

WASTE MANAGEMENT PLAN

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Project Name: Nolans Rare Earths Project

REVISION HISTORY

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1.0 INTRODUCTION

1.1 Background

The Nolans Rare Earths Project (the Project) is located approximately 135 km northwest of Alice Springs in the Northern Territory (NT). The Project is owned and operated by Arafura Rare Earths Limited (also incorporated as Arafura Nolans Project Pty Ltd) (the Company, or Arafura). The Project targets the Nolans Bore mineral deposit for rare earth elements.

Project activities will include earthworks and construction, mining, processing, rehabilitation and decommissioning of an open-cut, rare earth mine, and its associated infrastructure. The Project site comprises five main areas linked by access roads, which includes: the mine site, explosives magazine, processing plant, accommodation village, and borefield areas.

1.2 Purpose

This management plan has been developed to outline how waste will be managed at the Project site to reduce and mitigate potential environmental risks arising from waste generation, handling, storage, and disposal. Including the approach and management hierarchy to be used in decision making and Project management.

This document is an integral part of the Project's Environmental and Social Management System (ESMS). It is a dynamic document, a receptacle for information which is to be reviewed annually (or as determined by regulatory or other requirements) and updated where changes are required. This cycle of continual improvement enables an accurate reflection of the current operational requirements and practices while allowing for responsiveness to conditions, input from stakeholders, and flexibility in planning and prioritisation.

All referenced Company policies, standards, registers, operational procedures, activity specific documents, forms and templates are stored and accessible from Arafura's ESMS.

1.3 Objectives

This management plan aims to prevent potential environmental impact from waste by outlining the measures that will be taken to:

- Avoid/Reduce the amount of waste produced by Project activities;
- Optimise recycling and reuse of wastes wherever feasible;
- Appropriately identify and characterise waste streams;
- Appropriately sort and store wastes according to type;
- Ensure appropriate disposal pathways are identified for each waste type;
- Ensure on site disposal is sited, designed, and maintained appropriately;
- Ensure transport of waste offsite is managed appropriately.

The key waste management objective, target, and Key Performance Indicator (KPI) are outlined within Table 1—1 below.

Table 1—1 Mitigation Objectives

Objective	Target	KPI
Prevent environmental impact from waste generation	Zero environmental incidents associated with the landfill and waste collection sites.	Number of incidents which occur in relation to the landfill and waste generation sites.

1.4 Responsibility

It is the responsibility of Arafura's environment team to develop and review this plan; and to monitor its implementation and effectiveness on site.

It is the responsibility of the site operations team to oversee and manage the activities required on site to implement this plan.

1.5 Legislation and Guidelines

The Project is obliged to comply with all relevant environmental legislation and regulatory requirements.

Of most relevance to the management of waste at the Project site are:

- *Environment Protection Act 2019* (NT)
- *Waste Management and Pollution Control Act 1998* (WMPC Act) (NT) (although does not apply to a contaminant or waste resulting from a mining activity)
- *Soil Conservation and Land Utilisation Act 1969* (NT)
- *National Waste Policy: Less waste more resources* (Commonwealth Government 2018)
- *Guidelines for the Siting, Design and Management of Solid Waste Disposal Sites in the Northern Territory* (NT EPA Guidelines 2013).

Within the Project area approvals for waste management and landfill planning are being managed under the Environment Protection Act 2019 through the environmental licensing regime, as described within the Project's *Mine Management Plan* (NRE-0000-O-PLN-O-0001) (MMP).

2.0 APPROACH TO WASTE MANAGEMENT

A risk-based approach is being taken to manage the potential impacts of waste resulting from Project activities. As outlined within the below section, the potential environmental impacts arising from Project activities related to waste have been identified; mitigation measures identified to manage these risks; and an ongoing Trigger-Action-Response Plan developed to ensure continual improvement of waste management at the Project site.

2.1 Potential Environmental Impacts

The key potential environmental impacts arising from Project activities in relation to waste management are outlined within Table 2—1 below.

Risk identification and assessment of the potential impacts has been further detailed within Arafura's broader Environmental and Social Risk Assessment, which is reviewed and updated on a regular basis.

Table 2—1 Key Potential Environmental Impacts arising from Waste Management on site

Activity	Potential Environmental Impact
Operation of onsite landfill	<p>If the landfill is inappropriately sited or designed:</p> <ul style="list-style-type: none"> ▪ Production of leachate leading to groundwater contamination ▪ Erosion and surface release of contaminants during rainfall events ▪ Excessive release of methane gases ▪ Cause of unpleasant odours.
Storage of waste	<p>If waste is left uncovered and inappropriately stored:</p> <ul style="list-style-type: none"> ▪ Attracts and provides a food source for pest species, leading to an increase in their occurrence and population numbers on site, such as cats, dingos, etc. ▪ Impacts to native fauna from increased pest numbers, such as predation and competition for food and habitat.
Storage of hazardous waste	<p>If hazardous waste is inappropriately stored, transported, or disposed:</p> <ul style="list-style-type: none"> ▪ Leading to uncontrolled release of hazardous substances and contamination of any of the below: <ul style="list-style-type: none"> • Soil/sediment • Surface water • Groundwater • Surrounding flora and fauna ▪ Causing an increased fire risk ▪ Impacting human health. <p>This could include chemically or radioactively hazardous wastes with varying levels of consequence.</p>

2.2 Mitigation Measures

Mitigation measures have been identified, as shown in Table 2—2 below and further detailed throughout this plan, which will be implemented on site to minimise the potential environmental risks identified. The timing and responsibility for implementation are also outlined. The waste hierarchy is also used to guide the planning and management of wastes and reduce risks, as outlined within Section 4.0 below.

