minimise the quantity of product purchased (e.g. cloths); and
- the provision of re-usable towels in bathrooms.

Resource recovery encourages the maximisation of waste material through re-use, recycling, reprocessing and energy recovery. As with avoidance, resource recovery also minimises the amount of waste generation.

Examples of resource recovery include:

- procuring recyclable alternatives where possible;
- the recycling of products (e.g. oils, timber, tyres and printer cartridges);
- re-use of single-sided paper for notes etc.; and
- re-use of stationary products (e.g. folders, clips etc.).

Metropolitan Coal – Waste Management Plan		
Revision No. WstMP-R01-C Page 15		
Document ID: Waste Management Plan		

Before disposing of general waste to landfill, the following recycling procedure will be implemented:

- consider recycling that may be possible;
- where possible, require consumable suppliers to collect and recycle the product; and
- consider commercial and non-commercial/charity off-site recycling services that may be available (e.g. aluminium can and glass bottle recycling services).

Disposal is the least preferred option in the waste hierarchy. Waste disposal will be carefully managed to minimise negative environmental consequences.

Any waste stream that cannot be recovered, reused or recycled will be transported by a licensed contractor to a licensed landfill facility.

7.2 WASTE STORAGE, HANDLING AND DISPOSAL

A summary of the storage, handling and disposal of mine waste is provided in Table 5. A description of each waste type and the respective management measures are provided in Sections 7.2.1 to 7.2.5.

Waste streams are kept separate where practicable to improve waste handling and classification, minimise costs associated with disposal and improve environmental outcomes. For example:

- hazardous waste will not be mixed with non-hazardous waste;
- where practicable, recyclable waste will be separated out from other waste; and
- waste with lower disposal costs are identified and kept separate from other waste types to reduce costs where practicable (e.g. the collection of recyclable material typically has lower costs than material required to be disposed of at landfill).

Table 5
Waste Storage, Handling and Disposal

Waste	Waste Classification	Storage	Handling/Disposal
Tyres	Special	Tyres stored on-site separate to other waste materials in Waste Storage Area.	Periodically collected by the tyre supplier and provided to a licensed tyre recycling facility for recycling.
Oil	Liquid	Oils are stored in waste oil drums located adjacent to the Fuel and Consumables Storage Facility and outside the Coal Handling and Preparation Plant (CHPP) building.	Collected by licensed contractor and provided to a waste recycling facility.
		Oil is separated from surface water runoff in oil/water separator and collected in a 1,000 L bulk storage container.	
Sewage from Major Surface Facilities Area	Liquid	Sydney Water sewage system.	Disposal via Sydney Water sewage system.
Paint	Liquid	Paint stored separate to other waste materials in the Waste Storage Area.	Collected by licensed contractor and provided to a licensed recycling facility.

Metropolitan Coal – Waste Management Plan		
Revision No. WstMP-R01-C Page 16		
Document ID: Waste Management Plan		

