



Waste Management Operational Procedures

Waste Disposal Facility – Wills Street, Broken Hill Class 1 Landfill



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Site Supervision and Control

Daily Checklist

In accordance with the EPA licence conditions records of the waste operations are required to be maintained.

A daily checklist is used by the waste supervisor to record a range of information regarding the operation.

Daily Servicing

The plant operator undertakes a daily servicing of the loader at 6:30 a.m. Maintenance of the shredder is conducted after 5 hours of operation and details are recorded in the maintenance register.

Routine maintenance is conducted by BHCC workshop mechanics on a pre-arranged schedule.

Operation of vehicular equipment, shredder and hand held equipment is carried out in accordance with safe work method statements and the manufacturer's operating procedures.

Daily Scheduling

An assessment of waste received is made daily by the Supervisor to determine resource requirements for the following day.

Issues include equipment, day labour, spare manpower, immediate or emergency issues, breakdowns or inclement weather.

This occurs for all waste received and for green waste shredding.

Following windy conditions it may also be necessary to remove windblown material from catch fences or the surrounding regeneration reserve.

Daily Supervision

Supervision of the waste facility requires multiple daily visits. Visits are dependent on waste and type being received, weather conditions, cover levels, operating machinery, manpower available and recycling contractor issues.

The supervisor also investigates and reports on complaints, incidents and accidents in accordance with Council's OH&S policy and procedures. A serious pollution breach would also require reporting to the EPA immediately.

Dust suppression is a continual operation generally due to the very dry climate and ground conditions. Water tanker operation and water storage levels are checked regularly. Wind blown material is also a constant issue and requires attention as weather conditions permit.

Dust Control

As the site conditions are generally very dry, significant dust suppression measures are needed daily. The most practical method is water sprays provided by a vehicular water tanker permanently on site. Water is supplied from onsite storage tanks and can be transported in from public standpipes. Bore water (heavily salt laden) is also available for dust suppression.

Climatic Events

The Waste facility is located on the fringe of Broken Hill. The City is located in a semi-arid environment with relatively low rainfall and a dry climate for the majority of the year. Drought has been experienced for some years; however in a normal year around 200-250mm of rain should be received. Temperatures in summer may exceed 40⁰ Celsius for small periods and strong winds can occur in the September / October months.

Climate Averages by Season

	Max. Temp.	Min. Temp.	Average Rainfall	Average Humidity
Summer	32 °	17 °	69 mm	28 %
Winter	16 °	5 °	59 mm	48 %

Climate Averages by Month

	Max. Temp.	Min. Temp.	Average Rainfall	Average Humidity
January	32 °	18 °	23 mm	28 %
February	32 °	18 °	24 mm	30 %
March	28 °	15 °	20 mm	32 %
April	23 °	11 °	18 mm	39 %
May	19 °	8 °	23 mm	48 %
June	15 °	6 °	21 mm	54 %
July	15 °	5 °	18 mm	50 %
August	17 °	6 °	18 mm	41 %
September	20 °	8 °	20 mm	34 %
October	24 °	11 °	24 mm	30 %
November	28 °	14 °	20 mm	27 %
December	31 °	17 °	21 mm	27 %

Windy Weather

The waste facility, by its location, is exposed to extreme wind conditions during some periods of the year. Prevailing winds from the South west occur in winter months followed by hot dry winds in summer from the North West.

The Bureau of Meteorology has recorded wind gusts of 72 km/hr at the Broken Hill weather stations.

Moderate to severe winds are not uncommon and trigger a range of control measures deemed necessary by the Waste Supervisor.

These include water sprays on areas generating dust, establishment of paper screens, containment of dumped material, adjust machinery operations, alternate public access.

Management of wind conditions is an ongoing and daily monitoring activity.

Wet Weather

Rainfall is minimal throughout a normal year however, rainfall events often be heavy causing access roads and waste cells to become unusable.

Public access is generally unaffected however; loader operation may be affected in unsealed areas and cells. Cell 11 is identified as the emergency cell for wet weather operations for Councils collection service.

Construction of an all weather road access to the future cell 12 (quarry) shall be established in early 2005. This cell is estimated to have a 12 year life span based on current waste quantities.



Litter Control

Continuous litter control is a necessity due to the exposed nature of the Waste facility, the very dry climate and the prevailing winds.

Catch fences are located at selected locations in line with prevailing winds and are regularly cleaned of accumulated material.

The waste management Supervisor determines the site conditions daily and reduces waste disposal movements if conditions indicate excessive wind swell.

Boundary fences and the adjoining regeneration reserve harbour large quantities of wind blown material in the right conditions. Staff are assigned to litter elimination as determined by the Waste management Supervisor.

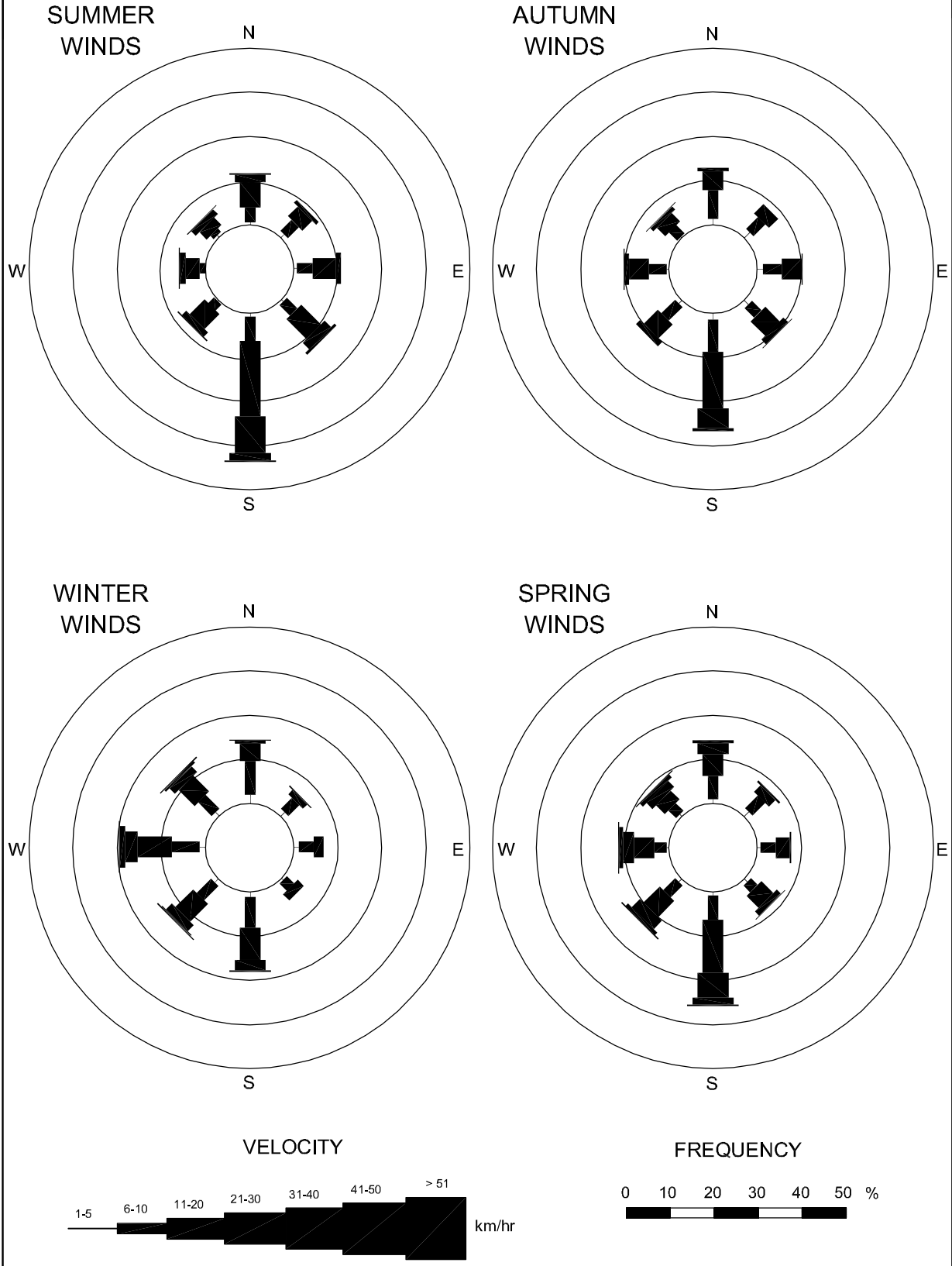
Plastic bags pose the greatest litter article. Elimination is carried out by using a fire lighter on plastic bags.

