

R E P O R T

Statutory Environmental Audit Wilsolve Pty Ltd Dandenong

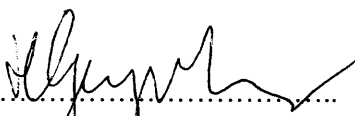
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EPAV

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pursuant to the Environment
Protection Act 1970

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1.1 Background Scope and Objectives

Wilsolve Pty Ltd (“Wilsolve”) operates a prescribed waste storage and consolidation facility at 76 Ordish Road Dandenong. Wilsolve, hold EPA Waste Discharge Licence EI 43. Wilsolve are licensed to accept a range of flammable prescribed wastes, for storage and consolidation.

Wilsolve receive off specification-packaged goods, mainly food and beverages for destruction and accept other industrial wastes at the premises. Off specification food and beverages are not subject to regulation covered in the Environment Protection (Prescribed Waste) Regulations 1998.

After an inspection by EPA officers and discussions between EPA officers and Wilsolve management it was agreed by all parties that Wilsolve would voluntarily participate in a statutory audit to be conducted by EPA officers under the direction of an environmental auditor appointed pursuant to Section 53S of the *Environment Protection Act*.

Dr Harry Grynberg, of URS Australia Pty Ltd, was engaged by Environment Protection Authority – Victoria (EPA) in his capacity as an environmental auditor appointed pursuant to Section 53S of the *Environment Protection Act 1970*, to lead an EPA team through the conduct of a statutory environmental audit pursuant to Section 53V of the *Environment Protection Act 1970*.

The following are the objectives and scope defined by the EPA.

Objective(s)

To assess the risk of any possible harm, or detriment to a segment of the environment, caused by industrial processes and activities conducted by Wilsolve Pty Ltd at their premises located at 76 Ordish Road, Dandenong.

Audit scope

Inclusions:

Assessment of the risk of an environmental hazard caused by all activities at the premises.

Assessment of compliance with the Act and subordinate instruments of all activities occurring at the premises.

It is anticipated that the hazard identification and risk assessment will broadly identify, rank and document environmental hazards in a qualitative fashion across the premises.

Exclusions:

The scope of the audit excludes assessment of:

- Activities beyond the premises boundary, including vehicle fleet operation;
- Compliance of Wilsolve’s environmental management system with ISO 14000 series;

- Compliance of Wilsolve's quality assurance system with ISO 9000 series; and
- Fire investigation (arising from 5 Feb 2004 fire)

The project brief that forms the basis for the engagement of Dr Grynberg is attached as Appendix A.

1.2 Audit Personnel and Roles.

The audit team consisted of the following personnel:

Dr Harry Grynberg	Senior Principal URS, Lead Environmental Auditor
Mr Peter Healy	EPA Environmental Audit Unit, EPA Project Manager, Audit Team Member
Mr Michael Barnes	EPA Regional Services, Audit Team Member
Mr Michael Rehfishch	EPA Land and Groundwater Unit, Audit Team Member.

The roles and responsibilities of the team members were as follows:

Leading of the audit Program	Dr Grynberg
Project Management	Peter Healy
Review of documentation	All
Participation in site inspections and collection of site information	All
Review of Licence Compliance	Michael Barnes
Review of other environmental compliance aspects	Peter Healy/ Michael Rehfishch
Dangerous Goods	Dr Grynberg
Hazard Identification and Risk Assessment	All lead by Dr Grynberg
Reporting	All with review by Dr Grynberg

A detailed description of the methodology is included in Section 3.

It was originally anticipated the Victorian Workcover Authority (VWA) would participate in the audit and provide assessment of the Dangerous Goods aspects of the audit. The VWA were subsequently unable to participate in the audit and Dr Grynberg undertook the assessment of the dangerous goods aspects of site operations.

The Environmental auditor considered the audit team members as his support team, and included Dr Adrian Bowden for specialist advice for the Risk Assessment aspects of the audit.

The auditor would also like to acknowledge the assistance of Wilsolve staff and consultants during the audit. This included Mr Clive Wilson (Managing Director Wilsolve), Mr Pat Davern (Consultant) and Mr Greg Checkley (Technical Director Wilsolve).

1.3 Audit criteria

The following are the audit criteria defined by the EPA.

- Environment Protection Act 1970;
- Industrial Waste Management Policy (Prescribed Industrial Waste);
- Industrial Waste Management Policy (Movement Controlled Wastes Between States & Territories);
- State Environment Protection Policy (Air Quality Management);
- State Environment Protection Policy (Waters of Victoria);
- State Environment Protection Policy (Prevention and Management of Contaminated Land);
- State Environment Protection Policy (Groundwaters of Victoria);
- Notifiable Chemical Order (PCB's);
- Environment Protection (Prescribed Waste) Regulations 1998;
- Environment Protection (Scheduled Premises and Exemptions) Regulations 1996;
- Environment Management Plan;
- Waste Licence EI 43;
- Works approval(s); and
- Financial Assurance

1.4 Documents Reviewed

The audit team collected and reviewed documentation from a number of sources for the purpose of the statutory audit. These included records from Wilsolve, EPA files for the site and the waste transport databases maintained by EPA. This information was used in the preparation of the audit checklists for the site inspection and was checked against operational aspects encountered during the site inspection.

Some documentation relating to dangerous goods were unavailable as they were being used by Wilsolve legal representative in relation to the February 2004 fire.

The documents reviewed are listed in Appendix B.

1.5 Audit Program

Key dates for the audit program were as follows:

Notification of Wilsolve and Request for Information	28 April 2004
On site Audit Inception meeting	30 th April 2004
Detailed site inspections by team	11, 12 May 2004
Risk Assessment workshop	21 May 2004
Draft Report	23 November 2004
Final report	17 th March 2005

2.1 Site Location

Wilsolve occupies the premises located at 76-78 Ordish Road, Dandenong. A location plan is presented in Figure 1. The premise is roughly rectangular; dimensions for current Wilsolve operations are approximately 92 metres wide and 178 metres long, (source aerial photograph). The certificate of title specifies a width along the eastern boundary at Ordish Road, of 93.12 metres, a total length of 269.02 metres along the northern boundary, and 291.11 metres along the southern boundary. The certificate of title boundaries incorporate the premises occupied by Soil Power (to the west).

The western portion of the property is occupied by Soil Power Pty Ltd that conducts composting activities on that part of the premises. Since the field investigation component of the audit, it is understood that Soil Power have ceased operations and are in receivership.

Information provided by Wilsolve identify the owners of the property as Beinn Fhada Nominees Pty Ltd (ACN 006 194 529). No other entities currently occupy the premises at this time. A copy of the certificate of title is included as Appendix C.

2.2 Surrounding Area

The premises located directly to the north, is a truck transport depot (Wettenhall Logistics). Further to the north are a number of sandblasting companies (S&T and Master Blaster). The site is bounded to the east by Ordish Road. Across Ordish Road is vacant land which is currently being developed; to the south east is a pet food manufacturer. To the south of the premises is a green waste mulching and composting operation previously occupied by Soil Power Pty Ltd but now in receivership. The land occupied by the green waste mulching and composting operation extends to the area adjacent to the western boundary of the Wilsolve premises.

Dandenong Creek is located approximately 300 metres to the west of the premises. There is a freeway easement, which follows the creek alignment; the Mitcham Frankston Freeway is to be constructed over the next few years.

The nearest residential properties are located approximately 850 m. to the west.

2.3 Zoning

The is zoned Industrial 2 zone under the Greater Dandenong Planning Scheme.

The auditors reviewed details of planning requirements of the planning scheme relevant to 76 Ordish Road Dandenong. The premises is zoned Industrial 2 Zone (IN2Z), under the Greater Dandenong Planning Scheme. The industrial 2 Zone permits the use of land within the zone for Industry, which includes the storage and distribution of goods and associated facilities. The IN2Z zoning specifically promotes the use for storage facilities that require a substantial threshold distance within the core of the zone. Sensitive land uses including residential housing and schools are prohibited within this zone. The

auditors sighted permits issued by the City of Dandenong for activities associated with 76 Ordish Road Dandenong. (See section 2.7).

The nearest areas zoned for residential dwelling is over 500m to the west.

2.4 Topography, Geology and Hydrogeology

The site is relatively flat and gently slopes to the west and east. The Cranbourne Geological Survey of Victoria Mapsheet (1:63,360) indicates the site is underlain by Quaternary age deposits of peaty clay and clay (mainly swamp deposits). The Quaternary deposits are in turn underlain by Brighton Group sediments consisting of sands, sand clays and clays.

A site assessment conducted in 1995 indicated that the surface soils were fill to 0.3 m underlain by 0.3 m of sand with clay beneath the sand, to 3 m.

A State Groundwater Database search (SGDB) was conducted to determine the use of groundwater in the area. The SGDB indicated there are 63 registered groundwater bores within a 2km radius of the site. Only three bores are registered for an extractive use (irrigation and stock and domestic use). Depth to groundwater typically ranges from 1.1 to 13 metres below ground level and on average is 5 metres below ground level. The site assessment conducted in the 1995 indicated that there was no groundwater encountered to 3 m depth.

Based on a review of groundwater quality information from the database search, groundwater quality is expected to be within Segment B as defined in the SEPP (Groundwaters of Victoria). Segment B groundwater is defined as groundwater with a background total dissolved solids level of between 1,001 and 3,500 mg/L. The protected beneficial uses as defined by the SEPP include: 'Maintenance of Ecosystems', 'Potable mineral water supply', 'Agriculture, parks and gardens', 'Stock watering', 'Industrial water use', 'Primary contact recreation' and 'Buildings and Structures'.

2.5 Site History

2.5.1 Aerial Photographs

Aerial photographs held by the Department of Sustainability and Environment "Landata archive" was examined to assist in determining the historical activities that have occurred at the premises. The photograph references and relevant observations are summarised in Table 2.1 below.

Table 2.1
Aerial Photographs

Photograph details	Observations
Project ref:7921IV3 79214, run 2, photograph number 235 Date: December 1977	Wilsolve infrastructure does not exist in 1977 - empty paddock.
Project ref:7921N16 2004, run 30, photograph number 127 & 128 Date: November 1989	Abattoir has been constructed at the premises. Employee parking area on earth to rear of the abattoir. No construction to the rear of abattoir. A tank is located on earth in the area to the rear of current existing tank farm. A roofed area is in existence in area of tank farm.
Project ref:7921N17 2072, run 27, photograph number 115 Date: July 1991	The tank on earth in area to the rear of current existing tank farm, has been removed or incorporated under shed area. The concreted and bunded class 3 flammable storage area does not exist in 1991. The drum recycling business was not operational at the premises in 1991, as the area where drum recycling activities occurred has not been developed in 1991. Miscellaneous materials starting to accumulate at the rear of the premises.
Project ref:VIC 40170 Date: 28 March 2004	Aerial photograph shows current configuration. Miscellaneous materials stored at rear of premises. Materials stored on earth along northern boundary of the premises. Photograph attached in Appendix D

2.5.2 Site History

Based upon the review of aerial photographs and anecdotal information provided by Wilsolve the following site history was developed.

Up until the late 1970s the site was undeveloped and probably used for grazing. There is some evidence of water distribution on the site possibly emanating from the area to the north which was used for wastewater disposal. A night soil depot was operated across Ordish road to the north east probably up until the 1960s.

An abattoir was constructed on the site in the late 1970s, and operated for a number of years until the business failed.

The EPA file indicates that the Dandenong Fat Company commenced operations on the site in 1990 with a works approval and planning permit being issued. The company used the existing buildings on the site. The activities which occurred included solvent recovery (including CFCs and solvent re-drumming) and “fat splitting”. A number of different entities operated on the site including Southern Drum Recyclers, Dandenong Fat Company, Wilsolve and Nolan Valley Pty Ltd.

The parts of the premises currently occupied by Wilsolve were previously occupied by a number of different legal entities that are no longer present on the site. Southern Drum Recycling Pty Ltd occupied a portion of the premises until 2001. This company was involved in the washing, storage and transport of containers that held a variety of liquid and solid prescribed industrial wastes. Part of the premises had been previously occupied by the Dandenong Fat Company Pty Ltd which was issued licence EI43 in 1990. The licence was transferred to Wilsolve in November 1998.

The Southern Drum Recycling business failed a few years ago and the activities ceased.

Wilsolve are in the process of submitting a works approval application for expanding the types of waste which can be accepted and treated at the site and the treatment processes to be conducted at the site.

2.6 Site Operations and Facilities

The site layout is shown in Figure 2. It was found during the audit that there was no up to date, current site layout and that the operations at the site had changed from those indicated in the site layout. The most recent version of the site layout is presented in Figure 2.

Wilsolve, predominantly handle 2 waste streams being:

- Industrial waste in the form of off specification or unwanted packaged liquid food and beverages and
- Prescribed waste, mostly solvents and solvent based liquids.

2.6.1 Industrial Waste

The food waste is not prescribed waste and therefore does not require waste transport certificates. Wilsolve were not able to indicate the annual quantities of food waste handled on the site, or the quantities stored at the site (eg average or maximum). Wilsolve estimated that 20-40 t/d of liquid food waste were handled in the Beverage Shed (Area B)

There are two main categories of packaged food waste:

- off specification or out of date non alcoholic drinks and other packaged food wastes e.g. mayonnaise.
- off specification or out of date alcoholic drinks.

The packaged food wastes are stored at a number of locations around the site including at the rear (west) (Plate 1) of Area F and in Area B (Beverage shed). The alcoholic wastes are stored under quarantine in Area F.

The packaged goods are separated and consolidated into solid and liquid waste streams (Plate 2). The containers are crushed utilising one of a number of mechanical shredding and crushing machines and are segregated from the liquid wastes. (Area B). The liquid waste is stored within tanks on site and either blended and reused as an animal food product (eg pig and cattle feed) or tankered off site for disposed to sewage treatment plants (eg Dutson Downs- Gippsland Water). Solid waste (eg glass, cardboard and metal containers) is separated and consolidated in bins for recycle where practicable. Solid food waste is decanted on the north side of Area E adjacent to the road way.

2.6.2 Prescribed Wastes

The prescribed waste received at the site are classified as hydrocarbon or solvent related (Class 3 or Class 6 materials) in the EPA Waste Discharge Licence (refer to Section 4).

The liquid prescribed wastes are unloaded in Area A (Plate 3), a bunded covered area and then transferred to the storage areas. The main storage area is Area I, a bunded but uncovered storage area. Chlorinated wastes are stored in Area D. Some solid prescribed wastes are unloaded to the north of Area J, in an unsealed unbunded area.

The prescribed waste streams are sampled upon receipt; analyses are conducted either on site or at an associated facility (CRG at Bayswater). The wastes are stored or consolidated on site; there is no treatment of these wastes on site. The main activity is the consolidation of small quantities of waste into eg 205L drums through open air decanting in Area I. Waste containers are washed, crushed, shredded and sent to scrap metal recycling. This activity occurs in the area to the west of Area E and occurred in Area K. Operations ceased in Area K after a fire in February 2004.

Wilsolve, depending upon demand and quality, either utilise waste solvent as a feed stream at the associated waste treatment facility located in Bayswater (CRG), on sell material that has some value, or dispose of the waste to other waste treatment facilities (eg Teris).

Wilsolve also import and sell a specialty solvent blend utilised by the printing industry. This material (Solvit QD) is not classified as a dangerous goods. This involves storage of the solvent, decanting and mixing the material to produce a product blend which is sold. The storage and blending is conducted in Area F.

2.6.3 Other Aspects

Wastewater and stormwater from operational areas is retained on site and is tankered to other waste treatment facilities. There is a significant quantity of empty drums and containers stored around the site, particularly in Area J, to the north of Area J (on unbunded and unsealed areas), to the rear (west of Area F and in the building to the west of Area E (“Drum store and work area”).

There are a large number of obsolete equipment items owned by Wilsolve which are stored to the north of the “Drum store and work area” (Plate 4) and also to the north of Area F, in unpaved open areas.

Physical infrastructure includes a tank farm, banded storage areas, mechanical workshop, operations office where the business office and reception is located, and a laboratory (Plate 5) located in a demountable hut on the premises.

2.7 Site Licences, Permits and Notices

Wilsolve hold licence EI43 issued by the EPA on 5 July 1990 to store and handle prescribed industrial wastes at the premises, subject to conditions. (See Appendix F)

Wilsolve hold a licence, issued by Department of Human Services, on 5 January 2004 ‘licence to Manufacture, Sell or Supply by wholesale poisons or controlled substances (other than schedule 8 or 9 poisons)’. The poisons or controlled substances include Dichloromethane.

Wilsolve do not hold a trade waste agreement or discharge agreement with South East Water. All liquid waste generated at the site must be transported off site by road transport other than for the on site sewer and wash water from the toilets and bathrooms that is discharged to sewer.

