Economics and Industry Standing Committee

BELLEVUE HAZARDOUS WASTE FIRE INQUIRY

VOLUME TWO

Report No.2

2002

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BELLEVUE HAZARDOUS WASTE FIRE INQUIRY

VOLUME TWO

Report No.2

Presented by:

Tony McRae

Laid on the Table of the Legislative Assembly
on Thursday, 27 June 2002

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COMMITTEE TERMS OF REFERENCE

On 29 May 2001, the Legislative Assembly established the Standing Committee on Economics and Industry.

The functions of the Committee are to review and report to the assembly on: -

- the outcomes and administration of the departments within the Committee's portfolio responsibilities;
- annual reports of government departments laid on the table of the House;
- the adequacy of legislation and regulations within its jurisdiction; and
- any matters referred to it by the assembly including a bill, motion, petition, vote or expenditure, other financial matter, report or paper.

At the commencement of each Parliament and as often thereafter as the Speaker considers necessary, the Speaker will determine and table a schedule showing the portfolio responsibilities for each Committee. Annual reports of government departments and authorities tabled in the Assembly will stand referred to the relevant Committee for any inquiry the Committee may make.

Whenever a Committee receives or determines for itself fresh or amended terms of reference, the Committee will forward them to each Standing and Select Committee of the Assembly and Joint Committee of the Assembly and Council. The Speaker will announce them to the Assembly at the next opportunity and arrange for them to be placed on the notice boards of the Assembly.

The Committee has the responsibility for the following portfolios:

- Energy
- Labour Relations
- Consumer Affairs
- Employment & Training
- Agriculture
- Forestry & Fisheries
- Housing
- Works & Services
- Environment & Heritage
- Water Resources

- Planning & Infrastructure
- State Development
- Tourism
- Small Business

And the regional portfolios of:

- The Midwest
- Wheatbelt & Great Southern
- The Kimberley, Pilbara & Gascoyne
- Peel & the Southwest
- Goldfields-Esperance

INQUIRY TERMS OF REFERENCE

In line with the statement in the Legislative Assembly on 2 May 2001, the Minister for the Environment and Heritage wrote to the Economics and Industry Standing Committee on 12 June 2001, requesting that the Committee give consideration to conducting an inquiry into the fire emergency of 15 February 2001 at the hazardous waste facility at Bulbey Street, Bellevue.

At a meeting on 13 June 2001 the Committee resolved to conduct the inquiry. On 20 June 2001 the Committee resolved to adopt the following inquiry Terms of Reference:

That the Committee examine, report and make recommendations on -

1. the role of relevant government agencies and relevant Ministers of the Crown in:

   (a) approving the treatment and storage of waste at the site; and

   (b) regulating waste treatment at the site, including monitoring and enforcement measures;

2. the nature and quantities of non-compliant materials stored at the site;

3. the response of relevant government agencies to the incident on 15 February 2001 and the post-crisis management;

4. the regulation, storage and disposal of hazardous waste in Western Australia, the extent of past and current operations and alternatives available; and

5. any other matters deemed relevant by the Committee.

CHAIRPERSON'S FOREWORD

I am pleased to present to the Legislative Assembly of the Parliament of Western Australia, the second report of the Economics and Industry Standing Committee. This report is the second and final volume based on the Committee's inquiry into a fire that occurred at the Waste Control Pty Ltd hazardous waste and solvent recycling facility on Bulbey Street, Bellevue on 15 February 2001. The first volume was tabled in the Legislative Assembly on 13 December 2001.

Community and industry awareness of the challenges in effectively managing industrial and toxic wastes is higher now than at any other time in our State's history.

The management demands of these hazardous wastes gives rise to dual expectations - from within the business sector for an economically efficient system and from across the community, for the wellbeing of humans and the broader environment.

And while these competing perspectives converge on many aspects of waste management, it is also true that the hazardous waste industry, and particularly the management of solvent waste, has become a highly contested area for policy makers in recent decades.

All stakeholders appear to agree on one point - hazardous waste is extremely dangerous to humans and to the biosphere and better management of all such wastes requires urgent attention.

Some emergent technologies attempt to use the residual energy within waste as a means to capture their economic values and to create a more sustainable approach to use, recycling, re-use and disposal. A number of these technologies are in the early stages of development and are still to satisfactorily resolve both technical problems and community concerns.

This inquiry recognises that there are many costs that can not be measured in standard accounting terms. Any proposal that involves the manufacturing, construction, transport and use of natural resources accumulates hidden 'costs' or negative externalities, which are inevitably borne by both the natural world and its human population. These social and environmental costs are not easily entered into budgets or onto balance sheets and traditionally, environmental inputs, such as clean groundwater, soil and air, have been regarded as free, public good 'consumables.' While these cannot be bought and sold in traditional trade mechanisms, they can be used and despoiled.

The key for governments is to be able to regulate effectively to ensure public health and safety, while encouraging greater responsibility at source. Concepts such as 'cradle to grave' and 'polluter pays' approaches will inevitably form a greater part of the management systems applied to waste management, so that the cost of appropriately disposing of waste is built-in to all stages of the production and consumption process.

Businesses benefiting from activities or products impacting on the natural and social environment will continue to face increased regulatory and social pressure to be more accountable for their activities and for the use of and access to public assets.

The cost, in financial terms, of the disaster at the Waste Control site in Bellevue already includes the cost of responses to the fire emergency, a year long Parliamentary inquiry and the Government's allocation of $5.7 million for the clean up of the site and affected surrounding areas. The costs of the post-disaster remedial action will also now include the maintenance of a public health register and, any health and property losses incurred by exposure to the fire.

The likely future total cost of the Waste Control disaster will, in the end, be many millions of dollars more than the intervention strategy devised by the then Minister for the Environment and approved by the then Cabinet.

The operators of Waste Control relied variously on ethical and/or economic efficiency arguments to promote and defend the nature of their operations. On the one hand, Waste Control managers were prepared to argue solvent wastes were a societal problem for which the company had an economically viable and environmentally clean solution and, at other times, Waste Control managers blamed the Government's lack of regulation of wastes for its poor financial position and site management failures.

There can be no doubt that the Waste Control site at no time fully complied with its licence requirements and rarely, if ever, operated profitably. The situation that developed at Waste Control is evidence of the failure of waste management operators and governments to clearly understand the economic, social and environmental values and risks associated with the industry.

Quite clearly, in this case, unfettered market systems failed to deliver good outcomes for the community, for industry or for the environment. Rather than rid the State of its industrial waste dilemma, Waste Control compounded the problems and challenges of recycling, re-use and disposal of toxic and solvent wastes.

The Committee recognises a failure in the policy governing hazardous waste. The market, left to its own devices, failed to deal appropriately with the hazardous by-products of industrial and commercial processes. The regulating agencies, while sharing some information, operated in formal isolation from each other, notwithstanding significant areas of regulatory and/or enforcement responsibility overlap.

The regulatory agencies – primarily the Department of Environmental Protection and the Department of Mineral and Petroleum Resources (formerly Minerals and Energy) - are bound by their separate statutory responsibilities, policies and budgets with occasional common objectives. The DEP, for example, were concerned that Waste Control's poor storage practices would cause waste to enter the natural environment, the DME were concerned that poor storage practices may create a dangerously explosive environment, while the Fire and Emergency Services Authority (FESA) were concerned that poor storage practices would constitute a fire hazard dangerous to humans and property.

The situation at Bellevue highlighted a systemic breakdown in the standards and systems intended to protect human and environmental health and safety. The regulatory agencies operated within separate 'silos of governance', with weak enforcement measures and a serious confusion of government policy and priority.

This inquiry reveals a substantial effort is now required for the development of clear policy guidelines for regulatory agencies, as well as lead responsibility and supporting roles for all government agencies involved with the hazardous waste industry.

It is appropriate to acknowledge that the DEP, as with all government agencies, operates within a limited budget framework. The crossover in responsibilities of the various agencies, and the inherent duplication of expenditure in handling a single operator, gives impetus to the concept of a lead agency role bringing together the various threads of governance associated with the management of hazardous waste.

The solutions to the issues and problems raised by the Waste Control failure are neither obvious nor cheap. The Committee believes the Bellevue incident offers a timely catalyst for a whole-of-

government approach to the management of hazardous waste, and for the better application of resources allocated to that task. The Committee is of the view that this will require a collective paradigm shift within government and the community alike.

Resources will be better spent preventing Bellevue-like circumstances arising again, rather than pouring vast amounts into the remediation of contaminated sites following system failures. In economic terms, Western Australia has indeed prospered from the booming resources sector, yet it is paying dearly for the mistakes and omissions of those times when waste management was not perceived as a priority issue.

The suburb and people of Bellevue are no stranger to these problems. Waste Control is but one of the most recently contaminated sites in Western Australia and indeed is not the only one of its kind in Bellevue.

Historically, Bellevue evolved from its role as a bushland component of the Noongar estate, into a semi-rural area and later, to what we now see as a mix of industrial, commercial and urban uses, skirted by the remnant natural bush of the Helena River Valley.

The legacy of the former OMEX Oil refinery is within a few hundred meters of the Waste Control site. For decades from the 1940s, thick oil waste was dumped directly into an on-site open pit as standard practice. Toxic industries such as this have not only impacted on the health of residents and the natural environment, but have created the potential for a toxic ghetto and continued threats to local social and environmental communities.

Government is now faced with the challenge of reconciling the needs of the community with the financial and environmental costs associated with industry.

People reasonably and rightly expect government to ensure the health and welfare of the community. When things go drastically wrong, as they have done at the Waste Control site, it is the government to which people turn in search of answers and assistance.

The answers to these challenges lie in good government policy, clear priorities, well resourced and focussed regulatory agencies, efficient regulation of industry and its practices and, possibly most importantly, the continuing development of the community's awareness of and engagement in the management of hazardous and toxic wastes.

This inquiry and its reports are designed to assist in the advance of each of these elements and serve as a benchmark for the present and future Western Australian community.

I thank my fellow Committee members for their individual and collective contributions to this report. I want also to thank the Committee's staff and in this regard I acknowledge the efforts of Principal Research Officer, Ms Melina Newnan, Research Officer, Ms Liz Kerr and more latterly, Ms Carolynn Hill who provided technical support in finalising the report.

I commend the report to the House.

TONY MCRAE, MLA
CHAIRPERSON

ABBREVIATIONS AND ACRONYMS

"ACSR"	Australian Chemical and Solvent Recycling
"ANZECC"	Australian and New Zealand Environment and Conservation Council
"BA"	Breathing Apparatus
"BCCC"	Bellevue Community Consultative Committee
"CEO"	Chief Executive Officer
"CERD"	Chemical Engineering and Research Design
"CHEM Unit"	Chemical and Emergency Management Unit (Queensland)
"Comcen"	Communications Centre
"CSO"	Crown Solicitor's Office
"CTS"	Cleanaway Technical Services
"DEP"	Department of Environmental Protection
"DES"	Department of Emergency Services (Queensland)
"DEWCEP"	Department of Environment, Water and Catchment Protection
"DME"	Department of Minerals and Energy
"DMPR"	Department of Minerals and Petroleum Resources
"*EDG Act*"	Explosives and Dangerous Goods Act 1961
"EIA"	Environmental Impact Assessment
"EIL"	Ecological Investigation Level
"EMRC"	Eastern Metropolitan Regional Council
"EPA"	Environmental Protection Authority
"EPA"	Environmental Impact Assessment
"*EP Act*"	Environmental Protection Act 1986
"FCO"	Fire Control Officer
"FESA"	Fire and Emergency Services Authority
"FW"	Fresh Water
"HAZMAT"	Hazardous Materials
"HEAT"	Hazardous Emergency Advisory Team

"HDWA"	Health Department of Western Australia
"HIA"	Health Impact Assessment
"IC"	Incident Controller
"IMT"	Incident Management Team
"LWTF"	Liquid Waste Treatment Facility
"MOU"	Memorandum of Understanding
"MRS"	Metropolitan Region Scheme
"NHMRC"	National Health and Medical Research Council
"PCBs"	Poly-chlorinated biphenyls
"OIC"	Officer in Charge
"PCE"	Perchloroethylene (also known as Tetrachloroethylene)
"PPE"	Personal Protective Equipment
"QLD"	Queensland
"RACE"	Response Advice for Chemical Emergencies (Queensland)
"SES"	State Emergency Services
"SVBB"	Stoneville Volunteer Bushfire Brigade
"TFS"	Toxfree Solutions
"TPS"	Town Planning Scheme
"WA"	Western Australia
"WAPC"	Western Australian Planning Commission
"WorkSafe"	WorkSafe Western Australia
"WRC"	Water and Rivers Commission

GLOSSARY

"Committee"	Means the Economics and Industry Standing Committee
"Corrosive Substances"	Substances that by chemical action, will cause severe damage when in contact with living tissue, or, in the case of leakage will materially damage, or even destroy, other goods.[1]
"Dangerous Goods	Means a substance or article that is prescribed to be dangerous goods under the *Explosives and Dangerous Goods (Dangerous Goods Handling and Storage) Regulations 1992* and the Australian Dangerous Goods Code.[2]
"Discharge"	In relation to waste or other matter, includes deposit it or allow it to escape, or cause or permit it to be, or fail to prevent it from being discharged, deposited or allowed to escape.[3]
"Environment"	Means living things, their physical, biological and social surroundings, and interaction between all of these.[4]
"Flammable Liquids"	Liquids, or mixtures of liquids that give off a flammable vapour at temperatures of not more than 60.5 C, closed cup test, or not more than 65.6 C, open cup test, normally referred to as the flash point.[5]
"Flammable Solids"	Substances liable to spontaneous combustion and substances that in contact with water emit flammable gases.
"Hazard"	A source of potential harm or a situation with a potential to cause loss.
"Pollution"	Means direct or indirect alteration of the environment - (a) to its detriment or degradation; (b) to the detriment of any beneficial use; or (c) of a prescribed kind.[6]
"Prescribed Premises"	Premises engaged in certain activities listed in Schedule 1 of the *Environmental Protection Regulations 1987.*
"Risk"	The change of something happening that will have an impact upon objectives. It is measured in terms of consequences and likelihood.
"Toxic Substances"	Substances liable either to cause death or serious injury or to harm human health if swallowed or inhaled by skin contact.[7]

1 Australian Dangerous Goods Code, Sixth Edition, Vol 1, National Road Transport Commission, 1998, p 23.
2 Section 7 *Explosives & Dangerous Goods Act 1961*.
3 Section 3 *Environmental Protection Act 1986*.
4 *Ibid.*
5 Australian Dangerous Goods Code, *Op Cit.*
6 Section 3 *Environmental Protection Act 1986*.
7 Australian Dangerous Goods Code, *Op Cit.*

"Waste"	Includes matter – (a) whether liquid, solid, gaseous or radioactive and whether useful or useless, which is discharged into the environment; or (b) prescribed to be waste.[8]
"Waste Control"	Means Waste Control Pty Ltd.

"Department of Environmental Protection":

At the time of the fire on 15 February 2001, the Department of Environmental Protection (DEP) was a key regulatory arm of government responsible for several aspects of waste management in Western Australia. Since that time the DEP has been amalgamated with the Water and Rivers Commission to form the Department of Environment, Water and Catchment Protection (DEWCP).[9]

"Department of Minerals and Energy":

The Department of Minerals and Energy (DME) is now part of the Department of Mineral and Petroleum Resources (DMPR).

However, for the purpose of this report and in keeping with historical records, the Committee will make reference to the former DEP and DME when necessary.

"Health Department of Western Australia":

Recent Machinery of Government reforms to the public sector has resulted in a name change from the Health Department of Western Australia (HDWA) to the Department of Health (DOH). However, for the purpose of this report and in keeping with historical records DOH will herein be referred to as HDWA.

8 Section 3 *Environmental Protection Act 1986*.
9 DEP Submission to the Economics & Industry Standing Committee, 30 July 2001, p 1.

EXECUTIVE SUMMARY

This is the second volume of the report of the Economics and Industry Standing Committee inquiry into the Bellevue Hazardous Waste Fire. Volume One of the Report was tabled in the Legislative Assembly on 13 December 2001 and dealt in general terms with the fire emergency and more specifically with the health concerns arising from the fire incident. This Volume deals directly with the remaining inquiry Terms of Reference.

Chapter 1 of the report outlines the scope and parameters of the inquiry. The fire that occurred at the Waste Control Pty Ltd (Waste Control) solvent recycling facility in the Perth suburb of Bellevue on the night of Thursday 15 February 2001, raised the issues that are the subject of the Committee's inquiry. These matters include the events leading to the fire emergency, the actions of relevant government agencies, the emergency response to the fire, the post-crisis management of the fire emergency and the handling and storage of hazardous waste in Western Australia (WA).

Chapter 2 of the report outlines the regulatory regime and the key government agencies involved in the management and regulation of hazardous waste in Western Australia.

Chapter 3 of the report outlines the history of waste management and, more specifically, hazardous waste management in Western Australia. Many industrial processes use organic liquids to dissolve substances that cannot be dissolved in water. These organic liquids are referred to generally as solvents and can remain in waste from industrial processes. Effective management of solvent wastes is vital as some solvents are highly flammable and explosive and can cause serious contamination of water, soil and air, and can be harmful to human health.

It was not until the 1980s that changes in waste management regulations in Western Australia determined that solvent wastes could not longer go to landfill.

Chapter 4 of the report examines the history of the Bellevue site and the operations of Waste Control, the company licensed to operate the waste processing site. Waste Control was established as a solvent recycling facility in the late 1980s and was licensed to operate as a chemical recycling and waste treatment facility, including the storage of dangerous goods. These operations were licensed by the Department of Environmental Protection (DEP) and the Department of Minerals and Energy (DME). At various times, Waste Control stored up to 2000 drums (well in excess of its licence limit) of waste material consisting of solvents, metallic sludges and hydrocarbon residues. It was the primary and for some time the only company that provided a treatment or disposal option in Western Australia for many solvent wastes.

Waste Control collected industrial wastes from a range of sources including drycleaners, printers and the motor repair industry. The company was under-capitalised and the small or negative commercial margins upon which the business operated became an impediment to the company undertaking necessary upgrades and complying with licence conditions.

The company experienced difficulty disposing of the waste collected at its Bellevue site and, as a result, was in breach of licence conditions imposed by both the DEP and DME. In the period 1994 to 2000, the company was repeatedly threatened with prosecution and licence suspension.

Chapter 5 of the report considers planning and zoning issues. A planning history of the Waste Control site indicates that then Shire of Swan (now City of Swan) received applications to commence development at the site in 1986. The Environmental Protection Authority considered

that a formal Environmental Impact Assessment was not required, and the site was licensed to operate as a solvent recovery facility in 1990.

In some instances, State administrative arrangements separate land use planning functions from environmental protection functions. Regulatory systems for environmental management should integrate land use planning, resource exploitation and environmental protection.

The Waste Control facility was located in a general industrial zone and was within approximately 200 metres of residents and 500 metres of the Bellevue Primary School. The events surrounding the fire at Waste Control raise a number of significant planning issues regarding the siting of hazardous waste treatment facilities, including the need for effective buffer criteria.

Chapter 6 of the report deals with governance of the site and the relationship between Waste Control and the regulatory agencies. The unsatisfactory performance of Waste Control was a matter of concern to the regulatory agencies who were continuously seeking to pursue compliance with regulations set down in legislation pertaining to both environmental protection and dangerous goods storage and handling.

Competing industrial, economic (financial), social and environmental considerations shaped successive governments' approaches to managing and regulating Waste Control. The regulatory regime was characterised by the use of due process and opportunity for Waste Control to improve its performance, while the enforcement approach reflected attempts by the agencies to negotiate compliance through improvement notices rather than the blunt instrument of prosecution.

Regulatory agencies were encouraged to keep the facility operating while maintaining pressure on the company to improve performance. Inspections of the premises by key agencies revealed continuous and varied breaches of licence conditions, while repeated undertakings to remedy non-compliances of licence conditions were never fully met.

Changes to 'Waste Acceptance Criteria' at the Red Hill Waste Disposal Facility in 1998 meant Waste Control could no longer dispose of most of its sludge, non-recyclable material to landfill. As a result, a stockpile of approximately 2200 drums of hazardous waste accumulated at the site.

Much of the large stockpile of drums was held in non-bunded areas of the site and posed a threat of potential pollution to soil and groundwater.

In June 1999, an urgent briefing to the then Minister for the Environment triggered the development of six policy options for intervention into the operational and licensing failure evident at the site.

Cabinet subsequently approved a loan of $100,000 to permit tenders to be called for the removal of 1000 drums from the stockpile. The loan was secured by a Deed of Covenant under which Waste Control agreed to pay the State the principal sum and interest in accordance with a repayment schedule. Approximately 1000 drums were removed to Teris (Australia) Pty Ltd in Victoria by November 1999.

Chapter 7 of the report discusses enforcement action by the both the DEP and DME, including infringement notices, "show cause" warning letters and statutory directions under section 73 of the *Environmental Protection Act 1986* and section 45C of the *Explosives and Dangerous Goods Act 1961*. By January 2000, both the DEP and DME were actively gathering evidence for possible prosecution.

Some two months after the fire at the Bellevue site in February 2001, the DME brought successfully prosecutions resulting in fines totalling $200,000.

Chapter 8 of the report considers the *Environmental Protection Act 1986*. The definition of 'pollution' is considered in light of the *Palos Verdes* case, which was the first major court case interpreting the Western Australian *Environmental Protection Act 1986*. The Court's decision was read as limiting the definition of pollution to mean "to make physically impure, foul or filthy".

Since that time, several reviews of the *Environmental Protection Act 1986* recommended legislative amendments. These are discussed in Chapter 9 of the report which also discusses alternative legislative measures, some of which have been introduced and others not yet introduced into the Parliament. Changes which have been introduced centre on the new Controlled Waste Regulations and changes to the existing Liquid Waste Regulations, which are part of the regulatory system for managing hazardous waste streams. These regulations came into effect in July 2001 and establish a tracking system from the point of generation of the waste, continuing through to transport and disposal of the waste.

Contaminated sites are a serious environmental issue. It is estimated that there are at least 1500 contaminated sites on the Swan Coastal Plain, with a complex array of major health, economic, legal and planning implications as a result The recognised inadequacies of current legislation to deal with contaminated sites has lead to the drafting of the *Contaminated Sites Bill*, proposing requirements for the reporting of contaminated sites and powers to require possible contamination to be investigated and remediated.

Other proposed legislative changes include amendments to the *Environmental Protection Act 1986*. This draft Bill includes provisions which ensure that action can be taken over emissions within premises. New provisions allow for the introduction of wider conditions on licences, which can deal with production processes and stockpiles to ensure risks of emission are addressed. The draft Bill provides for closure notice provisions.

Chapter 10 discusses the fire incident management. The fire incident period is discussed in some detail, outlining communication difficulties experienced on the night of the fire. Also discussed are the classification of the fire emergency; issues arising regarding the attendance of volunteer firefighters; and the resultant identification by FESA of systems that require improvement in relation to fire classification and communication failures.

The role of the Hazardous Emergency Advisory Team (HEAT) and their involvement with the Waste Control fire is detailed. The HEAT was hampered by technical problems and experienced problems in communicating information to the Incident Controller in command at the Bellevue site. Evacuation procedures and the cause of the fire are also addressed. The Committee notes there is no prescribed evacuation procedure in Western Australia and evacuation in emergency situations is not compulsory.

Due to the ferocity of the fire destroying whatever evidence there might have been, the cause of the fire is unlikely to be determined. However, there is a reasonable likelihood that the fire was started deliberately.

Chapter 11 of the report deals with the post-crisis management. Following the fire emergency, the regulatory agencies responded to the concerns of both the local and wider community. The Health Department of Western Australian (HDWA) was responsible for addressing public health concerns, while the DEP took responsibility for the site.

Blood tests were offered to firefighters, while members of the local community were advised to seek medical advice if they held concerns about their health. A 24-hour Health Direct telephone help line was activated by HDWA and a range of public information mediums used to keep the community informed.

The fire destroyed the Waste Control premises, with the exception of the office building and laboratory. The extent of the blaze also resulted in damage to neighbouring properties. The environmental impact on the site and surrounding areas required ongoing DEP action in the clean-up of the site.

Areas of immediate risk to ecological and environmental health were decontaminated by the removal of soil, debris and fire wash water. Samples from adjoining and nearby properties were taken and a decontamination program implemented for many affected areas including neighbouring properties, drains, roads and verges. A detailed site investigation, commissioned to confirm the presence of soil and groundwater contamination beneath the Waste Control site, confirmed soil and groundwater contamination with further sampling continuing.

Chapter 12 investigates the nature and quantities of non-compliant materials that were stored at the Waste Control site. Immediately after the fire, there were allegations that PCBs and radioactive materials were on the premises at the time of the fire. Concerns were also raised that mercury metal had been consumed in the fire.

There is no evidence that PCBs, mercury metal or concentrate was consumed in the fire. Some PCBs legitimately passed through the Waste Control site and were taken to Eli Eco Logic for destruction through correct procedures. Testing at the Waste Control site showed radiation levels to be within normal background levels.

Chapter 13 considers the policy approach to hazardous waste handling and storage. The lack of a comprehensive strategy to address the specific problems at Waste Control and more generally in terms of hazardous waste management in WA are discussed. While a clear policy had been developed over time for the handling of non-hazardous liquid waste, this has not occurred for hazardous liquid waste.

Inter-agency cooperation is assessed. The report recognised that the regulatory agencies operated within separate ‘silos of governance’, with ineffective and infrequently used enforcement measures. The regulatory agencies are bound by separate statutory responsibilities and policies, although often with common objectives.

Chapter 14 considers alternative approaches to the regulation of hazardous industries, including product stewardship, environmental performance bonds and the concept of ‘‘community right to know’’.

The Report concludes by discussing the links between planning and licensing in relation to the siting of industrial sites. Regulation and governance is also discussed and how the reluctance of regulatory agencies to take prosecution action can be attributed to flaws in the regulatory scheme. The need for inter-agency cooperation is vital.

The ‘policy vacuum’ that exists in Western Australia in relation to hazardous waste management raises concerns. The report concludes that there is an urgent need for government to implement a comprehensive policy that can tackle the management of hazardous waste, in order to minimise the risk of another Bellevue and to stop the continued evasion of regulations through illegal dumping to the environment.

FINDINGS

The Committee finds that:

Finding 1 – p.11

Waste Control's commercial practices essentially undercut other operators to the point that an effective monopoly position was created.

The Committee finds that:

Finding 2 – p.11

Waste Control did not possess the necessary working capital or operating income to:
- maintain essential operating equipment; and
- comply with licence conditions.

The Committee finds that:

Finding 3 – p.14

There is no mandatory requirement for companies handling hazardous wastes to:
- produce or maintain a detailed, up to date inventory of wastes; and
- provide an inventory of those wastes to the regulatory agencies.

The Committee finds that:

Finding 4 – p.14

Waste Control did not provide an inventory or manifest of waste material stored at the site as requested by both Department of Environmental Protection and Department of Minerals and Energy.

The Committee finds that:

Finding 5 – p.22

The Environmental Protection Authority did not conduct a formal Environmental Impact Assessment on the Waste Control site at any time during the planning or development stages.

The Committee finds that:

Finding 6 – p.22

There is no requirement for a Health Impact Assessment in the Western Australian Environmental Impact Assessment process under the *Environmental Protection Act 1986.*

The Committee finds that:

Finding 7 – p.23

There is no mechanism for local government to be notified of changes to or expansion of activities once a licensed business has become operational.

The Committee finds that:

Finding 8 – p.23

The Waste Control site did not satisfy standards set down in the Western Australian Planning Commission's policy on Planning for Hazards and Safety.

The Committee finds that:

Finding 9 – p.24

The Waste Control site, as it changed and expanded its operations, was situated too close to residential housing, livestock yards and a primary school.

The Committee finds that:

Finding 10 – p.24

There is a need to identify appropriately buffered waste management precincts for siting hazardous waste including recycling, treatment, storage and disposal facilities.

The Committee finds that:

Finding 11 – p.28

The Department of Environmental Protection and Department of Minerals and Energy continued to licence Waste Control despite consistent non- compliance with licence conditions.

The Committee finds that:

Finding 12 –p.29

Chemical storage at the Waste Control site:

- from the time of the first regulatory agency inspection did not comply with regulations; and
- at no time was in complete compliance with either Department of Environmental Protection or Department of Minerals and Energy licence conditions.

The Committee finds that:

Finding 13 – p.29

A detailed risk assessment of the various operations relating to licensed dangerous goods at the Waste Control premises was not conducted by the Department of Minerals and Energy.

The Committee finds that:

Finding 14 – p.30

Government agencies were reluctant to revoke or suspend Waste Control's licence and adopted the view that working with the company and maintaining its operations was preferred to the reasonable risk of illegal dumping of waste or the accumulating of stored hazardous waste throughout the community.

The Committee finds that:

Finding 15 – p.31

The Shire of Swan, the Department of Environmental Protection and the Department of Minerals and Energy:

- were not aware of the full extent of Waste Control's operations at Lot 88 Oliver Street, Bellevue until 1993; and
- Waste Control retrospectively applied for and was granted Works Approval and licences.

The Committee finds that:

Finding 16 – p.31

There is no formal procedure in place for the Department of Minerals and Petroleum Resources to consult local authorities prior to the issue of a licence to store dangerous goods.

The Committee finds that:

Finding 17 – p.32

In 1998, the East Metropolitan Regional Council at its Red Hill landfill site strengthened its Waste Acceptance Criteria. As a result, Waste Control was generally unable to meet these standards, causing an increase in stockpiled drums at Bellevue.

The Committee finds that:

Finding 18 – p.36

The Cabinet approved loan of $100,000 to remove the 1999 backlog of drums from the Waste Control premises was ineffective in dealing with the long-term regulatory and operational failures.

The Committee finds that:

Finding 19 – p.37

The contract to remove the backlog of 1000 drums from the Waste Control site did not:

- stipulate the specific drums to be removed:
- stipulate specific objectives of the operation;
- provide a monitoring mechanism to ensure objectives had been met; or
- result in a long-term reduction in the size of the drum stockpile on the site. However, it reduced the quantity of waste stored elsewhere in the community.

The Committee finds that:

Finding 20 – p.38

The financial assistance provided to Waste Control allowed the company to deal with the existing waste backlog in the short term, while doing little or nothing to address the real problems at the site. Site inspections within six months of the intervention revealed that the stockpile of drums had returned to its former volume.

The Committee finds that:

Finding 21 – p.42

Infringements at the Waste Control site were considered individually rather than collectively, resulting in a perception that they were not serious enough to warrant an effective prosecution.

The Committee finds that:

Finding 22 – p.42

Long term environmental damage can occur from on-going 'minor' breaches.

The Committee finds that:

Finding 23 – p.43

Despite evidence of Waste Control's:
- repeated breaches of its licence conditions;
- its lack of funds to comply with upgrades/rectification of breaches; and
- general poor management of the site,

the Department of Environmental Protection and the Department of Minerals and Energy continued to issue operational licences with conditions, with only minor improvements in Waste Control's performance.

The Committee finds that:

Finding 24 – p.43

Both the Department of Environmental Protection and the Department of Minerals and Energy adopted a cautious approach when assessing the possible prosecution of Waste Control for its failure to comply with licence conditions. The advice of the Crown Solicitor's Office contributed to the agencies' reluctance to prosecute.

The Committee finds that:

Finding 25 – P.48

Provisions within the *Environmental Protection Act 1986* that deal with pollution within the boundaries of prescribed premises are ineffective and do not allow the regulators to take effective action where on-site pollution is reasonably suspected.

The Committee finds that:

Finding 26 – p.49

While the definition of pollution in the *Environmental Protection Act 1986* placed some constraints on the Department of Environmental Protection, *the Environmental Protection Act 1986* and the directions provided by the *Palos Verdes* case still provided significant powers to protect the environment from pollution.

The Committee finds that:

Finding 27 – p.59

The Bellevue incident demonstrated that current licence arrangements are inappropriate and need to be more responsive to differing circumstances.

The Committee finds that:

Finding 28 – p.64

The Fire and Emergency Services Authority incident controllers did not accurately communicate the nature of the fire smoke plume to Bushfire Brigades called to assist in the incident and this was due in part to the failure to accurately classify the incident as a chemical fire.

The Committee finds that:

Finding 29 – p.66

The lack of a HAZMAT fire classification compounded the strategic difficulties in responding to the fire emergency.

The Committee finds that:

Finding 30 – p.69

The emergency services fire-plan was not accessed for some 90 minutes after emergency services personnel arrived at the site. This had implications for strategic decision making, including the environmental risk posed by the fire wash water, fire fighters and others exposed to the smoke plume and the classification of the fire.

The Committee finds that:

Finding 31 – p.71

The difficulties experienced with:
- communications between the Hazardous Emergency Advisory Team and the Incident Controller at the fire site; and
- the failure to accurately categorise the fire

resulted in inappropriate responses in relation to the deployment of personnel, public health precautions and fire fighting, wash-down and environmental protection strategies.

The Committee finds that:

Finding 32– p.71

There were serious technical and system problems with communication and communication systems that hampered coordination between the Hazardous Emergency Advisory Team, the Incident Controller, volunteer firefighters and other regulatory agencies.

The Committee finds that:

Finding 33 – p.73

The Health Department of Western Australia's recommendation that evacuees should not be permitted to return to their homes was not acted upon.

The Committee finds that:

Finding 34 – p.75

There is a reasonable probability that the fire was started deliberately by persons unknown.

The Committee finds that:

Finding 35 – p.79

Neighbouring businesses were adversely affected as a result of the fire at the Waste Control site.

The Committee finds that:

Finding 36 – p.83

It is likely that contamination of the soil and groundwater at the Waste Control site had been occurring over a number of years.

The Committee finds that:

Finding 37 – p.86

There is no evidence that mercury metal or concentrate was consumed in the fire.

The Committee finds that:

Finding 38 – p.87

There is no evidence that PCBs were consumed in the fire.

The Committee finds that:

Finding 39 – p.88

Although testing found small quantities of PCBs present on the Waste Control site:
- they were at levels typical of any industrial site; and
- they were at levels below those that might raise human health concerns.

The Committee finds that:

Finding 40 – p.92

A conflict exists within the policy objectives of the Department of Environmental Protection, where the department oversees both environmental protection and the management of hazardous wastes.

The Committee finds that:

Finding 41 – p.92

There is no long-term policy strategy for the handling and management of hazardous waste in Western Australia.

The Committee finds that:

Finding 42 – p.93

There was a systemic breakdown in standards and mechanisms intended to protect human and environmental health and safety.

The Committee finds that:

Finding 43 – p.93

There is a cross-over in the responsibilities and an inherent duplication of resources of the various agencies associated with the management of hazardous waste.

The Committee finds that:

Finding 44 – p.93

There was a lack of formal knowledge sharing between the various agencies which regulated activities at the Waste Control site.

RECOMMENDATIONS

The Committee recommends that:

Recommendation 1 – p.18

The *Environmental Protection Act 1986* be amended to ensure:
- companies licensed to handle hazardous wastes provide an up-to-date inventory of those wastes; and
- that an updated inventory is provided to the regulatory agencies on a regular prescribed basis.

The Committee recommends that:

Recommendation 2 – p.25

A more strategic view to planning as it relates to licensed hazardous waste sites is required to:
- ensure that planning schemes and land use compatibility are fully considered, including assessment over time as the nature of hazardous industries change;
- ensure planning schemes take into account the disposal of waste; and
- provide for an assessment of environmental impacts.

The Committee recommends that:

Recommendation 3 – p.25

Planning schemes need to ensure buffer zones around hazardous industries are established on the basis of the type and volume of hazardous waste, and incompatible land uses excluded.

The Committee recommends that:

Recommendation 4 - p.25

State Planning Authorities need to develop a closer working relationship with local government and environmental protection authorities

The Committee recommends that:

Recommendation 5 - p.26

Prior to the issue of a licence under the Explosive and Dangerous Goods Regulations, the Department of Minerals and Petroleum Resources must consult with:
- local government authorities;
- environmental protection agencies;
- WorkSafe WA; and
- Fire and Emergency Services Authority.

The Committee recommends that:

Recommendation 6 - p.26

Environmental protection guidelines must be:
- better incorporated into town planning schemes and policies; and
- taken into account by local government authorities,

when siting hazardous waste activities.

The Committee recommends

Recommendation 7 - p.26

Appropriately buffered and limited numbers of waste management precincts need to be:
- identified for the siting of facilities; and
- located to allow the safe recycling, treatment and disposal of hazardous waste.

The Committee recommends that:

Recommendation 8 - p.26

The Environmental Impact Assessment process as contained within the *Environmental Protection Act 1986* be expanded to:
- incorporate a health impact assessment where appropriate; and
- involve the Health Department of Western Australia in the process of the health impact assessment.

The Committee recommends that:

Recommendation 9 – p.26

Relevant government agencies, in cooperation with local government, look to review all existing Department of Environmental Protection and Department of Minerals and Petroleum Resources licensed sites to assess land use compatibility.

The Committee recommends that:

Recommendation 10- p.49

Amendments to the *Environmental Protection Act 1986* proceed as a matter of high priority to ensure the definition of 'pollution' includes pollution of the environment whether on or off a site or premises.