This method is extremely successful and quick.

Scheduled litter control is carried out at three monthly intervals through the engagement of the local Scouts Group who patrol, remove and collect litter material in adjoining regeneration area, road reserves, fences and landscaped areas.

Should conditions change, arrangements are made for special cleanups.

\\SERVER\RWC\438\CAD\LEMP\438Base_3 Wind.DWG



DATA SOURCE:
BUREAU OF METEOROLOGY
Patton Street, Broken Hill

Figure 3
WIND SPEED
AND DIRECTION

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Waste Reival

General

Broken Hill City Council has a licence No 5898 from the EPA for the waste facility.

Licence renewal is set for review on 1 July 2005. Anniversary date is 11 September annually. Waste disposal quantity must not exceed 60,000 tonnes per annum.

Waste excluded from the site are:

- ❖ Nuclear waste
- ❖ Cytotoxic waste
- ❖ Biologically infectious waste

A volumetric survey of the waste cell levels is conducted annually by a registered surveyor to determine waste quantities. These are segregated into:

- ❖ Domestic waste
- ❖ Commercial waste
- ❖ Building/Demolition waste
- ❖ Industrial waste
- ❖ Green waste
- ❖ Clinical and contaminated waste
- ❖ Offal
- ❖ Tyres

Domestic waste is received by resident disposal and by Councils collection service.

The Public disposal area is an all weather facility, well signposted and designed in roundabout operation.

The recycling facility is accessed first upon entry to the waste facility. General goods and material drop off, followed by steel and glass bins, general rubbish and tree bay.

Council's collection vehicles delivery collected garbage to an independent cell not accessible by the public.

Dumped general waste is moved by loader to small cells for cover and burial.

Green waste is relocate to the shredder area and the recycling contractor handles the bins and drop off material.

Contaminated waste is disposed off through specific arrangements with Councils Waste Supervisor.

Tyres are deposited in the general waste disposal areas. Lead contaminated dust and soils are deposited in the general waste areas.

Domestic waste

General public access to the waste facility is available 7:00 am to 6:00 pm daily, all year.

The facility is opened and closed by the Recycling contractor who patrols the dumping faces daily, retrieves materials and supervises public access.

Material, once deposited is pushed up by rubber tyred loader into the lower level waste corridor for holding; then removed by loader to burial cells.

This method efficiently separates public access from burial and compaction operations.

Cells are generally compacted in 1 meter layers with cover applied by end of day operations.

Compaction is carried out during daily placement of waste material.

Cells are completed in two layers (approximately 2-3 metres high) with a final capping layer comprising heavy solid material & clean dirt.

A designated emergency cell (No 11) is maintained for emergency use during wet weather.

Generally stored cover material is sufficient for 14 days operation. Approximately 3000 m³ of virgin material is excavated at 3 monthly intervals from the site in accordance with the Landfill Environmental Management Plan prepared by R.W.Corkery Pty Ltd (9 June 2004)

Commercial Waste

Waste generated from commercial activities in Broken Hill consists mainly of packaging materials.

Cardboard, paper and packaging materials are delivered to the waste facility by private vehicles. Other materials such as used carpet, damaged stock, containers etc are placed in the general waste area.

Broken Hill City Council provides a commercial waste collection service ranging from monthly single pickups to multiple weekly services.

A specific cardboard bay is allocated for the storage of recyclable cardboard materials adjacent the shredder facility.

All equipment operated in the facility has the required "**Work Method Statements**" on display and available to employees. All employees are inducted on the use of the facility and equipment.

Industrial Waste

Industrial waste from manufacturing or production industries is minimal.

The majority of industrial waste is generated from earthmoving companies carrying out demolition works, and construction companies carrying out demolition and building works. Small quantities of industrial wastes, liquid containers, paint containers, steel scraps, etc

Waste generated from the mines is deposited on the mine sites.

Local contractors are aware of the Councils need for solid waste material and arrange deposition with the waste services supervisor.

Concrete, rock and solid materials are used for cell wall construction.

Waste Oil

A 55,000 litre site tank located at the main entrance to the waste facility is utilised for the storage of waste oil. Oil is delivered from domestic and industrial sources in various containers. Containers are emptied into the main tank by the deliverer or weekly by the recycling contractor.

Periodic degreasing of the access pad and surrounds is required to remove spilt oil.

The tank dip stick is checked by the waste supervisor periodically. At 30,000 litres arrangements are made with an interstate company to remove the tank contents. This occurs around every 3 months based on past activity.

Asbestos

Should this waste be received it is deposited in the contaminated waste area by arrangement with the Waste Supervisor. No records are maintained.

Green Waste

The expansion of Councils shredding operation provides for recycling of the majority of green waste extracted from the waste stream.

Material is segregated in the public access area and relocated to storage bins located in the shredder compound.

Regular trimming of street trees are conducted with a portable chipper.

Material is deposited at the RVA area for sale.

Shredded mulch is transferred to the onsite contractor for green waste production.

Medical and Clinical Waste

Broken Hill Base Hospital regularly deposits medical waste in yellow waste bags, specifically marked. This material is deposited in by arrangement with the Hospital and the Waste Supervisor and is counted and recorded. A record sheet is supplied by hospital staff and one copy kept on file at Administration.

Only 200 kg's can be accepted in any one waste delivery.

The Standard identifies infectious waste with the colour yellow and a black symbol. Red is used to identify radioactive wastes. Cytotoxic wastes are identified by the colour purple.

Infectious waste Class A, Routine contaminated waste is Class B and Sharps is Class C.

Sharps from the Hospital, doctor's surgeries, pharmacies and health centres are transported to Mildura by Hospital personnel.

Contaminated Waste

This waste is determined by qualified test results. Generally includes contaminated soils from hazardous sites such as petrol stations, gas works and soils containing hydrocarbons.

Offal

Offal generated from the local abattoir is received directly into special areas under the VBA arrangements for recycling.

Animal carcasses are received into the designated meat disposal pit. Daily dumping occurs from the kangaroo abattoir and the remainder from veterinarians, dog control officer and private disposal. Pits are designed in a trench fashion and located in non public areas. Pits are constructed based on usage. Daily cover is applied to waste but not compacted.

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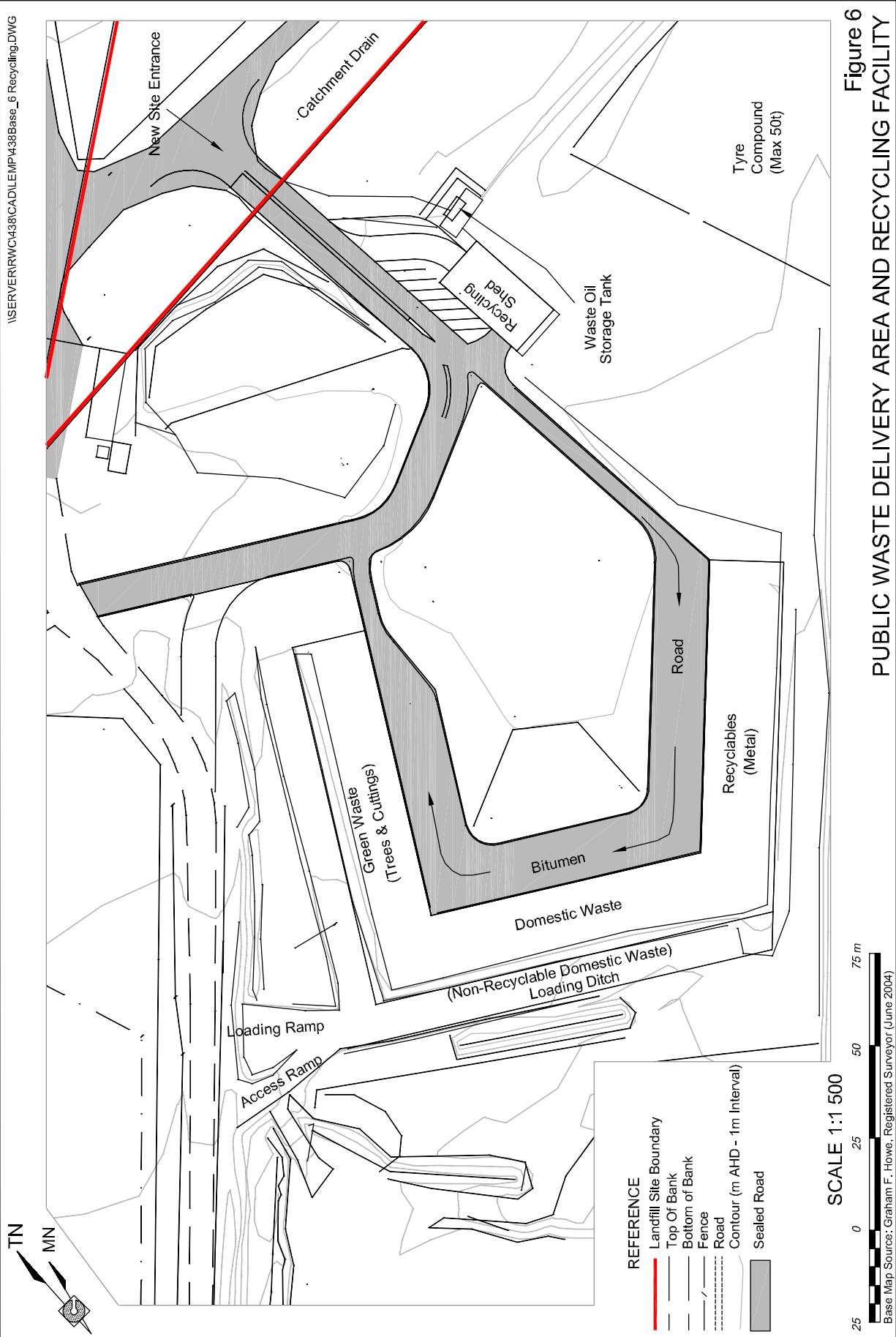


