

Introduction

Foreseeable 'accountability' is a vital factor in environmental risk management. Corporations have a responsibility to their shareholders and to the communities in which they operate to be accountable for their environmental performance. Indeed that principle is supported generally by the Business Council's policy "to protect the environment by seeking to reduce any adverse impact of the business's operations and products on air, water, land and living organisms to a level where the cost to society of further reductions is no longer offset by the benefits".¹

Legal actions founded on the damaging effects of contamination or environmental degradation could have a devastating impact on the financial resources of a corporation. If a corporation's vision is blinded to the foreseeable risks or the corporation carelessly underestimates its exposure to potential liability, it is questionable whether the corporation has adequately briefed its own risk assessment team or whether the assessment methods employed are sufficiently sophisticated to look beyond the standard procedures applied through environmental impact assessment, site testing and compliance auditing.

Ultimately the success or failure of a corporate environmental policy will depend on management's ability to implement specific objectives through their employees,² but initially, management will need to assess the corporation's exposure to every imaginable environmental risk at all levels of corporate operations and from all foreseeable avenues of legal liability.

The Scope of the Due Diligence Plan

The scope of the due diligence plan for corporations is by necessity expansive, inclusive and pervasive, requiring comprehensive identification of all potential risk situations. As each situation identifies land and environmental sectors foreseeably threatened by the harmful acts contemplated there will be the need to evaluate, at civil and criminal levels, the legal consequences of corporate culpability. In considering relevant state and federal legislation, due regard will have to be given to the likelihood the corporation will be prosecuted in a hostile forum. Prosecution on the basis of strict or absolute liability is a likely outcome.³

Without a doubt "imaginable" considerably extends the scope of "foreseeable" but are the limits of foreseeability ever fully determined? *Donoghue v Stevenson*⁴ may have benchmarked the standard of care we owe to 'our neighbour' but legislators have been reasonably successful in transposing that concept of care to 'our environment' through legislation such as the *Protection of the Environment Operations Act 1997 (NSW)*.

The necessity to take an *expansive* view of what is foreseeable is well supported in case law and literature⁵ but the view espoused is legalistic rather than operationally focussed and in many respects is too simplistic for the purpose to be served. Whilst identification of a class of persons within the foreseeable range of risk is (as noted by Fleming) more relevant than recognising the risk attributed to an identified individual within that class of persons,⁶ questions of 'proximity' and notions of foreseeability are often influenced by considerations which extend the 'imaginable' limits. Corporations face formidable difficulties when they seek to create an all encompassing due diligence plan, but the problems are not insurmountable. As the following cases demonstrate, the foreseeable difficulties are not unimaginable when viewed retrospectively.

Case Studies on Foreseeability

The foreseeability of heavy rainfall into a dairy farm dam was a crucial matter for consideration in *Environment Protection Authority v Associated Dairies Pty Ltd*⁷.

In this case the defendant operated a very substantial dairy at Berkshire Park, New South Wales. Due to heavy rainfall an effluent pond on the property discharged some of its content into a nearby freshwater pond. Eventually the effluent escaped over the pond walls as a result of the incapacity of the pond to contain the volume of the effluent and the rainwater. In time the effluent found its way out of the freshwater pond and into South Creek. A penalty of \$30,000 was imposed by the Land and Environment Court. In respect to the question of reasonable foreseeability of the environmental harm, Bignold J observed at page 24:

"Although I accept the evidence of [the dairy managers] that they were not aware of any previous incident involving pollution emanating from the effluent or other dams on the site as a result of rainfall and runoff, that finding does not exhaust the question of reasonable foreseeability of environmental harm being caused in the manner that it was. For example neither really knew or understood the true storage capacity of the effluent dams or whether that capacity, if known, was sufficient to cope with liquid wastes generated by the dairy together with ordinary rainfall and runoff events from lands including neighbouring properties within the catchment of those dams. The evidence of rainfall recorded in the vicinity of the Defendant's premises for the period immediately before 6 December 1995 does not indicate an unusual intensity of rainfall. Mr Gautam's opinion, which was not challenged, was that the rainfall intensity in the 24 hours prior to 9.00 am on 6 December 1995 is likely to be equalled or exceeded every 6 months on average. Thus the intensity of rainfall experienced

in the 24 hours before 9.00 am on 6 December 1995 was an event that the Defendant could have reasonably foreseen. Indeed it would have oftentimes experienced such rainfall events during the life of the dairy."

