

LAW AND CHANGE FINANCIAL LIABILITY FOR THE CLEAN-UP OF CONTAMINATED LAND

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[This paper attempts to explore some of the factors which need to be considered in the design of environmental laws generally. The legislative allocation of financial liability for cleaning up contaminated sites is used as a case study. There are difficult questions of how the costs of de-contamination may be distributed across the various parties involved. It is argued that current legislative and common law intervention is inadequate for this cost allocation. Some considerations that must be taken into account in choosing an appropriate cost allocation system, such as 'efficacy' and 'equity', are outlined. Finally, a general structure for legislative reform of the Environment Protection Act 1970 (Vic.) is suggested.]

1. INTRODUCTION

The inadequacy of past environmental management practices has become increasingly evident in recent decades, particularly with regard to land contamination. It is estimated that there are up to ten thousand potentially contaminated sites across Australia.¹ The Coode Island fire of August 1991² is testimony to continuing contamination, further jeopardising environmental quality and human health. The importance of containing and rectifying contaminated sites promptly and effectively cannot be overestimated. Of equal urgency is the improvement of waste management practices to avoid the creation of additional contaminated sites. Both of these objectives may be promoted by the appropriate imposition of financial liability for clean-up costs.

The existing legal framework for the allocation of clean-up costs in Victoria, however, fails to satisfactorily advance these priorities. At both common law and under the Environment Protection Act 1970 (Vic.), costs are often inequitably and unpredictably allocated. Thus, the law does not ensure a correlation between poor management practices and liability for clean-up costs. A new legislative scheme which imposes costs for clean-up in a manner which encourages better waste management practices is required.

In order to appreciate the gravity of the problem, Part Two of this article describes the nature, extent and cost of land contamination. The deficiencies of the existing legal framework will then be outlined under both the common law and the Environment Protection Act. In Part Four, some policy considerations which should inform a new legislative approach to the issue will be analysed, focusing in particular on the critical components of 'equity' and 'efficacy'.

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¹ Australian and New Zealand Environment And Conservation Council and the National Health and Medical Research Council, *Australian and New Zealand Guidelines for the Assessment and Management of Contaminated Sites* (1992) 1. Henceforth cited as the 'ANZECC Guidelines'.

² *Infra.* n.10.

Environmental laws may operate better if their economic effects are used to bring about changes, and if the costs of protection are shared fairly across the different parties involved. Finally, some ideas for reform will be canvassed.

2. CONTAMINATED SITES

A contaminated site is broadly defined as 'a site at which hazardous substances occur at concentrations above background levels and where assessment indicates that it poses, or is likely to pose an immediate or long term hazard to human health or the environment'.³ Contamination occurs in a multitude of ways.⁴ In the case of chemicals stored in containers on a factory site, the chemicals may leak from the containers and gradually percolate into the underlying soil.⁵ These chemicals may react to produce toxic substances which are absorbed into plants and enter the food chain. The ecosystem may be destabilized by the death or reproductive sterility of its organic components. The toxic substances may also taint the groundwater flowing through the soil⁶ and thereby migrate away from the factory site toward neighbouring land. Consequently, serious hazards to human health and environmental quality may arise.

Frequently the consequences of improper waste management are not fully apparent until some time after the initial contamination.⁷ Complex ecosystem processes, such as the carbon cycle, are still poorly understood by scientists, as are the ways in which hazardous substances may interact when mixed together. For example, many agricultural and veterinary chemicals have not been assessed for their potential long-term impact upon human health.⁸ It is therefore difficult to identify precisely how wastes may pose problems. Importantly, by the time contamination becomes manifest, it may have become irreversible because of the delay in treatment.

Increasingly strict standards for waste management have been introduced by progressive amendments to the Environment Protection Act.⁹ Sites used for the storage, treatment or disposal of industrial wastes must now be licensed. Work approvals are needed for changes to those sites. The transport of wastes is also subject to a relatively strong licensing scheme. Despite those positive changes, inadequate waste management practices are still commonplace. This was epitomised recently by the fire which occurred on the chemical storage site of Coode Island.¹⁰

³ 'ANZECC Guidelines', *op. cit.* n.1, 2.

⁴ Wolf, S., 'Hazardous Waste Trials and Tribulations' (1983) 13 *Environmental Law* 367, 418-26.

⁵ *Ibid.* 418.

⁶ Berns, S., 'Out of Sight, Out of Mind: Toxic Waste as an Environmental Risk' (1986) 3 *Environmental and Planning Law Journal* 107, 109.

⁷ Page, T., 'A Generic View of Toxic Chemicals and Similar Risks' (1978) 7 *Ecology Law Quarterly* 207, 218.

⁸ *Report of the Senate Select Committee on Agricultural and Veterinary Chemicals in Australia* (1990) 186-9.

⁹ See, for example, Fethers, B., 'The EPA: An Overview' (1990) 64 *Law Institute Journal* 389.

¹⁰ Coode Island is a large chemical storage site in the western suburbs of Melbourne, owned by the State Government but operated by private corporations. The fire released vapours which were dispersed over part of the metropolitan area. Fortunately, tests revealed that the clouds did not contain acrylonitrile or cyanide, both extremely toxic substances that could have been produced in reactions within the clouds: see *Age* (Melbourne), 22 August 1991, and 31 August 1991.

Thousands of such potentially contaminated sites, such as factories and storage depots in metropolitan areas, exist in Australia.¹¹ It has been estimated that at least 700 sites of varying degrees of contamination and risk exist in Victoria alone — requiring billions of dollars to rectify.¹² Lead contamination in the Melbourne suburb of Ardeer, discovered in 1989 after the land was converted from industrial to residential use,¹³ could cost up to \$6 million to clean up.¹⁴ The traditional response of simply isolating a contaminated site is no longer feasible as valuable land may be ‘locked up’ from alternative uses.

