12 WASTE HAZARDOUS SUBSTANCES AND CONTAMINATED SITES

Overview

- **During 2002-2003 5.4 tonnes of waste hazardous substances were collected from throughout the Northland Region**
- **657 kg of intractable material was collected during 2002-2003**
- **Since 1993 over 35 tonnes of waste hazardous substances have been collected, recycled, disposed of or placed into long-term storage**
- **All or part of the Councils stockpile of intractable wastes will be disposed of overseas during the 2003-2004 financial year**
- **During 2002-2003 approximately 100 sites listed on the contaminated sites database were visited and inspected**
- **Work continued on developing a consistent approach to the management of contaminated sites in New Zealand**

2002/2003 Annual Plan Performance Targets

To facilitate the collection, transport, re-use, storage, treatment and disposal of redundant agrichemicals and other small quantities of waste hazardous chemicals, where there is no appropriate service provided, by:

- **Operating, in conjunction with Wrightson, waste agrichemical collection facilities at Whangarei, Dargaville, Waipapa and Kaitaia**
- **Operating a facility in Whangarei for the short term storage of hazardous chemicals awaiting transport**
- **Providing a collection, transport and disposal service for the other quantities of waste hazardous chemicals**
- **Export for safe destruction, one third of the intractable waste hazardous chemicals that the Council has in long term storage**

To facilitate the management of contaminated sites in Northland, by:

- **Maintaining and updating a database of potentially contaminated sites, related site assessments and remediation**
- **Promoting the assessment and remediation of significant contaminated sites**
- Promote the implementation of the region's contaminated sites management strategy by providing information and advice to District Councils and others with responsibility for contaminated sites, including making submissions on related plans and consent applications

12.1 Waste Hazardous Substances

The safe disposal of redundant or unused agricultural chemicals and other waste hazardous substances is an issue for all communities, especially given the limited disposal options available in this country. Currently, only two commercial hazardous waste disposal facilities operate in the North Island, situated in Auckland and Wellington. While some New Zealand landfills offer co-disposal for low-key hazardous wastes, the option is not available in the Northland Region.

Some of the more hazardous agricultural chemicals held by farmers and horticulturists (especially organochlorines such as DDT, Lindane or Dieldrin) cannot be legally disposed of in New Zealand. These chemicals require special disposal technologies such as high temperature incineration.

12.1.1 Operation Depots

The Northland Regional Council, together with Wrightson, operates four collection depots, located in Kaitaia, Waipapa, Dargaville and Whangarei. The Council also oversees Whangarei District Council waste stores in the city.

A purpose-designed store is located at the Pohe Island landfill in Whangarei, exclusively operated by the Council. At the complex, waste hazardous substances are repacked, labelled and placed in temporary storage until being despatched to Auckland for long-term storage or disposal. Council staff visit individual properties to recover chemicals that may be leaking, require repackaging or in a deteriorating condition.

The Council also provides assistance to private organisations requiring chemical disposal. Such incidents include the collection of laboratory wastes from schools and industrial wastes (including solvents and timber treatment sludges).

Operation of Depots

The stores operated by Wrightson accept all received chemical wastes. These wastes are documented before being placed in the store itself. Once stored, the wastes become the responsibility of the Northland Regional Council. Waste stored at the Wrightson stores is therefore regularly transported to the Pohe Island Complex.

Equipment

Spill and safety equipment is available on-site at all Wrightson stores, in the event of any emergency such as the accidental spill of chemicals. The Council regularly updates emergency procedures, as well as restocking of equipment when necessary.

12.1.2 Quantities and Types of Chemicals Collected

During the 2002/ 2003 financial year approximately 5 tonnes of waste hazardous substances were collected for long-term storage, redistribution or pre-treatment. This is less than in previous years, with about 9 tonnes of hazardous waste collected in the both 2000/2001 and 2001/2002 financial years.

Hazardous wastes collected over the last financial year included:

Insecticides and Fungicides

Approximately 1 tonne of insecticides and fungicides were collected from throughout the region with the majority coming from the Kerikeri area. Approximately 10% of the total volume collected was returned to the manufacturer. The remaining 90% was in a severely deteriorating condition, the labels illegible, and (in some instances) required repackaging. The majority of the collected insecticides and fungicides were sent to Auckland for disposal or long-term storage.

Pest Control Wastes

Approximately 1 tonne of pest control baits were handed in or collected from various government agencies and private individuals. The majority of these wastes were either past their expiry date or were weather damaged. These wastes were destroyed rather than being placed into long-term storage.

Agrichemicals

Approximately 3 tonnes of agrichemicals were collected from throughout the region. The vast majority of these were herbicides (~2 tonnes), which are still readily available on the market and legal to use. These were distributed to Landcare groups, predominately in the Far North District. The other tonne of agrichemicals were in a deteriorating condition, deregistered or banned. These were not redistributed.