The Committee recommends that:

Recommendation 11 - p.59

The *Environmental Protection Act 1986* be amended to provide for court-sanctioned closure and seizure powers where a high risk to human populations or the environment exists, whether from licensed or unlicensed hazardous waste operations.

The Committee recommends that:

Recommendation 12 – p.60

The Government's proposed legislative reforms on contaminated sites, waste management and environmental protection be given the highest priority for finalisation and presentation to the Parliament.

The Committee recommends that:

Recommendation 13 - p.75

In a hazardous emergency involving the summoning of Hazardous Emergency Advisory Team, the Health Department of Western Australia's expertise and responsibilities must form a key part of the assessment and decision making process.

The Committee recommends that:

Recommendation 14 - p.75

The Fire and Emergency Services Authority:

- review its current system of incident classification;
- develop a HAZMAT classification that incorporates appropriate exclusion zones;
- develop HAZMAT incident evacuation procedures; and
- review all communicating procedures and system compatibility.

The Committee recommends that:

Recommendation 15 - p.76

The Hazardous Emergency Advisory Team be equipped with a mobile chemical and hazardous wastes incident support unit with analysis and strategic advice capabilities.

The Committee recommends that:

Recommendation 16 – p.76

The Community Development and Justice Standing Committee consider the issue of evacuation procedures in emergency situations, as they relate to hazardous materials emergencies.

The Committee recommends that:

Recommendation 17 – p.96

The State government develops a long-term policy strategy for the handling, recycling, disposal and management of hazardous waste in Western Australia.

The Committee recommends that:

Recommendation 18 – p.96

Relevant Ministers initiate a series of formal Memoranda of Understanding between the waste management regulatory agencies that facilitate and inform information sharing, regulatory and enforcement coordination and lead agency responsibility based on the location, type and size of operations that are licensed or subject to inspection by more than one government agency.

The Committee recommends that:

Recommendation 19 - p.101

All regulatory and licensing government agencies:
- adopt the concept of 'community right to know';
- disclose information on hazardous activities to the public; and
- use the Government Website and other public domain information sources to ensure relevant information is accessible to the community.

The Committee recommends that:

Recommendation 20 – p.101

Amendments to the *Environmental Protection Act 1986* require licensing of:
- activities that have the potential to pollute; and
- premises and/or locations on which such activities are performed.

MINISTERIAL RESPONSE

Standing Order 277(1) of the Standing Orders of the Legislative Assembly states that:

> *A report may include a direction that a Minister in the Assembly is required within not more than three months, or at the earliest opportunity after that time if the Assembly is adjourned or in recess, to report to the Assembly as to the action, if any, proposed to be taken by the Government with respect to the recommendations of the Committee.*

Accordingly, the Economics and Industry Standing Committee therefore directs that the:

Minister for the Environment and Heritage respond to Recommendations: 1,4,5,6,7,8,9,10,11,12,17,18,19 and 20 contained within the report; the

Minister for Planning and Infrastructure respond to Recommendations: 2,3,4,6,7 and 18 contained within the report; the

Minister for Police and Emergency Services respond to Recommendations: 5,13,14,15,17, and 18 contained within the report: the

Minister for State Development respond to Recommendations 5,9,17,18 and 19 contained within the report: the.

Minister Representing the Minister for Local Government and Regional Development respond to Recommendations: 2,3,4,5,6,7,9,17 and 18 contained within the report: the

Minister for Health respond to Recommendations: 8,13,17 and 18 contained within the report: and the

Minister for Consumer and Employment Protection respond to Recommendations: 5,and 18 contained within the report.

As this report and its recommendations require a multi-agency response, the Committee recommends that where this occurs, the response may be coordinated by the Minister for the Environment and Heritage.

CHAPTER 1 THE INQUIRY

1.1 Introduction

Industrial processes, predominantly those involved in the printing, automotive spray painting, dry-cleaning and testing laboratories produce approximately one million litres of solvent type wastes in Western Australia (WA) each year. The types of wastes produced include acids, oxidisers, solvents, hydrocarbons, pesticides, batteries and paints.

A fire started at the Waste Control Pty Ltd hazardous waste and solvent recycling facility on Bulbey Street, Bellevue, an outer metropolitan suburb of Perth, at approximately 11.00 p.m. on Thursday 15 February 2001. The facility was estimated to have been storing up to 500,000 litres of chemicals and toxic solvents.

More than 25 fire service units, including volunteer fire brigades, responded to the fire emergency. The resultant smoke plume and fire was water generated a high amount of anxiety amongst the community, and especially the local community at Bellevue.

The Minister for the Environment, the Hon. Judy Edwards, MLA, wrote to the Economics and Industry Standing Committee (the Committee) on 12 June 2001 requesting that the Committee conduct an inquiry into the incident at Bellevue. The Committee formally resolved on 13 June 2001 to conduct the inquiry and adopted the inquiry Terms of Reference on 20 June 2001.

1.2 Conduct of the Inquiry

The Committee advertised the inquiry and called for public submissions.[10] Forty-three submissions were received from individuals and community groups, government agencies and industry. The Committee held formal evidence public hearings and discussions with industry and government representatives from WA and other jurisdictions within Australia.

It has not been possible to fully-develop all of the many issues raised within the submissions. However, the Committee has read all of the submissions and attempted to address issues that impact on the Terms of Reference for this inquiry.

1.3 Framework of The Report

This inquiry was by nature both investigative and conceptual: investigative in that it examined events, files and records leading up to the fire emergency at Bellevue, and conceptual in that it examined the broader issue of hazardous waste management and regulation in Western Australia, with a view to establishing viable alternatives.

The Committee had initially intended to table a single report addressing the full Terms of Reference of the inquiry. However, due to the need to resolve certain public health concerns, the Committee resolved to present the report in two volumes.

[10] Advertisement calling for submissions appeared in the *West Australian* newspaper on Saturday 23 June 2001 and in Community Newspapers, namely the *Echo* and the *Midland Kalamunda Reporter*.

Volume One, which was tabled in the Legislative Assembly on 13 December 2001, dealt in general terms with the fire emergency and more specifically with the health concerns arising from that incident. The key recommendation of Volume One – the establishment of a public health register for those exposed to the fire or fire water – has since been implemented by the Minister for Health. Volume Two deals directly with the remaining Terms of Reference for the inquiry.

1.4 Inquiry Parameters

This report examines issues including:

- the events leading up the fire emergency on 15 February 2001;
- the actions by all relevant Government agencies in relation to the operations of Waste Control at its Bellevue premises;
- the emergency response to the fire at the waste facility site;
- the post-crisis management of the incident; and
- handling and storage of hazardous waste in Western Australia.

CHAPTER 2 REGULATORY REGIME

2.1 Introduction

At the time of the fire on 15 February 2001, the Department of Environmental Protection (DEP) was a key regulatory arm of government responsible for several aspects of waste management in WA. Since that time, the DEP has been amalgamated with the Water and Rivers Commission to form the Department of Environment, Water and Catchment Protection (DEWCP).[11]

Similarly, the Department of Minerals and Energy (DME) is now part of the Department of Mineral and Petroleum Resources (DMPR). However, for the purpose of this report and in keeping with historical records, the Committee will make reference to the former DEP and DME where necessary.

2.2 Department of Environmental Protection

The DEP is responsible for administering the *Environmental Protection Act 1986* (*EP Act*). The *EP Act* is designed to prevent, control and abate environmental pollution so that the environment is conserved and enhanced. The *EP Act* is supported by the *Environmental Protection (Liquid Waste) Regulations 1996*, and the *Environmental Protection (Controlled Waste) Regulations 2001*,[12] which apply to the production, collection, storage and disposal of liquid waste.

The DEP was known and referred to as the Environmental Protection Authority until 1993, when legislative amendments separated the role and functions within the department and created a separate body under the *EP Act*. The DEP has prime responsibility for actively regulating and licensing certain activities, while the EPA has a more advisory role.

2.2.1 Environmental Protection Authority

The Environmental Protection Authority is established under the *EP Act*. The Authority consists of five members appointed by the Governor on the recommendation of the Minister for the Environment.[13]

The functions of the Authority include conducting Environmental Impact Assessments (EIAs) on proposed developments where they are considered necessary and to provide independent advice to the Minister for the Environment on environmental matters.[14]

2.2.2 Waste Management (WA)

Waste Management (WA), a corporate entity within the DEP, carries out waste management operations under Part VIIB of the *EP Act* at the Liquid Waste Treatment Plant – Brookdale, under Ministerial Direction.[15] The Environmental Protection Authority (EPA) has responsibility under

11 DEP Submission, *Op Cit*, p.1
12 These regulations came into effect in July 2001.
13 Part II of the *Environmental Protection Act 1986.*
14 Section 16 of the *Environmental Protection Act 1986.*
15 Section 110M of the *Environmental Protection Act 1986*

this Part of the Act to monitor or cause to be monitored the implementation of any proposal of which Waste Management (WA) is the proponent.[16]

2.3 Water and Rivers Commission

The Water and Rivers Commission (WRC) is a Western Australian State Government agency which was established on 1 January 1996, under the *Water and Rivers Commission Act 1995.*

The WRC has since been amalgamated with the DEP and forms part of the Department of Environment, Water and Catchment Protection (DEWCP). The WRC is responsible for water management, including resource allocation, protection and evaluation as well as environmental and research management issues.

The Swan River Trust (with the WRC) is responsible for water resources and pollution, and water catchment protection in the Perth metropolitan area.

2.4 Department of Minerals and Energy

The Department of Minerals and Energy (DME) is responsible, among other things, for the administration of the *Explosives and Dangerous Goods Act 1961* (*EDG Act)* and associated regulations. The *EDG Act* provides for the control and regulation of explosives and dangerous goods in order to reduce the risk of danger to public safety, and gives comprehensive powers to the Chief Inspector and inspectors, including requirements relating to licensing, inspections and notification.

The DME is made up of seven key divisions - Statutory Operations, Policy Coordination, Investment Attraction, Major Projects, Geological Survey, Corporate Services and the Chemistry Centre of WA. Each Division is headed by an Executive Director, who reports to the Director General.

Explosives subject to the Act include dynamite, detonators, gelignite, gunpowder, ammonium nitrate, fuel oils, fireworks and cartridges for guns. Dangerous goods include petrol, diesel, cylinder gases, LP gas, chlorine gas, ammonia, oxidising agents, poisons, corrosive substances and other flammable and combustible liquids.

2.5 Fire and Emergency Services Authority

The Fire and Emergency Services Authority of Western Australia (FESA) was established as a statutory government authority on 1 January 1999 and is responsible for the administration of the *Fire and Emergency Services Authority of Western Australia Act 1998.* FESA also has authority under the *Fire Brigades Act 1942* and the *Bush Fire Act 1954*.

FESA's functions relate to the provision and management of emergency services. These functions include providing Ministerial advice on policy issues, developing plans for and providing advice on the management and use of emergency services.

[16] EPA Submission to the Economics and Industry Standing Committee, 3 July 2001, p.2.

The Chief Executive Officer (CEO) of FESA is responsible for overall leadership, policy and strategic planning. The CEO works with the FESA Board of Management to oversee the strategic direction and all the operations and functions of the organisation. A cross-section of volunteers, the general public and local government form the FESA Board.

2.6 Health Department of Western Australia

The Health Department of Western Australia (HDWA) has a large regulatory function and administers the *Health Act 1911*, the *Poisons Act 1964*, the *Radiation Safety Act 1975* and a number of associated Regulations. Environmental Health Services, a branch of the Public Health Division, is the key arm of HDWA in relation to hazardous activities.

Environmental Health Services works in concert with local government, which performs many of the services defined under the *Health Act 1911*, with a focus on disease prevention and management.

2.7 Worksafe

WorkSafe Western Australia (WorkSafe) is the State Government agency responsible for the administration of the *Occupational Safety and Health Act 1984*. The principal objective of the Act is to promote and secure the safety and health of persons in the workplace.

Responsibility for enforcing the *Occupational Safety and Health Act 1984* rests with WorkSafe through its inspectors. Inspectors are empowered to visit and enter workplaces in order to enforce the Act and Regulations. Where inspectors become aware of non-compliance with the law they may issue verbal directions, improvement or prohibition notices, or commence prosecution action.

2.8 City of Swan

The Swan Shire (now the City of Swan) is the local government authority with responsibility for planning approvals and zoning in and around the Bellevue area.

Local governments are established as separate, semi-autonomous, legal entities in their own right, bound by a state-legislated Local Government Act and a range of other laws.

Local governments in Western Australia operate through councils to which local citizens elect representative members. Elected councillors, meeting in accordance with a set of laws and rules, make policy decisions on a wide range of local issues including the provision and maintenance of community facilities and services. These are typically quite diverse ranging from parks to infant health centres to building permits. Councils employ management and staff to administer the many local government responsibilities on a day-to-day basis.

CHAPTER 3 HISTORY OF WASTE MANAGEMENT

3.1 Solvent Waste

More than 50 percent of industrial liquid wastes consists of unstable oil and water emulsions derived mainly from service stations, waste oil recyclers, and car wash companies. The remainder is generated by more than 200 industries around Perth, including laboratories, paint distributors, dry-cleaners, machining shops, galvanisers, and platers.[17]

In many industrial processes, organic liquids are used to dissolve substances which cannot be dissolved in water. These organic liquids, which are generally called solvents, can remain in waste from the industrial process. Proper management of solvent wastes is essential as solvents can cause fires, explosions, contamination of waters, soil and air and can be harmful to health.

Solvent waste can result from:

- cleaning or degreasing (eg. parts washing, spray-gun cleaning, precision cleaning of instruments and electronic components, vapour degreasing etc);
- solvent extraction (eg. extraction of oils, fats and other materials in industrial laboratory processes); and
- manufacture of solvent-based products (eg. surface coating materials and other chemical products).

3.2 Solvent Recycling

In the 1980s, a working party was set up to look at solvent recycling in WA. It was decided that solvent waste could no longer go to landfill. The existing waste treatment facility at Forrestdale (later known as Brookdale) was licensed to deal with non-hazardous liquid waste. However, solvents could not be treated at this facility and would not be accepted. Other States had solvent recycling facilities, and it was believed that Western Australia could set up similar facilities.

The producers of waste solvent previously accepted at landfill were advised that they would have to recover their solvents, either by themselves or via a solvent recycling company.[18] The Health Department of Western Australia (HDWA) widely distributed an Environmental Health Guide on the Recycling of Solvent Wastes to industry. It set out information on what solvent wastes were and the process for recycling. It also listed the suppliers of recycling equipment and solvent recycling companies available at the time.

Recycling units, which could distil waste, were available through the HDWA and the distilled waste could then be reused by industry.

Four recycling facilities established operations in the early 1980's. Two of those companies merged, and later became Waste Control at Bellevue.

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17 Proposed Non-Hazardous Industrial Liquid Wastes Treatment Plant at Forrestdale, Health Department of Western Australia, Report and Recommendation of the Environmental Protection Authority, Perth, Bulletin 417, November 1989, pp 1-3.

18 *Ibid*, p i.

3.3 The Health Department & Solvent Waste

The involvement of the HDWA in hazardous waste management is historical. The Health Department administered the *Health (Disposal of Liquid Waste) Regulations 1983*, and the Waste Management Section was responsible for the administration of liquid waste regulations. Industrial waste, including petrol and oil trap waste, was to be transported to special council sites, which accepted septic and grease trap waste. Amendments in 1987, to the *Health (Licensing of Liquid Waste) Regulations 1987* exempted certain liquid wastes to encourage recycling.

Under the early regulations, the HDWA monitored landfill operations to ensure that liquid waste disposal conformed to health regulations or the regulations of other agencies. The agencies worked together to ensure suitable disposal of waste.

The HDWA, acting under instructions from the Cabinet Committee on Metropolitan Waste, proposed a non-hazardous industrial liquid waste treatment plant at Forrestdale on the existing Metropolitan Septage Treatment Plant site. The facility would treat liquid waste and discharge the treated effluent to sewer. This would obviate the method of disposal that was being used to discharge it to the Kelvin Road, Gosnells landfill. Landfill operators had given notice that they would be closed to the acceptance of industrial liquid waste at the end of November 1989.[19]

The HDWA was not a regulator of industrial sites. The EPA originally issued licences for disposal of waste in pits on sites, while the Water Corporation regulated the disposal of waste to sewer. The Mines Department licensed storage of dangerous goods. In the late 1980's, local councils decided to stop accepting liquid waste to landfill.

3.3.1 Liquid Waste Treatment Plant

Cleanaway Technical Services (Cleanaway) won the tender to set up and operate the non-hazardous liquid waste treatment facility (LWTF) under the control of the Health Department. CTS already operated the Metropolitan Septage Treatment Plant at Forrestdale on the same site.[20]

The facility, was initially under contract to the Health Department in 1988. In December 1993, Cabinet approved the transfer of the Waste Management Section from the Health Department to the Department of Environmental Protection (DEP). The transfer was completed in early 1994. In 1994 the Waste Management Section of the Health Department became the Office of Waste Management in the DEP.

In 1998, the proponent for the facility changed to Waste Management (WA), a corporate entity within the DEP. Regulation of the licence conditions for the facility was transferred from the DEP to the EPA via a Ministerial Directive in 1998.

19 *Ibid.*
20 *Ibid.*

CHAPTER 4 SITE BACKGROUND

4.1 The Company

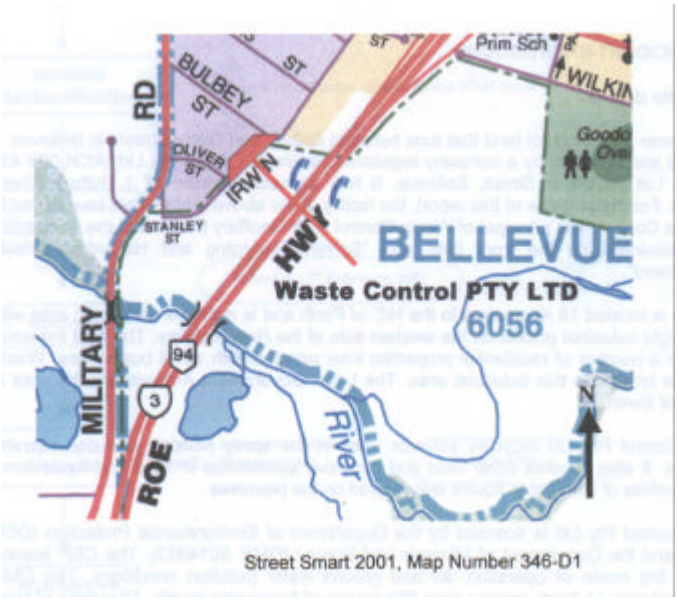
In May 1988, the Environmental Protection Authority (EPA) issued a Works Approval to Austech (Australia) Pty Ltd (Austech) to build a nitromethane plant at the Bellevue site. However, the plant was never built and, in December 1989, a Works Approval was issued to the same company to build a solvent recycling[21] plant at 1 Bulbey Street, Bellevue.

On 16 January 1990, the EPA issued an operating licence under the *EP Act* to Austech, after Dr Jeffrey Claflin had established the Australian Chemical and Solvent Recycling Company in 1989 at the Bulbey Street, Bellevue site. Waste Control Pty Ltd was founded at about the same time and was located in Welshpool.

Both companies were established in response to the promotion by the HDWA for solvent recycling, in line with new liquid waste regulations, which would prevent such material being disposed of at landfill. The two companies merged in 1991.

A site inspection conducted by the DEP in March 1993 revealed the company name had changed from Austech to Waste Control Pty Ltd. At the time of the fire emergency, the company was also trading as Hazardous Waste Solutions. However, for the purposes of this report, the Company will herein be referred to as Waste Control.

At the time of the fire emergency, Waste Control was licensed to operate as a chemical recycling and waste treatment facility, including the short-term storage of dangerous goods. Both the DEP and the DME simultaneously licensed the site.



The premises was located in an industrial area in Bellevue and within approximately 500 metres of the Bellevue Primary School, 200 metres from residents and 100 metres from the Roe Highway. Drains from streets adjacent to the premises run into the Helena River which, in turn, flows into the Swan River.

Waste Control was placed into liquidation on 7 June 2001. Ferrier Hodgson of Perth, Western Australia, is administering the affairs of the company.[22]

[21] Industrial solvent wastes from various industries can be processed to produce re-useable solvent product.
[22] Order of the Supreme Court of Western Australia, 7 June 2001, DEP File No 658/99 Vol 4.

4.2 The Company - Operators

Dr Jeffrey Claflin and Mr Rodney Mathers were the main operators of the business over the period of its operation. Mr Mathers was a founder of the company and was closely involved with Waste Control as a director from approximately 1990 until late 2000.[23]

Mr Mather's role in the company was one of assisting the operations, while Dr Claflin provided technical expertise and the daily management of the site. In September 1999, Dr Claflin took over the role of General Manager for Waste Control to personally oversee operations and, in particular, regulation compliance.[24]

4.3 The Company – Commercial Margins

Waste Control collected industrial wastes from a number of sources on a fee-for-service basis. Waste included solvents from the dry-cleaning, printing and motor repair industries and also some hazardous wastes such as polychlorinated biphenyls (PCBs), pesticides and acids, which were on-shipped to licensed facilities and small amounts of mercury, which were stored at the site.

In general terms, Waste Control were paid by waste producers to dispose of their waste product, some of which could be recycled and sold back to industry, while the remainder would be disposed of at a cost to Waste Control.

Dr Jeffrey Claflin, Director of Waste Control advised the Committee:

> *If I were to summarise the history and the problems leading up to the fire… it is relatively straightforward. The company, Waste Control Pty Ltd, was certainly undercapitalised to do what it was doing, and always had been undercapitalised. However, with the resources that were available, we did an amazing job; we did fabulously well. If any particular thing caused the downfall, I suggest it was the regulatory framework that was put together for technical purposes…The regulatory framework made it impossible for a company with our capitalisation to meet our obligations.*[25]

Waste Control stored up to 2000 drums (205 litre size) of waste material consisting of solvents, metallic sludge and hydrocarbon residues on the premises. It was the primary, and for some time only, company that provided a treatment or disposal option in Western Australia for many solvent wastes. This was the case from approximately 1996 until February 2001

The Committee heard evidence from other industry operators, regulators and observers that the prices charged by Waste Control for its services were too low, effectively preventing other businesses from entering the market.

In the early 1990s, several other companies were offering a solvent waste recycling/disposal service. However, evidence suggests that Waste Control's pricing policy meant that it was not

[23] Mr Rodney Mathers, Transcript of Evidence, 24 October 2001, p.1.
[24] Letter from Dr Claflin dated 14 September 1999, DEP File No 658/99/5 Vol 1.
[25] Dr Jeffrey Claflin, Transcript of Evidence, 5 September 2001, p.2

possible for other companies to compete on an economically viable basis, causing these companies to withdraw from the solvent recycling market.

The Committee was advised that:

> *Waste Control had been aggressively undercutting its competition to increase its market share. The prices it was charging were not sufficient to do the job properly.*[26]

One of Waste Control's most significant claimed impediments to compliance with its licence conditions was the tight commercial margins upon which the business operated. Correspondence the company sent to government regulatory agencies, the then Ministers for the Environment and the Mines Department and later to the then Premier, clearly indicates that Waste Control did not possess the required capital, or operating income, to make improvements to its Bellevue facility to fully satisfy its licence conditions.

The Committee believes that Waste Control's pricing policy was the primary cause of its unacceptable low trading profit. Further, the business was unlikely to increase its profitability under its pricing policy to a sufficient level to allow it to operate effectively.

Mr Mathers, a Director of Waste Control, stated that the maximum industry would pay for recycled solvent product was between 70 and 90 cents per litre, and that the virgin (new) product was available for around 90 cents per litre. Mr Mathers advised the Committee that the true cost for correct handling and treatment of solvent at that time was around $2.50 per litre.[27]

Within the Waste Control operations, the cost of recycling far outweighed the collection and resale returns. Those wastes that could not be recycled had to be disposed of into landfill, or through interstate licensed facilities at a cost to Waste Control, which included transportation.

The Committee has concluded that the need for increased cash flows led the Waste Control management to take in more waste product than the operation could safely and effectively process. This, in turn, caused poor waste management practices to arise.

The Committee believes that Waste Control's commercial practices essentially undercut other operators to the point that an unsustainable and artificial market dominance was created.

The Committee finds that:

Finding 1

Waste Control's commercial practices essentially undercut other operators to the point that an effective monopoly position was created.

The Committee finds that:

Finding 2

Waste Control did not possess the necessary working capital or operating income to:
- maintain essential operating equipment; and
- comply with licence conditions.

[26] Dr Bryan Jenkins, Transcript of Evidence, 7 November 2001, p 14.
[27] Mr Rodney Mathers, *Op Cit*, p.5

4.4 Waste Stored

The company held a Dangerous Goods Storage Licence issued under s 45(a) of the *EDG Act*, authorised by the DME for the storage of a range of dangerous goods.[28]

The most recent DME renewal notice for the licence to store dangerous goods at the Waste Control site provided for the storage of:

Flammable Liquids;	320.0 kl/tonnes
Toxic Solid Waste;	10.0 kl/tonnes
White Spirits/Water Emulsions;	14.5 kl/tonnes
Paint Thinners;	4.5 kl/tonnes
Waste Water;	4.5 kl/tonnes
Toluene;	25.0 kl/tonnes
Mixed Flammable Solvents;	13.0 kl/tonnes
Corrosive Substances;	12.0 kl/tonnes[29]

4.4.1 Dangerous Goods Classification

Goods that are considered 'dangerous' are assigned to a Class according to the most significant risk presented by the goods, as determined by the criteria set out by international standards.

The *Explosives and Dangerous Goods (Dangerous Goods Handling and Storage) Regulations 1992*, sets down the manner in which dangerous goods must be managed, and the conduct on premises on which dangerous goods are stored. This includes regulations pertaining to separation and segregation distances, bunding requirements, screen walls and security.

4.4.2 Placarding of Dangerous Goods Premises

Regulations stipulate that, premises on which dangerous goods are stored, shall ensure the premises are placarded in accordance with DME the guidance note for placarding.[30] The DME guidance note requires premises to be placarded in accordance with the WorkSafe guidance note 'Storage of Chemicals'. Placards are intended as a guide for company personnel and emergency services personnel in the event of an incident at the site. Waste Control commissioned HMS Consultancy Pty Ltd in January 2001, to conduct an audit of the site for the purpose of assisting the company to attain compliance with the *Explosives and Dangerous Goods (Dangerous Goods Handling & Storage) Regulations 1992*. During inspections of the Waste the site.

The above photograph shows the placards on the front gate of the Waste Control premises.

[28] Storage, in relation to dangerous goods, means retaining the dangerous goods on any premises for a period of not less than one hour.
[29] DME Renewal Notice – Licence to Store Dangerous Goods, S013578, 17 December 2000.
[30] Regulation 3.20 Explosives and Dangerous Goods (Dangerous Goods Handling and Storage) Regulations 1992.

The consultant was required to identify the generic class of all substances at the site, rather than the specific individual substances or quantities. This task was carried out between 12 January 2001 and 1 February 2001, approximately two weeks prior to the fire emergency. The results are shown in Table 1.

Table 1 Classes of substances held at Waste Control site as at 1 February 2001:

Classification	Substance
Class 3 Flammable Liquids	Flammable Solvents Paint Thinners White Spirit Turpentine Paint Methyl Ethyl Ketone Toluene Flammable Liquids not otherwise specified (N.O.S.)
Class 6 Toxic Substances	Perchloroethylene
Class 5 Oxidising Substances & Organic Peroxides	Hydrogen Peroxide Methyl Ethyl Ketone Peroxide
Class 8 Corrosive Substances	Corrosive Liquid N.O.S Acids Corrosive Liquid N.O.S Alkaline Industrial Lead Acid Batteries Hypochlorite Solution
Combustible Substances	Waste Oil Oils various

4.4.3 Manifest of Materials on Site

Explosives and Dangerous Goods (Dangerous Goods Handling and Storage) Regulations 1992 required Waste Control to maintain a manifest of dangerous goods stored at the site.

The company was requested, on 10 October 2000, to provide a copy of the manifest, but the DME inspector did not sight the manifest.[31] The absence of a suitable manifest was one of the issues over which the DME subsequently prosecuted the company and will be discussed further in Chapter 10 of this report.

4.4.4 Prescribed Premises

The company was licensed by the DEP as a "prescribed premises" under the *EP Act*. Prescribed premises are premises engaged in certain activities listed in Schedule 1 of the *Environmental Protection Regulations 1987*.

Waste Control was a prescribed premises under Categories 39 and 61 of Schedule 1, which are described as:

> *(39) Chemical or oil recycling: premises on which waste liquid hydrocarbons or chemicals are refined, purified, reformed, separated or processed*
>
> *(61) Liquid Waste Facility: premises on which liquid waste produced on other premises (other than sewerage waste) is stored reprocessed, treated or irrigated..*[32]

31 Letter from DME to Committee dated 13 September 2001.
32 *Environmental Protection Regulations 1987,* Schedule 1.

The activities carried out on prescribed premises as described are considered to have the potential for significant environmental impact. The construction of these premises requires a Works Approval, and a licence to operate the facility.

There is no specific legislative requirement under the *Environmental Protection Act 1986* to provide inventories. However, there is a power under section 57 of the *EP Act* to impose conditions on a licence issued by the DEP.

Waste Control was required by way of a licence condition issued on 7 August 1999, to maintain a manifest of all chemicals received and stored on site. However, DEP records and evidence to the Committee suggest that an up-to-date manifest was not maintained.

The Committee finds that:

Finding 3

There is no mandatory requirement for companies handling hazardous wastes to:
- produce or maintain a detailed, up to date inventory of wastes; and
- provide an inventory of those wastes to the regulatory agencies.

4.5 Wastes Known to Have Passed Through the Site

Due to Waste Control's failure to maintain adequate storage records, the Committee was unable to obtain a precise list of chemicals and their specific volumes on the site at the time of the fire emergency.

The Committee notes that, while some inventory information was provided in the form of extracts from the drum movement log, an inventory of chemicals on the site was not provided.[33]

The absence of a comprehensive register of the chemicals stored at the site caused serious problems for firefighters and those attempting to address community health concerns. These and other issues will be developed further in later chapters of this report.

The Committee finds that:

Finding 4

Waste Control did not provide an inventory or manifest of waste material stored at the site as requested by both Department of Environmental Protection and Department of Minerals and Energy.

Information gathered from departmental records of the relevant agencies and other sources suggests the types of materials stored at the Waste Control site, but not necessarily present at the time of the fire. These are listed in Appendix Two of this report.

4.5.1 ChemCollect

ChemCollect is a free collection program for unwanted farm chemicals. The DEP, Agriculture Western Australia, Environment Australia and local authorities jointly run the ChemCollect program, with assistance from other government departments, industry and community organisations.

[33] Letter from DEP to the Committee dated 31 October 2001.

The program offers an opportunity for individuals or businesses to have their unwanted chemicals collected and destroyed free of charge. The program is part of a three-year national collection program jointly funded by the State and Commonwealth Governments.

Waste Control was licensed to handle some of the chemicals retrieved on the ChemCollect and Household Hazardous Wastes programs. The DEP supplied the Committee with a complete record of waste sent to Waste Control as part of the ChemCollect program, including certificates of disposal at licensed facilities.

4.6 Storage Difficulties

While the company had the capacity to recycle some of the waste it collected, much of the waste was stored on the premises as a backlog. During Court proceedings against the company in April 2001, Mr Mitchell representing the Crown stated:

> *In 1999, approximately 2000 205-litre drums of waste dating back up to 10 years were held on the premises. The manner of storage of much of this waste did not comply with the requirements of the Dangerous Goods Act and the Explosives and Dangerous Goods Handling and Storage Regulations 1992.*[34]

Since commencing its operations, Waste Control was not able to dispose of the waste collected at the Bellevue site. The site experienced significant problems in meeting the licence conditions imposed by both DEP and DME and was repeatedly threatened with both prosecution and closure.

In November 1998 the Eastern Metropolitan Regional Council (EMRC) ceased accepting waste material previously accepted from Waste Control. New Landfill Waste Acceptance Criteria, relating to the amount of liquid contained in unsuitable waste product, resulted in wastes being rejected at the land-fill site.

Waste Control contended that this situation contributed to a large stockpile of wastes that accumulated on the site,[35] since the company was unable to dispose of material it could not recycle. This contributed to the accumulation of drums on the site. This issue is discussed further in section 6.3 of this report.

During 1999 and 2000, Mr Mathers made several approaches to the former Minister for the Environment, Hon Cheryl Edwardes, and the former Minister for Mines, Hon Norman Moore, in an attempt to obtain direct financial assistance for the company to enable it to meet its regulatory responsibilities.[36] None of these approaches was successful.

Mr Mathers also argued for the government to make changes to the liquid waste regulations of the day. Mr Mathers believed that the introduction of tighter liquid waste regulations, (which would effectively force producers of solvent and other wastes to account for and dispose of that waste through licensed facilities), would provide a more reliable customer base for companies such as Waste Control.[37]

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34 State v Waste Control Pty Ltd, Transcript of Proceedings, Court of Petty Sessions, Midland, 19 April 2001, p 3.

35 Dr Jeffrey Claflin, Submission to the Economics & Industry Standing Committee, 27 July 2001, p.3

36 Mr Rodney Mathers, *Op Cit*, pp.10-12

37 Mr Rodney Mathers, Letter to the Premier dated 15 September 1999, DEP File No 658/99/5 Vol 1.

In correspondence between Waste Control and the government authorities, the company argued that if they increased the cost for recycling or disposal, the hazardous waste stream would be likely to disappear.

Dr Claflin stated:

> *Waste Control is the last or was the last and often the only repository in Western Australia for hazardous wastes. If Waste Control had increased the cost for recycling or disposal, a large fraction of the hazardous waste stream would simply disappear and be illegally disposed of.*[38]

However, data to support this claim does not exist, as producers of solvent type wastes were not, until July 2001, required to account for their waste product.

4.7 Site Condition Before the Fire

The safety procedures and compliance record of the operations at the Bellevue facility had deteriorated substantially and became progressively worse over time, particularly in relation to infringements against its licence conditions.

In July 1999 the Water and Rivers Commission was alerted by the DEP to a chemical spill at the site. FESA contained the spill with the assistance of the Shire of Swan. A number of agencies attended a briefing about the site and raised concerns about the premises.

Subsequently the DEP served a pollution direction in August 1999 under section 73 of the *EP Act* requiring the company to:

- prevent further offsite contamination;
- decant liquids out of the leaky drums; and
- contain contaminated stormwater on the premises.

The DME, in consultation with WorkSafe WA, issued a notice requiring the company to:

- prepare an emergency plan:
- prepare product manifest/Material Safety Data Sheets;
- attend to the decanting of the leaky drums;
- repair bunding and attend to product labelling, waste classification,; and
- provide personal protective equipment and hazard identification when moving waste to another site.

FESA requested a contingency plan for spill and fire emergency management.

[38] State Crown Solicitor v Waste Control Pty Ltd, Transcript of Proceedings, *Op Cit,* p 19.

The Explosives and Dangerous Goods Division of the DME had issued a number of warnings instructing the company to remedy defects in the way it stored dangerous goods on the premises. The following photographs taken by DME Inspectors at the Waste Control site in September and October 2000 clearly demonstrate the poor state of the site, in particular the drum storage area.

Poor housekeeping around the main drum depot.

Tarp-covered area of main drum depot. A lot of the drums were not labelled, so their identity was not known.

Poor housekeeping around the main drum depot.

Oxidisers and Corrosives

The Committee recommends that:

Recommendation 1

The *Environmental Protection Act 1986* be amended to ensure:

- companies licensed to handle hazardous wastes provide an up-to-date inventory of those wastes; and
- that an updated inventory is provided to the regulatory agencies on a regular prescribed basis.

CHAPTER 5 PLANNING & ZONING ISSUES

5.1 Introduction

Planning for hazardous industry has become an increasingly important facet of land use planning. Catastrophes overseas and within Australia have heightened public awareness of hazards associated with some industry and activities.

Assessment of developments for hazardous industries are generally referred by the local authority to the EPA under the *EP Act*, and to the DME under the *EDG Act*. The Australian Planning Ministers established a National Task Force into Hazardous Industry and Safety Planning in 1986, in recognition of the importance and complexity of hazardous industry planning. Policies and Guidelines related to hazardous industry planning were developed.

The Western Australian Planning Commission (WAPC) has policies to guide planning issues relating to proposals for hazardous industry and the storage of dangerous goods.[39] However, these policies are intended only as a guide for planners and are not formally binding.

5.2 Regulation of Land Use

In Western Australia, planning is administered at three levels: by the Minister for Planning, the WAPC and local governments.

Land use in the Perth metropolitan area is controlled by the Metropolitan Region Scheme (MRS), administered by WAPC, and the relevant local Town Planning Scheme (TPS), administered by local government.

The WAPC has delegated to local governments the power to determine most applications for development consent under the MRS. Local governments are responsible for identifying areas suitable for particular land uses, for establishing residential densities, and for keeping their Town Planning Scheme(s) up to date.