An English Case Study

In *Cambridge Water Company v Eastern Counties Leather PLC.*⁸, (another case involving the 'pollution' of a water source in unusual circumstances) the House of Lords reversed the English Court of Appeal judgment that held the appellant tannery liable in 'strict liability' for ground water contamination. Eastern Counties Leather ['ECL'] operated a tannery at Sawston (about 8 kilometres south of Cambridge) and had been a producer of fine leather since 1879. Cambridge Water Company [CWC] discovered in 1982 that the Sawston water had become unfit for human consumption when new standards for 'drinking water' set by the WHO in 1980 were introduced in England in 1982⁹ and claimed to have evidence that the solvent used by ECL had seeped into the ground beneath the ECL tannery, and contaminated the table of water which led into CWC's borehole. There was no direct evidence of the actual manner in which the solvent was spilled at ECL's premises. However, the trial judge found that there were regular spillages of relatively small amounts of solvent [during the period up to 1976] onto the concrete floor of the tannery. The trial judge found that a reasonable supervisor of ECL would not have foreseen, in or before 1976, that such repeated spillages of small quantities of solvent would lead to any environmental hazard or damage - i.e. that the solvent would enter the aquifer¹⁰ or that having done so, detectable quantities would be found down-catchment. Even if he had foreseen that solvent might enter the aquifer, he would not have foreseen that such quantities would produce any sensible effect upon water taken down-catchment, or would otherwise be material or deserve the description of pollution any spillage would have been expected to evaporate rapidly in the air, and would not have been expected to seep through the floor of the building into the soil below. The only harm that could have been foreseen from a spillage was that somebody might have been overcome by fumes from a spillage of a significant quantity.¹¹

The Court of Appeal assessed damages at \$956,937 (less \$60,000 being the residual value to CWC of Sawston Mill) on the basis of strict liability in nuisance. On appeal to the House of Lords, ECL's appeal was ultimately successful because CWC was unable to establish that pollution of their water supply by the solvent was, in the circumstances, foreseeable. Lord Goff's judgment in the House of Lords (supported by Lords Jauncey, Lowry and Wolf)

considered the question of foreseeability of damage under the rule in *Rylands v Fletcher*. His judgment referred to the celebrated statement of Blackburn J. in *Fletcher v Rylands*¹² and to the particular passage where Blackburn J. spoke of “anything *likely* to do mischief if it escapes,” and which a person “*knows to be mischievous*” if it enters upon a neighbouring property. In these circumstances the law imposed a liability on that person to “answer for the natural and *anticipated* consequences” of its escape. Lord Goff concluded: “The general tenor of his statement of principle is therefore that knowledge, or at least foreseeability of the risk, is a pre-requisite for the recovery of damages under the principle; but that the principle is one of strict liability notwithstanding that he has exercised all due care to prevent the escape from occurring.”¹³

Turning to the facts of the present case Lord Goff was of the firm opinion nobody at ECL could reasonably have foreseen the resultant damage at CWC's borehole at Sawston¹⁴ and added “that the present case may be regarded as one of what is nowadays called historic pollution, in the sense that the relevant occurrence (the seepage of P.C.E. through the floor of ECL's premises) took place before the relevant legislation came into force¹⁵. “It appears that under the current philosophy, it was not envisaged that statutory liability would be retrospective.” Goff L.J. was not persuaded that a common law principle “should be developed or rendered more strict to provide for liability in respect of such pollution and recognised the value of ‘well informed and carefully structured legislation’¹⁶ in achieving a strict regime of environmental protection and preservation.

Papua New Guinea Case Study

The third case study is set in the western province of Papua New Guinea. Since 1984, the province has hosted a consortium of American, German and Australian companies (BHP) seeking to establish the Ok Tedi mine for the purpose of mining gold and copper by the extraction process. The case raises issues of foreseeable risk that a corporation's alleged violations of the environment in an undeveloped country could imperil the existence of its indigenous people resulting in a class action being brought by the indigenous people *in the jurisdiction of the corporation's Australian headquarters* for wilful negligence.