Table 2—2 Mitigation Measures

Mitigation Measure	Timing	Responsibility
Site Induction		
<p>Site inductions will include the following specific waste management components:</p> <ul style="list-style-type: none"> Waste management hierarchy Identification of waste types (classification) Waste collection, storage, handling, and transport requirements Safe work practices (particularly in relation to radioactive and hazardous wastes) Waste collection and disposal locations on site. 	Site Induction	All personnel
Waste Hierarchy		
<p>A waste hierarchy will be implemented on site including:</p> <ul style="list-style-type: none"> Avoid and Reduce Reuse, Recycle and Recover Treatment Disposal. 	At all times	All personnel
Hazardous Wastes		
Waste oils are to be stored in permanent waste oil tanks located at the vehicle workshops and are to be removed from site by a suitably licenced contractor.	As required	Environmental Officer Supply Officer
Hazardous substances are to be stored a minimum of 10 m away from drainage lines.	At all times	Environment Manager
Spill kits are to be located at all hazardous substance storage locations. Spill kits are to be available for relocation to specific areas in accordance with scopes of work.	At all times	Area Managers
Regular inspections of hazardous substance storage locations and workshops are to be conducted to ensure spill kits are present and contain sufficient materials for potential spillages. Inspections are also required to ensure housekeeping and compliance with HSE requirements.	Monthly or as required when operations begin	Safety and Environmental Officers
In the event of a spill, the spill management procedure within the <i>Emergency Response Management Plan</i> (ARMS-0000-H-PLN-H-0001) must be followed.	At all times	All personnel

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Mitigation Measure	Timing	Responsibility
Hazardous waste will be disposed of within appropriately designed facilities on site where safe and appropriate to do so (e.g. the Residue Storage Facility (RSF)). Only authorised personnel will be responsible in handling hazardous materials.	At all times	Environmental Officer Supply Officer
Where not safe to dispose on site, hazardous waste will be transported from site by appropriately licenced contractor(s) and disposed of within licenced facilities. Certificates of disposal must be supplied by waste disposal contractors, and recorded within Arafura's ESMS.	At all times	Environmental Officer
General		
Waste will be segregated at each area of generation, managed before disposal.	At all times	All personnel
Recyclable materials are to be stored at the landfill storage yard and/or waste collection points and removed from site as required.	As required	Environmental Officer Supply Officer
Litter sweep of the Landfill at monthly intervals required to collect any windblown waste.	Monthly	Environmental Technician
The active landfill area will be fenced with feral animal-proof fencing and access gates will be kept closed when not in use. This will minimise windblown waste and access by feral animals. Putrescible waste will be covered following disposal into the landfill. Landfill trenches will be covered once filled, and progressively rehabilitated.	At all times	All personnel
Inspection and Monitoring		
Monthly landfill inspection and litter sweep as required. Record keeping and reporting of quantities of waste kept on site and sent off site.	Monthly	Environmental Technician
Perform audits of third-party waste management facilities and contractors as appropriate to verify compliance with legislative and contractual requirements, including adherence to this and associated management plans.	As required	Environmental Officer
Management Plan Review		
Waste Management Plan performance review as part of the annual MMP compliance reporting.	As required	Environment Manager

2.3 Trigger, Action, Response Plan

The Trigger, Action and Response Plan (TARP) outlines remedial actions and responses to the situation. The levels of incidents and TARP are provided in Table 2—4 below.

Table 2—3 Trigger, Action and Response Plan

Trigger	Action	Response
Landfill and waste collection sites containing wastes attracting vermin/pests.	<ol style="list-style-type: none"> 1. Complete routine inspections of landfill and waste collection sites. 2. Litter sweep as required. 	<p>Environment Manager to continue standard monitoring as per this management plan.</p> <p>Implement a pest control in identified areas as required.</p>
Waste incorrectly disposed of resulting in potential cross contamination of other wastes.	Remove and segregate according to waste classifications outlined in Section 3.	<ol style="list-style-type: none"> 1. Environment Manager to continue standard monitoring as per this waste management plan. 2. Investigate the source of any incorrect handling and/or contamination. 3. Introduce control measures as required.
Spill of hazardous waste causing environmental harm.	<p>Response as outlined in the <i>Emergency Response Management Plan</i> (ARMS-0000-H-PLN-H-0001). Generally:</p> <ol style="list-style-type: none"> 1. Isolate and contain the spill utilising the spill kit if safe to do so. 2. Evacuate from the area if potential danger. 3. Notify Emergency Response Team Coordinator. 4. Monitor and determine if spill kit response has been effective in containing and managing spill. 5. Undertake remediation recommendations as required. 6. Conduct regulatory reporting as required. 	<p>Conduct an incident investigation as per the Environmental event procedure (Incident, Non-compliance and Hazard) (NRE-0000-H-PRO-N-0002).</p> <p>Review this plan and emergency response planning for any changes that need to be made as per the learnings from the spill.</p> <p>Introduce controls as required, including regular inspections to storage areas.</p>

3.0 WASTE CLASSIFICATION

All waste generated within the Nolans Project shall be classified into the below categories.

- **Radioactive Waste:** Waste materials containing radioactive substances or contaminated with radioactivity (e.g. through prolonged contact with ore). This can be liquid or solid. Radioactive waste must be treated in accordance with the *Arafura Radiation Protection and Waste Management Plan* (NRE-0000-H-PLN-H-0004). Where radioactive waste is mixed with other waste, it must be classified as radioactive waste.
- **Controlled Waste:** Any type of waste with a unique regulatory requirement such medical waste, asbestos, waste tyres and special waste listed under an NT EPA gazettal notice. This includes listed wastes specified in Schedule 2 of the *NT Waste Management and Pollution Control (Administration) Regulations 1998* ('listed wastes'). Where special waste is mixed with other waste, it must be classified as special waste.
- **Hazardous Waste:** this category encompasses materials with the potential to cause harm to persons or the environment. Hazardous wastes can be liquid or solid. This category encompasses containers that previously held hazardous substances classified under the Transport of Dangerous Goods Code, as well as specific waste types such as coal tar, coal tar pitch, lead-acid and nickel-cadmium batteries, lead paint waste, hydrocarbons, toxic chemicals, and any mixtures of these materials. The classification of dangerous goods must be undertaken considering the Australian Dangerous Goods Code. Where hazardous waste is mixed with other waste, it must be classified as hazardous waste.
- **Putrescible Waste:** refers to any type of waste that undergoes organic decomposition, such as household waste and food waste. As well as consolidated treated solid wastes (biosolids) remaining at the end of the wastewater treatment train.
- **General Waste:** refers to any type of waste that has not been classified under any of the other categories. This includes materials such as glass, plastic, metal, paper, cardboard, wood waste, building and demolition waste, plastics, etc. as well as any mixtures of these materials.

