Jellinbah Group

LAKE VERMONT RESOURCES ENVIRONMENTAL IMPACT STATEMENT

CHAPTER 15 WASTE

aarc ENVIRONMENTAL SOLUTIONS

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15 Waste Management

This chapter describes the expected waste streams (mineral and non-mineral) from the proposed Project activities during the construction, operation and decommissioning phases. This includes discussion of the expected waste quantities, characteristics, impact assessment, and mitigation and management strategies.

15.1 Environmental objective and outcomes

This chapter has been prepared to assist the DES in carrying out the environmental objective assessment in respect of the following environmental objective stated in the Project ToR:

> *Any waste generated, transported, or received as part of carrying out the activity is managed in a way that protects all environmental values.*

The chapter also demonstrates that the Project meets the performance outcomes in Schedule 8 of the EP Regulation:

> *Waste generated, transported, or received is managed in accordance with the waste and resource management hierarchy under the Waste Reduction and Recycling Act 2011; and*
>
> *if waste if disposed of, it is disposed of in a way that prevents or minimises adverse effects on environmental values.*

A geochemical assessment of mining waste has been undertaken for the Project by RGS Environmental Pty Ltd and is provided as Appendix D, Geochemical Assessment. A land-based effluent disposal assessment and model development has also been undertaken for the Project and is provided as Appendix S, Land-Based Effluent Disposal Assessment Report. These assessments were prepared in accordance with the requirements of the 'EIS Guideline – Waste' (DES 2020m).

Further, it is acknowledged that the existing Lake Vermont Mine EA currently authorises the disposal of waste on-site as Environmentally Relevant Activity (ERA) 60(1)(a), 'Operating a facility for disposing of waste less than 50,000 tonnes per year'. While this authorisation does exist, Lake Vermont currently disposes of all waste off-site through licensed waste contractors utilising licensed recovery centres.

15.2 Waste generation

The types of waste expected to be generated by the proposed Project include *non-mineral waste* (general waste), *mineral waste* (mining waste) and *mine-affected wastewater*.

15.2.1 Non-mineral waste

Non-mineral waste will be generated during:

1) the construction phase;
2) the operation phase; and
3) the decommissioning phase.

15.2.1.1 Construction phase

Waste generated in this phase will include:

- vegetation cleared from the infrastructure footprint of the Project;

- regulated waste (as defined by the EP Regulation), including used oils and oily wastes, paint residues, detergents, solvents, batteries and tyres;
- recyclable waste (e.g. plastics, metals, paper and cardboard);
- general waste (e.g. food scraps, non-recyclable plastics and office waste);
- re-useable and refurbishable items (e.g. pipes, fittings and pumps, etc.);
- used tyres from light and heavy vehicles;
- primary treated sewage effluent (prior to sewage treatment plant construction); and
- secondary treated sewage and Class C effluent for irrigation.

15.2.1.2 Operational phase

Waste generated in this phase will include:

- vegetation progressively cleared ahead of the development of the mine and out-of-pit spoil emplacements;
- regulated waste (as defined by the EP Regulation) including used oils and oily wastes, oil-contaminated materials (used oil filters and containers), greases and oily rags, paint residues, detergents, solvents, batteries and tyres;
- recyclable waste (e.g. plastics, metals, paper and cardboard);
- general waste (e.g. food scraps, non-recyclable plastics and office waste);
- reusable and refurbishable items (e.g. pipes, fittings and pumps);
- used tyres from light and heavy vehicles, conveyor belts and synthetic and natural rubber items;
- secondary treated sewage effluent, Class C effluent for irrigation, and residual sewage sludge;
- timber from packaging; and
- underground waste (e.g. packaging, cloths and pipe).

15.2.1.3 Rehabilitation and decommissioning phases:

Waste generated in these phases will include:

- regulated waste (as defined by the EP Regulation) including used oils and oily wastes, paint residues, detergents, solvents, batteries and tyres;
- general waste (e.g. food scraps, non-recyclable plastics, office waste);
- recyclable waste (e.g. codes 1, 2, 3 and 5 plastics, metals, paper and cardboard);
- reusable and refurbishable items (e.g. pipes, fittings, plant and equipment);
- used tyres from light and heavy vehicles; and
- secondary treated sewage effluent, Class C effluent for irrigation, and residual sewage sludge.

Infrastructure at the Project will be decommissioned in accordance with the PRCP (Appendix B, Progressive Rehabilitation and Closure Plan).

15.2.2 Mineral waste

During the construction phase, the Project is estimated to create approximately 100,000 m^3 of overburden waste rock (from construction of the drift). This waste rock material will be stockpiled for use in Project construction activities, such as the development of laydown areas and/or levees.

During operation of the underground Project, approximately 14.8 Mt of coal reject (coarse reject and tailing) material is expected to be produced as part of processing activities. The open-cut operational phase will produce an estimated 165 Mbcm of overburden waste rock and 2.8 Mt of coal rejects. Annual mineral waste production in relation to coal output is provided in Table 15.1.

15.2.2.1 Waste rock geochemical assessment

A geochemical assessment of mining waste materials (spoil) that will be produced by the Project is provided in Appendix D, Geochemical Assessment. Overburden (Section 4), interburden, roof, floor and parting materials have been analysed as part of the geochemical assessment, with the conclusion that the Project waste rock materials have low sulphur content. Sulphur is a central element within waste characterisation, and with the oxidation of sulphidic mine wastes (such as waste rock and coal reject material), there is a risk of releasing acid mine drainage (also known as acid rock drainage) into the receiving environment.

Analysis of Project waste rock materials revealed that the median content of sulphur is 0.01%, which is lower than the background median crustal abundance in unmineralised soils (0.07% sulphur). Materials containing less than 0.1% sulphur are generally considered to be barren of sulphur. The majority of sulphur present in the Project material analysed is in a non-sulphide form and, therefore, has negligible capacity to generate acidity. Project materials analysed have excess ANC and are classified as NAF, with a negative median net acid producing potential value of -41.2 kg H_2SO_4/t (sulphuric acid per tonne). Project waste rock is expected to generate 'slightly alkaline to alkaline' and low salinity run-off or seepage, which indicates low salinity characteristics.

Metal or metalloid concentrations of the Project waste rock are not enriched relative to guideline values or median values for unmineralised soils. Metals and metalloids have low solubility at the pH of leachate expected from bulk NAF waste rock, and dissolved metal concentrations in surface run-off are expected to be low and unlikely to pose significant risk to the quality of surface and groundwater resources.

Overburden materials classified as soils are sodic and may be prone to dispersion. Mining waste generated by the Project may be amenable to revegetation as part of the rehabilitation activities, with amelioration.

15.2.2.2 Coal reject material geochemical assessment

A geochemical assessment of coal and potential coal reject (coarse reject and tailing) materials to be produced by the Project is provided in Appendix D, Geochemical Assessment (Section 4). The assessment determined the following:

- Coal and coal reject material has neutral to slightly alkaline pH values, with low salinity leachate values.
- The median sulphur content of coal and coal reject material is 0.1%.
- The majority of coal samples contained sulphur in non-sulphide form, and a minority of samples exhibited sulphide proportions greater than 50%. Therefore, project coal and coal reject material are considered to have a negligible capacity to generate acidity, with a negative median NAPP value of -19.7 kg H_2SO_4/t recorded. All samples analysed had a negative NAPP.
- Metal and metalloid concentrations in Project coal and coal reject materials were also low, being below the National Environmental Protection Measure (NEPM) (NEPC 2013) guideline values, with the exception of molybdenum in one sample.