Figure 6

PUBLIC WASTE DELIVERY AREA AND RECYCLING FACILITY



Tyres

Quantities from retail tyre firms, mechanics, garages, car sales form the bulk of tyre disposal. As a bulk removal of tyres by a recycling contractor, requires large quantities to be stockpiled, and the EPA licence restricts stockpiling to 50 tonnes at one time, most tyres are disposed within the landfill. Some are shredded, however the objective is to distribute tyre disposal to eliminate a fire hazard.

Recycling

Overview

Due to the remote location of Broken Hill, Council is not able to take advantage of the full range of recycling buyers and operators seeking recycling materials. Even with this constraint, waste disposal volumes have reduced the deposited waste stream significantly.

Whilst Broken Hill resides in NSW the city is commercially supported from South Australia, in particular Adelaide. As such container deposit legislation has had a significant affect on bottles and cans in the waste stream. Accordingly residents collect and deliver cans and bottles to the local commercial recycler, Channings.

Recyclable material accessible in the waste stream consists of household products, building materials, green waste, timber, cardboard, oil, steel and glass.

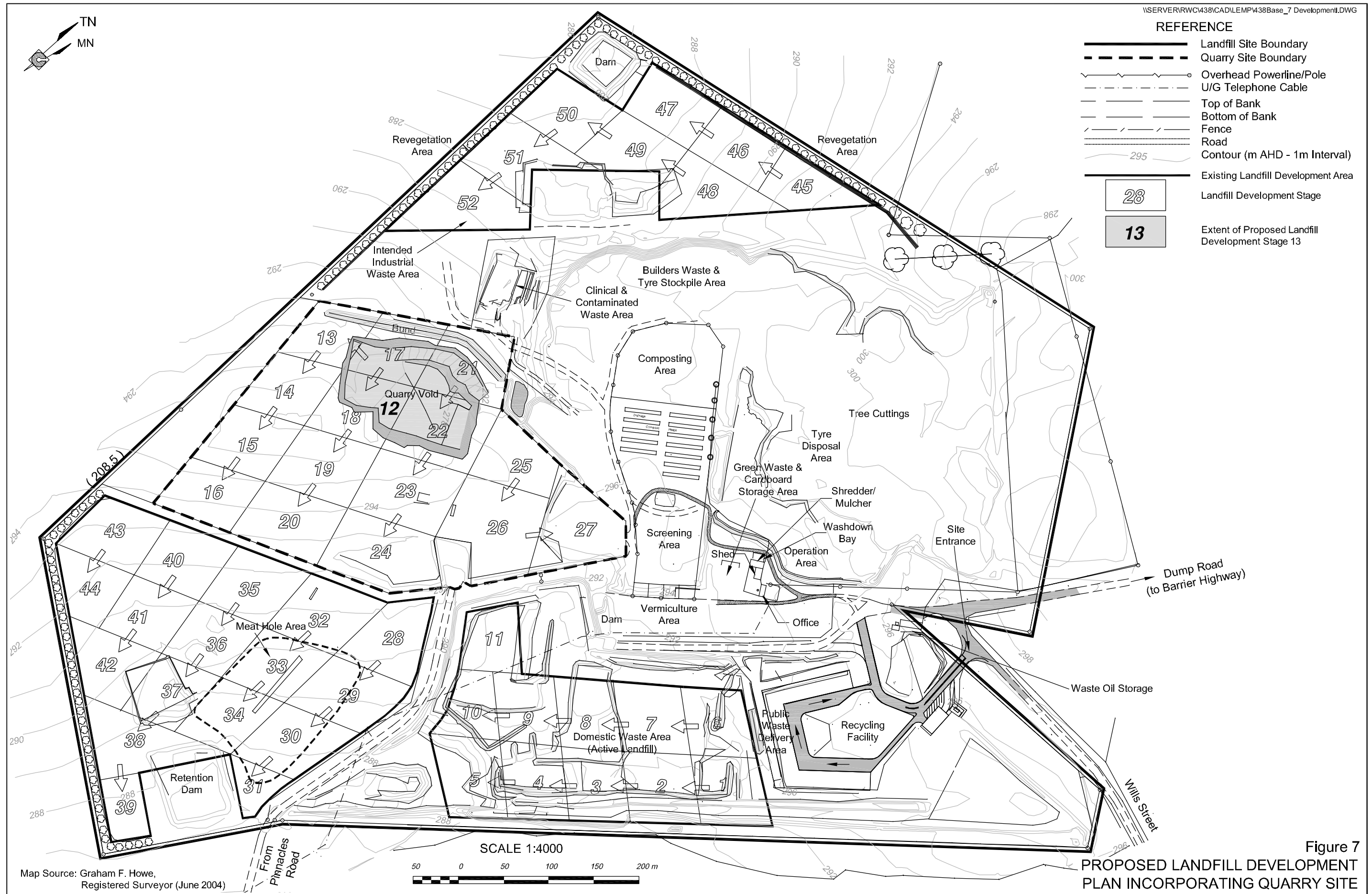
Contractors

Access rights to site materials are under a recycling contract to Brookes Metal Services which provides for the operator to manage site security, disposal management in the public areas, management of the Recycling Storage shed and waste oil storage. The contractor screens incoming material and removes items suitable for recycling.

A 60m x 40m storage shed located at the waste facility entrance is used by the contractor to store recyclable material, some sold to the general public or to other recyclers such as steel, glass etc.

Green waste is collected in the general waste area and selected for shredding. The shredded waste is made available to Regional Vermiculture Australia (EPA licence 12087 EPA "Class 3 open windrow composting licence" for developing of composting and garden products.





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Landfill Staging

Current

In accordance with the Landfill Site layout plan the current operating areas are stages 1-11. Final finished heights are in accordance with the LEMP. Daily cover is to be a minimum of 150mm over all exposed waste Intermediate cover to be 300 mm at 3 monthly intervals.

Future

It is envisaged that cell 12 (old quarry) shall follow the current areas and shall provide a disposal area for approximately 12 years based on current disposal quantities.

Future areas continue from 13 – 44 for domestic waste. Industrial waste is planned fro areas 45-52

Emergency disposal in wet weather is programmed for use of cell 11.

Industrial waste is disposed of in areas 45-52. The waste is arranged for disposal with the waste supervisor.