The cost of de-contaminating a site will vary according to the nature and degree of danger created by the substances present. In some cases, the contamination may need to be removed from the site altogether.¹⁵ In other cases, it may be sufficient to ensure that the contamination is safely contained within a property.¹⁶ The cost will also vary according to the purpose for which the land is to be used. Higher standards of cleaning-up may be required for sites proposed for residential or public use as compared to industrial zones.¹⁷ As demand for urban space increases, rehabilitation efforts become imperative — and greater clean-up costs may be expected.¹⁸

The social resources available for cleaning up contaminated sites, however, are clearly finite. While the Environment Protection Authority (‘EPA’) focuses on minimising the potential for further land contamination,¹⁹ the necessity of allocating costs for the clean-up of existing sites remains urgent. Yet, as we shall see, the law has not adequately addressed the issue of financial liability for land contamination.

3. THE EXISTING LEGAL FRAMEWORK

The legal framework which governs the allocation of financial liability for clean-up costs of contaminated land in Victoria has two sources: the common law and the Environment Protection Act.

3.1 *The Common Law*

At common law, the present owner or occupier of land is generally held legally responsible for the condition of the land. In the unlikely event that contamination

¹¹ *Supra* n.1.

¹² Robinson, B., *Mimeo of Speech to the Australian Chemical Industry Council Waste Management Seminar (8 November 1990)* 9.

¹³ *Age* (Melbourne), 21 September 1989.

¹⁴ *Age* (Melbourne), 6 June 1991.

¹⁵ Dominguez, G., and Bartlett, K., *Hazardous Waste Management (Vol.1)* (1986) 42. In this case, soil may have to be excavated and transported to a disposal tip.

¹⁶ *Ibid.* For example, contamination may be sealed off within impermeable walls inserted into the soil, and then covered over by topsoil.

¹⁷ Johnsen, H., ‘The Adequacy of the Current Response to the Problem of Contaminated Sites’ (1992) 9 *Environment and Planning Law Journal* 230, 236.

¹⁸ In the next few years alone, the Australian Defence Industries site adjacent to the Maribyrnong River, and the proposed Sandridge housing development site, may require de-contamination before conversion to other uses: *Herald* (Melbourne) 15 June 1989 and *Age* (Melbourne) 3 May 1990 respectively.

¹⁹ The EPA has imposed binding guidelines designed to reduce industrial waste production: ‘Industrial Waste Management Policy (Waste Minimisation)’ *Victorian Government Gazette*, 29 October 1990, s.52.

is confined within a property, the owner or occupier is not obliged to take any rehabilitative measures to remove the contamination. However, if the contamination causes damage to neighbouring properties or affects human health, the landowner is potentially exposed to several forms of tortious liability; namely, the actions of private nuisance, trespass or negligence.²⁰

The tort of private nuisance, for example, is based upon the principle that a landowner is entitled to use his or her property in any way desired, subject to the constraint that the land use must not materially interfere with the right of neighbouring landowners to enjoy beneficially their own properties.²¹ The interference must be substantial and unreasonable from an objective viewpoint, and cause a material injury.²² Standing to sue in private nuisance is confined to those persons who have suffered invasions of their substantive proprietary rights. In the case of a contaminated site, the spread of contamination into the neighbouring properties is likely to amount to an unreasonable interference with those properties.

In turn, trespass covers the direct and unauthorized physical interference with an individual's exclusive possession of property.²³ It differs from other causes of action in that it is actionable without proof of injury to property. Evidence of physical contact with the property is ordinarily sufficient. Moreover, once it has been demonstrated that some contact has been made, the defendant has the burden of proving that the interference should be exonerated. Some forms of environmental degradation, such as drifting vapours rising from a waste disposal site, may not constitute direct physical contact.²⁴

Finally, negligence may be available as a cause of action.²⁵ The occupier of a property that contains contaminated material is obliged to take reasonable care to ensure that it does not cause injury to neighbouring land or human health. He or she can be sued where the standard of care expected was not fulfilled in the circumstances, and this failure caused the injury allegedly suffered by the person bringing the action.²⁶ Those elements may be very difficult to establish, as the state of knowledge extant at the time of the contamination may have been insufficient to support an argument that the occupier should have taken reasonable precautions to prevent the contamination. Further, the damage may not be traceable to a particular source; the risk created by the landowner, if any, may be confounded by interacting with other factors.

The deficiencies of the common law in managing environmental degradation have been well documented elsewhere.²⁷ Most importantly, the common law focuses on resolving individual disputes rather than addressing the issue in a broader community context. It thus cannot readily assimilate the broader

²⁰ The *Rylands v. Fletcher* principle is another possible cause of action: see Fleming, J., *The Law of Torts* (1992) 334.

²¹ Bates, G., *Environmental Law in Australia* (3rd ed. 1992) 37.

²² Toohey, J. and D'Arcy, A., 'Environmental Law — Its Place in the System' in Fowler, R.J. (ed.) *Proceedings of the International Conference on Environmental Law* (1989) 70.

²³ Fleming, *op. cit.* n.20, 16.

²⁴ Toohey, *op. cit.* n.22, 71-2.

²⁵ Fleming, *op. cit.* n.20, 105.

²⁶ *Ibid.* 114.

²⁷ See, for example, Berns, *op. cit.* n.6, 107, especially at 111.

community interest in environmental protection or the necessity of a comprehensive policy approach to the issue.²⁸ Clean-up of sites is thus delayed by the reactive nature of the common law and the necessity of allocating blameworthiness. Moreover, the courts lack the special scientific and economic expertise required for devising effective standards which properly take account of the various interests concerned.

In addition, the common law often fails to allocate financial liability for damage caused by contamination in an equitable and clear manner. Logically, one who is responsible for contamination should pay for the damage and clean-up costs; a direct correlation should exist between the hazardous activity and liability. In practice, however, the evidentiary difficulty of proving that contamination caused an injury or that an occupier breached a standard of reasonable care, can present an insurmountable obstacle to establishing common law liability.²⁹ The consequent scarcity of awards of compensation generates complacency with regard to inadequate waste management practices. Further, common law damages may merely cover the value of the land rather than the full cost of a continuing rehabilitation effort.