This type of waste can be further classified as either recyclable (including e-waste and batteries, plastics, cardboard and paper where a recycling service provider is available), or non-recyclable waste.

A diagram depicting the process of waste classification is shown within Figure 3—1 below. Once a waste has been classified, it must then be managed accordingly.

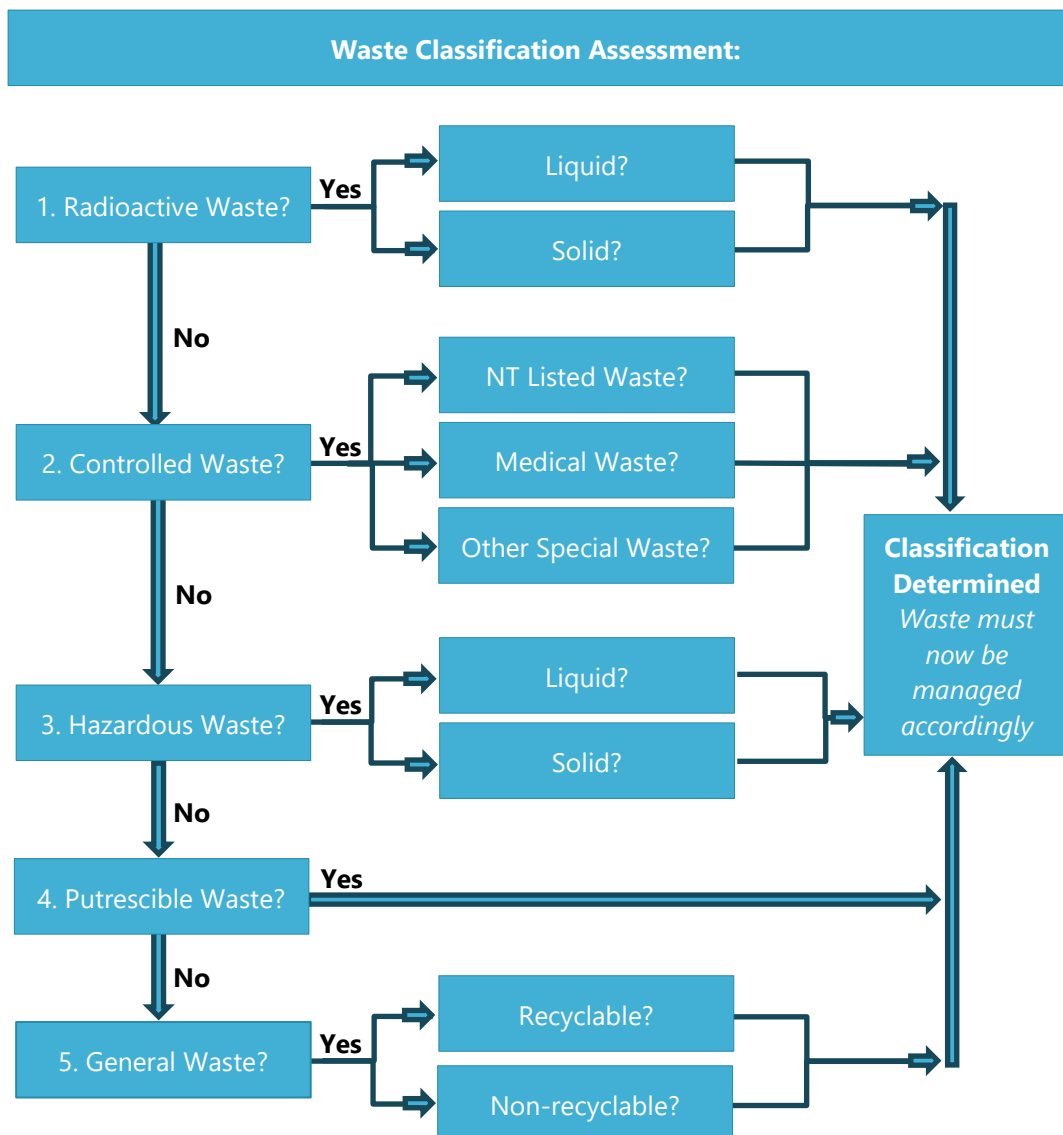


Figure 3—1 Waste Classification Assessment Process Diagram

4.0 WASTE MANAGEMENT HIERARCHY

All waste generated from Project activities will be managed in accordance with the hierarchy of control outlined in the *National Waste Policy* (Australian Government 2018), as shown in Figure 4—1 below. A description of how the hierarchy will be applied is described in Sections 4.1 – 4.5 below.

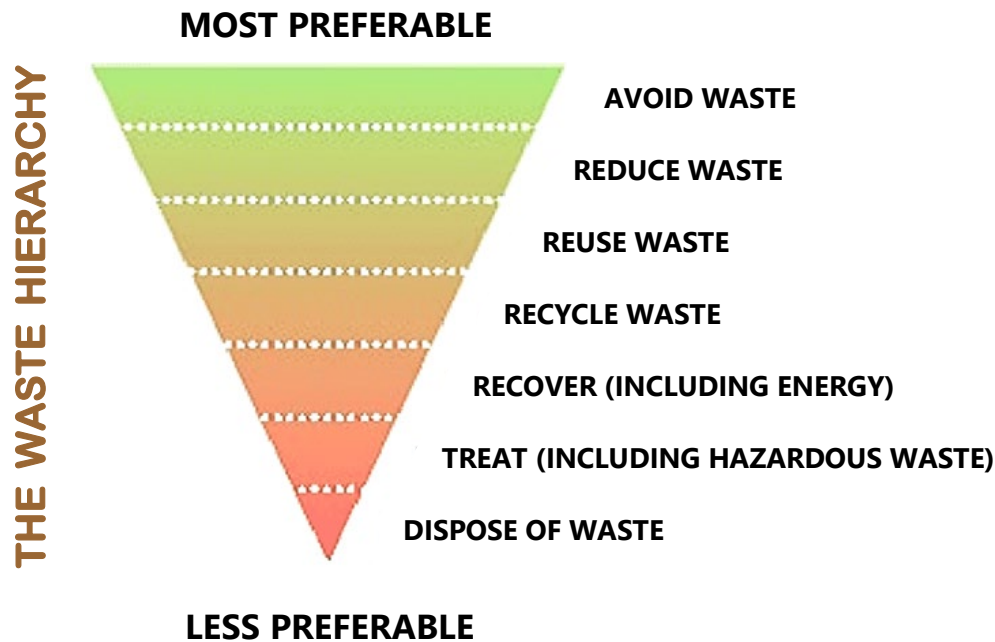


Figure 4—1 The Waste Hierarchy (Source: National Waste Policy, Australian Government 2018)