Wilsolve provided copies of the following planning permits issued by City of Greater Dandenong:

Table 2.2
Planning Permits Issues

Item	Date
Materials recycling, waste oil & ammonia, waste water treatment, decant aerosol , food and beverage, package decanting, fuel blending	13 August 2003
Drum washing	30 December 1997
Drum laundering plant	3 June 1997
Carport	14 December 1994
Drum wash extension	29 July 1993
Fat processing & Cold Storage with Plan	16 May 1989

3.1 Introduction

The key objective, as outlined in Section 1.1, was to assess the risk of any possible harm, or detriment to a segment of the environment, caused by industrial processes and activities conducted by Wilsolve Pty Ltd at their premises located at 76 Ordish Road, Dandenong. This was addressed through:

- Assessment of the risk of an environmental hazard caused by all activities at the premises.
- Assessment of compliance with the Environment Protection Act and subordinate instruments, for all activities occurring at the premises.

The segment of the environment was defined as the site and immediate surrounds which could be impacted by the activities on site, while taking into account the exclusions included in Section 1.1. The audit was conducted in April-May 2004 and addresses operation at that time.

The compliance assessment was based on the audit criteria included in Section 1.3.

The specific elements that were addressed, and the reference used for defining the beneficial uses are listed below:

Water Surface and Groundwater	SEPP Waters of Victoria, SEPP Groundwaters of Victoria
Atmosphere	SEPP Air Quality Management
Land	SEPP Prevention and Management of Contaminated Land
Odour	SEPP Air Quality Management
Fish and Wildlife	SEPP Waters of Victoria

For the purpose of this audit noise, vegetation, and aesthetics were not assessed other than as discussed as follows.

It was decided not to address noise issues due to the location of the site and the nature of the activities; it was considered unlikely that there would be compliance issues or environmental hazards.

Similarly with respect to vegetation, fish and wildlife, and aesthetics, due to the degraded nature of the area and the industrial development which has occurred, it was considered unlikely that the site activities would result in non compliance issues or environmental hazards. The exception to this being to the extent that the SEPPs Waters of Victoria Groundwaters of Victoria, and Prevention and Management of Contaminated Land identify protection of vegetation, fish or wildlife as beneficial uses.

Dangerous Goods aspects of the operations were included in the audit as the licence required compliance with dangerous goods legislation. The storage and management of Class 3 and Class 6 dangerous goods gives rise to potential risks to the environment.

3.2 Audit Methodology

3.2.1 Audit Inception

Wilsolve were notified of the scope, schedule and objectives of the audit, together with a request for documents and other information to be provided for review before the site inspections. A Preliminary meeting was held at the site with attendance by the environmental auditor, the audit team, VWA and site staff and management. The meeting addressed the scope of the audit, methodology and timing. Wilsolve provided an overview of the site activities and an initial familiarisation inspection was conducted.

3.2.2 Environmental Records Review

The audit team members reviewed readily available, reasonably ascertainable history and records concerning environmental, planning, geological, and hydro geological conditions of the site. Documents provided by Wilsolve including Process flow diagrams, stormwater plans and engineering drawings were reviewed. Applicable environmental and planning permits and environmental audit and impact assessment reports prepared for the site were reviewed to check their compliance with the current legislative requirements, including State Environment Protection Policies, Industrial Waste Minimisation Policies and the Environment Protection Act and subordinate legislation.

Past audit reports and recommendations were sought (none were available for review) prior to the site reconnaissance, to assist in ensuring that relevant issues were addressed during the site walkover and site interviews.

3.2.3 Pre-inspection Workshop

On the basis of the review of available records and the initial inspection, a half day workshop was held in which each team member presented the results of their identification of environmental issues. A preliminary environmental hazard identification and risk ranking was prepared using the AS/NZ 4360 1999 Risk Management methodology. This is presented in Table 3.1

The environmental hazard identification and risk ranking together with the identified data gaps formed part of the focus of the site inspections and interviews.

3.2.4 Site Inspections

The environmental auditor and the team spent two full days on site confirming the findings of the document review, identifying on the ground issues, interviewing staff, reviewing records, observing operations, assessing identified environmental hazards and identifying and assessing any other environmental hazards. A Photographic record was made.

The team conducted a thorough site inspection, including any and all possibilities for waste discharge from the site. The integrity of bunding and controls points were inspected and the layout of the site's stormwater system inspected. Potential areas where spills could enter drains with rainfall run-off were also assessed, as well as storage risks on site. Bunding inspections also considered the materials of construction (compatibility with material being stored), and capacity as well as integrity and control points as outlined in the proposal.

The auditors also observed the conditions of the premises, and checked the presence of waste stored or disposed on site, current and past uses of the sites, storage of goods, signs of chemical spills on the ground, emissions of dust and odour, operational noise, discharge of effluent, drainage, and waste handling practices.

One of the audit team conducted a number of subsequent inspections to address unresolved issues.

Table 3.1
Identification of Potential Environmental Hazard

Potential Hazard	Potential Cause	Potential Impacts
Discharge of chemicals/wastes to surface waters	- A chemical spill in an unbunded area, during manual movements. - A leaking vessel containing chemicals stored outside a bunded area. - Oily discharge from the compressor from routine operation. - Rainfall washing chemical residues from external surfaces of contaminated containers or equipment located outside a bunded area. - Operator error resulting in first flush system discharging to the stormwater system. - Inappropriate storage of dangerous goods resulting in a discharge of wastes to surface waters - Loss of containment as a consequence of fire fighting activities	Increased levels of chemical contamination in surface waters, causing an adverse impact upon waterway and reduction in beneficial uses as specified in the <i>State Environment Protection Policy (Waters of Victoria) gazetted 4 June 2003</i>
Contamination of soil from chemical/waste releases	- Historical activities of drum washing, and the abattoirs. - Historical activities of chemical handling by Wilsolve	Increased levels of chemical contamination of the land resulting in loss of current and future beneficial uses of the land environment, as specified in State Environment Protection Policy (Prevention and Management of Contamination of Land)

Potential Hazard	Potential Cause	Potential Impacts
Contamination of groundwater from chemical/waste releases	- Historical use of underground storage tanks (subsequently removed). - Loss of containment of chlorinated organics (whether by spill, leak or other) and the ability of the secondary containment to hold the material. - Integrity of secondary containment (bundled areas, exhibited cracking and corrosion) - Unknown condition of sumps	Increased levels of chemical contamination of the groundwater resulting in loss of current and future beneficial uses of the groundwater environment, as specified in <i>State Environment Protection Policy (Groundwaters of Victoria)</i>
Discharge of pollutants to the air environment	- Solvent emissions during decanting - Emission of odours from chemicals or other wastes - Emissions to the atmosphere as a consequence of an incident (uncontrolled reaction, fire or explosion) at the premises	Increased levels of chemical contamination/odour in the local air environment resulting in reduction air quality, potential adverse health impacts and loss or reduction in beneficial uses specified in State Environment Protection Policy (Air Quality Management)

3.3 Risk Assessment

3.3.1 Introduction

The auditors implemented a risk-based approach to identify the risk of any possible harm or detriment to segments of the environment caused by any industrial process or activity, as specified by Section 53V of the Environment Protection Act 1970.

The auditors designed this environmental audit methodology in line with risk management practices referred to in the Australian Standard (Risk Management AS/NZS 4360:1999).

The risk assessment provided the auditors with a tool with which to prioritise activities at the site and develop recommendations for improvements.

3.3.2 Hazard Identification

The auditors, in a workshop format, reviewed the activities on site, and developed a table of environmental hazards associated with these activities. The list of hazards is included in Appendix E.

Hazards were issues which had the potential to or are causing a risk to the environment.

3.3.3 Risk Classification

The hazards were ranked and prioritised using the following likelihood, consequence and risk classification criteria.

Methodology

The adopted process involves the assignment of a likelihood weighting from A to E and a consequence rating from 1 to 5 to each risk, based on the weighting's descriptions. Likelihood and consequence ratings applied in the risk assessment process, tailored for the site and the type of risks, are as follows:

Table 3.2
Range of likelihood values

		Likelihood	Description
A	Almost Certain	Several times per year to monthly (>1)	The event is expected to occur in most circumstances
B	Likely	Annually (1)	The event will probably occur in most circumstances
C	Possible	Every 5 – 10 years (0.1)	The event should occur at some time
D	Unlikely	Every 50 years (0.02)	The event could occur at some time
E	Rare	Every 100 years (0.01)	The event may occur only in exceptional circumstances

Table 3.3
Consequence Weighting

	ENVIRONMENTAL EFFECTS
1 INSIGNIFICANT	Low Environmental Impact No observable effect to plants or animals. No requirement to inform authorities. No visible discharges. No offsite impact
2 MINOR	Minor Environmental Impact Minor effects on plants and animals. Required to inform authorities. May involve a clean-up. Visible discharge observed. No off site impact
3 MODERATE	Moderate Environmental Impact Moderate effects on plants and animals. Physical impacts on the public. Required to report to authorities. Off site impact Extensive clean-up may ensue.
4 MAJOR	Major Release Major effects on plants and animals. Substantial clean-up costs. Long term impacts offsite Personal and business prosecution possible.
5 CRITICAL	Extreme Event Permanent effects on the environment on and off site. Potential loss of licence to operate. Prosecution of company and directors possible.

The combination of the likelihood and consequence ratings is then compared to a qualitative risk analysis matrix, providing an indication of the magnitude of consequence (ranging from low to priority).

The adopted risk level matrix is as follows:

Table 3.4
Risk Level

Likelihood	Consequence				
	1 – Insignificant	2 – Minor	3 – Moderate	4 – Major	5 – Critical
A – Almost	M	H	P	P	P
B – Likely	M	M	H	P	P
C – Possible	L	M	H	P	P
D – Unlikely	L	L	M	H	P
E – Rare	L	L	M	H	H

(P) Priority – requires immediate remedial planning & action.

(H) High – requires remedial planning & action.

(M) Moderate – address via new procedures, modification of existing practices and training.

(L) Low – no formal requirement for further action, unless possible escalation of risk.

When reviewing the controls in place to mitigate hazards, the audit adopted the following order of preference for risk mitigation and management:

- Hazard elimination, by process or product modification/change,
- Physical design to minimise potential for hazard to be realised, through reduction in likelihood of the hazard occurring, and impact of the hazard, and
- Procedural measures to manage risks.
- Legislative requirements, environmental guidelines, and knowledge of acceptable engineering practices were also utilised to determine the adequacy of the controls in place.

The results of the risk assessment and prioritisation are presented in Appendix E: Tables for Risk Assessment and Prioritisation, and discussed in Section 5.

3.4 Compliance Assessment

A complete compliance assessment of the site's extent of compliance against its waste discharge licence, as well as any applicable environmental legislation, policy, regulation was undertaken. Any further investigations necessary would be highlighted, non-compliance issues raised and any measures to meet compliance requirements recommended. These are discussed in Section 4.

4.1 Introduction

In considering the risk to the beneficial uses from the activities conducted at the site, the auditor determined compliance of the site operations during the site inspection with the Waste Discharge Licence EI43. A copy of the licence is attached in Appendix F. The auditor also assessed the site against relevant legislation to ensure the current Waste Discharge Licence reflects these requirements. A summary of the legislative compliance is presented in Appendix H.

A summary of the licence compliance findings is included in Appendix G

4.2 EPA Licence

The Environment Protection Act 1970 (EP Act) Section 20 (3A) requires the occupier of a premises treating or storing prescribed industrial waste, referred to in the Act as a Schedule 4 premises, to hold a licence under the EP Act.

Section 19A (3A) of the Act prohibits the alteration of the method of operation of those works or the alteration of the types of prescribed waste being reprocessed, treated stored or disposed of the premises without first obtaining works approval and subsequently licence amendment.

Wilsolve hold EPA Waste Discharge Licence EI 43 to store and handle prescribed industrial wastes at premises situated at 76 – 78 Ordish Road Dandenong. The licence was issued on 5 July 1990 and last amended on 27 November 1998. A copy of the waste discharge licence is attached in Appendix F. Activities at the premises were assessed against the requirements of the licence. The requirements of the licence were also compared against objectives of the Act and policies. The complete list of pertinent observations is contained in Appendix G.

The auditors identified:

- The licence is of an older format, having been last amended in 1998. As a consequence several objectives contained within policies that have been substantially amended or have been made and come into force since that date, have not been incorporated into the licence.
- Many of the licence conditions are irrelevant to the current operation of the premises as they relate to the former fat processing/ fish oil operations at the premises, which no longer occur. Conditions that are no longer applicable are listed in Appendix G.
- The plan of premises attached to the licence does not reflect the locations where specific activities related to prescribed industrial wastes are undertaken. Many licence conditions refer to building or areas where the nomenclature has changed. The plan of premises provided by Wilsolve (Figure 2) assigns titles to specific areas and buildings, which do not match those on the licence or in the description provided during the audit inspection.

RECOMMENDATION

The Authority should amend the licence to remove redundant conditions, reflect current operations, enshrine current policy objective, and attach an updated plan of premises.

4.2 Waste Management

The objective(s) of *Industrial Waste Management Policy (Prescribed Industrial Waste)*, IWMP (PIW) includes, protection of human health, amenity and environment from hazards posed by PIW, minimising the generation of PIW, and the elimination of the disposal of PIW to landfill. Clause 8(2) of the policy specifies that the Authority will employ a coordinated range of measures to achieve policy objectives and intent including, the use of statutory tools.

4.2.1 Waste Acceptance

Wilsolve accept a range of flammable prescribed wastes, for storage and consolidation at the premises. The prescribed waste types that reflect the descriptors contained in the existing licence or received and treated at CRG, a sister site to that operated by Wilsolve, are presented in Table 4.1. Wilsolve also receive off specification-packaged goods, mainly food and beverages for destruction, and accept other industrial wastes at the premises.

- a) Wilsolve have a dedicated loading/ unloading area (Area A). The entire area is located under cover, with the base constructed of concrete and sloped to a blind sump. This dedicated lay down area is utilised for prescribed wastes accepted at the premises only. Waste packaged goods of food and beverages are unloaded within the grounds. The auditors did not observe this activity.
- b) The facility has no weighbridge to determine the total weight of the waste unloaded. During the inspection the auditors saw a 1mx1m area flat pan scale near the reception office. This equipment was not seen being used during the period of the inspection by the auditors.
- c) The licence issued to Wilsolve places requirements upon the receipt and tracking of PIW accepted at the premises.

The EPA licence permits the following prescribed wastes to be accepted at the premises subject to conditions:

Oils of animal or vegetable origin;	Fats of animal or vegetable origin;
Tallow of animal or vegetable origin;	Soaps;
Glycerine;	Chloro-fluorocarbons containing solvents
Solvents, including chlorinated aliphatic hydrocarbons.	Grease (Mineral Grease) 16 m ³ max

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SECTION 4

Table 4.1
Acceptable Wastes and Treatment Methods

Waste Code	EPA Publication 395 description	Prescribed waste type	Treatment method(s)	Existing licence (descriptor)
F120	Solvent-based wastes (FP>60.5°C, closed-cup test or FP>65.6°C open-cup test) from the production, formulation and use of inks, dyes, pigments, paints, lacquers and varnish, NOS	Waste from the production formulation and use of inks, dyes, pigments, paints lacquers and varnish (not otherwise specified)	Storage and consolidation	Solvents including chlorinated aliphatic hydrocarbons
F130	Solvent-based wastes (FP>60.5°C, closed-cup test or FP>65.6°C open-cup test) from the production, formulation and use of resins, latex, plasticisers, glues and adhesives (NOS) excluding solid inert polymeric materials	Waste from the production, formulation and use of resins, latex plasticisers, glues and adhesives (n.o.s.) excluding solid inert polymeric materials	Storage and consolidation	Solvents including chlorinated aliphatic hydrocarbons
F140	Aqueous-based wastes (flammable vapours) (FP<60.5°C, closed-cup test or FP<65.6°C open-cup test) from the production, formulation and use of inks, dyes, pigments, paints, lacquers and varnish, NOS	Waste from the production formulation and use of inks, dyes, pigments, paints lacquers and varnish (not otherwise specified)	Storage and consolidation	A waste stream treated by CRG

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SECTION 4

Waste Code	EPA Publication 395 description	Prescribed waste type	Treatment method(s)	Existing licence (descriptor)
F160	Solvent-based wastes (FP<60.5°C, closed-cup test or FP<65.6°C open-cup test) from the production, formulation and use of inks, dyes, pigments, paints, lacquers and varnish, NOS	Waste from the production formulation and use of inks, dyes, pigments, paints lacquers and varnish (not otherwise specified)	Storage and consolidation	Solvents including chlorinated aliphatic hydrocarbons
F170	Solvent-based wastes (FP<60.5°C, closed-cup test or FP<65.6°C open-cup test) from the production, formulation and use of resins, latex, plasticisers, glues and adhesives (NOS) excluding solid inert polymeric materials	Waste from the production, formulation and use of resins, latex plasticisers, glues and adhesives (n.o.s.) excluding solid inert polymeric materials	Storage and consolidation	Solvents including chlorinated aliphatic hydrocarbons
F180	Paint Residues N.O.S.	Waste from the production, formulation and use of inks, dyes, pigments, paints lacquers and varnish (n.o.s.)	Storage and consolidation	A waste stream generated by CRG, during reprocessing of spent solvents
G100	Ethers n.o.s.	Organic Solvents (excluding halogenated solvents)	Storage and consolidation	Solvents including chlorinated aliphatic hydrocarbons
G110	Non halogenated solvents (FP>60.5°C,	Organic Solvents (excluding halogenated	Storage and	Solvents including chlorinated aliphatic

