



**PEMBROKE**

**Olive Downs Coking Coal Project**

Additional Information to the  
Environmental Impact Statement

**Section 17**

**Waste**

## 17 WASTE

**1. Provide additional information regarding the expected disposal locations for landfill, recycling, waste oil, regulated waste, black waste/sewerage/bio products.**

Pembroke has conducted a detailed analysis of the potential waste streams and disposal locations (including regulated wastes), which builds on the summary presented in Table 4-46 of the draft EIS. Table 17-1 below describes the outcome of this detailed analysis.

In most instances, where waste is proposed to be transported to a licenced landfill facility, Pembroke will arrange for this waste to be transported outside of the Isaac Regional Council LGA. This commitment will form part of the contractual arrangements currently being developed with licenced contractors.

Notwithstanding, the Waste Management Program (Appendix I) describes the waste disposal options for wastes proposed to be disposed of within the Isaac Regional Council LGA.

**2. Prepare a draft waste management strategy which ensures that preferred waste disposal options are feasible for Isaac Regional Council.**

Consistent with the commitment in Section 4.14.4 of the draft EIS, Pembroke has prepared a draft Waste Management Program for the Project. The draft Waste Management Program identifies the waste streams expected to be generated at the Project and waste management measures to be implemented, including consideration of waste disposal options. The draft Waste Management Program is provided in Appendix H.

Pembroke will provide the draft Waste Management Program to the Isaac Regional Council for comment.

**Table 17-1  
Estimated Maximum Wastes Produced by the Project (per annum)**

Waste Type/Waste Category	Form	Source	Approximate Quantity (per annum)		Attributes that may Affect Dispersal	Risk of Causing Environmental Harm*	Management Strategies (Waste Management Hierarchy Level)*	Proposed Disposal Location
			Construction	Operations				
<b>Non-regulated</b>								
Excavated waste (i.e. overburden, interburden)	Solid	Mining activities	N/A	12 – 300 Mbcm	Potential for erosion and saline runoff	Low	Placed within the in mined out voids of the open cut pits (when space becomes available) behind the advancing mining operations (g) or placed in out-of-pit waste rock emplacements (g).	Excavated waste would be disposed of within the approved ML areas.
Coal rejects (i.e. coarse and fine rejects)	Solid/Liquid	Mining activities	N/A	0.1 – 5.5 Mt	Potential for erosion, saline runoff. Low potential for acid formation	Low	Fine rejects would be dewatered in the ILF cells (f). During the initial phase of the Project (before in-pit emplacement becomes available), coarse rejects would be disposed at out-of-pit emplacements buried by at least 10 m of waste rock and fine rejects would be temporarily stored in the ILF cells. In-pit emplacement would be utilised when space becomes available (g).	Coal rejects would be disposed of within the approved ML areas.
General waste (i.e. food scraps, non-Class 1 [PET], 2 [HDPE] and 5 [PP plastics])	Solid	Kitchenettes, crib rooms, administration areas, workshop, etc.	1,500 m <sup>3</sup>	2,500 m <sup>3</sup>	Putrescible and attractive to fauna	Low	Stored on-site in bins for regular transport off-site by a licensed waste transport contractor to a licensed landfill (g).	General waste would be transported off-site by a licenced waste contractor to an approved landfill (excluding Dysart).
Recyclable waste (i.e. aluminium, steel cans, Class 1, 2 and 5 plastics, paper towels, paper and cardboard)	Solid	Kitchenettes, crib rooms, administration areas, workshop etc.	430 m <sup>3</sup>	1,200 m <sup>3</sup>	Small in size and light in weight	Low	Stored on-site in bins for regular transport off-site by a licensed waste transport contractor for recycling (d). Confidential papers would be segregated into locked paper bins for shredding and recycling (d).	Recyclable waste would be transported off-site by a licenced recycling contractor to an approved recycling facility outside the Isaac Regional LGA.