In summary, coal waste geochemical characteristics of the Project materials are considered to be of low risk to the environment.

Table 15.1: Estimated annual mineral waste generation in relation to coal output

Year	Underground Mining			Open-cut Mining (Satellite Pit)			
	ROM coal (t)	Product coal (t)	CHPP rejects (t)	ROM coal (t)	ROM waste (bcm)	Product coal (t)	CHPP rejects (t)
1 (2026)	120,599	104,829	15,770	—	—	—	—
2	407,558	373,109	34,449	—	—	—	—
3	3,854,215	3,403,760	450,455	—	—	—	—
4	6,389,931	5,733,715	656,216	—	—	—	—
5	6,707,875	6,056,206	651,669	—	—	—	—
6	6,928,790	6,234,064	694,726	—	—	—	—
7	6,340,317	5,688,199	652,118	—	—	—	—
8	5,337,080	4,725,249	611,831	—	—	—	—
9	5,356,817	4,468,218	888,599	—	—	—	—
10	4,868,204	4,059,046	809,158	—	—	—	—
11	5,446,513	4,498,854	947,659	—	—	—	—
12	3,931,421	3,282,333	649,088	—	—	—	—
13	4,861,426	4,108,503	752,923	—	—	—	—
14	5,377,038	4,539,002	838,036	—	—	—	—
15	5,931,230	5,049,339	881,891	—	—	—	—
16	4,490,033	3,928,561	561,472	—	—	—	—
17	4,739,102	4,181,096	558,006	—	—	—	—
18	5,065,826	4,458,430	607,396	—	—	—	—
19	4,577,298	4,006,933	570,365	—	—	—	—
20	4,733,743	4,085,390	648,353	258,707	13,532,224	200,436	58,271
21	5,725,404	4,820,442	904,962	1,066,768	15,963,723	844,570	222,198
22	4,410,978	3,594,433	816,545	1,321,576	17,578,874	1,072,284	249,292
23	2,965,948	2,322,704	643,244	1,276,587	17,621,022	1,063,526	213,061
24	—	—	—	1,401,996	17,074,784	1,136,094	265,902
25	—	—	—	1,488,154	17,249,295	1,157,223	330,931
26	—	—	—	1,442,902	17,832,792	1,034,341	408,561
27	—	—	—	1,316,800	17,822,767	956,998	359,802
28	—	—	—	1,451,066	17,108,187	1,148,838	302,228
29	—	—	—	1,924,539	12,755,867	1,577,244	347,295
30	—	—	—	395,669	1,106,802M	324,386	71,283
Total	108,567,347	93,722,417	14,844,931	13,344,763	165,646,337	10,515,939	2,828,824

15.2.3 Mine-affected wastewater

The Project will generate mine-affected water through the run-off of surface water over disturbed areas and dewatering of the underground mine. Potential impacts of mine-affected water are considered in Chapter 8, Surface Water.

Mine-affected water generated by the Project will be managed in accordance with EA conditions. It is noted, however, that no mine affected water releases to the receiving environment are proposed. Mine affected water in excess to site operational needs will be pumped to the Lake Vermont Mine for use and management.

15.3 Existing waste generation

The Project is an extension of the existing Lake Vermont Mine. The mine currently produces waste typical of a mining operation (as outlined in section 15.2.1) and manages this waste through off-site disposal in accordance with the existing Waste Management Plan. The Lake Vermont Mine and the proposed Project will operate under one EA and one Waste Management Plan (in the form of a proposed update to the existing Plan). The waste volume produced by the Project is expected to be consistent with that currently produced by the existing operation but with the addition of waste streams produced by underground mining activities (as detailed in section 15.2.1). All coal reject material generated by the Project will be managed on-site, as detailed in section 15.8.2.

15.4 Regional waste management facilities

The IRC operates nine regional waste management facilities with the potential to support the Project, with Dysart Waste Management Facility, Clermont Waste Management Facility and Moranbah Waste Management Facility being the most relevant to the Project. These facilities can receive general waste, waste oils, cooking oils, cardboard and paper, batteries, scrap metal, green waste, commingled recyclable waste and timber.

IRC waste management operates under the 'Isaac Waste Management Strategy 2020–2025' (IRC 2020) , which has been developed to meet the requirements of Queensland's *Waste Reduction and Recycling Act 2011*. The 'Isaac Waste Management Strategy 2020–2025' provides for:

> *[T]he proposed strategic direction for solid waste management that is generated from households, commercial and industrial premises, the mining industry and the construction and demolition sector.*

The underlying strategic intent of the 'Isaac Waste Management Strategy 2020–2025' is to reduce the amount of waste going to landfill by increasing waste recovery and recycling (IRC 2020).

The Moranbah Waste Management Facility was upgraded in 2018 and has the greatest capacity to receive waste from the Project. The facility is the primary landfill for the region and has an annual tonnage limit of 50,000 tonnes per year, with a forecast life until approximately 2045 (IRC 2020). It is significantly larger than the Clermont Waste Management Facility and the Dysart Waste Management Facility that have tonnage limits of 5,000 tonnes per year and 2,000 tonnes per year, respectively.

The Dysart Waste Management Facility currently receives waste from the existing Lake Vermont Mine and will continue to be utilised by the existing operation while receiving capacity exists. It is noted, however, that the IRC has been required to redirect certain wastes sent to this facility to the Moranbah facility in recent years (IRC 2020) to manage landfill availability. While it is the intent of the Proponent to continue to use IRC waste receival facilities for the existing Lake Vermont Mine, it is proposed that all future waste generated by the new underground operation and satellite open-cut which form the new extension Project, be managed on-site, under existing Lake Vermont Mine approvals. This strategy has been adopted in response to comments received from IRC, where waste from future Project approvals is desired to be managed by Proponents, on sites.

15.5 Potential impacts

Potential impacts that may arise from the Project wastes have been identified in order to address management and mitigation options that demonstrate compliance with Schedule 8 of the EP Regulation. The impacts of each waste type and reference to the chapter section describing management strategies is shown in Table 15.2.