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SECTION 4

Waste Code	EPA Publication 395 description	Prescribed waste type	Treatment method(s)	Existing licence (descriptor)
	closed-cup test or FP>65.6°C open-cup test) (NOS) (combustible)	solvents)	consolidation	hydrocarbons
G120	Non halogenated solvents (FP<60.5°C, closed-cup test or FP<65.6°C open-cup test) (NOS) (Flammable)	Organic Solvents (excluding halogenated solvents)	Storage and consolidation	Solvents including chlorinated aliphatic hydrocarbons
G130	Halogenated solvents (FP>60.5°C, closed-cup test or FP>65.6°C open-cup test) (NOS) (combustible)	Halogenated Organic Solvents	Storage and consolidation	Solvents including chlorinated aliphatic hydrocarbons
G140	Halogenated solvents (FP<60.5°C, closed-cup test or FP<65.6°C open-cup test) (NOS) (Flammable)	Halogenated Organic Solvents	Storage and consolidation	Solvents including chlorinated aliphatic hydrocarbons
G150	Halogenated solvents, NOS (Non-combustible/non flammable vapours)	Halogenated Organic Solvents	Storage and consolidation	Solvents including chlorinated aliphatic hydrocarbons
G160	Wastes from the production, formulation and	Organic Solvents (excluding halogenated	Storage and	Solvents including chlorinated aliphatic

Compliance Assessment

SECTION 4

Waste Code	EPA Publication 395 description	Prescribed waste type	Treatment method(s)	Existing licence (descriptor)
	use of organic solvents, NOS	solvents)	consolidation	hydrocarbons
G170	Solvent Recovery Residues	Waste tarry residues arising from refining, distillation and pyrolytic treatment	Storage	Solvents including chlorinated aliphatic hydrocarbons
K150	Vegetable oils and derivatives	Animal and vegetable oils and derivatives	Storage and consolidation	Tallow of animal or vegetable origin
K170	Animal oils and derivatives (eg. Tallow)			Oils of animal or vegetable origin, fats of animal or vegetable origin, Vegetable oils and derivatives, Glycerine Tallow of animal or vegetable origin
J100	Waste Oils unfit for Original intended Use	Oils, hydrocarbons, emulsions	Storage and consolidation	Grease(mineral greases solid at 20 °C and 760mmHg, derived from straight chain hydrocarbons only)
M160	Halogenated chemicals (not otherwise	Halogenated organic Chemicals (not	Storage and	Chlorofluorocarbons containing

Compliance Assessment

SECTION 4

Waste Code	EPA Publication 395 description	Prescribed waste type	Treatment method(s)	Existing licence (descriptor)
	specified)	otherwise specified)	consolidation	solvents
M250	Detergents and surface active agents (surfactants)	Detergents and surface active agents (surfactants)	Storage and consolidation	Soaps

Wilsolve do not require an EPA licence to accept and handle off specification food and beverages, which are an industrial waste, but not a prescribed waste and are not subject to regulation covered in the *Environment Protection (Prescribed Waste) Regulations 1998*.

Wilsolve stock and supply the printing industry with a specialist solvent with the trade name Solvit QD that is packaged on the premises. The material is stored in a tank located in building in Area K. A material safety data sheet of the product was produced for the auditors (see Appendix I). Spent Solvit QD, a waste from the production, formulation and use of inks, dyes, pigments, paints lacquers and vanish is returned to Wilsolve as a prescribed waste and reprocessed.

Wilsolve send waste solvents to and receive product and solvent wastes from an associated company CRG Chemical Refining Group Pty Ltd located in Bayswater. CRG have distillation facilities to recover the solvent from the contaminants. Mr Clive Wilson a director of Wilsolve is also a director of CRG Chemical Refining Group Pty Ltd. The companies share resources such as laboratory staff and equipment.

A variety of containers containing prescribed waste are received and handled at the premises, including 200L metal drums both open and sealed head, intermediate bulk containers (IBC), 20L metal and plastic drums, 200L reinforced cardboard containers holding food residues, small plastic containers, metal skips and others.

During the site inspection of 11 and 12 May 2004 the auditors observed waste containers being unloaded in the loading/unloading area identified as 'Truck unloading bay Area A' on the plan of premises. During the two days of the site visits the same drums of waste remained in the loading/unloading area. The extended storage of prescribed waste in the acceptance area is not considered good practice and contravenes dangerous goods regulations (Table 4.5).

A number of containers held at the premises had been labelled by Wilsolve with characteristic plastic labels some were sprayed painted with letters designating their intended disposal, and others had identification from the waste originator.

A number of waste containers exhibited no labelling identifying as to where they originated, or what they contained. Some had letters sprayed on the side, either partially or fully such as T/T or N. (licence non compliance)

The auditors observed an IBC containing a white liquid placed inside the metal shed located in Area G on the plan of premise. No label or identifying spray painted letters could be seen on the container. Mr Wilson upon request was unable to provide information on what the IBC contained. (licence non compliance)

The auditors observed a container, which held material bore a poison label with 'Vanadium pentoxide' on the label. Another drum containing material bore a label 'MDI'. Neither of these wastes is permitted to be received by Wilsolve's EPA licence.

The auditors reviewed the waste transport certificates for wastes accepted at the premises over the 11th and 12th of May 2004. The completed certificates identified the following waste streams being Solvent

Wastes, Solvent And Paint, Solvents And Rags From Production And Use Of Inks, Dyes, Pigments, Paints Lacquers And Varnish as being transported to and accepted at Wilsolve. In addition for the period 1 July 2003 to 30 April 2004) documentation identifying solvent recovery residues, heating oil, containers with residues of fibreglass, rags, waste paint, and surfactants, wash waters, cyanide containing wastes, Nickel wastes, acids, chrome containing wastes indicated acceptance at the premises, in contravention of the licence.

The waste descriptors in the Wilsolve licence are not consistent with the waste types specified in the Environment Protection (Prescribed Waste) Regulations 1998, nor do they correspond to the waste categories and descriptions in the EPA publication 395 'Instructions for Completion of Waste transport certificates'.

The inconsistency between the descriptor of prescribed waste streams identified in the EPA publication 395b, the regulation and the licence has the potential to cause confusion at Wilsolve as to what waste streams are permitted to be received, as they will not match descriptors on the transport certificates.

A number of non compliances with the licenced are described above and summarised in Appendix G.

RECOMMENDATION:

Wilsolve must organise the removal and appropriate disposal as soon as possible of all prescribed industrial wastes not permitted in the licence EI34.

Wilsolve must ensure only prescribed waste streams permitted by the licence are accepted at the premises. The development and implementation of a management or work procedure should address this.

THE EPA should:

- *Amend the licence to reconcile the prescribed waste types specified in the regulation and EPA guidance document with the prescribed waste types permitted in the licence.*
- *Include solvent recovery residues, paint residues, and aqueous-based wastes (flammable vapours) (FP<60.5°C, closed-cup test or FP<65.6°C open-cup test) from the production, formulation and use of inks, dyes, pigments, paints, lacquers and varnish, NOS as a permitted waste stream in the licence given it is consistent with the waste streams processed or waste generated from solvent recovery operations at CRG.*
- *Limit the permitted treatment methods to storage and consolidation only.*

4.2.2 Management systems

The auditors reviewed documents provided by Wilsolve that relate to waste acceptance procedures being:

- 'Standard Operating Procedure Number 3C unloading of flatbed vehicles for incoming material', and
- 'Standard Operating Procedure Number 3C unloading of flatbed vehicles – off site'.

-
- SOP Number 5 Assessment and distribution of incoming materials arriving on FT trucks.

These procedures do not require any verification by Wilsolve personnel:

- of the wastes received against the information provided by the waste generator or waste transporter;
or
- that the waste received is permitted by the EPA licence to be accepted at the premises

The procedures state all unloading will take place in the designated unloading bay (see Area Plan A). Mr Wilson informed the auditors that some wastes are unloaded at the raised platform to the north of Area I.

The procedure for unloading of flat bed vehicles for incoming material specifies that the paperwork is provided by the driver of the transport vehicle to the 'office'. The document goes on to state the material is unloaded by the fork lift driver.

SOP Number 5 addresses where materials entering site are to be stored, the SOP would benefit from instructions on checking for and corrective actions to address drum integrity, leaks and corrosion.

No procedures were provided for the receipt of other waste streams accepted at the premises.

RECOMMENDATION

Wilsolve should review the procedures to ensure

- *Documentation provided by the client or transporter accurately describes material delivered, and that the material is permitted to be received.*
- *Ensure procedures reflect operations, either incorporate additional area(s) within procedure(s) or police/prevent unloading from occurring in un authorised areas.*
- *All wastes accepted at the premises including industrial wastes, are incorporated in the procedures.*
- *Wilsolve keep records of waste received at the premises. The information retained by Wilsolve is not in a form that permits Wilsolve to readily identify the amount of waste at the premises, its location or type.*

4.2.3 Sampling and Analysis

Wilsolve have a small dedicated laboratory available for the analysis of waste streams at the premises. The laboratory includes a gas chromatograph. The laboratory is utilised for internal work only, which includes analysis for CRG. The laboratory is not NATA approved for the sampling or analysis conducted.

Wilsolve's technical manager Mr Greg Checkley oversees the sampling and analysis. Mr Checkley advised the auditors that he is tertiary qualified. Mr Checkley has worked in this capacity for at least 2 years. The auditors did not seek documentation to verify his credentials.

The auditors reviewed documents provided by Wilsolve that relate to waste sampling and testing procedures being:

- ‘Standard operating procedure Number 10 Sampling of Incoming Material’ ;
- ‘Standard operating procedure Number 11 Testing of Incoming Material’; and
- Standard operating Procedure Number 16 Accessing Acceptance of a waste line or unused material for disposal from a new customer.

These documents state that their purposes are to describe sampling and testing procedures for incoming material respectively.

The procedure states in any given consignment a representative number of samples will be taken. No instruction is provided as to how long these samples are to be maintained other than for materials sent to CRG. Nor is there any instruction for when these samples must be taken. During the inspection no samples were seen to have been collected from the solvent sludge containers unloaded in the Area A of the truck unloading area.

The procedure specifies that a sample shall be collected from every consignment.

Document SOP 11 states “a full identification 1-12 (parameters) is required with an unknown material”. This document does not define an unknown material.

Document SOP 16 does not specify if the samples must be retained, nor where the information must be recorded or what action to take if the analysis indicates the material is not as expected or is contaminated with an unacceptable waste.

The procedure does require confirmatory testing for waste streams from known customers or from new customers whose streams are known. There is no assurance that wastes received at the premises for potential re use is not contaminated.

The auditors are aware of a situation (at other sites) in which samples of oily water mixtures and industrial wash waters collected from other scheduled premises contained unexpected contaminants being significant quantities of dichloromethane. This has posed increased risks for schedule 4 operators who heat waste oil/water mixtures to separate out the different components. This confirms the importance of characterising received waste streams.

RECOMMENDATION

Wilsolve review and implement their standard operating procedures

- *to better characterise incoming waste streams, and*
- *ensures representative samples are collected and retained from all ‘loads’ of waste for a period of at least two months such that the consignment from where the sample originated can be located or that the sample for a particular load can be obtained from storage on the premises.*

The Wilsolve licence has no requirements to undertake identifying analysis of incoming or outgoing waste streams. Schedule 4 licences have as a matter of routine, requirements to undertake this type of sampling and analysis.

RECOMMENDATION

The Authority amends the licence to require representative sampling and identifying analysis of all incoming loads and outgoing loads of waste and product.

4.2.4 Storage and Handling

Issues relating to the Dangerous goods regulations are also discussed in section 4.7.

The wastes once accepted at the premises are segregated and stored as per dangerous goods class code. The prescribed wastes are generally located in secure concrete bunded areas, located outside. The class 6 store is located within a shed, the tank farm is roofed, and the prescribed waste unloading bay is also roofed. (Area A)

The site contains no infrastructure to treat any of the solvent wastes brought onto the premises; all waste treatment is conducted at CRG.

There are a number of machines designed to shred and separate a variety of packaging materials.

There are no facilities in any of the enclosed buildings to collect the ambient air, nor to disperse vapours through an operating exhaust stack or capture emissions with a pollution control device such as carbon filter.

During the inspection, Mr Wilson identified an area, which on the plan of premises is identified as 'drum storage area' where Mr Wilson informed the team that containers are washed using high-pressure hoses. During the inspection, the area held a raised platform. The bund in this area was found to have a hole and the area of ground outside the bund around this hole was found to be damp and with free standing liquid. Staff took steps to seal the hole with cement when the hole was located. Based on this observation it is likely that wastewater was discharged to stormwater and land, a non-compliance with the licence. (Plate 6)

For material other than Solvit QD, it was unclear how material such as recovered solvent, or for example methylene chloride identified as being fit for reuse was separated from other waste streams and identified as a product. Mr Wilson subsequently advised that these materials were stored separately.

Wilsolve provided labelling utilised at the premises. Labels provided by Wilsolve identified material as a product and fit for reuse.

RECOMMENDATION:

Wilsolve set aside and signpost product areas to ensure they are isolated from waste areas, to minimise the risk of material unfit for its intended use being delivered to and handled by third party.

Wilsolve prepare and implement procedures to ensure product material is clearly labelled and segregated from the waste.

The auditors reviewed documents provided by Wilsolve that relate to prescribed waste storage and handling procedures being:

- ‘Standard operating procedure Number 6B Operation of Pressure washing equipment’.

This document refers to a ‘sludge bin’, which was not observed during the inspection.

The procedure provides no instruction on the acceptable reuse, recycling and disposal of containers contaminated with prescribed industrial wastes.

EPA publication 344.1 ‘Transport and Management of Used Containers’ provides guidance on container reuse and disposal.

RECOMMENDATION

Wilsolve prepare and implement a standard operating procedure, for the reuse and disposal of all waste containers generated on the premises, this procedure should be consistent with the EPA guideline.

The EPA licence places no limit upon the maximum storage capacity of prescribed waste that the plant is capable of holding while still meeting all requirements of the bunding guidelines and Dangerous Goods legislation. The auditor’s assessment of the theoretical maximum storage capacity of waste and product based upon the existing “bund areas” and dangerous goods requirement is summarised in Table 4.2. The estimates include storage of other wastes eg food wastes.

Mr Clive Wilson was unable to provide the auditors with an inventory upon request of the total waste on site and a breakdown of individual waste types.

The auditors are of the opinion that the amount of waste stored on site at any time should be minimised, as:

- The value of financial assurance levied against a schedule 4 licence by the EPA is a function of the type and quantity of prescribed waste available to be stored at the premises.
- A large stockpile of wastes represents a potential liability to EPA and the state of Victoria, in terms of cleanup costs, should Wilsolve become insolvent.

The EPA amends the Wilsolve licence to limit individual waste streams to plant storage capacities determined above.

Table 4.2
Dangerous Goods and Waste Storage

Storage Area	Dangerous Goods – limit (Inventory in 1997 Manifest undated)	Bunding guideline limit*	Inventory May 2004
Area I Solvent (class 3) prescribed waste drum storage area (Plate 7,8)	44,000 L(max)	Area: 400 m ² Theoretical capacity 864,000 L	112,000 L
Area D Chlorinated Solvent (class 6) prescribed waste drum storage area (Plate 9)	1,800 L TCE(max) 800 L Methylene Chloride(Ave)	Area: 50 m ² Theoretical capacity:108,000 L	28,000 L
Area G Storage shed	Not specified	Area: 100m ² Theoretical capacity:207,360 L	29,000 L
Area C empty container processing	Not specified	Area: 140 m ² Theoretical capacity:302,400 L	48,000 L
Area F, Main building equipment store and class 9 liquid store (ex abattoir)	Off specification food or beverage is not a DG	Area: 800 m ² Theoretical capacity:384,000 L	Information not recorded
Area H, General storage area	Not specified	Area: 560 m ² Theoretical capacity:1,209,600L	Information not recorded
Drum storage area (rear of tank farm)	Not specified	Area: 96 m ² Theoretical capacity:207,000 L	Information not recorded
Drum storage and work area (building at rear of premises) (Industrial waste) Pallets observed to be packed 4 high	Off specification food or beverage is not a DG	Area: 448 m ² Theoretical capacity:1,290,240 L	400,000
Packaged liquid container outside storage area – rear of premises	Off specification food or beverage is not a DG	Area: 480 m ² Theoretical capacity:1,036,800 L	139,000 L
Total capacity:		5,609,400 L	756,000 L

* based on full area with out access ways.

Note 1: The above table relates to packaged goods only, and as such does not include bulk storage tanks.

Note 2: The EPA bunding guideline maximum permissible storage capacity based up on 10 percent of total capacity for over 10,000 litres of product is less than the physical storage capacity of Wilsolve bunded areas. Consequently physical storage limits were employed. It has been assumed that packaged goods are all palletised, have capacity of 800 litres, occupy 1 cubic metre, can be packed 3 high, and that 90 percent of the available floor space is capable of being utilised. The half height rule has not been employed as several of the bund areas are located within buildings, or against wall or enclosures, additionally the bulk of the site drains to a single collection point permitting spilt material to be contained.