4.1 Avoid and Reduce

Waste generation shall be avoided during the design phase and by adopting procurement strategies aimed to prevent waste. The following waste management strategies and practices will be adopted:

- Selecting suppliers that prioritise sustainable practices and are environmentally friendly.
- Selecting products/materials that create less waste (including packaging), less hazardous waste, and/or are biodegradable.
- Establishing procurement practices that identify opportunities to return usable materials, while also preventing excessive ordering of supplies.
- Reducing consumption by choosing products with minimal packaging. For example, opting for bulk purchases to reduce packaging waste.
- Conducting a risk assessment for materials to be brought into the Project and their potential waste. This assessment should be integrated into the supplier or contract process and should include a list of pre-approved Waste Management Contractors, the contractor's waste management obligations, licensing and certification records, and any other relevant information.
- Opting for durable products to reduce the need for frequent replacements.
- Embracing digital solutions whenever possible to avoid the use of paper.

- Enforcing rigorous waste segregation practices to ensure that different waste types are kept separate to avoid contamination of materials.
- Planning meals and shopping to avoid purchasing excess food that may go to waste and maintain inventory controls.
- Promoting awareness about proper waste treatment practices among the public and businesses to encourage responsible waste management and treatment methods.
- The Waste Management Performance Standard within the *Arafura Environmental and Social Performance Standards* (NRE-0000-H-STD-N-0002) document is to be issued during the contracting process, to form part of the environmental requirements applicable to all contractors.

4.2 Reuse, Recycle and Recover

Reuse refers to the alternative of incorporating a material or waste into the supply chain requiring a minimum treatment and without reprocessing. Recover may involve reprocessing prior to use. Recycling involves processing waste materials to create new products. Reuse and recovery of waste streams will be undertaken for incorporation into the supply chain as much as possible. Recycling of waste will be prioritised where service providers are available. The following waste management strategies and practices will be adopted:

- As much as possible and where safe to do so, reuse and repair items to extend their lifecycle before discarding them.
- Repurposing waste materials where an alternative use is identified, and it is feasible and safe to do so.
- Donating materials to community organisations where they can be reused
- Adopting material separation by sorting recyclables from general waste.
- Disposing of waste through local or national recycling and reuse programs where they are available (e.g. e-waste).
- Consider composting of putrescible waste when feasible to do so, for use as a garden fertiliser on site.

4.3 Treatment

Treatment refers to the processes applied to materials before their disposal in landfills or through other methods when recovery is not possible. The following waste management strategies and practices will be adopted where applicable and safe to do so onsite; otherwise, offsite by a service provider:

- Sorting, shredding, and compacting waste to reduce its volume and facilitate reuse or further treatment.
- Utilising chemical reactions to neutralise harmful components in waste. This can include processes such as oxidation, reduction, and neutralization to make waste less hazardous. This will be applied through bioremediation of hydrocarbon contaminated soils.
- Treating hazardous waste to immobilise contaminants, making it safer for disposal.

- Ensuring proper landfill design with systems to manage leachate and gas emissions, minimising environmental impact.

4.4 Disposal

Disposal refers to the final, least preferred waste management option. The following waste management strategies and practices will be adopted:

- Off-site waste disposal must be carried out by a licensed handler at a licensed facility.
- Prioritising recycling of recyclable general wastes whenever a local service provider is available.
- All waste taken offsite must be appropriately contained for transportation in accordance with the relevant guidelines, and the distance travelled limited as much as possible, to avoid spills.
- On-site waste disposal must be conducted in Arafura's landfill in full compliance with local regulations.

5.0 WASTE STREAMS

Understanding the types of waste generated by the Project is essential for effective site waste planning and management. This includes understanding the classification, source, type, and quantities of waste produced. The waste management hierarchy can then be applied.

Some of the waste streams anticipated from Project activities have been identified, as shown in Table 5—1 below. Including their anticipated waste classification under normal circumstances, and common source of generation.

Initial estimates of anticipated waste volumes for each key category have been calculated for the Project, and the waste management options planned accordingly.

Further detail of estimated waste streams and volumes will be generated during the detailed design phase of the Project, and actual waste streams and volumes will be recorded once site activities recommence. To continue to better understand the anticipated waste streams and determine how best to manage them.

Table 5—1 Anticipated waste streams from Project activities

Waste Classification	Waste Stream	Source of Generation
Radioactive Waste	<ul style="list-style-type: none"> Overburden and waste rock Mill balls Conveyor belt and mill liners Wastewater from the controlled area showers with radioactive characteristics Mine drainage Process water and slurry. 	<ul style="list-style-type: none"> Mining operations and processes (e.g. drilling, ore extraction, crushing and grinding, concentration/ beneficiation) Wastewater and mine water drainage systems Process plant outputs.
Controlled Waste	<ul style="list-style-type: none"> Medical and related waste: Biomedical waste (e.g. used first aid materials, dressings, etc.) Cytotoxic & other pharmaceutical, medicine, or medical drug waste Needles and sharps. 	<ul style="list-style-type: none"> Medical assistance and first aid Self-administered medications.
	<ul style="list-style-type: none"> NT 'listed wastes' such as asbestos and tyres. 	<ul style="list-style-type: none"> Historical asbestos buildings, etc. Vehicles (LVs and HVs), maintenance and equipment workshops.

