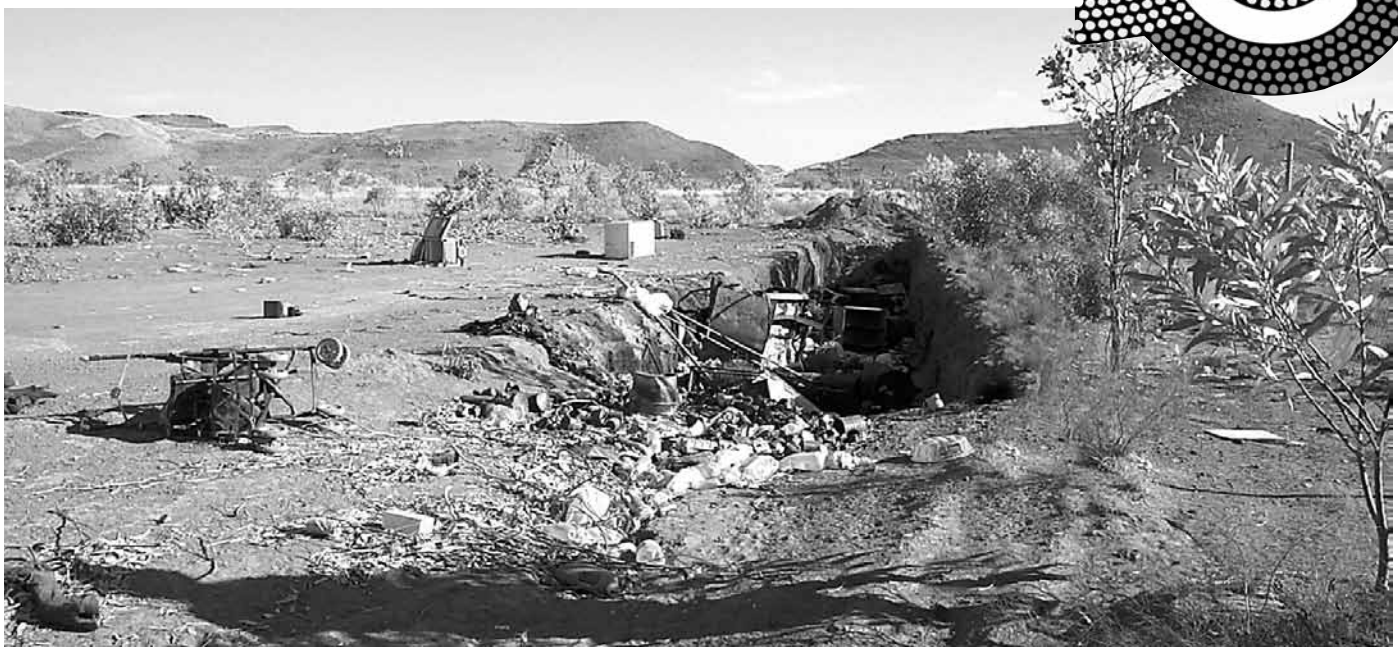
BUSH TECH #19

Maintaining your tip



Ideally, wastes should actually be dumped IN the trench, not nearby, and at the end of the day, all of the waste in the trench should be covered over with a layer of soil at least 150mm deep.

You may have noticed a few problems with your rubbish tip – for example a foul odour, or flooding during the wet season causing oily slime to ooze out into the ground water or flow out into stormwater drains. How can you manage your rubbish dump without spending too much money, without making people sick and without causing pollution? This BUSH TECH provides advice for remote communities on how to keep your landfill working well.

How to make the landfill work properly.

When waste is being dumped in a landfill trench, it should be buried to a depth of no more than 1 metre, ie. the trench should be only half full. When the entire trench is half full, you can go back and fill it with more rubbish to a height of 1 metre above the previous waste, leaving space for cover materials. At the end of the day's operations all waste in the trench should be covered over. The soil covering should be at least 150mm. This is necessary to cut down on foul odours, keep the rats and mice away, control diseases and minimise the spread of fires.