Note 3 the floor area available for storage in the abattoir (Area F) was estimated at 20 percent, based upon the presence of miscellaneous materials, walls and equipment.

4.2.5 Waste Despatched From the Premises

All waste accepted at Wilsolve is despatched from the premises in one of the following streams:

- PET plastic bottles and other plastic based materials, for recycling,
- Glass segregated into colour for reuse,
- Cardboard packaging for recycle or to municipal landfill as an industrial waste.
- Miscellaneous packaging, as putrescible waste to municipal landfill,
- Off specification food material as a waste derived product being stockfeed, or disposal as an industrial waste to a sewage authority,
- Waste solvent to CRG for reprocessing into waste derived product, generally gunwash,
- Waste solvent to other schedule 4's as a prescribed waste,
- Waste solvents, chlorinated hydrocarbons and other prescribed wastes as a product to "clients",
- Solvit QD as product to the printing industry.

Waste transport certificates were supplied by Wilsolve for waste despatched from the premises during the two days on site. The following wastes were dispatched from the premises.

- 8,000 litres of solvents sent to CRG Chemical Refining Group Pty Ltd for reprocessing.
- 19,200 litres of solvent were sent to a second schedule 4 premise.

The audit team reviewed waste transport certificate data for the period 31 July 2003 to 30 June 2004. Waste was transported from Wilsolve to a number of other EPA licensed disposal/treatment facilities within the Melbourne Metropolitan area. These licenced premises include: Chemical Refining Group Pty

Ltd EI38778; Central Gippsland Water Authority ES544; Envirochem Technologies Pty Ltd EI34422; Lau Nay Nominees Pty Ltd EI28979; Master Waste Pty Ltd EI43252; Nuplex Special Waste Pty Ltd EI23855, Stericorp Ltd EI65, Sita Australia Pty Ltd ES511 and Teris (Aust) Pty Ltd EI21010.

The results of the review of the disposal paths of wastes, for the period 30 June 2003 to 31 July 2004, are presented in Table 4.3.

Table 4.3
Waste Balance (30 June 2003 to 31 July 2004)

Waste stream	Volume
Waste accepted at Wilsolve as per WTCs (note 1)	13,637,650 litres
Wastes Transported Off Site as per WTCs	
Chemical Refining Group Pty Ltd	1,618,750
Central Gippsland Water Authority	3,347,410
Envirochem Technologies Pty Ltd	1,280
Lau Nay Nominees Pty Ltd	17,200
Master Waste Pty Ltd	7,100
Nuplex Special Waste Pty Ltd	200,300
Stericorp Ltd	16,161
Sita Australia Pty Ltd	130,680
Teris (Aust) Pty Ltd	754,600
No licence listed	58,300
TOTAL	6,151,781 litres
Waste Unaccounted for by WTCs	7,486,169 litres

Note 1: Incoming waste was expressed in a number of different units. A density of 1000 kg/cubic metre was assumed to convert from mass to volume.

The quantity of paints, lacquers, varnish, resins, inks, dyes, pigments, adhesives wastes accepted at the premises on waste transport certificates, using waste category codes F100-F180 during the period July 2003 to June 2004 was recorded as 7,532,134 litres. Data drawn for waste certificates shows a total of 2,718,130 litres of these wastes being dispatched from the premises for the same period.

The quantity of organic solvents, solvent residue wastes, waste category codes G100-G180 accepted at the premises on waste transport certificates during the period July 2003 to June 2004 was recorded as 444,706 litres. For halogenated organic waste codes G130, G140 & G150 during the above a period, waste transport certificates indicate that a total of 137,692 litres were accepted at the premises, while waste certificates only identify 23, 800 litres of these solvents being dispatched from the premises during this period.

The team observed more than 45 x 200 Litre drums labelled as containing halogenated solvents, which corresponds to 9,000 litres. The audit team did not determine how long the chlorinated solvents observed at Wilsolve had been stored on site.

A review of the EPA files failed to identify any information submitted by Wilsolve to EPA detailing, the amount of waste recycled, or reused.

Wilsolve did not provide the audit team with information about the amount or types of waste derived product transported from the premises, nor details of types of industrial waste received at and despatched from the premises. Wilsolve did not provide the names of clients receiving waste derived product. Wilsolve consider some of this information to be commercial in confidence.

The quantities of waste dispatched to these premises during the 2003_2004 Financial year, as recorded on the completed waste transport certificates is significantly less than the quantity accepted on the premises during this period, recorded on waste transport certificates.

The audit team was unable to verify from the available information the destination of over 55% percent of the prescribed industrial waste accepted at facility. Clive Wilson at a subsequent meeting was able to provide the team with a break down in wastes dispatched from the premises also based on Waste transport certificates for the period July 2003 to June 2004. This is detailed in table 4.4

Table 4.4
Quantities of Waste dispatched based on Wilsolve's analysis of WTCs

Receiving Site	Volume/Mass
CRG	1,645,190L
Gippsland Water	3,272,250L
JJ Richards	195,500Kg
Nuplex	166,100L
Teris	754,600L
Waste Services (NSW)	57,500L
Stericorp	15,586 Kg
Envirochem	1,280kg
Total	6,109,106 L

The information in Tables 4.3 correlates with information contained in Table 4.4 for the wastes discharged for the site. The "no licence listed" in table 4.3 corresponds to Waste Services (NSW) in table 4.4 i.e. wastes transported interstate.

The difference between wastes received and wastes dispatched under WTCs could be waste solvents reused and recycled however Wilsolve did not provide information to confirm this, in spite of the issue being raised at a number of meetings. It is understood that some of this information may be considered commercial in confidence however it is necessary for Wilsolve to demonstrate how the prescribed wastes are managed. This includes the production of annual waste returns as discussed below.

It is essential for the purpose of establishing the fate of wastes delivered to the Wilsolve site that an inventory and characterisation (or specification) of all "products" produced for reuse is maintained.

Part of the discrepancies could relate to the receipt of waste containers which are partially full. Therefore it is recommended that a weigh bridge be installed so that the weight of all prescribed waste received and dispatched, solvent product and empty containers can be monitored. This will provide confidence that all prescribed wastes are managed appropriately.

RECOMMENDATION:

Wilsolve develop and implement an inventory control system to permit, rapid identification of date, quantity, type and destination of all streams entering stored at or leaving the premises, whether product or waste.

Wilsolve install a weighbridge to facilitate accurate monitoring of all waste streams received and dispatched from the site.

The EP Act section Sec 54B(1) requires a premises who produce, reprocess, treat, stores or disposes of a PIW to lodge with the authority an annual return containing the prescribed particulars relating to the amount, category and quality of the PIW. The IWMP PIW clause 12 (4) also requires the submission of information to EPA on an annual basis

A review of information on EPA files indicates Wilsolve have never submitted this information. This is a contravention of the EP Act.

It is noted that the Wilsolve licence has no requirement to report on quantities of waste accepted or despatched from the premises, in accordance with the Act or the Policy.

RECOMMENDATION:

EPA amends the Wilsolve licence to formalise reporting requirements of wastes accepted at and materials despatched from the premises. The report should be independently verified.

Wilsolve seek to reuse and recycle wastes accepted at the premises, this process has the dual purpose of conservation of resources, and reduction in disposal costs. This practice is consistent with policy objectives set out in IWMP PIW.

Industrial waste such as alcohol, soft drink, milk products, peanut butter and other food wastes such as mayonnaise, fruit juice, are blended and sent off to a piggery as a feedstock. No waste transport certificates (WTC) are completed for this waste transport. This waste is not considered prescribed waste and hence the prescribed waste WTCs are not required. No records were provided by the company to indicate volumes, technical specifications, and testing or quality assurance for this pig feed were produced. It was noted that some wash waters from food factories are also received at the site, these are prescribed wastes and should have WTCs associated with the deliveries. This is not currently the case and is a contravention of the EP Act.

Wilsolve did not provide the audit team any information demonstrating the checks and balances in place to ensure the waste derived product is fit for its intended use, or that they have controls in place, in the form of documented procedures, product specifications, testing programs to provide surety that waste derived product is fit for its intended use. Mr Wilson indicated that these measures are part of a commercial in confidence contract which were not provided to the audit team.

The licence places no explicit requirements upon the licensee to ensure waste derived product is fit for its intended use, and poses no hidden hazard to humans or the environment.

RECOMMENDATION:

Wilsolve develop product specifications for all product streams generated at the site and that these specifications, along with any limitations is provided to clients.

Wilsolve develop and implement a:

- *quality assurance program including product testing,*
- *product specifications, (the auditors did observe a product specification for paint thinner to a large automotive supplier), and*
- *product information.*

Wilsolve should make this information available to perspective clients, along with notification that the material is a waste derived product.

EPA consider amending the Wilsolve licence to require Wilsolve develop processes to ensure waste derived product is fit for its intended use.

4.3 Water

The *Environment Protection Act 1970 Section 38* specifies that any discharge or deposit of wastes into waters of the State of Victoria shall at all times be in accordance with declared SEPP or WMP.

The SEPP Waters of Victoria, gazetted 4 June 2003, sets the policy framework to protect the environmental values, beneficial uses and associated social and economic values of the water environment to ensure the needs of current and future generations are met. Appendix I Contains a summary of policies, regulations and guidelines administered by EPA and relevant to activities conducted at Wilsolve. The table lists observations and summarises extent of compliance with the relevant clauses/requirements.

SEPP Waters of Victoria, clause 37, specifies that chemicals and hazardous substances must not be stored in or adjacent to surface waters or drainage lines unless the storage facility prevents the substances from coming into contact with the surface water.

Clause 27 (2) specifies the Authority shall require licence holders to implement effective wastewater management practices that minimise environmental risks to beneficial uses.

Wilsolve, store a range of waste hydrocarbons, including flammable solvents, halogenated solvents plus waste food and beverages.

Wilsolve collect rainfall runoff from the roofs of Building area B and the offices. This water is reused on site and Wilsolve is to be commended.

The nearest watercourse is Dandenong Creek, located to the South of the Wilsolve site. The stormwater drain that runs along the southern side of the Wilsolve site feeds an open drainage line at the rear of Wilsolve. This drainage line historically discharges to a second drainage line located immediately to the east of the elevated bike path, which runs adjacent to Dandenong Creek and ultimately discharges to it. The drainage line has been diverted into a quarry pit. Any failure of the first flush system or spill to the rear of the Wilsolve would discharge to this drainage line, and the quarry pit, and ultimately to the creek if the diversion ceases.

Dandenong creek discharges into the Patterson River that ultimately into Port Phillip Bay at Carrum. The beneficial uses are therefore defined by SEPP Waters of Victoria for the Cleared Hills and Coastal Plains segment (as part of “rivers and streams”) are as follows: primary and secondary contact recreation, aesthetic enjoyment, indigenous and non-indigenous culture and spiritual values, agriculture and irrigation, aquaculture, industrial and commercial use, human consumption after appropriate treatment and fish, crustacea & molluscs for human consumption. The SEPP indicates that the ecosystem is slightly too moderately modified and provides environmental water quality objectives for urban areas. Any discharges of stormwater from the site must not compromise the beneficial uses.

4.3.1 Physical Controls

The following physical controls were in place to control the discharge of contaminated liquid from the premises:

The work areas are largely hard paved with the majority of the work and storage areas either sloped to a waste collection sump or bunded. It is estimated that 40 percent of the premises, some 6,800 square metres of a total 16,375 square metres is located on hard pavement that drains to the first flush system. This included the former abattoir but excluded the administration building and portable laboratory. The estimate is based upon a calculation of the area utilising the aerial photograph taken 28 March 2004 (Appendix D). The percentage of site which is schedule 4 area that is hard paved is needed for the assessment of the security of waste storage control for financial assurance purposes.

Stormwater/waste runoff from paved areas and roadways are directed to a 13,000 litre below ground tank, before pumping to a 25,000 litre holding tank. The below ground tank has an automated pump that operates to keep the underground tank at approximately 10,000 litres capacity. (Source: Undated document titled Dandenong Fat Company (Wilsolve) Southern Drum Company Stormwater with attachments). Liquid can be pumped from this tank to a 65,000 litre concrete tank, for reuse on site or disposal. A manual gate valve located adjacent to the tank farm, allows water to be diverted from the sump to the stormwater drain. The drain runs along the southern boundary of the site. The valve was not locked at the time of inspection.

Mr C. Wilson advised that all water captured by the first flush system is treated as prescribed waste, no written instructions were provided to support this statement.

Chemical containers and miscellaneous equipment are stored along the northern boundary and to the rear of the premises, in an unpaved unbunded area. Any spill has the potential to be washed off site during rainfall events or seep into the soil in drier conditions.

A large stockpile of liquid food waste was stored to the rear of the premises. This area is paved but unbunded, it slopes towards the site stormwater drainage system.

Members of the auditors walked the entire length of the drainage line, located at the rear of the premises to the bicycle path located adjacent to Dandenong Creek. The auditors did not observe excessive staining or pitting on a concrete drainage pipe adjacent to the bicycle path. Excessive pitting would indicate the discharge of low pH waste, while staining would indicate the discharge of pollutants. Excessive algal growth was not observed in pooled water in the drain, as observed within side entry pits on site.

The stormwater drain, inspection pits and access point to the drainage line, were covered with earth, miscellaneous detritus, building waste and overgrown with weeds at the time of inspection. Mr C. Wilson stated that the drain is not regularly monitored or analysed for contaminants from the premises. Works were subsequently taken to allow access to the stormwater drain.

The concrete paving was cracked or highly pitted in a number of areas.

Significant splashing and spillage was observed in the plastic soft drink processing area, this area displayed significant pitting. The auditor is of the opinion that the likely cause of the pitting is the low pH water associated with the carbonation of the drinks. The water tightness, of expansion joints in the concrete, is unknown, as is the integrity of sumps.

Several sumps are located around the site to collect liquids in the bunds. Several sumps were observed, all were full, and a number had significant biological growth on their surface.

The integrity of the pavement on the site is unknown.

The rate of loss of liquid from a bunded area is a function of the amount of time it is inundated combined with the size of any breaches in containment and pressure head.

RECOMMENDATION:

To minimise potential losses through seepage from the bunded areas, Wilsolve should ensure bund walls, bases, and sumps are:

- *Free from gaps, and cracks,*
- *Coated with an impervious barrier, and*
- *Operated free of liquid.*

The following Wilsolve documents relate to the containment of wastes on the premises

- draft EIP dated November 2002,

- Wilsolve document titled “Checklist”,
- SOP, number 3C , dated 2001

The draft EIP dated November 2002 states all storage material handling and processing activities are on site are carried out on impermeable cement areas that is maintained in a secure manner.

The Wilsolve document titled “Checklist”, dated ‘Week commencing 5/4/04, includes a column for each area to comment on the status of the bunding “Bunding intact”. The document was ticked and initialled.

The auditors observed pooling of liquid to the rear of the drum crushing area. The auditors identified a bung placed in a drain point in the bund, the bung was not secure. Wilsolve took steps in the form of cementing up the bungle.

The integrity of storage tanks (primary containment) tank testing each 10 years (Draft EIP), no records sighted of results of tank testing, no records sighted of when integrity testing due.

No procedures were provided for assessing ongoing integrity of tanks and valves, The draft EIP states that transfer hoses are pressure tested annually, no results were sighted, during the audit.

RECOMMENDATION:

Wilsolve develop and implement procedures for ongoing integrity testing.

The auditors reviewed the licence to determine if licence requirements that wastes must be isolated from access to surface waters

The auditors identified 11 conditions in the licence that specify where variously identified wastes, solvents or raw materials, are permitted to be loaded or unloaded, stored or processed. While meeting the objective of the policy, the requirements, are very prescriptive and repetitive.

RECOMMENDATION:

It is recommended that the 11 conditions of the licence being Schedule B, condition 1, Schedule D conditions 1, 3, 4, & 6, Schedule E conditions 1, 5, 7, 8, 10 & 12 be replaced by 1 conditions being:

All waste, process chemicals or product must only be unloaded or loaded, stored, treated or reprocessed within, secure bunded areas constructed, sized operated and maintained in accordance with the EPA Publication No 347 "Bunding Guidelines", as shown on the delineated and hatched plan of premise.

Wilsolve activities do not meet the requirements of the existing licence in relation to the location of the storage and handling of wastes.

The licence has 3 conditions, which specify, drums must be in sound condition, or that tanks be fitted with alarms and indicators to warn of overflow.

Wilsolve do not have high level alarms or indicators on tanks inspected by the auditors. There was evidence of tanks having overflowed.

It was observed during the site inspection that there are areas to the north of Area I and to the west of the site in which:

- there is storage of chemical containers, drums and obsolete equipment,
- loading and unloading and storage of food waste etc,
- the unloading of solid prescribed waste

All of which occur in areas which are unsealed and which have no stormwater collection and containment. This is in non compliance with EPA bunding requirements and pose a risk of stormwater contamination and hence impact on the creek.

It was also observed that stormwater management systems are not well understood.

RECOMMENDATION:

A Stormwater Management Plan be developed to minimise the potential impact on stormwater run off and the creek, particularly focused on areas that are not addressed by the existing stormwater containment system. The Stormwater Management Plan should address the non compliances identified in this report and address the risks to the environment identified.

