



NAMOI MINING PTY. LTD.

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Waste Management Plan
for the
Sunnyside Coal Project



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Prepared By: Namoi Mining Pty Ltd
PO Box 600
Gunnedah NSW 2380

Tel: [02] 6742 4337
Fax: [02] 6742 3607
Email: dyoung@whitehaven.net.au

Document Control*					
Edition	Revision	Comment	Author	Date	Authorised by:
1	Rev 0			8/8/2008	D Young

*To be revised at least every 2 years.

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ACRONYMS USED THROUGHOUT THIS REPORT

AEMR	-	Annual Environmental Management Report
CCC	-	Community Consultative Committee
CHPP	-	Coal Handling and Preparation Plant
DA	-	Development Application
DECC (EPA)	-	Department of Environment and Climate Change (Environment Protection Authority)
DoP	-	Department of Planning
DPI-MR	-	Department of Primary Industries - Mineral Resources
EA	-	Environmental Assessment
EMS	-	Environmental Management Strategy
GSC	-	Gunnedah Shire Council
ISO	-	International Standards Organisation
NMPL	-	Namoi Mining Pty Ltd
PA	-	Project Approval
ROM	-	Run of Mine
WaMP	-	Waste Management Plan
WCMPL	-	Whitehaven Coal Mining Pty Ltd

1 INTRODUCTION

The Sunnyside Coal Mine (“the mine”) is located approximately 15km west of Gunnedah and 2km north of the Oxley Highway (see **Figure 1**). The mine is being developed by Namoi Mining Pty Ltd (NMPL), a subsidiary company of Whitehaven Coal Limited, as an open cut mining operation.

The mine site is 231ha and is located entirely within the “Sunnyside” property which is owned by Namoi Mining Pty Ltd.

Project Approval (PA) 06_0308 was granted for the Mine by the Minister for Planning on 24th September 2008. The approval allows for the development and operation of a 1Mtpa open cut mine, which will involve the following activities.

- Coal mining by open cut and potential auger mining methods over an area of approximately 80-100ha.
- Crushing, screening and stockpiling of coal.
- Transportation of coal from the mine via a purpose built road parallel to and northeast of the existing Coochooboonah Lane, upgrading intersections and road shoulder surfaces on an established route along the Oxley Highway, Blackjack Road, Quia Road and Torrens Road, and use of this route to the Whitehaven Coal Handling and Preparation Plant (CHPP) and rail Loading Facility at the Whitehaven Siding.
- Final Rehabilitation of the areas of disturbance within the Mine Site following completion of the Mine.

NMPL recognises that poor waste management practices have the potential to impact on the local environment. These impacts have been recognised by NMPL and are described as follows.

- Waste, or leachate from waste storage areas, has the potential to contaminate land and water.
- Offensive odours may be produced from waste storage areas.
- Ineffective recycling and/or over-ordering of stock can lead to the wastage of resources.

PA 06_0308 specifies the requirement for a WaMP under *Condition 3(43)* which states:

“WASTE

Waste Minimisation

43. *The Proponent shall prepare and implement a Waste Management Plan for the project to the satisfaction of the Director-General. This plan must:*
- Be submitted to the Director-General for approval prior to commencing of construction;*
 - Identify the various waste streams of the project;*
 - Describe what measures would be implemented to reuse, recycle, or minimise the waste generated by the project;*

- (d) Ensure irrigation of treated wastewater is undertaken in accordance with Environmental Guidelines: Use of Effluent by Irrigation (DEC, 2004), or its latest version; and*
- (e) Include a program to monitor the effectiveness of these measures.”*

This Waste Management Plan (WaMP) has been prepared to be used as an effective management tool to be implemented, as NMPL recognises that poor waste management can have significant detrimental effects on the environmental performance of the mine.

This document applies to all of the activities conducted during the construction, development and operation of the mine. The WaMP is to be read in conjunction with the Environmental Management Strategy (EMS) and other environmental management plans.