From the Ok Tedi mine copper concentrate, together with the gold and other constituents, is piped to the river port at Kiunga on the Fly River. Several breakages of the pipeline have caused concentrate to spread over a wide area of adjacent land. Only 85 per cent of copper is extracted from the ore. Tailings discharged into the river system therefore contain large

quantities of copper, one of the most poisonous metals known when released into aquatic ecosystems.

Mining has also generated ten times more sediment than occurred naturally in the river system before mining started. The spread of sediment made the garden areas unsuitable for growing sago, the basic protein staple, and other vegetables.

To forestall such damage, the PNG Government had originally made it a condition of Ok Tedi's operation that a tailings dam be built for the waste discharging into the river system. But in early 1984, a few months before extraction was due to begin, a landslip covered the foundation work for the dam.

Ok Tedi Mining Limited (OKML) got permission from the PNG Government to start mining and discharge the tailings into the river system, provided plans for a new tailings dam were submitted. BHP estimated a tailings dam at Ok Tedi would cost in the vicinity of \$1.5 billion. If the consortium were required to build the dam, BHP claimed it would have to close the mine. The Cabinet granted BHP a dispensation to continue operating the mine without the need for a tailings dam, provided certain predictions of the future environmental damage were not exceeded.

One of the central questions in the litigation at that time brought on behalf of the indigenous affected villagers by their solicitors, Slater and Gordon, was whether or not those predictions were, in fact, exceeded and whether BHP and OTML were in breach of the conditions of the dispensation.¹⁷

Proceedings were brought in the Supreme Court of Victoria (BHP has its corporate headquarters in Victoria) "by and on behalf of a number of persons who claimed to be injuriously affected by the discharge of certain by-products of the Ok Tedi copper mine into the Ok Tedi River."¹⁸ It was alleged that land adjacent to the Ok Tedi River had "become polluted and less useable for the purposes of those plaintiffs who lived on the flood plains adjacent to the river,"¹⁹ as a result of the actions of BHP (as manager of the mine) causing intentionally or otherwise...certain substances to be discharged into the Ok Tedi River with the consequence that the waters of the river have become polluted or their flow has been affected."²⁰

In September, 1995, Byrne J. ruled in favour of the plaintiffs on the jurisdictional challenge to the Supreme Court of Victoria hearing the Ok Tedi claims (in Victoria). Unless overturned on appeal, BHP and OTML would have been forced to defend their PNG environmental record in an Australian jurisdiction, even though the compensation claims concerned a representative action ostensibly on behalf of 30,000 PNG nationals and the actions which founded the claims all occurred in a foreign land.

John Gordon (Slater and Gordon) notes:²¹:

“With constitutional challenges issued to new PNG legislation criminalizing the legal proceedings, and facing a fresh set of contempt claims and civil damages actions (later withdrawn) over an alleged attempt to engineer a settlement direct with the lead plaintiffs in PNG, BHP finally came to the settlement table and a settlement agreement was struck in June 1996. The key elements of the settlement were:

- \$110 million compensation (non reducible) for all affected people;
- \$40 million for the worst affected villages around the Ok Tedi;
- A commitment to a process aimed at reducing the environmental impact of the mine through an economically and technically feasible tailings mitigation scheme;
- Ongoing payments for garden damage;
- A further 10% of equity purchased by the PNG government to be applied for the benefit of the Western Province;
- Payment of Slater & Gordon’s legal costs and disbursements incurred over the 5 years acting for the landowners.

It had been, perhaps, too optimistic to think that the Ok Tedi issue would conclude with the 1996 settlement. With a lot of hard work from Nic Styant-Browne of Slater & Gordon, and goodwill from BHP and the PNG Government, the arrangements for distribution of the \$40 million dollars for the Ok Tedi people were hammered out by the people in Papua New Guinea. The \$110 million began flowing and on the environmental front, BHP came up with a promising alternative to the tailings dam – a pipeline to transport the tailings to storage cells created by dredging sediment from the Ok Tedi on the flat land at the base of the mountains.

But something happened, and BHP didn't build it. There was certainly no objection from the government, but BHP began saying that they didn't think there would be any environmental benefit in removing the tailings from the river for the next ten years of mining.

Then, in August 1999, a bomb-shell. After years of people telling them that the dumping of tailings in the river would destroy the Ok Tedi and Fly Rivers irreparably, BHP finally admitted that this might be true, and that their own studies were showing that the impacts on the river were much worse than they (alone!) had anticipated.