After covering with soil, waste should be compacted to save space and extend the landfill life, but more importantly to prevent the site from subsiding in future years when the tip is decommissioned. Suddenly and unexpectedly sinking into piles of refuse in the middle of a football game could be very unpleasant, especially if you were just about to score that winning goal! Waste can be compacted by driving back and forth across it with a large rubber-tyred roller.

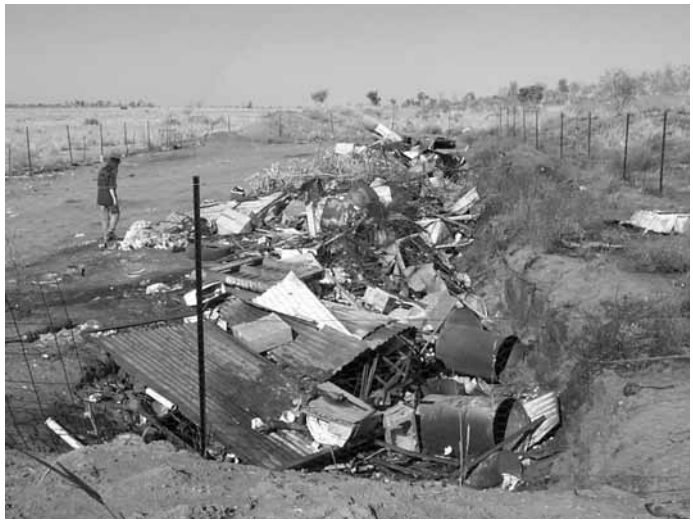
Earthmoving equipment is very useful for excavating trenches, compacting waste and applying cover materials, but it is very expensive. Cover materials can be applied by hand with a shovel, of course. Some communities in the Top End and in Western Australia are sharing expensive equipment such as front end loaders so that every community in their entire region can have access to excavators, bulldozers and front end loaders to do a variety of useful jobs around the community, not just managing the landfill. Sounds like the way to go!

Traffic barriers and signs should make it clear to anyone dumping waste which trench or working face is currently in use. Portable temporary litter fences should be installed and these need to be moved around occasionally as different parts of the site are used for dumping. Fire breaks need to be maintained too, vegetation quickly regrows in wet areas and this can be a fire hazard.

Cars should not be dumped in the landfill trenches or piled up against the working face. It is better to set aside an area where they can be located. If the community is able to participate in recycling schemes and decides to do so, then an area should be set aside for storing recyclable wastes and signs should be put up (in an appropriate language) to make it clear where this type of waste should be stored. A hardstand area is ideal, if you can afford one. Educating the community members about recycling is of course very helpful too.

Green waste should be stockpiled separately so that it does not take up too much space. Ideally, it could be cut into smaller pieces and used for mulch around trees.

For dumping of special wastes such as septic tank sludge, waste from the clinic, dead animals such as community dogs, and waste paint, seek advice from your government environment department or from CAT. Don't just dump them in the landfill and hope for the best!



This landfill could be improved by adding cover materials to prevent flies from breeding and to allow rainwater to run off rather than pooling in the trenches.

BUSH TECH #19

Maintaining your tip (continued)

Troubleshooting –

How to solve common landfill problems before they make you feel down in the dumps.

Our dump smells disgusting.

Add cover materials every time waste is dumped in a trench or at the working face.

Rubbish is blown about all over the place.

Install a temporary litter fence and periodically remove windblown litter from the fence and put it together with the other waste.

We don't have any earthmoving equipment.

If possible, borrow it from a neighbouring community. Try to schedule your landfill maintenance activities for a time when you need equipment for other works such as road construction and maintenance. This helps to reduce the cost of equipment mobilisation.

Water pools whenever it rains and millions of mosquitos bite.

Wow! You could use some improved drainage. Pile up earth around your landfill site to make a bund or berm to divert that rainwater away.

We can't get anyone to collect recyclable materials from our community.