Finally, a purchaser of contaminated land may have no remedy under property law against the person from whom he or she bought it. In accordance with the *caveat emptor* maxim, a purchaser of land usually takes the risk that the land is contaminated or otherwise defective.³⁰ It is the purchaser who must ascertain whether there are problems associated with the land. Sellers are not obliged to disclose any defects in the property which are visible or which could be discovered by a reasonably careful inspection of the property.³¹ Moreover, as the case authorities currently stand, a seller does not have to disclose latent defects in the property that are known to the seller. Unfortunately, in many cases, contamination may be detected only through extensive testing of the land. Even then, the testing may be unable to find contamination that is latent in nature. Thus, the purchaser usually has no remedy against the person from whom he or she bought the land, in the event that the land is found to be contaminated. Unless an actionable misrepresentation or a fraudulent concealment as to the land's condition has been made by the seller, the contract of sale cannot be subsequently rescinded.³² The costs of rectifying contamination present on the land, or of satisfying compensation claims brought by other persons, are left to the landowner.³³

Clearly, therefore, the common law fails to provide a fair and accessible avenue for the rehabilitation of contaminated sites. Its flaws are exacerbated by the

²⁸ Toohey, *op. cit.* n.22, 73.

²⁹ Meyer, C., 'The Environmental Fate of Toxic Wastes, the Certainty of Harm, Toxic Torts and Toxic Regulation' (1988) 19 *Environment Law* 321, 371.

³⁰ Cameron, M. and Dowse, J., 'Contaminated Sites: Vendor and Purchaser' (1990) 64 *Law Institute Journal* 404.

³¹ Wikrama-Nayake, P., *Voumard: The Sale of Land in Victoria* (4th ed. 1986) 216.

³² Cameron, *op. cit.* n.30, 404.

³³ To some extent, *caveat emptor* may be modified contractually. Warranties and indemnities can also be incorporated into a contract of sale to ensure that a seller will be liable for any clean-up costs subsequently incurred: *ibid.* 404-406. Such measures, however, are unsatisfactory. They merely provide a piecemeal solution and assume the existence of equality of power between contracting parties.

inadequate protection offered by property laws to the innocent purchaser of contaminated land. As we shall see in the next section, the Environment Protection Act also has serious deficiencies.

3.2 *The Environment Protection Act 1970 (Vic.)*

3.2.1 *The Scheme*

The Environment Protection Act was introduced in 1970 as a response to the perceived deficiencies of the law in managing environmental problems. Following amendments in 1984, power was conferred upon the EPA to undertake, or to direct the taking of, clean-up measures where contamination jeopardizes the environment or human health. This power recognizes the need to act immediately in response to hazardous contamination, rather than await court decisions on who should be responsible for the clean-up. Some limited provision is consequently made in the Environment Protection Act for the allocation of clean-up costs.³⁴

Most commonly, when confronted with a contaminated site, the EPA will invoke section 62A and issue a notice directing any of several specified parties to take clean-up measures. Those parties include the occupier of the site, the person who has caused or permitted the contamination, any person who appears to have abandoned any industrial waste or potentially hazardous waste, or any person who handles industrial waste or potentially hazardous waste in a manner causing an environmental hazard.³⁵ The EPA can choose which party will bear the financial liability for clean-up, as the costs will be met by the party to whom the clean-up notice is issued.

Alternatively, the EPA may itself take clean-up measures under section 62. The circumstances in which it may do so include the discharge of pollutants, the likely existence of a condition of pollution, the abandonment of industrial waste or potentially hazardous substance, or the handling of industrial waste or potentially hazardous substance in a manner that may cause an environmental hazard. The EPA may then recover the reasonable costs³⁶ of doing so from either the person who caused the action of clean-up to be taken or the occupier of the premises on which the contamination exists. If the occupier cannot be found for payment, the costs will become a charge upon the premises, effective upon registration with the Titles Office. After twelve months, where there has been no payment, the EPA becomes entitled to sell the property to recover the charge.

In practice, although there are a number of persons who may be made liable for clean-up costs, the EPA tends to target the occupier of the land under section 62A.³⁷ It is usually the occupier who is the most easily identified potential source of reimbursement. It may be more difficult to identify persons who cause

³⁴ Strangely, Hansard does not report any discussion in Parliament regarding those provisions: see Victoria, *Parliamentary Debates*, Legislative Assembly, 3 May 1984, 4405. This may reflect a lack of consideration as to the manner in which they would operate in practice.

³⁵ Environment Protection Act 1970 (Vic.) s.62A(1).

³⁶ These costs may include labour, administrative and overhead costs: Environment Protection Act 1970 (Vic.) s.62(2A).

³⁷ Cameron, *op. cit.* n.30, 405.

contamination or to establish the existence of a causal link between manufacturing activities and the contamination.³⁸ The occupier does not have to own the land, as it is the mere fact of occupation at the time of a clean-up that serves as the criterion for liability. Financial institutions may, for example, become liable if they enter into possession of the land upon a mortgage default, as this amounts to occupation at law.³⁹ No element of knowledge on the part of the occupier is required for liability to be imposed. In effect, the liability is a strict one, and it will usually be very difficult to evade liability even though there may be mitigating circumstances. Further, there is no right of appeal from a clean-up notice. If the occupier is the one who is obliged to clean up, the occupier may take legal action to recover reimbursement for the costs of clean-up from any of the other specified persons.⁴⁰

The liability is also a retrospective one, since the activities which caused the contamination need not have occurred during the present occupier's occupation, but may have occurred many years ago. In the case of persons who caused the contamination, they may be made liable for clean-up costs even though they no longer occupy the land and had disposed of the land several decades previously. They may also be made liable for contamination that has migrated off-site to other properties. The scope of liability is potentially very broad, as the EPA has wide powers to impose clean-up requirements under section 62A. A person may be required to restore the environment to a state as close as practicable to the state it was in prior to the contamination, or to remove or abate any pollutant, or to retain any contractor or expert agency at his or her cost for the clean-up work.⁴¹ There is no provision for a limit upon costs, which is significant as the work may continue for some time.

