Waste Management Plan

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1. INTENT

The intent of this Waste management Plan (WMP) is to provide guidance on the management of waste streams generated by Cracow Operations (CRO).

2. OBJECTIVE

CRO is the holder of Environmental Authorities (EA) EPML00770913 issued under the *Environmental Protection Act 1994* (EP Act), which authorises and imposes conditions on mining activities.

The objectives of the WMP are to provide a framework for CRO to:

- Maintain a waste inventory and appropriately manage wastes,
- Implement the waste management hierarchy to minimise waste generation and disposal,
- Monitor and evaluate the performance of waste management practices on site, and
- Provide awareness training to staff to drive compliance and continuous improvement.

Aris Resources is committed to providing a high standard of care for the natural environment through effective organisational practices. Aris Resources' activities are undertaken within the framework of approvals, lease conditions and licenses established by environmental regulatory authorities.

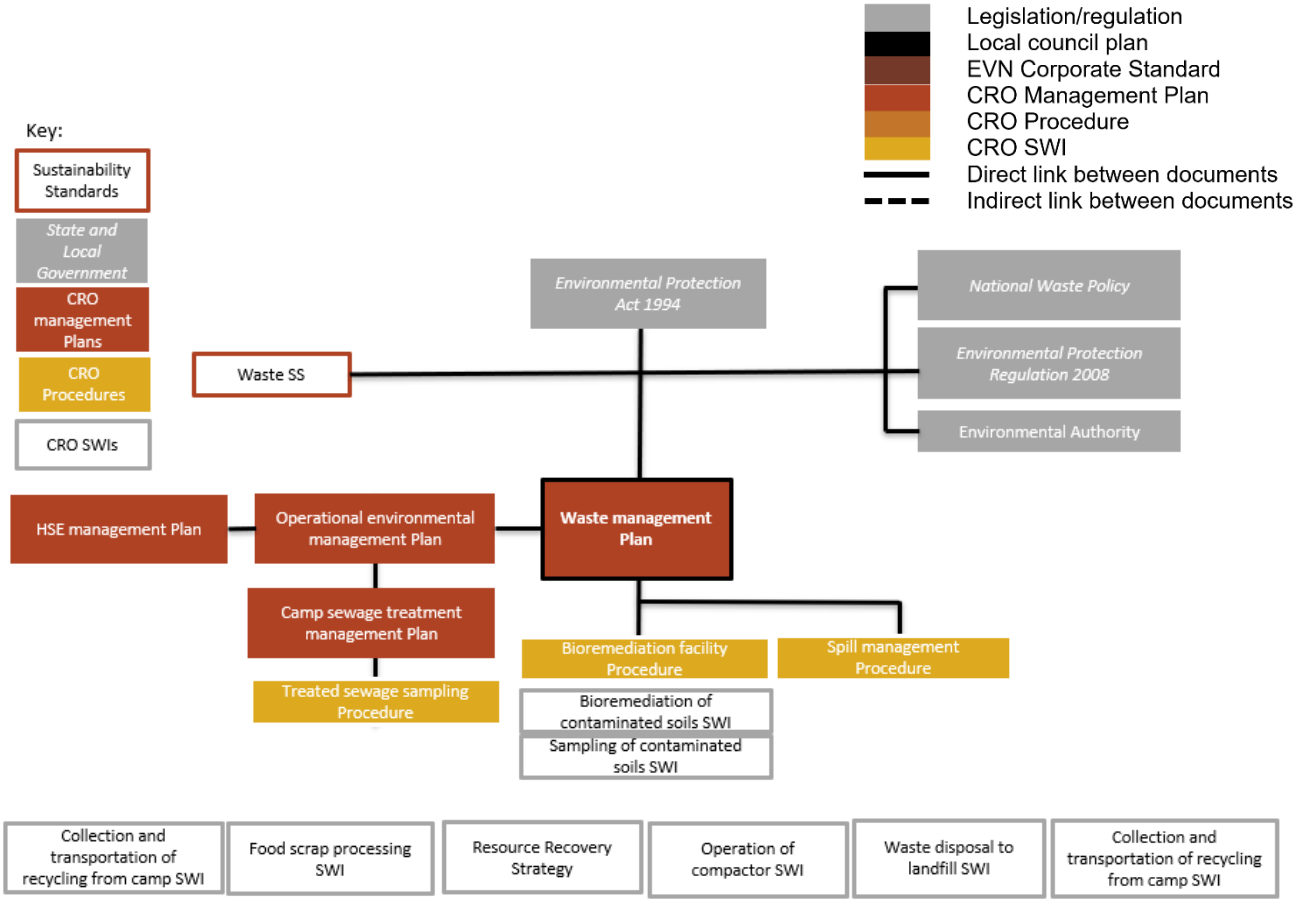
3. APPLICATION

The WMP applies to all locations under EA EPML00770913, and covers the generation, collection, storage, transportation and disposal of hazardous waste, non-hazardous waste and wastewater. Some of these aspects are dealt with in other associated plans and procedures and have been referenced where appropriate. The waste management risk treatment controls have been derived from a risk assessment conducted using ISO3100 standards and is live in QHSE.