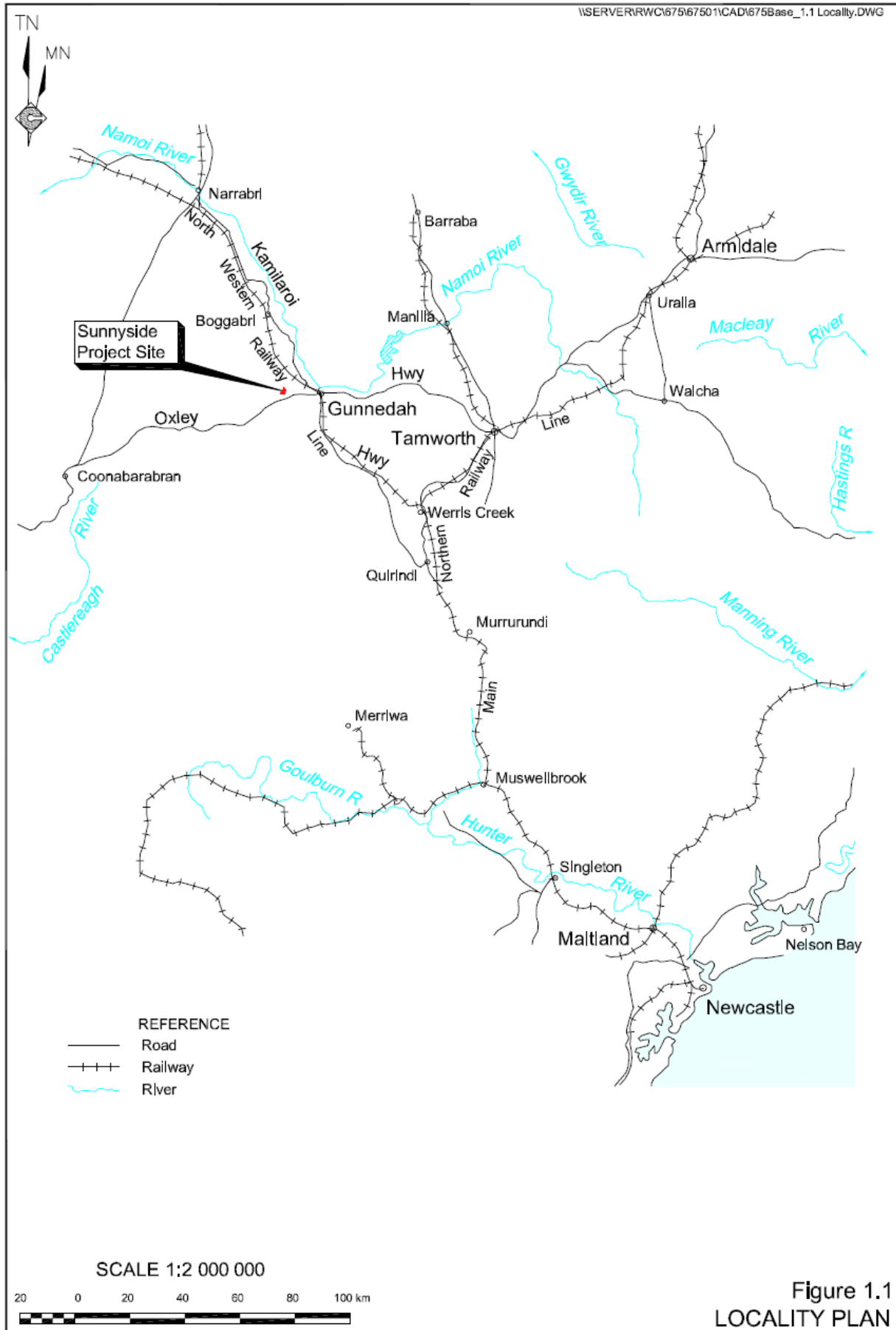


Figure Prepared by R.W. Corkery & Co. Pty Ltd

2 MINE WASTE STREAMS

The wastes that the mine will generate can be categorised as production and non-production wastes. Non-production wastes will include:

- general domestic-type wastes from the on-site buildings and routine maintenance consumables;
- fencing materials;
- oils and grease; and
- sewage.

Production wastes generated by the mine would consist of:

- mined rock from the development of the open cut mining area;
- potentially contaminated water from the maintenance workshop, washdown pad and fuel storage areas; and
- potentially saline water dewatered from the mine void and stored in pit water storage dams for dust suppression purposes.

Appendix 2 presents a comprehensive list of the various waste streams generated by the establishment, development and operation of the mine.

3 WASTE MANAGEMENT OBJECTIVES

The objectives of waste management at the mine are as follows.

- (i) To minimise waste production.
- (ii) To identify waste types and quantities on site.
- (iii) To maximise the beneficial use of production waste material for site construction and rehabilitation activities.
- (iv) To identify potential re-use or recycling opportunities and ensure appropriate handling and collection procedures are in place.
- (v) To investigate methods to minimise waste generated by the mine and implement reasonable and feasible measures to minimise waste.
- (vi) To ensure the disposal of wastes conforms with applicable guidelines or licences.
- (vii) To ensure areas where fuels, oils or other potential contaminants are stored are appropriately bunded.
- (viii) To ensure sewage disposal does not degrade the waste water utilisation area.

