

# Land Administration of Contaminated Sites - Considering Alternative Uses

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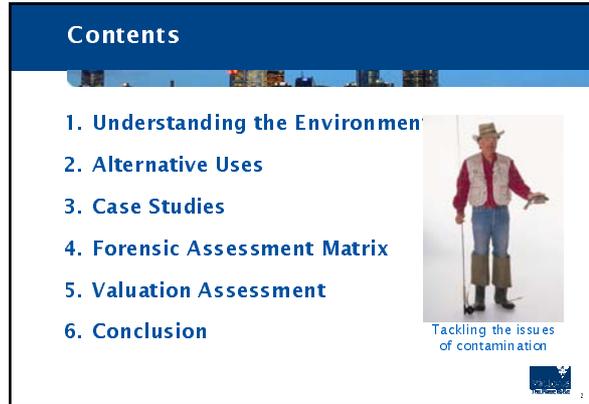


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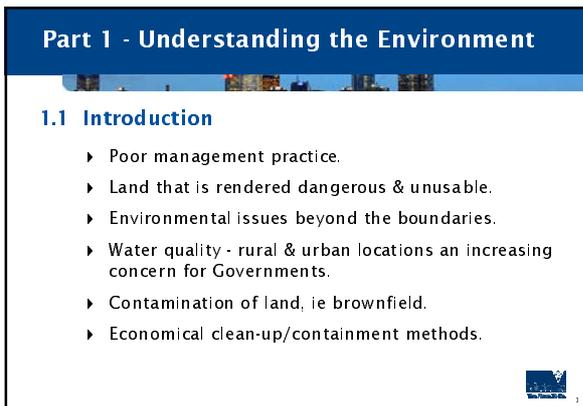
Tackling the issues of contamination



## Part 1 - Understanding the Environment

### 1.1 Introduction

- ▶ Poor management practice.
- ▶ Land that is rendered dangerous & unusable.
- ▶ Environmental issues beyond the boundaries.
- ▶ Water quality - rural & urban locations an increasing concern for Governments.
- ▶ Contamination of land, ie brownfield.
- ▶ Economical clean-up/containment methods.



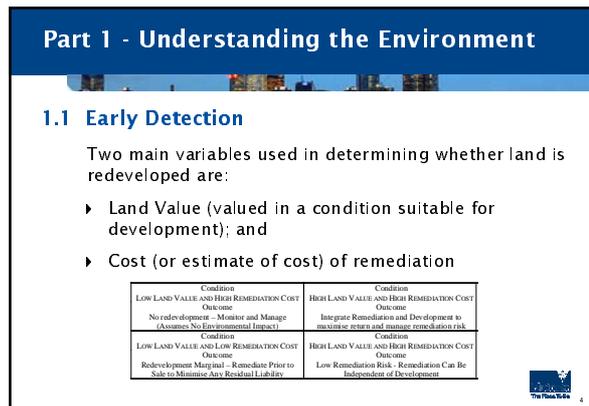
## Part 1 - Understanding the Environment

### 1.1 Early Detection

Two main variables used in determining whether land is redeveloped are:

- ▶ Land Value (valued in a condition suitable for development); and
- ▶ Cost (or estimate of cost) of remediation