Table 15.2: Waste streams and potential impacts

Waste type	Potential impacts	Management options
Non-mineral wastes		
General waste	• impacts to health and hygiene; • increased waste going to landfill; • ongoing pressure on local and regional commercial waste collection, treatment and disposal facilities; • land, surface water and groundwater contamination from leachate or run-off originating from unsealed waste collection and storage areas; • health and hygiene issues resulting from the inadequate management of putrescible wastes; • attraction of pest fauna species (e.g. feral pigs, black rats, feral cats, native rodents and scavenging bird species) arising from an inadequately managed waste collection area; • resource inefficiencies arising from inadequate recycling and/or reuse of waste materials; and • litter in and around the Project site: o visual amenity; o impacts to fauna and flora habitats; o increased risk of fire; and o creating a health risk by providing a mosquito breeding habitat.	section 15.7.1
Regulated waste	• risks to workplace health and safety resulting from unsafe or inadequate storage, containment and/or handling of hazardous wastes; • resource inefficiencies arising from inadequate recycling and/or reuse of waste materials; and • pollution to the receiving environment (e.g. surface water and land).	section 15.7.2
Sewage	• pollution to the receiving environment (e.g. surface water and land); • resource inefficiencies arising from inadequate recycling and/or reuse of waste materials; • spills or leaks into the surrounding environment; and • land, surface water and groundwater contamination from inappropriate and/or inadequate treatment and management of sewage effluent.	section 15.7.3
Mineral wastes		
Waste rock	• visual amenity; • land, surface water and groundwater contamination from seepage from waste rock emplacements; • resource inefficiencies arising from inadequate recycling and/or reuse of waste materials; and • impacts to visual amenity due to the planned spoil emplacements of excavated waste.	section 15.8.1

Waste type	Potential impacts	Management options
Coal reject	• increased likelihood of fire; • land, surface water and groundwater contamination from coal rejects stockpiles; • environmental and human impacts from improper storage and maintenance; and • impacts to visual amenity due to the planned spoil emplacements of excavated waste.	section 15.8.2

15.6 Waste management

The waste management principles used for the development of management measures to mitigate impacts of generated waste are outlined in section 15.6.1.

15.6.1 Waste management principles

Each potential waste stream generated by the Project and the most appropriate and effective avoidance and management methods are considered according to the following;

- the polluter pays principle;
- the user pays principle;
- the proximity principle; and
- the product stewardship principle.

15.6.1.1 Polluter pays principle

The polluter pays principle means that all costs associated with the management of waste should be borne by the persons who generated the waste.

All costs associated with the management of the Project waste will be borne by the Proponent.

15.6.1.2 User pays principle

The user pays principle means that all costs associated with the use of a resource should be included in the prices of the goods and services (including government services) that result from the use.

All waste management costs will be met by the Project. No government subsidy, incentive payment or grant has been accounted for.

15.6.1.3 Proximity principle

The proximity principle means that waste and recovered resources should be managed as close to the source of generation as possible.

Waste generated by the Project that cannot be recycled or repurposed, will be disposed of on-site (at the existing Lake Vermont Mine) under existing approvals. This strategy aligns to the proximity principle. For existing Lake Vermont Mine waste, this is proposed to continue to go to the Dysart Waste Management Facility, located approximately 20 km south of the Project.

15.6.1.4 Product stewardship principle

The product stewardship principle identifies shared responsibility between persons involved in the lifecycle of a product and the management of its impacts. Responsibilities may differ at each stage in the lifecycle of a product.

15.6.2 Waste management hierarchy

Potential impacts (environmental and otherwise) of waste will be managed in accordance with established industry practices and to contemporary community standards. All forms of waste expected to be generated by the Project have been assessed for their environmental risk, and management approaches have been developed with consideration to:

- the identified environmental risk;
- the available local and regional waste management services and facilities; and
- the waste management hierarchy (as presented in Figure 15.1 and outlined in sections 15.6.2.1 to 15.6.2.7).

The generation, transport and management of waste in accordance with the waste management hierarchy demonstrates meeting the first performance outcome of Schedule 8 of the EP Regulation.

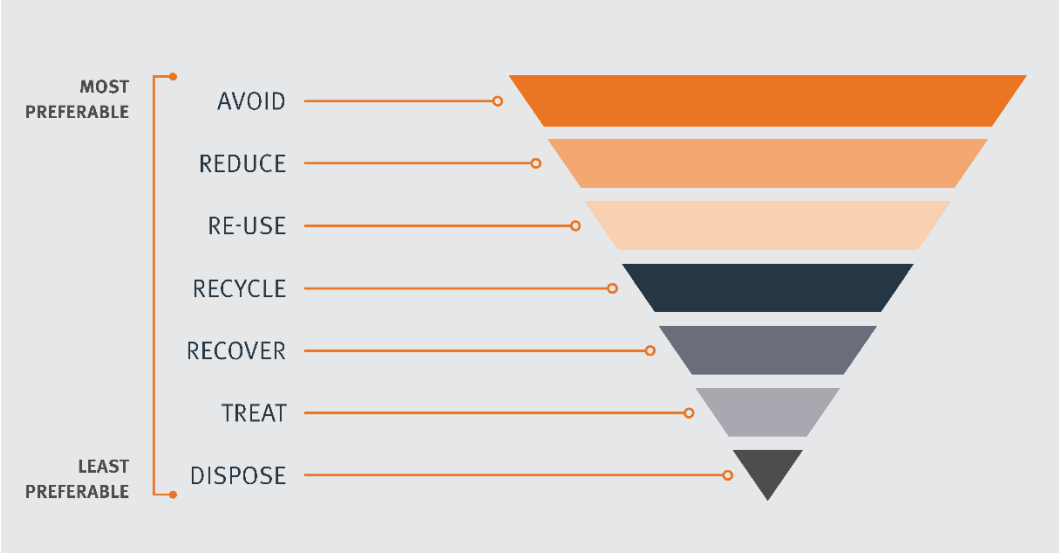

Figure 15.1: Waste and resource management hierarchy (after DSDMIP 2019)

15.6.2.1 Waste avoidance

When possible, raw materials will be delivered in bulk to minimise packaging waste. When bulk delivery is not feasible, consideration will be given to packaging and storage, and if practicable, preference will be given to returnable containers or containers and packaging utilising recyclable and/or biodegradable materials. The use of alternative raw materials will be considered when this achieves waste avoidance.

15.6.2.2 Cleaner production

To embed cleaner production concepts, the Project will consider preventative principles and seek to encompass eco-efficiency and pollution prevention to reduce risks to humans and the environment. This will be represented through updates to the existing Waste Management Plan.

There are several criteria ascribed to cleaner production, including:

- input substitution;
- product selection;
- process changes;
- reuse of resources;
- technology modifications; and
- closed-loop recycling.

The following actions satisfy cleaner production principles and are considered appropriate and feasible for the Project:

- The extent of ground disturbance during construction and operations will be limited through good Project planning and utilising current geological models and mine planning software.
- The Project and mine planning outcomes will be optimised by selecting the most efficient and productive mining machinery and equipment suited to the geological structure and sequence of the mine.
- Efficient and practicable coal extraction and processing technologies will be selected along with equipment suited to the geochemical and physical characteristics of the ROM coal.
- Recycling programs will be established for used materials whenever practicable and feasible.

15.6.2.3 Waste reduction

Waste produced by the Project will be reduced by limiting the quantity of materials brought on-site to those necessary for the operation. Purchases of materials and products will be considered according to the quality of the items, their fitness for purpose to maximise life expectancy, and their disposal requirements.

15.6.2.4 Waste reuse, recycling, reprocess and reclaim

The Project's waste recycling program will involve the principle of rebuild and reuse of equipment (and components) in favour of disposal. Equipment that will be preferentially reused include:

- mobile plant;
- plant components;
- filters;
- hydraulic oils; and
- plant tyres.