4.3.2 Monitoring

The licence prohibits the discharge of waste by Wilsolve to surface waters, and places controls on emissions of rainwater from the premises to surface waters.

The licence places monitoring requirements upon Wilsolve for the stormwater discharged via the stormwater system from the premises.

A review of EPA files failed to locate any copies of monitoring reports that were required by licence to be conducted and submitted to EPA in accordance with Licence schedule F condition 11. Mr C Wilson advised the auditors that stormwater is not monitored.

RECOMMENDATION:

Sampling of stormwater from the site should be conducted as part of site monitoring requirements, in order to demonstrate that there are no impacts on beneficial uses..

4.4 Air

The aims of SEPP (AQM), include achieving the cleanest air possible while still having regard to the social and economic development of Victoria, and support Victorian and National measures to address enhanced greenhouse effects.

The SEPP defines the beneficial uses requiring protection as life health and well being of humans, other forms of life, including the protection of ecosystems and Biodiversity, local amenity and aesthetic

enjoyment, visibility, the useful life and aesthetic appearance of building structures, property, and materials, and climate systems that are consistent with human development, the life health and well being of humans, and the protection of ecosystems and Biodiversity. The SEPP defines target ground level concentration for selected chemical species but also indicates that for Class 3 indicators, removal should be to the maximum extent achievable.

The existing licence places controls on emissions to the atmosphere for particles and odour. However these address activities which are no longer operational at the site (fat processing and fish oil processing).

The Wilsolve premise does not appear to be a major air emitter however the emissions have not been estimated.

Emissions from the premises relate to fugitive emissions of solvents in Area I and potentially any other area of the premises where solvent containing drums are handled. There is also the potential for the premises to generate odour emissions from food and beverage waste handling within Areas B and E.

The premises have no facilities to collect and contain discharges to air like volatile organic compounds, such as those generated by hydrocarbon/solvent waste liquids. To prevent discharge to the air environment WA1380 required the re-drumming of organic wastes to be conducted within an enclosed building. This was reflected in licence condition Schedule D condition 1 "All solvent re-drumming operations shall take place within building A as shown on the premises plan in schedule L".

During the audit of practices in Area I, open drums containing solvents were observed to be unattended for long periods. There is also the potential for uncontrolled solvent releases from empty drums in this and other areas of the site, including the drum crushing area west of Area E and the aerosol can crushing area.

RECOMMENDATIONS:

Wilsolve develop a strategy, acceptable to the EPA to manage the volatile emissions so as to prevent discharge to the air environment.

The existing licence permits the receipt of certain waste streams that would require a high level of control to ensure emissions and risk of exposure is minimised. Trichloroethylene, a chlorinated solvent, is such a chemical. Trichloroethylene has been identified by the International Agency for Research on Cancer IARC as possibly carcinogenic to humans. See Trichloroethylene (IARC Summary and Evaluation Volume 63, 1995). The SEPP (AQM) Schedule A has classed TCE as a class 3 indicator. A class 3 indicator is a waste that has been identified as an extremely hazardous substance, which may threaten the beneficial uses of the air environment due to its carcinogenic, mutagenic, teratogenic or highly persistent characteristics.

The SEPP AQM clause 20 further requires class 3 indicators to be managed to ensure emissions are reduced to the maximum extent achievable.

SEPP AQM also requires the licence holder by December 2003 to have developed an improvement plan to reduce emissions of class 3 indicators to the maximum extent achievable.

- Clause 13 (2) specifies the Authority shall employ statutory and non statutory instruments and measures in implementing the policy including licences, works approvals and Notices issued under the Act.

Wilsolve have not provided the auditors with a copy of this plan. A review of the EPA files, indicates no plan has been submitted to the Authority.

The SEPP (AQM) clause 33 also requires licence holders to prepare energy and greenhouse gas management plans on accordance with Protocols of Environmental Management which have been prepared. No evidence of assessment of these issues has been sighted.

RECOMMENDATION:

That Wilsolve:

- *Prepare a Class 3 Indicator Management plan*
- *Asses its requirements for a Greenhouse Gas Management plan and implement the outcomes.*
- *Remove all TCE from the premises to a facility licensed to accept TCE.*
- *Receive no further TCE until an approved plan is developed and implemented minimising the potential for discharge of TCE to the air environment.*
- *Advise the EPA in writing at the earliest of proposed actions in the short term to ensure emissions are minimised (i.e. eliminate material from site) and timelines for submission of the plan to minimise emissions (commence receipt once plan implemented).*

EPA may wish to amend the licence to:

- *Prohibit the receipt and storage of trichloroethylene at the premises, or*
- *Limit the treatment of class 3 indicators including TCE to storage only.*
- *To remove chlorofluorocarbon containing solvents; wastes from the list of waste accepted at the premises, until Wilsolve can demonstrate the CFCs can be decanted with zero emissions. Waste chlorofluorocarbons cannot be collected from the containers at the premises currently in such a way as to “avoid or minimise emissions of these substances to the atmosphere so as to achieve the best environmental outcome”. This is required in clause 14 of the Industrial waste management policy (protection of the ozone layer).*

4.5 Land and Groundwater

The goal of SEPP Groundwaters of Victoria is to maintain and where necessary improve groundwater quality sufficient to protect existing and potential beneficial uses. The SEPP Groundwaters of Victoria define the beneficial uses of groundwater in accordance with the Total Dissolved Solids (TDS) levels in

the groundwater ("segments"). As noted in section 2.4 the Groundwater Segment is likely to be B (1001-3500mg/L) and hence the beneficial uses to be protected are: maintenance of ecosystems; potable mineral water supply; agriculture, parks and gardens; stock watering; industrial water use; primary contact recreation; and buildings and structures. The SEPP indicates the water quality objectives for each beneficial use. It should be noted that a beneficial use may not be appropriate for a particular area due to yield constraints.

Similarly the SEPP (Protection and Management of Contamination of Land) defined the beneficial uses to be protected for Industrial Land use as: Maintenance of highly modified ecosystems, human health and aesthetics. The SEPP indicates the indicators and objectives for each beneficial use.

There is no land or groundwater assessment monitoring undertaken at the premises and the condition of the soil and groundwater at the premises is not understood.

The activities conducted at the premises and the condition of bunded areas indicates that there is a high potential for the contamination of land and groundwater at the premises. (Section 5)

In September 1995 a limited soil assessment was undertaken to assess the environmental condition of the land at a portion of the premises. This report did not cover the entire site as there was no assessment of areas to the south of the main driveway or any of the former Southern Drum Recycling site now a part of the Wilsolve premises. The report was of limited scope and did not identify all potentially contaminating activities (for example the former abattoir area). No mention is made of the former location of the underground petroleum storage tank. There was limited sampling undertaken across the site and no sampling within bunded areas where it is likely that there is contaminated soil. The sampling and handling of soil samples collected for the assessment was not consistent with good practice.

Given the nature of the materials handled at the premises, the condition of bunding and the lack of any recent and reliable soil and groundwater investigation, there is a high potential for soil and groundwater contamination at the premises.

RECOMMENDATIONS:

- *Wilsolve undertake a hydro geological and contamination assessment at the premises. As part of this assessment develop a Groundwater Management Plan detailing groundwater quality monitoring to be undertaken at the premises.*
- *Wilsolve perform a detailed assessment of the integrity of all bunded and concrete sealed areas across the premises.*
- *Wilsolve modify waste transfer and handling practices to cease using concrete bunded areas for temporary containment.*
- *Wilsolve ensure that there are no contaminating activities including the storage of disused equipment in unsealed, unbunded areas of the premises.*
- *Wilsolve review the integrity requirements for the storage of chlorinated solvents to ensure storage areas are designed and constructed to prevent the release of chlorinated hydrocarbons to the land and groundwater environment.*

The licence lacks an explicit prohibition on discharge or seepage to groundwater. Surface waters and land environment are explicitly covered in Schedule B condition 2, and air emissions in condition 3 of the licence.

The licence lacks any conditions relating to the installation and maintenance of groundwater bores or the monitoring of groundwater to identify any impacts upon the groundwater environment by Wilsolve's activities.

RECOMMENDATION:

The Authority amend the licence to

- *Include an explicit prohibition on discharge of waste to groundwater.*
- *Require the investigation of and installation of monitoring bores to monitor the quality of the groundwater environment, and any impact by Wilsolve activities.*

Financial assurance is a requirement that has been placed on all schedule 4 premises to ensure that there are adequate funds available to conduct clean up works to minimise further risk to the environment from abandoned chemicals stored or contaminated land and groundwater from site activities should a site be abandoned. Section 21 of the EP Act permits the imposition of financial assurance on schedule 4 premises. (See also section 4.6.1)

Wilsolve have not provided any information to the auditors indicating any assessment has been undertaken of the groundwater environment under the Wilsolve premises.

Clause 11(2) (c) of the policy places a requirement upon EPA to ensure that works approval and licences contain requirements that are consistent with the policy.

RECOMMENDATION:

Wilsolve initiate a groundwater monitoring program acceptable to the Authority.

The Authority, consider amending the licence to:

- include explicit prohibition of discharge or contamination of groundwater environment.
- require Wilsolve to initiate a groundwater monitoring program

4.6 Other Environmental Legislation

4.6.1 Financial Assurance

The EPA works approval WA 51709 issued 16 July 2003, places a condition of the approval that the works approval will not take effect until a financial assurance, including an assessment of soil contamination is provided to the satisfaction of the Authority. To date this has not been provided to the Authority

Section 21 (1) (ba), Special Conditions, requires the occupier of a schedule 4 premises, to provide the Authority with a financial assurance satisfactory to the Authority in accordance with Section 67B.

The purpose of the financial assurance is to protect the environment, and the broader community from a site cleanup through the failure of the occupier to make and pay for necessary measures. A site clean up may be required following gradual or sudden contamination, for disposing of stock in the case of premises being abandoned, or due to occupier insolvency.

The Authority holds financial assurance in the form of cash, to the value of \$ 50,708, provided on 25 October 1999, for the premises.

The value of the financial assurance has not been reviewed since this time. A preliminary assessment based upon Guidelines for determining financial Assurance at Schedule 4 Premises, June 1995 indicates the financial assurance requirement could be of a magnitude, of \$800,000, see Appendix J. The value of the financial assurance is in a large part determined by the assessable schedule 4 area, and the physical and procedural controls available to mitigate the risk of contamination of the soil environment.

The EPA publication Guidelines for Determining financial Assurance a Schedule 4 Premises, June 1995, further specifies that the financial assurance will be revised by EPA at least every 2 years.

Wilsolve should anticipate a financial assurance review, and take steps to minimise the potential size of the financial assurance by:

- Undertake soil assessment to confirm status of the site;
- Minimise assessable area;
- Minimise waste stockpiles; and
- Ensure controls are of a high standard.

Given the site only has a financial assurance of \$50,000 to cover costs for environmental assessment, clean up, and disposal of stock, should Wilsolve become un-financial or the site be abandoned. The cost of disposal and transport of waste currently stored on the site would exceed the amount of financial assurance provided.

RECOMMENDATION:

It is recommended that Wilsolve cause a soil and groundwater assessment to be conducted of the premises in accordance with the National Environment Protection (Assessment of Site Contamination) Measure 1999 (NEPC 99) and the Australia and New Zealand Guidelines for the assessment and management of Contaminated Sites (1992).

Wilsolve re-evaluate the financial assurance requirement for the facility in taking into account the quantities of waste on the site and the condition of soil and groundwater at the site and other requirements outlined in EPA guidance.

4.6.2 Other Environmental Regulations

As summarised in Appendix H, compliance with the following environment regulations was assessed:

Industrial waste management policy (Protection of the Ozone Layer)

There is no CFC or Halons received or stored at the site.

Industrial waste management policy (National Pollutant Inventory)

Wilsolve have not reported as required under this policy. It may be under threshold values but has not undertaken an assessment to demonstrate compliance with the requirements.

Wilsolve should undertake an assessment to determine whether it is required to report.

Industrial waste management policy (Movement of Controlled Waste between States and Territories)

Wilsolve have made application under this policy, no non-compliance was identified.

4.6.3 Environmental Management

Assessment of environmental management systems was excluded from the scope of the audit. However based on the observations at the site it was concluded that Wilsolve do not currently have comprehensive systems in place to monitor and manage environmental issues, and assess and minimise potential environmental harm.

The licence places no requirements upon the licensee to investigate or minimise the production of PIW, and enshrine the commitment to the waste hierarchy, being avoidance, reuse, recycling etc.

A draft Environment Improvement Plan was provided to the auditors by Wilsolve.

RECOMMENDATION:

That Wilsolve develop and implement a formal system to monitor and manage environmental issues, in the form of an environment improvement plan and/ or environmental management system. The EMS should be consistent with the Australian Standard AS 14000 series or EPA EIP Guidelines.

4.7 Dangerous Goods

4.7.1 Dangerous Goods Requirements

It is a requirement of Schedule E, Condition 9 of the EPA licence that ‘storage and handling of materials shall be in accordance with the Dangerous Goods (Storage and Handling) Regulations 1989’. These regulations have been superseded by the Dangerous Goods (Storage and Handling) Regulations 2000 (“the regulations”), which are supported by a Code of Practice for the Storage and Handling of Dangerous Goods (December 2000).

Regulations associated with Dangerous Goods (Storage and Handling) Regulations 2000 include Occupational Health and Safety (Hazardous substances) Regulations 1999, Occupational Health and

Safety (Plant) Regulations 1995 and Occupational Health and Safety (Incident Notification) Regulations 1995. While the Occupational Health and Safety regulations were not the subject of this audit, given the activities which are conducted on the site, management should assess the site for compliance with these regulations.

The regulations require “notification” of the Workcover Authority if quantities exceed the specified “manifest” quantity, which is the case for this site. It has been agreed (Agreement dated September 1997) between the Victorian Workcover Authority and the Environment Protection Authority that Schedule 4 premises (where required to be licensed) are exempt from licensing (a requirement under the 1989 Dangerous Goods regulations). However Scheduled 4 premises are still required to comply with the Dangerous Goods (Storage and Handling) Regulations. Therefore it is reasonable to conclude that a site (such as Wilsolve) is not required to “notify” the Victorian Workcover Authority (a requirement of Dangerous Goods (Storage and Handling) Regulations 2000).

The Dangerous Goods (Storage and Handling) Regulations 2000 are less prescriptive than the previous regulations. Under the regulations the occupier has a range of duties to fulfil including identification, assessment and management (control) of risks. The following discussion follows the order in which the various duties and obligations are listed in the regulations.

Some requirements of an occupier under the regulations are a function of the maximum quantities of dangerous goods that can be stored on the site. This is generally noted in an inventory (a list of quantities of material by dangerous goods class) which is used to develop the manifest. The determination of the quantity of dangerous goods, the development and maintenance of a register of dangerous goods, and the maintenance of a register of dangerous goods are requirements of the regulations (204,427,442) as is the development and maintenance of a manifest. At the time of the audit Wilsolve were unable to provide an inventory or register of dangerous goods on the site or an estimate of the maximum capacity of the site. There is an inventory in the sites Manifest (dated March 1997).

During the audit an estimate of the quantities of dangerous goods on site was made based on counting pallets and drums. This is listed in Table 4.5 together with the quantities listed in the 1997 manifest.

Table 4.5
Estimate of Dangerous Goods quantities

Inventory in 1997 Manifest (undated)					Inventory May 2004
Product	UN No.	Class	Average Quantity	Maximum Quantity	Estimated Quantity
Paint thinners/ Ink Waste Containing solvents	1993	3	40,000L	44,000L	112,000L
Trichloroethylene	1710	6.1	1600L	1800L	28,000L*
Methylene Chloride	1593	6.1	800L		
Diesel		1	-	-	10,000L

* chlorinated solvents including TCE

In addition, a small quantity of Class 8 and 9 materials were noted to be on site (Area G).

It should be noted that while the Class 6 store was full, the site drawing indicated that the Class 6 store was larger. Therefore a larger quantity of Class 6 could have been stored on the site in the past. The Class 3 store was not full and hence its capacity is potentially at least 50% more than the inventory at the time of the audit. There is an additional store (Area G) which also has storage capacity.

The register and inventory, in the manifest, must be updated to maximum quantity and the class of dangerous goods on site. The site should maintain an inventory of dangerous goods on site including their location.

Based on the quantities of Class 3 dangerous goods (alone), the quantities require compliance with placarding, manifest and fire protection requirement of the regulations.

The regulations require “notification” of the Workcover Authority if quantities exceed the manifest quantity requirement, which is the case for this site. As noted above our interpretation of the agreement between EPA and the Workcover Authority is that this removes the requirement for notification.

A summary of observation including actual and potential non-compliance with the regulations is included in Table 4.6. These are discussed in the following sections.

4.7.2 Induction and Training

The site has an induction program and has developed Standard Operating Procedures (SOP) for some activities. Two copies of different induction programs were provided. One version included reference to the Health and Safety Manual. The Fire Safety and Emergency Manual is not referenced in the induction program. The site has copies of training records for staff. There is a matrix of staff and competency. The induction program requires updating as the plan is not consistent with current operations, eg Area I is shown as containing Class 8, 9 and 3 materials.