**Table 17-1 (Continued)**  
**Estimated Maximum Wastes Produced by the Project (per annum)**

Waste Type/Waste Category	Form	Source	Approximate Quantity (per annum)		Attributes that may Affect Dispersal	Risk of Causing Environmental Harm*	Management Strategies (Waste Management Hierarchy Level)^	Proposed Disposal Location
			Construction	Operations				
Refurbishable items (i.e. pipe work and associated components and fittings, wing nuts, conveyor rollers and belt)	Solid	CHPP and workshops	<15 t	<40 t	Rust formation	Low	Items would be stockpiled within a designated area. If condition is acceptable, items would be reused directly (c). Where items are at the end of their life, they would be collected and disposed of as appropriate (g). Where items are contaminated with hydrocarbons, they would be managed as regulated waste.	If disposal off-site is required, refurbishable items would be disposed of by a licenced waste contractor to an approved waste facility.
Green waste (i.e. grass, cleared timber and weeds)	Solid	Clearing of vegetation	210 ha <sup>#</sup>	210 ha <sup>#</sup>	Attractive to fauna	Low	Mulched and/or placed in timber stacks for reuse on-site during rehabilitation (c). Waste vegetation would be burned where appropriate (g).	Green waste would be disposed of within the approved ML areas.
Scrap metal (i.e. stainless steel, aluminium and any item considered to be metal [ferrous or non-ferrous] including machine and vehicle parts)	Solid	Construction activities, infrastructure maintenance and workshops	150 m <sup>3</sup>	200 m <sup>3</sup>	Rust formation	Low	Smaller items would be placed in scrap metal skips for collection by a licensed contractor. Larger items would be left in an accessible location where specific collection arrangements can be made. All grease and oils are to be removed prior to placement in skips. A licensed contractor would remove all scrap metals for segregation at a licensed recycling facility (d).	Scrap metal would be disposed of by a licensed contractor to an approved recycling facility.
PPE and other small items (i.e. gloves, hard hats, safety glasses and face masks)	Solid	Bathhouse and contractor facilities	<60 kg	<120 kg	Light weight and small in size	Low	Equipment that is not deemed damaged would be reused (c). Only sufficiently used/damaged PPE would be disposed of (g).	Where PPE is required to be disposed of, it would be transported off-site by a licenced waste contractor to an approved landfill (excluding Dysart).

**Table 17-1 (Continued)**  
**Estimated Maximum Wastes Produced by the Project (per annum)**

Waste Type/Waste Category	Form	Source	Approximate Quantity (per annum)		Attributes that may Affect Dispersal	Risk of Causing Environmental Harm*	Management Strategies (Waste Management Hierarchy Level)*	Proposed Disposal Location
			Construction	Operations				
Air filters (i.e. engine air filters)	Solid	Vehicle and machinery maintenance at workshops	<2 t	<2 t	N/A	Low	Air filters would be temporarily stored in the appropriate air filter skip/bin. Final disposal would be off-site (g).	Air filters would be transported off-site by a licenced waste contractor to an approved landfill (excluding Dysart).
Timber/wooden pallets (i.e. reusable pallets)	Solid	Workshop and administration areas	<2 t	<2 t	N/A	Low	Pallets that are reusable would be returned to the supplier (c). The remainder would be sent to general waste (g).	Pallets that are not re-usable would be transported off-site by a licenced waste contractor to an approved landfill (excluding Dysart).
Mine affected water	Liquid	Any water that has been used or potentially contaminated by mining operations, including mine runoff water, groundwater seepage into pit, or water that has been used at the CHPP	Refer to Appendix E of the draft EIS for mine affected water volumes.	Refer to Appendix E of the draft EIS for mine affected water volumes.	Liquid	Low	Mine affected water would be reused (c) for dust suppression and construction and/or road maintenance around the Project. Discharge to the Isaac River would be subject to meeting water quality release limits specified in an EA for the Project. Further water management strategies are discussed in Sections 4.2, 4.3 and Appendix E of the draft EIS.	N/A
<b>Regulated</b>								
Waste oils	Liquid	Machinery and vehicle maintenance and workshop	400 kL	1,400 kL	Liquid	Medium	Collection and storage for transport by a licensed regulated waste contractor to a regulated waste receiver for reuse (c) or recycling (d).	Waste oils would be recycled by a licenced regulated waste contractor.

**Table 17-1 (Continued)**  
**Estimated Maximum Wastes Produced by the Project (per annum)**

Waste Type/Waste Category	Form	Source	Approximate Quantity (per annum)		Attributes that may Affect Dispersal	Risk of Causing Environmental Harm*	Management Strategies (Waste Management Hierarchy Level)*	Proposed Disposal Location
			Construction	Operations				
Engine oil/fuel filters	Solid/Liquid	Vehicle and machinery maintenance at workshop	4,000	12,000	Liquid contents	Medium	Collection and storage in sealed oil filter disposal pod. Transportation by a licensed regulated waste contractor to a licensed regulated waste receiver for treatment (solvent wash) to recover oil (c) or recycling (d).	Engine oil/fuel filters would be recycled by a licensed regulated waste contractor.
Waste grease (i.e. from machinery)	Liquid	Workshop, large machinery maintenance	<100 kL	<200 kL	Liquid	Medium	Stored in tanks or appropriately sealed containers in a designated bunded area. Transported by a licensed regulated waste contractor to a licensed regulated waste receiver for, recycling (d).	Waste grease would be recycled by a licensed regulated waste contractor.
Sewage	Liquid	Offices and workshops	<100 kL	<120 kL	Liquid	Medium	During construction there would be temporary ablution blocks which would not be connected to a sewage system and would require pumping out by licensed contractor. Once the sewage treatment plants are operational, within the mine infrastructure areas, the effluent would be treated by a package sewage treatment plant (f) and disposed via irrigation or reused within the site water management system.	Sewage would be transported off-site by a licensed contractor to disposal at a licensed facility during construction. Once the Project is operational, sewage would be treated and disposed in the designated effluent irrigation areas (Figure 3-1).
Empty waste oil containers	Solid	Workshop	<4 t	<10 t	N/A	Medium	All drums would be segregated and sealed prior to collection by a licensed regulated waste contractor and transported to a licensed waste receiver where drums and containers would be rinsed and recycled (d).	Empty waste oil containers would be recycled by a licensed regulated waste contractor.