3.2.2 Deficiencies.

The most fundamental flaw in the legislative scheme is that liability is not clearly based upon responsibility for contamination. No overriding principle of liability is made explicit. A rudimentary fault-based approach is suggested by references to 'the person who caused the pollution to occur',⁴² but it is the occupier who will most commonly be held liable pursuant to the EPA's current approach.⁴³ While in some cases the occupier will be responsible for the contamination, in many other cases occupation or ownership will have changed through time. Innocent parties who purchase property without knowledge of the presence of contamination may be held liable for the costs of the clean-up.⁴⁴ The purchasers

³⁸ Dominguez, *op. cit.* n.15, 154.

³⁹ Australian and New Zealand Environment and Conservation Council, *Financial Liability for Contamination Site Remediation* (June 1993) 25. Hereafter cited as 'ANZECC Discussion Paper'.

⁴⁰ Environment Protection Act 1970 (Vic.) s.62A(2). This will be of little value where those other persons cannot be identified or are not available.

⁴¹ Environment Protection Act 1970 (Vic.) s.62(1A).

⁴² Environment Protection Act 1970 (Vic.) s.62A(1)(b).

⁴³ *Supra.* n.37.

⁴⁴ There is at present a state-wide planning requirement for land intended for a 'sensitive use' such as for residential land or schools. In these cases, the new planning scheme amendments should either specify the existence of contaminated sites within the area or provide for an environmental audit certificate. However, contaminated sites will slip through if they are not identified at the time of the planning scheme amendment or that amendment does not include an environmental audit requirement.

of land in the Ardeer estate development, which had been rezoned to residential land from industrial land, and which was subsequently discovered in 1989 to be contaminated by lead, were thus potentially liable for clean-up costs.⁴⁵ It will also be unfair to impose liability upon the occupier if the contamination has migrated from elsewhere.

Further, the scheme does not allow for any factor to mitigate the imposition of liability. It does not acknowledge that culpability may differ between particular occupiers. An occupier who causes contamination, for example, may have used the best available technology, or depended upon a state of scientific knowledge which subsequently turned out to be seriously inadequate.⁴⁶ The operations may also have been approved by the then-existing government authorities responsible for environment management, in accordance with standards perceived as appropriate at that time.⁴⁷ The community may have benefited from the products whose manufacture created contamination. While such factors do not exonerate one who has caused contamination, issues of equity require the apportionment of costs between different parties in some situations.

Finally, where liability is imposed upon a party for clean-up costs, the scheme provides no right of consultation in that process. The EPA has a large discretion, limited only by administrative law requirements, to select any method of clean-up and any standard of purity it desires.⁴⁸ It is not required to prove that the person who is given notice is in fact liable under the Act. As seen above, the occupier, on the other hand, has no right of appeal from a clean-up notice. Although a person held liable should be precluded from selecting an inadequate standard of clean-up, there is no protection from the imposition of unrealistic standards of clean-up and excessive financial liabilities.

Thus, it can be seen that the Environment Protection Act fails, like the common law, to equitably and effectively allocate the financial liability for clean-up of contaminated land.

3.3 *The ANZECC Discussion Paper*

Recently, the Australian and New Zealand Environment and Conservation Council ('ANZECC') released a discussion paper on financial liability for contamination clean-up.⁴⁹ The discussion paper suggests that national guidelines should be developed to govern cost allocation.⁵⁰ Those guidelines would be implemented through a cooperative scheme in which each state and the Common-

⁴⁵ Herron, K., 'The Impact of Hazardous Waste on Appraisal' (1991) 31 *The Valuer* 500. The EPA had the option of pursuing the corporations responsible for the contamination or the present occupiers of the land. In this case, the EPA sought to affix liability upon the corporations, which has proven difficult to date: *Age* (Melbourne), 6 June 1991. See also the discussion in *Environment Protection Agency v Simsmetal Ltd* [1991] 1 VR 623. The obstacles presented by the case have now been resolved by an amendment to the Environment Protection Act 1970 (Vic.).

⁴⁶ Dominguez, *op. cit.* n.15, 159.

⁴⁷ 'ANZECC Discussion Paper', *op. cit.* n.39, 22-3.

⁴⁸ National Environmental Law Association (Victorian Division), *Submission to the ANZECC on Financial Liability for Contaminated Sites*, (September 1993) 7.

⁴⁹ *Supra.* n.39.

⁵⁰ *Ibid.* 5.

wealth enacted appropriate legislation. Uniformity of provisions across Australia is highly desirable, as differences in jurisdiction could lead to inconsistent outcomes.

4. THE DESIGN OF ENVIRONMENTAL LAWS

The design of environmental laws needs to be more carefully conceptualized. In the past, environmental laws were often formulated as an *ad hoc* response to perceived environmental threats, without taking into account the possible implications of those laws.⁵¹ In particular, the traditional means of environmental protection has been aggressive regulation: prescribing standards and enforcing them through penalties. In the United States, 12 volumes or 9,600 pages of environmental regulations existed in 1990.⁵² Yet such intense regulation has limited value unless it induces enduring change in the practices of industry as well as ensuring environmental quality. The design of environmental laws must promote solutions to degradation which integrate many complex factors in a comprehensive way. For example, regulations which seek to impose unrealistic objectives, like a completely purified environment, will be ineffective.⁵³ Industry may also be less than eager to comply with regulations perceived as inequitable.

The effectiveness of regulation in protecting the environment⁵⁴ will be enhanced when laws are designed in a manner which promotes 'equity' and 'efficacy'. Critically, the law must promote the effective resolution of an environmental problem in a way that expends as few social resources as possible in order to comply with the requirement of 'efficacy'.⁵⁵ The objective is to ensure that the problem is properly and fully rectified in the present, rather than merely postponed to future generations. The solution must, however, not consume excessive resources. Conversely, 'equity' requires that the law should ensure that the benefits and burdens of environmental protection are shared fairly among the various parties involved. Those parties include the government, industry, the community and environmental lobby groups.

The meaning of 'efficacy' and 'equity' depends upon the particular environmental problem and upon the value judgments which are made as to how the conflicting interests of all parties will be reconciled. Design of a law which governs the imposition of financial liability for contamination would ideally ensure that the following goals are met:

- an immediate and safe response to contamination where required;
- the rehabilitation of the contaminated land;

⁵¹ Irwin, F., 'An Integrated Framework for Preventing Pollution and Protecting the Environment' (1991) 22 *Environmental Law* 1, 12-8.

