

16 | Waste



Section 16 Waste

16.1 Introduction

This section describes the generation of waste during the construction and operation stages of the Alpha Coal Project (Rail) (herein referred to as the Project) and identifies corresponding management and mitigation measures to avoid, reduce and minimise the potential waste.

Information regarding waste water and air emission impacts are detailed further in Volume 3, Section 11, 12, 13 and 14 of this EIS.

Information regarding waste treatment processes are not known at this stage and will be further documented during the detail design phase of the Project.

16.2 Waste Generation

16.2.1 Construction Waste Generation

16.2.1.1 Pre-construction Activities

Significant quantities of vegetation waste will be generated during the pre-construction works of the Project. A large area of vegetation will need to be cleared in order to construct the Project. This will comprise of a mixture of vegetation types, such as grasses, shrubs, trees and logs of varying sizes. The vegetation waste will be generated along the whole length of the Project.

In addition, pre-construction activities will involve the establishment of five workers' camps. Two existing and three temporary camps will be required. The camps will be made from transportable units built on temporary foundations. This would generate small amounts of typical construction waste including packaging, surplus construction materials such as timber, concrete, gravel, metals and plastics.

16.2.1.2 Civil Works

Civil works will comprise of bulk earthworks. The majority of the general fill for earthworks will be obtained from the cuttings/excavations and the Project has been designed so as to maximise the balance between cut and fill. However, there would be some amount (estimate is currently not known – further detail will be provided at the detailed design stage) of surplus spoil from earthworks and drainage construction – mostly material unsuitable for reuse as fill based on material properties.

Results of the geotechnical study indicated that the Project traverses mainly sandy, silty and gravely surficial soils. Minor volcanics, sandstone and other sedimentary rocks are also encountered along with basalt. Between chainages 335 km and 495 km the predominant rocks consist of granite, diorite, sandstones, siltstones and basalt. It also traverses pockets of low quality black clay soils. It is this material which will typically be spoiled. Unsuitable materials will generally be disposed off by adding to the embankment in non-load bearing areas.

The design will be further optimised during detailed design to account for likely quantities of unsuitable material obtained from detailed geotechnical investigations.

Other civil works including road and bridge construction may generate small quantities of surplus construction materials for example, asphalt, concrete and metals including steel reinforcement bars.

16.2.1.3 Track Construction

Track laying, and communications and signalling installation may generate some small quantities of electrical and telecommunications cabling off-cuts, plus packaging and cable reels.

16.2.1.4 Workers' Camps

The five workers' camps will accommodate 700 to 800 personnel per camp during the construction stage and will contain the following facilities:

- accommodation units;
- central dining/kitchen hall;
- enclosed food storage (include cold storage), preparation and serving areas;
- wet mess;
- laundry facilities;
- ablution blocks;
- septic sewerage system sufficient to accommodate for the number of workforce personnel;
- first aid station and designated vehicle;
- fuel, chemical and waste storage;
- potable water;
- communication facilities;
- recreational facilities; and
- parking facilities.

Therefore, typical domestic waste quantities are expected to be generated over the construction period from these camps. This would include a mixture of garbage (including food waste), recyclables (such as paper, cardboard, liquid paperboard, plastics, ferrous and non-ferrous metals, glass), spent oils and liquids, solvents, effluent etc.

Assuming approximately 2.2 kg of garbage and 0.8 kg of recyclables are generated per person per week from the construction camps, an estimated 3 tonnes of waste would be generated per week per camp.

The works are to be constructed in six or more stages. Each stage will have a Project Management office and will produce office waste.

There will be a sleeper production factory and rail welding facility adjacent to the marshalling yard in Salisbury Plains, 20 km from Abbot Point. At the marshalling yard, locomotives and rolling stock shall be delivered and commissioned. In addition, a workshop and other facilities to support track and rolling stock maintenance will be built to enable commencement of operations.

16.2.1.5 Decommissioning and rehabilitation

At the completion of the construction activities for civil and track work, temporary construction facilities and areas will be rehabilitated including removal of temporary construction camps. Demountable buildings will be removed and concrete slabs will be broken up. Concrete waste will then be stockpiled for removal. Decommissioning will generate large quantities of used office, dining, recreational and residential furniture, equipment that would require management/disposal.