Waste collection points will be at the existing Lake Vermont workshop area and the new workshop area. These areas will facilitate the separation of waste and recyclable streams and provide storage infrastructure appropriate for the various waste streams on-site. This is currently well understood as a result of existing operations.

Recyclable material (including scrap metal, used batteries, paper and packaging materials, oil and fuel drums, waste oils, and solvents) will be stored at the workshop area for collection by licensed contractors. All oil will be stored within tanks located in the workshop area where it can be collected for reprocessing. Other potentially recyclable materials, such as light vehicle tyres, will be assessed at appropriate times to determine if new or innovative recycling technologies can be utilised so that resources can be reclaimed from these waste materials.

No waste material generated at the site will undergo resource recovery under the *Waste Reduction and Recycling Act 2011* 'End of Waste' framework.

15.6.2.5 Waste to energy

Residual waste that is not technically, environmentally or economically practicable to reuse or recycle has the potential to be used in a waste to energy process. The Project will not include any activities that produce energy from waste.

15.6.2.6 Treatment

There is no anticipated thermal treatment of waste to be undertaken by the Project. Treatment of sewage generated at the Project will occur on-site, with sewage treatment discussed in section 15.7.3.

Green waste produced by clearing of vegetation for infrastructure development will be stockpiled, for mulching or burning at appropriate times.

15.6.2.7 Disposal

Project wastes will be disposed of in accordance with Table 15.4. Tyres will be stored on-site in accordance with the 'Operational policy–mining, disposal and storage of scrap tyres at mine sites' (DES 2014). When practicable, purchase agreements for tyres will include take-back clauses and/or recycling opportunities. If surplus used tyres remain, these will be disposed of at depth, within waste rock emplacements.

Disposal of Project waste through on-site landfilling, will occur in accordance with relevant State and Local government requirements. The Lake Vermont Mine strategy for general waste, benign material and tyres is on-site burial in accordance with the Waste Management Plan and approvals. However, in practice collection and transport to offsite facilities is routinely undertaken for general waste and tyres. Both burial of these waste types and off-site disposal will continue under the proposed Project, subject to review and update to accommodate local government policy changes (refer Isaac Waste Management Strategy 2020–2025, IRC 2020). Where on-site landfilling practices are undertaken, they will be managed in accordance with the updated Waste Management Plan for the Lake Vermont Mine.

These proposed waste disposal methods prevent or minimise effects on environmental values, in accordance with Schedule 8 of the EP Regulation.

15.6.3 Waste generation and management

The anticipated Project waste generation and management strategies are presented in Table 15.4. The risk of causing harm listed in Table 15.4 was defined according to Table 15.3 in consideration of potential hazards, toxicity and dispersal mechanisms for each waste category prior to proposed management and mitigation strategies.

Table 15.3: Risk of causing harm level determination

Risk category	Risk of causing harm level determination
High	The event could happen easily or often (>60%), and may occur every year
Medium	The event has the potential to occur (30-60%), occurred elsewhere and may occur every 3 years
Low	The event has a low probability of occurring (<30%) and may occur every 10-30 years

Table 15.4: Anticipated waste generation and management strategies

Waste type/ waste category	Form	Source	Estimated quantity (per annum)		Risk attributes	Risk of harm without control[1]	Management strategies and storage (waste management hierarchy level)[2]	Proposed disposal methodology
			Construction	Operations				
Non- regulated, mineral waste								
Excavated waste (e.g. waste rock, overburden, etc.)	Solid	Mining activities	N/A	< 186 Mbcm	Potential for erosion and saline run-off	Low	Waste rock emplacements adjacent to pit and subsequently as infill of the open-cut mine behind the advancing mining operations. Waste rock emplacements to a maximum height of approximately 40 m above ground level (g).	Excavated waste will be disposed of within the approved ML; refer section 15.8.1.

Waste type/ waste category	Form	Source	Estimated quantity (per annum)		Risk attributes	Risk of harm without control[1]	Management strategies and storage (waste management hierarchy level)[2]	Proposed disposal methodology
			Construction	Operations				
Coal rejects	Solid	Mining activities	N/A	< 17.6 Mbcm	Potential for erosion and saline run-off, acid formation	Low	Moisture reduction by belt press filter and in-pit co-disposal with waste rock and/or behind the advancing open-cut operations (g).	No coal rejects will be disposed of within the Project area, with all rejects handled within the existing Lake Vermont Mine infrastructure. Management of coal rejects is addressed in detail in Chapter 6, Rehabilitation.

Waste type/ waste category	Form	Source	Estimated quantity (per annum)		Risk attributes	Risk of harm without control[1]	Management strategies and storage (waste management hierarchy level)[2]	Proposed disposal methodology
			Construction	Operations				
Non-regulated, non-mineral waste								
General waste (e.g. food scraps, non-recyclable plastics)	Solid	Kitchenettes, crib rooms, administration areas, workshops, underground areas etc.	900 t	1200 t	Putrescible; attractive to fauna and disease vectors	Medium	Project produced general waste will be collected in bins located within the MIA, for collection and transfer to the Lake Vermont Mine for disposal. Bins will be emptied regularly to prevent long holding periods (g).	General waste produced by the Project will be managed on-site (at the existing Lake Vermont Mine) under existing approvals.
Recyclable waste (e.g. aluminium, steel cans, recyclable plastics, paper towels, paper and cardboard)	Solid	Kitchenettes, crib rooms, administration areas, workshops, etc.	60 t	130 t	Generally inert, contaminants	Low	Stored on-site in bins for regular transport off-site by a licensed waste contractor for recycling (d).	Recyclable waste will be transported off-site by a licensed recycling contractor to an approved recycling facility.

Waste type/ waste category	Form	Source	Estimated quantity (per annum)		Risk attributes	Risk of harm without control[1]	Management strategies and storage (waste management hierarchy level)[2]	Proposed disposal methodology
			Construction	Operations				
Refurbishable items (e.g. pipe work and associated components, wing nuts, conveyor rollers and belt)	Solid	CHPP, workshops and underground operations	<10 t	<15 t	Generally inert, contaminants	Low	Items stockpiled within a designated area. If condition is acceptable, items will be reused directly or sold to other parties (c); where items are at end of life, they will be collected and disposed of as appropriate (g); where items are contaminated with hydrocarbons, they will be managed as regulated waste.	Reuse or disposal off-site by a licensed recycling contractor to an approved waste facility.
Green waste (e.g. grass, cleared timber and weeds)	Solid	Clearing of vegetation	<1000 m^3	<1000 m^3	Attractive to fauna	Low	Placed in timber stacks for reuse on-site during rehabilitation (c) with waste vegetation burned if/as required (g).	Green waste will be disposed of within the MLA.
Scrap metal (e.g. 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	100 t	470 t	Generally inert, contaminants	Low	Smaller items placed in scrap metal skip bins for collection by a licensed contractor. Larger items left in an accessible location where specific collection arrangements can be made. Greases and oils to be removed prior to placement of materials in skips. Licensed contractor to remove all scrap metals for segregation at a licensed recycling facility (d).	Scrap metal will be disposed of by a licensed contractor to an approved materials recycling facility.
Air filters (e.g. engine air filters)	Solid	Vehicle and machinery workshops	<1 t	<1 t	N/A	Low	Air filters temporarily stored in the appropriate air filter skip/bin for final disposal off-site (g).	Air filters will be transported off-site for refurbishment or disposal at an approved landfill.