As a result of this revelation, BHP contended the only thing they could responsibly do (seemingly ignoring the tailings pipeline option) was to close the mine, unless, of course, the people of PNG want to keep it open, tailings problem and all.

Clearly BHP wanted out of Ok Tedi and wanted out without having to pay another cent in tailings mitigation, let alone the \$170 million or so it would take to build a pipeline. So it was a neat strategy to shift the onus onto the PNG people, rather than on the company that had caused and created this unholy mess.

But there was only thing that was stopping them. The 1996 settlement agreement, and its provision that rendered any dispute over its terms justiciable only in the Supreme Court of Victoria, and pursuant to the laws of that State.

And so, once again, the people of the Ok Tedi and Fly River came to Slater & Gordon and said "enforce the commitment to tailings mitigation – don't let this Australian company take its money and walk away from this mess they have created". Thus, on April 12, two writs were issued in the Supreme Court of Victoria against BHP and OTML seeking to enforce the terms of the 1996 settlement with regard to tailings mitigation and for compensation for the delay in it being implemented. One of the actions, *Gagarimabu & Ors v BHP and OTML* (No. 5003 of 2000) is one of the first actions issued under the new representative proceedings rules of the Supreme Court of Victoria, which came into effect in January this year, and recently survived a challenge in the Court of Appeal to their validity in the Mobil Avgas litigation. Gabia Gagarimabu is the member of the PNG National Parliament for the South Fly, and brings the claim on behalf of all of the clans who were parties to the 1996 settlement.

At the time of writing, it looks like the first of the actions – *Dagi v BHP & OTML*. (No 5002 of 2000) is likely to get to trial later this year. Once again, BHP will be answerable in their own town for their actions and decisions, and whether they ultimately justify them, or cannot, it will be a fascinating hearing, and hopefully, an end to a dramatic and important piece of litigation.”

Two American Case Studies

Liability for stigma damage arising from an association with contaminated land is well documented in the USA. Foreseeing the probability that liability could accrue from a distant association with a hazardous landfill, or from the mere presence of contaminated groundwater, considerably expands the boundaries of foreseeability.

On 6th December, 1994, an Ohio (USA) jury awarded an aggregated sum of \$US6.7 million to 1,713 property owners in ‘stigma damages’ in what the plaintiffs’ lawyers claimed as the first verdict to owners of non-contaminated property based solely on ‘proximity’ to a hazardous site. In *De Sario v Industrial Excess Landfill Inc.*²² the Court of Common Pleas found against the defendants, Bridgestone/Firestone Inc., F.F. Goodrich & Co., and Goodyear Tyre & Rubber Co. and demonstrated the way in which hazardous waste disposal can be the proximate cause of real estate devaluation on a massive scale.

All of the plaintiffs owned property within 3.2 kilometres of the twelve hectare Uniontown landfill, which contained 300,000 tons of hazardous waste, including 52,000 ‘55 gallon drums’ that were rusted, damaged or leaking. The homeowners argued that although their property *was not contaminated*, ‘stigma’ prompted by some 600 newspaper articles had reduced property values by \$US28 million. It appears the citing of the landfill dump within reasonable ‘proximity’ of a residential zone created community perceptions which downgraded and devalued the residential amenity, even though the problems created by the siting of the landfill were not apparent during the years 1966 to 1980 when the landfill dump operated. The Court permitted the case to be pleaded on the basis of a ‘stigma’ claim after considering evidence of the public’s perception of contamination but barred the plaintiffs from seeking punitive damages on the grounds that the defendant’s conduct was not ‘wilful and wanton’.

In a more recent case *Henry Hendler v The United States*²³ the court held that it may consider contamination stigma when evaluating the fair market value of land in compulsory acquisition cases. The plaintiff argued successfully that the State’s action in compulsorily

acquiring easement land for the purpose of sinking inspection wells on the plaintiff's property had the additional detrimental effect of stigmatising the plaintiff's land. The wells provided an inspection access into contaminated ground water flowing below the plaintiff's land.