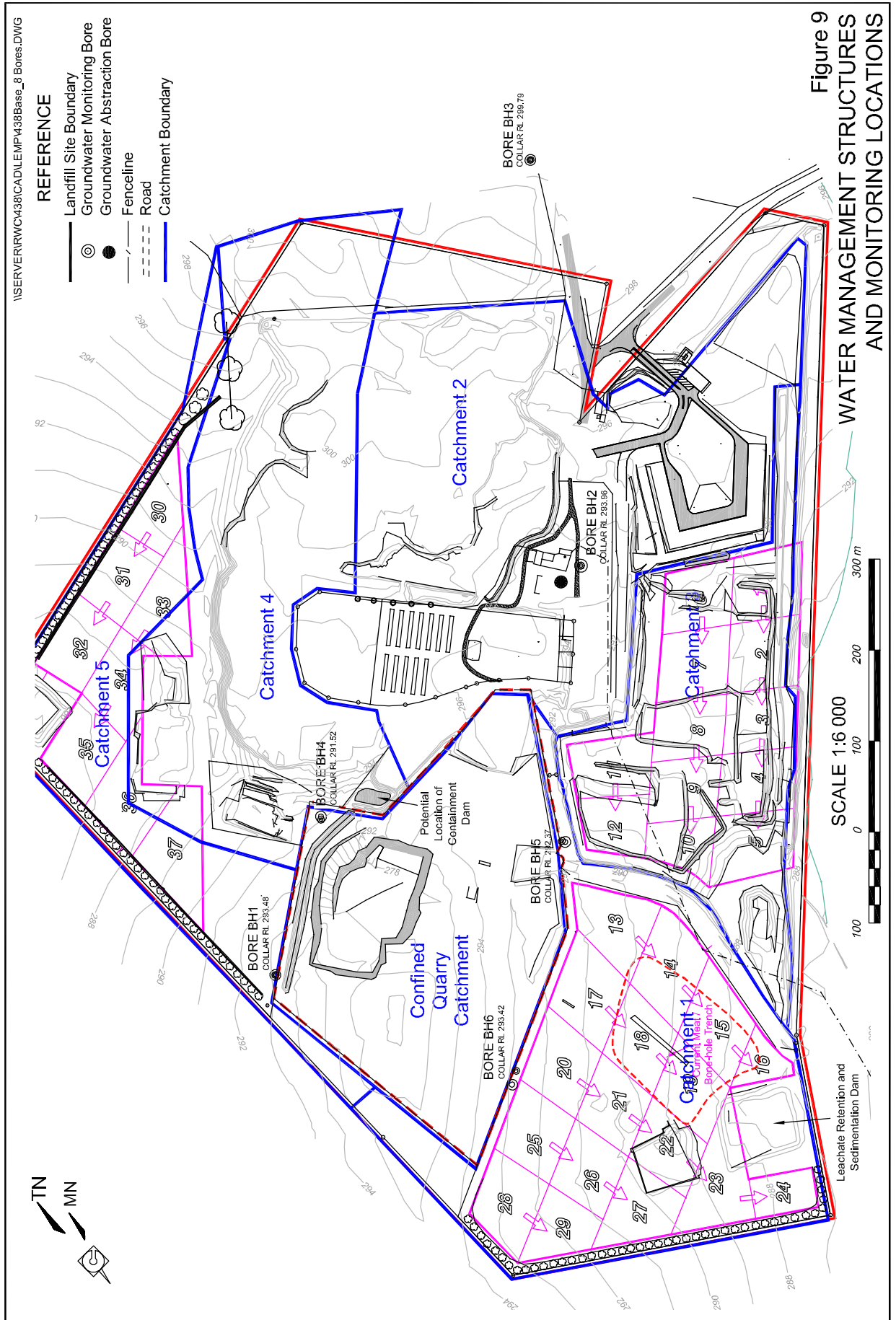
Stockpiling

Licence conditions require a minimum two weeks cover material to be available on site at any time.

Solid Inert builder's waste and demolition material is stockpiled when available and reused to build bund wall, capping & containments.

Green waste in large quantities is stockpiled for relocation to the shedder facility. Material for immediate shredding is stockpiled in the bays adjacent the shredder. Cardboard material is also stockpiled in the specific bay adjacent the shredder.





Fire Management

The objective, should a fire occur in the waste disposal areas, is to generally suffocate the fire. Due to depth and extent of compacted waste, water fighting is not successful and burnt areas still require cover to prevent windblown material and ashes. Tyres are the most hazardous and spectacular of fires.

Practical management of the fire is the responsibility of the Waste Supervisor. In most cases the Fire Brigade shall only be called where threats to buildings or personnel is evident or fires are developing in the surrounding regeneration areas

Containment of a fire shall be achieved by suffocation using loaders to push up material to suffocate fires.

Should a fire occur the Waste Supervisor shall determine the equipment and personnel required for containment and extinguishment.

A Fire Management plan has been adopted by Council and applies to all landfill areas.



Monitoring

Dust monitoring is conducted visually and an emphasis on site conditions is increased if weather conditions dictate. The Waste Supervisor shall determine the necessary measures to be taken. Generally dust suppression measures are increased should conditions deteriorate.

Ground water samples are taken when conditions permit. The waste supervisor advises the EHO when water is collected in the site dams. Samples are taken and sent for analysis.

Gas monitoring is conducted every 5 years using a grid pattern approach across the waste containment cells. The current analysis was completed in 2002.

Operational Documents

Daily Checklist – To be completed by Waste Services Supervisor

Day: M T W T F S S Date: / /

- | | |
|---------------------------------------------------------------------------------------|-------|
| 1. Perimeter and overall visual inspection for excessive material, security breaches. | Y / N |
| 2. Check fences, roundabout operations, catch fences. | Y / N |
| 3. Inspect waste oil disposal | Y / N |
| 4. Monitor dust suppression control measures | Y / N |
| 5. Check water storage tanks and storage tanks for trees | Y / N |
| 6. Liaise with waste recycling contractor | Y / N |
| 7. Assess waste quantities for adequate covering | Y / N |
| 8. Inspect machinery wash down bay, sump levels | Y / N |
| 9. Organise sludge removal as necessary | Y / N |
| 10. Coordinate contaminated waste disposal | Y / N |
| 11.. Machinery operating satisfactorily | Y / N |
| 12. Safe work method statements adhered to & PPE utilised. | Y / N |
| 13. Assess resources available for shredder operation | Y / N |
| 14. Assess waste received and prepare work programme for following day | Y / N |

Non compliance: Reasons _____

Special arrangements: _____

Incident / Accidents Yes / No Report Yes / No

Weather conditions: WIND – Light Moderate Gusty Dust storm

Wind direction - N NE E SE S SW W NW

Rainfall - _____ mm

Certified Correct _____ Waste Supervisor



Incidents and Accidents

In accordance with BHCC OH&S Policy

INCIDENT REPORT – WASTE DEPOT

DATE: _____	TIME NOTED: _____
--------------------	--------------------------

NATURE OF INCIDENT: (eg Fire, break in, chemical spill; oil etc)

Description of Location: _____
Description of Incident: _____ _____ _____
Has the Incident been Rectified? YES <input type="checkbox"/> NO <input type="checkbox"/>
If YES: Date: _____ Time: _____
If NO: Who has the incident been referred to? _____

BRIEF STATEMENT HOW THE INCIDENT WAS RECTIFIED AND/OR COMMENTS

COUNCIL PERSONNEL INVOLVED IN THE INCIDENT

NAME	Brief Description of Role and Responsibility

Report By: _____ (Name/Position) _____ (Date) _____ (Signature)



Industrial Waste Recording

For specific waste, a record is required under legislation by the EPA. This form or a modification may be presented for signoff by Councils Waste Supervisor.

Complete this part if waste is a dangerous good.

Proper Shipping Name

Dangerous Goods Class Subsidiary Risk/s (if any) | .
 UN Number Packing Group No

Type of Packaging Number of
 Packages Aggregate Net Quantity

Consignment Authorisation Number

— Load Number

This consignment authorisation is valid: From / / To / / ..
 .. (DD / MM / YY)

Licensed Non-licensed

Licence No.

Company Name

Address of waste source

Company Address

(If not the same as
 company address)

Contact Phone

Name of Consignor (print)

Signature of Consignor Date / /

List Contaminants

Waste Origin Code (ANZSIC) Waste Code

Amount of Waste tonnes kilograms

Physical nature of waste (solid, liquid, sludge, etc)

.....

Waste Type (hazardous, industrial, group A)

.....

Proposed treatment at destination (landfill, incineration, immobilisation, storage,
 treatment etc)

Date of dispatch / / Expected date of delivery to destination /
 /

Licensed Non-licensed

Licence No.

Company Name)

RTA Registration No. of Vehicle

Address)



Type of Transport (Road, Rail, Road & Rail)

Contact Phone)

Name of Driver (print)

Signature of Driver. Date / /

Company Name

Licence No.