This WMP is applicable to all phases of the site's life cycle - including design, construction, operation, rehabilitation, and closure. All Aeris Resources directors, employees, contractors, consultants and other service providers have the responsibility to adhere to this WMP and all other related management plans and procedures referred to in this document.

4. DOCUMENT MAP

The below document map provides an outline of the legislation and governing documents contributing to the WMP and its underpinning procedures and SWIs



5. WASTE MANAGEMENT HIERARCHY

The waste management hierarchy is a set of priorities for the efficient use of resources. This hierarchy can help to assist CRO in:

- Adopting a sustainable approach to waste management,
- Minimising waste volumes,
- Reducing the risk of causing harm to the environment, and
- Maximising operational efficiency and environmental performance.

The waste management hierarchy is illustrated below in Figure 1 and shows the strategy from most preferable to least preferable.

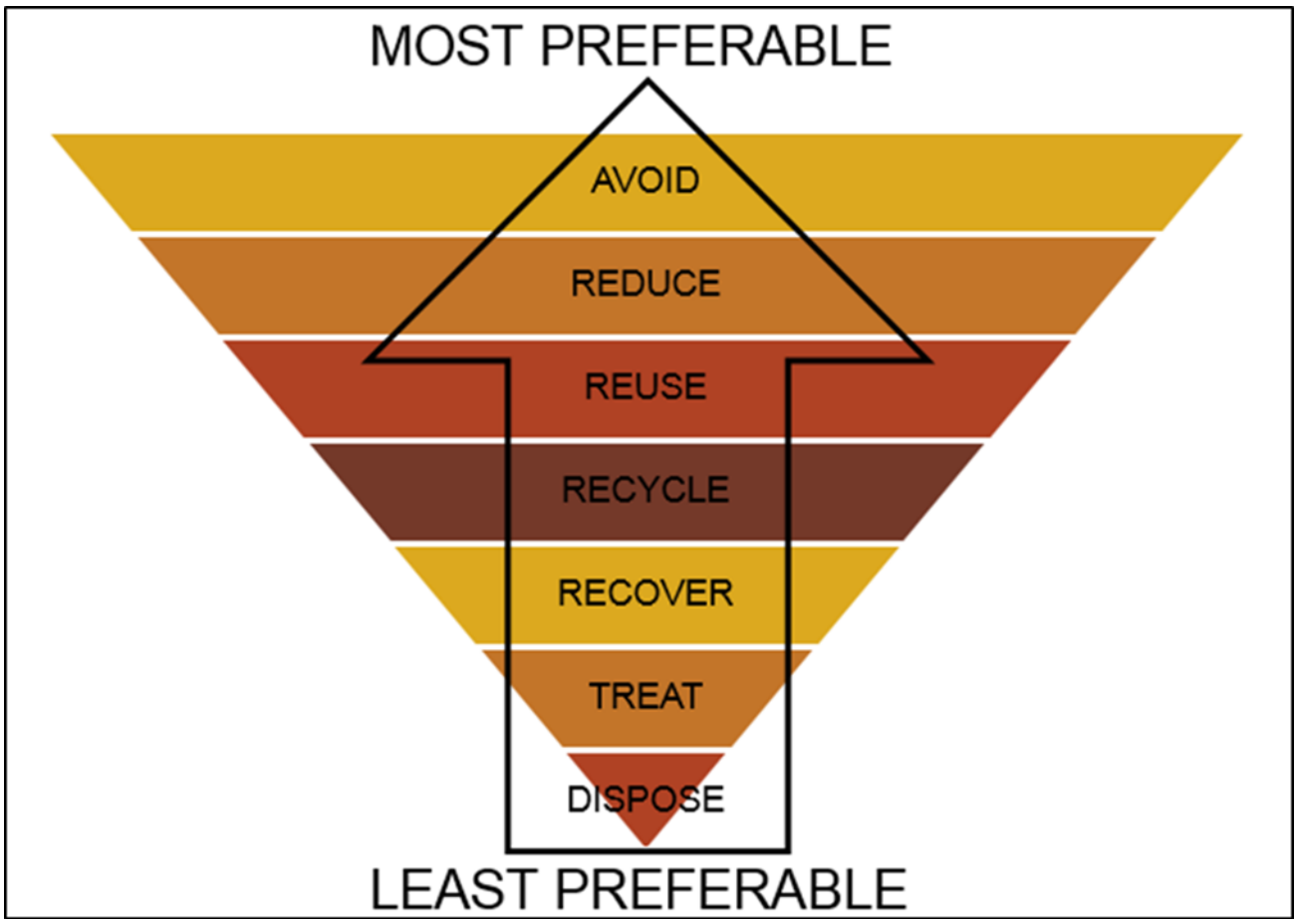


Figure 1: Waste Management Hierarchy

6. WASTE INVENTORY AND MANAGEMENT

6.1. Waste Types

The main waste generating activities at CRO are:

- Exploration
- Project construction activities
- Underground mining operational activities
- Processing
- Camp and office facilities

These activities generate a variety of waste products and are broadly categorised into general, recyclable and regulated waste as described below in Table 1. A full list of waste streams and their strategy for recovery is listed in the waste inventory.

Table 1: Waste Types Definitions

Type of Waste	Definition
General	Domestic, recyclable or commercial waste other than regulated waste.

Type of Waste	Definition
Recyclable	Waste that can be reused, converted into other products and reduces the consumption of new raw materials thereby reducing energy use, air pollution from incineration and water pollution from landfilling.
Regulated	Regulated waste is commercial or industrial waste, liquid or solid, that contains a constituent that may cause environmental harm and is required by legislation to be tracked. Includes hazardous substances or dangerous goods.

6.2. Waste Management and Resource Recovery Strategy