Table 5 (Continued) Waste Storage, Handling and Disposal

Waste	Waste Classification	Storage	Handling/Disposal
Lead acid batteries	Hazardous	Batteries stored on-site separate to other waste in Waste Storage Area.	Collected and provided to a waste recycling facility when there is a sufficient quantity to warrant collection.
Coal reject material	General solid waste (non-putrescible)	Stockpiled on-site in the Coal Reject Stockpile(s).	Transported by truck to Glenlee Washery for emplacement, to the Calderwood Urban Development Project for use as fill material and/or disposed in underground workings via the Coal Reject Paste Plant.
Drift waste rock	General solid waste (non-putrescible)	Temporarily stockpiled on-site in the Temporary Drift Waste Rock Stockpile(s).	Where practicable, utilised for construction and remediation activities at the approved upgrades of the surface facilities. Waste rock material that cannot be utilised on-site for construction and development activities would be placed underground via the approved paste plant and paste injection system and/or transported offsite within approved coal reject trucking limits (e.g. to Glenlee Washery for disposal).
Office waste (e.g. paper, plastics, aluminium cans and printer cartridges)	General solid waste (non-putrescible)	Individual waste paper recycling bins at office desks. Recyclable waste separated from non-recyclables on-site and stored in separate skips in the Waste Storage Area.	Collected weekly by licensed contractor and provided to a waste recycling facility (recyclables) or disposed of at licensed landfill facility (non-recyclables).
Scrap metal	General solid waste (non-putrescible)	Scrap metal separated from other waste and stored on-site in designated scrap metal skips around Major Surface Facilities Area.	Collected by licensed contractor when a sufficient amount warrants collection and provided to a licensed recycling facility.
General inert waste (e.g. packaging, concrete, timber, pipe, rope, rags)	General solid waste (non-putrescible)	Recyclable waste separated from non-recyclables on-site and stored in separate skips in the Waste Storage Area.	Collected weekly by licensed contractor and disposed in licensed landfill (non-recyclables) or provided to a waste recycling facility (recyclables).
Underground waste	General solid waste (non-putrescible)	Stored underground in small skips and transferred to the surface when skips are full. Waste is transferred to larger skips located in the Waste Storage Area.	Collected weekly by licensed contractor and provided to a licensed landfill facility.
Oil/fuel filters	General solid waste (non-putrescible)	Filters stored at the Waste Storage Area prior to collection.	Collected by licensed contractor and provided to a licensed landfill facility.
Absorbents (e.g. spent oil spill material)	General solid waste (non-putrescible)	Absorbents stored the Waste Storage Area prior to collection.	Collected by licensed contractor and provided to a licensed landfill facility.

Metropolitan Coal – Waste Management Plan			
Revision No. WstMP-R01-C Page 17			
Document ID: Waste Management Plan			

Table 5 (Continued) Waste Storage, Handling and Disposal

Waste	Waste Classification	Storage	Handling/Disposal
Nightsoil (sewage) from underground mining area	General solid waste (putrescible)	Stored in portable toilet systems located in underground mining area.	Collected weekly by a licensed nightsoil service and disposed of at licensed sewage waste receiving facility.
Food waste	General solid waste (putrescible)	Food waste stored with non- recyclable general domestic waste in the Waste Storage Area.	Collected weekly by licensed contractor and disposed of at a licensed landfill facility.

7.2.1 Special Waste

Tyres

Tyres will be stockpiled in the Waste Storage Area located adjacent to the Workshop and periodically collected by the tyre supplier. Tyres will be collected from the tyre supplier by a licensed tyre recycling company for recycling.

7.2.2 Liquid Waste

Waste Oil

Oils are stored in waste oil drums located adjacent to the Fuel and Consumables Storage Facility and outside the CHPP building. A licensed contractor collects the waste oil and transports it to a licensed recycling facility.

All flammable liquids such as oils and any materials contaminated with flammable liquids will be stored and handled in accordance with Australian Standard (AS) 1940:2004 *The Storage and Handling of Flammable and Combustible Liquids*.

Runoff from the mine facilities area (e.g. washery, workshop and stockpile areas) is collected in the Site Water Management System which comprises a series of collection dams, sumps and treatment systems. The Yard Catchment and Storage Bund is visually inspected twice per week and pumped to an oil/water separator. Water is separated and transferred to the primary settling tank where waste oil is collected in a 1,000 litre (L) bulk storage container located adjacent to the oil/water separator. The waste oil is pumped from the storage container by a licensed contractor for provision to a licensed recycling facility.

Sewage

Sewage from the Major Surface Facilities Area is removed from site via the Sydney Water sewage network.

Metropolitan Coal – Waste Management Plan		
Revision No. WstMP-R01-C Page 18		
Document ID: Waste Management Plan		

Paint

Paint is stored separate to other waste in the Waste Storage Area and is collected when there is a sufficient amount to warrant collection by a licensed contractor. Paint is disposed of at a licensed recycling facility.

7.2.3 Hazardous Waste

Lead Acid Batteries

Lead acid batteries are stored in the Waste Storage Area and collected by a licensed contractor for provision to a licensed recycling facility when there is a sufficient quantity to warrant collection. Lead acid batteries will be stored in accordance with AS 3780:2008 *The Storage and Handling of Corrosive Substances*.