Waste type/ waste category	Form	Source	Estimated quantity (per annum)		Risk attributes	Risk of harm without control[1]	Management strategies and storage (waste management hierarchy level)[2]	Proposed disposal methodology
			Construction	Operations				
Timber/wooden pallets (e.g. reusable pallets)	Solid	Workshops and administration areas	<1 t	<1 t	N/A	Low	Reusable pallets will be returned to suppliers (c). Other timber waste will be segregated for off-site disposal (g).	Timber that is not reusable will be transported off-site by a licensed waste contractor to an approved receiving facility.
Regulated, non-mineral waste								
Waste oils	Liquid	Machinery and vehicle maintenance and workshop	300 t	1300 t	Liquid	Medium	Collected and stored in designated self-bunded tanks for transport by licensed regulated waste contractor to a regulated waste receiver for reuse (c) or recycling (d).	Waste oils will be recycled by a licensed regulated waste contractor.
Engine oil/fuel filters	Solid/liquid	Vehicle and machinery maintenance at workshop	<5 t	<10 t	Liquid contents	Medium	Collected and stored in sealed oil filter disposal pod for transportation by a licensed regulated waste contractor for treatment (solvent wash) to recover oil (c).	Engine oil/fuel filters will be recycled by an approved refurbishment company.
Primary and/or secondary treated effluent	Liquid	Offices, workshops and bathhouse	<13 ML	<14.6 ML	Liquid	Medium	Construction phase: Collection and primary treatment (septic tanks) to be pumped out by a licensed contractor. Operations phase: treated effluent (f) irrigated to designated areas (c) compliant with relevant standards and EA conditions.	Off-site treatment and disposal for construction phase and treatment by package STP with irrigation to designated effluent areas during operations.
Sewage treatment sludge	Sludge	Sewage treatment process	3 t	10 t	Liquid	Medium	Sewage will be treated in compliance with relevant standards (g).	Removed by a licensed contractor for disposal at existing licensed facilities.

Waste type/ waste category	Form	Source	Estimated quantity (per annum)		Risk attributes	Risk of harm without control[1]	Management strategies and storage (waste management hierarchy level)[2]	Proposed disposal methodology
			Construction	Operations				
Empty waste oil containers	Solid	Workshop	<3 t	8 t	N/A	Medium	Segregate drums prior to collection by licensed regulated waste contractor for transport to a licensed waste receiver for treatment and recycling (d).	Empty waste oil containers will be recycled by a licensed regulated waste contractor.
Paints (e.g. general paint, air dried insulating varnish)	Liquid/gas	Industrial area infrastructure and workshop	<1 t	<1 t	Liquid	Medium	Collected at a designated bunded area for collection by licensed regulated waste contractor, for transport to a licensed regulated receiver for treatment (f) and disposal (g).	Paint will be disposed of off-site by licensed regulated waste contractor to an approved licensed facility.
Waste grease and hydrocarbon contaminated material (e.g. oily, greasy rages)	Solid/liquid	Workshop servicing trucks and light/heavy vehicles	<2 t	6 t	Semi-solid/liquid contents	Medium	Collected and stored in sealed disposal bin; transported by licensed regulated waste contractor to a licensed regulated waste receiver for appropriate disposal (g).	Disposed of off-site by a licensed regulated waste contractor to an approved licensed facility.
Miscellaneous chemicals (e.g. engine coolant, solvents, sealants, etc.)	Liquid/gas	Workshop and administration	< 10 kl	< 20 kl	Liquid	Medium	Collected and stored in sealed disposal bin; transported by licensed regulated waste contractor to a licensed regulated waste receiver for treatment and disposal (g).	Miscellaneous chemicals will be disposed of off-site by a licensed regulated waste contractor to an approved licensed facility (e.g. Moranbah).
Batteries (e.g. dry cell, gel cell, lead acid)	Solid	Operation of portable electrical equipment (radios, phones, etc.) within the workshop and other areas	<3 t	17 t	Liquid contents	Medium	Segregated and stored within dedicated containers in battery storage area for collection by licensed regulated waste transport contractor to a licensed regulated waste facility for recycling (d) or disposal (g).	Batteries will be disposed of off-site by a licensed regulated waste contactor to an approved licensed recycling facility.

Waste type/ waste category	Form	Source	Estimated quantity (per annum)		Risk attributes	Risk of harm without control[1]	Management strategies and storage (waste management hierarchy level)[2]	Proposed disposal methodology
			Construction	Operations				
Ozone depleting substances (e.g. refrigerants, air-conditioning gases)	Liquid/gas	Air-conditioning units, fridges and cars throughout site	50 kg	150 kg	Liquid or fumes	High	Ozone depleting substances to be contained at the source in cylinders and returned to the supplier for reuse and recycling (c)(d).	Ozone depleting substances will be recycled by a licensed regulated waste contractor.
Tyres (e.g. light and heavy vehicle tyres)	Solid	Tyres from light and heavy vehicles	300 t	700 t	N/A	Low	Segregated and stored in a designated area with no grass or other flammable material within a 10 m radius; tyres to 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 will be disposed of within spoil pits.

[1] Risk of, causing harm in absence of management or mitigation strategies in consideration of potential hazards, toxicity and dispersal mechanisms.

[2] References to the waste management hierarchy as defined in section 9 of the *Waste Reduction and Recycling Act 2011*: (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.

15.6.4 Decommissioning and rehabilitation

The Project will undergo progressively staged decommissioning and rehabilitation. Decommissioning of Project infrastructure will occur in accordance with the PRCP (refer to Appendix B, Progressive Rehabilitation and Closure Plan).

Waste generated during the decommissioning phase will be managed in accordance with the waste management hierarchy (per section 15.6.2). Equipment decommissioned from the Project will be repurposed to other operations when practicable. The decommissioning process is expected to generate regulated wastes, including hydrocarbon wastes, detergents, tyres, batteries, solvents, paints and chemicals. Non-regulated wastes expected to be generated include construction materials such as concrete, road base, timber, metal and bricks. Waste disposal during the decommissioning phase will continue in accordance with the methodologies set out in Table 15.4.

15.6.5 Natural resource use efficiency: Water

Raw water will be required by the Project to support construction activities, dust suppression, coal processing and to supply the potable water treatment plant. During the construction phase, water will initially be obtained from Sunwater's Eungella Pipeline *via* the Lake Vermont Mine offtake. Following mine construction, mine dewatering and surface run-off water captured and stored within water dams is expected to be sufficient to meet the majority of the Project needs. The Project water balance is discussed in detail in Chapter 8, Surface Water.

Water available on-site will be used preferentially to accessing external water sources, thereby driving the efficient use of this resource for the Project. Water balance modelling for the Project indicates that with the preferential utilisation of on-site water sources, the Project's water demand will be met by on-site sources for the operation phase of the Project. Water flow analysis for the Project construction phase is presented in Figure 15.2, while the operational phase is presented in Figure 15.3.