CRO endeavours to implement management and resource recovery strategies for all waste streams generated on site to align with the waste management hierarchy and incorporating the safe disposal and reuse and recycling of wastes where possible. Any waste stream not covered by this WMP is required to be discussed with the CRO Environment department to determine appropriate reuse, treatment, storage, collection and disposal method.

Table 2: Waste Management and Resource Recovery Strategy

Waste	Management Measure
Aerosol cans	Pierce empty cans remove the plastic nozzle and dispose of in scrap metal bins for recycling. Faulty or partially used aerosol cans must be treated as regulated waste and transported offsite by a licensed contractor as regulated waste.
Aluminium cans	Provision of coloured bins for waste segregation. Store in 1000L pods in camp waste laydown and in large waste collection bins at Mill Laydown. Send off to Theodore Lions Club.
Asbestos	Removal from site by licensed contractor as regulated waste.
Cardboard	Provision of cardboard bins. Pack using cardboard bailer as per the Operation of Carboard Compactor SWI and send offsite to recycling facility. Sent via backfilling on freight provider truck to the Visy recycling facility.
Chemical contaminated soil	Mining use a licensed contractor to remove contaminated soil. Processing disposes of all contaminated soil into the bioremediation pits.
Chemical waste and chemical contaminated containers	If the chemical waste cannot be returned to the process, remove from site as regulated waste by a licensed waste transporter.
Cooking oil	Place in drums at camp waste laydown (bunded and covered) for removal from site by licensed regulated waste contractor for recycling.
Cut collars	Segregation at the core yard and disposal at the poly dump at TSF1.
Domestic Batteries	Battery collection buckets in work areas. Empty prepaid buckets are purchased from the Lamp Recyclers to fill and return for recycling.
Explosives packaging and bags	Disposal at the Mag Dump for incineration by the Emergency Response Team (ERT), provided there is no potential for environmental harm (in accordance with Schedule C of the EA).
Fluorescent lights	Collection bins in work areas. Empty prepaid boxes are purchased from the Lamp Recyclers to fill and return for recycling.