Under the California Health and Safety Code, the presence of contaminated groundwater is a public nuisance. The Health and Safety Code provides; "The Legislature finds and declares that a threat to the public health and safety exists wherever there is a discharge, spill, or presence of hazardous substances on public or private property..." Cal. Health & Safety Code § 25400(1). At the time of well installation, tests showed that a plume of contaminated groundwater extending several thousand feet in length was flowing directly under the plaintiff's property and was moving south down Pyrite Canyon, where it threatened to poison the drinking water supplies of thousands of residents. Electromagnetic conductivity tests also indicated that this plume of contamination was flowing directly under the plaintiff's property. The EPA and the State had approached Mr. Hendler in August 1983 regarding the installation of wells to monitor the groundwater contamination emanating from Stringfellow but were refused access. The plume of contaminated groundwater contained high concentrations of toxic chemicals that could cause neurological impairment, liver and kidney damage, and, at high concentrations, death. The installation of the wells was a necessary first step to determine the plume's parameters in order to effectively abate the nuisance posed by the contaminated groundwater.

Documents Exposing the Foreseeable Risk

As the case in *TPC v Abbco Iceworks*²⁴ demonstrated, the legally mandated process of 'discovery' is one avenue often successfully exploited by litigants to strip away the veil of corporate secrecy. Court administered 'discovery' could unearth documents or information particularly damaging to a corporation's defence case. How privileged should a corporation's documents be? Can directors claim privilege against self-incrimination in environmental prosecutions? Prior to *Environment Protection Authority v Caltex Refining Co. Pty Ltd*²⁵ the common law was unclear on the question of corporate self-incrimination. To lift the "corporate veil", environmental protection legislation expressly held directors personally liable for the acts or omissions of their corporations unless "all due diligence" was exercised by the director.²⁶

In *Caltex* the High Court of Australia decided that privilege against self-incrimination did not extend to corporations required by valid process to produce documents in their possession.²⁷

McHugh J summarised the distinction between the individual and the corporation thus: “Furthermore, an individual witness is not entitled to the benefit of the privilege against self-incrimination if the only ground for the claim is that he or she will be adversely affected by the production of evidence. Members of a corporation may be adversely affected by the conviction of a corporation, but *they* are not convicted. It is difficult to see why an adverse effect on the members should entitle the corporation to refuse to produce evidence.”²⁸

If a corporation is subjected to criminal sanctions as a result of its self-incrimination there is no doubt that both the business and its officers suffer the consequences,²⁹ particularly when corporations are relatively small enterprises. *Caltex* has made the task of protecting company environmental audit findings more difficult. “Self monitoring by industry is the cornerstone of the current system of pollution control. The EPA does not have the resources to conduct its own monitoring and is largely reliant on self monitoring by industry. Accordingly, the EPA would be placed in a position of great difficulty in attempting to enforce pollution control statutes if industry self-monitoring records were unavailable for use in criminal proceedings.”³⁰

In NSW, S.181 of the *Protection of the Environment Operations Act 1977* [PEOA] grants a limited protection to “documents prepared for the sole purpose of a voluntary environmental audit” including “the final report of the audit and any documents prepared during the course of the audit, so long as the documents are prepared for the sole purpose of the audit.” The protection afforded these documents under S. 181 of the PEOA is however negated under S. 183 of the PEOA “if the person asserting or relying on the protection uses or relies on ... any part ... of the documents ... in any proceedings connected with the ... enforcement of the environment protection legislation.”

Despite the reinforcement of the principle of personal privileges in *EPA v Caltex* and *TPC v Abbco Iceworks* which emphasises an *individual's* privilege against self-incrimination and self-exposure to a penalty, the *Contaminated Land Management Act 1997* (NSW) includes a provision (S.88) whereby an authorised officer of the EPA may require a person to answer questions of relevant matters. Section 90(2) provides that “a natural person is not excused from a requirement ... to answer a question on the ground that the information or answer might incriminate the person or make the person liable to a penalty.”

The task of retaining self-audit information in a privileged status is challenging, if not daunting.