Laboratory Chemicals

Approximately 350 kg of laboratory chemicals were collected from a number of schools and private laboratories. 10% of these chemicals were recycled, the majority (85%) were destroyed, and the remaining 5% were placed into long-term storage.

The storage of hazardous waste is a delicate procedure, and safety is paramount.

12.1.3 Long Term Storage of Intractable Wastes

At present, the Northland Regional Council has 1440 kg of intractable wastes held in long-term storage. These wastes include:

- 250 kilograms of the deregistered herbicide 245t
- 800 kilograms of persistent organic pollutants including DDT, Lindane etc.
- 250 kilograms of 24 D dust
- 100 kilograms of arsenic based sheep dips
- 25 kilograms of Pentachlorophenol
- 10 kilograms of Chloropicrin
- 5 kilograms of mercury

12.1.4 Storage of Waste Hazardous Substances

The Northland Regional Council stores approximately 3.5 tonnes of waste hazardous substances (including the intractable wastes as listed above). At present, there are no disposal options available within New Zealand for these wastes.

In the interim, the waste hazardous substances are packed in UN approved containers and stored in licensed premises in Auckland. The Council regularly inspects the integrity of the containers and their contents.

12.1.5 Disposal Options

As mentioned previously, there are no facilities available in New Zealand available for the disposal of many of the wastes dealt with by the Council. Because this country produces a relatively small volume of hazardous waste, it appears highly unlikely that any New Zealand based technology will become available in the short or long-term.

Under the Basel Convention, hazardous waste can be shipped offshore for disposal, at high temperature incineration units in Canada, Europe, or the United States for instance. A French company, with a branch in Auckland, currently holds the licences for the export and destruction of the Council's hazardous wastes.

The Council's stockpile of wastes held in Auckland has declined. Over the past year, the complete stockpile of wastes were sorted and repacked by Council staff. This enabled the local destruction of approximately 50% of the total wastes previously held in storage.

12.2 Contaminated Site Management

The Australian and New Zealand Environment Conservation Council (ANZECC) define a contaminated site as:

" *A site at which hazardous substances occur at concentrations above background levels and where assessment indicates it poses, or is likely to pose and immediate or long-term hazard to human health or the environment"*

By definition, the management of contaminated sites is closely linked to the management of hazardous substances and hazardous wastes.

12.2.1 Work Programme 2002/2003

Over the past year, approximately 100 of the sites listed on the Selected Landuse Register were visited and inspected. By visiting the sites that are listed on the register, the information that is specified can be authenticated and updated. This leaves approximately 300 still to be visited.

12.2.2 National Working Group

A national working group consisting of representatives from all Regional Councils and the Ministry for the Environment has been meeting with the aim of having a consistent approach to the collection of information, entry of data onto the databases, and the categorisation of contaminated sites.

Much of the work required for the finalisation of the various guidelines and documents is now nearly complete with a final decision to be made on the outstanding issues in November 2003.

12.2.3 Underground Storage Tank Removal

Over the year, the four major oil companies continued their programme of fuel tank removal and replacement in the region. This programme is ongoing as fuel tanks come towards the end of their useful life.

12.3 Solid Waste Management

12.3.1 Landfill Monitoring

Under the Resource Management Act 1991, the vast majority of the small, and often poorly planned rural tips used throughout Northland have closed, and in most cases have been replaced with transfer stations, which have a much more benign impact upon the environment.

Instead of having a large number of small sites, much larger centralised landfills are now used for the disposal of refuse. At present, four landfill sites actively operate in the Northland Region. Two of these are based in the Far North, in Ahipara and Russell, one in Whangarei (Pohe Island) and one in the Kaipara District, at Hakaru.

Operational Landfills

Operational landfills are monitored either seasonally or biannually. Surface water, groundwater and sediment samples are collected from locations adjacent to the landfills. These samples are then analysed for a wide range of parameters, including general water quality indicators and potential contaminants (such as heavy metals). In addition, organic scans are carried out annually upon samples of landfill leachate, to screen for the possible presence of pesticide residues and other contaminants.

Closed Landfills

Closed landfills are visually inspected every year. At some sites, samples are collected and analysed for a range of water quality indicators and heavy metals.

Effects on Receiving Water Quality

The analysis of water samples shows that landfills in Northland are having little adverse effect on downstream receiving water quality. The landfills monitored and sampled over the past financial year were all within the specified consent limits and could not be shown to have contributed any significant contamination to nearby waterways.

One of the few remaining landfills active within the Northland Region

12.3.2 New Zealand Waste Strategy

In March 2002, the Government released **The New Zealand Waste Strategy**. The Strategy contains national targets for prioritising wastes. The following targets contained within the strategy have a direct impact on regional councils.