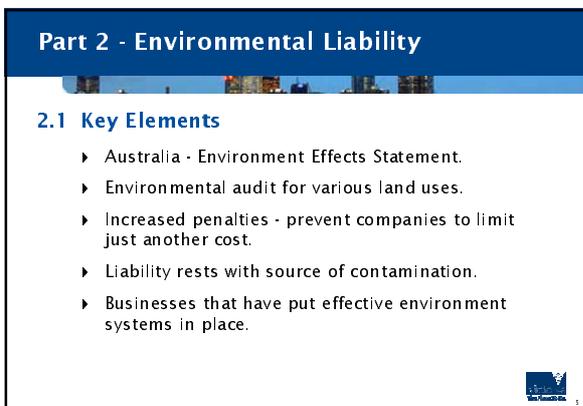
<p>Condition</p> <p>LOW LAND VALUE AND HIGH REMEDIATION COST</p> <p>Outcome</p> <p>No redevelopment - Monitor and Manage (Assumes No Environmental Impact)</p>	<p>Condition</p> <p>HIGH LAND VALUE AND HIGH REMEDIATION COST</p> <p>Outcome</p> <p>Integrate Remediation and Development to minimise return and manage remediation risk</p>
<p>Condition</p> <p>LOW LAND VALUE AND LOW REMEDIATION COST</p> <p>Outcome</p> <p>Redevelopment Marginal - Remediate Prior to Sale to Minimise Any Residual Liability</p>	<p>Condition</p> <p>HIGH LAND VALUE AND HIGH REMEDIATION COST</p> <p>Outcome</p> <p>Low Remediation Risk - Remediation Can Be Independent of Development</p>



## Part 2 - Environmental Liability

### 2.1 Key Elements

- ▶ Australia - Environment Effects Statement.
- ▶ Environmental audit for various land uses.
- ▶ Increased penalties - prevent companies to limit just another cost.
- ▶ Liability rests with source of contamination.
- ▶ Businesses that have put effective environment systems in place.



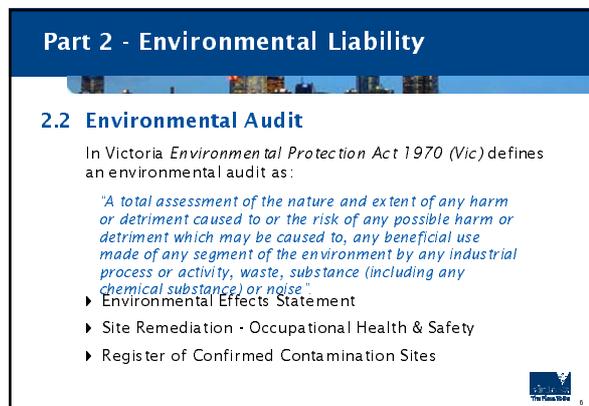
## Part 2 - Environmental Liability

### 2.2 Environmental Audit

In Victoria *Environmental Protection Act 1970 (Vic)* defines an environmental audit as:

*"A total assessment of the nature and extent of any harm or detriment caused to or the risk of any possible harm or detriment which may be caused to, any beneficial use made of any segment of the environment by any industrial process or activity, waste, substance (including any chemical substance) or noise"*

- ▶ Environmental Effects Statement
- ▶ Site Remediation - Occupational Health & Safety
- ▶ Register of Confirmed Contamination Sites



## Part 3 - Case Studies

### 3.1 Former Small Power Station Site - Victoria

- ▶ Involvement of Owner, Developer & Site Auditor.
  - ▶ Sensitive local water bird habitat.
  - ▶ Former Power Station used briquettes as a source fuel material.
  - ▶ Project included demolition of the Power Station & on-site treatment of contaminated soil.
- See [www.ghd.com.au](http://www.ghd.com.au) (Wendouree Power Station Remediation) for details



## Part 3 - Case Studies

### 3.2 Fuel Tank Time Bombs - Victoria and USA

- ▶ Identified by property professionals when visiting the site to value.
- ▶ Assess for works requested by client are wise to treat any sign of an underground fuel tank with caution.
- ▶ Victorian power industry - 20 tanks to be removed.



See [www.groundscience.com](http://www.groundscience.com) (site remediation tank decommissioning) for details



## Part 4 - Case Study: Valuation Assessment

### 4.1 Thackray Rd, Port Melbourne, Victoria, Australia



## Part 4 - Case Study: Valuation Assessment

### 4.2 Photographs of site plan - year 2003



## Part 4 - Case Study: Valuation Assessment

### 4.3 Contamination Status

- ▶ Aerial photographs from 1960 indicate sand quarrying.
- ▶ Alleged former use as a rubbish dump.
- ▶ Contaminated soil supposedly deposited.