Destination Address

Quantity Received

Treatment given to waste at destination

Contact Phone)

Date Received

Name of Representative (print) Signature

of Representative



**Broken Hill City Council
Waste Depot
Contact Numbers**

Complaints	0409712776	80802270	
Emergency	000		
Ambulance	131233		
Hospital	80801333		
Police	80870299		
Poisons Info	131126		
Waste depot Phone			
Waste Supervisor	0409 712 776		
Brooks Recycling	80870094		
EPA Hotline	131555		
EPA District office	03 50221096	Dennis Harvey	0427437905

RVA Telephone 80-878977 0411115274

FAX 80870157

Postal address

PO Box 532 Broken Hill NSW 2880

Electronic mail

General Information:

Sales: Sales@rva.net.au

Customer Support: CustomerSupport@rva.net.au

Workshop Supervisor	80878795	Trevor Blackwell
Loader Operators		
Support Staff	80802270	80802269
Hospital Representative		



Broken Hill City Council

WMS NO: 95

SAFE WORK METHOD STATEMENT (Part 1)

Area: Garbage & West Depot Operations

Project: Health Department Works

Job: DOMESTIC GARBAGE COLLECTION

Hazard Identification or Risk Assessment

Traffic
Pedestrians
Utilities/Services
Site Conditions

Safety Controls

Establish vehicle and pedestrians control and safety requirements
Activate traffic management plan
Wear safety vests and you work uniform
Wear eye and ear protection if required
Wear protective clothing including hats and sunscreen
use safe lifting techniques to move any heavy equipment
Keep clear of all construction vehicles and equipment
Check location of any utilities/services

Step	Procedure	Possible Hazards (for each step)	Safety Controls (for each hazard)
1	Perform pre-start checks.	*Damage/wear/leaks and personal injury.	*Ensure Operators Manual is available for reference. *Perform daily maintenance checks. *Ensure Fire Extinguisher is charged and in vehicle.
2	Picking up MGBs.	*Personal injury *Pedestrians. *Bystanders. *Traffic.	*Operate the truck on left hand side only when emptying bins. *Operate the truck from right hand side when driving from job to depot. *Ensure safe working distance from bystanders and parked vehicles. *Ensure that tree branches are clear of Bin Lifter. *Ensure that rubbish is removed from around Lifter Equipment. *Always wear PPE.
3	Refuel Plant.	*Burns *Personal injury	*Turn off all motors/mobile phones while refueling. *No naked flames or smoking while refueling.

12/2004

4

Cleaning after use

*Personal injury

*Always use PPE when washing trucks.

*Leave truck in a safe and clean condition.



Broken Hill City Council

SAFE WORK METHOD STATEMENT (Part 2)

Area: Garbage & West Depot Operations

Project: Health Department Works

Job: DOMESTIC GARBAGE COLLECTION

Personal Qualifications and Experience

*Vehicle Licences (Certificates of Competency) for Trucks, Backhoes and Front End Loaders.

Personnel, Duties and Responsibilities

- *Complete on-site Safety Checks
- *Check First Aid Kits for supplies
- *Check Fire Extinguishers are charged
- *Check that all Safety Equipment is in good order
- *Ensure that all Equipment is stored safely on work vehicles after use

Training Required to Complete Work

- *Instruction under the supervision of an experienced/competent person.
- *Manual Handling Training.
- *Sharps Disposal Training.

Engineering Details/Certificates/Workcover Approvals

- *Traffic Control Plan (if required)
- *Cable Location Plans (if required)

Codes of Practice/Legislation

- OH&S Act 2000
- OH&S Regulation 2001
- Council Policies & Procedures
- Workcover Regulations and Codes of Practice

Plant/Equipment

- *Check the availability of other Plant that may be required.
- *All other items required to complete the entire job.
- *Compactors.

Maintenance Checks

- *Service and check major items daily before starting.
- *Complete maintenance checks for Plant and Equipment.
- *Liaise with maintenance staff as required.

Signed Off: _____

Date: _____

Authorised By: _____

Area: _____

Valid Until: _____

Date: _____

Tuesday, 14 September 2004



Broken Hill City Council

WMS NO: 92

SAFE WORK METHOD STATEMENT (Part 1)

Area: General

Project: Plant Operations

Job: WATER TRUCK (TANKER)

Hazard Identification or Risk Assessment

- *Traffic.
- *Pedestrians.
- *Site Conditions.

Safety Controls

- *Establish vehicle and pedestrian Control & Safety Requirements.
- *Activate Traffic Management Plan.
- *Wear Safety Vests and your work uniform.
- *Wear eye & ear protection (if required).
- *Wear Protective Clothing including hats and sunscreen.
- *Use safe lifting techniques to move any heavy equipment.
- *Keep clear of all construction vehicles and equipment.
- *Check location of any utilities/services.

Step	Procedure	Possible Hazards (for each step)	Safety Controls (for each hazard)
1	Carry out pre-start check as per Pre-Start Up Procedures.	<ul style="list-style-type: none"> *Flat tyres *Broken/cracked windows/mirrors. *Engine damage *Trips/falls 	*Carry out pre-start checks and report to workshop for repairs if necessary.
2	Fill Tanker	<ul style="list-style-type: none"> *Trips/slips *Spills 	<ul style="list-style-type: none"> *Maintain good housekeeping. *Ensure hoses are tightly fitted.
3	Travel to Worksite.	*Traffic/pedestrians.	*Drive safely and to Road Regulations.

12/2004

- | | | | |
|---|---------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 4 | Water down worksite | <ul style="list-style-type: none">*Over watering (making worksite slippery).*Traffic/other Plant*Tanker tipping over*Pedestrians | <ul style="list-style-type: none">*Adjust water flow to correct spray.*Watch for possible hazards.*Drive safely to suit Road Conditions.*Care to be taken when watering footpaths. |
| 5 | Exit Worksite. | <ul style="list-style-type: none">*Traffic | <ul style="list-style-type: none">*Merge into traffic lane with care. |



Broken Hill City Council

WMS NO: 92

SAFE WORK METHOD STATEMENT (Part 2)

Area: General

Project: Plant Operations

Job: WATER TRUCK (TANKER)

Personal Qualifications and Experience

*Vehicle Licences (Certificates of Competency) for Trucks, Backhoes and Front End Loaders.

Personnel, Duties and Responsibilities

- *Complete on site Safety Checks.
- *Check First Aid Kits for supplies.
- *Check Fire Extinguishers are charged.
- *Check that all Safety Equipment is in good order.
- *Ensure that all equipment is stored safely on work vehicles after use.

Training Required to Complete Work

- *Instruction under the supervision of an experienced/competent person.
- *Manual Handling Training.
- *Induction--General Construction OH&S (green).
- *Induction--Work Activity Construction OH&S (blue).

Engineering Details/Certificates/Workcover Approvals

- *Traffic Control Plan (if required)

Codes of Practice/Legislation

- *OH&S Act 2000.
- *Codes of Practice.
- *Council Policies & Procedures.
- *OH&S Regulation 2001.

Plant/Equipment

- *Check the availability of other Plant that may be required to support the job.
- *All other items required to complete the entire job.
- *Water Tanker.

Maintenance Checks

- *Service and Check major items daily before starting.
- *Complete Maintenance Checks for Plant and Equipment.
- *Liaise with maintenance staff as required.

Signed Off: _____

Date: _____

Authorised By: _____

Area: _____

Valid Until: _____

Date: _____



SAFE WORK METHOD STATEMENT (Part 1)

Area: Garbage & West Depot Operations

Project: Health Department Works

Job: COMMERCIAL PROPERTIES (Dumper Bin Collection)

Hazard Identification or Risk Assessment

Traffic
Pedestrians
Utilities/Services
Site Conditions

Safety Controls

Establish vehicle and pedestrians control and safety requirements
Activate traffic management plan
Wear safety vests and you work uniform
Wear eye and ear protection if required
Wear protective clothing including hats and sunscreen
use safe lifting techniques to move any heavy equipment
Keep clear of all construction vehicles and equipment
Check location of any utilities/services

Step	Procedure	Possible Hazards (for each step)	Safety Controls (for each hazard)
1	Perform pre-start up checks.	*Damage/wear/leaks and personal injury.	*Ensure Operators Manual is available for reference. *Perform daily Maintenance checks as per Manual. *Ensure Fire Extinguisher is charged in vehicle.
2	Operation of picking up Dumper Bins	*Overhead wires/workers and personal injury.	*Ensure safe working distance from other vehicles. *Ensure all overhead power lines and tree branches are well clear of Bin.
3	Refueling of Plant.	*Burns/personal injury.	*Turn off all motors/mobile phones while refueling.
4	Cleaning after use.	*Personal injury.	*Always use PPE when washing trucks. *Leave truck in safe and clean condition.



Broken Hill City Council

SAFE WORK METHOD STATEMENT (Part 2)

Area: Garbage & West Depot Operations

Project: Health Department Works

Job: COMMERCIAL PROPERTIES (Dumper Bin Collection)

Personal Qualifications and Experience

*Vehicle Licences (Certificates of Competency) for Trucks, Backhoes and Front End Loaders.