Targets for contaminated sites

- By December 2008, all sites on the Hazardous Activities and Industry List will have been identified and 50 percent will have been subject to a rapid screening system in accordance with Ministry for the Environment Guidelines.
- By December 2010, all sites on the Hazardous Activities and Industry List will have been subject to a rapid screening system in accordance with Ministry Guidelines, and a remediation programme will have been developed for those that qualify as high risk.
- By December 2015, all high-risk contaminated sites will have been managed or remediated. A timeframe will also have been developed to address the management of or remediation of remaining sites.

Targets for Hazardous Wastes

- By December 2005, an integrated and comprehensive national hazardous waste management policy will be in place that covers reduction, transport, treatment and disposal of hazardous wastes to effectively manage risks to people and the environment.
- By December 2004, hazardous wastes will be appropriately treated before disposal at licensed facilities, and current recovery and recycling rates will be established for a list of priority hazardous wastes.
- Recovery and recycling rates for priority hazardous waste will increase 20 percent by December 2012.

Targets for Waste Disposal

- By December 2003, local authorities will have addressed their funding policy to ensure that full cost recovery can be achieved for all waste treatment and disposal processes.
- By December 2005, operators of all landfills, clean fills and waste water treatment plants will have calculated user charges based on the full costs of providing and operating the facilities and established a programme to phase these charges in over a timeframe acceptable to the local community.

- By December 2005, all cleanfills will comply with cleanfill disposal guidelines.
- By December 2010, all substandard landfills will be upgraded or closed.
- By December 2020,all substandard wastewater treatment facilities will be upgraded, closed or replaced with systems that comply with all relevant regional and coastal plans, standards and guidelines.

Targets for Waste Minimisation

- Local authorities will report their progress on waste minimisation and management for their annual report in 2001-2002 and quantitatively on an annual basis from then onwards.
- By December 2005, all regional Councils will ensure that new or renewed industrial resource consents include a recognised waste minimisation and management programme and will report on the percentage of all consents under their jurisdiction that have such a clause.
- By December 2005, at least 10 major businesses will be
- Participating alongside central and local government in developing and promoting waste minimisation programmes within their sector.
- Ninety-five percent of the population will have access to community recycling facilities by December 2005.
- By December 2005, territorial local authorities will ensure that building regulations incorporate reference to space allocation for appropriate recycling facilities in multi-unit residential and commercial buildings.
- By December 2005, all councils will ensure that procedures for waste minimisation have been addressed for all facilities and assets they manage and will have set target reductions based on public health, environmental and economic factors.
- By December 2010, all regional councils will ensure that at least 25 percent of all existing industrial resource consent holders have in place a recognised waste minimisation and management programme.

12.4 Northland Regional Council Waste Minimisation Strategy

The Northland Regional Council recently implemented a Council wide waste minimisation strategy.

12.4.1 What is waste minimisation?

Waste minimisation is about preventing waste at source through the efficient use of raw materials, energy and water. Waste minimisation involves action on three fronts.

People

Many reductions in waste can be achieved through better housekeeping. It is essential that employees are aware of the issues surrounding waste and are motivated and trained to prevent it

Systems

A systematic approach to measurement and control highlights deficiencies and problems, enables targets to be set and maintains levels of efficiency.

Technology

Capital investment in new technology can improve productivity and reduce waste generation, giving very short paybacks.

12.4.2 Recycling

In July 2002, recycling bins were installed at the Robert Street and Quayside offices. The following is now recycled at both offices:

Paper, cardboard, all types of glass, paper, aluminium cans, plastic bottles, batteries, and toner cartridges.

12.4.3 Waste Minimisation Committee

Following the commencement of recycling at two of the Councils offices a waste minimisation team was established. The team is made up of representative of each department as well as the regional offices.

One of the objectives of the team is promote recycling within the Council and to encourage waste minimisation throughout the organisation. Therefore, the first task of the new committee was to undertake an audit on the Councils solid waste stream. The audit was undertaken on the 16 September 2002.

12.4.4 Waste Audit

All wastes produced at the Quayside and Robert Street buildings were collected for a period of one week the collection included.

- Paper collected from paper recycling boxes;
- All material in the recycling bins;
- All shredded paper; and;
- All cardboard

The waste was then sorted in categories and weighed.

Results

- The results of the waste audit showed that the Whangarei offices of the Council produces approximately 155 kg of waste per week equivalent to approximately 30 kg per working day.
- We recycle one-third of the waste we produce;
- Nearly 73% of all our waste is paper and cardboard

The audit will be repeated in six months time.

12.4.5 Further Auditing

During the coming months, it is planned to undertake an audit on the Council's business operations. The audit will look at:

- Ancillary materials-materials used for cleaning and maintenance
- Consumable materials- materials used for offices paper, toner cartridges, and other consumables
- Packaging materials used to package and transport goods
- Energy-power consumption and fuel usage
- Water usage
- Solid waste
- The costs of removing the skip bin, drums and other wastes by waste management contractors
- Quantifying how much money is spent on each of the resources listed