This is a state-wide or territory-wide issue. Contact your local politicians and ask for their assistance.

Birds keep hanging around the landfill and this interferes with planes landing at the community airstrip.

Your landfill or your airstrip is in the wrong place! You need to move one or the other. They should be as far away from each other as possible.

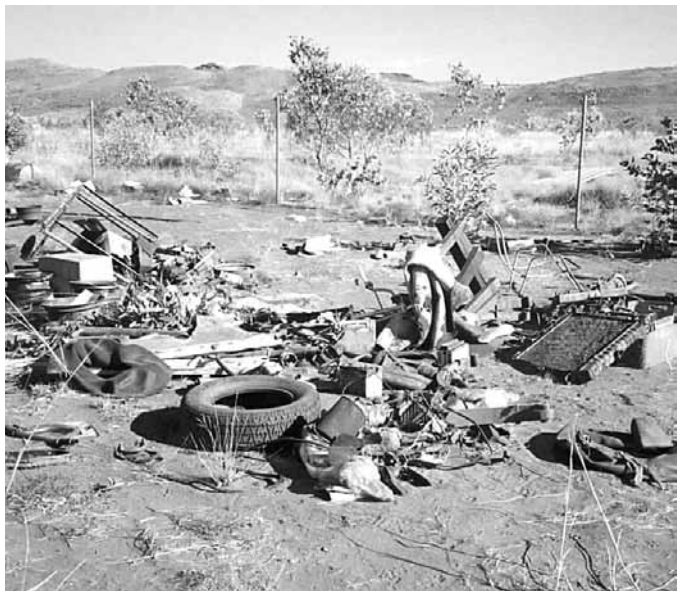
Contractors have taken up most of our landfill space with construction and demolition waste, PVC water pipes etc.

Whenever you prepare tender documents for a contract, you need to write into the contract a condition that contractors will take their waste away with them when they leave your community.

What about when all the trenches are full or the site is full of rubbish?

Actually, we should really think about decommissioning the landfill long before it finally gets to a crisis situation at the end of its useful life. Ideally, trenches of waste should be covered over with some suitable material as you go along, not leaving it until the whole dump is full. When all of the trenches or cells are full, then cover over the entire site with at least 600mm of an approved material (e.g. clayey soil) and compact it very well. This will avoid subsidence and infiltration of rainwater. Any drains should be filled in and any raised mounds of earth (technically known as bunds or berms) should be flattened. If there is no suitable clayey soil available to cover the site you may have to try out a second class material such as anthill soil from termite mounds or a thick layer of gravel.

Trees should be planted on the site, preferably native species. Access to a decommissioned landfill site should be restricted while it is being rehabilitated ie. leave the fence in place. After two or three years, if the site looks good and shows no signs of subsidence or pools of stagnant water, it can be used for parklands or soccer fields. But don't even think of putting buildings on the site! At this stage the fencing can be removed. It will probably not be in good enough condition to be reused as fencing, however it may be possible for it to be recycled together with other scrap metals.



At this landfill, an area has been set aside for recyclable wastes, to prevent them from being contaminated by rotting wastes.

Links

Guidelines for the siting, design and management of solid waste disposal sites in the Northern Territory
http://www.lpe.nt.gov.au/enviro/POLDOC/landfill/Swcont.htm

Panamerican Health Organisation – ***Landfilling Principles***
www.cepis.ops-oms.org/muwww/fulltext/repind49/lesson2/lesson2.html

Panamerican Health Organisation – ***Sanitary Landfill Operation***
www.cepis.ops-oms.org/muwww/fulltext/repind49/lesson8/lesson8.html

Environmental Health Handbook -see pages 130-131
www.menzies.edu.au/publications/ocpapers/ehb.pdf

Environmental Health Standards for Remote Communities in the Northern Territory – see pages B.74 – B.77
www.nt.gov.au/health/healthdev/environ_health/eh_standards/Environmental_Health_Standards_Remote_NT.pdf

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