5.3 Planning History of the Waste Control Site

At the time of the fire emergency, the Waste Control site was made up of two adjoining lots. Lot 99 Bulbey Street and Lot 88 Oliver Street, Bellevue. The site was initially part of a large grazing station (Helena Farm) that operated from the late 19th century.

In 1903, the site and neighbouring area were subdivided, with the house on Lot 99 Bulbey Street believed to have been constructed in 1904. Ownership of both allotments changed a number of times up until 1987 when Lot 99 was purchased by Austech, and a waste recycling operation began under the operating name of Australian Chemical and Solvent Recycling (ACSR).

[39] Western Australian Planning Commission's, *Policy on Planning for Hazards and Safety,* July 1991.

5.3.1 Planning Approvals at the Site

When the City of Swan receives an application for approval for land use, it refers to its TPS for the definitions and what is permissible. However, the City of Swan advised the Committee that the Model Scheme Text, upon which all local government Town Planning Schemes are based, does not have standard definitions for industrial uses. As such, hazardous industries can be defined differently in different jurisdictions.[40]

In December 1986 an application was made to the Shire of Swan (the Shire) for approval to commence development of a concrete wall/steel roof ablution block, and steel framed and/or steel clad factory building. The WA Meat Commission was the stated owner of Lot 88 Oliver Street.

A council development application report dated January 1987 describes the proposal as an 'Ablution Block/ Drying Shed to be zoned under the TPS No: 9 as 'General Industrial' and as 'Industrial' under the MRS. The Shire Clerk granted approval in January 1987.

Local government relies on expert and governmental advice in order to make a determination on whether or not a particular application should be approved. Most local governments do not have the specialist expertise that is required to make an authoritative judgement on whether a particular industry is appropriate.[41]

In September 1987, Austech submitted an application to the Shire for development of a Methyl Nitrate Plant at Lot 99 Bulbey Street Bellevue. The Shire forwarded the application to the EPA for assessment.

5.3.2 Environmental Impact Assessment

In Western Australia, the powers for Environmental Impact Assessment (EIA) procedures are embodied in Part IV of the *EP Act*. Proposals are referred to the EPA if it appears likely the proposal, if implemented, may have a significant effect on the environment.[42]

In WA, the EIA process does not distinguish between public and private proposals. Rather, it is considered to apply to any action, which may have 'an environmentally significant impact.'[43]

The EPA advised the Shire that the referral relating to Lot 99 Bulbey Street, as determined under s 40 of the *EP Act*, did not require a formal Environmental Impact Assessment (EIA) under Part IV of the Act. The EPA decided to offer advice to the Shire and, if appropriate, make recommendations to the relevant decision making authorities on the environmental aspects of the proposal.

In accordance with the provisions of the Shire's District TPS and the authority delegated under the MRS, the Shire advised Austech that approval to commence development of the methyl nitrate plant had been granted subject to the following conditions:

- the development complying with the provisions of the TPS, the *Health Act 1911* and the Uniform By-laws;
- approval being secured from the Explosives Branch of the DME; and

40 J. Erceg, City of Swan, Transcript of Evidence, 10 August 2001, p 1.
41 *Ibid*, p 2.
42 Part IV, S38 (1) *Environmental Protection Act 1986*, Western Australia.
43 Ian Thomas, *Environmental Impact Assessment in Australia*, 3rd Edition, 2001, p.163.

- approval being secured from the Pollution Control Division of the DEP.

The EPA found that the location of the proposed plant was close to other developments, making safety more important, but that it should be possible to address this situation adequately through the EPA's Works Approval process and DME regulations. Nevertheless, the EPA recommended that the location was environmentally acceptable.[44]

In October 1989, Chemical Engineering and Research Design (CERD)[45] advised the Shire that Austech, in a joint venture with CERD, were endeavouring to establish a small solvent recycling plant at the site. The general categories of solvents to be processed included hydrocarbons (paint thinners and turpentine), chlorinated hydrocarbons (degreasing solvents and trichloroethylene) and miscellaneous other solvents, in particular acetone.[46]

In January 1990, the DEP issued a licence to Austech to operate a solvent recovery works with general air/pollution control conditions and water pollution control conditions. The licence stated that the facility should be maintained in a manner that meets the requirements of the DME, Explosives and Dangerous Goods Division, in respect of the storage and handling of flammable solvents.

The DME, Explosives and Dangerous Goods Division issued Austech with a licence to store flammable liquids, including kerosene and paint thinners in April 1990.

Environmental Impact Assessment (EIA) has become an established process in planning and policy decisions over the previous two decades. Essentially, EIA seeks to determine the potential risks to the both the natural and social environment that may result from a proposed action. The rationale is that, if the likely effects are known in advance, potential problems may be avoided.

The Committee found that the DEP is focused on environmental risks. A health risk assessment process, which runs parallel to assessment of environmental risk, needs to be incorporated within the environmental impact assessment process.

The Committee believes that the Department of Health can play a greater role in the prevention of risks, at the time applications for approval are made.

5.3.3 Health Impact Assessment

In evidence to the Committee, Mr Michael Jackson, Director of Environmental Health with the HDWA stated that:

> *The Department of Health…has input in the Environmental Protection Authority's environmental impact assessments but, unlike some other States, there is no requirement in that process for a health impact assessment.*[47]

The concept of a Health Impact Assessment (HIA) process has been pursued to a limited extent in Australia. Amendments to the Victorian *Health Act 1988* provided for the preparation of health impact statements, where if an individual or group provided evidence that a proposed activity was a danger to public health, the Health Authorities could be requested to inquire into an activity.

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44 Environmental Protection Authority letter to Swan Shire dated 23 May 1988.
45 A further interest of Dr Claflin.
46 A letter from Dr Jeffrey Claflin, Managing Director to Swan Shire, dated October 1989.
47 HDWA, Transcript of Evidence, 31 August 2001, p.3.

Tasmania's *Environmental Management and Pollution Control Act 1994* empowers the Director of Public Health to require that an EIA include an assessment of the impact of a proposal on public health.[48]

In their submission to the Committee, the Health Department note that a HIA may be required, or relevant, even if an EIA is not warranted.[49]

The Committee finds that:

> Finding 5
>
> The Environmental Protection Authority did not conduct a formal Environmental Impact Assessment on the Waste Control site at any time during the planning or development stages.

The Committee finds that:

> Finding 6
>
> There is no requirement for a Health Impact Assessment in the Western Australian Environmental Impact Assessment process under the *Environmental Protection Act 1986*

5.4 Planning for Hazardous Industry

Hazardous industry means an industry which, when in operation and all measures proposed to minimise its impact on the locality have been employed, would pose a significant risk to the locality, to human health, life or property, or to the biophysical environment. Examples of such industries include oil refineries and chemical plants.[50]

Industrial sites are prone to contamination and their proximity to residential areas can be a cause for concern. Environmental impacts are site related. Close proximity to ecologically sensitive areas such as wetlands can result in degradation.

Additionally some areas of Perth are prone to contamination of groundwater due their specific hydrogeology.[51] Groundwater contamination is of particular concern in Western Australia due to the heavy dependence on ground water as a secondary supply for the greater metropolitan region.

Planning policies are made by the WAPC and local government(s) to provide guidance on planning, land use and development matters. Planning policies help the WAPC and local government to deal with applications in a consistent manner, although they are more flexible than statutory provisions.[52]

Paragraph 6.1.2 of the WAPC's Policy on Planning for Hazards and Safety reads:

> *In considering proposals for development of warehouses, open air storage and industries involving storage, a planning authority should establish whether dangerous goods, or*

48 Ian Thomas, *Op Cit*,, p.39.
49 Department of Health, Submission to the Economics & Industry Standing Committee, dated, 27 July 2001, p.3
50 Policy DC 4.2 *Planning for Hazards and Safety,* Western Australian Planning Commission, June 1991, p.1
51 Hudson K, Contaminated Site Management – A Case Study with Management Applications for Local Government, Murdoch University, 1997, pp 60-61.
52 *Planning for People, An Introduction to the Planning System in Western Australia,* Western Australian Planning Commission, August 1996, p5.

materials that may cause a hazard in the event of a fire, are to be stored on site.[53]

The Committee questioned the Chief Executive Officer of the City of Swan (formerly known as the Shire of Swan) as to whether the proximity of the chemical recycling plant to residents, the school and a livestock yard was considered as part of the planning process. The Committee received the following response:

> *File notes indicate that site visits by Planning Officers did occur during the development assessment process and proximity to other locations is always a consideration when considering developments with the potential to impact on health or amenity.*
>
> *Because it is a permitted use under the City's General Industry Zone, the City could not refuse the proposed development by reason of unsuitability of use. The City's Town Planning Scheme, however, enables conditions upon the approval to be imposed.*[54]

Conditions imposed included adherence to the requirements of the Explosive and Dangerous Goods Division of the DME and Works Approval from the Pollution Control Division of the EPA. The EPA advised the Shire that it believed concerns regarding safety could be adequately addressed by these approval processes.[55]

The Committee finds that:

Finding 7

There is no mechanism for local government to be notified of changes to or expansion of activities once a licensed business has become operational.

The Committee finds that:

Finding 8

The Waste Control site did not satisfy standards set down in the Western Australian Planning Commission's policy on Planning for Hazards and Safety.

5.5 Buffer Criteria

The events surrounding the Bellevue fire incident raise a number of significant planning issues regarding the siting of waste treatment and storage facilities, particularly in relation to their proximity to residential developments and related infrastructure such as schools, and proximity to sensitive industry such as those related to livestock.

The Waste Control facility was located in a general industrial zone, which was within approximately 200 metres from residents and 500 metres from the Bellevue Primary School.

The Committee was advised that there are no provisions under Town Planning Scheme No.9 regarding industrial buffers,[56] and believes there is a need to identify appropriately buffered waste management precincts for siting facilities for the recycling, treatment and disposal of hazardous wastes.

53 Policy DC 4.2 Planning for Hazards and Safety, *Op Cit*.
54 City of Swan letter to the Committee dated 28 March 2002.
55 Environmental Protection Authority letter to Swan Shire dated 23 May 1988.
56 City of Swan letter to the Committee dated 28 March 2002.

The siting of waste storage facilities needs to be carefully considered, as such a facility cannot be located too distant from the industrial or commercial sources. Placement too far from other industrial areas will make waste management very expensive, which could encourage illegal dumping. There is also a resultant problem with the transportation of dangerous and hazardous goods by road.

The Committee finds that:

> Finding 9
>
> The Waste Control site, as it changed and expanded its operations, was situated too close to residential housing, livestock yards and a primary school.

The Committee finds that:

> Finding 10
>
> There is a need to identify appropriately buffered waste management precincts for siting hazardous waste including recycling, treatment, storage and disposal facilities.

5.6 Assessment of Zoning Decisions

The Committee considers that a more strategic view to planning is required to ensure that planning schemes and land use compatibility are considered. Amendments to planning schemes should be adopted so that there is a state-wide approach to provide for appropriate zoning for hazardous industries and the disposal of associated wastes.

The Committee is aware that gaining community support for siting waste facilities may be a challenge but may be facilitated through community education and consultation processes. Community consultation and transparency throughout the development and approval process is desirable, particularly where the siting of industries has a potential to impact on human health.

The Committee notes the lack of conditions relating to human health risk assessment in the WA EIA process.

5.7 Planning and Environmental Management

Generally, State administrative arrangements separate land use planning functions from environmental protection functions. Local authorities have primary responsibility for developing local land use plans and controlling development, that is, building operations, subdivisions and changes in the use of land. State governments do have some control over the exercise of functions by local authorities, and may develop State or regional plans and environment protection policies to deal with major development proposals.[57]

Some States have attempted to coordinate planning and environmental management functions by combining their separate departments of environment and planning.[58]

In Western Australia, legislation does not deal with development control, so powers to control development lie within the area of discretion granted by a town planning scheme.[59]

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57 Bates, G, 1995, Environmental Law in Australia, 4th Ed., Butterworths, p 99.

58 *Ibid*.

Responsibility for managing, preventing, controlling and exercising and enforcing statutory powers and duties in relation to environmental harm rest principally with the central environment protection authority in each State and Territory.

The trend in environmental management is moving towards closer integration of planning and environmental controls. Integrated assessment of land use and environmental issues is preferable because it is more efficient in terms of time, expense and resources; but also because it is likely to lead to better identification and consideration of important environmental values.

In New South Wales, Victoria and Western Australia, planning and environmental protection licensing may take different paths. In other jurisdictions procedures for approval may be combined in the one assessment process.

Regulatory systems for environmental management need to better integrate land use planning, resource exploitation and environmental control. The traditional approach, based on setting emissions standards and policing them (command and control) has limited the mechanisms which regulatory agencies may use to achieve the best environmental outcomes.[60]

Environmental protection objectives are now encompassing the activities of all elements of government. Statutory directions to land use planning and resource based agencies to consider the environmental implications of development should be a consideration.

The Committee recommends that:

Recommendation 2

A more strategic view to planning as it relates to licensed hazardous waste sites is required to:
- ensure that planning schemes and land use compatibility are fully considered, including assessment over time as the nature of hazardous industries change;
- ensure planning schemes take into account the disposal of waste; and
- provide for an assessment of environmental impacts.

The Committee recommends that:

Recommendation 3

Planning schemes need to ensure buffer zones around hazardous industries are established on the basis of the type and volume of hazardous waste, and incompatible land uses excluded.

The Committee recommends that:

Recommendation 4

State Planning Authorities need to develop a closer working relationship with local government and environmental protection authorities

59 *Ibid*, p 132
60 *Ibid*, p 395.

The Committee recommends that:

Recommendation 5

Prior to the issue of a licence under the Explosive and Dangerous Goods Regulations, the Department of Minerals and Petroleum Resources must consult with:
- local government authorities;
- environmental protection agencies;
- WorkSafe WA; and
- Fire and Emergency Services Authority.

The Committee recommends that:

Recommendation 6

Environmental protection guidelines must be:
- Better incorporated into town planning schemes and policies; and
- Taken into account by local government authorities,

when siting hazardous waste activities.

The Committee recommends

Recommendation 7

Appropriately buffered and limited numbers of waste management precincts need to be:
- identified for the siting of facilities; and
- located to allow the safe recycling, treatment and disposal of hazardous waste.

The Committee recommends that:

Recommendation 8

The Environmental Impact Assessment process as contained within the *Environmental Protection Act 1986* be expanded to:
- incorporate a health impact assessment where appropriate; and
- involve the Health Department of Western Australia in the process of the health impact assessment.

The Committee recommends that:

Recommendation 9

Relevant government agencies, in cooperation with local government, look to review all existing Department of Environmental Protection and Department of Minerals and Petroleum Resources licensed sites to assess land use compatibility.

CHAPTER 6 GOVERNANCE OF THE SITE

6.1 Introduction

The relationship between Waste Control and the regulatory agencies was characterised by the on-going pursuit of compliance. Regulations under the *EP Act* and the *EDG Act* controlled both environmental protection and dangerous goods storage and handling. The regulatory agencies would continue to press for compliance, on occasion threatening prosecution, while the operators of Waste Control would assure the regulators of their intention to comply and, on occasion, would comply at least in part.

The unsatisfactory performance of Waste Control was a matter of concern to the DEP over many years. Communications between the company and the DEP going back to 1989 record both concerns with the way the business was operating and unsatisfactory environmental performance. The situation between Waste Control and the DME was similar. Inspectors would register concerns, which the operators would pledge to address.

6.2 Management And Regulatory Approach By the Agencies

Evidence before the Committee indicated a steady stream of correspondence between Waste Control and the regulatory agencies. Appendix One of this report contains a chronology of site inspections and other contact between Waste Control and the DEP, along with other relevant regulatory authorities, over the period of its operation.

Throughout the period of its operation, officers representing the DEP inspected the site on numerous occasions, fifteen of which are listed as site inspections relating to licence conditions.

Over at least ten years, the DEP progressively amended and strengthened the company's licence conditions, had numerous meetings with the company directors and threatened prosecution under the *EP Act* if environmental performance did not improve to achieve compliance with DEP requirements.

Two section 73 notices were served on the company in July and August 1999 relating to pollution from premises and another in August 1999 to remove drums and reduce the threat of fire or groundwater pollution.

The DEP's management approach included due regard for the broad social need to have a continuous waste service provided by Waste Control, including the removal of dangerous waste materials from local schools and shopping centres.

The regulatory regime was characterised by due process and opportunity for Waste Control to improve its performance, while the enforcement approach reflected attempts to negotiate a solution with the licensee, rather than move immediately into a prosecution or full enforcement approach. The DEP was of the view that this approach reflected the expectations of the public and government.[61]

[61] DEP Submission, *Op Cit*, p.6 & Transcript of Evidence dated 6 September 2001, p 3.

The Committee finds that:

> Finding 11
>
> The Department of Environmental Protection and Department of Minerals and Energy continued to licence Waste Control despite consistent non- compliance with licence conditions.

6.2.1 Operational Policy And Improved Performance

Industrial, economic (financial), social and environmental considerations shaped the DEP's approach to managing and regulating Waste Control. The stated policy was to keep the facility operational and maintain pressure towards improved performance. Prosecution was to occur only when all efforts to achieve improved performance were exhausted. [62]

In its submission to the Committee, the DEP stated that:

> *From the DEP's perspective, management and regulation of Waste Control Pty Ltd was influenced by the interests and requirements of relevant stakeholders, the broader interests of environmental protection and the community's expectation for some form of active management. In recognition of society's need for waste services, government seeks to facilitate adequate improvements in inadequate waste management practices as a first step. Closure of such a facility should therefore be an option of last resort while opportunity for improvement remains practical.* [63]

6.2.2 Dangerous Goods Storage at the Site

The DME continuously granted Waste Control a licence to store dangerous goods at the site over the years of its operation. The licence endorsed the storage of flammable liquids, kerosene and paint thinners.

Waste Control's working relationship with DME was not dissimilar to that of the relationship with DEP. During the period 1990 to 2000, Waste Control breached its licence conditions on numerous occasions. From 1990, the two sites were subject to numerous inspections and, without exception, non-compliances with the relevant technical standards were regularly recorded. The seriousness of the deficiencies varied over time and some were of a relatively minor nature.

Inspections of the premises revealed various breaches of licence conditions, which resulted in a letter advising Waste Control of possible legal action. A further comprehensive inspection resulted in a rating of nine, the worst possible, with a recommendation by the attending inspector that legal action be instituted.

The DME had endorsed a schedule of improvement works proposed by Waste Control in September 1994. Within two months the company was warned that the site represented "an unacceptable risk to public safety" and "immediate action was required to remedy the deficiencies". [64]

Further inspections revealed similar non-compliances and evidence was gathered to support possible legal action, which did not eventuate. Later site inspections revealed the same deficiencies.

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62 *Ibid*, p.7.
63 *Ibid*, p.6
64 DME Submission, dated 1 August 2001, p 9.

In response to a complaint by the Midland Fire and Rescue Service, a site inspection in April 1999 revealed a worsening of site conditions. A DME inspector recommended that supply of dangerous goods to the site should be halted and the dangerous goods already on the site should be removed.[65]

Heavy rains in July 1999 resulted in polluted stormwater overflowing onto adjacent property. During August 1999, DME demanded that immediate action be taken to remedy specific non-compliances.[66]

A detailed risk assessment of the various dangerous goods operations at the premises was not conducted by the DME. The risk was deemed acceptable and closure of the premises was not considered. The premises were continuously licensed for the storage of dangerous goods until 16 December 2000.[67]

The Committee finds that:

Finding 12

Chemical storage at the Waste Control site:
- from the time of the first regulatory agency inspection did not comply with regulations; and
- at no time was in complete compliance with either Department of Environmental Protection or Department of Minerals and Energy licence conditions.

The Committee finds that:

Finding 13

A detailed risk assessment of the various operations relating to licensed dangerous goods at the Waste Control premises was not conducted by the Department of Minerals and Energy.

From 1990 onwards, the operators of the premises were aware of the non-compliances and repeatedly agreed to upgrade facilities to meet the standards required.[68]

In evidence, the DME stated that:

> *The management of the site would do the absolute minimum at any particular time to try to get compliance…Almost at no stage during a 10-year period did the operator disagree with the requirements put on the site by our inspectors. It was always, "Yes; we will do that, but we need a little time" or, "Can we do it this way rather than that way?" If we pushed hard enough – it came to a crescendo with threats of prosecution –some work was done.*[69]

Over approximately 10 years, DME relied on undertakings provided by Waste Control to remedy non-compliances of its licence conditions which, for all practical purposes, hardly ever eventuated.

The DME did not wish to revoke or suspend Waste Control's licence and adopted the view throughout the 1990s that working with the company and keeping it operational was the best option. DME was not in favour of revocation or suspension of Waste Control's licence as it also

65 *Ibid*, p 10.
66 *Ibid*, pp 7-10.
67 *Ibid*, p.1
68 *Ibid*, p.1
69 DME Transcript of Evidence, dated 5 Sept 2001, p 8.

feared illegal dumping of waste or continued build-up of storage in the community. DME was of the view that it was acting in the public interest.[70]

The Committee finds that:

> Finding 14
>
> Government agencies were reluctant to revoke or suspend Waste Control's licence and adopted the view that working with the company and maintaining its operations was preferred to the reasonable risk of illegal dumping of waste or the accumulating of stored hazardous waste throughout the community.

6.2.3 Concerns Regarding Site Management

The Shire had contacted the DME advising of concerns from the surrounding proprietors and residents relating to the open storage of chemicals and potential fire/explosion risks at the site. They requested DME inspect the site and advise as to the adequacy of the storage conditions.

An on site meeting to discuss management practices with the proprietors and representatives from the relevant government agencies, including the Health Department and WorkSafe WA was held in April 1993. The main concerns related to methods of storage of chemicals and solvents, which contravened the conditions of the Works Approval. All liquids were being stored without adequate bunding and groundwater protection.

6.2.4 Expansion of Company Activities

The Lot 88 Oliver Street Bellevue site was not incorporated into the operations until early 1992. Prior approval for the storage of chemicals and solvents on Lot 88 had not been sought or granted.

A site inspection by the DEP in March 1993 revealed that the company name had changed from Austech (Australia) Pty Ltd to Waste Control, and that the company had expanded its storage area onto Lot 88 previously used as a car park. Additional bunding was recommended to accommodate the increased number of drums on site.

Mr John Erceg, Manager of Development Services at the Shire, advised the Committee that:

> *Local government often approves a category – industrial or commercial use – without knowing what industry will be within those premises. … A hazardous industry could be set up in a building without local government knowledge.*[71]

The Shire advised the proprietors to apply for a Works Approval for the chemical and solvent storage facility at Lot 88.

In May 1993, Waste Control agreed to undertake a program of stored volume reduction as well as provision of a bunded storage area. Waste Control also applied for approval to commence development on Lot 88.

Early in July 1993, the DEP advised the Shire that, while the latest proposal by Waste Control raised a number of environmental issues, the overall environmental impact of the proposal was

[70] *Ibid*, p 7, & Transcript of Evidence dated 19 Sept 2001, pp 2 & 3.
[71] J. Erceg, City of Swan, *Op Cit*, p 2.

not so severe as to require a formal assessment by the EPA and the subsequent setting of conditions by the then Minister for the Environment. The EPA again offered to provide advice to the Shire and relevant decision-making authorities on the environmental aspects of the proposal.

The Committee finds that:

Finding 15

The Shire of Swan, the Department of Environmental Protection and the Department of Minerals and Energy:

- were not aware of the full extent of Waste Control's operations at Lot 88 Oliver Street, Bellevue until 1993; and
- Waste Control retrospectively applied for and was granted Works Approval and licences.

A development application relating to Lot 88 was retrospectively approved subject to a range of conditions relating to drainage, landscaping and a Works Approval from the DME and the DEP.

Waste Control was advised that their latest application to commence development on Lot 88 had been granted at the full Council meeting of 22 September 1993.

The DME advised Waste Control that if full compliance with regulations were not achieved by October 1993, legal action would be instigated.

The Committee notes the fragmented approach by the regulatory agencies to the retrospective licensing of Lot 88. In particular, the apparent conflict between the concerns raised by DME in September 1993 and the simultaneous granting of development approval by the Shire on the same day.

The Committee finds that:

Finding 16

There is no formal procedure in place for the Department of Minerals and Petroleum Resources to consult local authorities prior to the issue of a licence to store dangerous goods.

6.3 Red Hill – Landfill

In 1996, the DEP developed guidelines pertaining to the acceptance of waste into landfill sites. These criteria came into effect in 1998. The East Metropolitan Regional Council (EMRC), which operates the Red Hill Waste Disposal Facility, accepted waste from Waste Control that met these Waste Acceptance Criteria.

In evidence before the Committee, the proprietors of Waste Control claim that changes to the acceptance criteria in 1998 made it difficult for the company to comply, due to the stringent nature and cost of testing and analysis required. Dr Claflin stated that:

> *Unfortunately, in 1998 the DEP and the Eastern Metropolitan Region Council agreed to disagree on what could be accepted at landfill. The Waste Acceptance Criteria – 1996 was being enforced, but unfortunately it was poorly written. In particular it applied a 'TCLP' leach test that meant that material you could probably eat safely was not allowed to go to landfill. The result of this was that no waste from the Waste Control processing was disposed*

of from Nov[ember] of 1998 and most of the 1999 material was also not disposed of.[72]

The stockpile build-up of approximately 2,200 drums of waste being held on the premises had been exacerbated from February 1999 with Waste Control failing to provide waste for landfill that met Waste Acceptance Criteria for EMRC's Class III and IV landfill at Red Hill.[73]

EMRC decided to discontinue acceptance of some waste from Waste Control for a range of reasons including:

- safety concerns over the consistency and unknown constituency of materials contained in drums; and
- the lack of an agreed sampling protocol for the contaminated material.[74]

An EMRC incident report dated 18 September 1998 states that:

> *At 9:40 am on Friday the 18th September Auswaste delivered to site a load of waste from Waste Control Pty Ltd for disposal. The load contained drums of unidentified and unknown substances being a thick grey sludge, white crystals, white powders, paints and a 205 Lt drum of pink liquid/gel paint type of material and a 205 Lt drum of dirty white liquid gel. The landfill operator pushed up the load and a drum burst and sprayed a nearby Cleanaway truck (SL5), the driver and the interior of the truck through the open window with a dirty white thick liquid.*[75]

Further incidents were recorded relating to excessive moisture content and odorous emissions from drums originating from Waste Control.

The Committee finds that:

Finding 17

In 1998, the East Metropolitan Regional Council at its Red Hill landfill site strengthened its Waste Acceptance Criteria. As a result, Waste Control was generally unable to meet these standards, causing an increase in stockpiled drums at Bellevue.

6.4 Options And Cabinet Decision

The build up of drums on the site was in part, a result of Waste Control's inability to comply with Waste Acceptance Criteria at Red Hill. This posed an immediate problem for government agencies who needed to address the stockpile of drums on the site.

Of concern for both the DEP and DME was that the excess stockpile of drums were stored in non-bunded areas on the site. Consequently, there was a potential for the release of spillage and pollution. In September 1999, the DEP presented the then Minister for the Environment with six options. The options as listed in the submission were as follows:

1. *Do nothing. This is not feasible. The stockpile of drums represents a possible hazard to people and the environment. If the site is abandoned the hazard would be increased.*

72 Dr Jeffrey Claflin, Submission, *Op Cit*, p.3
73 Cabinet Submission dated 7 September 1999.
74 Eastern Metropolitan Regional Council letter to the Committee dated 18 October 2001.
75 Eastern Metropolitan Regional Council, Incident Report, 18 September 1998

This option is not recommended.

2. *Provide the company with financial assistance to enable it to make the plant compliant and continue operating. There are no existing sources of funding other than a special allocation. If such assistance were made available it may well be seen by industry as rewarding non compliance and incompetence. This option is not recommended.*

3. *No assistance provided and the company goes into liquidation. Once the site is abandoned (or under some other arrangement) the government could take over the site, making it compliant and continuing to operate it itself until a buyer for the business is found. This would mean the operations continued at that site and the locals are already sensitised. The clean-up of the site would be complicated by the need to keep the plant operational, and this would likely add to the cost (no allowance for this additional cost is made in the table below). However, there may be some scope for recovery of cost from the profits and the proceeds of sale of the business. This option is feasible, but is not preferred.*

4. *No assistance provided and the company goes into liquidation. Once the site is abandoned the government could decommission and clean-up the site and relocate the essential plant to a new, less controversial location for ongoing operation and sale. This would require the environmental assessment of the new facility which would take some months and involve significant additional costs. This option is not recommended.*

5. *No assistance provided and the company goes into liquidation. Once the site is abandoned the government could decommission and clean-up the site and establish a still at the Forrestdale Liquid Waste Treatment Facility to treat the wastes now treated by Waste Control. The environmental approval for this site is presently being reviewed and it may be possible to add this recycling operation with little added expense. The contractor operating the site has a facility in South Australia at which wastes which are not readily treatable could be incinerated. This option is feasible, but is not preferred. This option is not recommended.*

6. *DEP causes some of the waste to be removed under section 73(4) of the EP Act 1986 so that flammable wastes are removed and Waste Control can continue trading, then attempt to recover costs from Waste Control when profitability returns. This option is recommended.*

In recommending [this option] it is pointed out that if Waste Control goes into liquidation, the State will bear the cost of removing waste from the Waste Control site and subsequently the remediation of the site. If the company can be allowed to continue trading, the DEPs environmental objectives can be met and the State will not have to bear the cost of cleaning up the site.[76]

6.4.1 Costing / Financial Implications

On 7 September 1999, the then Minister for the Environment recommended that Cabinet approve a loan of $100,000 to facilitate the removal of the stockpile of drums on the site. In recommending Option 6 to Cabinet, the then Minister and the DEP were concerned to ensure that

[76] Ministerial Briefing Note, 18 August 1999.

Waste Control was not placed into liquidation. In the event of liquidation, government would have to bear the cost associated with removal of waste, remediation of the site and any other cost associated with either running the facility at some other locality or running it until it could be sold.

Below is a table of costings prepared by the DEP for consideration by the Minister.[77]

Table 2 Costing of Options for Waste Control

Action	Option 2	Option 3	Option 4	Option 5	Option 6
Immediate action to secure the stockpile etc	$40 000	$40 000	$40 000	$40 000	
Site Security	Operational	Operational	$40 000	$40 000	Operational
Deal with stockpile	$500 000 Company Estimate $350 000	$500 000	$500 000	$500 000	$100 000 Partial Removal
Investigation of contamination	$50 000	$50 000	$50 000	$50 000	
Project mgmt for clean-up	Met by company	$25 000	$25 000	$25 000	
Clean-up other parts of site	No estimates available	No estimates available	No estimates available	No estimates Available	
Approvals for new site	-	-	$50 000		
Establish new operation			$110 000		
Total (excluding site clean-up)	$590 000	$615 000	$815 000	$665 000	$100 000

The then Minister for the Environment, the Hon. Cheryl Edwardes, in evidence before the Committee stated:

> *I took one recommendation to Cabinet, but the options that were open and available to Cabinet were obviously discussed. One other option was that if the place did close down, we would end up with an orphan site. A more important question was what would happen to the waste that was being produced by the 1000 operators. When dealing with such small amounts of waste, it would appear quite easy for illegal dumping to occur.*[78]

DEP's prime objective was to:

> *ensure that the environment is protected by taking measures to prevent pollution; and attempt to allow Waste Control to trade out of its present difficulties, reinforcing the 'polluter pays' principle and reducing government liability.*[79]

In a note to Cabinet on 10 September 1999, the then Minister for Health expressed concern about the financial viability of Waste Control and pointed out:

> *There is a concern that the venture may not be financially sound and the owners may walk away leaving the government to pick up the cost of managing and remediating the site. Providing assistance appears to be the best option for the short term, although there is no guarantee that the owners will not abandon the venture even if they receive financial assistance.* [80]

77 Ministerial Briefing Note, 9 September 1999, p.3 DEP file No: 658/99/5 Vol.1.
78 Hon. Cheryl Edwardes, MLA, Transcript of Evidence, 15 May 2002, p 5.
79 Ministerial Briefing Note, 18 August 1999.
80 Cabinet Comment Sheet, 10 September 1999, DEP File 658/99/5 Vol.1.

The Committee notes that the then Minister for Health's recommendation was that if Cabinet agreed to loan Waste Control the $100,000, there was no guarantee the company would not go into liquidation anyway.

DME supported option six of the submission to Cabinet. In evidence to the Committee, DME stated that:

> *The concept of reducing the quantity of material stored there and allowing them to retain their licence and putting pressure on them to see whether they could then perform, seemed most attractive to, I will not say my inspectors necessarily, but to the Government as a whole.*[81]

In their submission to the Committee, the DME indicated that at that time (August 1999), it was considered critical for the site to remain in operation to prevent the possibility of illegal dumping. The DME were aware that removing the stockpile of drums would ensure the waste treatment facility remain operational.[82]

The Committee notes, however, that although DME supported option six of the submission, it did not regard the removal of the drums as providing a long-term solution.

In evidence, DME stated that:

> *Certainly a reduction of the number of drums on the site was a good idea from our point of view but we did not think it was the solution because it did not address our real issues of the good management of the site, the maintenance of the bunding, the separation and the way that the material was still stacked.*[83]

Nevertheless, DME supported option six and in October 1999, Cabinet approval was given to fund the removal of 1000 drums of waste from the site.

The then Minister for the Environment advised Cabinet that, if the company was unable to trade out of its difficulties, it would be likely to go into liquidation. If this were the situation, the State would have to bear the cost of the drum removal and the remediation of the site, projected to have been in the area of $1,000,000. The then Minister advised Cabinet that:

> *There is public interest justification in providing a loan to the company if this liability can be avoided by government. The removal of 1,000 drums will reduce public and environmental risk and enable commercial trading to resume.*[84]

Another consideration for keeping the Waste Control facility operational was the impact of its closure on small business. The Cabinet Submission of 7 September 1999 stated:

> *Maintaining Waste Control in operation also ensures small business, such as dry cleaners and printers, retain access to WA-based and relatively low-cost waste recycling and disposal services.*[85]

81 DME Transcript of Evidence, 19 September 2001, p 4.
82 DME Submission, .*Op Cit*, p.10.
83 DME Transcript of Evidence, 5 Sept 2001, p 15.
84 Cabinet Submission, 7 September, 1999, p.2.
85 Cabinet Submission dated 7 September 1999.

The Committee was advised that Option 6 was recommended to Cabinet due to a number of factors, including the cost to the Government. Dr Jenkins advised the Committee that:

> *We believed that the polluter should pay to deal with the issues. The first five options effectively meant that the government would pay. We are talking about a seven-figure sum. There were discussions with Treasury about what it would accept.*[86]

The Committee is of the view that option six was chosen as it represented the most immediate solution to a serious problem. This option fitted in with a broader policy of allowing business to trade out of its difficulties. The Committee believes that while this option may have been effective in a situation where a stockpile of drums was the only non-compliance issue, in the case of Waste Control, this was only one of a raft of non-compliance issues at the site.

The Committee finds that:

Finding 18

The Cabinet approved loan of $100,000 to remove the 1999 backlog of drums from the Waste Control premises was ineffective in dealing with the long-term regulatory and operational failures.

6.5 Drum Removal

Following Cabinet approval, in September 1999, the DEP called for tenders for the removal of the 1000 drum back-log at Waste Control[87]. The State Supply Commission approved the results of a restricted tender process, and on 30 September 1999 the DEP awarded Teris (Aust) Pty Ltd (Teris) the contract for the removal and destruction of the wastes.

The tender process was restricted on the grounds of urgency and because there were only three companies capable of doing the work as required. The DEP paid Teris directly to carry out the removal operation.

Early in October 1999, Teris sent two qualified staff from Victoria to Waste Control for three days to establish procedures for the safe consolidation of loads for shipment, including repackaging of damaged drums, labelling, documentation and loading. Teris advised the Committee that:

> *As far as possible in the time available, these staff trained Waste Control employees in the correct procedures and ensured only compatible materials were included in the 1000 drums selected for transfer. A large part of the 1000 drums were processed by Teris [staff] over the three days so the Waste Control employees had hands-on experience in correct handling etc.*[88]

The Teris staff held the view that the Waste Control facility reflected badly on the waste industry as a whole. In their submission to the Committee, Teris stated that:

> *There was a failure to meet reasonable industry standards and there were likely breaches of safety and environmental regulations. Before commencing their activities, [Teris staff] had to source their own personal protective equipment and simple transfer pumps, which were*

86 Dr Bryan Jenkins, Transcript of Evidence, 7 November 2001, p 11.
87 The waste was removed using powers under section 73 of the *Environmental Protection Act 1986.*
88 Teris (Aust) Pty Ltd Submission to the Economics & Industry Standing Committee, dated 3 April 2002, p.2.

not available at Waste Control.[89]

The following page contains images taken by Teris staff at the Waste Control site in October 1999 of the drum storage area.

Teris received thirteen deliveries of waste over the period 18 October, 1999 through 20 December, 1999. All of these wastes were processed or disposed of by Teris by 29 December 1999.

The waste was transported via rail to Victoria. Teris staff, who instructed Waste Control employees on the manner in which the goods were required to be labelled and contained, packaged the initial consignment. Following the initial shipment, problems with leaking containers were noted by authorities in Adelaide and in Melbourne. During one shipment, National Rail was forced to isolate an area of 50 meters in radius around a container, causing major disruption to rail activities at the Melbourne Freight Terminal.