⁵² Oldenburg, K., 'Pollution Prevention Alternative to Regulation . . . Maybe' in Air and Waste Management Association International Specialty Conference Papers, *Hazardous Waste Management in the 90's: Moving from Remediation to Practical Preventative Strategies* (1990) 10.

⁵³ Baumol, W. and Oates, W., *Economics, Environmental Policy, and the Quality of Life* (1979) 211.

⁵⁴ Note that it is now realized that regulation is not necessarily an appropriate solution for environmental problems. Other policy instruments, like economic measures or cooperative schemes may be more apt in the particular circumstances.

⁵⁵ Jakeman, A. and Simpson R., 'Towards More Effective Environmental Quality Control Policies: A Technical Perspective for Air and Water Pollution' (1986) 3 *Environmental and Planning Law Journal* 124, 125.

- an equitable distribution of clean-up costs across the community; and
- the discouragement of poor waste management practices.

As was seen in Part Three, those goals are not satisfactorily addressed by the existing legal framework. In order to comply with the requirements of 'equity' and 'efficacy', the design of environmental laws involves consideration of several factors.

First it is imperative to evaluate the longer-term effects of specific regulation. A distinction has been drawn between laws which merely focus upon resolving disputes between parties and laws that attempt to rectify the causes of environmental degradation.⁵⁶ While the resolution of a dispute may be a successful strategy in the short-term, the result may simply postpone the environmental costs until a future generation. It is usually more effective and equitable to reduce environmental costs by treating contamination when it is less advanced.⁵⁷

Arguably, laws that allocate financial liability for the clean-up of contamination have traditionally focused on the immediate resolution of disputes. Further, recent proposals, like those put forward by the ANZECC in its Discussion Paper on Financial Liability for Remediation of Contaminated Sites, do not appear to promote fundamental changes in waste management practices. Thus, the fact that a corporation is confronted with substantial financial liability will not necessarily deter other corporations from continuing to engage in improper practices if the imposition of similar liability upon them is seen as uncertain.⁵⁸ The imperative of reducing waste production should be paramount in the longer-term, especially as contamination clean-ups are frequently incomplete and tardy.⁵⁹ In the meantime, existing contaminated sites must be rectified, which means that a new financial liability law is necessary.

The design of financial liability rules must resolve a tension between the demands of equity and efficacy. On the one hand, a law that imposes liability uniformly, eliminating scope for litigation over blameworthiness, seems to be most efficient. This is somewhat similar to the present situation under the Environment Protection Act. This simpler scheme, however, may actually discourage participation by polluters in clean-up processes, on the basis that it is perceived as inequitable.⁶⁰ Greater participation may be evoked by a more complex scheme which allows for differentiation between the contribution of particular parties. Paradoxically, the use of such equitable factors may generate more costly and prolonged litigation over liability.⁶¹ A challenge for law-makers is to decide how this apparent paradox may be resolved.

The resolution of this tension will require an evaluation of the economic ramifications of the new law. In the past the costs of environmental degradation

⁵⁶ Birkeland-Corro, J., 'Redefining the Environmental Problem: Some Impediments to Institutional Reform' (1988) 5 *Environmental and Planning Law Journal* 109, 130.

⁵⁷ Johnsen, *op. cit.* n.17, 242.

⁵⁸ See generally, Brunner, H., 'Environmental Criminal Enforcement: A Retrospective View' (1992) 22 *Environmental Law* 1315.

⁵⁹ Johnsen, *op. cit.* n.17, 231.

⁶⁰ See, for example, McNaughton, B., 'Whether the Sins of the Son Should be Visited Upon the Father' (1993) 10 *Environmental and Planning Law Journal* 3.

⁶¹ Reardon, J., 'Limiting Solid Waste Liability under CERCLA: Towards the Toxic Cleanup Equity and Acceleration of 1993' (1993) 20 *Boston College Environmental Law Review* 533, 573.

have largely been shifted from industry to the broader community, and therefore 'externalized' from production.⁶² Thus, the cost of cleaning up lead contamination at Ardeer in 1990 was, for example, paid by the Victorian Government.⁶³ Alternatively, where no treatment occurs, environmental quality and human health may be impaired again imposing the costs of degradation upon the community.⁶⁴ The inadequate practices of industry are therefore mistakenly seen as sustainable because their costs are not part of the production process. The deficiencies of the common law and the Environment Protection Act in equitably and efficiently allocating costs for contamination clean-up may be ameliorated by the 'precautionary principle'.

4.1 *The Precautionary Principle*

Traditionally, the law has sought to deter polluters by exposing them to the risks of penalties for breaches of regulation and a common law compensation payout. Contemporary approaches, however, seek to use legislation to create economic costs for industry if they engage in an activity which contributes to degradation.⁶⁵

Specifically, the 'precautionary principle', or the 'polluter pays principle', has become popular among environmental groups and legislators.⁶⁶ In its simplest form, the precautionary principle attempts to relate the activities of a person to the environmental degradation in issue. Thus, those persons who are responsible for the contamination of a site must pay for the costs of rectifying the damage caused, irrespective of whether fault can be proved on their part.⁶⁷ A correlation between the polluter's activity and the contamination needs to be established. In this way, the focus is upon the manner in which an activity is performed, rather than the nature of the injury.⁶⁸ Consequently, litigation over culpability is minimised. In this sense, the precautionary principle is more likely to produce an efficient legislative scheme.

In theory, the precautionary principle is likely to promote the internalisation of the costs of environmental degradation into production processes. Where it is perceived that the costs of clean-up are commonly imposed upon polluting corporations, those costs will no longer be seen as exotic, but rather as part of the production process.⁶⁹ Pressures for change in industrial processes are likely to arise as a result of higher real costs of production, thus encouraging sounder waste

⁶² Page, *op. cit.* n.7, 212-3.

⁶³ *Age* (Melbourne), 6 June 1991.

⁶⁴ Baumol, *op. cit.* n.53, 76-8.