7.2.4 General Solid Waste (Non-Putrescible)

Coal Reject

Approximately 8.5 million tones (Mt) of coal reject would be produced over the life of the Project. Coal reject is produced in two streams at the CHPP (i.e. coarse and fine rejects). Approximately 15% of the run of mine coal processed in the CHPP is separated to the coal reject stream (HCPL, 2008). Fine coal reject material is mixed with coarse reject material and stockpiled on-site.

Coal reject is transported by road to the Glenlee Washery and the Calderwood Urban Development Project, located approximately 25 km north-west and approximately 45 km south south-west of Metropolitan Coal, respectively. Coal reject is trucked by a licensed contractor from the Major Surface Facilities Area to the Glenlee Washery and the Calderwood Urban Development Project along the transport routes shown on Figure 4. Emplacement and management of the coal reject at the Glenlee Washery and the Calderwood Urban Development Project is conducted in accordance with separate environmental approvals by the owners of the Glenlee Washery and Calderwood Urban Development Project. In accordance with Condition 7, Schedule 2 of the Project Approval coal reject is not to be trucked off-site after 2021 without the approval of the Director-General (now Secretary) of the DP&E.

In order to reduce the volume of coal reject that requires off-site transport, underground backfilling of the mine void will be undertaken using a proportion of the coal reject produced over the Project life. In order to facilitate the underground backfilling of the mine void using coal reject material, a range of new infrastructure will be required, including a coal reject backfill plant located at the Major Surface Facilities Area and an additional (short-term) 50,000 t coal reject stockpile. The coal reject backfill plant and underground backfill infrastructure will be designed and built progressively during the initial stages of the Project. It is anticipated that backfilling of reject will be fully operational by Year 5 of the Project.

A number of underground coal reject management alternatives were considered for the Project. Of these, the method adopted for management of a large volume of coal reject was underground goaf injection of the mine void. Significant capacity is available over the life of the Project if backfilling, using coal reject, is undertaken directly into the goaf (i.e. broken rock) behind the longwall machine. HCPL (2008) estimate that the capacity for underground backfilling is significantly higher than the annual coal reject management requirements of the Project.

Metropolitan Coal – Waste Management Plan		
Revision No. WstMP-R01-C Page 19		
Document ID: Waste Management Plan		

Drift Waste Rock

In accordance with the *Metropolitan Mine Replacement Drift Modification Environmental Assessment* (HCPL, 2010) drift waste rock will be temporarily stockpiled on-site, before being utilised, where practicable, for construction and remediation activities at the approved upgrades of the surface facilities.

Drift waste rock that cannot be utilised on-site for construction and development activities will be placed underground via the approved paste plant and paste injection system and/or transported offsite within approved coal reject trucking limits (e.g. to Glenlee Washery for disposal).

Paper

Individual waste paper recycling bins are located at each desk within administration buildings and are emptied weekly into a recycling skip located in the Waste Storage Area. The recyclable material is collected weekly by a licensed contractor and transported to a licensed recycling facility for sorting.

In addition, confidential documents (paper) are placed in paper security bins in the Waste Storage Area and are collected by a licensed contractor on a weekly basis for recycling at a licensed facility.

Plastic, Glass, Aluminium Cans and Printer Cartridges

Plastic, glass and aluminium cans are placed into the recycling skip located in the Waste Storage Area. The recyclable material is collected weekly by a licensed contractor and transported to a licensed recycling facility for sorting. Printer cartridges are collected for recycling by the supplier at the time of delivery of new supplies.

Other General Domestic Waste

Non-recyclable domestic waste is placed in either domestic wheelie bins or a 660 L skip in the Waste Storage Area and is collected weekly by a licensed contractor for disposal at a licensed landfill facility.

Scrap Metal

Where practicable scrap metal is separated from general waste and collected in scrap metal skips located throughout the Major Surface Facilities Area. When the skips are approaching full, a licensed contractor collects the skips and transports them to a licensed recycling facility.