The DEP advised the Committee that staff from Teris were verbally instructed to remove the 'worst' drums from the site, that is, those drums that showed the most deterioration and posed the greatest risk to the environment.[90]

Examination of the contract between the DEP and Teris reveals a lack of stipulation as to which drums were to be removed from the site. Furthermore, the Committee believes the contract was deficient in that it did not include a mechanism for reviewing the success or otherwise of the objectives of the contract.

The Committee is of the view that the financial assistance provided by the DEP exacerbated the situation at Waste Control. The provision of the loan allowed the company to deal with the existing waste backlog in the short term, while doing little or nothing to address the real problems at Waste Control and the wider issue of hazardous waste management in WA. Site inspections in the following year revealed that the stockpile had returned to its former size.

The Committee finds that:

Finding 19

The contract to remove the backlog of 1000 drums from the Waste Control site did not:

- stipulate the specific drums to be removed:
- stipulate specific objectives of the operation;
- provide a monitoring mechanism to ensure objectives had been met; or
- result in a long-term reduction in the size of the drum stockpile on the site. However, it reduced the quantity of waste stored elsewhere in the community.

89 *Ibid.*

90 DEP letter to the Economics & Industry Standing Committee, dated 17 May 2002.

The Committee finds that:

Finding 20

The financial assistance provided to Waste Control allowed the company to deal with the existing waste backlog in the short term, while doing little or nothing to address the real problems at the site. Site inspections within six months of the intervention revealed that the stockpile of drums had returned to its former volume.

6.6 Loan Repayment

By a Deed of Covenant dated 28 October 1999, Waste Control agreed to pay to the State of Western Australia the Principal sum and interest in accordance with a re-payment schedule. The Principal Sum was the amount of $98,923.00, which was to be paid over a two-year period. The repayment of the sum was secured by a charge over the assets owned by Waste Control.

Under the Deed of Covenant, Waste Control had agreed to pay principal and interest at the rate of $4,000.00 a month. As at 31 January 2001, the amount, which should have been paid in the first year according to the payment schedule, was $56,000.00. Only $11,687.43 had been paid.[91]

6.7 WorkSafe Involvement at the Site

Under the *Occupational Safety and Health Act 1984*, where a WorkSafe inspector:

> *… is of the opinion that an activity is occurring or may occur at a workplace which activity involves or will involve a risk of imminent and serious injury to, or imminent and serious harm to the health of, any person, the inspector may issue to a person who is or will be carrying on the activity, or a person who has or may be reasonably presumed to have control over the activity, a prohibition notice prohibiting the carrying on of the activity until an inspector is satisfied that the matters which give or will give rise to the risk are remedied.*[92]

Waste Control Pty Ltd had been visited by WorkSafe Western Australia on 8 occasions from June, 1996 until February, 2001 and notices for improvements had been issued.

Notices related to contravention of section 19(1)(a) of the *Occupational Safety and Health Act 1984* in July 1996 and Regulation 4.55 of the *Occupational Safety and Health Regulations 1996*.

After the fire at Waste Control, WorkSafe worked with the contractor, Cleanaway and unions to address any concerns about health and safety. WorkSafe assisted in selecting protective equipment and the development of work procedures.

Appendix One of this report provides full details of WorkSafe's involvement at the Waste Control site.

91 CSO Letter dated 27 February 2001, DEP File No 658/99 Vol 3.
92 Section 49(1) of the *Occupational Safety and Health Act 1984.*

CHAPTER 7 ENFORCEMENT ACTION

7.1 Introduction

Over the decade of Waste Control's operation, the company had difficulty meeting the most basic requirements, in terms of bunding deficiencies, the maintenance of separation distances and general site house keeping. Inspectors from all agencies visiting the site were frequently appalled at the condition of the site and would lodge reports that reflected this view.

Many of the submissions received by the Committee are incredulous as to how the site was allowed to continue operating when it was clearly and continually in breach of licence conditions for many years.

The Committee found that the operators took full advantage of their statutory rights, using appeal mechanisms to protest at the tightening of licence conditions. This, in turn, hindered the enforcement process to some degree, and clearly frustrated those officers charged with the 'coal-face' regulation of the site.

7.2 Agencies Enforcement Action

Waste Control's continual failure to comply with licence conditions, its default of the Deed of Charge (security against the $100,000 spent removing drums from the site), and its failure to submit a management plan to achieve licence conditions, resulted in the DEP issuing 'show cause' letters to Waste Control.

From May 1999 to December 2000, Waste Control received infringement notices from both the DEP and DME. The infringement notices included unsatisfactory site inspection reports and 'show cause' warning letters that preclude a change in licence conditions, and statutory directions under section 73 of the *EP Act*[93] and section 45C of the *EDG Act*[94] respectively.

"Show cause" letters are issued under s 59(2) of Part V of the *EP Act*, to afford the licensee a reasonable opportunity to show cause why legal action should not be taken in respect of breaches of licence conditions. In the case of Waste Control, this included the requirement not to allow the drum stockpile to build up again.

In March 2000, the DEP wrote to Waste Control calling upon the company to show cause in writing why enforcement action should not be taken in respect of breaches of licence conditions, including failure to:

- provide a detailed inventory of containers of solid and/or liquid chemical waste on the premises;
- dispose of chemicals agreed to have been dealt with by October 1999 and December 1999; and

[93] Section 73 of the *EP Act* gives, among other things, an inspector or authorised person the power to direct in writing that any discharges of waste and/or pollution be dealt with in the appropriate manner

[94] Section 45C of the *EDG Act* provides that a Chief Inspector may give directions with respect to a premises on which dangerous goods are stored that a hazards control plan be implemented and that training must be given to persons occupying or employed on the premises in respect of that plan.

- dispose or treat waste received on the premises after 24 September 1999 within three months of receipt.[95]

In a Ministerial Briefing Note in support of its decision to take enforcement action the DEP stated:

> *The continued operation of Waste Control is not critical to the management of solvent or any other wastes in Western Australia. The company is not a major employer, and does not appear to have sufficient financial resources to operate such that it can meet its statutory obligations. The company's operations are not well conducted and the poor physical condition of the company's facilities poses a genuine threat to the environment in terms of risk to groundwater, site contamination and air quality problems in the event of a fire.*[96]

The former Minister for the Environment, the Hon Cheryl Edwardes, advised the Committee that:

> *… the company was not a major employer in the State and was not the sole company that recycled this waste. There were operators in the eastern States. If those other companies were used, it would have meant that smaller operators faced increased costs, which might well have led to dumping of waste in the bush.*[97]

Waste Control responded that it did not have the resources to undertake all the work requested by the DEP in the time frame provided, and indicated that a cooperative approach between Waste Control and the DEP to the managed resolution of problems would be the best course of action. The DEP subsequently agreed to a compliance schedule at a meeting between Mr Rod Mathers and the Acting Director of the Pollution Prevention Division of the DEP on 26 June, 2000. [98]

After an inspection of the site by the DEP in October 2000 it was revealed that Waste Control remained in breach of their licence conditions and the DEP issued a further 'show cause' letter to the company on 15 November 2000.

Options canvassed in the November Show Cause letter included:

- prosecution;
- revocation of licence; and
- refusal to re-issue a licence.

Waste Control did not respond and the DEP was preparing to commence enforcement action. The DEP was aware that the DME were also undertaking enforcement action in relation to dangerous goods storage issues at Waste Control. [99]

Inspections of the premises by the Explosives and Dangerous Goods Division of the DME revealed continuing breaches of the *EDG Act* and Regulations.

Problems associated with the facility included:

- poor state of equipment;

95 DEP 'Show Cause' Letter to Waste Control, dated 17 March 2000.
96 Ministerial Briefing Note dated 18 April 2000, DEP File No 658/99/5 Vol 1.
97 Hon Cheryl Edwardes, Ibid, p 6.
98 DEP 'Show Cause' Letter to Waste Control, dated 15 November 2000.
99 Ministerial Briefing Note dated 18 April 2000, DEP File No 658/99/5 Vol 1.

- inadequate storage and maintenance procedures;
- inadequate inventory controls / labelling;
- inadequate risk management in regards pollution into the environment; and
- inadequate safety procedures and emergency response plans.

Throughout the year 2000, both the DEP and DME undertook a number of site inspections and found significant non-compliance with licence conditions.

During this time, DME commenced gathering evidence for prosecution under *the Explosives and Dangerous Goods Act 1961*. However, advice from the Crown Solicitor's Office (CSO) initially advised against prosecution citing lack of evidence. It was not until December 2000 that DME commenced prosecution action.

7.3 Consideration of Prosecution

The DME received legal advice from CSO regarding prosecution under the *EDG Act* and associated regulations. The DME was advised against prosecution because evidentiary requirements for conviction would be very difficult to meet, the offences were relatively minor in themselves and the remedies available were limited.

Specifically, the CSO advised that, for a prosecution to be in the public interest, the DME would need to establish that, on a particular day, dangerous goods were situated on the premises and that the management of those dangerous goods represented a breach of the relevant regulation.

The CSO was of the opinion that only two very minor offences could be sustained before a Court, being the requirement to maintain a clean storage area and to prevent stored drums from falling outside the bunded area. The CSO did not consider it to be in the public interest to lay these minor charges as they "did not adequately reflect the criminality of the conduct identified at the site".[100]

The Crown Solicitor advised the DME that if the Department considered the site to be a hazard to safety, the Chief Inspector was open to give directions under s 45C of the *EDG Act* (see below). Further, the Crown Solicitor advised that if those directions were not complied with, s 51 allowed for cancellation or suspension of the licence.

Under the *Explosives and Dangerous Goods Act 1961,* the Chief Inspector:

> *… may from time to time give directions with respect to any premises on which dangerous goods are stored or proposed to be stored for the purposes of ensuring public safety and for the safety of any occupants in or on those premises.*[101]

The Act also provided that:

> *Where the holder of a licence … has failed to comply with … a direction given under section 45C, the Chief Inspector may suspend the licence … until the direction … has been complied*

[100] Crown Solicitor's Office letter dated 30 August 2000.
[101] Section 45C of the *Explosives and Dangerous Goods Act 1961.*

with.[102]

The Committee believes that the legal advice offered by the CSO reflects some of the general judgments being made regarding the infringements occurring at the Bellevue site. That is, the infringements were being considered individually, rather than collectively, resulting in a perception that they were not serious enough to warrant an effective prosecution.

The Committee is of the view that long-term environmental damage can occur from on-going 'minor' offences and on this basis believes the CSO advice was inappropriate.

The Committee finds that:

Finding 21

Infringements at the Waste Control site were considered individually rather than collectively, resulting in a perception that they were not serious enough to warrant an effective prosecution.

The Committee finds that:

Finding 22

Long term environmental damage can occur from on-going 'minor' breaches.

On the basis of advice received from the Crown Solicitor, the DEP was also cautious in applying section 73 of the *EP Act* as the section was perceived to be draconian, and in any event the section was considered to apply to off-site or 'from the premises' situations.

There is no appeal mechanism against a decision made under s 73, and as such it is treated with prudence. Justification for such a power lies in its utility in emergency situations, or one where there are potentially serious consequences. In most circumstances, the DEP rely on the provisions of s 65 as they are considered more appropriate.

Section 65 provides for the issue of pollution abatement notices where any waste is being or is likely to be discharged into the environment. This issue is developed in Chapter 8 of this report.

The Committee is of the view that both the DME and DEP's enforcement approach towards Waste Control was reinforced by the advice received from the Crown Solicitor. Keeping the waste facility operational and trying to improve performance by means of site inspections and adding conditions to licences was the course followed.

[102] Section 51(1) of the *Explosives and Dangerous Goods Act 1961.*

The Committee finds that:

Finding 23

Despite evidence of Waste Control's:
- Repeated breaches of its licence conditions;
- its lack of funds to comply with upgrades/rectification of breaches; and
- general poor management of the site,

the Department of Environmental Protection and the Department of Minerals and Energy continued to issue operational licences with conditions, with only minor improvements in Waste Control's performance.

7.4 Court Proceedings

DME accumulated further evidence in October 2000 for breaches of the *EDG Act* and Regulations and, on this occasion, a summons was issued to Waste Control in December, 2000 relating to 10 charges.

The 10 charges related to the failure to comply with regulations requiring adequate bunding, packaging and storage, firebreaks, inventory and separation distances. The Midland Court of Petty Sessions imposed fines totalling $200,000 on 19 April 2001.[103] It is worth noting that the company pleaded guilty to the charges.

The Committee finds that:

Finding 24

Both the Department of Environmental Protection and the Department of Minerals and Energy adopted a cautious approach when assessing the possible prosecution of Waste Control for its failure to comply with licence conditions. The advice of the Crown Solicitor's Office contributed to the agencies' reluctance to prosecute.

[103] State v Waste Control Pty Ltd, *Op Cit*..

CHAPTER 8 LEGISLATION

8.1 Environmental Protection Legislation

The *Palos Verdes Estates Pty Ltd v Carbon*[104] (*Palos Verdes*) case was the first major court case on interpreting the Western Australian *Environmental Protection Act 1986*.

The Full Court of the Supreme Court of Western Australia overturned a decision where the appellant had been convicted by a magistrate of causing pollution contrary to s 49(1) of the *EP Act* by bulldozing a path on a foreshore reserve. The decision in that case limited the definition of pollution under the Act. In *Palos Verdes*, clearing of vegetation and disturbance to soil was found not to be pollution, and further limits were placed on the definition itself.

The Committee notes that the intention of Parliament as expressed by the then Minister for Environment in the second reading to the Environmental Protection Bill was to "enable any source of pollution to be stopped".[105]

8.1.1 What Is Pollution?

The Full Court of the Supreme Court of Western Australia considered the meaning of 'pollution' within sections 3(1) and 49 of the *EP Act*.

Section 3(1) of the Act defines the environment to mean:

> *Living things, their physical biological and social surroundings, and interactions between all of these.*[106]

The definition is clarified in section 3(2) as follows:

> *The social surroundings of man are his aesthetic, cultural, economic and social surroundings to the extent that those surrounding directly affect or are affected by his physical or biological surroundings.*[107]

Section 49(2) of the Act reads:

> *(2) A person who emits or causes to or allows to be emitted from any premises noise, odour or electromagnetic radiation which unreasonably interferes with the health, welfare, convenience, comfort or amenity of any person commits an offence.*[108]

Malcolm CJ held, that the definition of pollution in section 49 and 3(1) of the *EP Act* was too wide and uncertain. Given the wide interpretation it would create a large class of offenders who would be guilty of offences of absolute liability in such acts as cutting a lawn, pruning a rose or treading on an ant.[109]

104 *Palos Verdes Estates Pty Ltd v Carbon*, 1991, 6 WAR 223
105 Parliament of Western Australia, Legislative Assembly, Hansard 24 July 1986, p. 2540.
106 Section 3(1) Environmental Protection Act 1986.
107 Section 3(2) Environmental Protection Act 1986.
108 *Palos Verdes Estates Case, Op Cit, p* 240.
109 *Ibid,, p* 223.

The Court was of the view that Parliament could not have intended the definition of pollution in the Act to be so wide as to create a situation in which a substantial number of the population would unknowingly commit offences in the ordinary course of their daily lives.

The Chief Justice suggested "pollution" should be read down so as to import the notion of harm that is done to the health, welfare and economic interest of people, or harm to animals, birds and so on.

The Chief Justice suggested that in the Palos Verdes:

> *All of this evidence pointed to disturbance of the soil rather than damage to the soil as such, as would be caused by the release into the soil of toxic chemicals, for example.*[110]

The Court looked to the purpose of the Act, which was to protect the environment, and to the ordinary dictionary definition of pollution "to make physically impure, foul or filthy".[111]

Malcolm CJ held that:

> *In my opinion, when one considers the use of words such as "detriment" and "degradation" in the definition of "pollution" in s 3(1), they must take their colour from the ordinary meaning of "pollution". Thus the terms of a kind which is associated with the ordinary meaning of pollution. Namely that the environment is altered to its detriment because the condition of water, atmosphere, land or other aspects of the environment is altered so as to make it harmful or potentially harmful to health, welfare, safety or property of human beings or harmful or potentially harmful to animals, birds, fish, other aquatic life, plants or vegetation.*[112]

The Court looked to other cases of pollution and stated:

> *Pollution where it occurs in its typical form by way of discharge of toxic fumes or waste, discharge of oil into the sea or chemical spill on a roadway imposes costs and burdens on the community. These costs and burdens will arise irrespective of the state of mind of the polluter, that is to say, whether the pollution was intentional, negligent, inadvertent or by unavoidable accident.*[113]

Effectively, the Court limited the definition of 'pollution' in section 3(1) of the *EP Act* to mean 'to make physically impure, foul or filthy' which meaning should be read against the statutory definition. The Court's findings did not remove the powers of section 73, but rather framed the use of section 73 by defining the meaning of a pollution event and how it should be applied. That is, pollution is:

> *Direct or indirect alteration of the environment by making it physically impure, foul or filthy to its detriment or degradation, or to the detriment of any beneficial use.*[114]

Section 73 was considered draconian if the definition of "pollution" was left unrestricted when read together with Part V of the *EP Act*.

110 *Ibid, p* 236.
111 *Ibid, p* 223.
112 *Ibid, p* 239.
113 *Ibid, p* 223.
114 *Ibid ,p* 243.

The other crucial definition in the Act is the definition of the "environment". This interacts with the definition of "pollution". As it relates to pollution and prescribed premises, the environment is something surrounding the premises, other than the premises itself.

8.2 Provisions Of Part V Of The Act

The Committee questioned the lack of prosecution action taken by the regulators against Waste Control for consistent breaches of licence conditions over the period of its operation.

The Committee was advised that pollution as defined in the Act is confined to impacts beyond the boundary of the prescribed premises.[115] Crown Law advice was that the department did not have the legal authority to deal with on-site issues.

Part V of the *EP Act* makes reference, *inter alia*, to waste or odour being discharged "from any premises"[116] and waste discharged "from any premises".[117] The central section of the Act, which makes it necessary to hold a licence, section 56, makes it an offence to cause or increase discharges of waste and emissions 'from the prescribed premises'. Section 74(3) provides that operating in accordance with a licence is a defence to offences under Part V of the Act, including pollution.

Effectively, if an operator is licensed to conduct activities on prescribed premises under the Act, they are in a position to pollute those premises. It is not enough for the regulator to suspect pollution is occurring, rather, the regulator must provide proof beyond reasonable doubt, including evidence of the harm caused by those activities, in order to take prosecution action following the Palos Verdes case.

The DEP referred to an explanatory statement by the current Minister for Local Government, on behalf of the Minister for the Environment, which again reinforced the DEP's cautious position in invoking section 73 of the Act. The Minister stated that:

> *Nor does section 73 provide a clear power to deal with on-site pollution. Legal opinion is divided as to whether "a condition of pollution" may be interpreted as applying to the situation of solely on-site pollution, and the point has not been judicially tested.*[118]

Development of contaminated sites legislation was trying to accommodate on-site contamination, and amendments to the *EP Act* were being developed to deal with shortcomings in the *EP Act*.[119] In a review of the *EP Act* in 1992, the Independent Advisory Committee recommended that the existing definition of pollution in the Act, as now interpreted as a result of the *Palos Verdes* decision, should be retained.[120] It also recommended the creation of an offence of 'causing or allowing the environment or a portion of the environment to be degraded'.[121]

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115 Dr Bryan Jenkins, Transcript of Evidence, *Op Cit*, p 6.

116 *Environmental Protection Act 1986*, Western Australia, Section 65 .

117 *Ibid*, Section 73.

118 Hon. Tom Stephens, Western Australian Legislative Council, Hansard 31 July 2001, p1633.

119 Dr Bryan Jenkins, Transcript of Evidence, *Op Cit*, p 9.

120 Independent advisory Committee for the Review of the Environmental protection Act to the Minister for the Environment, October 1992, p 22.

121 *Ibid*, p 23.

The Committee finds that:

> Finding 25
>
> Provisions within the *Environmental Protection Act 1986* that deal with pollution within the boundaries of prescribed premises are ineffective and do not allow the regulators to take effective action where on-site pollution is reasonably suspected.

8.2.1 Legislative Action

The DEP took the view that the rejection of the wider definition of pollution by the highest court in the State meant an alternative approach was needed if prosecutions were to be successful. Proof that discharges of substances which cause alteration to the water, air or land so as to alter their nature and have a detrimental effect on living things was adopted as practice in evidence gathering. Where such evidence was lacking proved to be a problem in relation to application of sections of the Act involving pollution.

The Committee is of the view that a reasonable and legitimate community expectation was that government should have acted in the public interest to bring about timely legislative change to remedy the deficiency.

With regard to the issue of legislative change, the DEP stated that:

> *We have been trying to do exactly that for some considerable time…It would probably relate back to 1992…This issue is something we are aware of and it is something we have inserted into draft legislation to be clarified.*[122]

8.3 Contamination on a Prescribed Premises

A public discussion paper considering improvements to the *EP Act* in May 1997, considered that the Act provides for the licensing of premises prescribed under the Act rather than activities which actually cause pollution. The report also found that the Act focuses on pollution from the premises and not pollution on the premises.

The report found that problem could be addressed by prescribing activities rather than premises.[123] The concept of activity based licensing is discussed in section 9.4 of this report.

The Committee was advised that:

> *The Environmental protection Act was designed to deal with emissions from premises into the environment. The legal interpretation is that a waste must be offsite before it is considered pollution under the Act. It is not enough for a contaminant to be present offsite; it must also have caused direct or indirect alteration of the environment either to its detriment or degradation, to the detriment of any beneficial use or of a prescribed kind. … This is reinforced in section 65 of the pollution abatement notices which refer to waste being or likely to be discharged from any premises into the environment, and in section 73, which refers to waste being discharged from any premises.*[124]

122 DEP, Transcript of Evidence, 6 September 2001, p.21.
123 A public discussion paper, Amendments to the Environmental Protection Act 1986, May 1997, p 8.
124 Dr Bryan Jenkins, Transcript of Evidence, *Op Cit*, p 4.

The interpretation being that, pollution, as defined under the *EP Act*, is confined to impacts beyond the boundary of a prescribed premises. While the definition of pollution in the *EP Act* placed some constraints on the DEP, the Committee believes that the *EP Act* and the directions provided by the *Palos Verdes* case still gave the DEP significant powers to protect the environment from pollution.

The Committee finds that:

> Finding 26
>
> While the definition of pollution in the *Environmental Protection Act 1986* placed some constraints on the Department of Environmental Protection, *the Environmental Protection Act 1986* and the directions provided by the *Palos Verdes* case still provided significant powers to protect the environment from pollution.

The Committee is of the view that there is a need to include contamination on the site, particularly for operations such as the one at Waste Control.

In the proposed amendments to the *EP Act* and the draft Contaminated Sites Bill, the definition of discharge into the environment is expanded to include contamination on the site of a prescribed premises. Alternative legislative measures are discussed further in the following chapter of this report.

The Committee recommends that:

> **Recommendation 10**
> Amendments to the *Environmental Protection Act 1986* proceed as a matter of high priority to ensure the definition of 'pollution' includes pollution of the environment whether on or off a site or premises.

8.4 Explosives and Dangerous Goods Legislation

The *Explosives and Dangerous Goods Act 1961 (EDG Act)* and the associated *Explosives and Dangerous Goods (Dangerous Goods Handling and Storage) Regulations 1992* provide for the regulation of dangerous goods. The objective of the legislation is public and workplace safety and its scope includes premises that are covered by occupation health and safety legislation.

Certain substances that are potentially very hazardous are prescribed to be "dangerous goods" to allow for appropriate safety precautions to be mandated.

It is an offence to use, or permit the use of, any premises for the storage of dangerous goods unless the person responsible has applied for and obtained a licence.[125]

Section 45A of the *EDG Act* gives the chief Inspector the power to decide, at his discretion whether to issue a licence for the purpose of storing dangerous goods, to refuse to issue such a licence, or to defer making a decision on an application to store dangerous goods.[126]

125 Section 45 Explosives and Dangerous Goods Act 1961.
126 DME Submission *Op Cit*, p 2.

The Regulations specify the meaning of the term "dangerous goods" by referencing the *Australian Code for the Transport of Dangerous Goods by Road and Rail",* as amended from time to time.

The Committee was advised that the *EDG Act* gives significant powers to the Chief Inspector in relation to "explosives" but does no give the same powers in relation to substances classed as "dangerous goods".[127]

The DME stated:

> *With the possible exception of Section 45C, the Act omits any powers that could be used to regulate the manufacture, reprocessing, use or disposal of dangerous goods.*[128]

Section 45C is relied upon to administratively implement the national standards for the control of Major Hazard Facilities such as the State's major petro-chemical industries. This administrative arrangement relies heavily on the cooperation of industry. The larger companies tend to comply with the national standard, however smaller independent operators may seek to take advantage of any perceived weakness in the legislation.[129]

Since the proclamation of the *EDG Act* in 1961, WAs chemical manufacturing and processing industries have grown dramatically. As a result, industrial and domestic waste products and produced in an every increasing rate. Over this period, community expectations for safety and protection of the environment have increased.

The existing Dangerous Goods legislation has been recognised as deficient for some time due to its primary focus on the storage aspects of dangerous goods and reliance on prescriptive technical standards. The approach adopted 40 years ago no longer reflects community expectations for safety and the environment.

Mr Malcolm Russell of the DME advised the Committee that:

> *The problem is that the 1961 legislation, which was drafted in the late 1950s , was at a time when many of the industries that we now see in this State did not exist*[130].

In July 2000, Cabinet approved the drafting of the Dangerous Goods Bill modelled on modern Occupational Health Safety legislation. The DME advised the Committee that approval is now being sought for a priority rating to draft the proposed Bill.[131]

The former Minister for the Environment and Labour Relations advised the Committee that with regard to whether responsibility for dangerous goods should be shifted across to WorkSafe was an ongoing issue during her time as Minister. The former Minister stated that:

> *It made a lot of sense with regard to what WorkSafe was looking at to a great extent, but not entirely. [WorkSafe] does cover the same sorts of powers and responsibilities. There would need to be further legislative changes.*[132]

127 *Ibid,* p 5.
128 *Ibid,* p 5.
129 *Ibid,* p5.
130 DME, Transcript of Evidence, 5 September 2001 p 5.
131 DME Submission, *Op Cit,* p12.
132 Hon Cheryl Edwardes, Transcript of Evidence, *Op Cit,* p3.

The Committee found that in other Australian jurisdictions the responsibility for dangerous goods storage and handling rests with Occupational Health and Safety.

The Committee notes that as the objective of the Dangerous Goods Regulations are to provide for public and workplace safety, WorkSafe may be a more appropriate agency to monitor such premises.

CHAPTER 9 ALTERNATIVE LEGISLATIVE MEASURES

9.1 Introduction

The situation at Waste Control has raised questions as to whether the current regulatory approach to waste management across all of government is appropriate in the contemporary waste treatment environment.

Most of the core legislation governing waste management was prepared and implemented well before the waste treatment and disposal industry existed in Western Australia at its current scale.

The Explosives and Dangerous Goods Act was first promulgated in 1961 and, although it has been subject to periodic amendment, the Committee believes it is in need of a review to make it more applicable and suitable for the rapidly changing environment in Western Australia, particularly in relation to waste products.

As discussed in the previous chapter, pollution as defined under the *EP Act* has been interpreted as being confined to impacts beyond the boundary of the premises. The Committee does not accept that such a limited interpretation was intended and believes there is a need to include on-site contamination within the scope of the Act.

The Committee believes that the need for a stronger legislative and regulatory framework for waste products will become more important as Western Australia develops its capacity for secondary processing of chemical products in the future.

Since the fire at Waste Control, legislative measures have been introduced, which deal with some of the regulatory shortcomings within Environmental Protection legislation. This Chapter gives an overview of those measures, and discusses other means of overcoming regulatory and enforcement problems, which have yet to be introduced into the Parliament.

9.2 Waste Tracking

The *Environmental Protection (Liquid Waste) Regulations 1996* were introduced to control the storage, removal and disposal of liquid waste, in particular grease and oil trap waste and sewerage. The Regulations resulted in a significant reduction in illegal dumping and a major improvement in management standards throughout the transport industry.

In March 2001, the Government amended the Liquid Waste Regulations and introduced new *Environmental Protection (Controlled Waste) Regulations 2001* to expand the regulatory coverage to include other hazardous wastes such as solvents, asbestos, clinical waste and polychlorinated biphenyls (PCBs).

The new Controlled Waste Regulations and changes to the existing Liquid Waste Regulations are part of the regulatory system for managing hazardous waste streams. The regulations were gazetted in March 2001, and came into effect on 1 July 2001.

9.2.1 Controlled Waste Regulations

The *Environmental Protection (Controlled Waste) Regulations 2001* and the amended *Environmental Protection (Liquid Waste) Regulations 1996* have been introduced with the aim of stopping inappropriate handling and disposal of controlled wastes, including solvents and waste sludge of the type previously handled at Waste Control.

Controlled waste types are listed in schedule 1 & 2 of the *Environmental Protection (Controlled Waste) Regulations 2001*.

Controlled waste categories include asbestos, clinical waste, PCBs and various liquid wastes such as solvents, septage and grease trap waste. The characteristics include flammability and toxicity.

The DEP is currently administering a licence and permitting system through an extension of Waste Track, a system that controls the production, storage, collection, transportation and disposal of controlled wastes.

The regulations establish a tracking system from the point of generation. For example, dry cleaners, printers and motor repair shops are monitored by the DEP, with monitoring continuing through to transport and disposal of the waste.

The Controlled Waste Regulations currently only apply to waste produced or disposed of in the Perth Metropolitan area, the City of Kalgoorlie Boulder and the City of Bunbury, as these regions are the major producers of these wastes. There is an expectation that other regions will be included in due course.

9.3 Policy of Cost Recovery

The DEP operates under a policy of full cost recovery, that is, regulations are designed to be self-funding. While smaller operators may seek to opt out of the regulatory system altogether, it is becoming increasingly difficult for these operators as the DEP targets industry and makes on-site visits to producers of waste product. Following is a summary of the tracking system currently in operation.

9.3.1 Producer

If a business produces a solvent waste from commercial activities, it is required to be licensed under the amended *Liquid Waste Regulations 1996*. This licence requires quarterly reporting of solvent waste storage, treatment and removal off site. A further permit is required to actually remove the waste from the site.

9.3.2 Transporter

Transporters of controlled waste are also required to be licensed under the *Controlled Waste Regulations 2001* and may only transport solvents from licensed premises. Controlled waste may only be disposed of at a DEP approved site.

9.3.3 Disposal

Disposal site operators are required to send the producer's transport permit to the DEP, enabling DEP to monitor waste from generation to disposal.

Waste must be deposited at an approved disposal site within seven days after collection. The operator of the disposal site must: check the driver ID; complete a record of disposal (kept for at least 3 years); provide a receipt for the waste to the transporter; provide a certificate of disposal to the waste producer; and send the permit to the DEP within 7 seven days.

9.4 Contaminated Sites

Contaminated sites are a serious environmental issue. Contaminated sites have major economic, legal and planning implications. They can lead to human health problems, multi-million dollar clean-ups, legal complications concerning liability, and uncertainty in the planning and development process.

The Committee was advised that new legislation has been drafted to deal with on-site contamination as the *EP Act* deals only with off-site pollution.[133]

It is estimated that WA has at least 1500 contaminated sites on the Swan Coastal Plain.[134] Over the past decade, there has been an increasing recognition of the problems associated with contaminated sites. The problem is of special importance in WA because of our great reliance on groundwater and the threat posed by land contamination to groundwater quality.

Land is considered contaminated when hazardous substances occur at concentrations above background levels and where assessment indicates it poses, or is likely to pose an immediate or long-term hazard to human health or the environment.

Most contamination occurs as a result of previous land uses. Materials that can cause contamination include:

- metals;
- inorganic compounds such as cyanide; organic chemicals;
- oils and tars;
- toxic, explosive and asphyxiant gases;
- combustible substances;
- putrescible materials: and
- hazardous wastes.

Contaminated land can be a danger to both human health and the environment, and often involves chemicals that persist for long periods and have repercussions for inter-generational equity.[135]

A national approach for the assessment and management of contaminated sites was identified as a priority issue by the Australian and New Zealand Environment and Conservation Council (ANZECC) and the National Health and Medical Research Council (NHMRC). As part of a joint

133 Dr Bryan Jenkins, Transcript of Evidence, *Op Cit*, p 4.

134 Contaminated sites: A public position paper, May 1997, Department of Environmental Protection, p iv.

135 Smith S, "Contaminated Land Management Bill 1997: Background and Commentary", Briefing Paper No 24/97, *NSW Parliamentary Library Research Service*.

initiative the ANZECC and the NHMRC released guidelines for the assessment and management of contaminated sites in January 1992.[136]

Some problems in dealing with contaminated sites identified in a discussion paper in 1997 included deficiencies in current legislation, including:

- a lack of power to identify, refer and investigate contaminated and potentially contaminated sites;
- a lack of power to require effective remediation of contaminates sites. [137]

It is noted that pollution abatement notices issued under s.65 of the *EP Act* are primarily designed to prevent or stop discharges or emissions from premises causing pollution, and are served on the current site owner and/or occupier. They apply when an off-site discharge of waste or emission causes pollution, and are unlikely to be able to require the remediation of existing, on-site contamination.[138]

A section 73 direction issued under the *Environmental Protection Act 1986* is designed to require action to be taken straight away to deal with waste discharge from premises or to prevent or control pollution. There is an assumption, however, that the discharge or pollution is being caused by current activities rather than contamination from past activities.[139]

The report further stated that there are no rules on liability relating to the management of contaminated sites and there is a lack of coordination among government agencies, with no single agency having prime responsibility.[140]

9.5 Draft Contaminated Sites Bill

The inadequacies of current legislative provisions to deal with contaminated sites has lead to the drafting of the *Contaminated Sites Bill* which introduces requirements for the reporting of contaminated sites and powers to require that possible contamination be investigated and remediated. The draft Contaminated Sites Bill contains a numbers of provisions including:

- a definition of contamination based on risk;
- a requirement to report known or suspected contaminated sites;
- the classification of sites;
- provisions for issuing notices – an investigation notice to investigate suspected contamination and prepare a plan for remediation; a clean-up notice to remediate contamination; and a hazard abatement notice to take immediate action to deal with any immediate and serious risks;
- a hierarchy to determine responsibility for remediation aimed to increase the likelihood that the polluter pays; and

136 Contaminated sites: Assessment and management of contaminated land and groundwater in Western Australia, A public position paper, May 1997, p 3.
137 *Ibid*, p 4.
138 *Ibid*, p 5.
139 *Ibid.*.
140 *Ibid.*.

- a system of accredited contaminated sites auditors; appeals and enforcement provisions.

The Committee understand that up to 18 drafts of the draft Bill have been developed and that a submission that the draft Bill progress to Cabinet is imminent.

Other proposed legislative changes include amendments to the *EP Act*.

9.6 Draft Environmental Protection Amendment Bill

The draft *Environmental Protection Amendment Bill* provides for changes to address some of the legislative constraints identified by the DEP for not taking enforcement action against Waste Control. The draft Bill has been rewritten 29 times as the Bill has progressed and developed. The Committee has been advised that the draft Bill has been sent to Cabinet. The draft Bill includes provisions, which ensure that action can be taken about emissions onto the premises. New provisions allow for the introduction of wider conditions on licences, which can deal with production processes and stockpiles to ensure risks of emissions are addressed.

The Draft Bill introduces new offences of unauthorised environmental harm and provisions for strategic environmental assessment and contains a number of provisions, including:

- Strategic assessment – to allow the EPA to assess a proposal that may not, of itself, directly impact on the environment, but anticipates future projects or activities that will have significant impacts;

- Environmental harm – introduces offences of causing material environmental harm or serious environmental harm without the proper authorisation;

- Changes to the processes for assessment, environmental protection policies, licensing, works approval and the issuing of notices to make them clearer, more flexible, less bureaucratic and more outcome-focussed;

- New closure notices to allow the CEO to manage the decommissioning of premises which have been the subject of a licence or approval;

- Provisions that enable the Minister, or the CEO with the Minister's approval, to require the holder of an approval or exemption under the Act to provide a financial assurance.

9.7 Closure Powers

The Committee raised the question as to why (once it became clear the operators were unable to comply with licence conditions) the government agencies could not simply close the site down. The Committee was advised that the *EP Act* in its current form does not provide for closure powers in relation to premises.[141] The Committee were advised that:

> *There are basically two options under the licensing regime; we can either revoke the licence or we can prosecute for non-compliance…[Closure] powers are not available under the Act;*

[141] DEP Submission, *Op Cit*, p.19.

we do not have the power to get someone to cease operating.[142]

While revocation of licence provides some power similar to closure, the *EP Act* allows for appeals against licence revocation, thereby allowing for the continuation of activities at a site.

Proposed amendments to the *EP Act* in August 2000 did include a closure notice provision.[143] The Committee is of the view that for situations like Waste Control closure powers would be desirable.