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Waste Classification	Waste Stream	Source of Generation
Hazardous Waste (solid)	<ul style="list-style-type: none"> Empty containers that previously held hazardous substances or dangerous goods, from which residues have not been removed by washing (e.g., chemical containers/drums, etc.) Bulka bags from bulk reagents (flocculant, magnesia, barium chloride, oxalic acid) Oily rags, oil filters, soils & sludges contaminated by hydrocarbons etc. Vehicle and plant batteries Nano filtration tubes, pipes and maintenance items from the Processing Plant. 	<ul style="list-style-type: none"> Pest and weed control activities Processing plant Maintenance & equipment workshops.
Hazardous Waste (liquid)	<ul style="list-style-type: none"> Pesticide and herbicides. 	<ul style="list-style-type: none"> Pest and weed control activities.
	<ul style="list-style-type: none"> Lubricant and fluids (e.g. hydraulic fluids) Hydrocarbon waste (e.g. motor oils). 	<ul style="list-style-type: none"> Vehicles and plant Maintenance & equipment workshops.
	<ul style="list-style-type: none"> Grease-trap waste, cooking oils, etc. 	<ul style="list-style-type: none"> Accommodation village kitchen.
	<ul style="list-style-type: none"> Paint waste. 	<ul style="list-style-type: none"> Building maintenance and renovation areas.
Putrescible Waste	<ul style="list-style-type: none"> Household organic waste Food waste, including animal waste Garden green waste (e.g. leaves, branches, and other garden debris) Sewerage and biosolids Paper and cardboard waste (where not recyclable/clean). 	<ul style="list-style-type: none"> Kitchen, rooms, and gardens at the accommodation village Offices and other site buildings.
General Waste (Recyclable)	<ul style="list-style-type: none"> Electronic waste (e-waste) or discarded electronic devices or equipment such as: <ul style="list-style-type: none"> Mobile phones and accessories Nickel-cadmium and rechargeable batteries (e.g., lithium-ion batteries) etc. Computer equipment (e.g., laptops, monitors and projectors) Computer parts (keyboards, mice, hard drives, memory cards, web cameras, etc.) Printers, scanners. 	<ul style="list-style-type: none"> Offices.
	<ul style="list-style-type: none"> White goods (e.g. fridges, microwaves, etc.). 	<ul style="list-style-type: none"> Accommodation Village Offices and other site buildings.

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Waste Classification	Waste Stream	Source of Generation
	<ul style="list-style-type: none"> Office waste <ul style="list-style-type: none"> Toner and printer cartridges Light bulbs. Small batteries. 	<ul style="list-style-type: none"> Offices.
	<ul style="list-style-type: none"> Plastic containers Aluminium cans Glass bottles and jars Paper and cardboard. 	<ul style="list-style-type: none"> Accommodation village Offices and other site buildings.
	<ul style="list-style-type: none"> Scrap metal, steel. 	<ul style="list-style-type: none"> Building construction areas.
	<ul style="list-style-type: none"> Vehicle and machinery batteries. 	<ul style="list-style-type: none"> Maintenance & equipment workshops.
General Waste (liquid)	<ul style="list-style-type: none"> Sewage Grey water RO brine discharge. 	<ul style="list-style-type: none"> Toilets at the accommodation village and offices Showers, sinks, and kitchens at the accommodation village and offices Discharge from the wastewater treatment system Discharge from the reverse osmosis water treatment system.
	<ul style="list-style-type: none"> Wash down water from maintenance & equipment storage areas Vehicle wash-down bays. 	<ul style="list-style-type: none"> Drainage systems around maintenance & equipment storage areas Drainage sumps located at vehicle washdown bays.
General Waste (Solid)	<ul style="list-style-type: none"> Nanofiltration tubes. 	<ul style="list-style-type: none"> Water treatment systems.
	<ul style="list-style-type: none"> Equipment parts. 	<ul style="list-style-type: none"> Maintenance & equipment workshops.
	<ul style="list-style-type: none"> General rubbish (e.g. product packaging, cutlery, tetra packs, meat trays, plastic lids, sanitary & hygiene products, disposable razors and toothbrushes, or others with similar characteristics) Packaging materials and non-recyclable or contaminated items (plastic, plastic bags, plastic wraps, paper, cardboards, broken glass, mixed items) Old/ damaged clothing (e.g., non-contaminated safety clothes). 	<ul style="list-style-type: none"> Materials generated at the accommodation village, workshops, and offices.

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Waste Classification	Waste Stream	Source of Generation
	<ul style="list-style-type: none"> Construction debris (e.g., demolition waste, concrete) Synthetic fibre waste Asphalt waste. 	<ul style="list-style-type: none"> Construction areas. For example, from the batch plant, road construction, etc.

6.0 WASTE COLLECTION AND STORAGE

All waste generated on site shall be segregated and stored according to its waste classification, to facilitate appropriate management of each waste type.

Waste will be stored in containers, bins, or storage yards as appropriate to each waste type. Waste storage containers, bins, and yards are to be located in each work area according to the anticipated waste streams from each work area. This includes include the below work areas, there will likely be others at varying stages of Project development:

- Village area
- Mine office
- Processing plant area.

All storage yards must be clearly demarcated and signed according to the type(s) of waste to be deposited. Storage areas will be appropriately designed (e.g. lined, bunded, enclosed, and positioned), demarcated and signed for the type and volume of receiving waste. Operational procedures and controls will be established for storage areas to avoid environmental impacts and ensure compliance with regulations.

Waste storage containers and bins must be sized, labelled, colour-coded, and stored appropriate to the waste stream and anticipated waste volume, in accordance with the relevant guidelines. Such as AS 4123.7-2006 for Non-hazardous Waste; the Australian Dangerous Goods Code for Dangerous Goods; and the AS/NZS 3816 for Medical Waste. Waste shall be stored properly, with sufficient space between containers to facilitate inspections and monitoring and be away from incompatible materials or sources of contamination.

A waste collection schedule for each anticipated waste type will be prepared prior to commencement of site activities. Waste collection should occur regularly, as appropriate to their size and waste type, to avoid overfilling of bins. Waste must be transported to the appropriate designated storage, treatment, or disposal area on site.