4 APPLICABLE GUIDELINES

The following Acts, Regulations and Guidelines have been reviewed and are applicable to the WaMP.

- Waste Classification Guidelines (DECC 2008).
- Environmental Guidelines: use of effluent by irrigation (DEC, 2004).
- Protection of the Environment Operations Act 1997.
- Waste Avoidance and Resource Recovery Act 2001.
- Protection of the Environment Operations (Waste) Regulation 2005.

5 MANAGEMENT SAFEGUARDS AND AMELIORATIVE ACTIONS

5.1 General Site Waste Management

The following actions/strategies will be put into practice to minimise the accumulation/generation of waste on site.

- All personnel working on the mine site are to undergo a site induction. The site induction will include the waste management practices on the mine site.
- All waste areas are to be clearly identified as waste storage areas. This includes bins and other receptacles for domestic waste, and which would be marked according to the type of waste accepted, e.g. scrap metal, oil filters and oily rags, other recyclables, general waste, etc.
- Clear written instructions are to be erected at appropriate locations detailing recycling and waste separation information.
- With the exception of mined rock, there will be no long term storage of any waste materials on the mine site. Notably, the mined rock will be utilised in construction of the perimeter amenity bunds and other items of mine site infrastructure such as the ROM coal and product stockpile areas. The mined rock/overburden will also form the basis of the reshaped final landform, with all overburden material placed in the out of pit overburden waste emplacement or in the in-pit overburden emplacement area. All overburden material will subsequently be reshaped, and then covered in subsoil and topsoil for final rehabilitation requirements. There may be some separate storage of specific sized rock that will be utilised for the establishment of rock lined waterways on the final reshaped landform. On this basis, all waste rock produced will be utilised in the final landform on site.
- There will be no tailings produced from site operations. Coal will be transported to the Whitehaven CHPP rail loading facility.
- Potentially contaminated water from the maintenance workshop, washdown pad and fuel storage areas will be directed to a central collection point and run through an oil separation unit. Collected oil and grease will be collected by an appropriately licensed contractor and transported off site for disposal at an appropriately licensed facility. All collections of oil and grease will be documented to enable specification of quantities transported off site and assessment of waste minimisation strategies.

5.2 Waste Minimisation

The following methods will be used to minimise waste production:

- Specifications of construction material quantities for contractors will be as accurate as possible to avoid the over-ordering of materials and the potential for excess waste.
- The ordering of stock during the operation of the mine will be regularly reviewed to ensure efficient stock control and to avoid wastage

- Effluent from the site offices, bathhouse and other amenities will be pumped to a self irrigating eco-cycle septic sewage system. The treated septic system water will be irrigated on revegetated areas and landscaped areas in accordance with *Environmental Guidelines: Use of Effluent by Irrigation* (DEC, 2004) and/or specific conditions of the mine's Environment Protection Licence.
- The use of degreasers will be regulated in the workshop areas to ensure the efficiency of the oil-water separator.

5.3 Recycling

NMPL will provide appropriate storage areas or receptacles for all materials that are suitable for recycling. The main recyclable waste materials that will be generated by the mine and their primary source(s) are as follows.

- Paper and cardboard: will be primarily generated within the site office facilities, but also in lesser quantities from contractor offices and workshops. Paper will be placed into appropriate collection bins, which will be collected by a recycling contractor on a regular basis.
- Scrap metal: will be generated during the site establishment phase, and on a continuing basis from the NMPL workshop. The scrap metal will be placed into large skip bins, which will be collected by a metal recycler as sufficient quantities are available. Separate containers or bins would also be maintained at strategic locations for the collection of aluminium cans.
- Oil filters and oily rags: will be generated at the maintenance workshop on the Project Site.
- Waste Oil: will be collected within bunded fuel storage, refuelling and maintenance areas and stored within waste oil bins once it has passed through an oil-water separator. The waste oil will be removed from site by a licensed waste oil contractor for recycling.
- Batteries: will be removed from site for delivery to a facility able to despatch them to an appropriate recycling facility.
- Miscellaneous recyclables: including printer cartridges and plastics will also be stored at appropriate locations prior to collection by, or delivery to, appropriate recycling facilities.

Appendix 2 provides a more comprehensive list of the waste streams generated and recycling opportunities for each waste stream.

NMPL's Environmental Officer will undertake regular inspections of the all waste storage locations to ensure that the appropriate separation and collection waste is being undertaken. As far as practical, NMPL will maintain a register of recycled material at the mine site.