General Inert Waste

General inert waste from the Major Surface Facilities Area (e.g. packaging, concrete, timber, pipe, rope, rags) is separated on-site into recyclable and non-recyclable waste. Recyclable waste is stored in the recycling skip located in the Waste Storage Area. The recyclable waste is collected weekly by a licensed contractor and transported to a licensed recycling facility for sorting. Non-recyclable waste is placed in either domestic wheelie bins or a 660 L skip in the Waste Storage Area and collected weekly by a licensed contractor for disposal at a licensed landfill facility.

Underground Waste

Waste from underground mining activities (e.g. packaging, cloths, pipe) is stored underground in small skips. When full, the skips are transported to the Major Surface Facilities Area and the waste is transferred into a skip located in the Waste Storage Area. The skip is collected weekly by a licensed contractor and the waste is disposed of in a licensed landfill.

Metropolitan Coal – Waste Management Plan		
Revision No. WstMP-R01-C Page 20		
Document ID: Waste Management Plan		

Oil/Fuel Filters and Absorbents

Free liquid from oil and fuel filters is drained and the filters are mechanically crushed so the filters can be classified as general solid waste (non-putrescible). Drained oil and fuel filters and spent spill absorbent material are stored with the underground waste in the Waste Storage Area for collection by a licensed contractor for provision to a licensed landfill facility.

7.2.5 General Solid Waste (Putrescible)

Food Waste

All food waste is collected with non-recyclable general domestic waste and stored in either domestic wheelie bins or a 660 L skip in the Waste Storage Area and is collected weekly by a licensed contractor for disposal at a licensed landfill facility.

Nightsoil (sewage) from Underground Mining Area

A nightsoil service is conducted weekly by a licensed contractor to collect nightsoil from portable toilets located in the underground mining area. Nightsoil is disposed of at a licensed sewage waste receiving facility.

7.3 WASTE TRACKING

Waste tracking requirements issued by NSW EPA apply throughout NSW to the consignment, transportation and acceptance for storage, treatment or disposal of certain waste types. These waste types are subject to special monitoring and reporting requirements under the POEO Act. Metropolitan Coal will ensure that all waste transportation from the Project will comply with the POEO Act, and any waste required to be tracked is done so in accordance with NSW EPA's waste tracking system. In accordance with these requirements, Metropolitan Coal tracks the transportation of waste oil to a licensed recycling facility.

In accordance with the POEO Act, Metropolitan Coal will ensure that the transporter of waste is licensed to carry the waste and the facility to which the waste is to be transported is legally able to receive the waste.

7.4 MANAGEMENT MEASURES REVIEW

Consistent with the Annual Review process described in Section 10, Metropolitan Coal will investigate opportunities to increase the recycling of waste quantities or waste types over the Project life.

7.5 PERSONNEL EDUCATION

An education program will be implemented on-site to increase the awareness of mine site personnel regarding waste management and measures to minimise the generation of waste.

Metropolitan Coal – Waste Management Plan		
Revision No. WstMP-R01-C Page 21		
Document ID: Waste Management Plan		

8 MONITORING

Waste generated at the Project is monitored on a monthly basis through waste disposal receipts provided by the waste contractors. Waste data will be collected and recorded according to type in the Metropolitan Coal Waste Register by a representative of the Environmental Department. The Waste Register is provided in Appendix A.

The Waste Register will be used to assess the performance of the mine against the performance indicator:

Waste generation has been minimised, as evidenced by:

- an increase in the amount or type of waste recycled;
- a decrease in the amount of waste generated that is disposed of to licensed landfill facilities; and/or
- no practicable opportunities for additional waste minimisation has been identified to those currently being implemented.

It is recognised that at particular stages over the Project life, Metropolitan Coal may not be in a position to increase the amount or type of waste recycled or decrease the amount of waste generated that is disposed of to licensed landfill. For example, the expansion activities that will be conducted in the early stages of the Project are likely to result in an increase in the amount of waste generated during the conduct of these activities. The above performance indicator will be considered to have been met if there are no practicable opportunities for additional waste minimisation to those currently being implemented. Metropolitan Coal will report on waste management through the Annual Review process.

Visual inspections of on-site waste storage areas will be conducted on a regular basis by the Manager - Safety & Environmental Services, and/or their delegate to confirm waste materials are being suitably stored.