9.8 Activity Based Licensing

The *EP Act* provides for the licensing of premises that are prescribed under the Act. This is not fully consistent with the nature of pollution control since pollution is generated from activities rather than premises and these activities may or may not be related to premises at a fixed location.

This may be addressed by prescribing activities rather than premises. This is the case in Queensland and in other jurisdictions. In South Australia, prescribed activities of environmental significance are required to be licensed under the *Environment Protection Act 1993* (South Australia).

In Queensland and South Australia, legislation stipulates that a person must not undertake an activity that pollutes, or might pollute the environment, unless that person takes all reasonable and practicable measures to prevent or minimise any resulting environmental harm.

9.9 Licensing Arrangements

The current range of types of conditions that can be placed on licences focus on pollution control equipment and monitoring and are limited in terms of operational practices.

The Committee was advised that:

> *DEP had proposed to the previous Minister the concept of a "supervised licence" for poor performers. A supervised licence would involve additional fees to enable greater DEP scrutiny to achieve operational improvements. Despite an EPA recommendation to draft regulations for such a licence, the Minister wanted more consultation with industry (industry associations opposed the concept as it provided DEP with greater ability to regulate industry).*[144]

Amendments to the licensing provisions of the *EP Act* would enable greater operational controls and risk assessments as licensing requirements.

142 DEP, Transcript of Evidence, 6 September 2001, p.11.
143 Section 68A Draft Environmental Protection amendment Bill 2002.
144 Letter from Dr Bryan Jenkins to the Premier dated 14 February 2002, attachment.

The Committee finds that:

> Finding 27
>
> The Bellevue incident demonstrated that current licence arrangements are inappropriate and need to be more responsive to differing circumstances.

9.10 Draft Waste Management Bill

The draft *Waste Management Bill* introduces powers that require producers of products to take responsibility for the wastes their products generate. Regulations under the draft Bill require that the producers of controlled products (products that generate problematic waste) must provide a system for take-back of the waste at no cost to the customer.

The draft Bill draws together in one Act most of the waste-related legislative provisions, from the *Health Act, 1911*, the Environ*mental Protection Act 1986* and the *Litter Act 1979*. It updates the provisions and adds new provisions for the promotion of extended producer responsibility.

The Draft Bill introduces a level of accountability for the quality of waste management services provided by local governments, overseen by the CEO.

The Committee understands that the draft Bill has been subject to 6 to 7 drafts and will be several months before it will go to Cabinet.

9.11 Hazard-Specific Legislation

All pollutants are hazardous to some degree; but chemicals and wastes of a particularly toxic nature are often classed as "hazardous" substances and may be subject to a stricter regime of control.[145]

New South Wales has established an assessment and waste disposal control process under the *Environmentally Hazardous Chemicals Act 1985* that applies to both industrial and agricultural chemicals.

The movement of hazardous wastes into and out of Australia is regulated by the Commonwealth *Hazardous Waste (Regulation of Exports and Imports) Act 1989*. The passage of this legislation represents Australia's response to an international agreement. The Convention on the Control of Transboundary Movement and Disposal of Hazardous Wastes 1989.

The Committee recommends that:

> **Recommendation 11**
>
> The *Environmental Protection Act 1986* be amended to provide for court-sanctioned closure and seizure powers where a high risk to human populations or the environment exists, whether from licensed or unlicensed hazardous waste operations.

[145] Bates, G, 1995*Op Cit*, p 447.

The Committee recommends that:

Recommendation 12

The Government's proposed legislative reforms on contaminated sites, waste management and environmental protection be given the highest priority for finalisation and presentation to the Parliament.

CHAPTER 10 FIRE MANAGEMENT

10.1 Introduction

The Committee's Volume One Report provided details of the fire incident period, and raised issues in relation to communication and classification of the actual fire and the potential health effects resulting from the fire. The Committee notes that, but for favourable wind conditions causing the smoke plume to migrate away from residential areas, the Bellevue fire would have been a far more serious threat to human health amongst the general community.

Since tabling the first Volume, the Committee has received further evidence and information from FESA, which has been incorporated in this chapter.

From a fire fighting perspective, two incidents were occurring in that area on the night of 15 February 2001. The Waste Control fire, which was logged by the FESA Communications Centre (Comcen) as Incident No.19821, and the Hazelmere Bush Fire, Incident 18927. When crews arrived at the Hazelmere Bush Fire it was discovered that it was in fact a consequence of the Waste Control fire.

In addition to Fire and Emergency Services employees and volunteers, other agencies attending the scene included Police and Ambulance Services, officers from the DME, the DEP and later HDWA.

10.2 The Fire – Incident Period

FESA Comcen received the first of a number of 000 calls pertaining to the fire at Waste Control at 10.59 p.m. on 15 February 2001. Mr Nick Devine, Director of Operations gave evidence that:

> *Two calls came in simultaneously on 000, at 22.59 hours. The first one was a call to a fire in Wells Street, maybe a tree or the cement works. The other call was a factory fire in Wells Street. The third call, at 23.00 precisely, was to a major chemical fire in Irwin Street.*[146]

The Communication Systems Officers initiated mobilisation of resources to a property fire and career fire-fighters from Midland and Bassendean Fire Stations turned out at 22:59 hours to the Waste Control site.[147] The Committee questioned why the incident was classified as a property, or structural fire, when Comcen information clearly noted that it was a major chemical fire. Mr Devine advised the Committee that:

> *It was generally accepted that it was a class-3 flammable liquids fire…that means the fire is fought in a very similar manner to an ordinary factory or structural fire. With regard to chemical[s] being involved, the premises were licensed to carry 11 substances all of which were of a flammable liquid nature…The initial attack on the fire, and the ongoing attack for some time, was in the manner of a class-3 flammable liquids fire*[148].

146 FESA, Transcript of Evidence, 5 September 2001, p 6.
147 FESA, Bellevue HAZMAT Fire Operational Analysis, June 2001, pp 8-9.
148 FESA, Transcript of Evidence, *Op Cit*, p 7.

In the case of standard structural fires, 2 units are automatically dispatched to the incident, with further units dispatched as required.

The Midland brigade entered Irwin Street at 23.02 hours. The Officer In Charge (OIC) of the Midland crew made the customary initial assessment of the incident and immediately upgraded the incident from a Second Alarm property fire to a Third Alarm property fire, effectively increasing the number of pumping appliances required at the incident.

The fire in the drum storage area was well established when the first crews arrived at the site. The Committee was advised by a FESA representative that when the Midland Brigade arrived at the scene:

> *They saw explosions and drums flying all around the place [and] were in some fear for their safety.*[149]

The Bassendean crew responded shortly thereafter and came across a property where drums had landed, which resulted in the fire spreading beyond the Waste Control site. These brigades took immediate action to contain the smaller fires they encountered.

The Midland unit communicated with the OIC of the Bassendean appliance, who advised that Bassendean were dealing with buses on fire in auction yards, and would be some time before they arrived at the Bulbey Street site.

The first of a number of FESA senior officers arrived at the site at 23.41 hours to assess the situation and to implement command and control structures. The first Incident Management Team (IMT) was formed under the Incident Control System structure.[150]

The DEP, the Police and Dr Claflin, the proprietor of Waste Control, were available at the Forward Control Point within the first hour. At approximately midnight, District Manager Edward Brooks of FESA met with Dr Claflin to ascertain the goods stored on the premises and was advised that there were 300,000 litres of white spirits, paint thinners, paints and mixed liquids and 30,000 litres of perchloroethylene.

District Manager Russell Stevens of FESA later confirmed with Dr Claflin that there were approximately 1,600 drums, mainly involving Class 3 flammable products including white spirits and thinners and passed this information on to the HEAT team.[151]

Efforts were made to protect exposures, such as neighbouring properties, as well as the house on the premises that was used as an office by the company. District Manager Brooks noticed the HAZMAT (hazardous materials) signage on the fence upon arrival and retrieved the fire plan from the canister.[152] The plan indicated that the house stored some mercury, cadmium and other chemicals, with the priority to ensure that the fire did not spread to the house.

The plan also indicated that there were underground storage tanks on the site. Priority was also given to cooling the vents to ensure that actual containers under the ground did not become too hot and explode.[153]

149 FESA, Transcript of Evidence, 31 August 2001, p 5.
150 FESA, Bellevue HAZMAT Fire Operational Analysis, *Op Cit*, p 15.
151 FESA, Sequence of Events, Incident Number: 18921, 17 February 2001, p 2.
152 Transcript of Fire Personnel Interview with DEP Officers, 12 March 2001, DEP File No 442/01 Vol 1.
153 *Ibid*.

Fire and Emergency Services personnel were aware the premises of neighbouring Pioneer Concrete housed a 2000 litre underground tank of diesel, a fuel bowser and six concrete agitator trucks.[154]

Intelligence on the size and magnitude of the incident was limited in the early stages of the fire emergency and the IMT focussed on the Waste Control site.[155] At 00.30 hours on Friday 16 February, the Incident Controller initiated sectorisation of the fire area - that is, the site was divided into smaller, manageable sections controlled by a Sector Commander to increase command and control functions.

The Waste Control site was established as Sector 1, while Sector 2 consisted of the salvage yard, wood yard and industrial area in the Military Road vicinity.[156]

The IMT then made a number of decisions in relation to Sector 1. The most significant of these being to let the fire burn freely to consume the flammable liquids in the drums, and to concentrate on cooling on-site property directly threatened by the fire, such as the house/office and laboratory/sea container.

Fencing and strong winds hampered fire-fighters in Sector 2, where efforts were concentrated in and around the various buildings and property in the industrial yards. Sector 2 fire fighting teams were also hampered by limited water supply due to high usage in Sector 1.

The Sector 2 fire then jumped Military Road, began burning in an industrial auctioneer's yard and moved towards a brickworks. Sector 2 was then extended to encompass these fires which were contained and monitored throughout the night.[157]

10.3 Bush Fire & Volunteer Firefighters

Midland Fire Brigade was the first to attend the fire, followed by seventeen other metropolitan brigades. The Darlington Volunteer Bush Fire Brigade was the first of the volunteer brigades to attend. Later the Glen Forrest, Mt Helena and Stoneville Volunteer brigades were activated to assist with the fire.[158]

The FESA Comcen received a number of calls reporting various fires in and around the vicinity of the Waste Control site in the first hours of the fire emergency. Most of the Fire and Rescue Services fire fighting efforts were directed at the chemical fire and surrounding area while bush fire volunteers were called in to extinguish subsequent adjacent grass and bush fires.[159]

The bush fires consisted of a series of small grass and scrub fires that were ignited by exploding drums and fallout from the Waste Control fire. The fallout appeared to have caused fires to start in and around a wood yard in Stanley Street, Bellevue and the adjacent salvage yard on the western side of Military Road Bellevue.

The fires then broadened into the bush area bordering the salvage yard and into the Helena River Valley, on the East and West sides of the bridge on Military Road Bellevue.

FESA advised the Committee that:

154 *Ibid*.
155 FESA, Bellevue HAZMAT Fire Operational Analysis, *Op Cit*, p 15.
156 FESA, Operational Analysis, *Op Cit*, pp. 5-16.
157 *Ibid*, p 18.
158 G Jones, Stoneville Volunteer Bushfire Brigade, Transcript of Evidence, Friday 10 August 2001, p 6.
159 FESA Health Report, Bellevue Chemical Fire, 25 July 2001, p 3.

> *Although these fires were adjacent to and caused by the HAZMAT Fire, for sometime they were not treated as part of the same incident since information received from the first 000 call identified the Bush Fire in Hazelmere as some distance from the HAZMAT fire.*[160]

The FESA Comcen created the new incident No. 18927 and dispatched the Kensington (Career) crew and paged the Darlington Volunteer Brigade to respond to the incident.

The first responding Volunteer Brigade (Darlington) arrived at 01.20 hours on 16 February 2001, followed by the Guildford FRS Volunteer Brigade at 01.30 hours. At 02.39 hours, the Glen Forrest and Mount Helena Brigades were called to the incident to assist with fires that were burning to the South and West of the Waste Control fire. At 04.15 hours the Stoneville Volunteer Bushfire Brigade turned out to assist with 'mop-up' activities related to the Helena River Valley fires.

Grass and bush fires continued to burn, leading the IMT to further sectorise the fire. Consequently, a third sector was established to cover the grass and bush fires and a senior manager was requested to attend sector three.[161]

Some of the fires in sector three were burning in inaccessible land and on the river flats. As a result, these fires were left to burn until they reached roads or firebreaks where they could then be extinguished.

The grass fires were slow moving spot fires, which were assessed as not representing a major threat. These were considered normal bush and scrub fires that volunteers regularly dealt with.

Each brigade worked for approximately 2 to 3 hours in the area and were exposed to smoke from various sources. FESA sought professional medical advice and initiated health checks to identify any questionable health circumstances and to monitor any long-term health effects.[162]

The Committee finds that:

Finding 28

The Fire and Emergency Services Authority incident controllers did not accurately communicate the nature of the fire smoke plume to Bushfire Brigades called to assist in the incident and this was due in part to the failure to accurately classify the incident as a chemical fire.

10.3.1 Volunteers Occupational Safety and Health Cover

Bushfire volunteers are the responsibility of Local Government. Under the Western Australian *Occupational Safety and Health Act 1984*, and associated regulations, volunteers are not covered. However, FESA advised the Committee that it:

> *Pro-actively accepts an obligation to apply identical circumstances that exist for career firefighters of the FRS [Fire and Rescue Services], to volunteers of the FRS, SES [State Emergency Service] and VMRS [Voluntary Marine Rescue Service].*[163]

160 FESA *Analysis of Volunteer Firefighter Involvement*, Supplementary Submission to the Economics & Industry Standing Committee, May 2002, p.1.

161 FESA, Operational Analysis, *Op Cit*, p 19.

162 FESA *Analysis of Volunteer Firefighter Involvement*, Supplementary Submission, *Op Cit*, p.2.

163 Letter from Mr Bob Mitchell, FESA Chief Executive Officer, to the Economics & Industry Standing Committee, 8 April 2002.

FESA further advised the Committee that it provides insurance cover for career fire fighters in compliance with the *Workers Compensation and Rehabilitation Act 1981*, which it mirrors for FRS, SES and VMRS volunteers through personal accident cover.

10.4 Fire Classification

Concern has been raised by one of the volunteer bush fire brigades over the communication relayed to crews responding to the fire emergency. The classification of the fire emergency as a flammable fire or structural emergency, rather than as a fire involving hazardous materials, resulted in confusion about the type of fire volunteers were being requested to attend.

The Committee was advised by the Stoneville Volunteer Bushfire Brigade (SVBB) Captain, Mr Greg Jones, that they received a message at 4.14 am:

> *Request for two fast attacks for mop up, go to bridge on Military Road, Bellevue …*[164]

The Stoneville Fire Control Officer (FCO) then rang the FESA Comcen and asked for the background on the fire. The FCO was advised that it was a factory fire that had escaped into bushland.

Mr Jones indicated that based on the advice received by the FCO:

> *…we decided to let the team leader and the rostered team go without either the FCO or captain because of the experience they would gain…..had it been any more serious than that, either one or both of us would have attended the fire.*[165]

The Committee questioned the SVBB as to whether they would have used different equipment had they known they were dealing with a chemical fire, to which Mr Jones indicated that they would not have attended the fire at all.[166]

The Committee questioned FESA representatives as to why the site was not declared a HAZMAT incident when the first crews arrived at the fire emergency. FESA advised that within the fire services in FESA, there is not a HAZMAT fire classification. Mr Nick Devine told the Committee that:

> *Our investigations revealed that we do not believe a HAZMAT fire classification is available in Australia at this time.*[167]

There was a lack of clarity in communication between the Comcen and the volunteer brigades attending the fire emergency. Furthermore, there existed a degree of confusion in regards to the classification of fire incidents involving hazardous materials.

10.4.1 Issues Arising

Criticism has been raised with regard to the attendance of volunteer firefighters without the appropriate Personal Protective Equipment (PPE). FESA has conducted an analysis of the

164 G Jones, *Op Cit*, p 4.
165 *Ibid*, p 5.
166 *Ibid*, p 4.
167 FESA Transcript of Evidence,5 September 2001, p 7.

incident and has determined that the attendance and involvement of ill-equipped Volunteer Firefighters were a result of a number of factors, including:

- the lack of an initial HAZMAT classification;
- Misinformation given in the earlier 000 call at 00.37 hours on 16 February 2001 and the interpretation of that information, which placed the second fire some distance from the Waste Control site;
- the failure to 'close' the Bush Fire (Incident No. 18927), when it was found that the fire reported was in fact immediately adjacent to the wood yard in Stanley Street Bellevue;
- inappropriate communications, in that the Sector 3 Manager called the FESA Comcen by telephone (not through the IMT as is normal practice) to request additional resources. At that time he was not questioned on the appropriateness of dispatching additional firefighters; and
- the IMT did not declare the Bellevue fire a HAZMAT incident until 07.00 hours on 16 February 2001, when nearly all the volunteer firefighters had departed. Had a HAZMAT incident been declared earlier, exclusion zones would have been established and questions raised about the involvement of firefighters without PPE.[168]

The result of the combination of these factors was that volunteer firefighters fought peripheral fires in the proximity of the HAZMAT fire, and as such were exposed to toxic smoke.

All fires had been contained by approximately 04.30 hours on 16 February 2001, with two hot spots remaining at the site. Fire crews remained at the fire emergency until approximately 16.40 hours on Saturday, 17 February 2001.

The Committee finds that:

> Finding 29
>
> The lack of a HAZMAT fire classification compounded the strategic difficulties in responding to the fire emergency.

10.4.2 Fire-Plan

The Midland Fire Station had developed a fire-plan in the event of a fire at the site. It comprised a map of the site showing the entry and exit gates, the position of fire hydrants and sprinkler systems, details of any fuel storage and gas cylinders. The documents were located in a red canister outside the front gate of the premises.

The plan outlined a method of combating the fire indicating some details of the chemicals held on site for the purpose of fire control strategies. In a section entitled 'Risk Analysis', the following notes were included:

> *Various flammable & Toxic liquids stored in the drum storage area and throughout the yard. In Office Laboratory there are various highly dangerous chemicals, eg. Potassium*

[168] FESA *Analysis of Volunteer Firefighter Involvement,* Supplementary Submission , *Op Cit,* p.2.

Cyanide, Sodium Azide, Mercury (60kg), Phosphorous & Sodium. (+ Others)

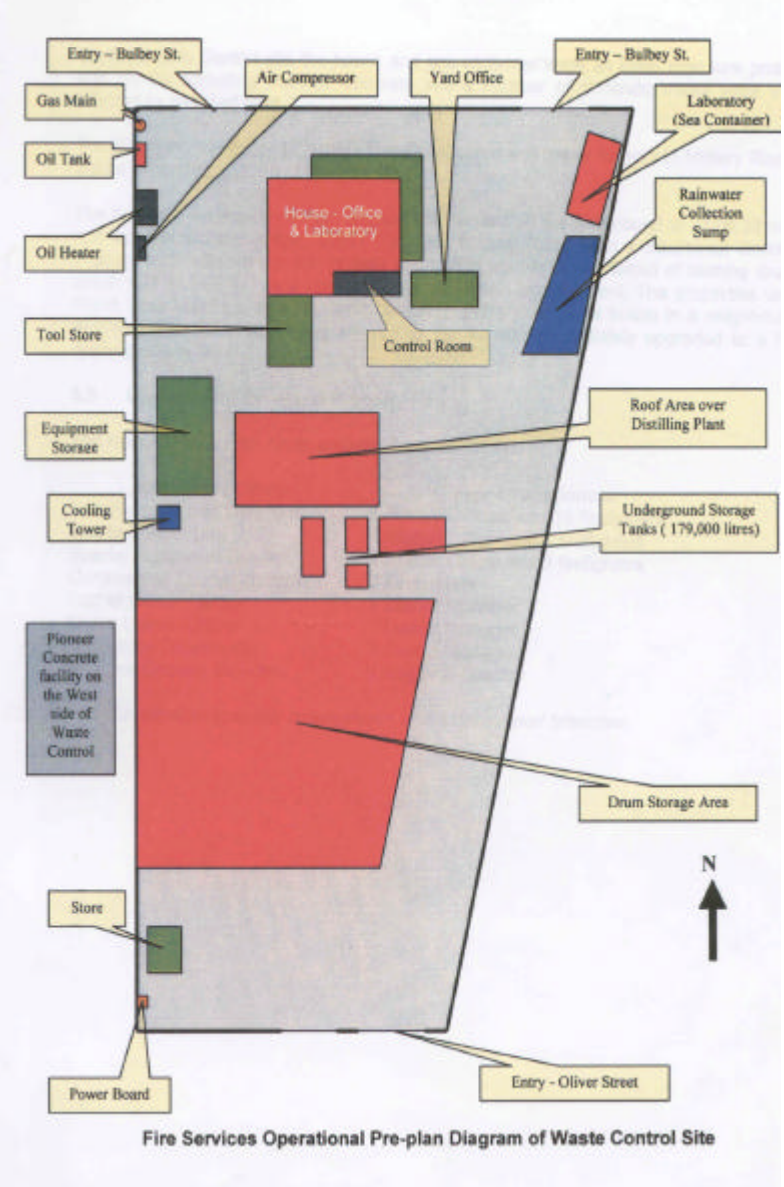
Firefighting advice from Brigade Chemist: Fire in Drum – If safe to do so fight fire using foam while cooling exposures.
Storage Area: - Make an aggressive attack to keep fire to a small area
Fire in Office Area – B.A[169] is essential due to hazard presented by Mercury vapours keep everyone not wearing B.A clear of incident.

Fight fires as normal but exercise great care during salvage work & while blacking out.[170]

The Committee questioned why the Midland Brigade did not immediately access the aforementioned fire-plan that was located in a red canister attached to a gate at the premises.

Mr Russell Stevens, a FESA District Manager, advised the Committee that the fire-plan was obtained by the Senior Officer at the scene on or near 00.30 hours. According to Mr Stevens, the fire-plan had not been obtained prior to this as the Midland Brigade had completed the plan and already had knowledge of the site. Mr Stevens stated:

> *The object of placing the pre-plan in the canister is so that when fire services are mobilised, appliances could be called that are not located at Midland and would not be intimately involved with this site.*[171]



Fire Services Operational Pre-plan Diagram of Waste Control Site

The fire plan provides basic, preliminary information and is designed to afford emergency services personnel an idea of the site layout and initial response measures. A more detailed manifest of the types and quantities of materials present at the site was required to have been stored in the same canister.

169 Breathing Apparatus.
170 Fire Services of Western Australia Operational Pre-Plan, 1 August 1999.
171 FESA, Transcript of Evidence, 5 September 2001, p 8.

10.4.3 Emergency Services Manifest

Explosives and Dangerous Goods (Dangerous Goods Handling and Storage) Regulations 1992 required Waste Control to maintain a manifest of dangerous goods stored at the site.

Regulations state that:

> *An occupier or licensee of premises on which dangerous goods are stored shall maintain a manifest of dangerous goods stored at the premises in accordance with the Guidance Note for Emergency Services Manifests issued by the National Occupational Health and Safety Commission.*[172]

Regulation 4.28 of the *Explosives and Dangerous Goods (Dangerous Goods Handling and Storage) Regulations 1992* prescribes the requirements for an Emergency Plan.

The Regulations do not provide a requirement for the plan to be updated within a set period. However, in accordance with Regulation 4.28(2), Guidance Note S310 states at paragraph 4.12 that an Emergency Plan should include a:

> *… specific provision for ongoing review at periodic intervals …*[173]

The DME advised the Committee that an updated Emergency Plan was not submitted to the Department.[174]

The Emergency Manifest was required to have been stored with the fire-plan, indicating the category or class of hazardous substance, the product name, and the quantity and location of goods stored at the site.

It has been established that the Emergency Manifest was not in the canister on the night of the fire emergency. However, the fire-plan that was accessed at approximately 00.30 hours held sufficient information to give the fire personnel some knowledge of the classes of chemicals stored at the site.

The Committee believes that the absence of an emergency manifest of materials stored on the site increased the risk faced by fire fighters attending the fire. Emergency services officers were unable to determine the correct safe distances from the fire. It also increased the level of anxiety and stress experienced by fire fighters after the event, as they did not know what they had been exposed to.[175]

The DME held a copy of a 1993 Emergency Plan prepared by Waste Control. The DME advised the Committee that the regulations do not provide a requirement for the plan to be updated within a set period and provided to the agency.

The company was requested on 10 October 2000 to provide a copy of the manifest, but the DME inspector did not sight the manifest.[176] The absence of a suitable manifest was one of the issues over which the DME subsequently prosecuted the company.

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172 Regulation 4.28 (1) of the *Explosives and Dangerous Goods (Dangerous Goods Handling and Storage) Regulations 1992.*

173 Guidance Note S310, paragraph 4.12.

174 Letter from DME to Committee dated 9 November 2001.

175 State v Waste Control Pty Ltd, Transcript of Proceedings, *Op Cit,* p 16.

176 Letter from DME to Committee dated 13 September 2001.

The Committee finds that:

Finding 30

The emergency services fire-plan was not accessed for some 90 minutes after emergency services personnel arrived at the site. This had implications for strategic decision making, including the environmental risk posed by the fire wash water, fire fighters and others exposed to the smoke plume and the classification of the fire.

10.5 Western Australian Hazardous Materials Emergency Management Plan

The Western Australian Hazardous Materials Emergency Management Plan (WESTPLAN – HAZMAT) is the State Emergency Management Plan for hazardous materials emergencies. The aim of the WESTPLAN – HAZMAT is to detail the agreed emergency management arrangements for hazardous materials emergencies throughout Western Australia. [177]

The term "HAZMAT" is used in the context of the WESTPLAN – HAZMAT and is defined as follows:

> *HAZARDOUS MATERIALS (HAZMAT). Hazardous materials include dangerous goods as defined in the Explosives and Dangerous Goods Act, 1961, petroleum as defined in the WA Petroleum Pipelines Act 1969 and WA Petroleum Act 1982, and any other materials which is considered a threat to health or the environment by the Hazard Management Agency, Department of Minerals & Energy, Department of Environmental Protection, Health Department, WorkSafe WA and Water Corporation.*[178]

In HAZMAT Fire Emergencies, FESA is the lead agency in terms of immediate response and management.

10.5.1 Role of Hazardous Emergency Advisory Team (HEAT)

Part of the State Plan provides for the establishment of the HAZMAT Emergency Advisory Team (HEAT). HEAT assists with the management of a hazardous materials emergency. It assists with the identification of hazardous materials, and provides technical advice. It provides advice on the nature of the hazards to people and the environment, the need for evacuation, resources required for the clean up and appropriate clean-up procedures and disposal methods.

A duty inspector from DME decides whether an incident should be classified as a HAZMAT incident. In making the decision the DME will consider the risks to people, property and the environment, irrespective of whether the materials are dangerous goods or not.

10.5.2 HEAT Involvement at Waste Control Fire

The HEAT was paged at approximately 23.40 hours on Thursday, 15 February 2001 to assemble at FESA House in Hay Street, Perth under State Emergency Management Committee arrangements as part of WESTPLAN-HAZMAT. HEAT's role was to provide the IMT with

177 *Western Australian Hazardous Materials Emergency Management Plan*, State Emergency Management Committee, March 2001, pp.1-2

178 *Western Australian Emergency Management Arrangements*, State Emergency Management Committee, Policy Statement No.7, December 1998, Item 22.

guidance for the management of hazardous materials and to lessen the impact of the event on the community and the environment.[179]

HEAT assembled with representatives from FESA Fire Services, Police, DEP, DME, HDWA, Water and Rivers Commission and the Water Corporation, with the Fire Services representative as the HEAT Manager. A HEAT Intelligence/Liaison Officer from the Fire Services was directed to the incident to maintain communications and information between the HEAT and the IMT. The main focus of the HEAT team was on the management of environmental issues from the water run off and the smoke plume.

The Committee notes that the HEAT did not access the Dangerous Goods licence that was available at FESA headquarters. HDWA note that although not comprehensive, this would have provided HEAT with a list of dangerous goods and quantities that are licensed to be stored on the site.[180]

At 00.37 hours on 16 February 2001, information gathered from Dr Claflin on the materials stored at the site was passed on to the HEAT. However, communication difficulties were experienced between the fire ground and the HEAT.[181]

10.5.3 Communication Difficulties

Communications between the HEAT team in Perth and the Incident Controller at Bellevue were hampered by technical problems on the night of the fire. The air conditioning had failed in the Comcen and, due to the midsummer temperatures, conditions within the original HEAT room were untenable. As a result, use was made of the boardroom annex.

The HEAT members used the boardroom annex and communicated to the on-site firefighters and others by means of a speaker-phone in that room. Contact was established with the HEAT liaison officer at the incident. Arrangements were made from him to call back on the telephone number given for that room. A fault with the telephone extension number in the board room caused some delay in receiving information back from the incident.

The speaker telephone used lacked recording facilities. HEAT members used either mobile phones or the speaker telephone to speak to other parties either at the incident or at other locations.[182] As a result, a comprehensive record of HEAT actions on the night is unavailable.

In an interview with Officers from the DEP shortly after the incident, District Officer Brooks reflected on the adequacy of the HEAT Unit at the Waste Control fire. District Officer Brooks noted that he did not receive any advice from the HEAT as to what chemicals were involved in the fire, or he could not obtain decisive information as to how to proceed with the incident.[183] Rather, District Officer Brooks, and other Officers at the incident, relied on information obtained from Dr Claflin and the limited advice of agency personnel present at the time.

179 *Ibid*, p 15.
180 Health Department of WA, Internal Post Incident Analysis, 14 June 2001, p 17.
181 FESA, Sequence of Events, Incident Number: 18921, 17 February 2001, p 2.
182 Letter from FESA to Committee dated 12 October 2001.
183 Transcript of Interview with the DEP, 13 March 2001, p 9.

The Committee finds that:

Finding 31

The difficulties experienced with:
- communications between the Hazardous Emergency Advisory Team and the Incident Controller at the fire site; and
- the failure to accurately categorise the fire

resulted in inappropriate responses in relation to the deployment of personnel, public health precautions and fire fighting, wash-down and environmental protection strategies.

The Committee recognises the highly charged nature of the fire emergency at Waste Control, and understands that uncontrollable technical difficulties were experienced on that particular occasion. However, the Committee is of the view that communication processes between the HEAT and the actual on-site incident were seriously inadequate.

FESA advised the Committee that, aside from the technical difficulties encountered on the night of the fire, some communications were conducted directly to the FESA Comcen by telephone, rather than through the IMT as is normal practice. This meant that there was not a single point of intelligence gathering, to enable better informed decision-making practices on the fire ground.

Contingency plans were not prepared for such an occurrence and as a result, the HEAT was largely ineffectual at the Waste Control incident. This, in turn, contributed to the inappropriate positioning of some fire fighters in the path of the toxic smoke plume.

The Committee finds that:

Finding 32

There were serious technical and system problems with communication and communication systems that hampered coordination between the Hazardous Emergency Advisory Team, the Incident Controller, volunteer firefighters and other regulatory agencies.

10.6 Evacuation

The protection of public health in a hazardous materials emergency, including evacuation, is a multi-agency responsibility with the final decision resting with the Incident Controller.[184] The Committee was advised that:

> *There was some confusion regarding the level of evacuation on the night of the fire. The HEAT was not immediately contacted following the fire…and on arrival at FESA headquarters was told that evacuation of 50 houses had occurred in the immediate vicinity and direction of the smoke plume. HEAT assumed the evacuation was adequate as no further information on the chemicals present was provided or advice sought. The local emergency plan was not activated. Police performed the evacuation.*[185]

The WESPLAN – HAZMAT does not prescribe particular evacuation procedures. The Incident Controller determines when an evacuation is to be carried out. The Police contacted FESA at 10.58 p.m. on 15 February 2001, advising of a call they had received about a fire. FESA confirmed a structural fire at Bellevue and the need for police attendance to block traffic and evacuate the area.

184 Heath Department Submission to the Economics & Industry Standing Committee, 27 July 2001, p 4.
185 Health Department of WA, Internal Post Incident Analysis, 14 June 2001, p 12..

FESA has authority under the *Fire Brigades Act 1942* and the *Bush Fires Act 1954* to call for the evacuation of residents from their homes. The Committee was advised that it is an accepted practice that once FESA calls for an evacuation, the Police service undertakes the evacuation process.[186]

The Committee was advised that there were two evacuations throughout this incident. The Police initially evacuated the surrounding area to protect life and property from the immediate threat from the fire and exploding drums. Four officers carried out the evacuation. These officers systematically knocked on doors, asking persons to leave their premises. Initially, Oliver, Bulbey and Wells Streets were evacuated.

In Western Australia, evacuation in emergency situations is not compulsory. Police do not have the powers to physically remove residents who do not wish to be evacuated. In this regard, Police encountered problems with some of the residents who did not want to leave their premises. However, after some encouragement all families left their residences. Police had to assist one family with two invalid children evacuate their residence.

It has widely been reported that over 50 people were evacuated from the area. However, the Committee was advised that a list of evacuees was not prepared and, as such, cannot confirm the accuracy of this claim. The State Emergency Service (SES) team leader, who was tasked with meeting the needs of the evacuees assembled at the nearby sale yards, stated that at about 01.30 am there were 10 to 12 residents at the sale yards. The Police advised that some residents may have gone directly to the homes of friends or relatives to stay for the evening.[187]

The IMT decided to allow the residents to return to their homes at approximately 05.30 am, after the main fire had been extinguished. At that stage, the incident had yet to be officially declared a HAZMAT incident.

The second evacuation occurred on the morning of 16 February 2001, and in this instance only Bulbey Street was evacuated. The Committee was advised that the second evacuation was called by the Incident Controller when it became known that it was a HAZMAT incident.[188]

The HDWA provided health advice to FESA during the fire, including advice on evacuating residents in the immediate vicinity of the fire. In their submission to the Committee, the HDWA advised that at 09.00 hours on 16 February 2001, FESA requested advice on further evacuation, in the knowledge that it was now declared a HAZMAT incident. HDWA confirmed that an evacuation distance of two kilometres was agreeable. However, HDWA did not determine the result of this request.[189]

The Committee notes that the Standing Committee on Community Development and Justice is currently undertaking an inquiry into emergency services legislation. As such the Committee wishes to refer the issue of evacuation procedures to that Committee for consideration.

186 Memorandum from the East Metropolitan District Police Office to the Economics & Industry Standing Committee, dated, 12 June 2002. p.1.
187 *Ibid,*. p 2.
188 *Ibid.*
189 Health Department of WA, Internal Post Incident Analysis, *Op Cit*, p.5.

The Committee finds that:

> Finding 33
>
> The Health Department of Western Australia's recommendation that evacuees should not be permitted to return to their homes was not acted upon.

10.7 HEAT Presence at HAZMAT Incidents

The Committee recognises a flaw in the operations of the HEAT, in terms of the ability of HEAT to effectively communicate with representatives present at HAZMAT incidents. The Committee found that in other jurisdictions in Australia, notably Queensland (QLD), this is not the case.

The Committee met with representatives from the QLD Department of Emergency Services (DES) and QLD Environmental Protection Authority (EPA) to exchange ideas in relation to hazardous emergencies such as the Waste Control fire at Bellevue.

The Committee found that the QLD authorities were faced with a similar emergency situation when a fire occurred at a chemical plant in the late 1980s. As a result of this and other chemicals incidents, the DES has developed a Chemical Hazards and Emergency Management (CHEM) Unit, whose focus is on chemical emergency management and includes the following range of services.

10.7.1 Response Advice for Chemical Emergencies (RACE).

The CHEM Unit's Response Advice for Chemical Emergencies (RACE) provides mobile, specialist scientific advice at chemical incidents and is used to assess, manage and minimise risks faced by emergency workers, the community and the environment.

Officers from the CHEM Unit can sample, monitor and analyse chemicals at an incident scene. In a chemical emergency, RACE supports the Fire and Rescue Authority as the combatant authority, and the Police Service as the incident coordinator.

Once the immediate emergency is over and the incident is under control, RACE can advise local government and emergency workers of the effective management of any hazardous residue.

The Committee believes the Western Australian HEAT team should be adequately resourced to bring it up to a similar standard. An essential element to the success of such units is the provision of specialised training and facilities to carry out these tasks. These responsibilities would be shared across the relevant agencies, as HAZMAT incidents often involve a multi-agency response.

The Committee notes that there have been at least two other major chemical incidents subsequent to the Waste Control fire, clearly indicating an on-going demand for specialised expertise.

10.7.2 Chemistry Centre of Western Australia

The role of the Chemistry Centre of WA is identified under WESTPLAN-HAZMAT, section 5.2.4. The HDWA advised the Committee that sampling of contaminated material, atmospheric monitoring results from exposure on the night of the fire and chemistry advice on the breakdown of products was not available.

In the days following the fire emergency, the DEP conducted sampling that was focused on environmental contamination. The Committee is of the view that the provision of appropriate chemical expertise and sampling was required for information on potential public health exposure.

The Committee believes the Chemistry Centre of WA may provide a valuable link at HAZMAT incidents, and must be incorporated into the HEAT.