Water resources and management is further discussed in 'Chapter 8, Surface Water'.

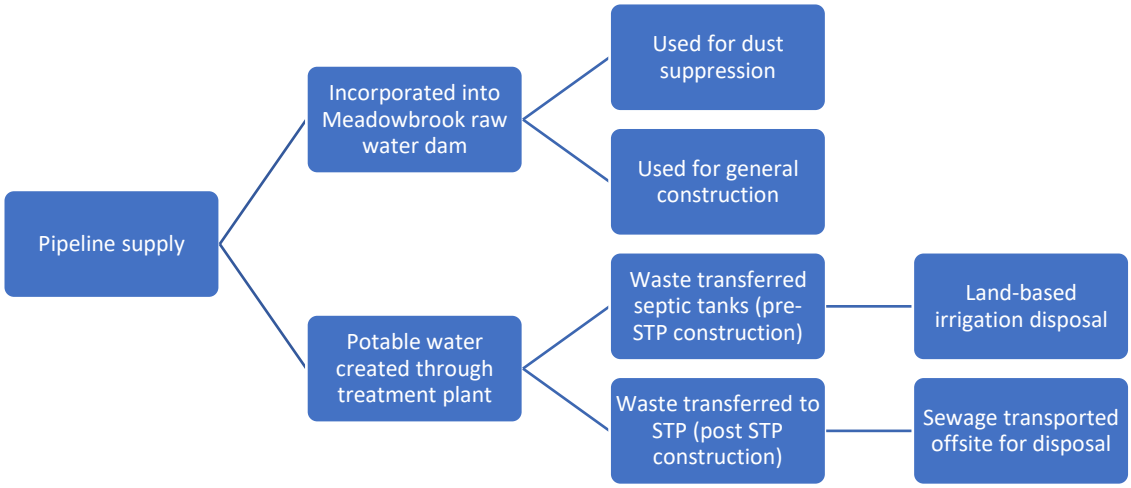

Figure 15.2: Water resource use material flow analysis for construction phase

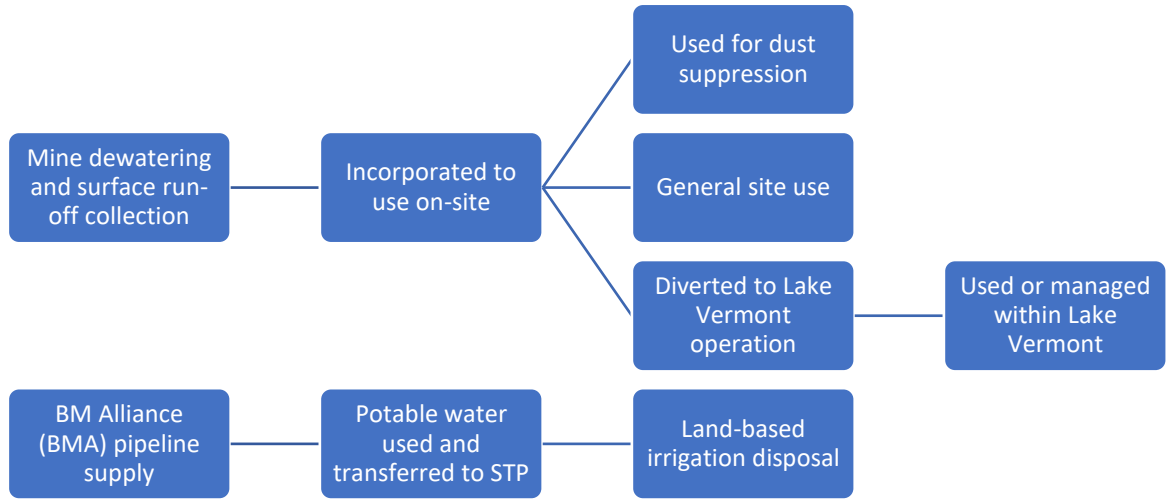

Figure 15.3: Water resource use material flow analysis for operational phase

15.6.6 Natural resource use efficiency: Energy

The Project power supply will be via the existing Ergon Energy Vermont substation located adjacent to the existing Lake Vermont Mine CHPP. Additional infrastructure required to power the Project includes an extension to the existing 66 kV ETL (traversing the Project Infrastructure corridor) and a new 66 kV/22 kV electrical substation and cables (providing electricity supply to the underground via surface to seam boreholes). The electricity resource flow analysis for the operational phase of the Project is presented in Figure 15.4.

Diesel-powered generators and/or solar power units will be used during construction to supply electricity prior to the electricity infrastructure being developed. Back-up generators will be available to support the operational phase, when required. Electrical energy use will be regularly reviewed for efficiency measures.

A diesel storage facility will be established at the MIA for the refuelling of vehicles. Vehicles will be maintained for fuel efficiency, and new vehicle purchases will be made cognisant of diesel consumption rates.

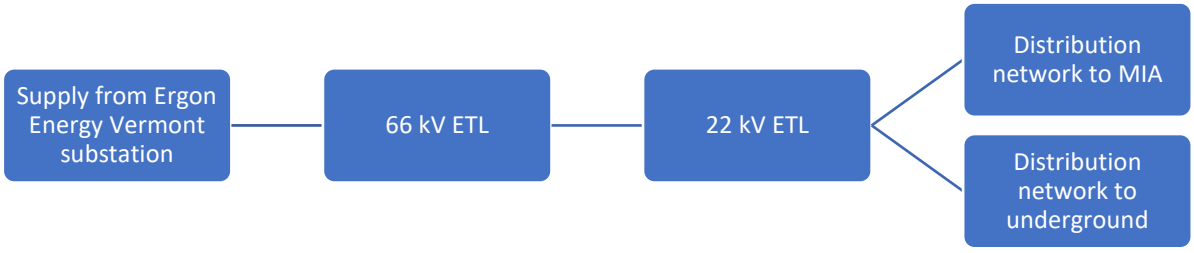

Figure 15.4: Electricity resource use energy flow analysis

15.7 Non-mineral waste management

A designated on-site waste collection area will allow for the temporary collection, segregation and storage of waste prior to its disposal. Skips, bins and other receptacles will be located throughout the MIA (including at the workshop and office areas) to facilitate the collection and segregation of waste streams.

15.7.1 General waste management

15.7.1.1 Non-recyclable general waste

Non-recyclable general waste, including putrescible and non-recyclable/refurbishable wastes, will be collected in bins for transfer from the Project MIA to the Lake Vermont Mine. Waste will be disposed of in a residual void at the Lake Vermont Mine, in accordance with existing approvals.

15.7.1.2 Recyclable general waste

Recyclable waste, including paper, carboard, metal cans and some plastics, will be segregated from general waste on-site and placed into appropriate storage containers for transport, such as skips. Collection and transport will be carried out by a licensed waste contractor for off-site recycling at Dysart or Moranbah Waste Management Facilities.

15.7.2 Regulated waste management

Regulated wastes, including waste oils, oil filters, waste grease, paints, various hydrocarbon contaminated materials and sludge resulting from the treatment of sewage and water, will be handled and disposed of in accordance with the properties of the specific materials.