5.4 Reuse of Waste Materials

Opportunities for the re-use of materials on site will be evaluated on a regular basis, i.e. construction timbers are to be re-used where possible. The effluent from the site office, bathhouse and other amenities will be treated and re-used as irrigation water on rehabilitation and landscaped areas in accordance with *Environmental Guidelines: Use of Effluent by Irrigation* (DEC, 2004) and/or specific conditions of the mine's Environment Protection Licence.

5.5 Waste Disposal

Disposal will be viewed as the last option in the management of waste, only if the avoidance, re-use or recycling of the waste in question is not practical. The following systems will be implemented at the mine in regard to waste disposal.

- Only transport operators or companies that are licensed by the appropriate authorities will be contracted to remove waste from the mine site.
- Waste vehicle tyres will be stored on site and disposed of at appropriately licensed facilities on an as needs basis.
- Waste materials, which cannot be either re-used or recycled, will be sent to a licensed landfill that may accept that category of waste. An experienced waste contractor will remove the waste off site.

5.6 Waste Schedule

Included in **Appendix 2** is a schedule of wastes that are likely to be generated on the mine site during the establishment, development and operation of the mine. The quantities of these wastes will be monitored by NMPL's Environmental Officer and reported as required.

5.7 Protection of the Environment Operations Act 1997

NMPL will ensure that the mine will comply with the requirements of the POEO Act 1997, through the adoption of a waste hierarchy philosophy of Avoid, Re-use, Recycle and Disposal (see **Figure 2**).

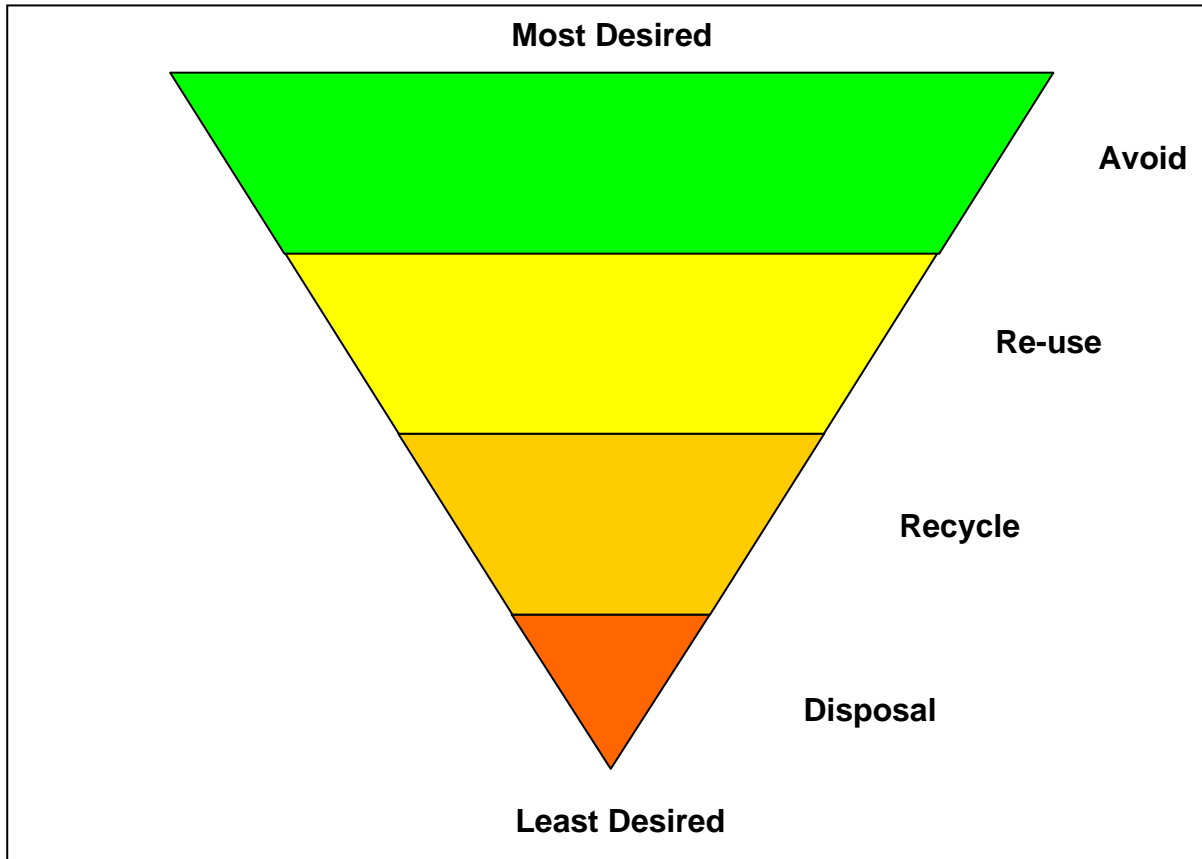


Figure 1: Waste Management Hierarchy

The production of waste will be controlled and reduced through the accurate ordering of materials and the avoidance of over-ordering and potential wastage of materials. Effluent from the site office, bathhouse and other amenities will be re-used around the mine site. All materials, which are available for recycling, will be collected and recycled off-site. Only materials, which do not fit into the above categories, will be disposed of to an appropriately licensed facility.