10.8 Cause of Fire

A fire investigation conducted by FESA examined the spread of the fire and potential heat sources. FESA found it a probability that the fire had started in the drum storage area, reducing the chances of the fire cause being electrical.[190]

The Arson Squad of the Western Australian Police Service investigated the fire. The Committee has been advised that, due to the hazardous nature of the site, a proper scene examination and the origin and cause of the fire could not be established. As a result, the actual cause of the fire has not been determined.[191]

Due to the ferocity of the fire destroying whatever evidence there might have been, the cause of the fire is unlikely ever to be determined. Furthermore, the clean-up of the site immediately following the fire removed any evidence the Arson Squad may have used to determine the cause of the fire.

The Committee was advised during the course of hearings that:

> *… at about 10 o'clock at night people were seen on the premises before the fire started and half an hour after they left, the place went up in flames.*[192]

Persons were seen leaving the premises and getting into a car.[193] On arrival at the incident, the Officer in Charge investigated and observed flames and smoke coming from the drum storage area, to the rear of the premises. The fire was burning in an area, which contained approximately 2500, 205 litre drums.[194]

The Committee was also advised that:

> *… the Fire Department stated that they knew of no way that the fire could have started by itself.*[195]

The police constable at the scene on the evening of the fire spoke to a male person who claimed to be an employee of Waste Control with full knowledge of the chemicals stored on the site. This person disappeared shortly thereafter and inquiries by the police revealed he was not an employee of Waste Control. Despite media appeals by the police, this person's identity remains unknown.[196]

190 FESA, Fire Investigation Report, 27 July 2001, pp. 3-8.
191 Letter from Western Australian Police Service, Crime Investigation Support, 7 September 2001.
192 C Stewart-Robinson, Bellevue Residents and Ratepayers Association Inc, Transcript of Evidence, 10 August 2001, p 6.
193 *Ibid*.
194 FESA, Fire Investigation Report, dated 27 July 2001, p 3.
195 Bellevue Residents & Ratepayers Association Inc, Submission to the Economics & Industry Standing Committee, 24 July 2001, p 4.
196 Letter from Western Australian Police Service, Crime Investigation Support, 7 September 2001.

The Committee is of the view that there is a reasonable likelihood the fire was started deliberately. The ferocity of the fire destroyed whatever evidence might have been present.

The Committee finds that:

> Finding 34
>
> There is a reasonable probability that the fire was started deliberately by persons unknown.

Additionally, prosecution, licence revocation and plant closure, (which all would have left the stored materials in place), would not have changed the circumstances leading to the fire in the event of arson.

10.9 FESA Post Incident Analysis

As a result of the Bellevue incident, FESA has taken a critical look at its operational procedures and a number of significant issues have come to light. In a post incident review, FESA has proposed more than 90 recommendations, many of which have already been implemented including:

- Updating mobilisation procedures
- Planning and logistic training at senior level
- Building three new vehicles including an incident command vehicle and special equipment to significantly improve communication and command
- Preparation of incident pre-plans for major risk sites.[197]

The Committee commends FESA for acknowledging significant problems and deficiencies in its incident management procedures and believes that FESA's own recommendations will overcome some of the deficiencies highlighted at Bellevue.

The Committee recommends that:

> **Recommendation 13**
>
> In a hazardous emergency involving the summoning of Hazardous Emergency Advisory Team, the Health Department of Western Australia's expertise and responsibilities must form a key part of the assessment and decision making process.

The Committee recommends that:

> **Recommendation 14**
>
> That Fire and Emergency Services Authority:
> - review its current system of incident classification;
> - develop a HAZMAT classification that incorporates appropriate exclusion zones;
> - develop HAZMAT incident evacuation procedures; and
> - review all communicating procedures and system compatibility.

[197] Emergency Services Authority, General Circular No 10/2202, 13 February 2002.

The Committee recommends that:

Recommendation 15

The Hazardous Emergency Advisory Team be equipped with a mobile chemical and hazardous wastes incident support unit with analysis and strategic advice capabilities.

The Committee recommends that:

Recommendation 16

The Community Development and Justice Standing Committee consider the issue of evacuation procedures in emergency situations, as they related to hazardous materials emergencies.

CHAPTER 11 POST-CRISIS MANAGEMENT

11.1 Introduction

In the days and weeks following the fire at Waste Control, the regulatory agencies responded to the many concerns of both the local and wider community with varied success. The Health Department took a lead role in addressing public health concerns, while the DEP took responsibility for the site itself, due to the significant impact on the site and surrounding environment.

The Committee received a number of submissions highly critical of aspects of the government response to the emergency. Some members of the surrounding community expressed concern that they had not been adequately followed–up in terms of a health response, while others lamented the history of contamination and toxic industry within Bellevue and the surrounding area.

Conversely, the Committee has also received submissions that commend the agencies involved and acknowledge the professionalism of the many officers attempting to manage a highly complex and difficult situation.

The Committee's Volume One report of this inquiry focussed on the health concerns arising out of the fire emergency at Waste Control. This chapter illustrates the main thrust of issues arising in the post-fire period, including an overview of the ongoing site remediation and monitoring being conducted by the DEP.

11.2 Health Department

HDWA is represented on the Hazardous Emergency Advisory Team (HEAT) as part of its public health responsibilities outlined within WESTPLAN – HAZMAT. Part of the role of HDWA is to provide expert advice to the HEAT on perceived risks to public health resulting from hazardous materials emergencies and to advise of measures to minimise the health risks and effects of that hazard.

HEAT commenced an emergency response action plan on 18 February 2001, to address the concerns of local residents and offer advice regarding the environmental and health risks presented by the fire.

This response consisted of a range of environmental testing and advice to residents. FESA also issued a questionnaire to fire and rescue personnel to determine the extent that fumes might have affected members. Blood tests were offered to concerned members, particularly those who exhibited adverse health symptoms. The Committee was advised that:

> *The Executive Director of Public Health…was available on Sunday 18 February to answer inquiries from general practitioners and members of the public about medical concerns.*[198]

198 HDWA, Transcript of Evidence, 31 August 2001, p.55.

HDWA released a media statement on Monday 19 February 2001, advising residents to contact their medical practitioner if they had concerns about their health and a 24-hour Health Direct telephone help line was activated. The HDWA engaged in a number of radio interviews to further encourage people to seek medical advice following the fire.

FESA initiated several meetings on Monday, 19 February 2001 to discuss the health implications of the incident. Health professionals were consulted by FESA to discuss appropriate ways of responding to health issues arising out the incident.

Health assessments were arranged through private medical centres and surgeries located throughout the metropolitan area.[199]

Thirty volunteer fire-fighters had blood tests taken as a result of their possible exposure to the potentially toxic by-products of the fire. A further 250 fire-fighters and 70 personnel from other supporting agencies and companies attended seminars arranged by FESA and the Health Department to inform them of their possible exposure to toxic substances.[200]

The Committee recommended in its Volume One Report that the HDWA implement and maintain a medical register of individuals who were exposed to the effects of the fire emergency.

In March 2002, HDWA responded to the Committee's recommendation and advised that a three-stage scientifically based Medical Register has subsequently been implemented. The HDWA has appointed a Steering Committee to oversee and guide the establishment of the Medical Register.

11.3 Impact of Fire on Surrounding Area

The Waste Control premises was substantially damaged by the fire, with the exception of the office building, front entrance to the property and the laboratory, which was a recycled sea container. The fire also burnt bushland down to the Helena River, caused toxic fumes to be discharged into the atmosphere and contaminated liquid, mainly fire wash water, to run down drains that led towards the Helena River.

FESA estimate that for the first six (6) hours of the incident, 3.6 million litres of water were applied using ground monitors, the aerial appliance and hand lines held by fire-fighters.[201]

The extent of the blaze resulted in damage to neighbouring properties. Due to the significant environmental impact on both the site and surrounding areas, the DEP took a lead role in managing the clean up of contamination at the site. During the fire emergency, the DEP installed bunding close to the site and drains were blocked in a successful effort to prevent contamination of the Helena River.

11.3.1 Lot 2

Lot 2, at the corner of Irwin and Bulbey Streets Bellevue, is the site immediately adjacent to the Waste Control site on the eastern boundary. Lot 2 is owned by the WA Main Roads Department.

199 FESA File Briefing Notes.
200 FESA letter to Crown Solicitors Office, *Op Cit*.
201 FESA Operational Analysis, *Op Cit*, p 21.

As a result of fire-fighting activities at the Waste Control site, drums from the site were moved onto Lot 2. Firewater was also ponded on Lot 2. Investigations by DEP indicated localised contamination of the soils on the site as a result of these activities.

Lot 2 was re-contoured and an automatic dust suppression system was installed to control dust and odour. During post-fire clean-up operations, contaminated fire wash water flowed on to Lot 2 Bulbey Street and the main stockpile of burnt drums were bulldozed onto and spread across Lot 2. Therefore, soil and groundwater contamination is also likely on Lot 2.

11.3.2 Neighbouring Property Damage

On DEP's instructions, Cleanaway Technical Services (CTS), undertook a clean-up of neighbouring premises in order to help the various businesses get back to work. This included erecting a new fence for one business and the cleaning of buses for another.[202]

The Committee received a submission from SPD Woodsupplies (SPD), a small retail firewood business located on the corner of Bulbey Street Bellevue, within 150 meters of the Waste Control site. SPD advised the Committee that they have suffered substantial damages as a result of the fire emergency.[203]

The DEP confiscated a wood-pile from SPD Woodsupplies immediately after the fire because it had visible signs of fallout. The wood was then transferred to the Waste Control site and was later considered suitable for disposal at landfill.[204]

In their submission to the Committee, SPD stated that:

> *Our firewood was confiscated on 20 February 2001. It was not replaced by the DEP until 31 May 2001. We believe the amount replaced was less than the amount confiscated…the fact that it took over 3 months to resolve meant that we were without stock and therefore unable to trade for a substantial part of winter.*[205]

SPD claim to have had major difficulty in dealing with the DEP on this matter. However, a mutually agreed Deed for the replacement of the fire-wood has been negotiated between the parties.

The Committee finds that:

Finding 35

Neighbouring businesses were adversely affected as a result of the fire at the Waste Control site.

11.3.3 Bellevue Primary School

The Bellevue Primary School was open on Friday 16 February 2001, the day after the fire. The Principal of the School advised the Committee that at approximately 7.00am he contacted the Midland Police Officer in Charge and requested advice as to whether the School should open on Friday, 16 February 2001.

202 DEP File No 658/99/4 Vol 1.
203 SPD Woodsupplies Submission to the Economics & Industry Standing Committee, 26 July 2001, p.1.
204 DEP File No. 658/099/6.
205 SPD Woodsupplies Submission, *Op Cit,* p.2.

After consultation with FESA and DEP officers on the site, the Principal was advised that the school could open as usual as the roads were open and the fire was under control.[206]

Throughout the day the Principal was in constant contact with the Health Department, which provided hourly updates on the clean-up and air-monitoring, which was in place to record changes in wind direction and any adverse conditions that could affect the school community. The Committee was advised that Dr Peter Di Marco of the HDWA visited the school and spoke directly with the Principal as to the status of the situation.[207]

The DEP was also in contact with the school and advised that the site was stable and there were no immediate health or safety concerns for school personnel. The Principal advised the Committee that:

> *Bellevue Primary School had no cause to evacuate the premises at any stage. No odour was detected at the school site throughout the day. Contingency plans were in place to evacuate staff and students if circumstances at the site changed.*[208]

There was a high level of concern raised in the media as to the health and welfare of the Bellevue Primary School students and staff following the incident. The Committee was advised by the Principal that:

> *No staff, student or parent reported to me that they, or their children suffered any health effects attributed to the fire emergency either on the 16 February or days and weeks following the fire.*[209]

The Committee was advised that both the DEP and the HDWA informed the school principal of the latest developments surrounding the fire throughout the day after the fire. Both agencies attended a specially convened Parents and Citizens meeting several weeks after the fire to explain the situation and to answer questions.[210]

11.4 Contamination

Contamination of a site commences when hazardous substances, either accidentally or deliberately, are released into the environment. Upon discharge, pollutants can accumulate and spread in the soil, water and/or air near the discharge point, depending on the manner in which they are released. This accumulation can mean substances reach levels at which they have a potential to impact on public health or the environment.[211]

Tests indicated contamination occurred to the Waste Control site itself, an adjacent wood yard, two drainage systems and a number of businesses downwind of the site. Swab samples of dust and debris collected from buses, fences and buildings on properties in the vicinity of the Waste Control site indicated levels of heavy metals. All surfaces were washed twice to remove any contamination. Results from swabs collected after decontamination indicated little or no metal contamination remained.[212]

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206 Bellevue Primary School, Submission from the to the Economics & Industry Standing Committee, d 17 May 2002.
207 *Ibid.*
208 *Ibid.*
209 *Ibid.*
210 *Ibid.*
211 Hudson K, 1997, *Op Cit,* p 58.
212 DEP letter to residents dated 4 April 2001, DEP File No. 11/90/474 Vol 3.

11.5 Hydro-Geological Setting

The Guildford Clay is an approximately sixteen (16) metre deep layer of sandy clay with some laterally discontinuous sand beds. It forms an unconfined aquifer with a thirteen metre saturated thickness. The groundwater in this regions flows south-west towards the Helena River.[213]

Underlaying the Guildford clay is the Leederville Formation, an extensive fresh water aquifer system beneath the Perth Metropolitan area, which is widely used for various purposes, including human consumption.[214]

The Waste Control site is underlain by layers of sand and clay of the Guildford Formation. A review by environmental consultants URS Australia Pty Ltd (URS) suggests the sub-surface profile comprises 3 meters of sand grading to clayey sand, and the presence of a less-permeable clay unit around 5 to 7 meters below ground level (mbgl) beneath only a portion of the site.

11.6 Decontamination/Clean-Up of Waste Control Site

Cleanaway Technical Services (CTS) was contracted by DEP to clean-up the Waste Control site and adjacent affected areas. The main objective of CTS's involvement was:

- to clean-up soil and other contamination and remove remaining wastes in order to render the area safe for reoccupation by residents and business; and
- to identify the extent of significant pollution and take preventative action to limit further spread of contaminants to surrounding areas.

The immediate clean-up occurred over the period 17 February to 31 March 2001.

11.6.1 Scope of Work

CTS, in consultation with DEP, agreed that the scope of work was to include:

- collection of water and soil samples for hazard identification as specified by DEP;
- evaluation of environmental impact in consequence of surface contamination;
- collection of swab samples from adjacent properties;
- recording of contaminants in soils, water and air; and
- results of the analysis.[215]

11.6.2 Results of Post-Fire Clean-Up

Areas with the potential for risk to ecological and environmental health were decontaminated by removal of soil, debris and water, particularly in an area known as the 'dampland' below the Roe Highway and the storm water channel, close to the Bellevue Primary School. The excavated areas

213 Hudson K, 1997, *Op Cit,* pp 29-30.
214 URS Australia Pty Ltd, *Detailed Site Investigation, Waste Control Site Bellevue*, Western Australia, February 2002, p.4.2.
215 Cleanaway Technical Services, Waste Control Fire Clean-Up Operations Environmental Sampling & Methods, Bellevue WA, May 2001, pp 1-28.

were confirmed to be free from contamination by validation sampling and analysis and backfilled with clean, imported material.

Samples from adjoining and nearby properties revealed the presence of heavy metals in the condensate from the fire with an absence of hydrocarbons. Affected areas were decontaminated using high-pressure water cleaning with only traces of heavy metals detected from the cleaned surfaces. Neighbouring properties, drains, roads and verges were also decontaminated.

On completion of the post-fire clean up, the Waste Control site was declared a contaminated site by the DEP, and as such a staged contaminated site assessment commenced, comprising preliminary and detailed site investigations. The DEP appointed environmental consultants, URS Australia Pty Ltd (URS) to undertake the site investigations.

Following a preliminary site investigation in October 2001, an initial detailed site investigation was completed involving the collection and analysis of 56 soil samples and the sampling of 15 groundwater bores, including 2 off-site bores located just outside the south eastern corner of the site on Lot 2 Bulbey Street.

11.6.3 Results of Detailed Site Investigation

The investigations confirmed the presence of soil and groundwater contamination beneath the Waste Control site. The DEP have provided the Committee with the following information:

11.6.3.1 Soil

The results show that soil at the site is contaminated by hydrocarbons (petrol, oils and tars), solvents (paint thinners and degreasers), phenols (paints, epoxy resins) and heavy metals (chromium, cadmium, copper, nickel and zinc). The contamination was found to be mainly within the central portion of the former process area on Lot 99, near the former underground storage tanks on Lot 99, and in the south-western portion of Lot 88.

11.6.3.2 Groundwater

Groundwater contamination was identified in both the shallow perched water table (approximately 3.5 meters below ground surface) and the intermediate regional water table known as the Guildford Formation (approximately 9.5 meters below ground surface). As with the soil, this contamination is mainly hydrocarbons, solvents, phenols and heavy metals.

Groundwater contamination within both the shallow and intermediate aquifer system appears to be concentrated beneath the former process area on Lot 99 and the unsealed laneway between Lot 88 and Lot 99.

11.6.3.3 Off-Site Groundwater Contamination – Helena River and Dampland

The groundwater contamination identified in both the shallow and intermediate aquifers is migrating beyond the boundaries of the Waste Control site in easterly, westerly and south westerly directions.

The Helena River is located approximately 300 meters south-west of the Waste Control boundary. However, the floodplain (dampland) extends to within 100 meters of the site. Remedial works were undertaken in this area during the post-fire clean-up and involved the excavation of contaminated soil.

The DEP and WRC are continuing to sample the dampland bores on a quarterly basis. The monitoring to date shows a number of these off-site bores have been impacted by low-level solvent impact, confirming that migration of contaminated groundwater to the south / southwest of the Waste Control site is occurring. The next groundwater sampling event is scheduled to take place in June 2002.

11.6.3.4 Next Stage of Investigation

Contaminated site assessment requires a staged approach. The purpose of the next stage of investigation is to confirm and delineate the extent and nature of the soil and groundwater contamination.

The works will identify remedial options and develop a preferred remedial strategy for soil and groundwater contamination to prevent further migration of the contaminated groundwater plume, impact to the Helena River and the Leederville Aquifer, and to enable the Waste Control site and Lot 2 to be redeveloped in the future.

11.6.3.5 Bellevue Community Consultative Committee

The Minister for the Environment and Heritage, Hon Dr Judy Edwards, has established a Bellevue Community Consultative Committee (BCCC) to ensure that the Bellevue residents and environmental groups are involved in decisions relating to the investigations and remediation of the site, and to play a key role in the dissemination of information to the local community.

The BCCC is made up of representatives from the Bellevue Resident and Ratepayers Association, Bellevue Primary School P & C, Contaminated Sites Alliance, Alliance for a Clean Environment, Fire Support Action Group, as well as local and state government agencies, including the City of Swan, HDWA and the DEP.

11.6.4 Pre-Fire Contamination

While the impact of the fire undoubtedly caused pollution to spread from the premises, the Committee is of the view that it is reasonable to assume contamination had been occurring at the site over the years of its operation. Evidence presented to the Committee clearly demonstrates poor management practices and inadequate measures taken in relation to storage and pollution control at the site.

It has been established in this report that Waste Control was in breach of licence conditions for the period of its operation. Those breaches related largely to the deficient manner in which hazardous materials were stored on the site.

The Committee believes there is a likelihood that those poor storage practices contributed to the contamination that has now been identified at the site.

The Committee finds that:

Finding 36

It is likely that contamination of the soil and groundwater at the Waste Control site had been occurring over a number of years.

CHAPTER 12 NON-COMPLIANT MATERIALS

12.1 Introduction

One of the Committee's Terms of Reference for this inquiry was to investigate the nature and quantities of non-compliant materials stored at the site. That is, materials that Waste Control was not licensed to process or store.

Immediately after the fire, there were suggestions that Waste Control were illegally storing poly-chlorinated biphenyls (PCBs) and even radioactive materials on the premises at the time of the fire-emergency. Concerns were also raised that mercury metal had been consumed in the fire.

The Committee's Volume One report on the Bellevue Hazardous Waste Fire Inquiry established that testing conducted at the site following the fire emergency showed radiation levels to be within normal background levels.[216] However, concerns were raised that the Committee's Volume One report failed to mention the presence of mercury in both the soil and fire wash water sampling.

12.2 Mercury

The concerns related specifically to sample analysis contained in the Cleanaway Technical Services (CTS) report, dated May 2001.

The Committee's Volume One Report stated that:

> *"a small amount of waste mercury was present at the site, stored in a laboratory that was not involved in the fire."*[217]

The CTS report indicated that five times the 'acceptable' limit of mercury was contained in the fire wash water, and a small quantity of mercury was contained in soil samples.[218] Investigations by the Committee determined that:

- In relation to the soil sampling, less than 0.2 mg per kg of mercury was detected, 1 mg per kg being the DEP's assessment criteria at an Ecological Investigation Level (EIL).[219]

- In relation to the sampling undertaken on the fire wash water, 0.51 mg per kg of mercury was detected, 0.1 mg per kg being the DEP's assessment criteria for Fresh Water (FW).[220] This was approximately five times the acceptable limit.

The Committee sought clarification on this issue with Mr Andre Stasikowski, an Environmental Engineer and Scientist and Director of Stass Environmental who was engaged by CTS to assist in the immediate post fire clean-up.

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216 Economics and Industry Standing Committee, Bellevue Hazardous Waste Fire Inquiry, Volume One, 2001, p.27.
217 *Ibid*, p.8.
218 Cleanaway Technical Services, *Op Cit*, p.22.
219 EIL indicates acceptable levels for the ecology. That is, flora, fauna and so on.
220 FW indicates acceptable levels for fresh water, for example rivers and streams.

Mr Stasikowski explained that EIL and FW levels are more sensitive than those used to determine the impact on human health. The level acceptable in terms of human health in a residential area is 15 mg per kg.

Mr Stasikowski also advised that all of the identified contaminated soil was removed, and the fire wash water was contained and removed from the stormwater drains adjacent to the Bellevue Primary School. The table on page 24 of the CTS report indicates that after treatment of the drains, the level was reduced to less than 0.1 mg per kg. That is within acceptable limits to both the ecology and human health.

On the issue of mercury being found in the sampling, Mr Stasikowski advised that the mercury detected was not pure metal mercury, which would have shown far higher levels, rather it would most likely have been mercury salts, or residues, often found in used industrial solvents of the type that were consumed in the fire. This analysis confirms the Committee's finding that there was no evidence that mercury metal or concentrate had been consumed in the fire.

The Committee finds that:

Finding 37

There is no evidence that mercury metal or concentrate was consumed in the fire.

12.3 Polychlorinated Biphenyls

12.3.1 What are PCBs?

PCBs are formally known as polychlorinated biphenyls. PCBs have the chemical formula $C_{12}H_{10-n}Cl_n$ where 'n' is 1-10. They are a family of 209 congeners (chemicals with the same basic structure) where the biphenyl structure has chlorine atoms substituted for hydrogen atoms to varying degrees.

Approximately 100 of these congeners are present in various technical mixtures of PCBs that were produced commercially in large quantities until the late 1970s. PCBs have been used in electrical appliances, such as transformers and capacitors, hydraulic fluids, plasticisers and dye carriers. They are also generated and released into the environment as unintentional by-products of chemical manufacturing and incineration.

PCBs are amongst a broader group of harmful persistent organic pollutants (POPs) that are toxic, persist in the environment and animals, bioaccumulate through the food chain, and pose a risk of causing adverse effects to human health and the environment. Because of their physical characteristics, POPs are transported long distances and are often deposited in areas where they have never been used or produced.

PCBs may cause a wide range of harmful health effects in humans and animals, including skin complaints, cancer, liver damage, immune system suppression and damage to the nervous and reproductive systems. PCB contamination may cause mutations in plants, decline in some bird populations and reduced reproduction in sea mammals. These concerns over the potential risks to health, food chain and environment led to a ban on the importation

of PCBs in the 1970s.[221]

12.3.2 PCB's at Waste Control

The Committee received a submission alleging that Waste Control had been illegally handling PCBs at the site. However, no evidence was presented to the Committee to support this allegation. The Committee was later presented with evidence, through the media, that Waste Control had handled PCBs at the Bellevue site in November 2000. The Committee then tracked the document trail relating to the purchase order for PCBs issued by Waste Control in September 2000.

Evidence received by the Committee confirms that the waste management company, Eli Eco Logic received the PCBs described in the purchase order on the 10th November 2000 and that these were subsequently destroyed through the correct procedures.

Claims were made that transformers containing PCBs may have been present at the site on the night of the fire emergency. However, advice received by the Committee indicated that the electrical devices were in fact frequency modulators, which do not contain PCBs.

The DEP advised the Committee that there were three frequency modulators on the Waste Control site at the time of the fire. They were not consumed in the fire and were transported to the Cleanaway Technical Services holding site at Brookdale soon after. The Committee has received photographic evidence to support this.

An inspection of the items by a DEP officer revealed they were still intact, undamaged and in very good condition. Plates attached to the items labelled them as Static Frequency Converters, oil filled with Silicon 561. There were no indications that oil had at any stage leaked from them.[222]

The Committee is satisfied that, on the evidence brought before it and information assembled by the Committee, there is no evidence that PCBs were consumed by the fire.

The Committee finds that:

> Finding 38
>
> There is no evidence that PCBs were consumed in the fire.

The DEP have followed up on this issue and have ordered that the site sampling be re-tested to look for levels of PCBs. Advice from the DEP is that sampling of soil and water at the site found small quantities of PCBs on the site. These were present at levels typical at any industrial site and, most importantly, presented at levels well below those that might raise human health concerns.

Environmental consultants, URS, have recently completed the sub-surface sampling at the Waste Control site and advised that in relation to PCBs:

> *a total of eight samples of visually impacted soils from both the shallow and intermediate zone were screened for total PCBs subsequent to the main analytical program. All samples reported results below the laboratory detection limits…In addition, analysis of most of the*

[221] Environment Australia Website http://www.ea.gov.au/industry/chemicals/swm/pcbs/, accessed April 2002.
[222] Email from DEP, to Economics and Industry Standing Committee, 10 May 2002.

samples selected for PCB analysis occurred outside of the recommended holding time for the sample extracts. Accordingly, concentrations of PCB may be under reported for these samples.[223]

URS have recommended further investigation to definitely confirm the absence or presence of PCBs in soil beneath the site. This will form part of the next stage of investigation at the site discussed earlier.

In this context the Committee is satisfied that its findings on the human health implications of the fire, and its recommendation for a public health register are the correct, first step directions on this matter.

The Committee finds:

Finding 39

Although testing found small quantities of PCBs present on the Waste Control site:
- they were at levels typical of any industrial site; and
- they were at levels below those that might raise human health concerns.

12.4 Licensing of Mercury and PCBs

The Committee was concerned that Waste Control had been handling mercury and PCBs, yet appeared to have been doing so without a licence. The Committee has followed up on this issue and has discovered that Waste Control did not require a licence to handle these substances for the following reasons.

Goods that are considered 'dangerous' are assigned to a Class according to the most significant risk presented by the goods as determined by the criteria set out in United Nations recommendations. In addition, dangerous goods are assigned to Packing Groups, according to the degree of risk the goods present during transport:

- I denoting great danger;
- II denoting medium danger; and
- III denoting minor danger. [224]

The regulations that cover the storage and handling of mercury and PCBs are the *Explosives and Dangerous Goods (Dangerous Goods Handling and Storage) Regulations 1992.*

Licensing of PCBs and Mercury is required only if the storage factor exceeds 1000. That is, 1000 litres in the case of these two types of dangerous goods. The key term here is *storage factor*.

Storage Factor = Amount x Individual factor in Table 3 below

Following is the table contained in the regulations (at s 4.2), to be used when calculating storage factors.

223 URS Australia, *Op Cit*, Section 9.4

224 Australian Dangerous Goods Code, Sixth Edition, Volume 1, January 1998, Requirements and Recommendations, pp 19-26.

Table 3 Dangerous Goods Storage Factors

Dangerous Goods	Factor
Class 2.1	2
Class 2.2	2
Class 2.3	200
Class 3 (Packing Group I)	20
Class 3 (Packing Group II)	2
Class 4.1 (Packing Group I)	20
Class 4.1 (Packing Group II)	2
Class 4.2 (Packing Group I)	20
Class 4.2 (Packing Group II)	2
Class 4.3 (Packing Group I)	40
Class 4.3 (Packing Group II)	4
Class 5.1 (Packing Group I)	20
Class 5.1 (Packing Group II)	2
Class 5.2 (Packing Group I)	40
Class 5.2 (Packing Group II)	4
Class 6.1 (Packing Group I)	100
Class 6.1 (Packing Group II)	10
Class 8 (Packing Group I)	20
Class 8 (Packing Group II)	2
Class 9 (Packing Group I)	20
Class 9 (Packing Group II)	2
All Packing Group III	1
Combustible Liquids in Bulk	0.2

12.4.1 Storage Factor - 450 Litres of Mercury

Mercury is a Class 8 Packing Group III Dangerous Good, UN number 2809, and as such is calculated using the 'All Packing Group III in the above table, which has a factor of 1.

An Industrial Chemist and former employee at Waste Control, advised the Committee that there were only three or four litres of mercury on the site. Most of the mercury stored at the site was collected from medical organisations and usually originated from broken thermometers.[225]

For an amount of four litres the following sum applies:

Storage Factor = Amount (4) x Factor (1) = 4 litres. A licence is not required to handle or store these materials, as the storage factor is less than 1000 litres.

12.4.2 Storage Factor for 200 Litre drum of PCBs

PCB is a Class 9 packing Group II Dangerous Good, UN number 2315. The aforementioned purchase order relating to the handling of PCBs at the Waste Control site was for 260 litres of high strength PCB.[226] To calculate the storage factor for these substances, the following sum applies;

Storage Factor = Amount (260) x Factor (2) = 520 litres. A licence is not required because the storage factor is less than 1000 litres.

The Committee found that Waste Control was licensed for Class 3, Class 6 and Class 8 Dangerous Goods, but was also able to legitimately handle small amounts of mercury and PCBs that would not appear on their licence.

225 Ms Rachel Irvine, Transcript of Evidence, 31 August 2001, p 4.
226 Hazardous Waste Solutions Purchase Order No: 238, dated 9 November 2000.

CHAPTER 13 POLICY DIRECTIONS

13.1 Introduction

Hazardous waste represents one of the most challenging policy areas for contemporary governments. As consumers of the goods and services that produce hazardous waste by-products, society as a whole must understand the implications associated with our consumption patterns. This situation is not going to change.

On the one hand, there exists in our society an expectation that governments will ensure people's lives and property are not subordinated to the interests of business. On the other hand, industry expects government to regulate fairly and consistently to ensure a level playing field for all participants. At the same time society has an expectation that business will continue to supply products, even if hazardous and dangerous wastes are produced as a result of the product manufacturing process.

The situation that developed at Bellevue highlighted shortcomings in the current regulatory regime relating to the handling and storage of hazardous wastes, and demonstrated the inherent dangers associated with those wastes to both people and the natural and social environment.

This situation raises questions for which there are no simple answers. The lack of a well defined policy direction in relation to hazardous waste management in WA, and the situation that developed at Bellevue, clearly demonstrated the failure of the market to adequately address questions of public safety and environmental protection.

Governments have a role in ensuring that operators of business do not compromise the health and safety of the communities in which they operate and that of the environment. The following section deals broadly with some alternative forms of regulation available for consideration in the current climate, and suggests some changes that may ensure we avoid another Bellevue.

13.2 Policy Approach to Waste Handling and Storage

The Committee is of the view that there existed a policy vacuum, whereby a comprehensive strategy to address the inherent problems, both at Waste Control and in terms of hazardous waste management in general, was absent.

The situation that developed at Waste Control is indicative of the late twentieth century trend toward a reliance on market mechanisms to deal with environmental problems. The circumstances at Bellevue illustrated that there was not a defined policy for dealing with hazardous waste in Western Australia.

While a clear policy had been developed over time for the handling of non-hazardous liquid waste, (and resources allocated to ensuring the effective and safe disposal of such waste with the establishment of facilities at Forrestfield), this was not the case for hazardous waste.

The handling and disposal of hazardous waste was largely left to the market, without adequate supporting regulations to ensure that the market operated within a clearly defined legislative and

policy framework. Quite clearly, in this instance, the market failed. Rather than rid WA of its solvent waste dilemma, Waste Control created more problems than it would ever solve.

13.2.1 Competing Policy Objectives

The Committee found that in WA, the DEP is both a proponent and regulator in the area of hazardous waste management. The situation that developed at Bellevue raises the question of whether a government agency charged with the protection of the environment, is in a position to adequately enforce the regulations while at the same time developing strategies to manage hazardous waste.

The Committee is of the view that a conflict exists within the objectives of environmental protection on the one hand and the management of hazardous wastes on the other. The DEP are faced with the dilemma of balancing enforcement with the promotion of waste management. The Committee found that competing objectives embedded within the policies guiding the DEP contributed to the situation that developed at Bellevue.

The Committee finds that:

Finding 40

A conflict exists within the policy objectives of the Department of Environmental Protection, where the department oversees both environmental protection and the management of hazardous wastes.

The Committee recognises a failure in the policy governing hazardous waste. The market, left to its own devices, failed to produce a winning formula to deal appropriately with the hazardous by-product of general human consumption. The regulators, while in some communication with each other, operated in formal isolation.

The Committee finds that:

Finding 41

There is no long-term policy strategy for the handling and management of hazardous waste in Western Australia.

13.3 Inter-Agency Co-Operation

In Western Australia, the DEP are charged with dealing with off-site impacts and other agencies, primarily DME, FESA, Health and WorkSafe, are charged with dealing with any on site issues. These arrangements have been underpinned by interpretation of the statutes involved, but not rigidly or definitively.

The Waste Control operation highlighted a systemic breakdown in the standards and mechanisms intended to protect human and environmental health and safety. The regulatory agencies operated within separate ‘silos of governance’, with weak enforcement measures.

The Committee finds that:

> Finding 42
>
> There was a systemic breakdown in standards and mechanisms intended to protect human and environmental health and safety.

The regulators are bound by separate statutory responsibilities. Each agency operates and manages separate policies and budgets, with (at times) common objectives. For example, the DEP were concerned that poor storage practices would cause waste to spill out of inadequate containers and into the natural environment. The DME and WorkSafe were concerned that poor storage practices may cause harm or injury to workers handling the material, while FESA were concerned that poor storage practices would result in a fire hazard.

The Committee finds that:

> Finding 43
>
> There is a cross-over in the responsibilities and an inherent duplication of resources of the various agencies associated with the management of hazardous waste.

The Committee is of the view that a combined effort is necessary when considering policy on hazardous waste. The Committee believes that in the regulation of hazardous waste consideration must be given to concept of a lead agency role bringing together the various aspects associated with the management of hazardous waste.

The Committee found that, other jurisdictions within Australia, whose regulatory responsibilities overlap in this manner, have developed formal Memoranda of Understanding (MOUs) to encourage intelligence sharing on issues of mutual concern.

The Committee is of the view that the concept of MOUs should be formalised in Western Australia.

The Committee finds that:

> Finding 44
>
> There was a lack of formal knowledge sharing between the various agencies which regulated activities at the Waste Control site.

13.4 Environmental Issues And Local Government

The Committee is of the opinion that Local Government authorities are an important part of the environmental protection system in Western Australia. Provision should be made within the *EP Act* for local government to be consulted where the operation of the Act relates to matters within the jurisdiction of the local government authority.

The Committee believes that the matter of environmental management should be the responsibility of all government agencies. Limited government resources requires the rationalisation and efficient use of staff and resources available. Local government officers are familiar with industrial premises operating in their localities.

The Committee believes that local governments have a role in environmental protection and that agreements could be entered into between state and local government authorities aimed at training environmental health officers of local government and devolving limited additional responsibility for some regulatory aspects of environmental protection. State government agencies would have a role in funding these activities.

In WA there is some involvement of local government in environmental matters. However, officers from local government do not possess powers or training to act in situations where an environmental breach has occurred.

The Committee believes that environmental health officers from local government must be empowered to trigger the formal involvement of DEP and DME at licensed premises which generate operational concerns.

13.4.1 Skill Sharing and Resource Efficiency

The Committee is aware of the limited resources and the complexity of legislation governing industrial waste. Ensuring that inspectors are aware of, and familiar with, industrial sites all over the State of Western Australia is an enormous task with limited resources.

The Committee believes that protection of the environment is not just an issue for the DEP, but must form part of, or be integrated into, the overall policies of all government departments. In this respect, the Committee believes a whole-of-government approach (including local government) must be applied when dealing with policies or proposals that have the potential to impact on the natural and social environment.

It appears to the Committee that consideration must be given to multi-skilling inspectors from a number of government agencies and local government authorities. Presently, officers inspect premises within the scope of their regulatory obligations. As such, an industrial site may be visited by a numbers of government agencies with different statutory obligations. For example:

- Local government inspectors may visit sites in relation to a number of planning and also health and environmental issues;
- WorkSafe officers may visit a site in relation to safety issues;
- the DME may visit a site in relation to the storage of dangerous goods;
- the DEP may visit a site in relation to environmental pollution issues; and
- FESA may visit a site in relation to fire safety matters.

In certain States there is a capacity for the delegation of powers to inspectors from other agencies to act as, for example, DEP officers. This increases the capacity of “people on the ground”, and ensures resources are used in the most effective and efficient manner.