**Table 17-1 (Continued)**  
**Estimated Maximum Wastes Produced by the Project (per annum)**

Waste Type/Waste Category	Form	Source	Approximate Quantity (per annum)		Attributes that may Affect Dispersal	Risk of Causing Environmental Harm*	Management Strategies (Waste Management Hierarchy Level) <sup>a</sup>	Proposed Disposal Location
			Construction	Operations				
Paints (i.e. general paint, air dried insulating varnish)	Liquid/Gas	Industrial area infrastructure and workshop	<1 t	<1 t	Liquid	Medium	Transported to a designated sealed and banded area for collection by a licensed regulated waste contractor and transported to a licensed regulated waste receiver for treatment (f) and disposal (g).	Empty waste oil containers would be recycled by a licenced regulated waste contractor.
Hydrocarbon contaminated material (i.e. oily rags)	Solid/Liquid	Workshop servicing trucks and light/heavy vehicles	<4 t	12 t	Liquid contents	Medium	Collection and storage in regulated sealed disposal bin. Transported by a licensed regulated waste contractor to a licensed regulated waste receiver for appropriate disposal (g).	Hydrocarbon contaminated materials would be disposed off-site by a licenced regulated waste contractor to an approved licenced facility.
Miscellaneous chemicals (i.e. engine coolant, solvents, sealants, etc.)	Liquid/Gas	Workshop and administration	20 kL	50 kL	Liquid	Medium	Transported to a designated sealed and banded area for collection by a licensed regulated waste contractor and transported to a licensed regulated waste receiver for treatment and disposal (g).	Miscellaneous chemicals would be disposed off-site by a licenced regulated waste contractor to an approved licenced facility.
Batteries (i.e. dry cell, gel cell, lead acid)	Solid	Operation of portable electrical equipment (radios, phones, etc.) within the workshop and other areas	<1 t	<1 t	Liquid contents	Medium	Segregation and storage within dedicated containers in battery storage area for collection by a licensed regulated waste transport contractor to a licensed regulated waste facility for recycling (d) or disposal (g).	Batteries would be disposed off-site by a licenced regulated waste contractor to an approved licenced facility.

**Table 17-1 (Continued)**  
**Estimated Maximum Wastes Produced by the Project (per annum)**

Waste Type/Waste Category	Form	Source	Approximate Quantity (per annum)		Attributes that may Affect Dispersal	Risk of Causing Environmental Harm*	Management Strategies (Waste Management Hierarchy Level) <sup>^</sup>	Proposed Disposal Location
			Construction	Operations				
Ozone depleting substance (i.e. refrigerants and air conditioning substances)	Liquid/Gas	Air conditioning units, fridges and cars throughout site	200 kg	800 kg	Liquid/Fumes	High	Ozone depleting substances would be contained at the source in cylinders and returned to the supplier for reuse and recycling (c)(d).	Ozone depleting substances would be recycled by a licenced regulated waste contractor.
Tyres (i.e. light and heavy vehicle tyres)	Solid	Tyres from light and heavy vehicles	180	280	N/A	Low	Segregation and storage in a designated area with no grass or other flammable material within a 10 m radius. Tyres would be transported off-site to a supplier for re-treading where practicable (c) or disposed on-site in a designated tyre disposal area in the backfilled pit (g).	Tyres would be disposed of within the approved ML areas.

\* In consideration of potential hazards, toxicity and dispersal mechanisms.

<sup>^</sup> Waste Management Hierarchy as defined in section 9 of the WRR Act: (c) waste reuse; (d) waste recycling; (f) treat waste before disposal; (g) waste disposal. The measures identified above will be implemented only once waste avoidance and reduction measures have been exhausted.

<sup>#</sup> The average annual disturbance of land (i.e. green waste) assuming the life of the Project is 79 years.