A central waste storage and sorting yard will be located adjacent to the landfill area. Waste will undergo any necessary additional sorting and handling within the yard to allow for reuse or disposal on site, or preparation for transport offsite for recycling or disposal.

The site office will provide a facility map or site plan showing the demarcated waste storage and disposal areas, which must be easily accessible to all site personnel. Copies of the relevant Safety Data Sheets (SDS) for any anticipated hazardous waste streams must also be available at the site office. SDSs must meet the Safe Work Australia requirements and must be easily accessible to all personnel involved in the handling of hazardous substances, as well as emergency service workers.

Some of the requirements for waste collection and storage have been listed within Table 6—1 below according to waste classification. These are indicative of the storage requirements that will be implemented on site and will be further refined as the Project progresses.



Table 6—1 Waste collection and storage requirements according to classification

Waste Classification	Segregation and Storage Bins
Radioactive Waste	<p>Radioactive material must be placed in the appropriate designated areas on site, e.g. within Waste Rock Dumps (WRDs) and RSF structures. Small components (e.g. contaminated processing parts) can be stored in secure, shielded containers if appropriate.</p> <p>The storage and management of radioactive wastes on site are further covered within the Arafura <i>Radiation Protection and Waste Management Plan</i> (NRE-0000-H-PLN-H-0004) including details of applicable guides and codes.</p>
Controlled Waste	<p>NT 'listed waste': Any of the wastes listed in Schedule 2 of the WMPC Regulations will need to be segregated as appropriate to the type of waste – e.g. tyres, asbestos, chemical wastes, explosives, etc.</p> <p>Medical waste: Medical waste shall be segregated into a specialised container located in the area where it is generated. For example, use of biohazard containers, such as sharp bins for needles and infected sharps waste.</p> <p>Colour-coding for medical waste containers:</p> <ul style="list-style-type: none"> ▪ White/yellow container for any medical waste. ▪ Purple container for cytotoxic waste. ▪ Other medical waste, other than sharps, shall be collected and stored in plastic bags, and must be labelled according to the coding specified above. ▪ Sharps are to be placed in rigid-walled containers that comply with AS 4031 and AS/NZS 4261. The emptying, cleaning and disinfection of reusable sharps containers must be in accordance with AS/NZS 4478. Single use sharps containers must never be emptied, cleaned or reused. <p>Tyres: Tyres will be temporarily stored within designated storage yard(s) within work areas, including the storage yard at the landfill area. These will be taken offsite for disposal by a licenced contractor.</p>

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Waste Classification	Segregation and Storage Bins
Hazardous Waste	<p>Hazardous waste must be segregated by hazard class and stored in designated areas. The relevant safety information including SDSs must be readily available at each storage area. Storage areas must be bunded, well-ventilated and clearly demarcated and signed, as appropriate to the type of waste, and the relevant regulatory requirements.</p> <p>Containers must be appropriately labelled according to their type and hazardous nature in accordance with the Code of Practice for Labelling of Workplace Hazardous Chemicals, and must include the following information:</p> <ul style="list-style-type: none"> the product identifier the name, Australian address and business telephone number of either the manufacturer or the importer a hazard pictogram and hazard statement that are consistent with the correct classification of the chemical any other relevant information (e.g. precautionary statements, relevant first aid and safety directions) Unknown waste products should be clearly labelled on the container, for example, 'Caution – do not use – unknown substance'. <p>Hazardous storage containers or areas must have secondary containment systems to minimise the risk of environmental harm from spills and leaks. The net capacity of a bunded storage facility should be either (whichever is the largest by volume):</p> <ul style="list-style-type: none"> 110% of the net capacity of the largest tank; or 25% of the combined total of all bunded containers. <p>Where applicable, the construction of containment systems must comply with the relevant Australian Standard for the type of dangerous substances. For example, the storage and handling of combustible and flammable liquids must comply with AS 1940:2017, The Storage and Handling of Flammable and Combustible Liquids. Which includes requirements for storage areas to be covered and well-ventilated.</p> <p>Underground storage and piping of hazardous waste is not permitted on site.</p> <p>Entry to some hazardous storage areas shall be restricted to trained personnel only, e.g. some sections within the processing plant.</p> <p>Wash down water: water generated from vehicle wash down bays or maintenance and equipment storage areas will be treated as hazardous waste, due to the likelihood of containing contaminants such as hydrocarbons. Water will be collected within drainage sumps and contained for treatment.</p>
Putrescible Waste	<p>Food and green waste: Colour coding for bins is dark green or black body with lime green lid.</p> <p>Sewage: will be contained within sewage tanks and/or wastewater treatment plant for treatment. Treated water from the village area treatment train will be disposed of within the designated spray field.</p> <p>Grey water: will be contained within greywater treatment systems for treatment. Treated water may be disposed of within the designated spray field.</p>

Waste Classification	Segregation and Storage Bins
General Waste	<p>Non-recyclable: colour coding for general waste bins is dark green or black body with a red lid. Avoid the disposal of any waste shown below or similar:</p>  <p>No batteries, light globes/tubes, e-waste or hazardous waste No plastic bottles No cans No glass</p> <p>Recyclable: materials will be stored in segregated areas, for collection and transport offsite for recycling by a licenced contractor. Segregation will be determined based on the contractor's requirements.</p> <p>Colour coding for co-mingled recycling bins is dark green or black body with a yellow lid. Colour coding for cardboard and paper bins is dark green or black body with a blue lid. Bins are to be labelled to avoid the disposal of any inappropriate wastes as shown below or similar:</p>  <p>No bagged recycling No food or liquids No coffee cups No clothes or textiles No aerosols No Tetra Paks silver lined No meat trays No polystyrene No soft plastics or plastic bags</p> <p>Recyclable (e-waste): e-waste disassembled e-waste shall be collected and transported offsite for reuse by a licenced contractor. Designated and labelled containers to be placed in offices or at any other sources of generation to protect electronics from damage and prevent the leakage of hazardous materials.</p> <p>Batteries: recyclable batteries must be temporarily stored in a contained area to prevent any leaks or contamination of the environment in the designed areas, for collection and transport offsite for reuse by a licenced contractor. Non-recyclable batteries are to be treated as hazardous waste.</p> <p>Construction materials: are to be collected in bulk bins placed near the source of generation. For transport to the landfill storage yard for sorting, storage, or disposal.</p>

7.0 WASTE HANDLING

All personnel involved in handling and transporting waste must wear appropriate personal protective equipment in accordance with Arafura's health and safety protocol. Including any specific safety requirements defined for each storage area, or applicable for handling a specific type of waste as required in the relevant safety data sheets (SDSs).