Waste will be tracked in accordance with the POEO Act (Section 7.3) and the tracking of waste will be monitored to ensure compliance.

In accordance with the POEO Act and its regulations, it is Metropolitan Coal's responsibility to ensure that any transporter of waste is appropriately licensed to transport the waste, and the facility that is to receive the waste is legally able to receive the type of waste concerned. It is the responsibility of the receiver to monitor the disposal of waste in accordance with the POEO Act and its regulations. Metropolitan Coal will ensure that its waste management contracts specify that the waste is to be transported by an appropriately licensed contractor and disposed of at an appropriately licensed facility.

Metropolitan Coal – Waste Management Plan		
Revision No. WstMP-R01-C Page 22		
Document ID: Waste Management Plan		

9 CONTINGENCY PLAN

In the event monitoring indicates that a performance indicator has been exceeded on a number of occasions, Metropolitan Coal will conduct an investigation, and identify and assess potential rectification measures.

Potential rectification measures may include:

- audit of waste management system, reviewing waste management measures;
- identification of potential system improvements such as upgrade of waste containment infrastructure and handling procedures;
- implementation of upgrades/modifications to the waste management system; and
- the conduct of additional monitoring (e.g. increase in monitoring frequency) to inform the proposed contingency measures.

10 ANNUAL REVIEW AND IMPROVEMENT OF ENVIRONMENTAL PERFORMANCE

In accordance with Condition 3, Schedule 7 of the Project Approval, Metropolitan Coal will conduct an Annual Review of the environmental performance of the Project by the end of March each year.

The Annual Review will specifically address the environmental performance of the WstMP and will:

- describe the works carried out in the past year, and the works proposed to be carried out over the next year;
- include a comprehensive review of the monitoring results and complaints records of the Project over the past year, including a comparison of these results against the:
 - relevant statutory requirements, limits or performance measures/criteria;
 - monitoring results of previous years; and
 - relevant predictions in the EA, Preferred Project Report and Extraction Plan;
- identify any non-compliance over the last year, and describe what actions were (or are being) taken to ensure compliance;
- identify any trends in the monitoring data over the life of the Project;
- identify any discrepancies between the predicted and actual impacts of the Project, and analyse the potential cause of any significant discrepancies; and
- describe what measures will be implemented over the next year to improve the environmental performance of the Project.

As described in Section 2, this WstMP will be reviewed within three months of the submission of an Annual Review, and revised where appropriate.

Metropolitan Coal – Waste Management Plan		
Revision No. WstMP-R01-C Page 23		
Document ID: Waste Management Plan		

11 REPORTING

11.1 INCIDENTS

An incident is defined as a set of circumstances that causes or threatens to cause material harm to the environment, and/or breaches or exceeds the limits or performance measures/criteria in the Project Approval.

The reporting of incidents will be conducted in accordance with Condition 6, Schedule 7 of the Project Approval. Metropolitan Coal will notify the Director-General (now Secretary) of the DP&E and any other relevant agencies of any incident associated with the Project as soon as practicable after Metropolitan Coal becomes aware of the incident. Within seven days of the date of the incident, Metropolitan Coal will provide the Director-General (now Secretary) of the DP&E and any relevant agencies with a detailed report on the incident.

11.2 COMPLAINTS

A protocol for the managing and reporting of complaints has been developed as a component of Metropolitan Coal's Environmental Management Strategy and is described below.

The Manager - Safety & Environmental Services is responsible for maintaining a system for recording complaints.

Metropolitan Coal will maintain public signage advertising the telephone number on which environmental complaints can be made. The Manager - Safety & Environmental Services is responsible for ensuring that the currency and effectiveness of the service is maintained. Notifications of complaints received are to be provided as quickly as practicable to the Manager - Safety & Environmental Services.

Complaints and enquiries do not have to be received via the telephone line and may be received in any other form. Any complaint or enquiry relating to environmental management or performance is to be relayed to the Manager - Safety & Environmental Services as soon as practical. All employees are responsible for ensuring the prompt relaying of complaints. All complaints will be recorded in a complaints register.