Some of the Standard Operating Procedures (SOP) are out of date, as follows:

- SOP 1 does not reference the Occupational Health and Safety plan or the Fire Safety Emergency manual;
- SOP 2 does not address the intrinsically safe forklift and its use;
- SOP 3D refers to Class 8 and 9 materials in Area I;
- SOP 6A refers to drum cleaning in Area C that seemed to be used for storage at the time of the site inspection; and
- SOP7A has been modified to include use of inspected sticker for drums to be shredded, there appears to be no learning from the incident (February 2004: in which an explosion and fire occurred) incorporated and no guidance regarding criteria for inspection.

There appears to be no evidence of an active “Controlled Document” procedure that should ensure that SOP, other procedures and plans are uniquely numbered and identified as the current relevant document. It does appear that site management is quite hands on, directing activities at the site.

It is recommended that the induction program be updated to reflect current operations. Induction should also include the Fire Safety and Emergency Manual. The site should select a single induction program and remove the redundant program from the active document system. The SOP should be updated to reflect current activities. SOP should be prepared for all process activities eg decanting, blending of Solvit QD. A controlled document procedure should be implemented

Table 4.6

Summary of Observations in Relation to the Dangerous Goods (Storage and Handling) Regulations 2000.

Dangerous Goods(Storage and Handling) Regulations 2000		Observation
Section	Clause	
Occupier Duties	427	site has in excess of 20kL Class 3 materials, requires placarding, manifest, fire protection activities
	204	approx. inventory of Class 3 140 pallets (area I); 112kL @800L/pallett
	204	inventory of area D class 6 store 35 pallets; 28kL @800L/pallett
	204,427,428	site has a Dangerous Goods manifest(site plan, Dangerous Goods quantities, fire system-signed by CFA which is out of date)
	204,427,428	class 6 store not as shown on drawing
	402	some training records available
	402	SOPs out of date and refer to incorrect area for operations (e.g. drum cleaning)
	402,412	some inconsistencies identified in visitor induction

Compliance Assessment

SECTION 4

Dangerous Goods(Storage and Handling) Regulations 2000		Observation
Section	Clause	
	204,442	Site does not have a DG inventory or register
	205	Site needs to comply with OHS (hazardous substances)regulation -not audited against
	405,406	separation distances from bund walls e.g. area E, QV blending, area I
	405,406	not all hazards have been identified (rolling Risk Assessments not complete)
Occupier Duties Cont.	405,406	shredder not flame proof (no adequate Risk Assessment)
	405,406	drum crusher not flame proof (no adequate Risk Assessment)
	405,406	a number of processes and activities are conducted on site for which adequate Risk Assessments have not been conducted e.g. loading, unloading DGs, sampling of drums, drum washing, drum crushing, decanting in area I, management of contaminated water
	405,406	some drums retained in loading/unloading area > 24 hours (SS ICBs to NE)
	405,406	mixed classes in Area G store (class 3,9,8)

Compliance Assessment

SECTION 4

Dangerous Goods(Storage and Handling) Regulations 2000		Observation
Section	Clause	
	405,406	mixed classes noted on drawing for Area I
	405,406	non class 6 material (ethylene glycol) in class 6 store
Risk Control	413	site has open access, but has after hours security.
	414	decanting, sampling occurs in summer
	424	flame proof Fork lift needs to be to certified as intrinsically safe
	424	non flame proof forklifts in area I
Placards	430	area G DG store without signage
	430	Main DG placarding not adjacent to main gate
	430	no class 8 sign on main placard
	439	not all drums labelled

Compliance Assessment

SECTION 4

Dangerous Goods(Storage and Handling) Regulations 2000		Observation
Section	Clause	
Incidents	437	no detailed spill response plan or written procedure
	444,445,446	no incident response procedure
		fire drills reportedly conducted but no records maintained
Fire protection	435,436	a number of issues raised in AFST report have not been addresses, therefore fire systems do not comply with AS 1221,1851,2419,2441,etc

4.7.3 Hazard Identification, Risk Assessment and Risk Controls

There appears to have been a concerted effort during 2002 to assess all operational areas and identify hazards. Only some of these assessments have been updated. Given the changes to site activities in some areas these assessments need to be updated. Some of the issues that were not identified in the risk assessments include the following:

- Area A: At the time of the inspection, it was observed that some chemicals are stored in this area. This was not addressed in the risk assessment. The potential use of an intrinsically safe forklift is not addressed.
- Area C: This area was used as storage at the time of the inspection, but was previously used for drum crushing. The potential risks due to flammables e.g. explosions, were not identified.
- Area E: The storage of diesel (C1 Dangerous Good) in the area was not identified as a risk. The lifting of drums is included as a manual handling issue but decanting of solvents from drums is noted. There is no assessment of risks (fire, explosion etc) due to this activity.
- Area F: There is no assessment of the Solvit QD blending activity including assessment of lighting and ventilation. (It is recognised that this is not a dangerous good).
- Area I: The sampling risk assessment addresses operations on hot days and indicates that this should be conducted in the shade, under the awning (Area K) or the Class 3 shed (Area G). This results in removing drums from the “Class 3 store” and returning them. The decanting risk control work sheet does not address the impact of ambient temperature on this operation in terms of exposure and potential for explosions; fire etc other than due to static electricity.

There are a number of activities which involve flammable liquids whether these are Class 3 or Class 6 (Chlorinated solvents). The risk assessments should be updated and made more comprehensive including worker exposure. Issues that should be included are:

- Use of non-intrinsically safe forklifts in area I (observed during the audit);
- The non certification of the “flame proof” fork lift;
- The location of potential ignition sources: electrical wiring in these areas and adjacent to these areas, non flame proof equipment for drum shredder and drum crushing equipment;
- The use of roadways directly adjacent to flammables goods stores (e.g. Area I), recommended separation distances between storage/ decanting areas and ignition sources (8m for open packages (Area I), 3m for closed packages (Area D) as per AS 1940)
- Employee’s exposure to vapour during sampling or decanting.
- The decanting of flammable chemicals in a store (eg Area I) was in the past prohibited (regulations superseded), however a detailed risk assessment should be carried to demonstrate that the risks are controlled and managed appropriately; and

- Separation distances from stored chemicals and bund walls (in some areas e.g. Area I material is stored at the bund wall), EPA Bunding Guidelines requires a minimum separation distance of at least 1m depending on the height of the stored package)

4.7.4 Manifest

Given the quantity of materials estimated (Table 4.4) above the site must maintain a manifest that includes an estimate of maximum quantities by class, a plan of the site indicating the location of dangerous goods and site services as well as the site address and emergency contacts.

As noted above the manifest is not up to date and does not reflect the quantities of chemicals (average or Maximum) on the site. Site management indicated that it is difficult to know the quantities of dangerous goods and other chemicals on site at any time. Assuming that charges are levied for the materials brought onto the site, waste transport certificates also indicate quantities, and the quantities taken off site are known (sold by volume) or as prescribed waste for further treatment or destruction, it should be possible to maintain a reasonable idea of the inventory.

The site plan was not current as it did not show the location of storage areas and the materials stored in those areas having changed, and the upgraded fire services.

It is recommended that the manifest should be updated to reflect actual site characteristics and a site inventory maintained on a continuous basis..

4.7.5 Placarding

There are placards around the site; however the following deficiencies were identified during the inspection:

- Waste Class 8 materials are stored on site but there is no Class 8 on the main sign at the entry to the site, (The EPA licence does not permit Class 8 materials to be received at the site)
- Area G has no signage, but contains dangerous goods.
- It was observed that there was access to area below Area F that was open. The area under area F is a confined space. A confined space sign should be provided. The access should be closed.
- There is a confined space under area F that is not sign posted as such.

It is recommended that the placarding be brought into line with dangerous goods regulations.

4.7.6 Fire Protection

The site recently upgraded the fire system. Part of the system was serviced by Dandenong Fire Service (30 October 2003), however the letter report indicated that it was not a level 2 service (as per AS 1851) and hence did not comply with the relevant Australian Standard. A fire service report was commissioned in 23 December 2003 and a plumbing compliance report in March 2003. The reports indicated that there were still deficiencies with the systems and that they did not comply with the AS 2441 and 2419. A

number of recommendations were made and these had not all been implemented at the time of the site inspection eg Dual mill cocks on hydrants, hydrants within 10 m of a building without 90/90/90 fire protection.

The fire protection system should be brought into compliance with the applicable Australian Standards (see Code of Practice for Storage and handling of Dangerous Goods).

4.7.7 Emergency Preparedness and Incident Reporting

Emergency preparedness is addressed in the Occupational Health and Safety manual (dated 26/2/2004) and the specific Fire Safety and Emergency Manual (dated August 2003). Neither plan has a site drawing indicating the location of fire response equipment and the Fire Evacuation and Assembly area. The Fire Safety and Emergency Manual also address spills. The only spills identified in the manual are oil spills; however the predominant flammable liquids handled on the site are solvents (Class 3 and Class 6). There manual should be modified to specifically address spills and leaks of flammables including potential exposure and PPE requirements. There were a number of procedures provided entitled “Employee Fire Procedure”, “Employee Evacuation Procedure, Employee Major Spills and Leaks” and CFA Emergency procedures. These are not referenced in the Occupational Health and Safety manual and the Fire Safety and Emergency Manual.

Written advice from the emergency service authority should be sought when preparing the emergency response plan. (Code of Practice for Storage and handling of Dangerous Goods p58).

Annual evacuation exercises are reportedly held but this is not documented. Evacuation exercises and other scenarios such as spill response should be part of the employee-training program and documented (as part of training records).

There are a number of documents dated 22/2/2004 which address “incident response”: *Management of Injury /Incident reporting and Investigation-* this addresses injuries with little reference to other incidents.

Site management indicated that there have been incidents in the past, but no documentation regarding past investigation have been provided.

Accident Investigation Report- this refers to incidents but due to the title may not be understood as an Incident Investigation Report

The documentation relating to the major incident in February 2004 (fire and worker injury) was not available for review due to potential legal proceedings.

4.7.8 Site Security/ Visitors

The site is unsecured in that one can drive or walk onto the site. There had been a boom gate in the past but there were a number of incidents in which the boom gate was driven through.

The site is not fenced to the south or west. The site employs on site security guards overnight to detect/prevent entry to the site.

The site should have sufficient security measures so as to prevent unauthorized entry; this should include fencing and a means of preventing unauthorized vehicles from entering the site.

It was observed that there were some inconsistencies between the condition on the visitor's tag and the site safety procedure with respect to ignition sources. These inconsistencies (relating to mobile phones and other ignition sources) should be resolved.

4.7.9 Other observations

While not part of the scope of the audit it was observed that some obsolete equipment and disused shed /containers stored at the site (at the rear and North West area) may have asbestos insulation and that insulation was not appropriately encapsulated. The material in the cladding on the autoclave in Area D is unknown. This should be assessed.

4.7.10 Summary of recommendations

The inventory in the manifest should be updated to maximum quantity and the class of dangerous goods on site

The site should maintain an inventory of dangerous goods on site including their location.

It is recommended that the induction program be updated to reflect current operations. Induction should also include the Fire Safety and Emergency Manual. The site should select a single induction program and remove the redundant program from the active document system. The SOP should be updated to reflect current activities. SOPs should be prepared for all process activities eg decanting, blending of Solvit QD. A controlled document procedure should be implemented.

The risk assessments should be updated and made more comprehensive including worker exposure.

The fire protection system should be brought into compliance with the relevant Australian Standards

5.1 Introduction

The methodology for the risk assessment was described in section 3.3. The objective was to assess and prioritise the risks to the environment. It should be noted that due to the assessment methodology any hazards included in the risk register (Appendix E) which related to non compliance were excluded as these are discussed in Section 4. The elements of the environment, hazards, risk ranking, environmental risk, proposed action and proposed completion date are presented in Table 5.1 for the issues that were ranked as priority and high. The findings are discussed in the following sections.

The audit team adopted the following order of preference for risk mitigation and management:

Hazard elimination, by process or product modification and/or change,

Physical design to minimise potential for hazard to be realised,

through reduction in likelihood of the hazard occurring, and impact of the

hazard, and

Procedural measures to manage risks.

Legislative requirements, environmental guidelines, and knowledge of acceptable engineering practices were utilised to determine the adequacy of the controls in place.

For activities with associated high or priority risks, where insufficient information was available to determine whether the hazard to the section of the environment had been realised, further investigation is strongly recommended. It is expected the investigation will permit Wilsolve, the community, and regulatory authorities to take stock of the environmental segment, and where necessary guide Wilsolve as to what further remedial action may be required to mitigate the hazard.

5.2 Risk Management

5.2.1 Air Environment

The auditors identified the hazard of discharge of chemicals to the air environment during decanting operations.

The auditors further identified that Wilsolve handle hazardous chemicals in the form of TCE. Wilsolve have inadequate physical or procedural controls to ensure emissions to the air environment are minimised.

RECOMMENDATION

An air emissions impact assessment is required to address this issue and demonstrate that there is no risk to the environment. It should be noted that occupational exposure should be included in this assessment.

5.2.2 Soil and Groundwater

The auditors identified the hazard of discharge of chemicals to land from historical activities. There was inadequate information to make a determination of whether Wilsolve current activities are impacting upon the soil and groundwater environments.

The soil assessment conducted in 1995 was of limited scope and inadequate to make a determination of whether there is contamination of the land environment.

Wilsolve have not conducted an assessment of the impact of their operations upon the groundwater environment.

The potential discharge of chlorinated hydrocarbon through concrete was identified as a priority risk. Appropriate coating of storage areas is required. There is potential impact on soils and groundwater from current and historic site activities; as no information is available it is recommended that a soil and groundwater assessment be conducted to demonstrate that there is no risk to beneficial uses.

5.2.3 Surface Water

The auditors identified the hazard of discharge of chemicals and other wastes to surface waters, by a number of different routes, through loss of containment of either tanks or bunding, a chemical spill, operator error or loss of containment as a consequence of fire fighting activities.

The auditors did not observe any evidence of pollutants or residues beyond the premises boundary that could be attributed to Wilsolve, and no information on EPA files.

The auditors identified potential access to surface waters from a bunded area on site, or via incorrect operation of the stormwater bypass. Wilsolve were unable to demonstrate the integrity of tanks pipe work or bunding.

The auditor is of the opinion that physical barriers could be upgraded to further mitigate the potential for discharge to surface waters.

Wilsolve have some procedures to reduce the risk of discharge to surface waters, although they are incomplete.

RECOMMENDATION

A stormwater management plan should be developed which should include procedures for ensuring the integrity of pavements and a stormwater monitoring program. A monitoring program is a requirement of the licence.

5.2.4 Waste Management

There appears to be no inventory control or mechanism for tracking “products” derived from wastes eg solvents, or food waste.

The auditors identified the potential for waste derived products to be contaminated with unanticipated materials which could have unforeseen implications for end users.

Wilsolve does not track all the prescribed waste delivered to the site, to their ultimate disposal or reuse.

Wilsolve was unable to demonstrate processes and procedures including testing, written warnings “this is a waste derived product” are in place to ensure the waste derived product is fit for its intended use.

There fore there is potential for adverse impacts from the reuse of these materials.

RECOMMENDATION;

Further work in this area is needed to mitigate hazards associated with the sale of waste derived products. This should involve, waste tracking and reporting, and specification of all products, so as to allow the tracking of all prescribed waste received at the site.

5.2.5 Dangerous Goods

There are a number of current activities and features of the site which could result in impacts on the environment, particularly uncontrolled impacts due to fire or explosion. These are noted in table 5.1

There are a range of rectification measures which should be conducted to address these risks, including further risk assessments, preparation or modifications to procedures and plans, training and some physical measures.

Risk Assessment

SECTION 5

Table 5.1
Summary of Risk Assessment for Priority and High issues.