16.2.1.6 Hazardous Wastes

Construction equipment will require fuel for operation, and maintenance activities will also be carried out. This may give rise to generation of waste oil and oily wastes.

Other hazardous wastes are not anticipated to be generated during the construction phase.

16.2.2 Operational Waste Generation

16.2.2.1 Railway Marshalling Yard and Maintenance Facilities

Used oils, oily rags, solvents, lubricants and fuel waste will be generated from servicing and maintenance activities at the railway marshalling and maintenance facilities. Office waste including paper, cardboard, packaging waste (plastics, glass, liquid paperboard, metals), food waste, effluent and light bulbs etc will also be generated.

16.2.2.2 Track and Facility Maintenance

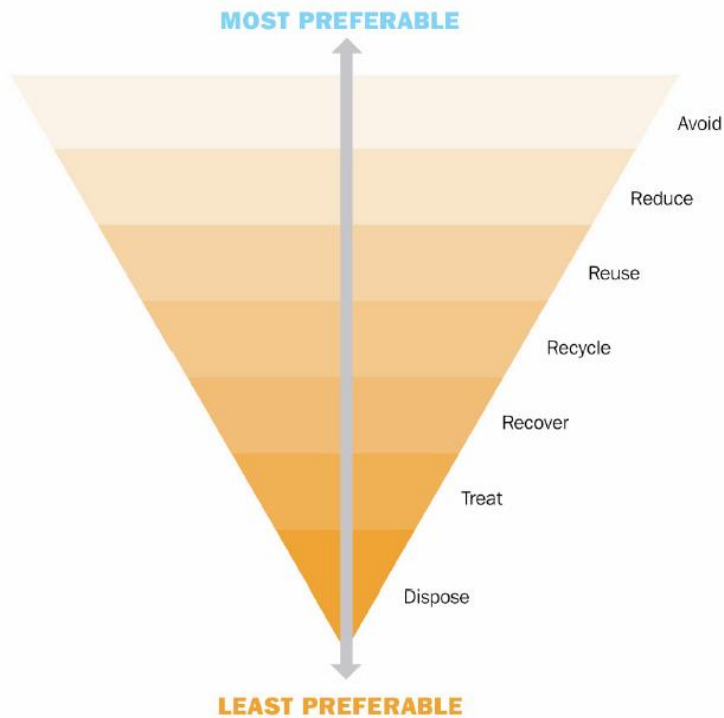
Track maintenance will require periodic track and ballast replacement and this will generate significant quantities of waste steel and ballast. Corridor management may require weeding or vegetation maintenance – some litter and vegetation waste, and chemical storage containers may be generated from corridor management activities.

16.3 Management of Impacts

16.3.1 Introduction

The management of waste from the Project will be in accordance with relevant legislation and the principles of the waste management hierarchy (refer to Figure 16-1). Preference would be given to waste avoidance and reduction, then reuse and recycling, recovery and then treatment and disposal.

Figure 16-1: Waste hierarchy



16.3.2 Construction Waste Management

As part of the Construction Environmental Management Plan (CEMP), two detailed waste management sub-plans will be prepared:

- a construction waste management sub-plan; and
- construction and operational camp waste management plan.

The sub-plans will be framed using the waste management hierarchy principles outlined in Figure 16-1. The sub-plans would be prepared prior to commencement of construction and be consistent with the *Environmental Protection Act 1994* (EPA) and the *Environmental Protection (Waste Management) Policy 2000*.

The sub-plans will:

- identify requirements for waste avoidance, reduction, reuse and recycling;
- provide procedures for handling, stockpiling/storage, and reuse of waste;
- identify disposal sites and relevant testing;
- set out procedures for meeting legislative requirements for transport of waste; and
- set out procedures for obtaining the required approvals for offsite management of waste.

Procedures to prevent spillage and emergency plans to manage environmental incidents would also be developed as part of the CEMP for the Project.

Waste disposal and recycling facilities will be provided on site by licensed, commercial operator/s in a designated waste transfer station area. Arrangements for any waste to be disposed at local council landfills would be negotiated with the licensed operator and the relevant local council.