Personnel, Duties and Responsibilities

- *Complete on-site Safety Checks
- *Check First Aid Kits for supplies
- *Check Fire Extinguishers are charged
- *Check that all Safety Equipment is in good order
- *Ensure that all Equipment is stored safely on work vehicles after use

Training Required to Complete Work

- *Instruction under the supervision of an experienced/competent person.
- *Manual Handling Training.
- *Sharps Disposal Training.

Engineering Details/Certificates/Workcover Approvals

- *Traffic Control Plan (if required)
- *Cable Location Plans (if required)

Codes of Practice/Legislation

- OH&S Act 2000
- OH&S Regulation 2001
- Council Policies & Procedures
- Workcover Regulations and Codes of Practice

Plant/Equipment

- *Check the availability of other Plant that may be required.
- *All other items required to complete the entire job.
- *Compactors.

Maintenance Checks

- *Service and check major items daily before starting.
- *Complete maintenance checks for Plant and Equipment.
- *Liaise with maintenance staff as required.

Signed Off: _____

Date: _____

Authorised By: _____

Area: _____

Valid Until: _____

Date: _____



Broken Hill City Council

SAFE WORK METHOD STATEMENT (Part 2)

Area: Garbage & West Depot Operations

Project: Health Department Works

Job: TRANSPORTING DUMPER BINS

Personal Qualifications and Experience

*Vehicle Licences (Certificates of Competency) for Trucks, Backhoes and Front End Loaders.

Personnel, Duties and Responsibilities

- *Complete on-site Safety Checks
- *Check First Aid Kits for supplies
- *Check Fire Extinguishers are charged
- *Check that all Safety Equipment is in good order
- *Ensure that all Equipment is stored safely on work vehicles after use

Training Required to Complete Work

- *Instruction under the supervision of an experienced/competent person.
- *Manual Handling Training.
- *Sharps Disposal Training.

Engineering Details/Certificates/Workcover Approvals

- *Traffic Control Plan (if required)
- *Cable Location Plans (if required)

Codes of Practice/Legislation

- OH&S Act 2000
- OH&S Regulation 2001
- Council Policies & Procedures
- Workcover Regulations and Codes of Practice

Plant/Equipment

- *Check the availability of other Plant that may be required.
- *All other items required to complete the entire job.
- *Compactors.

Maintenance Checks

- *Service and check major items daily before starting.
- *Complete maintenance checks for Plant and Equipment.
- *Liaise with maintenance staff as required.

Signed Off: _____

Date: _____

Authorised By: _____

Area: _____

Valid Until: _____

Date: _____

Tuesday, 14 September 2004



SAFE WORK METHOD STATEMENT (Part 1)

Area: Garbage & West Depot Operations

Project: West Depot Operations

Job: SHREDDER OPERATIONS

Hazard Identification or Risk Assessment

Traffic
Pedestrians
Utilities/Services
Site Conditions

Safety Controls

Establish vehicle and pedestrians control and safety requirements
Activate traffic management plan
Wear safety vests and you work uniform
Wear eye and ear protection if required
Wear protective clothing including hats and sunscreen
use safe lifting techniques to move any heavy equipment
Keep clear of all construction vehicles and equipment
Check location of any utilities/services

Step	Procedure	Possible Hazards (for each step)	Safety Controls (for each hazard)
1	Check machine for defects before start-up.	*Damage *Wear *Leaks *Always wear PPE	*Perform daily maintenance checks. *Ensure Operators Manual is available for reference. *Always wear PPE
2	Operation of Shredder	*Personal injury/death	*Make sure there is a clear view of the Hopper and Conveyor at all times. *Always wear PPE.
3	Cleaning after use.	*Personal injury	*Always use PPE when operating Shredder. *Leave Shredder in a safe and clean condition.



12/2004

WMS NO: 206

Broken Hill City Council

SAFE WORK METHOD STATEMENT (Part 2)

Area: Garbage & West Depot Operations

Project: West Depot Operations

Job: SHREDDER OPERATIONS (Vermeer)

Personal Qualifications and Experience

Personnel, Duties and Responsibilities

Training Required to Complete Work

Engineering Details/Certificates/Workcover Approvals

Codes of Practice/Legislation

Plant/Equipment

Maintenance Checks

Signed Off: _____

Date: _____

Authorised By: _____

Area: _____

Valid Until: _____

Date: _____



Broken Hill City Council

WMS NO: 99

SAFE WORK METHOD STATEMENT (Part 1)

Area: Garbage & West Depot Operations

Project: West Depot Operations

Job: LOADING SHREDDER (With Loader)

Hazard Identification or Risk Assessment

Traffic
Pedestrians
Utilities/Services
Site Conditions

Safety Controls

Establish vehicle and pedestrians control and safety requirements
Activate traffic management plan
Wear safety vests and you work uniform
Wear eye and ear protection if required
Wear protective clothing including hats and sunscreen
use safe lifting techniques to move any heavy equipment
Keep clear of all construction vehicles and equipment
Check location of any utilities/services

Step	Procedure	Possible Hazards (for each step)	Safety Controls (for each hazard)
1	Perform pre-start checks	*Damage *Wear *Leaks *Personal injury	*Perform daily maintenance checks.
2	Loading Shredder Hopper	*Personal injury *Injury to bystanders	*Always wear PPE *Always check for bystanders in the immediate work area.
3	Refuel Plant	*Burns *Personal injury	*Turn off all motors and mobile phones while refueling. *No naked flames or smoking while refueling.
4	Cleaning after use.	*Personal injury	*Always use PPE when washing Trucks. *Leave Truck in a safe and clean condition.



Broken Hill City Council

SAFE WORK METHOD STATEMENT (Part 2)

Area: Garbage & West Depot Operations

Project: West Depot Operations

Job: LOADING SHREDDER (With Loader)

Personal Qualifications and Experience

*Vehicle Licences (Certificates of Competency) for Trucks, Backhoes and Front End Loaders.

Personnel, Duties and Responsibilities

- *Complete on-site Safety Checks
- *Check First Aid Kits for supplies
- *Check Fire Extinguishers are charged
- *Check that all Safety Equipment is in good order
- *Ensure that all Equipment is stored safely on work vehicles after use

Training Required to Complete Work

- *Instruction under the supervision of an experienced/competent person.
- *Manual Handling Training.
- *Sharps Disposal Training.

Engineering Details/Certificates/Workcover Approvals

- *Traffic Control Plan (if required)
- *Cable Location Plans (if required)

Codes of Practice/Legislation

- OH&S Act 2000
- OH&S Regulation 2001
- Council Policies & Procedures
- Workcover Regulations and Codes of Practice

Plant/Equipment

- *Check the availability of other Plant that may be required.
- *All other items required to complete the entire job.
- *Loader.

Maintenance Checks

- *Service and check major items daily before starting.
- *Complete maintenance checks for Plant and Equipment.
- *Liaise with maintenance staff as required.

Signed Off: _____

Date: _____

Authorised By: _____

Area: _____

Valid Until: _____

Date: _____



Broken Hill City Council

SAFE WORK METHOD STATEMENT (Part 2)

Area: Garbage & West Depot Operations

Project: Health Department Works

Job: CARDBOARD COLLECTION

Personal Qualifications and Experience

*Vehicle Licences (Certificates of Competency) for Trucks, Backhoes and Front End Loaders.

Personnel, Duties and Responsibilities

- *Complete on-site Safety Checks
- *Check First Aid Kits for supplies
- *Check Fire Extinguishers are charged
- *Check that all Safety Equipment is in good order
- *Ensure that all Equipment is stored safely on work vehicles after use

Training Required to Complete Work

- *Instruction under the supervision of an experienced/competent person.
- *Manual Handling Training.
- *Sharps Disposal Training.

Engineering Details/Certificates/Workcover Approvals

- *Traffic Control Plan (if required)
- *Cable Location Plans (if required)

Codes of Practice/Legislation

- OH&S Act 2000
- OH&S Regulation 2001
- Council Policies & Procedures
- Workcover Regulations and Codes of Practice

Plant/Equipment

- *Check the availability of other Plant that may be required.
- *All other items required to complete the entire job.
- *Compactors.

Maintenance Checks

- *Service and check major items daily before starting.
- *Complete maintenance checks for Plant and Equipment.
- *Liaise with maintenance staff as required.