This delegation of authority would require a commitment to the training of officers to ensure that such officers become skilled in a range of functions and are familiar with a range of regulatory regimes.

13.5 Current Situation

At the time of the fire emergency, Waste Control was the primary treatment or disposal option in Western Australia for most industries producing solvent wastes. The Committee received a submission from the Drycleaning Institute of Western Australia, which advised that:

> *The loss of that one source [of waste treatment] had a dramatic effect on the drycleaning industry. It required all dry-cleaners to store their waste, on or off the premises, sometimes in breach of the DEPs requirements as to quantities and storage containers, simply because there was no other viable alternative.*[227]

Toxfree Solutions (TFS), are now licensed to store and handle most of the waste types previously handled at Waste Control.

The acquisition by TFS of Eco Logic Australia Pty Ltd, a Kwinana based operation, provided TFS with a licensed facility. The operations of this division provide both remediation services such as treating PCBs and chemical-contaminated soils, and provide ongoing waste management services for wastes such as perchloroethylene.

TFS has the required dangerous goods approval from the Department of Mineral and Petroleum Resources for on-site storage and handling of 100 tonnes of perchloroethylene, 50 tonnes of organochlorine pesticides and 100 tonnes of PCBs. The environmental licence to treat and handle these wastes was issued by the DEP on 21 December 2001.

A range of solvent wastes that previously went to Waste Control[228] are being repackaged into 200 litre drums at the Brookdale waste treatment facility for transport to Cleanaway Technical Services in South Australia for incineration. At present, these wastes can continue to go there until June 30 2002.

Some solvent wastes that had been sent to Waste Control are being treated at Environmental Recovery Services (ERS) in Maddington. ERS had been accepting and treating/recycling these wastes under DEP and DME licences prior to the Waste Control incident.

From June 30 2002, the management options for hazardous wastes within WA are as listed in Appendix Three of this report.

The hazardous wastes discussed within this report are the result of industrial and commercial practices that provide benefits for the whole community, including governments and industry. Solvent and other industrial type wastes are a societal problem, which have the potential to cause health and safety problems within the community. Governments must have a role in ensuring such wastes do not adversely effect the health and welfare of the community, nor the environment.

Perchloroethylene is a recognised problem throughout Australia and the world and Toxfree has recently been awarded a contract by the Western Australian government to demonstrate the veracity of the Toxfree technology to treat this material. In the industrialised world, approximately 0.25Kg per head of population is generated per year, which in Australia, translates to a total volume in the order of 5000 tonnes per annum.[229]

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227 Drycleaning Institute of Australia–Western Australia Inc., Submission to the Economics & Industry Standing Committee, 2 May 2002, p 2.

228 Including white spirit, xylene and toluene.

229 www.toxfree.com.au/service/toxic, accessed 24/01/02.

Much of the focus during this inquiry has been on the hazardous waste by-product of the dry-cleaning industry, perchloroethylene. However, many hazardous wastes which result from everyday practices, such as driving a car or fertilising a lawn, are often not considered by people when they engage in those everyday activities.

Table 4 below provides some of the common names and sources of a range of wastes. The list is not comprehensive or conclusive, rather it provides a thumbnail sketch of some wastes commonly produced within the community.

Table 4 Common Waste Types and Sources

Example Of Waste Type	Common Names And/Or Sources Of Wastes
Perchloroethylene (Tetrachloroethylene)	Dry-cleaning fluid and/or residue
Potassium, Permanganate	Condy's Crystals
Hydrogen Peroxide Reagent	Bleach
Ammonium Nitrate	Lawn Fertilisers
Oxygen Candles	Used for welding underwater
Chlorine Powder	Swimming Pool Chlorine
Acrylamide Waste	Water treatment flocculant chemicals
Various Lab Wastes	School, industry laboratory wastes
Waste Acids	Swimming pool acid, stain removers, brick cleaner
Corrosive Reagents (caustics/acids)	Household cleaners, for example toilet and oven cleaners.
Formalin Solution	Embalming fluid for specimen preservation
Bagged Reagents	Quicklime
Batteries (acids/alkali_	Car and household batteries.
Elemental Mercury	Old thermometers, lamps
Ferrous Sulphate Solution	Chemical manufacturers
Cooper Ammonium Chloride Solution	Electronic Industry
Nickel, Chrome, Cyanide Solution	Electroplaters
Low level, Mercury Sulphide Contaminated Activated Carbon Residue	Liquid Natural Gas extraction industry
Water containing metal slags	Metal fabrication
Solution containing metal sulphides	Mining and exploration industry/laboratories.

The Committee recommends that:

Recommendation 17

The State government develops a long-term policy strategy for the handling, recycling, disposal and management of hazardous waste in Western Australia.

The Committee recommends that:

Recommendation 18

Relevant Ministers initiate a series of formal Memoranda of Understanding between the waste management regulatory agencies that facilitate and inform information sharing, regulatory and enforcement coordination and lead agency responsibility based on the location, type and size of operations that are licensed or subject to inspection by more than one government agency.

CHAPTER 14 ALTERNATIVE REGULATORY OPTIONS

14.1 Problems with the Industry

There are approximately one million litres of solvent wastes generated each year in WA. The waste management industry has evolved over recent decades and new regulations, particularly environmental regulations, have been developed along with the industry.

The chemicals industry is made up of a range of companies involved to varying degrees in the production, distribution, supply and recycling of hazardous products. Many are small players which are difficult to regulate. These include specialty chemical manufacturers and distributors involved in the supply chain.

Smaller players often tend to be unsophisticated in processes and economically marginal, while larger players may be concerned about their reputation and image of themselves and the entire industry. The Committee received a submission from Associate Professor Frank Murray from Murdoch University, who highlighted the need for disincentives to the 'toxic shell game' involving the transfer of hazards and risks from the bigger operators to the smaller operators.

14.2 Regulation of Hazardous Industries

Traditionally, governments have relied on a "Command and Control" method of regulating industry. In broad terms, Command and Control means that regulators stipulate in detail the terms by which industry must operate, and enforces those regulations by way of statutory powers written down in the relevant legislation.

The WA *EP Act*, the *EDG Act* and associated regulations provide a regulatory framework that is intended to guide industries where products may have implications in terms of both their affect on the environment and public health and safety. The situation that developed at the Waste Control clearly demonstrated the inadequacy of the current regulatory regime in both respects.

14.2.1 Command and Control

The Command and Control method of regulation requires regulators to have a comprehensive and accurate knowledge of the workings of the industry they are trying to control, and requires a credible deterrent threat. Threats may include substantial punitive fines, public exposure, expensive remedial work or withdrawal of an operating licence.[230]

Where resources are inadequate to monitor, inspect and ensure compliance, such threats may become ineffective. There is also potential for small to medium sized organisations to ignore regulatory requirements if they are not concerned about public image. Furthermore, Command and Control regulation does not encourage or reward innovation, rather it concentrates on punitive measures designed to force organisations to comply.

While not suggesting a total shift away from this type of regulation, it is worth considering the alternatives. There are a number of measures that may involve a mixture of Command and

[230] Associate Professor Frank Murray, Submission to the Economics and Industry Standing Committee, 13 August 2001, p 2.

Control with other regulations where appropriate. These include self-regulation by industry; economic instruments; voluntary regulation and co-regulation; and disclosure.

14.2.2 Self Regulation and Responsible Care

A doctrine of Responsible Care has been supported in the chemicals industry as an attempt by industry to self-regulate. The principles associated with the doctrine of Responsible Care encompass community consultation, product stewardship, industry collaboration and co-operation with government.

Responsible Care has the potential to be flexible, responsive to market conditions, and requiring less government intervention than the traditional method of command and control. However, it is not without its shortcomings.

For example, it may lack transparency, openness and accountability. There is a danger that it gives the appearance of regulation without realistic strength, while standards may be weak and enforcement ineffective.[231]

14.2.3 Product Stewardship

In the absence of product life cycle powers, the committee believes that there is a need for achieving better management of solvent wastes through product stewardship.

There is a need for waste management strategies that deal with the entire product life cycle for particular wastes. The draft *Waste Management Bill* provides for the management of problematic wastes and controlled products requiring the manufacturer, distributors or sellers of a controlled product to implement a management plan for the product.[232]

Product Stewardship promotes the assessment and management of products that contain or create hazardous substances that may pose risk to the environment or human health. The concept of Product Stewardship encompasses responsible and ethical design, with management of products throughout the entire lifecycle of a product.

Product Stewardship includes the notion of 'cradle to grave' measures, which involves building the cost of disposal into the product at the manufacturer/producer or distributor/wholesaler level. An example of this is the comprehensive product stewardship program put in place at the federal level, whereby a levy is charged per litre on all new lubricant oils sold in Australia.

Oil companies pay a levy per litre to the federal government, which holds those monies in trust. The companies are then encouraged to collect waste oil from their customers for recycling. When the company sells recycled product back into the market, they are eligible for reimbursement and may access those funds from the federal government.

The Committee is of the view that, after consultation with suppliers and users, regulations could be developed which provide for suppliers to adopt product stewardship responsibilities.

14.2.4 Economic Instruments / Polluter Pays

Flexibility in licensing arrangements, discounts of fees as rewards, and reimbursements of fees for approved actions have a role in encouraging good performance and penalising poor

231 *Ibid*, p.3/

232 Schedule 3 Waste Management Bill 2002.

performance.[233] Examples include load-based licensing and a best practice licensing system which have been introduced in Western Australia. In broad terms, load-based licensing requires operators to pay for the amount of emissions or pollutants they produce as a result of their activities.

This approach requires costs to be set at a level that provides an incentive for industry to reduce emissions as far as practical, while maintaining competitiveness in the marketplace.

In the solvent and/or chemical recycling industry, companies are generally paid to receive hazardous wastes, which may then be recycled for future sales and revenue. Where the cost of processing these wastes is substantial, there exists an economic incentive to promote over-stocking and other potentially hazardous practices.[234] The Committee found this to be a contributing factor to the recurring stockpile of hazardous wastes at the Waste Control site.

Other economic instruments such as financial bonds or redeemable deposits are contingent on satisfactory disposal or recycling of hazardous substances.

14.2.5 Environmental Performance Bonds

Environmental performance bonds require operators to post a security deposit or a bond prior to operation. They are best suited to situations where there is one source of potential environmental damage that can be reasonably estimated. Bonds are used for land rehabilitation by the mining industry, for companies producing hazardous wastes, and as a permit condition for aquaculture.[235]

In some other states of Australia, notably NSW, industries involved in the treatment or storage of hazardous waste have the payment of a bond included as part of licence conditions. Such bond monies may be applied to a range of purposes, such as payment for any clean-up costs in the event of an accident, or to allow regulatory agencies to undertake urgent repair work without the consent of an intransigent licence holder.

The current *EP Act* does not have financial assurance requirements. In the proposed amendments to the *EP Act*, new provisions for financial assurances allow the CEO to impose a financial assurance requirement, such as a bank guarantee, a bond or insurance policy subject to Ministerial consent.[236]

The Committee believes the adoption of financial bonds or assurances would create an effective barrier to entry into the waste market for poor operators without the necessary capital to adequately operate.

14.2.6 Liability of Directors

Further to the provision of Environmental Performance Bonds, the concept of Liability of Directors may also act as a deterrent in terms of poor operators being discouraged from entering the market. Mr Michael Bennett of the Environmental Defenders Office submitted to the Committee that:

Any legislative amendment must consider the introduction of liability of directors and

233 Associate Professor Frank Murray, Submission, *Op Cit*, p.3.
234 *Ibid*, p.3.
235 Young M.D. & Others, "Reimbursing the Future", Biodiversity Series, paper No. 9, Biodiversity Unit, Department of the Environment, Sport and Territories, Commonwealth Government, 1996, p 31.
236 Part VA, Environmental Protection Bill 2002.

managers.[237]

In the contemporary market, all too often the community is expected to 'pay the bill' to clean-up sites, or recompense creditors when directors of failed businesses simply abandon ship, often taking profits with them.

14.2.7 Voluntary Regulation and Co-regulation

Voluntary regulation and co-regulation usually consists of negotiated agreements between individual companies and regulators. They are cooperatively planned, with targets and strategies, ideally involving independent confirmation of whether agreed outcomes are being achieved.

In principle, voluntary regulation is non-mandatory. However, in practice, these forms of regulation generally involve a level of coercion and are thereby considered as co-regulation.

Examples include Dutch environmental covenants and US programs to reduce toxic chemical release.[238]

14.2.8 Disclosure and "Community Right to Know'

The concept of disclosure aims to inform the community about activities, emissions, discharges and policies of organisations, and relies on the recognition of good performers and the public shaming of poor performers. Examples include the United States *Emergency Planning and 'community right to know' Act 1986.* [239]

The Committee believes that the community has a right to know what hazardous industries are located within their community. Legislation must include the requirement for industries to submit an updated list of hazardous materials stored or processed at their premises. The list could be submitted on a regular basis to the DEP and placed on the Internet to enable public access and information.

The Committee believes that such a list would also assist emergency services personnel in ensuring that they are well informed and kept up to date of materials held at premises, to enable them to prepare and deal effectively with any incidents that may occur.

237 M Bennett, Environmental Defenders Office of Western Australia, Transcript of Evidence, 10 August 2001, p 3.
238 Associate Professor Frank Murray, Submission, *Op Cit,* p.3.
239 *Ibid*, p.4.

The Committee recommends that:

Recommendation 19

All regulatory and licensing government agencies:
- adopt the concept of 'community right to know';
- disclose information on hazardous activities to the public; and
- use the Government Website and other public domain information sources to ensure relevant information is accessible to the community.

The Committee recommends that:

Recommendation 20

Amendments to the *Environmental Protection Act 1986* require licensing of:
- activities that have the potential to pollute; and
- premises and/or locations on which such activities are performed.

CHAPTER 15 CONCLUSIONS

15.1 Introduction

The management of hazardous waste raises economic expectations and concerns for community wellbeing. The hazardous waste industry, and in particular the issue of solvent waste, has become a highly contentious area for policy makers in the past decade.

The Committee finds that Waste Control was identified as a major risk to the community and to the environment long before the Bellevue incident occurred.

From evidence presented, the Committee finds that non-compliance with licence conditions was a regular feature of the Department of Environmental Protection and the Department of Minerals and Energy's experience with Waste Control throughout the period of the company's operation.

However, the Committee concludes that, from the evidence, regulatory non-compliance by Waste Control was not the cause of the fire. Evidence before the Committee suggests that the likely cause of the fire was arson.

15.2 Planning and Licensing

Planning for hazardous industry has become a matter of increasing importance to the community in terms of land use planning.

The Committee considers that a more strategic view to planning is required to ensure that land use planning schemes and land use compatibility are jointly considered. Amendments to planning schemes should be adopted so that there is a statewide approach to provide for disposal of waste, including hazardous waste.

The Committee believes that consultation is required between industry, government and the community to address the issue of land use and the location of waste facilities. The siting of waste storage facilities needs to be carefully considered by all parties since a facility cannot be located too distant from the industrial or commercial sources. Placement too far from other industrial areas will make waste management costly in terms of transportation, which could encourage illegal dumping. There is also the resultant problem with the transportation of dangerous and hazardous goods by road.

The State government has some control over the exercise of functions by local authorities. The Committee is of the view that the State needs to take a more strategic role in land use planning to ensure a consistent approach to the siting of hazardous waste facilities throughout the state. The Committee is of the view that this will assist to stop the placement of hazardous industries in inappropriate locations, as was the case with Waste Control at Bellevue.

To assist this, the State government will need to develop consistent definitions for industrial land uses and transparent policies relating to proposals for hazardous waste and dangerous goods.

15.3 Governance

The unsatisfactory performance of Waste Control was a matter of concern to the government over a number of years. The Committee finds that inspectors from government agencies visiting the Waste Control site often expressed concern at the condition of the site and lodged reports that reflected this view.

Officers of the DEP charged with the job of inspecting the site and attempting to enforce regulations were faced with the increasingly problematic situation developing at Bellevue. It was clear that the site had the potential to cause serious environmental damage through, at a minimum, the contamination of groundwater via continuous on-site discharges of stored pollutants and wastes.

The operators sustained a culture of negotiating with government officers, departments and Ministers for more time, assistance in meeting statutory obligations and the waiver or loosening of improvement notices. The fact that Waste Control operated an effective monopoly position (through below cost price-cutting) meant the government felt unable to force licence compliance for fear of causing a major industrial and environmental crisis through the loss of a waste disposal service within the State.

15.4 Regulation

Waste Control operators took full advantage of their statutory rights, using appeal mechanisms to thwart the tightening of licence conditions. This, in combination with direct lobbying, hindered enforcement of standards and frustrated the officers charged with the 'coal-face' regulation of the site.

In broad terms, the Department of Environmental Protection (with advice from the Crown Solicitor's Office) interprets the *Environmental Protection Act 1986* offence powers as not including 'on-site' contamination. In accordance with this view, it is necessary for physical evidence of polluting materials or agents moving from (ie outside) a licensed premises before any prosecution action is likely to succeed.

The Committee regards this situation as unacceptable and believes that legislative reform must be given the highest priority.

The Department of Environmental Protection demonstrated its attempts to convince successive governments of the need for tougher Environmental Protection laws and legislation to this effect has been rewritten a number of times over the years. At their core, the proposals seek to provide for pollution to be prevented rather than polluters punished after the fact. Proposed amendments would include the introduction of powers for the regulatory agencies to enter licensed properties to ensure that industries are not operating in ways that could cause pollution.

15.5 Outcomes of Intervention Action

In June 1999, the Waste Control site had reached such a critical situation that the CEO of the Department of Environmental Protection advised the then Minister for the Environment, Hon Cheryl Edwardes of the need for an urgent response to the site's condition. The Department had developed a number of response options, ranging from the government assuming total

responsibility for the site, through to the provision of a loan to enable the dangerous backlog of materials to be removed. Cabinet accepted the Minister's recommendation for the provision of a $100,000 loan to Waste Control.

The Committee is of the view that this option was chosen, as it appeared to provide the most immediate solution to a serious problem. The option was also consistent with a broader Government policy approach of making businesses more responsible for their economic and operational performance.

The Committee believes that this option may have been effective where a stockpile of drums was the only non-compliance issue. In the case of the Waste Control operation at Bellevue, there is ample evidence, from at least 5 years of operations, that the build up of a large stockpile of waste-filled drums was only one of many serious environmental and safety issues at the site.

Indeed, the Committee is of the view that, by June 1999 and based on the history of the site, attempts to sustain the Waste Control operations failed and were potentially dangerous. It also recognised that this attempt to sustain the operations was influenced by a serious confusion in government policy that had accumulated since the *Palos Verdes* case of 1992.

15.6 Enforcement

It is clear that the State's regulatory agencies were reluctant to take prosecution action. A measure of this reluctance can be attributed to flaws in the regulatory scheme itself, in part to the ineffective and deficient policy direction of Government, and also to the cautious attitude adopted by the Crown Solicitor's Office in its assessment of the Environmental Protection Act 1986 powers.

Following the Government emergency rescue package of the site in August 1999 and up to December 2000, the Departments of Environmental Protection and of Minerals and Energy issued infringement notices to Waste Control relating to continued unsatisfactory site management and licence breaches.

Waste Control was allowed to continue to operate despite explicit concerns of inspectors and the Committee is of the view that this had the effect of allowing and rewarding continuing poor performance by Waste Control. Agency moves to commence prosecution occurred too late to remedy this.

15.7 Inter-Agency Cooperation

The regulatory agencies – primarily the Department of Environmental Protection and the Department of Mineral and Petroleum Resources (formerly Minerals and Energy) - are bound by their separate statutory responsibilities, policies and budgets with occasional common objectives. The Department of Environmental Protection, for example, was concerned that Waste Control's poor storage practices would cause waste to enter the natural environment, the Department of Minerals and Energy was concerned that poor storage practices may create a dangerously explosive environment, while the Fire and Emergency Services Authority was concerned that poor storage practices would constitute a fire hazard dangerous to humans and property.

The situation at Bellevue highlighted a systemic breakdown in the standards and mechanisms intended to protect human and environmental health and safety. The regulatory agencies

operated within separate 'silos of governance' with ineffective enforcement measures and little capacity to develop a cumulative perspective.

It is worth noting that the agencies operate within a limited budget framework. The crossover in responsibilities of the agencies and the inherent duplication of expenditure in handling a single operator lends credence to the notion of greater inter-agency cooperation, incorporating the various threads of governance associated with the management of hazardous waste. The Committee strongly supports the concept of inter-agency Memoranda of Understanding and better integration of land-use planning and environmental protection.

15.8 Policy

The Committee recognises a failure in the policy governing hazardous waste. The situation that developed at Waste Control is evidence of the failure of the waste management industry and governments to clearly understand the economic, social and environmental values and risks associated with the industry.

The market, left to its own devices, failed to deal appropriately with the hazardous by-products of industrial and commercial processes. Unfettered and unregulated market systems failed to deliver good outcomes for the community, industry or the environment.

The Committee found that Waste Control appears to have been given 'special consideration', by government agencies to continue to operate, because of the essential and unique services it provided in recycling waste products.

In the absence of a comprehensive policy or plan as to how the government would tackle this issue in the long term, Waste Control was allowed to limp along within an inadequate regulatory framework and unsustainable financial, management and operational shortcomings.

Concerns have been raised in several Australian jurisdictions about the problems of hazardous waste management, particularly disposal. The closure of landfill sites to the receival of such waste due to health and environmental risks, and opposition to landfill, is indicative of community concerns about hazardous wastes.

The Committee believes there is a need to plan long-term, cost-effective options for the management of solvent wastes. This would involve establishing alternative facilities in Western Australia, which would eliminate much of the higher cost and risks associated with interstate disposal.

The Committee supports the continued regulation of hazardous waste management by the State and recognises the need for a consistent national approach to defining management standards for hazardous waste. A national approach would provide a standard for the evaluation of waste management proposals and guard against the development of "pollution havens". It would also encourage the development and application of comparable regulatory sanctions across all jurisdictions.[240]

The Committee is unanimously of the view that the management of hazardous wastes poses a very real risk to the community and to the biosphere and that our collective energy, resources and will are necessary to counter a growing social, economic and environmental threat.

[240] Hazardous Waste Consultative Committee, Final Report, April 2000, p 58.

APPENDIX ONE

CHRONOLOGY OF REGULATORY ACTION AT WASTE CONTROL

DATE	DEPARTMENT OF ENVIRONMENTAL PROTECTION	DEPARTMENT OF MINERALS & ENERGY	FIRE & EMERGENCY SERVICES	WORKSAFE WA	SHIRE OF SWAN
SEPT 1987					Austech Australia submitted an application to commence development of a Methyl Nitrate Plant at Lot 99 Bulbey Street Bellevue
OCT 1987					The Shire forwarded the plans submitted to Council for the Methyl Nitrate Plant at Lot 99 Bulbey Street Bellevue to the Environmental Protection Authority (EPA) for assessment. A letter dated 9 October 1987 from the EPA to the Shire advises that the referral has been determined under Section 40 of the *EP Act* 1986 as not requiring formal environmental impact assessment under Part IV of the Act. On 21 October 1987 the Shire advised Austech Australia that approval to commence development had been granted. The form of approval states a number of conditions that were to be met by the developer, including approval being secured from the Explosives Branch of the Mines Department and the Pollution Control Division of the Environmental Protection Authority.
DEC 1987		Application to licence site at 1 Bulbey Street to store up to 9.1 kl of Class 2 flammable liquids associated with manufacture of nitromethane. Licence subsequently issued valid until 9 December 1988			
MAR 1988					The EPA advised the Director General of Mines and the Shire that the new location was closer to other developments, making safety more important, and that it should be possible to

DATE	DEPARTMENT OF ENVIRONMENTAL PROTECTION	DEPARTMENT OF MINERALS & ENERGY	FIRE & EMERGENCY SERVICES	WORKSAFE WA	SHIRE OF SWAN
					adequately address this through the EPA's Works Approval process and Mines Department regulations. The EPA recommended that the new location was environmentally acceptable.
MAY 1988	The EPA determined that a proposal to establish a Nitromethane plant at Bellevue was assessed as not requiring formal assessment under Part IV of the *Environmental Protection Act 1986*, but should be processed through a Works Approval and licensing provisions of Part V of the Act. A Works Approval was issued to Austech to build a Nitromethane plant at 1 Bulbey Street, Bellevue. The Works Approval required adherence to the requirements of the Mines Department - Explosives Branch. A copy of the Works Approval was provided to the Shire of Swan, however, this plant was never built.				
APR 1989		Inspection of site. Instructions to company to address multiple non-compliances.			
JUL 1989	A Works Approval was issued to Austech (Australia) Pty Ltd to build a Nitromethane plant at 1 Bulbey Street, Bellevue. The EPA advised Austech Australia that the application for Works Approval to build a Nitromethane plant was approved subject to conditions.				
OCT 1989	Austech submitted an Application for Works Approval to the EPA, detailing the proposed solvent recycling facility at Lot 99 Bulbey Street.	The Department received notification from Austech Pty Ltd and Chemical Engineering and Design seeking amendment of original licence to reflect proposal to establish a waste recycling plant at the site. Licence granted to			A letter from Dr Jeffrey Claflin, Managing Director of Chemical Engineering and Research Design (CERD) advised the Shire that Austech Pty Ltd in a joint venture with CERD were endeavouring to establish a small solvent recycling

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		reflect storage of flammable liquids, kerosene and paint thinners			plant. The general categories of solvents to be processed included hydrocarbons (paint thinners eg: turpentine), chlorinated hydrocarbons (degreasing solvents and trichloroethylene) and miscellaneous other solvents, in particular acetone. The letter accompanied an Application for Approval to Commence Development under the MRS for changes to the site at Lot 99 Bulbey Street. The changes were described as a long-term development, including concrete pads, bunding and 3 underground storage tanks.
NOV 1989	The Water Authority wrote to the EPA outlining specific requirements relating to bunding and security measures to prevent contamination of groundwater				The Shire advised Austech that the application for proposed extensions to the chemical recycling plant at Lot 99 Bulbey Street had been granted subject to a range of conditions relating to drainage, signage, approval being secured from the Explosives Branch of the Mines Department, and the applicant securing a Works Approval from the EPA. .
DEC 1989	The EPA advised Austech that the Works Approval had been approved subject to various conditions relating to storage and handling, bunding and details of the underground storage tanks Austech submitted an application for a licence to operate a solvent recovery works with the EPA. Classification of the premises being Chemical Works Class 2.	DME approved solvent recycling plant.			A Works Approval was issued to Austech to build a solvent recycling plant at 1 Bulbey Street, Bellevue. The Works Approval was copied to the Shire of Swan, the Water Authority of WA and the Mines Department
JAN 1990	The EPA issues a licence to Austech to operate a solvent recovery works with general air/pollution control conditions and	DME approved installation of underground flammable liquid tank.			

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	water pollution control conditions. The licence stated that the facility should be maintained in a manner that meets the requirements of the Department of Mines, Explosives and Dangerous Goods Division in respect of the storage and handling of flammable solvents.				
APR 1990		Inspection carried out revealed a number of deficiencies. Instruction to Waste Control to address multiple non-compliances.			
MAY 1990		Further inspection revealed that the premises complied with the Dangerous Goods Regulations. Between April 1990 and March 1993 the site was inspected four times, and non-compliances such as bunding, stacking of drums and the lack of an emergency response plan were identified. The owner agreed to address deficiencies, which were, at the time, considered to be minor given the nature of the operation.			
NOV 1991		Inspection carried out revealed a number of deficiencies. Instruction to Waste Control to address multiple non-compliances.			
MAR1993	A site inspection revealed that the company name had changed from Austech (Australia) Pty Ltd to Waste Control Pty Ltd. The inspection report recommended that additional bunding be installed to accommodate the increased number of drums on site.	Inspection carried out again revealed a number of deficiencies. Instruction to Waste Control to address multiple non-compliances. The DEP advised DME of its concerns relating to increasing amount of product stored at premises. The Shire of Swan formally raised concerns about the site and requested advice regarding status of licence. DME responded that a formal application from operators was awaited.			The Shire wrote to the DME advising of concerns by surrounding proprietors and residents relating to the open storage of chemicals and potential fire/explosion risks at the site. The Shire advised they had visited the site and requested DME to inspect and advise as to the adequacy of the storage conditions.
APR 1993					The Statutory Services Committee of the Shire reported that an on site meeting was arranged to discuss management

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					practices with the proprietors. Attending the meeting were representatives from the Health Department, EPA, Department of Occupational Safety and Welfare and officers from the Council's Environmental Health and Planning Services. The main concerns related to methods of storage of chemicals and solvents, which contravened the conditions of the Works Approval. All of the liquids were being stored on ground level where any spillage could lead to the pollution of ground and surface water. The terms of the EPA Works Approval required the drum store and processing plant areas to be located in a bunded area. Council forwarded these concerns to the EPA and the DME. Furthermore, a detailed search of Council's records revealed no prior approval for the storage of chemicals and solvents on Lot 88 Oliver Street, Bellevue. The Shire wrote to the proprietor to advise of the concerns relating to the open storage of solvents and chemicals and that the proprietor should apply for a Works Approval for the chemical and solvent storage facility at Lot 88 Oliver Street as required under the provisions of the Shire of Swan TPS No: 9.
MAY 1993		The company retrospectively applied for licences for Bulbey Street site and for adjacent site at Oliver Street.			Waste Control Pty Ltd wrote to the Shire agreeing to undertake a program of stored volume reduction as well as provision of a bunded storage area. The letter accompanied an application for approval to Commence Development on Lot 88 Oliver Street. Dr Claflin also advised that a licence application for storage had also been submitted to the DME.

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JUN 1993					The Shire wrote to the EPA, the DME and the Health Department enclosing the latest application for the proposed chemical and solvent storage area. The Shire noted concerns over inadequacies in storage practices, which may increase the risk of pollution of ground and surface water, particularly the nearby Helena River. The Shire requested the three agencies assess the application and forward any comments as soon as possible.
JUL 1993	Early in July, the EPA wrote to the Shire of Swan, advising that while the latest proposal raised a number of environmental issues, the overall environmental impact of the proposal is not so severe as to require a formal assessment by the Authority and the subsequent setting of conditions by the Minister for the Environment. The EPA offered to provide advice to the Shire and relevant decision making authorities on the environmental aspects of the proposal.	DME advised Waste Control that the current licence for site could not be amended until further information received. Dr Claflin advised DME that site improvements were under way. Licence amended subject to provision Further inspections revealed continuing breaches of regulations and in August 1993 DME advised that prosecution action may result. A site licence for Oliver Street had still not been issued.			The EPA advised the Shire of Swan that a formal assessment by the Authority was not necessary. Later in the month the EPA wrote to the Shire Community Planning and Development section advising of concern at the arrangements for storage on the site. The EPA advised that new licence conditions, developed with the cooperation of the Water Authority, should be sufficient to provide protection to both ground and surface waters. The Health Department replied to the earlier letter from the Shire advising that they do not have jurisdiction regarding on-site storage of chemicals. The Health Department advised that they had been in contact with DME and were satisfied DME were adequately addressing the issue of storage on the site.
AUG 1993		A comprehensive site inspection carried out in August 1993 rated the site at worst possible rating. Attending inspector recommended legal action be instigated, however DME resolved to give company more time to comply. Two representatives from Waste Control met with officers from the Health			The Shire registered a complaint regarding the conditions of chemicals "laying around the front fence in rusting drums and leaking on the ground". The Shire requested the manager move the drums into the compound.

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		Department, Water Authority, EPA and DME to discuss concerns with the site. Operator cited market difficulties as key factor in growing stockpile of wastes. DME extended deadline for compliance until 29 November 1993.			
SEPT 1993		Inspection of site resulted in instruction for Waste Control to remove dangerous goods in excess of licence conditions.			The Shire approved the latest development application relating to Lot 88 Oliver Street Bellevue subject to a range of conditions relating to drainage, landscaping and a Works Approval from the DME and the EPA. The Shire wrote to Waste Control advising that their latest application to commence development on Lot 88 Oliver Street had been granted at the full Council meeting of 22 September 1993.
OCT 1993		DME letter to Waste Control approving an extension of time to remove excess dangerous goods.			
DEC 1993		Inspections carried out on both sites revealed non-compliance was considerably lower than previous inspection. DME advised that a licence would not be issued until a number of items addressed. DME subsequently licensed both sites until December 1994 without special conditions. Three inspections carried out over this period. Subsequent letter instructing immediate action required.			
FEB 1994			An incident involving a controlled experimental canister-cooking unit resulted in a visit to the site by the Fire Brigade. Waste Control wrote to the Shire and the EPA explaining the circumstances surrounding the incident.		
AUG 1994	Site inspection carried out. Recommendations were made to amend the	Joint inspection with DEP, Water Authority, Health Department (Waste			

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	licence conditions in regard to the requirement for groundwater sampling and inventory of chemicals held on site.	management WA) with instruction to multiple address non-compliances.			
SEPT 1994		DME endorsed a schedule of improvement works proposed by company. Within two months operators were warned that the site was considered an unacceptable risk to public safety and immediate action necessary to remedy deficiencies.			
OCT 1994	Licence reissued incorporating bunding, inventory and groundwater pollution control conditions.	Inspection with instructions to address multiple non-compliances with a comment note that failure to do so would result in legal action.			
DEC 1994		Inspection with subsequent letter from Chief Inspector to Waste Control instructing that immediate action was required to address deficiencies. Throughout the period 1994-1995 the DME based its approach on commitments made by the operator to improve the management and safety at the site, taking into consideration the nature of the deficiencies and the importance of maintaining a waste management facility for industrial solvents. This approach continued through 1995, with the DME repeatedly accepting the undertakings given by the company to improve compliance.			
JAN 1995		Inspection with subsequent letter from Branch Manager to Waste Control regarding non-compliance with a comment note that failure to comply would result in legal action.			
APR 1995		Inspection with instruction to address multiple non-compliances.			
JUN 1995		Inspection and evidence gathered with subsequent letter that full compliance was required within 2			

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		months.			
JUL 1996				Complaint No: 1138 from an employee at the site on 18/06/1996 alleging that no personal protective equipment (PPE), material safety data sheets (MSDS) and no training had been provided for persons handling solvents. Worksafe Inspector investigated the complaint on 08/08/1996. No action was taken in respect of PPE and MSDS. While this cannot be confirmed with the Inspector, it is reasonable to assume that these aspects of the complaint could not be substantiated. Improvement notice I89578 was issued requiring the employer to display the safe working load (SWL) on the forklift attachment within 1 month. The department received advice on 08/08/1996 that the notice had been complied with. Improvement notice I89759 was issued requiring the employer to provide new employees with training in accordance with Australian Standard 1940 of 1993 (The storage and handling of flammable and flammable liquids). The department received advice on 08/08/1996 that the notice had been complied with.	
AUG 1996	A site inspection revealed approximately 2500 drums stored on-site and contaminated stormwater had potential to flow off-site as a result of high rainfall.				
MAR 1997		Further inspections revealed similar non-compliance and a formal interview with Dr			

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		Claflin took place as a precursor to prosecution. Instruction to remedy non-compliances issued. No action was proceeded with.			
OCT 1997	Licence reissued minus bunding, inventory and groundwater conditions.				
JAN 1998		Inspection revealed continuing non-compliances. Photographic evidence gathered with subsequent letter instructing Waste Control to address non-compliance. Two follow up letters instructed Waste Control to confirm course of action.			
JUN 1998	Site inspection. Recommended actions: upgrade of bunding; inventory of wastes on-site; groundwater monitoring; and a schedule for removal of the chemical backlog.				
FEB 1999			Midland Fire Station crews undertook a building inspection of the site. They noted concerns regarding the conditions on the site and notified the DME and Waste Control.		
MAR 1999			A further building inspection raised concerns, which were forwarded to the DME.		
APR 1999		In response to a complaint from Midland Fire and Rescue Service an inspector visited the site and noted worsened conditions. Inspector recommended supply of dangerous goods to site be halted and those on site be removed. Inspector issued Waste Control instructions to remedy non-compliances.			
MAY 1999	A licence was issued which tightened conditions on stormwater management, groundwater monitoring and included a schedule for the removal of				

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	chemicals backlog.				
JUN 1999	Waste Control appealed to the Minister, as is their statutory right, regarding licence conditions relating to throughput, management of contaminated stormwater, removal of drums from premises and bunding.	Meeting with Waste Control instructing it to rectify non-compliances in accordance with agreed timetable.	Midland Fire Station requested that a Fire Safety Inspector (FSI) from FESA's North Metropolitan Office inspect the site. FSI inspected the site and relayed concerns regarding safety to the DME.		
JUL 1999	A site inspection on 2 July revealed 2000 drums of waste on-site. Problems noted with contents of drums and sumps. First indication of leaking drums and build-up of stockpile. The company was unable to provide an inventory of chemicals due to the purported theft of company equipment containing inventory records. On 21 July 1999, the DEP, DME and FESA met in regard to Waste Control and its licence conditions. DME undertook to inspect premises to check compliance with DME regulations. The DEP took similar steps to inspect the premises to undertake compliance audit of the licence conditions. A meeting on 22 July 1999 between DEP and Waste Control revealed that the company had no funds to either remove the backlog of waste stored in drums or carry out the required upgrades. On 27 July 1999 Contaminated water was discovered running off-site and DEP responded by issuing a section 73 Direction in terms of the	Midland Fire and Rescue Service made a second complaint regarding site conditions, and shortly thereafter on 27 July, heavy rain caused polluted stormwater to overflow into an adjacent property. The adjacent property was and is owned by the Western Australian Main Roads Department. Inspection as part of HAZMAT incident with FESA, DEP, Department of Health and WorkSafe.	Crew from the Midland Fire Station found materials leaking from the site. A Hazmat incident was declared.	Westplan Hazmat incident on 27/07 /1999 following a discovery that leaking chemicals from drums stored on the Waste Control site had contaminated soil on an adjoining property. The inspector visited the site briefly to familiarise himself with the problem. The investigation was passed on to the inspector responsible for that industry grouping.	