Any transfers of waste would take place in accordance with legislated docket tracking systems that ensure waste reaches the appropriate destination. Only licensed contractors and drivers would be utilised. Any transporters would be expected to meet Hancock Prospecting Pty Ltd's (HPPL) (the Proponent) requirements for spill control and be equipped with emergency equipment.

Table 16-1 summarises the proposed management measures for construction waste.

Table 16-1: Management of construction waste

Material	Proposed management
Vegetation and landscape materials	<ul style="list-style-type: none"> • minimise clearance of vegetation where possible. • as far as practicable, ensure that vegetation materials are mulched and used onsite for rehabilitation and revegetation works. • larger vegetation materials such as hollow logs and hollow bearing trees will be stockpiled for use in rehabilitation activities or placed in adjoining bushland. Some may be able to be used on site to build habitat structures. • where vegetation can not be reused as part of the Project (as either chip/mulch or habitat structures, ensure it is transported to an organics processing facility for chipping, mulching or composting.
Spoil	<ul style="list-style-type: none"> • wherever practicable, reuse spoil onsite as backfill or to widen embankments. • transport any surplus soil that cannot be reused off – site to an approved landfill site where it can be used beneficially (e.g. landfill cap material or to backfill borrow pits). The material will then be tested in accordance with relevant legislation prior to disposal. • locate material and stockpiling areas for spoil within the construction corridor until its ultimate destination is determined.
Surplus construction materials	<ul style="list-style-type: none"> • ensure detailed designs and specifications minimise the generation of waste during construction. • the durability of materials will be considered so as to minimise the generation of waste during construction. • set up designated waste transfer areas and store/stockpile recoverable/recyclable waste separately from residual/non-recyclable waste. Stockpiles and storage areas will be appropriately managed. • steel – suitable steel off cuts or scrap will be recycled. • timber and plywood – suitable wood waste will be reused or recycled where possible, for example for firewood/wood chips. • other construction materials – non-recyclable construction materials will be disposed of at an appropriately licensed landfill in accordance with legislative requirements.
Spent oils, liquids and other chemicals from construction plant and equipment	<ul style="list-style-type: none"> • waste oils and liquids will be stored in designated containers and appropriately disposed of at a licensed facility or recycled where possible. • all chemicals, fuels and oils will be stored in appropriately bunded areas in accordance with Australian Standards to minimise potential for any spills. • paints and solvent use will be minimised by using pre-painted products where practicable. • used or waste paints and solvents will be recycled or sent for disposal by an

Material	Proposed management
	appropriately licensed facility.
General waste	<ul style="list-style-type: none"> recycling bins will be provided around construction camps, site offices and amenities. Recyclable materials such as glass, aluminium, plastic and paper will then be taken off site for recycling. garbage will be removed by an appropriate licensed contractor for disposal.
Decommissioning/ rehabilitation waste	<ul style="list-style-type: none"> used furniture and equipment from decommissioning will be sold / reused / donated to charity where possible. Otherwise it would be disposed of at an appropriately licensed landfill. other construction and demolition waste from decommissioning activities (such as concrete) will be recycled wherever practicable.

16.3.3 Operational Waste Management

Waste management is to be incorporated in the Operational Environmental Management Plan (OEMP) for the Project. The OEMP will detail appropriate procedures for the management of operational waste including storage, transport, recycling and disposal facilities and arrangements.

Table 16-2 summarises the proposed management measures for operational waste.

Table 16-2: Management of operational waste

Material	Proposed management
Servicing and maintenance	<ul style="list-style-type: none"> used oils, oily rags, solvents, lubricants, fuel etc will be stored in covered and bunded areas prior to appropriate disposal at a licensed facility or recycled where possible.
General waste	<ul style="list-style-type: none"> recyclables such as paper, cardboard, packaging waste (plastics, glass, liquid paperboard, metals will be collected by a licensed contractor for recycling. garbage will be disposed off at a licensed landfill facility.
Ballast	<ul style="list-style-type: none"> ballast will be removed and cleaned off site for reuse. Any ballast that cannot be reused as ballast will be sent for recycling (such as crushing and use as construction fill).
Steel track	<ul style="list-style-type: none"> steel track will be sent to scrap metal recycler for reuse and recycling.