The personnel or workers handling and transporting waste must read the relevant SDSs and safety information prior to handling it, and ensure they understand the handling and safety requirements, potential hazards, and have any appropriate emergency response equipment easily accessible. Arafura and/or the responsible contractors must ensure that all personnel involved in the handling and transport of waste have undertaken the required training and inductions to enable them to carry out the task safely.

Hazardous waste handling and transportation must be conducted by authorised and trained personnel. Permits and licences are required for some types of special and hazardous waste. Detailed waste handling procedures will be developed to clearly communicate requirements for anticipated waste streams as the Project develops. Including the development of induction material, and identification of any training, permitting or licencing requirements. Further requirements for the handling of hazardous wastes are outlined within the *Hazardous Materials Management Plan* (ARMS-0000-H-PLN-H-0002) and the *Radiation Protection and Waste Management Plan*.

8.0 TRANSPORT OF WASTE

Onsite and offsite transportation shall be conducted in a manner that prevents accidental spills or release of waste. Transport of materials on site shall be in accordance with the Traffic Management Plan (NRE-0000-H-PLN-H-0013).

Radioactive materials are not to be transported offsite. Transport while on site shall be conducted in accordance with the *Radiation Protection and Waste Management Plan* (NRE-0000-H-PLN-H-0004), which includes the Radioactive Materials Transport Management Requirements and the Radiation Transport Management Procedure.

Vehicles must not exceed their load capacity, and containers must be properly loaded, secured and labelled in accordance with the relevant guidelines and regulations (i.e. the *Waste Management and Pollution Control (Administration) Regulations 1998*).

Requirements for managing spills during transportation are included in the *Emergency Response Management Plan* (ARMS-0000-H-PLN-H-0001) and the *Environmental and Social Performance Standards* (NRE-0000-H-STD-N-0002). These standards are provided to all contractors and form a contractual requirement for all contractors involved in the transport of waste.

All transportation loads taken offsite shall be accompanied by the appropriate manifest.

Waste licensing is required for the transportation of special and some hazardous wastes. If these activities are carried out by a third party, the Company must ensure they hold the appropriate licence(s).

Transportation of Dangerous Goods must be carried out according to the NT and Federal regulatory requirements. Refer to Section 1.5 above for the relevant legislation.

9.0 WASTE DISPOSAL

Appropriate waste disposal shall be determined based on the type of waste. Alternative options according to the waste hierarchy must be considered first. Waste disposal should be considered as the final option, only after assessing all other waste management alternatives within the waste hierarchy. Disposal is only to occur if a material cannot feasibly be otherwise reused, recycled, or recovered.

The following requirements apply to the disposal of waste:

- Waste disposal through a third party must be conducted by a licensed handler.
- NT 'listed wastes' must be handled by a listed licenced company in the NT.
- Certificates of disposal shall be provided by the services providers.
- Detailed operational procedures and controls will be established for waste treatment and disposal to prevent environmental impacts and ensure regulatory compliance.

Detailed planning for anticipated waste streams and disposal methods will be developed. A general guideline for planned waste disposal methods according to waste class is provided in Table 9—1 below. Detailed planning will be further progressed and refined as the Project develops and this plan becomes operational.

Table 10—1 Waste Disposal Methods

Waste	Disposal Method
Radioactive Waste	<ul style="list-style-type: none"> ▪ Will be disposed of within designated facilities on site designed to hold such waste. This includes the WRDs and the RSF. Detailed design and operational planning will be undertaken prior to construction and use of these facilities. ▪ Radioactive waste must not be disposed of in Arafura's landfill.
Controlled Waste	<ul style="list-style-type: none"> ▪ NT 'listed wastes' require specialised management and must be taken offsite for disposal by a waste handler licensed by the NT EPA, and disposed of within a licensed waste management facility. A full list can be found in Schedule 2 of the WMPC Regulations. ▪ Requirements for licensing will form a key contractual requirement for relevant waste handling service providers. ▪ Listed wastes must not be disposed of in Arafura's landfill.
Hazardous Waste	<ul style="list-style-type: none"> ▪ Some hazardous wastes will be disposed of onsite, depending on the type of waste. Appropriately designed onsite facilities (this includes the RSF) are to be used for all onsite disposal. Detailed design and operational planning will be undertaken prior to construction and use of these facilities. ▪ Hazardous wastes are not to be disposed of in Arafura's landfill. ▪ Wastes not able to be safely disposed of on site, or not appropriate under regulatory or industry standards will be disposed of offsite. Any hazardous waste taken offsite must be transported by a licensed contractor, and disposed

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Waste	Disposal Method
	<p>of within a licensed waste management facility.</p> <ul style="list-style-type: none"> Unused chemical containers can be returned to the supplier where possible. Empty chemical containers and remaining chemicals must be disposed of according to the label and safety data sheet instructions.
Liquid Waste	<ul style="list-style-type: none"> Wastewater is to be treated and reused or disposed of onsite and will not be discharged offsite. Treated water can be reused on site for dust suppression or evaporated within the designated spray field or evaporation ponds.
Putrescible Waste	<ul style="list-style-type: none"> On site disposal within the landfill facility. Composting food and green waste may be considered for reuse as a fertiliser on site.
General Waste	<p>Where waste recycling services are available for general waste streams within a reasonable distance from site, this will be prioritised for these materials. Otherwise such wastes will be disposed of as per non-recyclable wastes.</p> <p>Non-recyclable:</p> <ul style="list-style-type: none"> On site disposal within landfill wherever possible. Preference not to dispose offsite as much as possible. Any off-site disposal of general waste must be transported and managed by a licensed service provider at a licensed waste management facility, as locally as possible. <p>Recyclable:</p> <ul style="list-style-type: none"> Licensed contractors to collect and transport offsite to material recovery/ recycling facilities as locally as possible Dispose eligible recyclable containers through an approved NT collection depot Specialist construction and demolition recycling operators to be used for some materials, e.g. scrap metal E-waste, disassembled components that are recyclable shall be returned to the supplier or disposed of through an organisation or service provider approved under the National Television and Computer Recycling Scheme. A specialised recycling company will be engaged to remove e-waste from the mine site on an as-needed basis. Some components of e-waste are considered 'listed wastes' must be disposed through a NT EPA licenced transporter and handler.