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	Act to deal with the situation. [241] A briefing note relating to the incident of 27 July was sent to the Minister's office on 28 July 1999.				
AUG 1999	Inspection of Waste Control on 2 August by 2 DEP officers during a heavy rain event. Inspection of Waste Control by 2 DEP officers in response to a media complaint of offensive odours and potential health effects on workers in a neighbouring business. Instructions were issued to rectify immediate problems. DEP sent a letter to Waste Control on 17 August 1999 requesting an inventory of wastes on-site be provided by 24 August 1999. Inspection of Waste Control by DEP officer on 17 August during heavy rain. Hydrocarbons observed being washed off-site down a street drain. Samples were collected and two employees interviewed under caution. DEP response to licence conditions appeal sent to Appeals Convenor on 24 August 1999. Meeting held between DEP, DME, Fire and Rescue Services, WorkSafe and Water & Rivers Commission on 24 August to ensure common understanding of issues at Waste Control and a coordinated response. Section 73 Direction issued on 26 August requiring prevention of leakage from drums,	DME began to liaise more closely with DEP and other agencies culminating in a meeting outlining DEP's proposal to provide funding to the company to reduce the stockpile of wastes. DME sent an ultimatum to the company on 26 August 1999, demanding immediate attention to specific non-compliances.	Following the July Hazmat incident, a Midland Fire Station crew was requested to prepare an operational pre-plan for the site. This was done using the standard community risk management pre-plan format that provided key data relating to the site, maps and a summarised risk analysis.	Westplan Hazmat incident on 27/07/1999. This inspector who visited the site was responsible for the industry grouping. **Action taken:** Dr Langley met with officers from the DEP and the DME to develop a strategy for dealing with the waste stored on the site. The meeting took place on the 24/08/1999 and tasks to be undertaken by each agency were agreed on. For example: ▪ The DME was to address issues such as redrumming (placing the contents of old drums into new, more secure containers), labels (on drums), placards, MSDS, emergency planning, housekeeping and segregation (of incompatible chemicals); ▪ The DEP was to address issues of bunding and cover (to protect the drums from rain); ▪ The Fire & Rescue Services were to develop a plan to combat emergencies such as fire; WorkSafe was to apply its enforcement policy	A chemical spill on site resulted in the Shire being asked by the Fire and Rescue Service to provide support in the clean up, which was duly provided.

[241] Section 73 of the *EP Act* gives, among other things, an inspector or authorised person the power to direct in writing that any discharges of waste and/or pollution be dealt with in the appropriate manner

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	repair of defective bunding, provision of covers over bunded areas, installation of rainwater collection and treatment system, and site security. On 27 August the DEP requested an inventory of wastes stored at the site. Meeting between Minister for the Environment, DEP representatives and Waste Control on 30 August 1999.			(to general occupational safety & health issues) on the site. An undertaking was given to consult with the DEP if a prohibition notice was to be issued. A prohibition notice stops a particular activity.	
SEPT 1999	Re-issue of Section 73 Direction on 1 September, relaxing timeframe for actions required under Direction issued on 26 August 1999. Appeal determined. Throughput unchanged, stormwater to be contained on site, drums to be removed within approved timeframe and bunding to be installed within approved timeframe. During September 1999, State Cabinet considered a six-option submission prepared by DEP detailing various options for dealing with the situation at Waste Control. The option to remove 1000 drums in order to reduce the backlog of storage drums, allow the company to continue trading and repay approximately $100,000 for costs incurred by government was supported by WRC, DME, FESA and HDWA and subsequently approved by Cabinet. Licence conditions were amended to reflect appeal decision. Waste Control objected to amended conditions as impossible to meet.	Waste Control sought an extension of time to comply. DME responded that compliance must occur by 26 October 1999.		An inspection of the premises was carried out on 07/09/1999. A number of deficiencies were noted. The Managing Director of Waste Control was given verbal instructions to address certain issues (eg residual current devices, guarding of machines, lock out tag out system) and provided with information.	
OCT 1999		Inspection indicated			

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		continuing non-compliances and subsequent report recommending enforcement.			
NOV 1999	Using powers under section 73, the DEP caused 1000 drums to be removed at a cost of approximately $100,000 which reduced the stockpile to within licence limits. The amount of approximately $100,000 plus eight per cent interest per annum was never fully repaid. Site inspection carried out. It was noted that one of the stills was inoperable owing to a leaking oil jacket. Also evidence of wastewater leaving the site and storage of chemicals outside bunded areas.			On the 18/11/1999 the DME advised WorkSafe that Waste Control had 2 x 200 litre drums of 70% hydrofluoric acid. WorkSafe began negotiations with the DEP to find another user for the acid. The matter was resolved by Waste Control agreeing to dilute and then neutralise the acid. An inspection of pressure vessels at Waste Control by an Inspector from WorkSafe with specialist skills in that area was arranged. Two Inspectors carried out an inspection of pressure vessels at Waste Control at the request of the DME. It was considered that the air receivers (air tanks) should have been registered with the department and inspected by a competent person. An improvement notice I115990 requiring Waste Control to do this was issued.	
DEC 1999	Waste Control informed DEP of a leak in oil jacket of "Egg" still, consequent reduction in income and request for re-scheduling of repayments. No detailed supporting financial information provided. DEP requested detailed financial information to support the request for re-scheduling of payments. Waste Control rejected DEP position.				
JAN 2000	DEP re-stated requirements for re-scheduling of payments.				

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	Waste Control provides copy of business plan provided to the ANZ bank and raises possibility of sale of secured assets to pay the DEP. DEP accepted secured asset sales provided the equipment sales enabled the full $100,00 to be recovered. Waste Control stated ANZ Bank had rejected the business plan and indicated January repayment to DEP would not be made unless asset sale goes ahead.				
FEB 2000	Waste Control confirmed that January payment had not been made and indicated that the sale of ROTO still was being pursued. DEP requested payment of the first $4000 repayment by 14 February under terms of the Deed of Charge. Waste Control responded, stating company seeking alternative means of achieving its restructure plan. Licence compliance inspection carried out. Backlog of drums appeared to be reducing. Recommended that company should maintain a detailed inventory relating to chemical identification and management to ensure waste stockpile was not to increase. Meeting between the then Minister for the Environment, DEP and Waste Control about a revised management plan for licence compliance and repayment schedule. DEP agreed to the revised repayment schedule and management plan for licence compliance.				

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MAR 2000	Waste Control indicated it would sell ROTO still and meet licence requirements by 15 March 2000. Inspection on 17th March 2000 revealed another breach of licence conditions relating to the chemical inventory and disposal of waste. Waste Control foreshadowed a notice to show cause why it should not be prosecuted, by lodging a business restructure. DEP informed Waste Control that repayments were to take precedence over other discretionary outlays. Waste Control responded to show cause letter foreshadowing restructuring of business and use of future anticipated profits to meet DEP requirements.	Evidence was gathered with the intention to prosecute for breaches of dangerous goods regulations. A comprehensive brief of evidence was forwarded to Crown Solicitor's Office with instruction to proceed with prosecution. Evidence included details of breaches of regulations, photographic evidence of the site and a record of interview with Dr Claflin.			
APR 2000	Waste Control started trading as Hazardous Waste Solutions. 28 April 2000 meeting between the Minister's Office, DEP and Waste Control about licence non-compliance.				
MAY 2000	Inspection revealed an increase in the number of drums (after 1000 drums were removed in November 1999) from approximately 1000 to more than 2000. Leakages from the drums were also noted. Site inspection carried out on 29 May 2000. Significant increase in the number of drums of solid/liquid chemical waste noted. Leaking drums and corroded bulk containers found on the premises. Waste Control met with DEP to discuss non-				

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	compliance issues				
JUN 2000		Inspection with subsequent instruction to Waste Control to rectify non-compliances. DME received a reply from Crown Solicitor, concluding that insufficient evidence existed to prove most of the alleged offences. There was sufficient evidence for two minor offences, however, it was considered that these did not adequately reflect the seriousness of the issue. Most notably, evidence was lacking to prove that the contents of the containers were in fact dangerous goods. DME noted that this evidence was difficult to obtain and required laboratory analysis and a clear audit trail.			
JUL 2000	Following a meeting between representatives of DEP and directors of Waste Control, a schedule of actions to bring the operational side of the site up to acceptable standards was agreed and incorporated into DEP's draft conditions of licence..			An Inspector visited the premises to discuss fatigue management plans for drivers employed by the company. The Inspector found that the company had submitted a fatigue management plan to the department. He addressed some other issues he noted while at the site and two improvement notices were issued. Improvement notice I124563 dealt with issues involving forklift safety. The employer was required to provide a safe working surface, legible load-rating chart, training for drivers, adequate traffic control and hooks for lifting. Improvement notice I124564 dealt with housekeeping and required the employer to move drums that restricted space for forklifts and people working on the site.	

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AUG 2000	Waste Control formally accepted the conditions in a letter dated 2 August 2000. The licence was issued, which included agreed timeframes for bunding, inventory and stormwater management.		A Fire Safety Inspector conducted a follow-up inspection and noted that not many changes had occurred at the Waste Control site since the previous inspection. The issue was again referred to the DME.		
SEPT 2000		Inspection and evidence gathered (photos) with subsequent instructions to Waste Control to rectify non-compliances. DME presented complaint			
OCT 2000	Inspection revealed non-compliance with the agreed conditions. In response to a letter from DEP to show cause why it should not be prosecuted, Waste Control cited financial difficulties.	Evidence was again presented to the Crown Solicitor and on this occasion was recommended for prosecution.			
NOV 2000	Show Cause letter was served on Waste Control in relation to alleged breaches of the licence conditions relating to: the build up of approximately 2100 drums of waste material; inappropriate storage of chemical wastes; spillage from corroding drums; lack of treatment of potentially contaminated stormwater prior to disposal off-site; and failure to provide a waste inventory. Waste Control responded stating that it could not afford to perform the required upgrades to the premises.		Waste Control wrote to a number of government agencies (one of which was FESA) updating actions being taken with respect to the site.		
DEC 2000		DME sought Crown Solicitor's advice as to whether licence should be renewed. Summons relating to 10 charges for breaches of licence conditions regarding storage, bunding, firebreaks, inventory and separation distances was issued to Waste Control on 14 December 2000.			
JAN 2001	Licence was issued which included additional				

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	stringent conditions on waste management and inventory control.				
FEB 2001	DEP made the decision to prosecute Waste Control for alleged breaches of its licence conditions. Waste Control provided an improvement plan for the site to meet licence conditions to DEP. On the evening of 15 February 2001 a fire occurred at the premises of Waste Control and in the aftermath, DEP issued a section 73 Direction on the company to clean up the site and surrounding areas affected by the fire and associated fire-fighting activities. The company advised DEP that it was unable to pay for the required clean-up operation. DEP engaged Cleanaway Technical Services to conduct the clean up.[242]	Letter to Waste Control advised licence would not be renewed.	Fire Services personnel, including Volunteer Fire Fighters, attended Waste Control on the night of 15 February 2001. Hand-over of the site to the DEP occurred at 16.43 hours on Saturday 17 February 2001. Following the hand-over of the site to DEP, equipment and appliances were decontaminated. All fire crews departed the fire-ground at 20.26 hours on Saturday 17 February 2001.	Investigation records details of action taken by Chief Scientific Officer Len Gordon over a period of weeks after the fire at Waste Control. February 20 2001, two meetings between various agencies involved in the incident. The purpose of the meetings were to receive advice on the nature of chemicals involved and to develop a strategy for dealing with the environmental, public health and occupational health issues arising from the fire. Issues discussed included the nature of chemicals involved in the fire, possible health effects, a clean up program, soil and water testing, exposure of firemen and reports that standard procedures had not been followed during the fire. WorkSafe's role was to provide advice on chemicals and control measures. A lack of information about chemicals stored on the site made it difficult to assess the risks both to fire fighters and members of the public who may have been exposed. February 21 2001 meeting at the DEP between various agencies and the Environmental Consultant carrying out tests on soil, water and condensate from the fire that had contaminated adjoining properties. Information available indicated low	Council sought an urgent briefing from relevant government departments and agencies concerning public health and safety, environmental impacts and other planning and compliance implications for the Shire and its residents as a result of the fire.

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				levels of heavy metals in run off. A report that school busses contaminated during the fire had been used to transport children was discussed. It did however transpire that the busses had been thoroughly washed by the Fire & Rescue Services before being used. Samples from the busses were being tested. February 27 2001, dispute over occupational safety and health at Waste Control site during the initial clean up. While the standard of training and personal protection was considered good, the employer agreed to make improvements to address the unions concerns. No notices were issued. A WorkSafe Inspector was requested to attend a meeting at FESA House and provide medical advice on testing for approximately 150 people exposed to fumes during the fire at Waste Control. Dr Wan of WorkSafe attended the meeting on 20/02/2001 and assisted FESA develop a program for monitoring the health of fire fighters involved in combating the fire at and around Waste Control. A questionnaire for interviewing fire fighters was developed and medical examinations were to be offered by FESA. Information on the health risks from chemicals such as lead and phosgene was to be issued to fire fighters by FESA.	
APR 2001		The Midland Court of Petty Sessions convicted Waste Control on all ten complaints			

DATE	DEPARTMENT OF ENVIRONMENTAL PROTECTION	DEPARTMENT OF MINERALS & ENERGY	FIRE & EMERGENCY SERVICES	WORKSAFE WA	SHIRE OF SWAN
		and fined the company $20,000 in respect of each, being a total of $200,000.			
MAR 2002	DEP formally charged Waste Control with four breaches of licence conditions.			March 6 2001 telephone call received by Len Gordon from the occupational safety consultant. Two employees had received minor burns while testing a water hose. The employees had been treated on site and taken to hospital. March 7 2001, site visit conducted to investigate injuries reported the previous night. Information on the work carried out by the employees during the incident was obtained. Work practices were modified slightly to prevent a recurrence. Confirmed that injured employees had been discharged from hospital and had not suffered any further symptoms. March 16 2001- telephone call from the occupational safety and health consultant on site at Waste Control. The consultant advised that there had been a small fire on the site that afternoon while removing drums. The Fire & Rescue Services had attended. March 19 2001, investigations to determine the cause of the small fire and to confirm adequate safeguards were in place. A drum had ignited when being crushed by an excavator. The fire could not be extinguished and was eventually buried by the Fire and Rescue Services. No one was injured and work was stopped until work procedures were modified.	

APPENDIX TWO

RANGE OF CHEMICALS BELIEVED TO BE STORED AT WASTE CONTROL SITE OVER THE PERIOD OF ITS OPERATION:

Acetone	Low level radioactive tracer materials (eg from universities)
Acrylic thinners	Methyl Ethyl Ketone
Ammonia	Methyl Ethyl Ketone Peroxide
Batteries (NiCad and lead)	Mixed oxidisers
Caustic (Sodium hydroxide)	N-Butanol
Copper Sulphate	Nitric Acid
Degreaser	Oils (eg transmission oil)
Diisobutyl ketone	Organic peroxide Type F
Epoclean	Oxidising agent (solid)
Ethanol	Paint and paint thinners
Ethyl Acetate	Perchloroethylene/Tetrachloroethylene
Flammable Organic solvents/liquids	Pesticide
Formaldehyde	Refrigerant gases
Formalin	Shell – X55
Fuel	Sodium Aluminate
Furax (from fire fighting)	Sodium Hypochlorite
Grease/fats mixed with water	Solvent 10, 13 and 43
Gun wash	Strontium Chromate
Heavy metals including mercury	Sulphuric Acid
Hydrochloric Acid	Tars
Hydrogen Peroxide	Teric DN9
Hypochlorite solutions	Toluene
Isopropyl Alcohol	Turpentine & Turpentine substitute
Laboratory chemicals (mixed type, small amounts)	White Spirit
Light machine oil	Xylene[243]

[243] DEP file records L/230/89 Vol. 4, 27 February 2001.

APPENDIX THREE

MANAGEMENT OPTIONS FOR HAZARDOUS WASTES WITHIN WESTERN AUSTRALIA AFTER 30 JUNE 2002

TYPE OF WASTE	MANAGEMENT OPTIONS	FINAL DISPOSAL METHOD
Dry Cleaning Waste	▪ Treatment at Toxfree Kwinana: ▪ Repackaging and transport interstate by CTS, ERS and others also possible, however not currently undertaken.	Recycling or incineration interstate.
Organic Based Wastes (including Solvents, thinners, inks, dyes)	▪ Some treatment at ERS Maddington: ▪ Repackaging and transport by ERS and Toxfree to Oil to Energy in Port Headland (non-chlorinated wastes only) or interstate; ▪ CTS and others may use waste producers facilities and/or licensed dangerous goods storage facilities for repackaging and temporary storage prior to transport interstate.	Recycling in WA and interstate incineration.
Polychlorinated Biphenyls (PCB)	▪ Concentrated at Toxfree Kwinana if required: ▪ Repackaged by ERS or Toxfree for transport interstate; ▪ CTS and others may use waste producers facilities and/or licensed dangerous goods storage facilities for repackaging and temporary storage prior to transport interstate.	High temperature destruction interstate. (BCD Qld)
Pesticide Wastes	▪ Repackaged by Toxfree and ERS for transport interstate; ▪ CTS and others may use waste producers facilities and/or licensed dangerous goods storage facilities for repackaging and temporary storage prior to transport to Oil to Energy in Port Headland (non-chlorinated wastes only) or interstate.	Treatment and/or disposal interstate.
Bulk Acids and Bases (pH <2 or >12.5)	▪ Pretreatment to render them non-hazardous at waste producer's facilities then treatment at Brookdale Liquid Waste Treatment Facility(LWTF); ▪ Treatment at Western Resource Recovery, Kalgoorlie; ▪ Recycling of <45kL for use as reagents by CTS at the LTWF.	Recycling and treatment in WA.
Free Cyanide >5mg/L and hexavalent chromium above 100 mg/L	▪ Pretreatment to render them non-hazardous at waste producer's facilities; then ▪ Treatment at the LWTF.	Treatment in WA.
Contaminated Soils (including those resulting from emergencies)	▪ Treatment at Toxfree with concentrate sent interstate for total destruction; ▪ Disposal and/or temporary storage at DEP approved landfill; ▪ Bioremediation and/ or other treatment at DEP approved facilities.	Treatment in WA or interstate where possible. Disposal to Landfill.
Small packages of acids and bases (pH <2 or > 12.5)	▪ Repackaged by Toxfree and ERS for transport interstate; ▪ CTS and others may use waste producers facilities and/or licensed dangerous goods storage facilities for repackaging and temporary storage prior to transport interstate.	Recycled and treated interstate.

APPENDIX FOUR

BRIEFINGS HELD

Date	Name	Position	Organisation
27 July 2001	Klaus Braun	Risk Management Consultant	ICS Group
27 July 2001	Ray Brown	Industrial Chemist	ALCOA
27 July 2001	Assoc Prof Frank Murray	School of Environmental Science	Murdoch University of W.A.
8 August 2001	Ken Raine	Manager Pollution Prevention Division	DEP
22 August 2001	William Syme	Director	Green Enviro Technologies
22 August 2001	John Hebenton	State Manager	Lurgi Australia Pty Ltd
15 October 2001	Prof Jeffrey Spickett	Director Research Development & Graduate Studies, Division of Health Services	Curtin University of Technology
29 October 2001	Andre Stasikowski	Principal Engineer	Stass Environmental
1 February 2002	Dick Allen	Chief Executive Officer	Toxfree Solutions Limited
4 February 2002	Michelle Andrews	Business Coordinator Environmental Regulation Division	DEP
4 February 2002	Doug Hide	Section Manager	DEP
4 February 2002	Catherine Harrison	Acting Manager Licensing Branch	DEP
4 February 2002	Steven Gostlow	Environmental Officer Controlled Waste	DEP
6 February 2002	Haydn Raitt	President	Dry Cleaners Association
6 February 2002	Gavin Evans	Vice President	Dry Cleaners Association
26 February 2002	Kathy Macklin	Senior Environmental Officer	Planning & Infrastructure
26 February 2002	Paul Stephens	Statutory Planner	Planning & Infrastructure
10 April 2002	Andrew Cooper	Senior Hydrogeologist	URS Australia
10 April 2002	Marilyn Lauria	Principal Environmental Geologist	URS Australia
10 April 2002	Prof Jeffrey Spickett	Director Research Development & Graduate Studies, Division of Health Services	Curtin University of Technology
23 May 2002	Dr Ivan Botica	Special Risks Officer	FESA
30 May 2002	Melinda Lizza	Account Manager	Teris Australia Pty Ltd
19 June 2002	Tim McAuliffe	Director Environmental Regulation	DEP
19 June 2002	Alison Clark	Legal Officer	DEP
19 June 2002	Fred Tromp	Director Resource Science	DEP

SITE VISITS AND BRIEFINGS HELD

Date	Name	Position	Organisation	Site
27 July 2001	Dr Jeffrey Claflin	General Manager	Waste Control Pty Ltd	Bellevue Hazardous Waste
27 July 2001	Philip Hine	Assistant Director, Pollution Prevention	DEP	Bellevue Hazardous Waste
27 July 2001	Michael Hansen	State Manager	ERS Australia Pty Ltd	Maddington
27 July 2001	Rachel Irvine-Marshall	Technical Adviser	ERS Australia Pty Ltd	Maddington
27 July 2001	Sean Wilson	Service Manager	ERS Australia Pty Ltd	Maddington
27 July 2001	Robert Goldfinch	Branch Manager	Cleanaway	Brookdale

APPENDIX FIVE

WITNESSES TO HEARINGS HELD

Date	Witness	Position	Organisation
10 August 2001	Graeme French	Executive Officer	Environmental Protection Authority
10 August 2001	Ron Jones	Associate Member	Alliance for a Clean Environment
10 August 2001	Jane Bremmer	Secretary	Alliance for a Clean Environment
10 August 2001	Lee Bell	Secretary	Contaminated Sites Alliance
10 August 2001	John Erceg	Manager Development Services	City of Swan
10 August 2001	Patsy Molloy	Convenor	Clean Air Committee
10 August 2001	Greg Jones	Brigade Captain	Stoneville Volunteer Bushfire Brigade Inc
10 August 2001	Michael Warnock	Brigade Fire Control Officer	Stoneville Volunteer Bushfire Brigade Inc
10 August 2001	Michael Bennett	Solicitor	Environmental Defender's Office of WA (Inc)
10 August 2001	Graeme S. Dundas	Member of the Public	
10 August 2001	Charles Stewart-Robinson	President	Bellevue Residents & Ratepayers Association Inc
31 August 2001	Greg Jones	Brigade Captain	Stoneville Volunteer Bushfire Brigade Inc
31 August 2001	Michael Warnock	Brigade Fire Control Officer	Stoneville Volunteer Bushfire Brigade Inc
31 August 2001	Ron Jones	Associate Member	Alliance for a Clean Environment
31 August 2001	Rachel Irvine-Marshall	Industrial Chemist	Former Waste Control staff member
31 August 2001	Michael Hansen	WA State Manager	ERS Australia Pty Ltd
31 August 2001	Peter Di Marco	Principal Toxicologist	HDWA
31 August 2001	Michael Jackson	Director Environmental Health	HDWA
31 August 2001	Lindsay Gillam	HEAT Representative	HDWA
31 August 2001	Alison Daly	Manager Heath Outcomes Assessment	HDWA
31 August 2001	Lindsay Cuneo	Acting Director Planning Development & Special Risks	FESA
31 August 2001	Russell Stevens	District Manager	FESA
31 August 2001	John Truswell	Manager Water Resources & Special Risks	FESA
5 September 2001	Malcolm Russell	Director Explosives & Dangerous Goods Division	Department of Minerals & Petroleum Resources (formerly DME)
5 September 2001	Lawrence Lim	Senior Inspector Explosives & Dangerous Goods	Department of Minerals & Petroleum Resources (formerly DME)
5 September 2001	Dr Stephen Appleyard	Supervising Hydrogeologist	Water & Rivers Commission
5 September 2001	Dr Donald McFarlane	Director Resource Management	Water & Rivers Commission
5 September 2001	John Truswell	Manager Water Resources & Special Risks	FESA
5 September 2001	Nick Devine	Director Operations	FESA
5 September 2001	Phil Cribb	District Manager	FESA
5 September 2001	Russell Stevens	District Manager	FESA
5 September 2001	Bill Forbes	Executive Director Fire Services	FESA
5 September 2001	Kenneth MacKay	Fire-fighter Manager Communications	FESA
5 September 2001	Dr Frank Daly	Senior Toxicologist	Royal Perth Hospital
5 September 2001	Dr Jeffrey Claflin	Director	Waste Control Pty Ltd
6 September 2001	Philip Hine	Assistant Director Pollution Prevention	DEP
6 September 2001	Fred Tromp	Former Director Pollution Prevention	DEP
6 September 2001	Kenneth Raine	Manager Pollution Response	DEP
6 September 2001	Sharon Clark	Environmental Officer	DEP
6 September 2001	Michael Jackson	Director Environmental Health	HDWA
6 September 2001	Dr Peter DiMarco	Principal Toxicologist	HDWA

Date	Witness	Position	Organisation
6 September 2001	Alison Daly	Manager Health Outcomes Assessment	HDWA
6 September 2001	Lindsay Gillam	HEAT Representative	HDWA
6 September 2001	Pierina Otness	Senior Scientific Officer	HDWA
6 September 2001	Hazel Upton	Managing Physicist Radiation Health	HDWA
6 September 2001	Michael Phillips	University Lecturer	Curtin University
6 September 2001	John Erceg	Manager Development Services	City of Swan
6 September 2001	Phil Stjohn	Principal Planner	City of Swan
19 September 2001	Dr Bryan Jenkins	Former Chief Executive Officer	DEP
19 September 2001	Jim Malcolm	Director Waste Management Division	DEP
19 September 2001	Lee Ranford	Former Director General	DME
19 September 2001	Malcolm Russell	Director Explosives & Dangerous Goods Division	DME
24 October 2001	Rodney Mathers	Former Director	Waste Control Pty Ltd
7 November 2001	Dr Bryan Jenkins	Former Chief Executive Officer	DEP
15 May 2002	Hon Cheryl Edwardes	Former Minister for the Environment	DEP

APPENDIX SIX

SUBMISSIONS RECEIVED

No.	Date	Name	Position	Organisation
1	26 June 2001	Warrick Shirreff	Manager	Plastics Developments
2	3 July 2001	Graeme French	Executive Officer	Environmental Protection Authority
3	10 July 2001	John Erceg	Manager Development Services	City of Swan
4	12 July 2001	Prof Jonathan Majer	Head of Department of Environmental Biology	Curtin University
5	24 July 2001	K.M. Gordon	Member of the Public	
6	25 July 2001	Julienne Simpson	Member of the Public	
7	25 July 2001	Charles Stewart-Robinson	President	Bellevue Residents & Ratepayers Association Inc
8	25 July 2001	Mick Warnock	Acting Secretary	Stoneville Volunteer Bushfire Brigade Inc
9	26 July 2001	Royce J White	Member of the Public	
10	26 July 2001	Carol Payne	Proprietor	SPD Woodsupplies
11	27 July 2001	Michael Bennett	Solicitor	Environmental Defender's Officer
12	27 July 2001	G.S. Dundas	Member of the Public	
13	27 July 2001	Patsy Molloy	Convenor	Clean Air Committee
14	27 July 2001	Nigel Ball	Project & Sales Manager WA	Ecotech Pty Ltd
15	27 July 2001	Peter Meyrick	Health Services Manager	City of Armadale
16	27 July 2001	Dr Jeffrey K Claflin	Managing Director	Waste Control Pty Ltd
17	27 July 2001	Ray Brown	Industrial Chemist	Member of the Public
18	27 July 2001	Bob Mitchell	Chief Executive Officer	Fire & Emergency Services Authority of WA
19	30 July 2001	CM & PG Nield	Member of the Public	
20	1 August 2001	Astrid Herlihy	Member of the Public	
21	19 July 2001	J.I. Gill	Managing Director	Water Corporation
22	25 July 2001	Robert Leckie	Former employee	DME
23	31 July 2001	Tim McAuliffe	Director Environmental Regulation	DEP
24	2 August 2001	Christine Hughes	Chairperson	Guildford Association
25	3 August 2001	Klaus Braun	Principal	ICS Group
26	3 August 2001	Peter & Sophia Vlaar	Property owners	
27	6 August 2001	Jim Limerick	Director General	DME
28	6 August 2001	Barbara Dundas	Member of the Public	
29	6 August 2001	S & K Denniss	Member of the Public	
30	8 August 2001	Peter McKenzie	Manager Health Services	Town of Kwinana
31	8 August 2001	Julie Harradine	Secretary	Hazelmere Progress Assoc
32	9 August 2001	Ron Jones Jane Bremmer Lee Bell	Associate Member Chairperson Member	Alliance for a Clean Environment Contaminated Sites Alliance
33	13 August 2001	Dot Hesse	Chairperson	Kwinana Watchdog Group
34	15 August 2001	Robert Griffiths	Coordinator Environmental Planning	Department for Planning & Infrastructure
35	15 August 2001	Frank Murray	Associate Professor School of Environmental Science	Murdoch University

No.	Date	Name	Position	Organisation
36	31 August 2001	Prof Bryant Stokes	Acting Commissioner of Health	Department of Health
37	4 September 2001	Gavin Waugh	Vice President	Safety Institute of Australia WA Branch
38	17 September 2001	Rodney Mathers	Former Director	Waste Control Pty Ltd
39	18 September 2001	Chris Myson	Secretary	Glen Forrest Volunteer Bush Fire Brigade
40	16 October 2001	Barry Coupar	Member	Atlas Site Community Liaison Committee & Mirrabooka Action Group
41	3 April 2002	John Hewitson	Company Manager	Teris (Aust) Pty Ltd
42	2 May 2002	Mike Culmsee	Executive Officer	Drycleaning Institute of Australia – WA Inc.
43	23 May 2002	Graeme Browne	Principal	Bellevue Primary School

APPENDIX SEVEN

LEGISLATION & REGULATIONS

Legislation	State (or Country)
Environmental Protection Act 1986	Western Australia
Explosives and Dangerous Goods Act 1961	Western Australia
Fire Brigades Act 1942	Western Australia
Fire & Emergency Services Authority of Western Australia Act 1998	Western Australia
Health Act 1911	Western Australia
Local Government Act 1995	Western Australia
Occupational Safety and Health Act 1984	Western Australia
Radiation Safety Act 1975	Western Australia
Western Australian Planning Commission Act 1985	Western Australia
Environment Protection Act 1970	Victoria
Environment Protection Act 1997	Australian Capital Territory
Environmental Management & Pollution control Act 1994	Tasmania
Environmental Assessment Act	Northern Territory
Waste Management & Pollution Control Act 2001	Northern Territory
Envrionmentally Hazardous Chemicals Act 1985	New South Wales
Environment Protection Act 1993	South Australia
Environmental Protection Act 1994	Queensland

Regulations	State (or Country)
Dangerous Goods (Transport) (General) Regulations 1999	Western Australia
Environmental Protection Regulations 1987	Western Australia
Environmental Protection (Controlled Waste) Regulations 2001	Western Australia
Environmental Protection (Liquid Waste) Regulations 1996	Western Australia
Explosives and Dangerous Goods (Dangerous Goods Handling and Storage) Regulations 1992	Western Australia
Environmental Protection (Interim Waste) Regulation 1996	Queensland
Waste Management & Pollution Control (Administration) Regulations 1999	Northern Territory
Environment Protection (Prescribed Waste) Regulations 1998	Victoria

APPENDIX EIGHT

INTERSTATE MEETINGS HELD

Date	Name	Organisation	Place
7 March 2002	Capt. Walter Stuart State Martine Pollution controller	Transport SA	Adelaide, SA
7 March 2002	Capt. Carl Kavina Manager, Marine Environment & Safety Operations	Transport SA	Adelaide, SA
7 March 2002	Max Harvey Deputy Director	Environment Protection Agency	Adelaide, SA
7 March 2002	Kirsty Evans	Environment Protection Agency	Adelaide, SA
7 March 2002	Knut Cudaran Secretary	Environment, Resources & Development Committee	Adelaide, SA
7 March 2002	Stephen Yarwood Research Officer	Environment, Resources & Development Committee	Adelaide, SA
15 April 2002	Dr Faiz Khan Senior Principal Policy Officer Environmental Policy & Economics Division	Environmental Protection Agency	Brisbane, QLD
15 April 2002	Gary O'Connor Manager Environmental Operations	Environmental Protection Agency	Brisbane, QLD
15 April 2002	Peter Collins Operations Manager (Licensing) Environmental Operations Southern Region	Environmental Protection Agency	Brisbane, QLD
15 April 2002	Stuart Cameron Principal Environmental Officer Sustainable Industries Division	Environmental Protection Agency	Brisbane, QLD
15 April 2002	Michael Logan RACE Co-ordinator CHEM Unit	Counter Disaster & Rescue Services Departmental of Emergency Services	Brisbane, QLD
15 April 2002	Chris Maguire Area Director Major Event Planning Group	Queensland Fire & Rescue Service	Brisbane, QLD
15 April 2002	Jeff Harper Manager Safety Equipment	Queensland Fire & Rescue Service	Brisbane, QLD
15 April 2002	Rachelle Stacey Senior Research Officer	Public Works Committee Legislative Assembly	Brisbane, QLD
15 April 2002	Don Livingstone MP Chair	Public Works Committee Legislative Assembly	Brisbane, QLD
15 April 2002	Hon Kevin Lingard, MP Deputy Chair	Public Works Committee Legislative Assembly	Brisbane, QLD
15 April 2002	Barbara Stone, MP Member	Public Works Committee Legislative Assembly	Brisbane, QLD
15 April 2002	Robert Poole, MP Member	Public Works Committee Legislative Assembly	Brisbane, QLD
15 April 2002	Bob Quinn, MP Member	Public Works Committee Legislative Assembly	Brisbane, QLD
15 April 2002	Trevor Strong, MP Member	Public Works Committee Legislative Assembly	Brisbane, QLD
16 April 2002	Christopher Cornish Business Manager	Brightstar Environmental	Wollongong, NSW
16 April 2002	Damien Farrell Government & Public Affairs Executive	Brightstar Environmental	Wollongong, NSW
16 April 2002	Mark Hipgrave General Manager, Projects	Brightstar Environmental	Wollongong, NSW

Date	Name	Organisation	Place
17April 2002	Mark Gorta Director Chemicals Policy	Environmental Protection Authority	Sydney, NSW
17April 2002	Maryanne McCarthy Acting Manager Sydney Waste	Environmental Protection Authority	Sydney, NSW
17April 2002	Greg Sheehy Principal Officer Sydney Waste	Environmental Protection Authority	Sydney, NSW
17April 2002	Paul Rutherford, Manager Hazardous Waste regulation Unit	Environmental Protection Authority	Sydney, NSW
17April 2002	Robert Stefanic Senior Project Officer	Standing Committee on State Development, Legislative Council	Sydney, NSW
17April 2002	Hon Tony Kelly, MLC Chair	Standing Committee on State Development, Legislative Council	Sydney, NSW
17April 2002	Hon Henry Tsang, MLC Member	Standing Committee on State Development, Legislative Council	Sydney, NSW
18 April 2002	Bruce Dawson Manager Waste Management Unit	EPA Victoria	Melbourne, VIC
18 April 2002	Helen Tope Waste Management Unit	EPA Victoria	Melbourne, VIC
18 April 2002	Carsten Osmers Manager Operations directorate	EPA Victoria	Melbourne, VIC
18 April 2002	Adrian Simonetta Manager Dangerous Goods	Work Safe Victoria	Melbourne, VIC
18 April 2002	John Hewitson Company Manager	Teris (Aust) Pty Ltd	Dandenong, VIC
18 April 2002	Ravi Ketharanathan Plant Manager	Teris (Aust) Pty Ltd	Dandenong, VIC
18 April 2002	John Jones Quality Control Manager	Teris (Aust) Pty Ltd	Dandenong, VIC
18 April 2002	Cathy Brice Account Manager	Teris (Aust) Pty Ltd	Dandenong, VIC
19 April 2002	Brad Miles Director	Environment & Natural Resources Committee	Melbourne, VIC
19 April 2002	Graeme Stoney, MP	Environment & Natural Resources Committee	Melbourne, VIC
19 April 2002	Christine Fyffe, MP	Environment & Natural Resources Committee	Melbourne, VIC

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