The most significant regulated waste stream generated by the Project will be waste oil, which will be transported off-site by a regulated waste transporter to an authorised regulated waste facility for recycling. Minor regulated waste streams (Table 15.4) will be collected and stored within the Project waste collection facilities, and batch disposed of to various specialist waste treatment, recycling or disposal facilities. It is feasible for the Project area to be serviced by authorised regulated waste transporters which is demonstrated by the existing servicing of the adjacent Lake Vermont Mine.

Regulated wastes will be stored in fuel/chemical storage areas with adequate bunding and in areas equipped for immediate clean up of spills. Engine oil and fuel filters will be stored in appropriate sealed oil filter disposal pods prior to collection and transport. Hydrocarbon contaminated materials will be collected and stored in sealed, regulated disposal bins. Sewage and water treatment sludge will be generated by the sewage and water treatment systems in quantities suitable to be transported off-site for disposal. The sewage and water treatment sludge will be stored in the treatment facilities until collection a licensed contractor and disposed of at a licensed facility as is undertaken for these waste types at the existing Lake Vermont Mine. Sewage treatment is discussed in further detail in section 15.7.3.

All areas in which hazardous materials and wastes are to be stored will include a secondary containment to prevent occurrence of spills or leaks. The containers will also be sealed and secure to prevent movement, leaks or spill that may occur, including in the event of extreme weather (e.g. flooding, earthquake). Any highly flammable liquids will be stored in self-bunded storage containers or tanks and isolated within the MIA under AS 1940:2017, ‘The storage and handling of flammable and combustible liquids’.

The existing Lake Vermont Mine has implemented a Chemical and Fuel Management Plan that outlines storage considerations and spill prevention measures which are relevant to regulated wastes. These include consideration of design and location of the storage units and infrastructure including:

- site conditions and use of adjacent areas;
- design of equipment and infrastructure to minimise fire occurrence;
- separation of potential hazards;
- spill control measures:
    - access to MSDS for all chemicals;
    - using and maintaining suitable storage facilities;
    - using a Spill Response Procedure; and

- incident report forms.

15.7.3 Sewage management

During the construction phase, a primary sewage treatment process consisting of septic tanks for the collection of sewage will be installed. Primary treated effluent and sludge by-products will be routinely transported to existing sewage treatment facilities by suitably licensed contractors for processing and disposal. A package STP will be constructed during this phase of works to support operational effluent management, and used once operational.

After STP construction is complete, and by the operations phase, sewage generated at the MIA will be pumped to the package STP by underground sewage pump stations and underground rising mains. The STP peak design capacity will be adequate for the maximum Project workforce of 200 workers on shift generating 200 L per day and will have secondary treatment capability and the ability to produce Class C effluent for irrigation. The collection system will utilise an appropriately sized pump station to minimise the retention of raw sewage and mitigate the potential for odour and volatile organic compounds. All equipment and control panels will be located in a control room at the MIA. Wet weather storage of 120 m^3 will be located adjacent to the plant to ensure irrigation of saturated soil is avoided during wet weather periods. The location of the STP and associated effluent disposal infrastructure is shown on Figure 3.24.

Waste residual sludge removal is expected to be required every 12–18 months. This will be undertaken by a licensed waste contractor, with disposal at a licensed facility.

The MEDLI ML software has been used by Cardno (Qld) Pty Ltd (2022) to model the proposed irrigation of treated effluent to land, and their MEDLI modelling report is provided as Appendix S, Land Based Effluent Disposal Assessment (Section 2). It has been conservatively estimated that a maximum of 200 workers will be on-site at any one time and that each worker will generate a daily wastewater volume of 200 L, consistent with Queensland's Environmental Protection Regulation 2019.

Modelled treated effluent quality release limits are presented in Table 15.5. It has been determined that the effluent can be irrigated at a maximum of 1.1 mm/day over the proposed area of 3.6 ha (detailed below) that is provided over both proposed effluent irrigate areas (Figure 3.24). This will prevent impacts from nutrient leaching, runoff or overflow. These limits were determined as appropriate for irrigation quality release for the Project as detailed in Appendix S (Land based Effluent and Disposal Assessment, section 4.2). It is noted that these release limits are derived from the following sources:

- the 'Eligibility Criteria and Standard Conditions for Sewage Treatment Works' (ERA 63)–Version 2 (DEHP, 2016); and
- the Australian Standard: 'On-site domestic wastewater management' (AS/NZ 1547:2012a).

Table 15.5: Treated effluent for irrigation quality release limits

Quality characteristics	Release limit	Limit type
Total nitrogen[a]	60 mg/L[c]	Maximum
Total phosphorus [a]	20 mg/L[c]	Maximum
EC [a]	1600 µs/cm	Maximum
pH [a]	5.0–8.5	Range
Total residual chlorine [a]	1 mg/L	Maximum

Quality characteristics	Release limit	Limit type
E. coli [a]	<1000 cfu/100 ml	Maximum

[a] Source: DEHP (2016)
[b] Source: AS/NZ 1547
[c] Long-term release limit concentrations

The proposed land-based effluent disposal area has been assessed as part of the MEDLI modelling work (refer to Appendix S, Land Based Effluent Disposal Assessment Report, Section 1.1). Consequently, design of the effluent disposal area will incorporate the following attributes:

- It will be located within the MIA bunding to protect it from a 1% AEP flood event.
- It will be located proximate to the wastewater source, reducing effluent transport requirements.
- It will only be used for treated effluent disposal.
- It will be inaccessible to livestock.
- It will be constructed to contain run-off and seepage within its designated area.
- It will have appropriate buffer areas that will be maintained.

The modelled extent of the required effluent irrigation area is 3.6 ha (refer Appendix S, Land Based Effluent Disposal Assessment Report, Section 8). This area has been defined to meet the required attributes, as shown in Figure 3.24 and has been determined based on the conservative estimated generation of 40 m^3/day of secondary treated effluent. The proposed effluent irrigation area is provided across two locations in the north of the MIA serviced by pipework from the wet weather store and STP. The two areas are proposed to ensure the irrigation area determined to be required by modelling is available. The two irrigation areas will be used consecutively, and in parallel where required by operational conditions.

The irrigation system and disposal area will be managed in accordance with AS/NZS 1547:2012a, with consideration of the following parameters:

- The irrigation area will be a designated disposal area with clearly delineated boundaries and access restrictions.
- The irrigation system will be designed to distribute effluent evenly into the designated area, with control of droplet size, throw and plume height to mitigate aerosol dispersion so that likelihood of wind drift is negligible.
- A buffer area for potential spray distances will be maintained in accordance with the 'Technical guideline for the disposal of effluent using irrigation' (Tennakoon and Ramsay, 2020).
- The irrigation area pastures will be maintained by mowing and removing grass clippings.
- Soil monitoring will be undertaken at an appropriate frequency.

Sewage sludge will be generated by the sewage treatment system. The sludge is classified as a regulated waste and will be removed from the Project site by a licensed contractor and disposed of at a licensed facility.

15.7.4 Non-mineral waste management plan

An updated Waste Management Plan will be developed that details the procedures for the management of non-mineral waste generated during operation of the Project. The plan will identify waste streams, monitor the quantities of waste generated, identify measures to minimise waste generation and ensure that waste is correctly stored, handled and disposed of.