Signed Off: _____

Date: _____

Authorised By: _____

Area: _____

Valid Until: _____

Date: _____

Tuesday, 14 September 2004



Broken Hill City Council

WMS NO: 98

SAFE WORK METHOD STATEMENT (Part 1)

Area: Garbage & West Depot Operations

Project: Health Department Works

Job: LITTER BIN COLLECTION

Hazard Identification or Risk Assessment

Traffic
Pedestrians
Utilities/Services
Site Conditions

Safety Controls

Establish vehicle and pedestrians control and safety requirements
Activate traffic management plan
Wear safety vests and you work uniform
Wear eye and ear protection if required
Wear protective clothing including hats and sunscreen
use safe lifting techniques to move any heavy equipment
Keep clear of all construction vehicles and equipment
Check location of any utilities/services

Step	Procedure	Possible Hazards (for each step)	Safety Controls (for each hazard)
1	Perform pre-start checks.	<ul style="list-style-type: none"> Wear *Leaks *Damage *Personal injury 	<ul style="list-style-type: none"> *Ensure Operators Manual is available for reference. *Perform daily maintenance checks. *Ensure Fire Extinguisher is charged and in an accessible position.
2	Operation of Bin Lifter Arm.	<ul style="list-style-type: none"> *Traffic *Pedestrians *Personal injury 	<ul style="list-style-type: none"> *Operate the truck on left hand side when lifting Bins. *Ensure safe working distance from bystanders. *Ensure safe working distance from parked vehicles. *Ensure the Hopper is empty when travelling from Bin to Bin. *Always use PPE.
3	Refuel Plant	<ul style="list-style-type: none"> *Burns *Personal injury 	<ul style="list-style-type: none"> *Turn off all motors and mobile phones before refuelling. *No naked flames or smoking while refuelling Truck.

12/2004

4 Cleaning after use.

*Personal injury

*Always use PPE when washing Trucks.
*Leave Truck in a safe and clean condition.



Broken Hill City Council

SAFE WORK METHOD STATEMENT (Part 2)

Area: Garbage & West Depot Operations

Project: Health Department Works

Job: LITTER BIN COLLECTION

Personal Qualifications and Experience

*Vehicle Licences (Certificates of Competency) for Trucks, Backhoes and Front End Loaders.

Personnel, Duties and Responsibilities

- *Complete on-site Safety Checks
- *Check First Aid Kits for supplies
- *Check Fire Extinguishers are charged
- *Check that all Safety Equipment is in good order
- *Ensure that all Equipment is stored safely on work vehicles after use

Training Required to Complete Work

- *Instruction under the supervision of an experienced/competent person.
- *Manual Handling Training.
- *Sharps Disposal Training.

Engineering Details/Certificates/Workcover Approvals

- *Traffic Control Plan (if required)
- *Cable Location Plans (if required)

Codes of Practice/Legislation

- OH&S Act 2000
- OH&S Regulation 2001
- Council Policies & Procedures
- Workcover Regulations and Codes of Practice

Plant/Equipment

- *Check the availability of other Plant that may be required.
- *All other items required to complete the entire job.
- *Compactors.

Maintenance Checks

- *Service and check major items daily before starting.
- *Complete maintenance checks for Plant and Equipment.
- *Liaise with maintenance staff as required.

Signed Off: _____

Date: _____

Authorised By: _____

Area: _____

Valid Until: _____

Date: _____



SAFE WORK METHOD STATEMENT (Part 1)

Area: Garbage & West Depot Operations

Project: West Depot Operations

Job: LOADER OPERATIONS

Hazard Identification or Risk Assessment

Traffic
Pedestrians
Utilities/Services
Site Conditions

Safety Controls

Establish vehicle and pedestrians control and safety requirements
Activate traffic management plan
Wear safety vests and you work uniform
Wear eye and ear protection if required
Wear protective clothing including hats and sunscreen
use safe lifting techniques to move any heavy equipment
Keep clear of all construction vehicles and equipment
Check location of any utilities/services

Step	Procedure	Possible Hazards (for each step)	Safety Controls (for each hazard)
1	Perform pre-start checks.	*Wear *Leaks *Damage *Fire	*Ensure Operators Manual is in Plant and available for reference. *Perform daily maintenance and checks as per Manual (page 99). *Ensure Fire Extinguisher is charged and in Loader.
2	Before starting Loader	*Slips/falls when getting in/out of Loader.	*Refer to Operators Manual (page 15)
3	Starting Loader	*Personal injury *Injury to bystanders	*Refer to Operators Manual (page 16)

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4	Loader operations	<ul style="list-style-type: none">*Noise*Visibility*Uneven ground*Injury to bystanders*Wire entanglement	<ul style="list-style-type: none">*Use of PPE*Ensure Loader windows/mirrors are clean.*Approach uneven ground with caution and be aware of shifting ground that may lead to Plant becoming unstable.*Always check the movement of vehicles around the Tip Face.*Avoid driving over wire if possible.*If Loader becomes entangled take to a safe work area to remove wire.
5	Parking Loader	<ul style="list-style-type: none">*Uneven ground*Lowering of Equipment	<ul style="list-style-type: none">*Approach uneven ground with caution.*Ensure area around Loader is clear before lowering Rippers and Bucket.
6	Stopping Loader	<ul style="list-style-type: none">*Overheating	<ul style="list-style-type: none">*After Loader is parked and Park Brake is engaged, allow the engine 5 minutes before shut-down.
7	Refuelling Loader	<ul style="list-style-type: none">*Burns*Personal injury	<ul style="list-style-type: none">*Turn off all motors/mobile phones while refuelling.*No naked flames or smoking while refuelling.
8	Cleaning after use.	<ul style="list-style-type: none">*Personal injury	<ul style="list-style-type: none">*Always use PPE when washing Loader.*Leave Loader in a safe and clean condition.



Broken Hill City Council

WMS NO: 97

SAFE WORK METHOD STATEMENT (Part 2)

Area: Garbage & West Depot Operations

Project: West Depot Operations

Job: LOADER OPERATIONS

Personal Qualifications and Experience

*Vehicle Licences (Certificates of Competency) for Trucks, Backhoes and Front End Loaders.

Personnel, Duties and Responsibilities

- *Complete on-site Safety Checks
- *Check First Aid Kits for supplies
- *Check Fire Extinguishers are charged
- *Check that all Safety Equipment is in good order
- *Ensure that all Equipment is stored safely on work vehicles after use

Training Required to Complete Work

- *Instruction under the supervision of an experienced/competent person.
- *Manual Handling Training.
- *Sharps Disposal Training.

Engineering Details/Certificates/Workcover Approvals

- *Traffic Control Plan (if required)
- *Cable Location Plans (if required)

Codes of Practice/Legislation

- OH&S Act 2000
- OH&S Regulation 2001
- Council Policies & Procedures
- Workcover Regulations and Codes of Practice

Plant/Equipment

- *Check the availability of other Plant that may be required.
- *All other items required to complete the entire job.
- *Loader.

Maintenance Checks

- *Service and check major items daily before starting.
- *Complete maintenance checks for Plant and Equipment.
- *Liaise with maintenance staff as required.

Signed Off: _____

Date: _____

Authorised By: _____

Area: _____

Valid Until: _____

Date: _____

Tuesday, 14 September 2004



Broken Hill City Council

Waste Depot

Fire Management Plan

This Plan is prepared for the management of fire and emergency response procedures at the Broken Hill City Council Waste Depot.

Section 20 of the OHS Act provides that an employee also has a duty of care to take reasonable care for the health and safety of people who are at the employee's place of work and may be affected by the employee's acts or omissions at work.

PROCEDURES

1. BACKGROUND

The Landfill depot is a final destination for a variety of unwanted products including household and commercial refuse. These could include toxins, chemicals, asbestos, oils, aerosol cans, tyres and garden pesticides/herbicides. No one should be complacent when dealing with an emergency in a landfill. Any fire or spill could produce a serious health threatening situation so it is imperative that the incident be contained as soon as possible.

2. RESPONSES

The fire brigade is the coordinating authority to handle fires and similar emergencies. Where an emergency has been identified the response should be to contact the fire brigade by telephoning 000.

Remember the 000 call goes to a call centre (which could be located anywhere in Australia).

THE OPERATOR WILL ASK CERTAIN QUESTIONS THAT MUST BE ANSWERED.

Examples of some question you will get when calling 000

What service do you require? - Police, Fire, Ambulance

You will then be switched through to the appropriate service who will ask question such as:

What type of incident? - eg. chemical spill, fire.

What address? - the depot is located at the intersection of Wills St and Dump Road

What is the nearest cross street? -

What is the Suburb or Town? - Broken Hill.

Are there any nearby landmarks? - the sewerage farm

Are there any injuries? -

REMEMBER - R A C E

- R** Remove people from the immediate danger area;
Rescue /Evacuate other people from adjoining areas.