10.0 MONITORING AND RECORD KEEPING

Regular monitoring will be undertaken of waste management activities and facilities, including the following:

- Regular inspections of waste segregation and collection practices to identify non-conformities and potential improvements aimed at reducing the volume of waste produced within the Project.
- Housekeeping and inspections of areas of waste generation, storage, and disposal. Check the effectiveness of storage areas for any spills or hazards.
- Regular inspections and general maintenance of hazardous substances storage areas. Ensure storage areas are properly demarcated and signed, and containers are appropriately labelled and stored.
- Routine checks of the emergency response systems to ensure they are in good working order, including fire extinguishers, spill kits, etc.
- Routine inspections and maintenance of environmental pollution control equipment, including monitoring stations.
- Regular environmental monitoring will be undertaken to ensure waste management controls are effective.

Records of waste management activities undertaken on site will be maintained, including the following:

- Records of all monitoring inspections and maintenance carried out are to be maintained within Arafura's Environmental and Social Management System.
- Records of the amount of waste collected at each area source of generation, including type, area of storage and final disposal.
- Up to date records of waste stored on site shall be maintained, including type, quantities, and location.
- Data and information on the waste streams generated at each source (including processes) will be maintained either by the contractors or by Arafura as appropriate. The collected data will include waste characterization, types, quantities, and potential for reuse or disposal.
- Requirements of the *Hazardous Materials Management Plan* (ARMS-0000-H-PLN-H-0002), the *Radiation Protection and Waste Management Plan* (NRE-0000-H-PLN-H-0004), and the *Environmental and Social Performance Standards* (NRE-0000-H-STD-N-0002) will be implemented and records maintained as stipulated in these related documents.
- Maintain waste tracking records of waste disposal offsite, including type, contractor(s) involved, and final disposal location(s). Where appropriate, certificates of disposal shall be provided by the services providers to Arafura upon completion.
- Waste tracking is required for special waste through transport to their final destination, both within the Northern Territory and across state borders. Tracking process shall be completed by the licenced handler through the [EPA Online system](#), and a copy of the waste tracking certificates shall be provided to Arafura.

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- Dangerous goods must be stored, transported, and disposed of in accordance with NT and Federal regulations, as well as the NT SafeWork guidelines and the Australian Dangerous Goods Code. This includes implementing procedures for transport emergencies, such as an Emergency Response Plan and other necessary requirements.
- Arafura will conduct regular audits of engaged organisations/contractors/service providers involved in waste management, to ensure compliance with legislative and Arafura requirements.

11.0 REVIEW AND IMPROVEMENT

Waste management will undergo continuous improvement driven by regular review, assessment, process evaluation, and any changes in Project requirements. Waste generation will be assessed at all levels of the supply chain and production chain to identify opportunities for product substitution, reduction of waste, and reuse.

Waste management records will be regularly reviewed to ensure effective waste management practices are being implemented in accordance with this document, the *Hazardous Materials Management Plan* (ARMS-0000-H-PLN-H-0002), the *Radiation Protection and Waste Management Plan* (NRE-0000-H-PLN-H-0004), and the *Environmental and Social Performance Standards* (NRE-0000-H-STD-N-0002); and any other relevant aspects of Arafura's ESMS. Including ensuring compliance with all applicable legislative and approvals, licencing, and permitting requirements through Arafura's Compliance Management System.

Project planning, designs, and processes will be regularly evaluated to identify opportunities to improve waste management. Such as opportunities to:

- substitute raw materials with less toxic alternatives
- enhance the efficiency of processes to reduce consumption and waste volumes
- reuse treated waste within current processes
- ultimately reduce the amount of waste being produced and disposed of.

Detailed site planning and operational procedures will be developed as the Project progresses, including the following:

- Detailed landfill design and operational procedure will be developed and implemented prior to construction of the facility.
- A management of change process will be developed, documented, and implemented. To review on site waste management on a regular basis, identify opportunities for improvement, and assess any potential or planned changes to storage facilities, expected waste materials and quantities.
- Established operational procedures and controls will be reviewed to enhance waste management, ensuring effective treatment and disposal practices that prevent environmental impacts and ensure full compliance with regulations.

An annual review of the currency and performance of this management plan will be conducted, to coincide with the review process of the Project's MMP, and any required updates made. The review process is to assess Project performance against the objective, target, KPI (as outlined in Section 1.3 above), and commitments contained within this plan.

12.0 ABBREVIATIONS AND DEFINITIONS

Abbreviation	Meaning
Arafura / the Company	Arafura Rare Earths Limited
AS	Australian Standard
EPA	Environment Protection Authority
ESMS	Environmental and Social Management System
HV	Heavy Vehicle
KPI	Key Performance Indicator
LV	Light Vehicle
MMP	Mine Management Plan
NT	Northern Territory
NT 'listed wastes'	Wastes specified in Schedule 2 of the <i>NT Waste Management and Pollution Control (Administration) Regulations 1998</i>
Project	Arafura's Nolans Rare Earths Project
RO	Reverse Osmosis
RSF	Residue Storage Facility
SDS	Safety Data Sheet
TARP	Trigger, Action and Response Plan
Waste	Any material either solid, liquid or contained gaseous material that is discarded or no longer wanted
WRD	Waste Rock Dump
WMPC Act	<i>Waste Management and Pollution Control Act 1998</i>
WMPC Regulations	<i>Waste Management and Pollution Control (Administration) Regulations 1998</i>