⁶⁵ Fowler, R., 'Managing Development and the Environment: Broad Policy Options in Legislation and Self-Regulation', a paper presented to a public seminar on Development and the Environment, 3 August 1990.

⁶⁶ The Australian and New Zealand Environment and Conservation Council maintain that it should be the 'driving principle' of any scheme determining liability for clean-up costs of contaminated land: 'ANZECC Discussion Paper', *op. cit.* n.39, 14.

⁶⁷ Gaines, S., 'The Polluter-Pays Principle: From Economic Equity to Environmental Ethos' (1991) 26 *Texas International Law Journal* 463, 467-8.

⁶⁸ An useful analogy may be drawn between the precautionary principle and the common law action of trespass. Both are based upon the issue of whether there was responsibility (or physical interference in the case of trespass) on the facts.

⁶⁹ 'ANZECC Discussion Paper', *op. cit.* n.39, 14.

management practices. The precautionary principle has the potential to promote more enduring long-term changes in industry.

The precautionary principle has formed the basis of many recent changes in environmental laws, especially the industrial waste management reforms in Victoria.⁷⁰ The full price of the disposal or treatment of waste, having regard to the longer term impact of that waste, must now be paid by industry. Such an outcome can promote imaginative solutions to waste management as evidenced by the experience of one Melbourne-based waste disposal company. As a result of increasing its charges by 110% during 1986, a significant reduction occurred in the quantity of waste delivered to the Cleanaway's Tullamarine site.⁷¹ Larger corporations apparently chose increasingly to treat their waste on-site.

The precautionary principle is not the only basis of imposing liability. Fault-based liability, for example, imposes clean-up costs on parties who are shown to have breached a reasonable standard of care in managing industrial waste.⁷² In theory, fault-based liability ensures an equitable allocation of costs by excluding the possibility of innocent occupiers from being held liable for the costs, and by predictably relating inadequate management practices to the imposition of liability. It may, however, be subject to the same flaws that have already emerged in common law negligence suits relating to contaminated sites.⁷³ For example, it is often difficult to prove that a particular activity caused contamination because of deficient understanding of ecological processes and the existence of other potential sources of contamination. The standard of care may also be very difficult to define.

Similarly, risk-based liability would appear to be far from a satisfactory basis for imposing costs. Pursuant to this rationale, those parties who create the risk of contamination by engaging in an activity, or who benefit from that activity, are held liable for clean-up costs.⁷⁴ For example, a corporation that manufactures chemicals with highly toxic by-products is likely to be held responsible for any contamination which arises on its premises. Liability is imposed as a consequence of the existing risk irrespective of whether the corporation actually caused the contamination. A corporation may be liable for costs simply because it derives financial income from a particular manufacturing activity. For example, a bank may be liable for costs where it finances a project of a manufacturing corporation in return for a share in the income. Although the risk-based approach has the merit of focusing attention upon the important issue of risk management, it is undermined by the inequity which it potentially creates. There is no clear relationship between poor management practices and liability for costs; innocent parties may also be held liable. Clearly, therefore, risk-based liability is seriously flawed.

4.2 *Equitable Considerations*

The precautionary principle thus appears to be the most equitable basis for imposing liability. It satisfies community interests in limiting both subsidisation

⁷⁰ See, for example, the 'Industrial Waste Management Policy (Waste Minimisation)', *op. cit.* n.19.

⁷¹ Thompson, S., 'Melbourne Metropolitan Board of Works and the Polluter Pays Principle' *Waste Management Symposium Papers*, 15 July 1988.

⁷² 'ANZECC Discussion Paper', *op. cit.* n.39, 15.

⁷³ Berns, *op. cit.* n.6, 111.

⁷⁴ 'ANZECC Discussion Paper', *op. cit.* n.39, 17.

of inefficient industries and the open-ended liability of government for clean-up costs.⁷⁵ However, the precautionary principle as considered above fails to adequately consider broader equitable issues. For example, it fails to account for situations in which a party should be relieved of liability for clean-up costs, either because those costs are disproportionate to the culpability of that party, or because other parties should also share the costs. In other words, there may need to be an apportionment of liability between parties upon the basis of 'mitigating factors'.⁷⁶

Such factors must include the possibility that multiple parties contributed to the contamination of a particular site, whether as successive occupiers or as users of a disposal site. The fact that a particular occupier relied upon the best available knowledge and technology at a given time is also significant.⁷⁷ Further, standards approved by the then-existing government body responsible for environmental management may later prove to be seriously inadequate.⁷⁸ These factors affect the perceived culpability of a polluter. Moreover, where the community has benefited from products which require hazardous chemicals, like pharmaceuticals or fertilisers, it may be appropriate for the community to bear some of the clean-up costs.⁷⁹

Equity may be promoted, therefore, by allowing such extenuating factors to limit or even extinguish liability otherwise imposed upon a corporation under the precautionary principle. Ideally, the liability imposed upon a party should reflect closely its proportionate contribution to the contamination. Thus, costs may be apportioned between different corporations, or perhaps between a corporation and the broader community. In circumstances where an occupier is innocent of the contamination, or where the contamination may have migrated from a neighbouring property,⁸⁰ an exemption from liability may be appropriate. Drawing an analogy with the priority rules which govern property law matters, a bona fide purchaser of property for value without notice⁸¹ should not be liable for contamination costs.

The challenge of creating an equitable scheme for the allocation of liability for clean-up costs is clearly a critical but difficult one. While equity demands that a polluter be held responsible for contamination, participation in clean-up processes may be more satisfactorily promoted by a perception that costs are equitably distributed. Consideration of such mitigating factors as those discussed above, may promote the efficacy of the objective of clean-up for contaminated land. In this way, the apparently paradoxical relationship between equity and efficacy may be resolved.

4.3 Orphan Sites

The precautionary principle cannot, however, be applied to cases of contaminated sites for which no occupier or person causing the contamination can be

⁷⁵ As noted elsewhere, subsidies often promote inefficient and environmentally unsound practices: Hahn, R. and Stavins, R., 'Incentive-Based Environmental Regulation: A New Era from An Old Idea?' (1991) 18 *Ecology Law Quarterly* 1, 11.