For each complaint, the following information will be recorded in the complaints register:

- date and time of complaint;
- method by which the complaint was made;
- personal details of the complainant which were provided by the complainant or, if no such details were provided, a note to that effect;
- nature of the complaint;
- the action(s) taken by Metropolitan Coal in relation to the complaint, including any follow-up contact with the complainant; and
- if no action was taken by Metropolitan Coal, the reason why no action was taken.

The Manager - Safety & Environmental Services is responsible for ensuring that all complaints are appropriately investigated, actioned and that information is fed back to the complainant, unless requested to the contrary.

Metropolitan Coal – Waste Management Plan		
Revision No. WstMP-R01-C Page 24		
Document ID: Waste Management Plan		

In accordance with Condition 10, Schedule 7 of the Project Approval, the complaints register will be made publicly available on the website and updated on a monthly basis. A summary of complaints received and actions taken will be presented to the Community Consultative Committee as part of the operational performance review.

11.3 NON-COMPLIANCES WITH STATUTORY REQUIREMENTS

A protocol for the managing and reporting of non-compliances with statutory requirements has been developed as a component of Metropolitan Coal's Environmental Management Strategy and is described below.

Compliance with all approvals, plans and procedures will be the responsibility of all personnel (staff and contractors) employed by or in association with Metropolitan Coal, and will be developed through promotion of Metropolitan Coal ownership under the direction of the General Manager.

The Technical Services Manager and/or Manager - Safety & Environmental Services will undertake regular inspections, internal audits and initiate directions identifying any remediation/rectification work required, and areas of actual or potential non-compliance.

As described in Section 11.1, Metropolitan Coal will notify the Director-General (now Secretary) of the DP&E and any other relevant agencies of any incident associated with Metropolitan Coal as soon as practicable after Metropolitan Coal becomes aware of the incident. Within seven days of the date of the incident, Metropolitan Coal will provide the Director-General (now Secretary) of the DP&E and any relevant agencies with a detailed report on the incident.

A review of Metropolitan Coal's compliance with all conditions of the Project Approval, mining leases and all other approvals and licences will be conducted prior to (and included within) each Annual Review. The Annual Review will be made publicly available on the Peabody website.

Additionally, in accordance with Condition 8, Schedule 7 of the Project Approval, an independent environmental audit will be conducted by the end of December 2011, and a minimum of once every three years thereafter. A copy of the audit report will be submitted to the Director-General (now Secretary) of the DP&E and made publicly available on the Peabody website. The independent audit will be conducted by an appropriately qualified, experienced and independent team of experts whose appointment has been endorsed by the Director-General (now Secretary) of the DP&E.

12 REFERENCES

Helensburgh Coal Pty Ltd (2008) Metropolitan Coal Project Environmental Assessment.

Helensburgh Coal Pty Ltd (2010) Metropolitan Mine Replacement Drift Modification Environmental Assessment

NSW Environment Protection Authority (2014) Waste Classification Guidelines – Part 1: Classifying waste.

Metropolitan Coal – Waste Management Plan							
Revision No. WstMP-R01-C		Page 25					
Document ID: Waste Management Plan							

ľ	Metropolitan	Coal -	Waste	Management	Plan
ı	vietiopolitari	Cuai -	vvasie	ivialiauellielii	гіан

APPENDIX A METROPOLITAN COAL WASTE REGISTER

Metropolitan Coal – Waste Management Plan						
Revision No. WstMP-R01-C						
Document ID: Waste Management Plan						

Metropolitan Coal Waste Register

Waste Stream (tonnes)	January	February	March	April	May	June	July	August	September	October	November	December	Year to Date
Tyres													
Oil													
Paint													
Batteries													
Coal Reject													
Drift Waste Rock													
Paper/Plastic/ Glass/ Aluminium													
General Waste ¹													
Pallets/Scrap Wood													
Cardboard													
Scrap Metal													
Nightsoil													
Other													

¹ General Waste includes all non-recyclable waste from the administration buildings, workshop, CHPP, yard area and underground mining area, unless the waste is separately listed in the Waste Register.

Metropolitan Coal – Waste Management Plan						
Revision No. WstMP-R01-C						
Document ID: Waste Management Plan	<u> </u>					