Waste	Management Measure
Food waste	Buckets are macerated and dumped in the bioremediation pit. Under review for potential composter to be installed.
General waste	Provision of general waste bins. Disposal at the VR1 Landfill in accordance with Waste Disposal to Landfill SWI.
Glass bottles	Provision of bins at camp. Store in 1000L pods in camp waste laydown. Send off site to Theodore Lions Club.
Green waste	Green waste can include is any organic waste that can be composted. It is most usually composed of refuse from gardens such as grass clippings or leaves, and domestic or industrial kitchen wastes. Placed in the bioremediation pits or used around site as sediment and erosion control measures. If contaminated with weed species, consult the Environment Team.
Hydrocarbon (or organics) contaminated soil	Remediate in bioremediation pits. Soils contaminated with the following can be remediated: BTEX (benzene, toluene, ethylbenzene and xylenes), TPH (total petroleum hydrocarbons), PAHs (polycyclic aromatic hydrocarbons) and phenolics.
Industrial batteries	Send off site to Theodore Lions Club.
Clinical waste	Stored in either clinical (yellow biohazard) bins or needle disposal boxes. Sharps and biohazard bins are then transported to Theodore Hospital when necessary.
Mining wastes	Under review as TSF2 is unable to receive mining waste.
Oily filters	Removed from site by regulated waste contractor to be recycled.
Oily rags	Removed from site by regulated waste contractor for disposal.
Old Uniforms	Boxes to be kept in laundry for employees to donate old uniform. Notify Community Advisor when boxes full for the clothes to be delivered to Vinnies in Theodore. They will be either sold or cut up into rags and Aeris will have the opportunity to buy the rags back to use on site.
Paper	Segregated at the source into paper bins, shredded and taken to the Bioremediation pits at the Mill and Underground Workshop.
Pallets	Stores department stockpiles for recycler. Orica explosives pallets returned
Printer cartridges	Sent via Australia Post to Planet Ark free of charge. Planet Ark to supply the bag/box with address label and customer ID printed on it.
Scrap steel	Provision of steel bins at mill, mine and camp. Collection by scrap metal company.
Seepage water	Seepage water originating from the tailings dams are pumped back into the process water cycle. This is managed in accordance with the Water Management Plan.
Sewage	Treated through Sewage Treatment Plants at the Camp, Mill and Mine. Managed in accordance with the Camp Sewage Treatment Plant Management Plan and Water Management Plan.
Sewage sludge	Excess sludge in Sewage Treatment Plants is collected by a licensed waste contractor as regulated waste.
Treated effluent	Recycled through the tailings dam and process plant as per agreement with the Department of Environment and Science (DES).

Waste	Management Measure
Used spill kits	Remove from site as regulated waste by a licensed waste contractor.
Water	Track water usage in Water Accounting Spreadsheet and identify conservation projects. Process water is recycled. Managed in accordance with the Water Management Plan.
Waste oil	Collected by licensed regulated waste transporter for recycling.
Waste rock	Manage in accordance with Mining Waste Rock Management Plan.

7. WASTE MANAGEMENT FACILITIES

The waste management facilities at CRO are outlined in Table 3 below. A map showing the location of each facility can be found in Appendix 1.

Table 3: Waste management facilities at CRO.

Waste Management Facility	Description
Bioremediation pits	Three bioremediation pits are in operation at CRO: Mine, Mill and Golden Plateau Pit. These facilities are designed to remediate hydrocarbon contaminated soils resulting from mining activities. The Bioremediation Facility Procedure outlines the operational requirements of the facilities.
On site landfill	General waste is disposed of at the CRO landfill waste disposal trench facility as per the Mine EA (map included in Schedule J of EA EPML00770913). This is located at Vent Rise 1 (VR1) and is fully fenced and vermin proof. An excavated trench is periodically compressed with the excavator to maximise potential fill area. Site services manage and maintain the site in accordance with Waste Disposal to Landfill SWI.
Tailings dams	Two tailings storage facilities (TD4 and TSF1) are located at CRO and receive certain wastes generated by mining activities for disposal, in accordance with Schedule C of the EA. The tailings dams are managed in accordance with their respective Operating Manuals.
Sewage treatment plants	Three sewage treatment plants are in operation at CRO: Mine, Mill and Camp STP. These systems recycle sewage waste into treated effluent. Operational management of the STPs is in accordance with OEM guidelines and the Camp Sewage Treatment Management Plan.
Storage dams	There are numerous storage dams in operation at CRO, which are used to collect recycled water, seepage and stormwater runoff. The management of water is outlined in the Water Management Plan.

8. WASTE MANAGEMENT PRACTICES

8.1. Waste Inventory

CRO is developing a waste inventory of all waste streams including the following information:

- Type of waste,
- Volume of waste where practicable,
- Source of waste, and
- Destination of waste.

Waste inventories enable the accurate assessment of waste data, assist with waste avoidance and reduction and allow accurate reporting where required. The CRO waste inventory is stored in Monitor Pro 5 (MP5), listed under the headings; non-hazardous, regulated and recycling.

8.2. Waste Storage and Handling

In addition to waste management facilities described in Section 8, waste that requires transportation for recycling or disposal are stored within designated waste laydown areas across site. Wastes are generally segregated into their streams as per Section 7.2.