- A** Alert others - especially staff in the vicinity;
Fire Brigade (0-000).

- C** Contain the fire (if safe to do so);

- E** Extinguish the fire (if safe to do so).

3. WATER POINTS

A brief story on the location of water mains and water access.

THE WASTE DEPOT COMPRISES

Description of the premises

This goes with appropriate map

Location of various storages

This goes with appropriate map

Maps of Roads

Escapes routes

Staging Post - For the purpose of evacuation all personnel should be directed to the main gate. The FSO should ensure that personnel are directed away from the main thoroughfare as this will be in use by emergency services response groups, including fire brigade, and could include ambulances, authorised officers of Broken Hill City Council.

If access to the Main Gate is not an option, then the FSO should direct people to the quarry access gate.

Personnel - at any one time the following people may be present within the depot:

At the landfill site

- the official scavenger
- the official scavenger employees, including his wife
- up to four waste services personnel in vehicles
- several members of the public
- Others who are on site in an official capacity. (Note: it is recommended that no unauthorised person should be allowed onto the site).

FIRE SAFETY OFFICER

A Fire Safety Officer should be appointed. Preferably this person will spend most of his/her working time at the depot. The FSO will be responsible for:

Operational Control

- Ensure that all fire fighting equipment is kept in good order and repair.
- Ensure that appropriate signs are placed at each site where fire is a potential hazard.
- Ensure that all exit roads and gates are clear of fixtures.
- Ensure that work sites and sheds are clear of debris.
- General housekeeping.

Fire Safety Review

- Undertake regular inspections (preferably monthly or at least quarterly) of all sites where fire is a potential hazard.
- take appropriate action to rectify potential problems.
- Report any change or deficiency to the Supervisor.
- Initiate procedural changes or reviews.

COMMON CAUSES OF LANDFILL FIRES

These include:

- Arson - fires that are deliberately lit to cause havoc, usually at night.
Arsonists are tempted by exposed flammable material; secluded accessible locations where security may not be visible; accumulated rubbish on fence lines.
- Carelessness - especially during winter when people tip hot ashes into the landfill. The landfill depot should be a smoke free zone.
 - a. Ignorance - assuming that someone else will do the job.
 - b. arrogance - assuming that you know what to do in an emergency.
 - c. Apathy - not caring about or doing anything to rectify dangers that exist.
- Accidental or mechanical causes where fire may be caused by defective machinery.
- Internal combustion or combustion from products interred in the landfill such as aerosol cans, gases produced from putrescible materials, grass clippings etc.

THE TYPES OF FIRES MOST LIKELY AT THE DEPOT ARE:

- a. Surface fire - usually papers, plastic bags etc. - most can be extinguished with minimal effort eg. a shovel full of dirt or a squirt with the hand held fire extinguisher.
- b. Pit fire.
- c. Tyres.
- d. Grass.
- e. Chemical.

MOST EFFECTIVE CONTROL OF FIRE

In the event of fire the most effective control has proven to be a smothering of dirt applied with front-end loaders.

Experience has shown that the application of water is ineffective as:

- at night water will create steam that distracts the firemen;
- water "spreads" a chemical fire;
- the water pressure at the depot is ineffective against a fire that has taken hold.

**ENVIRONMENTAL MANAGEMENT PROCEDURES FOR
GROUND WATER TEST WELLS – BROKEN HILL WASTE DEPOT**

1. PURPOSE/OBJECTIVE

This procedure relates to the sampling and analysis of groundwater from groundwater test wells located at Council's Waste Depot. The analysis of groundwater is a requirement of Council's EPA Licence for the Waste Depot whilst its purpose is to assess whether contamination from the landfill site is entering the ground water.

2. LEGAL REQUIREMENTS

As previously mentioned in (1) above the sampling of ground water at Council's Waste Depot is a requirement of Council's EPA licence for the facility. It is also a requirement of the EPA's guidelines for solid waste landfill sites.

3. SAFETY

There are two aspects of this procedure where extra caution should be exercised in order to avoid harm to sampling staff. These matters are discussed below;

- a) Before sampling each test well must be purged of stagnant water. A 12V/24V submersible pump is used for this task which runs off of a high current deep cycle battery. Care must be taken not to short-circuit the terminals of this battery as this could result in the battery catching fire or exploding. Of the equipment used for sampling the stainless steel pump tethering cable is most likely to cause a battery short circuit if it is allowed to fall across the terminals.
- b) The sampling containers used for the ground water sampling are supplied by the laboratory and some contain strong acids as preservatives. Care must be taken to ensure that neither undiluted or diluted acid comes in contact with the sampling staff's skin, eyes or clothing. Special care should be taken when filling the small glass sampling containers as it is easy for these to overflow. The use of appropriate gloves is recommended. Squirt bottles containing water should always be on hand in case diluted/undiluted acid makes contact with the sampling staff's skin or eyes (unlikely). Any contact with skin or eyes should be very well flushed and in the case of eye contact, medical attention should be sought immediately.

4. ACCOUNTABILITY AND RESPONSIBILITIES

Council's Environmental Health & Building Surveyor and/or Council's Trainee Environmental Health & Building Surveyor will be responsible for the purging and sampling of the test wells and the forwarding of all samples to the laboratory for analysis.

5. SAMPLING PROCEDURE

Ground water samples are taken quarterly. A reminder will come up on Council's computer re-submit system at a point six weeks and four weeks before the sample results are due. The first reminder is a prompt to contact the laboratory and request the supply of adequate sampling containers. Sampling containers are obtained from the Department of Mineral Resource's Environmental Geochemistry Laboratory in Lidcombe, Sydney. The second prompt is a reminder to carry out the actual sampling. Sampling should normally be carried out early in the week to avoid samples arriving at the laboratory at or close to the weekend.

The main equipment required to carry out the purging/sampling of the test wells is as follows;

- a) Sampling containers as supplied from the laboratory.
- b) 12 volt submersible purging pump, with all attachments.
- c) 12 volt deep cycle battery.
- d) Water depth tester (ie. fox whistle).
- e) Digital thermometer.
- f) Demineralised water, cleaning/drying materials, book for recording water depth and temperature results.

All equipment is stored in the Environmental Services Division at Council's Administration Centre.

6. PURGING/SAMPLING PROCEDURE

- a) The test wells are provided with locking caps so these must be unlocked before any work can commence. The keys are located in Council's Environmental Services Division.
- b) Before purging the depth of the water level is checked with the fox whistle. The depth of the water level is recorded. This procedure must be carried out before any purging or sampling is carried out.
- c) In order to purge the test well the submersible pump is lowered to a point that is midway down the water column. The pump is then connected to the 12volt deep cycle battery and water is pumped for a period of 30 minutes. During this period approximately 120 litres of water is pumped from the test well.
- d) After purging the pump can be used to supply water for the samples. Each sample container is filled in turn. Care must be taken when filling the 40ml containers in order to prevent overflowing. These sample containers contain strong acids as preservatives. There are currently 5 sample containers to fill for each test well.

- e) After sampling, an empty container (ie. foam cup) is filled with water so that a temperature reading can be taken with the digital thermometer. A record is kept of the temperature.
- f) After removal of the pump the test well caps are closed and locked to prevent possible contamination of the wells between sampling periods.
- g) At the completion of all sampling the samples are taken back to Council's Administration Centre and placed in the refrigerator until they are forwarded to the laboratory by air express the following day.
- h) The samples are packed in a large esky with an adequate supply of freezer bricks (usually 3) and sealed. The esky is then sent to the following laboratory by TNT Air Express

NSW Department of Mineral Resources
Environmental Geochemistry Laboratory
LIDCOMBE NSW 2141

- i) The samples are analysed for the following parameters.

Ph, Conductivity, Ca, Mg, Na, K, Chloride, Sulphate, Nitrate, Bicarbonate, Ammonia Nitrate/Nitrate as N, Alkalinity, Lead, Cadmium, Total Organic Carbon.

The parameters are as specified by the Environmental Protection Authority.

- j) When the analysis results are received back from the laboratory they are forwarded to the EPA as part of Council's quarterly reporting procedure for the Waste Depot and are also stored in Council's Material Filing System.

7. TRAINING

Staff involved with carrying out borehole purging or sampling activities must be adequately trained in general environmental sampling procedures. The tasks will therefore normally be performed by Council's Environmental Health & Building Surveyor or Council's Trainee Health & Building Surveyor. If required untrained staff may assist with sampling.

8. DEFINITIONS

Purging: Purging is the process of pumping stagnant water out of a test well prior to sampling so that the samples taken are more representative of the surrounding ground water.

9. REFERENCES

Not applicable