Element	Hazard	Ranking	Environmental Risk	Proposed Action	Completion Date
AIR	Solvent emissions from decanting (including chlorinateds)	P	odours, impacts on health,	undertake emission estimation or monitoring, air quality modeling and impact assessment,	Jul-05
SOIL	Integrity of pavements by area (solvents and food wastes)	P/H	soils act as a conduit to groundwater resulting in impacts on groundwater beneficial use	assess and repair all paved surfaces	Dec-05
	Leakage of Chlorinated chemicals through Concrete	P	soils act as a conduit to groundwater resulting in impacts on groundwater beneficial use	Coat surfaces in areas in which Chlorinated hydrocarbons are stored.	July-05
GROUND-WATER	USTs removed in the past (1999?) - no records	H	Leakage resulted in impacts on Groundwater beneficial uses	Undertake a soil and groundwater contamination assessment	Dec-05
	Integrity of pavements by area	H	Leakage resulted in impacts on Groundwater beneficial uses	Undertake a soil and groundwater contamination assessment	Dec-05
	Integrity of bunds by area - e.g. Area B pavements eroded showing reinforcing and expansion joints	H	Leakage resulted in impacts on Groundwater beneficial uses	Undertake a soil and groundwater contamination assessment	Dec-05
	Integrity of below ground tank (near stormwater pit)	H	Leakage resulted in impacts on Groundwater beneficial uses	Undertake a soil and groundwater contamination assessment	Dec-05

Risk Assessment

SECTION 5

Element	Hazard	Ranking	Environmental Risk	Proposed Action	Completion Date
GROUND-WATER Cont.	Integrity of sump adjacent Area D Class 6 store, Area C TIT	H	leakage resulted in impacts on Groundwater beneficial uses	Undertake a soil and groundwater contamination assessment	Dec-05
	Integrity of TIT and in ground sump near "effluent storage tank" area E	H	leakage resulted in impacts on Groundwater beneficial uses	Undertake a soil and groundwater contamination assessment	Dec-05
	Integrity of small sumps	H	leakage resulted in impacts on Groundwater beneficial uses	Undertake a soil and groundwater contamination assessment	Dec-05
	Bund water east of "drum " store drains to soils - oily water observed on the ground	H	leakage resulted in impacts on Groundwater beneficial uses	Undertake a soil and groundwater contamination assessment	Dec-05
	Historic activities (SDR & Abattoir operations)	H	leakage resulted in impacts on Groundwater beneficial uses	Undertake a soil and groundwater contamination assessment	Dec-05
	Leakage of Chlorinated through Concrete	P	leakage resulted in impacts on Groundwater beneficial uses	Coat surfaces in areas in which Chlorinated hydrocarbons are stored.	May-05
WATER	Drainage slopes to front of property to Ordish Road	H	contaminated stormwater impacting on Dandenong Creek	Prepare a stormwater management plan to minimise the risk of stormwater contamination.	Jul-05

Risk Assessment

SECTION 5

Element	Hazard	Ranking	Environmental Risk	Proposed Action	Completion Date
	Unsealed northern area used for general storage	H	contaminated stormwater impacting on Dandenong Creek	Prepare a stormwater management plan to minimise the risk of stormwater contamination.	Sept-05
	Unsealed western area used for obsolete equipment storage	H	contaminated stormwater impacting on Dandenong Creek	Prepare a stormwater management plan to minimise the risk of stormwater contamination.	Sept-05
	Water at rear of property (SE)	H	contaminated stormwater impacting on Dandenong Creek	Prepare a stormwater management plan to minimise the risk of stormwater contamination.	Sept-05
WATER Cont.	Laboratory discharge to sewer - minor TWA?	H	chemicals discharge to sewer and adversely impacting on sewer structure or worker safety.	Segregate chemicals and dispose as prescribed waste.	May-05
	Stormwater bypass - contaminated stormwater discharge	H	contaminated stormwater impacting on Dandenong Creek	Prepare a stormwater management plan to minimise the risk of stormwater contamination.	Sept-05
	Manual override to open bypass valve to stormwater and close contaminated stormwater valve for 24 hours	H	contaminated stormwater impacting on Dandenong Creek	Prepare a stormwater management plan to minimise the risk of stormwater contamination.	Sept-05

Risk Assessment

SECTION 5

Element	Hazard	Ranking	Environmental Risk	Proposed Action	Completion Date
WASTE MANAGEMENT	Residuals in crushed drums	M/H	fire or other adverse impact at metals recycling facility	Drums and other container should be cleaned in accordance with EPA requirements and wash waters disposed of as prescribed waste.	May-05
	Not all wastes disposed from the premises are tracked (DCM from Tasmanian Alkoloids)	P	prescribed waste may not be disposed of in a manner which does not impact on the environment, reuse of chemicals may endanger the health of workers and /or have adverse environmental impacts.	Develop an inventory of all material entering and leaving the site which have origins in prescribed waste, track and record the use of the "products. Prepare an annual report with independent verification	May-05 Dec-05
Dangerous Goods	SOPs out of date and refer to incorrect area for operations (e.g. drum cleaning	P	inappropriate operation could result in discharges to air soil or stormwater.	Update all SOPs with due regard to environmental impact.	Jul-05
Dangerous Goods Cont	separation distances from bund walls e.g. area E, QV blending, area I	P	potential for spills	modify current storages to ensure adequate separation distances	May-05
	Inductions do not cover all aspects eg fire safety and emergency manual	P	inappropriate operation could result in discharges to air soil or stormwater	Update inductions with due regard to environmental impact, emergency response , fire safety	May-05
	not all hazards have been identified (rolling Risk Assessments not complete)	P	inappropriate operation could result in discharges to air soil or stormwater.	Update risk assessment with due regard to environmental impact.	May-05

Risk Assessment

SECTION 5

Element	Hazard	Ranking	Environmental Risk	Proposed Action	Completion Date
	shredder not flame proof (no Risk Assessment)	P	potential for fire/ explosion and uncontrolled releases to the air, soil and stormwater.	Conduct risk assessment and provide appropriate equipment	April-05
	drum crusher not flame proof (no RISK ASSESSMENT)	P	potential for fire/ explosion and uncontrolled releases to the air, soil and stormwater.	Conduct risk assessment and provide appropriate equipment	April-05
Dangerous Goods Cont	a number of processes and activities are conducted on site for which Risk Assessment have not been conducted e.g. loading, unloading DGs, sampling of drums, drum washing, drum crushing, decanting in area I, management of contaminated water	P	inappropriate operation could result in discharges to air soil or stormwater. potential for fire/ explosion and uncontrolled releases to the air, soil and stormwater	Conduct risk assessment, develop SOPs, train staff and provide appropriate equipment	April-05
	site has open access, but has after hours security.	P	Potential for vandalism to cause a spill or fire resulting in uncontrolled discharges to the environment.	Provide appropriate fencing for the whole site.	April-05
	decanting, sampling occurs in summer	P	odours, impacts on health,	undertake emission estimation, air quality modeling and impact assessment,	Jul-05

Risk Assessment

SECTION 5

Element	Hazard	Ranking	Environmental Risk	Proposed Action	Completion Date
	flame proof Fork lift needs to be to certified	P	potential for fire/ explosion and uncontrolled releases to the air, soil and stormwater.	Have the equipment certified.	April-05
	non flame proof forklifts in area I	P	potential for fire/ explosion and uncontrolled releases to the air, soil and stormwater.	train staff and signpost to ensure the use of that forklift in Class3/6 storage areas ceases.	April-05-05
	not all drums labeled	P	prescribed waste may not be disposed of in a manner which does not impact on the environment, reuse of chemicals may endanger the health of workers and /or have adverse environmental impacts.	train staff, conduct weekly audits	April-05
Dangerous Goods Cont.	no detailed spill response plan or written procedure	P	inappropriate response could result in discharges to air soil or stormwater.	Conduct risk assessment, develop response plans, train staff and provide appropriate equipment	May-05
	no incident response procedure	P	inappropriate response could result in discharges to air soil or stormwater.	Conduct risk assessment, develop response plans, train staff and provide appropriate equipment	May-05

6.1 Conclusions and Recommendations

The Wilsolve site has a large number of issues which need to be addressed to ensure that the site and its activities are in compliance with legal requirements in relation to environmental and dangerous goods management and to minimise the risk of harm to the environment.

Wilsolve must address all the compliance issues raised in the report and implement changes to ensure compliance.

Recommendations arising from the audit and included in the report (generally in *Italics*) are summarised in the following tables. A number of recommendations require action by the EPA particularly through amending the licence (Table 6.1) while other recommendations need to be implemented by Wilsolve (Table 6.2). A number of recommendations arising from the compliance assessment have common recommended actions to those identified through the risk assessment. These are noted in table 6.2.

In order to monitor implementation of all the recommendations included in this report and to ensure that all the compliance issues are addressed it is recommended that Wilsolve prepare a detailed action plan for approval by EPA and that there be quarterly reporting by Wilsolve and ongoing review and of progress auditing by EPA.

Table 6.1
Recommendation requiring implementation by the EPA

Element	Recommendation
EPA Licence	The licence should be amended to remove redundant conditions, enshrine current policy objective, implement recommendations from this audit and include an updated plan of premises.
Soil and Groundwater	The licence should be amended to include an explicit prohibition on discharge of waste to groundwater.
	The licence should be amended to require the investigation of and installation of monitoring bores to assess the quality of the groundwater environment, and any impact by Wilsolve activities as part of a groundwater monitoring program acceptable to the Authority

Element	Recommendation
Waste Management	The licence should be amended to reconcile the prescribed waste types specified in the regulation and EPA guidance document with the prescribed waste types permitted in the licence. This should include solvent recovery residues, paint residues, and aqueous-based wastes (flammable vapours) (FP<60.5°C, closed-cup test or FP<65.6°C open-cup test) from the production, formulation and use of inks, dyes, pigments, paints, lacquers and varnish, NOS as a permitted waste stream in the licence given it is consistent with the waste streams processed or waste generated from solvent recovery operations at CRG.
	The licence should be amended to limit the permitted treatment methods to storage and consolidation only
	The licence should be amended to require representative sampling and identifying analysis of all incoming loads and outgoing loads of waste and product. Schedule 4 licence premises have as a matter of routine, requirements to undertake this type of sampling and analysis.
	The licence should be amended to limit individual waste streams to plant storage capacities as determined in the audit report and restrict the quantity to the amount of chlorinated solvents which could be collected, transported and disposed at another licenced facility.
	The licence should be amended to formalise reporting requirements of wastes accepted at and materials dispatched from the premises. The report should be independently verified
	The licence should be amended to require Wilsolve to develop processes to ensure waste derived product is fit for its intended use
	It is recommended that the 11 conditions of the licence being Schedule B, condition 1, Schedule D conditions 1, 3, 4, & 6, Schedule E conditions 1, 5, 7, 8, 10 & 12 be replaced by 1 conditions being: All waste, process chemicals or product must only be unloaded or loaded, stored, treated or reprocessed within, secure bunded areas constructed, sized operated and maintained in accordance with the EPA Publication No 347 "Bunding Guidelines", as shown on the delineated and hatched plan of premise.

Element	Recommendation
	EPA should consider amending the licence to: Prohibit the receipt and storage of trichloroethylene at the premises or limit the treatment of class 3 indicators including TCE to storage only; to remove chloro-fluorocarbon containing solvents; wastes from the list of waste accepted at the premises
Environmental Management	The licence should be amended to require Wilsolve develop and implement a formal system to monitor and manage environmental issues, in the form of a environment improvement plan and/ or environmental management system consistent with ISO 14000 series or EPA EIP Guidelines.

The proposed completion date for amending the licence is April 2005

Conclusions and Recommendations

SECTION 6

Table 6.2
Recommendations requiring implementation by the Wilsolve

Element	Recommendation	Associated Proposed Environmental Risk Action	Completion date
Air	Wilsolve develop a strategy, acceptable to the EPA to manage the volatile emissions so as to prevent adverse impact on the air environment.	undertake emission estimation, air quality modelling and impact assessment,	Sept-05
	Prepare a Class 3 Indicator Management plan		Sept-05
	Assess its requirements for a Greenhouse Gas Management plan and implement the outcomes.		April-05
Soil and Groundwater	Wilsolve undertake a hydro geological and contamination assessment at the premises. As part of this assessment develop a Groundwater Management Plan detailing groundwater quality monitoring to be undertaken at the premises. The soil and groundwater assessment should be conducted in accordance with the National Environment Protection (Assessment of Site Contamination) Measure 1999 (NEPC 99) and the Australia and New Zealand Guidelines for the assessment and management of Contaminated Sites (1992).	Undertake a soil and groundwater contamination assessment	March-06

Conclusions and Recommendations

SECTION 6

Element	Recommendation	Associated Proposed Environmental Risk Action	Completion date
	Wilsolve perform a detailed assessment of the integrity of all bunded and concrete sealed areas across the premises.	Assess and repair all paved surfaces. Coat surfaces in areas in which Chlorinated hydrocarbons are stored	Dec-05 May-05
	Wilsolve modify waste transfer and handling practices to cease using concrete bunded areas for temporary containment.		April-05
	Wilsolve ensure that there are no contaminating activities including the storage of disused equipment in unsealed, unbunded areas of the premises.		April-05
	Wilsolve review the integrity requirements for the storage of chlorinated solvents to ensure storage areas are designed and constructed to prevent the release of chlorinated hydrocarbons to the land and groundwater environment.	Coat surfaces in areas in which Chlorinated hydrocarbons are stored	May-05
Water	A Stormwater Management Plan be developed to minimise the potential impact on stormwater run off and the creek, particularly focused on areas that are not addressed by the existing stormwater containment system. The Stormwater	Prepare a stormwater management plan to minimise the risk of stormwater contamination.	Sept-05

Conclusions and Recommendations

SECTION 6

Element	Recommendation	Associated Proposed Environmental Risk Action	Completion date
	Management Plan should address the non compliances identified in this report and address the risks to the environment identified.		
	Sampling of stormwater from the site should be conducted as part of site monitoring requirements, in order to demonstrate that there are no impacts on beneficial uses..	Prepare a stormwater management plan to minimise the risk of stormwater contamination.	Sept-05
Waste Management	Wilsolve must ensure only prescribed waste streams permitted by the licence are accepted at the premises. The development and implementation of a management or work procedure should address this.		March-05
	Wilsolve should review the procedures to ensure: - Documentation provided by the client or transporter accurately describes material delivered, and that the material is permitted to be received. - Ensure procedures reflect operations, either incorporate additional area(s) within procedure(s) or police/prevent unloading from occurring in un authorised areas. - All wastes accepted at the premises including industrial		May-05

Conclusions and Recommendations

SECTION 6

Element	Recommendation	Associated Proposed Environmental Risk Action	Completion date
	wastes, are incorporated in the procedures. - Wilsolve keep records of waste received at the premises. The information retained by Wilsolve is not in a form that permits Wilsolve to readily identify the amount of waste at the premises, its location or type. - to better characterise incoming waste streams, and - ensures representative samples are collected and retained from all 'loads' of waste for a period of at least two months such that the consignment from where the sample originated can be located or that the sample for a particular load can be obtained from storage on the premises.		
	Wilsolve must organise the removal and appropriate disposal as soon as possible of all prescribed industrial wastes not permitted in the licence EI34.		March 05
	Wilsolve develop and implement an inventory control system to permit, rapid identification of date, quantity, type, treatment and fate of all streams entering stored at or leaving the premises,	Develop an inventory of all material entering and leaving the site which have origins in prescribed waste,	May-05

Conclusions and Recommendations

SECTION 6

Element	Recommendation	Associated Proposed Environmental Risk Action	Completion date
	whether product or waste. Consideration should be given to installing a weighbridge on site.	track and record the use of the "products. Prepare an annual report with independent verification	Dec-05
	Wilsolve set aside and signpost product areas to ensure they are isolated from waste areas, to minimise the risk of material unfit for its intended use being delivered to and handled by third party.		May-05
	Wilsolve prepare and implement procedures to ensure product material is clearly labelled and segregated from the waste.		May-05
	Wilsolve develop product specifications for all product streams generated at the site and that these specifications, along with notification that the material is a waste derived product and include any limitations. Wilsolve develop and implement a: quality assurance program including product testing,	Develop an inventory of all material entering and leaving the site which have origins in prescribed waste, track and record the use of the "products.	May-05

Conclusions and Recommendations

SECTION 6

Element	Recommendation	Associated Proposed Environmental Risk Action	Completion date
	- product specifications, (the auditors did observe a product specification for paint thinner to a large automotive supplier), and - product information. Wilsolve should make this information available to perspective clients, along with notification that the material is a waste derived product.		
	Wilsolve prepare and implement a standard operating procedure, for the reuse and disposal of all waste containers generated on the premises, This procedure should be consistent with the EPA guideline.		May 05
Dangerous Goods	While the Occupational Health and Safety regulations were not the subject of this audit, given the activities which are conducted on the site, management should assess the site for compliance with these regulations	undertake emission estimation or monitoring, air quality modelling and impact assessment,	Sept-05
	It is recommended that the manifest should be updated to reflect actual site characteristics and a site inventory maintained on a		April -05

Conclusions and Recommendations

SECTION 6

Element	Recommendation	Associated Proposed Environmental Risk Action	Completion date
	continuous basis. The register and inventory, in the manifest, must be updated to maximum quantity and the class of dangerous goods on site. The site should maintain an inventory of dangerous goods on site including their location.		
	It is recommended that the induction program be updated to reflect current operations. Induction should also include the Fire Safety and Emergency Manual. The site should select a single induction program and remove the redundant program from the active document system.	Update inductions with due regard to environmental impact, emergency response , fire safety	May-05
	The SOP should be updated to reflect current activities. SOP should be prepared for all process activities eg decanting, blending of Solvit QD.	Update all SOPs with due regard to environmental impact.	Jul-05
	A controlled document procedure should be implemented.		May-05
	The fire protection system should be brought into compliance with the applicable Australian Standards (see Code of Practice for Storage and handling of Dangerous Goods).		March 05
	The risk assessments should be updated and made more	Update risk assessment with due	May-05

Conclusions and Recommendations

SECTION 6

Element	Recommendation	Associated Proposed Environmental Risk Action	Completion date
	comprehensive including worker exposure	regard to environmental impact.	
	It is recommended that the placarding be brought into line with dangerous goods regulations.		May-05
Financial Assurance	Wilsolve re-evaluate the financial assurance requirement for the facility in taking into account the quantities of waste on the site and the condition of soil and groundwater at the site and other requirements outlined in EPA guidance		May-05
Environmental Management	That Wilsolve develop and implement a formal system to monitor and manage environmental issues, in the form of a environment improvement plan and/ or environmental management system. The EMS should be consistent with the Australian Standard AS 14000 series		Sept -05

Dr Harry Grynberg (Senior Principal) along with his support team from EPA and URS Australia Pty Ltd (URS) has prepared this report for the use of Wilsolve Pty Ltd and the Victorian Environment Protection Authority in accordance with the usual care and thoroughness of the consulting profession. It is based on generally accepted practices and standards at the time it was prepared. No other warranty, expressed or implied, is made as to the professional advice included in this report. It is prepared in accordance with the scope of work and for the purpose outlined in the Proposal dated 29 March 2004 to the Victorian Environment Protection Authority.