NMPL will undertake waste management on site in accordance with the legislation and guidelines listed in **Section 5** of this Waste Management Plan. All contractors removing waste from site will be suitably licensed with appropriate governing bodies as required. Wastes, which are required to be tracked, will be done so, in accordance with the relevant legislation.

6 MONITORING, REPORTING AND REVIEW

Waste management data will be documented and reported in each Annual Environmental Management Report (AEMR). The information will include the quantities and type of waste removed off site for recycling or disposal, the contractor engaged to remove the wastes, and the final destination for all waste products. Details will be provided on the implementation success of the WaMP implemented and any areas that require improvement will be included and highlighted.

7 RESPONSIBILITIES AND ACCOUNTABILITIES

The Mine Manager and Environmental Officer will be responsible for the following activities described in the WaMP.

- implementing the activities contained in this WaMP, including recording sources and destinations of recyclable wastes;
- ensuring that all on-site waste contractors are inducted;
- ensuring that all waste contractors are appropriately licensed;
- ensuring that all materials are separated and recycled appropriately;
- maintaining a database which will record the quantities and types of waste removed from the site; and
- conducting regular audits around the mine site to inspect waste management practices. A formal and targeted internal audit of waste management practice will be undertaken on site on a quarterly basis to assess waste management performance. In addition to this, general site observations on a week to week basis will be undertaken to ensure wastes are being adequately separated and stored appropriately prior to collection.

Contractors that are engaged by NMPL to operate at the mine will be responsible for:

- ensuring that all wastes are placed into the appropriate storage areas or receptacles;
- ensuring they comply with all on-site regulations;
- ensuring they engage in safe work practices; and
- undertaking work practices that comply with this WaMP.

8 APPENDIX

8.1 Appendix 1: Consent Condition Relating to Waste Minimisation

SCHEDULE 3 SPECIFIC ENVIRONMENTAL CONDITIONS

WASTE

Waste Minimisation

43. The Proponent shall prepare and implement a Waste Management Plan for the project to the satisfaction of the Director-General. This plan must:
- (a) Be submitted to the Director General for approval prior to commencing of construction;
 - (b) Identify the various waste streams of the project;
 - (c) Describe what measures would be implemented to reuse, recycle, or minimise the waste generated by the project;
 - (d) Ensure irrigation of treated wastewater is undertaken in accordance with Environmental Guidelines: Use of Effluent by Irrigation(DEC, 2004), or its latest version; and
 - (e) Include a program to monitor the effectiveness of these measures..

8.2 Appendix 2: Sunnyside Coal Mine Waste Schedule

Waste Schedule

Table A1

Schedule of wastes likely to be generated at the Coal Project during the construction, commissioning and operation of the mine

Waste Type	Source	Management/Disposal
Paper	Office/Workshop areas	Paper to be placed into recycling bins for collection
Cardboard	Used as packaging for various items	Cardboard to be placed into recycling bins for collection
Plastic Packaging	Used for shrink wrap over large goods deliveries. Used for general packaging	Placed into general rubbish receptacles for disposal to landfill
Putrescible Waste	Waste from employees	Placed into general rubbish receptacles for disposal to landfill
Timber	General off cuts during construction	Timber will be mulched and used around bare areas and in landscaping.
Metal	General excess materials during construction	Metals to be stored separately and removed from site for recycling
Hydrocarbons	Used in workshop and servicing areas	Any excess oil which is collected either through the separator or by other means will be stored in an appropriate location prior to removal by a licensed waste oil recycler.
Rags	Used in workshop and servicing areas	Soaked rags will be placed into general rubbish receptacles and taken by a licensed contractor
Batteries	Expended batteries from vehicle fleet	Will be removed from site for collection by a licenced contractor
Tyres	Expended tyres from vehicle fleet	Where practicable, tyres will be used as road boundaries and support for mounted towers. Otherwise tyres will be disposed of to licensed facilities
Effluent	From bathhouse and office areas	Effluent will be treated by a water treatment facility on site. Treated effluent will then be applied to rehabilitated and landscaped areas.