## Part 4 - Case Study: Valuation Assessment

### 4.4 "End Game Scenarios"

- ▶ Crucial to establish a number of alternative uses.
- ▶ Highest and best, determined after clean up.
- ▶ Alternative uses will establish the viability as to the extent of clean.
- ▶ Individual feasibility appraisals are vital when dealing with



## Part 4 - Case Study: Valuation Assessment

### 4.5 Valuation/Appraisal Approach

- ▶ Establish the market level of value, (disregarding site-specific items related to contamination).
- ▶ "Clean" site sales evidence provides foundation prior to adjustments.
- ▶ Apply site specific items.
- ▶ Consider and apply risk factors.



## Part 4 - Case Study: Valuation Assessment

### 4.6 Valuation/Appraisal Approach

Thackray Road				
Bench Mark Level	m2	\$/m2		
		(a)		
Unaffected Land	19,090	\$400	\$7,636,000	
Affected Land (bv. easement)	10,050	\$200	\$2,010,000	
<b>Total Site Area</b>	<b>29,140</b>		<b>\$9,646,000</b>	
			<b>\$9,646,000</b>	
Site Specific Adjustments				
Less (unaffected)	Earth & Capping	19,090	\$50	\$1,107,220
	Demolition	19,090	\$10	\$190,900
	Extra Bldg. Foundations	19,090	\$30	\$572,700
<b>Sub Total</b>				<b>\$1,870,820</b>
				<b>\$1,870,820</b>
Less (affected)	Earth & Capping	10,050	\$58	\$582,900
<b>Sub Total</b>				<b>\$582,900</b>
				<b>\$582,900</b>
(b) Less	Risk Cost		\$0	\$0
	Time Cost		\$0	\$0
	Ongoing Liabilities		\$0	\$0
<b>Assessment/Market Value</b>				<b>\$7,192,280</b>
				<b>\$7,192,280</b>

(a) Rates have been altered due to confidentiality  
 (b) See Part 3 for explanation for this case study



## Part 4 - Case Study: Valuation Assessment

### 4.7 Valuation/Appraisal Approach

- ▶ Consequence of the "site specific adjustments".
- ▶ Potential negative impacts.
- ▶ The markets view /perception of the site.



## Part 4 - Case Study: Outcome 2006

### 4.8 Outcome



## Part 4 - Case Study: Outcome 2006

### 4.8 Outcome



## Part 5 - Future Hot Issues in Groundwater

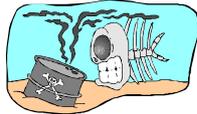
### 5.1 Groundwater Contamination



## Part 5 - Future Hot Issues in Groundwater

### 5.2 Groundwater Assessment Criteria

- ▶ Protection of aquatic ecosystems.
- ▶ Protection of potable (drinking) water.
- ▶ Protection of primary contact recreation.
- ▶ Protection of agricultural water supplies for stock watering.
- ▶ Protection of industrial water supplies, buildings and structures.



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## Part 5 - Future Hot Issues in Groundwater

### 5.3 Groundwater Monitoring

- ▶ Groundwater well installation.
- ▶ Groundwater sampling.
- ▶ Groundwater flow direction.
- ▶ Groundwater analytical test results.
- ▶ Groundwater monitoring can be for 10, 20 or 30 years.

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## Part 6 - Conclusion

### 6.1 Our Environment, Our Future, Future Generations

- ▶ Rectifying past environment disasters.
- ▶ Experienced environmental consultants required.
- ▶ Morally the need to address environmental disasters prevails.
- ▶ Substantially driven by the ongoing shortage of land & rising prices.



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## Disclaimer



I would like to draw to your attention that the views presented in this paper are my own and should not be construed as representing those of the State Government of Victoria, Australia.

The figures within this paper have been altered and do not represent current levels or rates. This has been done due to confidentiality.



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- ▶ Lea Brown, Personal Assistant, Valuer-General Victoria, Australia.
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