⁷⁶ 'ANZECC Discussion Paper', *op. cit.* n.39, 20.

⁷⁷ Dominguez, *op. cit.* n.15, 159.

⁷⁸ 'ANZECC Discussion Paper', *op. cit.* n.39, 23.

⁷⁹ *Ibid.* 17.

⁸⁰ *Ibid.* 20.

⁸¹ Such a purchaser would take the land free of any equitable interest created: see Neave, M., Rossiter, C. and Stone, M., *Property Law Cases and Materials* (1988) 288.

found. These sites are known as 'orphan sites'.⁸² For example, the corporation which formerly occupied a contaminated site may have gone bankrupt in the period before the contamination is discovered. Although the directors of the corporation may be made personally liable for any offence committed by the corporation against the Environment Protection Act,⁸³ they are not held personally liable for clean-up costs at present. In any case, this prospective source of funds will be useless where directors lack the financial resources necessary to pay for clean-up.

One answer to the problem of orphan sites is the creation of a special fund to pay the costs of decontamination. In the United States, a 'Superfund' has been established under the Comprehensive Environmental Response, Compensation and Liability Act 1980.⁸⁴ The Superfund is financed by taxes imposed on industry's use of petroleum and chemicals as well as government contributions.⁸⁵ In this way, the costs are shared between the community and industry, both of which benefited from the production of contamination.

Unfortunately, the Superfund system has not been notably successful. Not only is the scheme chronically underfunded,⁸⁶ thus guaranteeing extreme delay in the clean-up of even priority sites, it has also been plagued by extensive and complicated litigation over liability.⁸⁷ The Superfund, however, is only one model. It is flawed in that it seeks to apply to all contaminated sites identified by the EPA as requiring treatment. A fund established for the sole purpose of de-contaminating orphan sites may be a more desirable option. Funds should not derive solely from government revenue because this may be perceived as simply subsidizing inefficient industry practice and thereby fail to promote cost internalization.⁸⁸ Rather, funds may originate from a levy imposed upon industry, varying according to each sector's share of contamination,⁸⁹ with government contributions to reflect the community contribution. Such a levy would be more carefully targeted at those industries in which inadequate management practices are pervasive.

5. A PROPOSAL FOR LEGISLATIVE REFORM

Having considered the inherent flaws in the existing legal framework for the allocation of clean-up costs, and examined some considerations which should inform legislative change, I now suggest a proposal for reform.

⁸² 'ANZECC Discussion Paper', *op. cit.* n.39, 37.

⁸³ Environment Protection Act 1970 (Vic.) s.66B.

⁸⁴ Otherwise known as the CERCLA 42 USC /9601.

⁸⁵ Yandle, B., 'Rules of Liability and the Demise of Superfund' in Meiners, R. and Yandle, B. (eds), *The Economic Consequences of Liability Rules* (1991) 143.

⁸⁶ This is partly a consequence of the number of sites requiring decontamination. Under the Act, the United States EPA must create a priority list for contaminated sites that are especially hazardous, with the list containing over 1200 sites by 1989: Jonas, L., 'Dividing the Toxic Pie: Why Superfund Contingent Contribution Claims Should Not be Barred by the Bankruptcy Code' (1991) 66 *New York University Law Review* 850.

⁸⁷ This has been largely a consequence of the rules of joint and several liability which allow the United States EPA to sue one party for the entire liability: Yandle, *op. cit.* n.85, 150. Targetted parties, often confronted with a claim which is disproportionate to its contribution to the damage, are thus less likely to settle a claim and may seek to involve other parties. The strict liability imposed by the legislation, and the few defences available, increases the likelihood that parties will resist liability: Jonas, *ibid.* 859.

⁸⁸ See Baumol, *op. cit.* n.53, 248-50.

⁸⁹ Some industries will be disproportionately responsible for contamination, such as the petroleum, chemical and energy industries.

5.1 Preliminary Issues

First, however, it must be emphasised that any new financial liability law must be part of a comprehensive scheme for dealing with waste management in order to be effective. As we have seen above, such laws on their own do not necessarily bring about enduring changes in industry and the community. Policies aimed at changing the causes of contamination, like reducing production of toxic substances and wastes by industry, are critical. Fortunately, Victoria already has an established program designed to minimise waste production.⁹⁰

Once liability for contamination is allocated, it is imperative that the clean-up process is undertaken satisfactorily. Effective clean-up is limited by technical feasibility and costs.⁹¹ It has traditionally been further jeopardised by policies which undermined this objective. For example, the former State Pollution Control Commission (NSW) had a draft policy that permitted contaminants to be simply buried under one metre of soil as long as the site was clearly marked as contaminated.⁹² It has been argued above that the ANZECC standards are seriously deficient, in that they focus more upon the shorter-term aim of making sites useable rather than upon the longer-term object of making sites environmentally safe. Clearly, a prompt and effective de-contamination process, irrespective of the future use of a particular site, is an essential component of a waste management scheme.

5.2 Recommendations for Reform of the Environment Protection Act

Perhaps one of the most important steps in any attempt to reform the law regarding contaminated sites would be to formulate a declaration of the objectives sought to be promoted. Currently, there is no articulation of the policies and value judgements that underlie the existing clean-up provisions of the Environment Protection Act. The insertion of a new division into the Act dealing with contaminated sites would also enhance the effectiveness of the legislative scheme by integrating the financial liability framework with the rest of the legislation.

Second, uncertainty and confusion could be minimised by the insertion of provisions into the Act detailing the circumstances in which the EPA may require clean-up operations to be taken, and specifying the process of determining appropriate clean-up measures. As we have seen, currently the EPA has a very broad discretion to decide whether an administrative notice should be issued, and what it should require. Although there are advantages in such a broad flexibility, decisions can become incoherent and inconsistent. Such provisions should include the following steps:

- ascertain whether contamination exists, and whether it is sufficiently hazardous to require an immediate, priority response;

⁹⁰ A waste minimisation program was begun in late 1990, with the longer-term object of requiring industry to change its production practices through the use of appropriate technology and audits to reduce waste: Malone, P., 'Pollution Prevention Through Waste Minimisation: Converging the Interests of Industry, Government and the Public' (1991) 8 *Environmental and Planning Law Journal* 267, 271.