The methodology adopted and sources of information used by Dr Harry Grynberg and the support team are outlined in this report. Dr Harry Grynberg and the support team have made no independent verification of this information beyond the agreed scope of works and we assume no responsibility for any inaccuracies or omissions. No indications were found during our investigations that information contained in this report as provided to Dr Harry Grynberg and the expert support team was false.

This report was prepared based on activities observed at the site during April and May 2004 and is based on the conditions encountered and information reviewed at the time of preparation. Dr Harry Grynberg and the support team disclaim responsibility for any changes that may have occurred after this time.

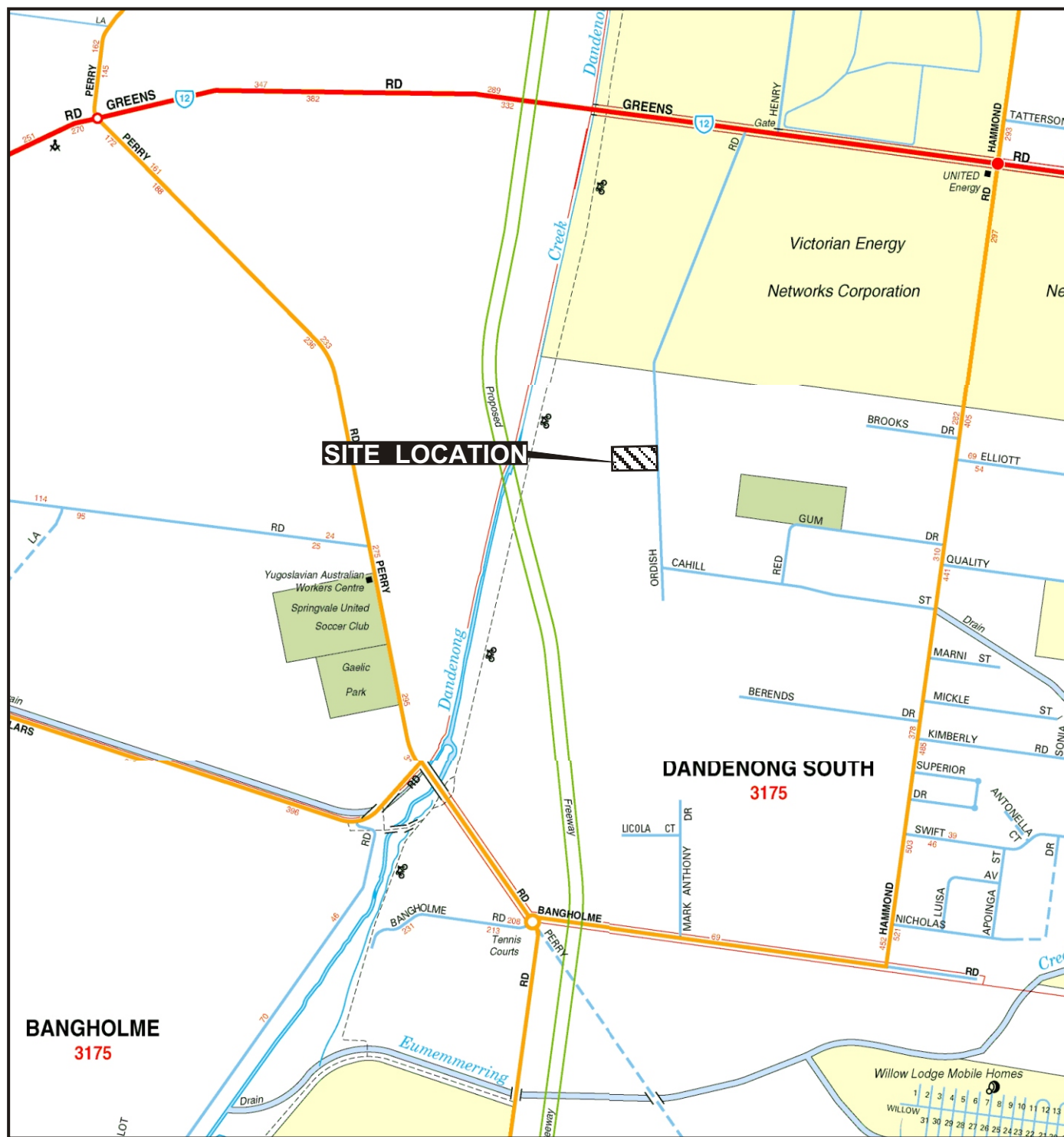
This report should be read in full. No responsibility is accepted for use of any part of this report in any other context or for any other purpose. This report does not purport to give legal advice. Legal advice can only be given by qualified legal practitioners.

This Phase 1 environmental audit addresses the likelihood of environmental liability resulting from past and current known uses of the property and the immediately adjacent properties. This investigation is limited to visual observation of surface conditions at the property, interview(s) with personnel and a review of reports and literature. Sampling and laboratory analysis are not undertaken by Dr Harry Grynberg and the support team as part of this investigation. Opinions and recommendations contained in this report are based upon data provided by representatives of Wilsolve Pty Ltd, information gained during site inspection, employee interviews, information obtained from government authorities' records and other third parties. This approach reflects current professional practice for Phase 1 environmental audits. No warranty or guarantee of property conditions is given or intended.

URS cannot be responsible for changes in conditions that occur after the date of this report, whether they are hazardous or otherwise.

Opinions and recommendations presented herein apply to the site existing at the time of our investigation and cannot necessarily apply to site changes of which Dr Harry Grynberg and the support team is not aware and has not had the opportunity to evaluate. Dr Harry Grynberg and the support team make no determination or recommendation regarding a decision to provide or not to provide financing with respect to the site.

Figures



CLIENT:
ENVIRONMENT PROTECTION AUTHORITY VICTORIA

PROJECT:
STATUTORY AUDIT WILSOLVE PTY LTD

TITLE:
LOCALITY MAP

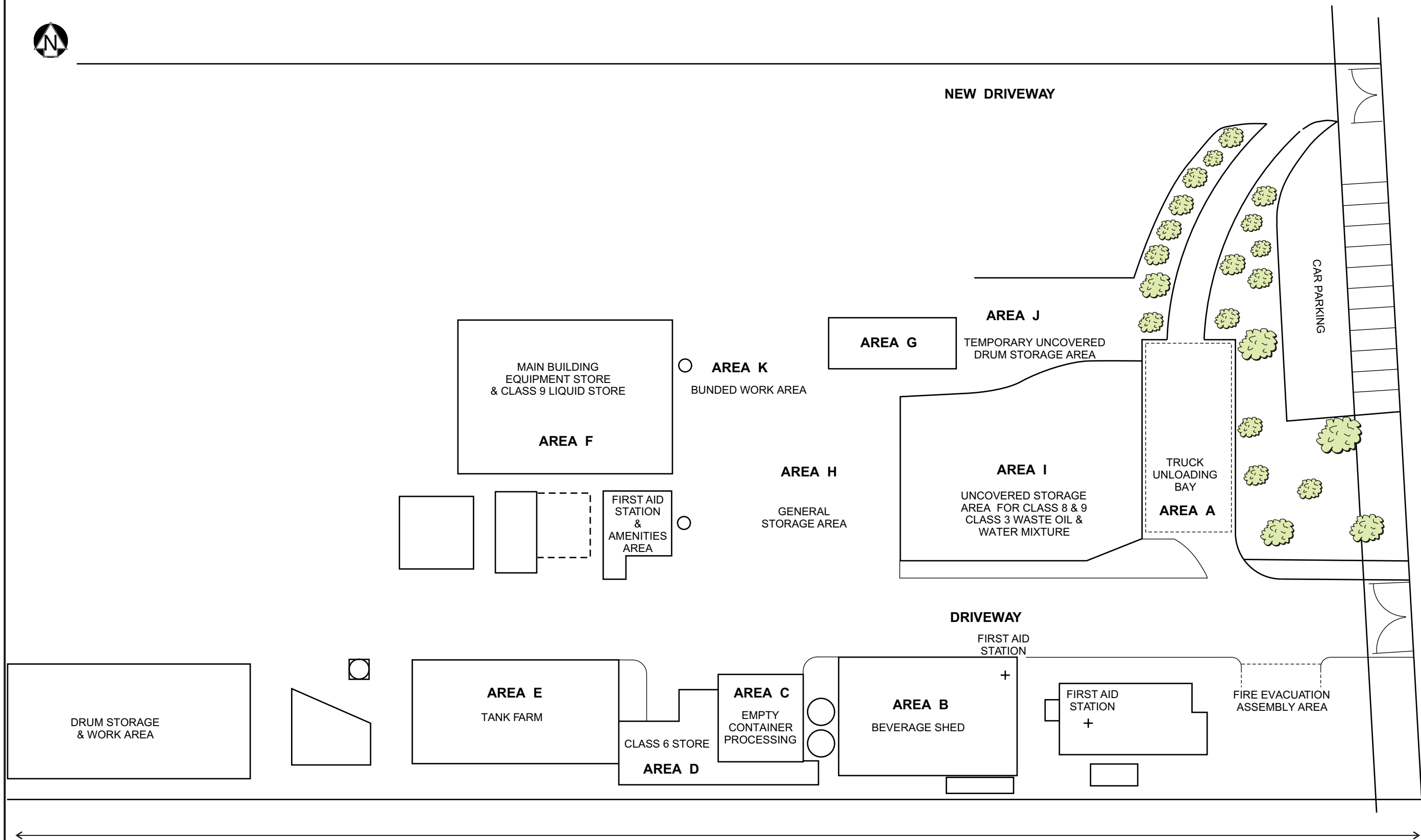
DESIGNED: **H.G.**
DRAWN: **L.B.B**
DATE: **Nov. 2004**

APPROVED:
DATE:
STATUS: **Draft**

PROJECT: **43282901**
CAD FILE: **Figure 1**
REVISION: **A**

URS

FIGURE
1
89 of 96



Approx. 185m

Approx. 90m

CLIENT: ENVIRONMENT PROTECTION AUTHORITY VICTORIA			TITLE: SITE LAYOUT		
PROJECT: STATUTORY AUDIT WILSOLVE PTY LTD					
	DESIGNED: H.G.	APPROVED:	PROJECT: 43282901	URS	FIGURE 2
	DRAWN: L.L.B.	DATE:	CAD FILE: Figure 2		
	DATE: Nov. 2004	STATUS: Draft	REVISION: A		

Plates

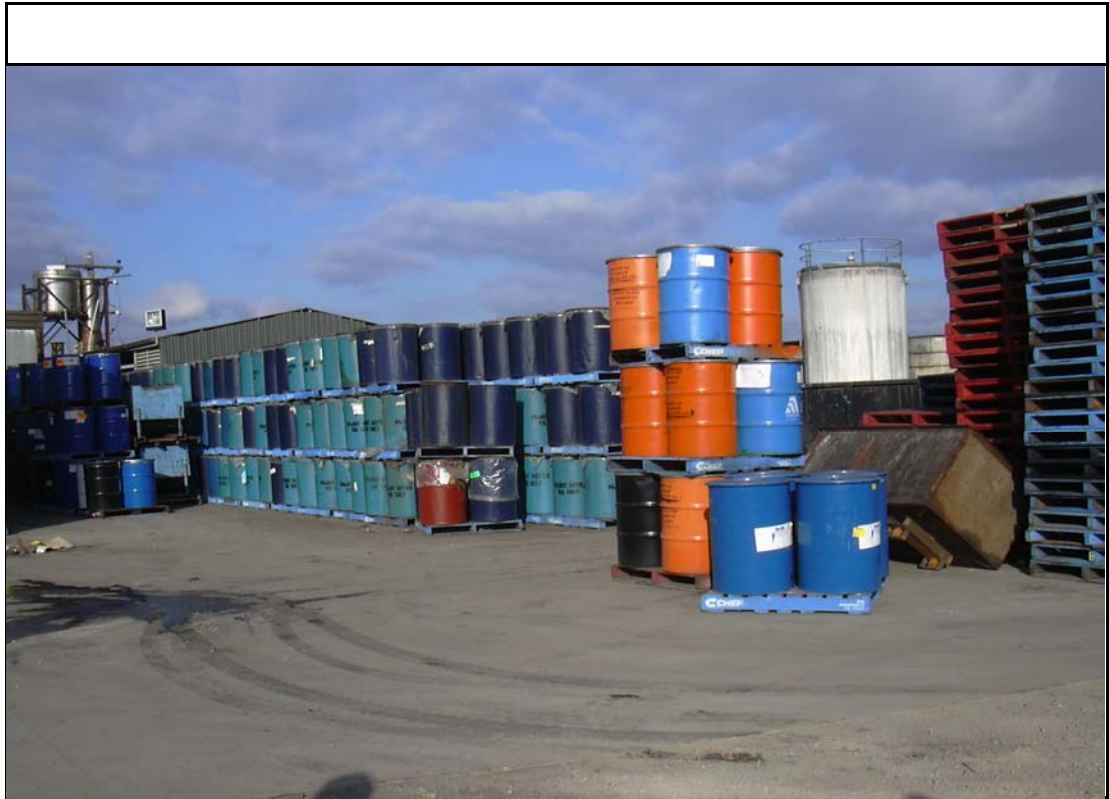


Plate 1 - Food Waste Storage



Plate 2 - Pump out of Food Waste

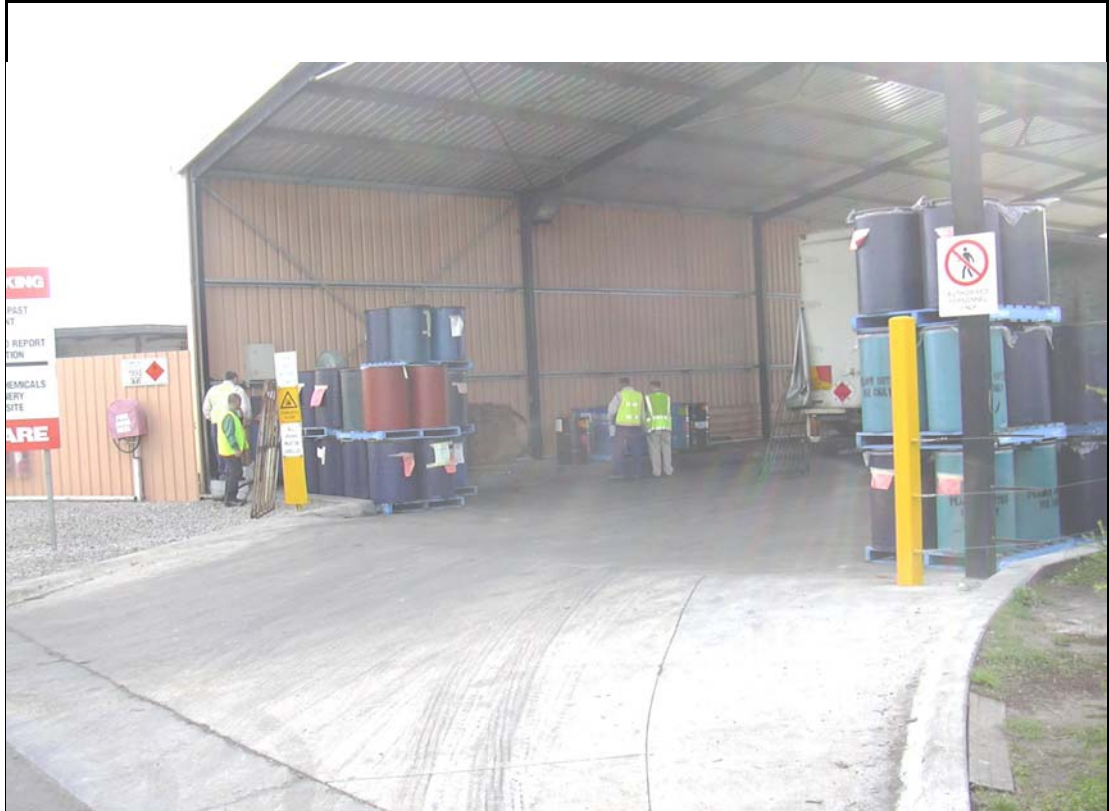


Plate 3 - Prescribed Waste Unloading Area



Plate 4 - Obsolete Equipment Storage



Plate 5 - Laboratory



Plate 6 - Leakage of Wastewater to Land / Stormwater



Plate 7 - Class 3 Storage Area



Plate 8 - Storage of Class 3 Water in Area I



Plate 9 - Class 6 Storage