Regulated waste requires more specialised storage and handling requirements due to the additional risks posed to the environment and shall be managed in accordance with the Hazardous Substances and Dangerous Goods Management Plan.

8.3. Waste Transport

Both hazardous (regulated) and non-hazardous waste can be transported throughout site to designated laydown areas. It is the responsibility of the waste generator to ensure that regulated waste is removed from site by a licensed waste transporter. The CRO Environmental Department will request government Waste Tracking Certificate (WTCs) once every six months to ensure they are being submitted on CRO's behalf as agreed.

8.4. Waste Tracking

CRO tracks the quantities and movement of all general, recyclable and regulated wastes using the tracking system outlined in Section 9.1. Site services weigh and record waste streams.

Regulated waste is tracked in accordance with the *Environmental Protection Regulation 2008*, using approved Waste Tracking Certificates (WTC). Waste tracking agent agreements are maintained with regulated waste transporters to supply waste tracking information to the Department of Environment and Science in accordance with s81U(3) of *Environmental Protection Regulation 2008*.

Records of waste movements relating to generating, storage and disposal of hazardous and trackable wastes must be retained for a period of 5 years. These records are stored in Monitor Pro.

8.5. Staff Training

All CRO employees and contractors are familiarised with the WMP during their general induction. Occasional waste management toolboxes will be rolled out throughout the year as well as pre-start reminders. Waste management requirements are also covered in area inductions. Training sign-on sheets are to be kept tracking who has been trained.

Changes made to waste management requirements will be communicated to employees and contractors through pre-starts and HSE meetings.

Environmental awareness training is also presented at pre-starts and HSE meetings on a regular basis to reinforce key waste management principles, raise awareness of any issues and encourage continuous improvement of waste management in line with the waste management hierarchy.

9. EVALUATION AND REVIEW

9.1. Evaluation

The effectiveness of this WMP and its associated procedures is regularly assessed to ensure:

- Compliance with legislative obligations,
- Relevance, reflection of operational needs and that environmental risks are adequately managed, and
- New waste streams are identified, and existing waste streams evaluated.

Effectiveness is evaluated using several methods which are outlined in Table 4. QHSE is used to track the progress of audits and inspections and associated actions.

Table 4: Methods use to evaluate the effectiveness of waste management at CRO.

Assessment Tool	Description of Method
Audits	• Conduct corporate and internal compliance audits to formally assess the level of compliance with regulatory and internal requirements. • Audit outcomes are used to develop corrective actions where necessary.
Inspections	• Regular site inspections by the regulator to ensure compliance with EA conditions. • Quarterly environmental inspections of works areas and the on-site landfill to ensure compliance with this WMP. • Inspection outcomes are used to develop corrective actions where necessary.
Incident review	• Review of internal incidents, near misses or hazards is regularly undertaken to identify recurrences of similar incident types.
Data review	• Review of waste tracking data to identify trends and implement solutions where necessary.

10. REVIEW

This WMP shall be reviewed every year. This document shall also be updated if any of the following occur:

- Legislative change,
- Change in the area of activity,
- This WMP does not adequately manage environmental risk,
- New waste types are generated, or waste types are no longer generated, and / or
- Changes to associated documents.

11. ROLES AND RESPONSIBILITIES

Position	Responsibilities
General Manager	• Provision of staff and financial resources to support site environmental management. • Responsible for the management of EVN staff and contractors.
Department Managers	• Ensure waste is segregated in work areas. • Provision of staff to conduct environmental inspections with environmental advisors.
HSE Manager	• Oversee the management of the EMS and associated governance programs to ensure the operation maintains compliance with internal and external obligations. • Report environmental matters to the regulator as required by the EA.

Position	Responsibilities
Environmental Advisor	• Maintain the EMS to ensure compliance with legislative requirements. • Coordinate monitoring, management and audit activities required as part of internal and external requirements. • Provide governance and verification of operational activities to ensure compliance with the EA, relevant legislation and to drive continual improvement. This includes conducting workplace inspections identify areas for improvement. • Provide environmental awareness training to employees. • Report environmental matters to the regulator as per the EA (where delegated by the HSE Manager).
Site Services	• Undertake waste handling, transfer, disposal and landfill management. • Record waste and report to environment department
Employees and Contractors	• Segregate waste at source and follow the WMP where applicable • Raise continuous improvement ideas to minimise waste generation on site. • Participate in environmental awareness training, pre-starts, meetings and other communications as required. • Report all actual and potential environmental incidents immediately to the supervisor and Environment Department.

APPENDIX 1 – WASTE FACILITY LOCATIONS AT CRO