⁹¹ Johnsen, *op. cit.* n.17, 235.

⁹² *Ibid.*

- enter the site onto a formal contaminated sites register, to warn prospective purchasers;⁹³
- choose the clean-up measures and the standard to which the site is to be restored, with input from various defined parties such as the occupier, the EPA and the local government authorities responsible for the area; and
- determine what the costs of clean-up are, before attributing those costs to a party.

Further provisions should govern the allocation of liability for clean-up costs of contaminated land. An ideal scheme would be three-fold.

Provision should be made to enshrine the precautionary principle as the fundamental basis of the system. Consequently, identification of the party or parties responsible for a particular contaminated site would be a threshold issue. Here, the burden of proof is critical. How it is defined will have a profound impact upon the likelihood that litigation may become uncontrollable. As considered above, the EPA is not currently required to establish a particular burden of proof; it merely needs to establish some reasonably based opinion that a risk to the environment or human health exists in order to allocate responsibility. To some degree, potential 'respondents' should be protected from the risk of abuse inherent in such a discretion.

In my view, the burden of proof should have a shifting nature. Within the first stage of allocation, the EPA should have to establish on the balance of probabilities that a party was responsible for contamination. This means proof of the causes and history of the contamination, which may be difficult to adduce (as in the context of common law negligence suits). Responsibility under the precautionary principle, however, is considerably easier to prove than a breach of duty of care. Once responsibility has been established, the burden of proof should shift to the 'respondent' to demonstrate why its liability should be apportioned or even extinguished. Much of the costs of litigation are thus shifted to the 'respondent', who is likely to be in a position of better knowledge than the EPA as to how it managed the site. The burden of proof can be used to encourage settlements.

Further, in my view, an 'arbitration court' is possibly the more effective means of deciding how costs are to be allocated.⁹⁴ An administrative body such as the EPA constantly risks being 'captured' by particular interests, and therefore making decisions in their favour.⁹⁵ There is also the potential for abuses of power in that the EPA would have the power (as it currently does) to choose the method of clean-up and then elect who should pay for that method. It seems better for allocation decisions to be made by a comparatively impartial and independent body. However, it is vital that the persons comprising the 'arbitration court' either have environmental, scientific or economic expertise — or have access to specialist advice when appropriate. Of course, there are questions as to whether such a

⁹³ Such a register already exists, but it is administrative and not supported by legislation: 'ANZECC Discussion Paper', *op. cit.* n.39, 53.

⁹⁴ Proposals for a new Environment Court in the Victorian court system currently exist following the very successful creation of a Land and Environment Court in New South Wales: see 'Current Developments: Victoria' (1993) *Australian Environmental Law News* 5.

⁹⁵ Ayres, I. and Braithwaite, J., *Responsive Regulation: Transcending the Deregulation Debate* (1992) 54.

court should be given the power to seriously affect the financial position of corporations.

The precautionary principle will, however, need to be tempered by equitable considerations. The legislative scheme would ideally include a carefully drafted list of 'mitigating factors' which could be used as a checklist by the 'arbitration court'.⁹⁶ Where a party is found responsible for contamination, a strong presumption that the extent of liability be equated to the full costs of the clean-up should exist. However, that presumption may be displaced by proof of such mitigating factors. The factors could include:

- the amount of contamination which the 'respondent' contributed to the overall situation;
- the nature and hazardousness of the contamination;
- the care with which the 'respondent' originally carried out disposal or treatment on the site; and
- the compliance by the 'respondent' with the law at the time of the contamination.

In some cases, costs may be divided among parties. In other cases, where a party is seen as having reduced liability but no other parties at fault exist, or there is no fault found on the part of a party, or there is no identifiable party in existence, the situation will become more complex. In those circumstances, the 'arbitration court' should be able to order that the short-fall in funding is to be made up through disbursements from a contamination fund.

The third tier in the scheme would require the establishment of a fund. Provision in the Environment Protection Act already exists for the creation of an Environment Protection Fund.⁹⁷ Under the Environmental Protection Act, as it currently stands, the fund could only make grants for the purpose of effecting improvements in waste disposal or storage sites. The fund could be constituted by a levy imposed on certain industries.⁹⁸ New provisions should be inserted into the Environment Protection Act, expanding the purposes of the Environment Protection Fund to include de-contamination of orphan sites, and setting out how funds are to be disbursed for this purpose. However, the EPA is not currently in favour of such an option.⁹⁹

6 CONCLUSION

The existing regime governing financial liability for the clean-up costs of contaminated sites is deficient, both at common law and under the Environment Protection Act. There is little recognition of the precautionary principle as a fundamental rationale for cost allocation. The scheme also operates unpredictably and may fail to distribute costs equitably across the various parties involved. Law

⁹⁶ Compare the checklist of factors referred to in Reardon, *op. cit.* n.61, 572.

⁹⁷ Environment Protection Act 1970 (Vic.) s.70.

⁹⁸ For example, in 1989, an environmental levy was imposed upon all premises that produce or store or otherwise deal with industrial wastes and notifiable chemicals, under s.24A of the Environment Protection Act. This levy was to be paid into the Environment Protection Fund.

⁹⁹ Mfodwo, K., 'Remediation and Compensation After Hazardous Waste Incidents: Recent Developments Affecting Companies and Financial Institutions in Victoria' (1991) 8 *Environmental and Planning Law Journal* 211, 218.

reform must occur to ensure that allocating financial liability is both efficient and equitable.

There must be adequate funds to promptly and effectively restore contaminated sites to a productive use or at least to a safe condition. Moreover, the costs must be fairly distributed across the community, with each group bearing an appropriate share. Those persons who are responsible for the contamination should bear the greatest burden; yet there should be scope for the recognition of equitable considerations such as mitigating factors. The paradoxical relationship between efficacy and equity may be resolved through a scheme that affixes responsibility fearlessly but which allows for equity.