The updated Waste Management Plan will incorporate:

- management practices that will be utilised to store, handle and dispose of waste on-site;
- measures to simplify the categorisation of waste into general waste, various recyclable wastes and regulated waste;
- designation of general waste collection bins, including bin labelling and emptying schedules;
- storage measures for waste oils, chemicals, batteries and other hazardous and/or regulated substances;
- measures for allocating recyclable waste into separate recyclable streams, including paper and cardboard, metals and recyclable plastics;
- measures for used tyre storage and disposal to be in accordance with the operational policy 'Disposal and storage of scrap tyres at mine sites' (DES, 2014), including the recording of potential on-site tyre disposal locations;
- storage measures for all waste types (e.g. metals, paper, oils, batteries, general waste, etc.) in accordance with:
    - public health, hygiene and safety standards; and
    - flammable liquid storage standards (AS 1940:2017, 'The storage and handling of flammable and combustible liquids');
- measures for storage of regulated and/or hazardous waste to ensure that the potential for environmental harm is minimised;
- waste tracking procedures as defined by Schedule 11 of the EP Regulation in accordance with the requirements of Part 9 of the EP Regulation; and
- criterion for waste management performance success and review periods.

15.8 Mineral waste management

The management of overburden waste rock materials is outlined in this section, with additional details specifically related to their placement and rehabilitation detailed in Chapter 6, Rehabilitation. Waste rock will be placed in out-of-pit emplacements while an initial mining pit is created. It will then be placed in-pit as operations progress.

Coal rejects will be produced and disposed of within the existing Lake Vermont Mine. Coal waste geochemical characteristics are considered to present a low risk of environmental harm. Solid mineral waste generated by the Project is discussed in detail in Chapter 6, Rehabilitation.

15.8.1 Waste rock management

During the construction phase, the Project is estimated to create approximately 100,000 m^3 of overburden waste rock (from construction of the drift). This waste rock material will be stockpiled for use in Project construction activities, such as the development of laydown areas and/or levees.

The open-cut operational phase will produce an estimated 165 Mbcm of overburden waste rock. Annual waste rock volumes are detailed in Table 15.1 along with proposed mining rates. Overburden generated by open pit mining will initially be placed in two out-of-pit waste rock emplacements adjacent to the pit and then in-pit as operations progress. Throughout the operational phase of open pit mining, waste rock will progressively be placed back into the pit as space becomes available. Progressive rehabilitation will be undertaken as the waste rock emplacements are no longer required for mining operations, consistent with the Project PRCP (refer to Appendix B, Progressive Rehabilitation and Closure Plan, Section 3.5.8).

Waste rock geochemical characteristics indicate a very low presence of sulphur, with negligible capacity to produce acid drainage (refer section 15.2.2.1). Project waste rock is also expected to generate low salinity run-off or seepage due to its low salinity characteristics. Metal or metalloid concentrations of Project waste rock is not enriched relative to guideline values or median values for unmineralised soils. As such, management of waste rock material is considered to present a low risk of environmental harm.

15.8.2 Coal reject management

During the underground operation, approximately 14.8 Mt of coal reject material is expected to be produced, with the open-cut operation producing a further volume of approximately 2.8 Mt. Annual coal reject volumes are provided in Table 15.1.

No coal rejects will be disposed of within the Project area, with all rejects to be handled within existing Lake Vermont Mine infrastructure. Management of coal rejects is addressed in detail in Chapter 6, Rehabilitation.

A geochemical assessment of coal and potential coal reject materials indicates neutral to slightly alkaline pH values and low salinity leachate values. The median sulphur content of coal and coal reject material is also very low (refer section 15.2.2.2). The majority of coal samples contained sulphur in non-sulphide form. Therefore, the Project coal rejects are considered to have a negligible capacity to generate acidity and will present a low risk of environmental harm to the receiving environment. Management of coal rejects is addressed in detail in Chapter 6, Rehabilitation.

15.8.3 Rejects management plan

Lake Vermont Mine currently operates under a Mine Waste Management Plan in accordance with existing EA conditions. This Mine Waste Management Plan will be updated to detail the procedures for the management of coal rejects generated during operation of the Project. The updated plan will include provisions for:

- containment of tailings;
- management of seepage and leachates during operations and the foreseeable future;
- controlling fugitive emissions to air;
- programming progressive sampling and characterisation to identify acid producing potential and metal concentrations of tailings;
- maintaining records of the relative locations of any other waste stored within the tailings; and
- rehabilitation strategies.

monitoring of rehabilitation, research and/or trials to verify the requirements and methods for decommissioning and final rehabilitation of tailings, including the prevention and management of acid mine drainage, erosion minimisation and establishment of vegetation cover. Management of coal reject material, including the plan for disposal, is detailed in Chapter 6, Rehabilitation.

15.9 Performance monitoring and review

Records of waste streams, including quantities, management practices, details of disposal, details of transport and details of disposal contractors, will be maintained in accordance with the updated Waste Management Plan.

The updated Waste Management Plan will prescribe employee obligations for reporting waste management incidents in accordance with Section 320B of the EP Act. Corrective actions will be recorded, and responsibilities will be assigned to the appropriate site personnel for action and close-out.

In addition to the performance monitoring specified within the Waste Management Plan, performance indicator targets will be applied as presented in Table 15.6. The plan will also specify the auditing requirements of the waste monitoring program, including inspections of facilities and reporting of inspections.

Table 15.6: Performance indicators for waste management

Performance indicator	Target	Timeframe
Compliance with EA conditions relevant to waste management	100% compliance.	Ongoing throughout the life of mine
Apply the waste hierarchy to management of Project waste	Review waste production and identify minimisation measures. Control strategies applied to each waste type that is consistent with the waste hierarchy. Review waste management to identify opportunities for improvement.	Prior to project commencement and ongoing during the life of mine Periodic review of waste management protocols
Safe storage and disposal of hazardous substances	Compliance with AS 1940, 'The storage and handling of flammable and combustible liquids'.	Prior to Project commencement and ongoing during the life of mine
Safe on-site disposal of treated effluent	Compliance with AS 1547, 'On-site domestic wastewater management.'	
Undertake a waste minimisation program	Waste minimisation program developed and implemented.	

15.10 Mitigation and management measures

The existing Lake Vermont Mine has demonstrated a capability to manage the environmental impacts associated with both mineral and non-mineral waste materials. Central to this is the operation of a Waste Management Plan and a Mine Waste Management Plan.

The existing Lake Vermont Waste Management Plan addresses the following:

- waste management principles;
- identification of waste produced at the site;
- strategies for waste management including;
    - waste minimisation;
    - waste reuse and recycling;
    - waste treatment; and
    - waste disposal;
- description of the waste streams;
- reporting and recording of waste management;
- emergency and incident management;
- waste management review and monitoring;
- emergency and contingency plans; and
- provisions for the tracking of waste.

These existing plans will be updated to include consideration of management activities associated with the proposed Project's waste management processes presented in Table 15.4

As part of their induction processes and toolbox talks, employees will be advised of their obligations to report incidents that will cause, or have the potential to cause, material or serious environmental harm.