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Once again it is incumbent on the corporation concerned to *foresee the risk* in creating documents when the information contained therein may be used by an adverse party as admissions against the corporation. Where particulars of self-evaluation audits are the subject matter at risk the challenge is to establish lawyer-client privilege protecting disclosure. Senior lawyers in environmental litigation recommend the engagement of outside counsel at the commencement of the audit process to work in close co-ordination with the in-house lawyers and the consulting firm conducting the audit or site assessment.³² The process of establishing lawyer - client privilege is outlined as follows: the consultant should report directly to counsel for the purposes of protecting the information gathered as privileged and to control the type of record being assembled. All draft and final reports should be submitted to outside counsel for review and distribution. Distribution of such reports should be limited within the company on a need-to-know basis, and confidential materials should be labelled and segregated from non-privileged materials.³³

Prior to the commencement of the audit, staff need to be briefed on the confidentiality of the process which gathers information for the purpose of obtaining legal advice from counsel. It is fundamental to the objectives of the exercise that staff understand:

- (a) Communications to an outside consultant, who is acting as the agent of counsel, are to remain confidential;
- (b) communications are being made at the direction of the employees' corporate supervisors;
- (c) communications are within the scope of the employees' duties; and
- (d) information is being gathered so that the company can obtain legal advice from counsel based upon the information in the audit report.³⁴

Environmental regulators could find themselves in difficult situations if they fail to extend at least qualified privilege to documents that are created in order to initiate self-improvement and self-evaluative reports. The question will be whether the public interest is served or harmed by the disclosure of internal reviews. There is the suggestion environmental audits may be protected if the audit: (1) is prepared with an eye towards furthering the public interest and with a statement regarding the company's environmental policy, (2) conforms with and advances internal corporate policy, as well as applicable federal, state and local laws, (3) is held strictly confidential, (4) is written to reflect the internal self-evaluation and self-analytical nature of the process, and (5) is prepared so that the factual and evaluation portions can be separated.³⁵

Government attitudes to environmental prosecution based on disclosure, co-operation and compliance will foreseeably differ between countries and sovereign states. Whilst Australia has established comprehensive guidelines for the assessment and remediation of contaminated land through ANZECC and the National Environmental Protection Council (NEPC)³⁶ which supports the 'polluter pays principle', the NEPC has yet to publish National policy guidelines on the subject of qualified corporate privilege attached to voluntary audits and self-evaluative reports. In New South Wales a specific section of the NSW 'EPA Prosecution Guidelines'³⁷ is devoted to "Disclosure, Co-operation and Compliance." According to the Manager of Litigation, "the general message emanating from legal practitioners in NSW to their clients was that to co-operate with the EPA, in the course of an investigation, was tantamount to putting a noose over one's head."³⁸

The guidelines indicate that an offender's willingness to make available to the EPA all relevant information (including the complete results of any internal or external investigation and the identity of all potential witnesses) is to be encouraged and hence is a factor which will be considered along with all of the other relevant factors in deciding whether to bring a prosecution.³⁹ By contrast the Victorian EPA can require an industrial licensee or an occupier of industrial premises generating industrial waste to undertake and provide to the Victorian EPA the results of an independent environmental audit or (in the case of a waste generator) the results of an independent waste audit usually carried out in conjunction with the preparation of a waste management plan.⁴⁰ The *Protection of the Environment Operations Act 1997* [NSW] incorporates provisions for mandatory audits and environmental management plans in an endeavour to reduce foreseeable environmental harm.

Risk Management Strategies

The term 'risk' in the context of environmental protection refers to the variable or probabilistic losses of a company's financial resources as a direct result of its corporate operations.⁴¹ The distinction between *risk* (which is quantifiable) and uncertainty (which is not) has much to do with the substantial possibility that harm, danger, hazard or loss will *actually* occur.⁴² Inherent in the 'substantial possibility' is the recognition that a *real* risk situation exists.

"Risk" is concerned with the chance of an event happening and the magnitude of the harm caused by the event. Even if the magnitude of the risk is considered to be small it does not follow it is justifiable to neglect a risk of such a small magnitude. A *reasonable* man would only neglect such a risk if he had some valid reason for doing so; e.g., that it would involve considerable expense to eliminate the risk, but first he would weigh the risk against the difficulty of eliminating it.⁴³

In the *Wagon Mound No. 2 Case*⁴⁴ a large quantity of bunkering oil spilled from the ship, the *Wagon Mound*, into Sydney Harbour and onto the foreshore near a wharf operated by Overseas Tankship [U.K.] Ltd. Sparks from a welding operation on the wharf ignited the floating oil. The resulting fire damaged the wharf and a vessel under repair. When the case came before the Privy Council on appeal Lord Reid noted:

"... there was no justification what ever for discharging the oil into Sydney Harbour. Not only was it an offence to do so but it involved considerable loss financially. If the ship's engineer had thought about the matter there could have been no question of balancing the advantages and disadvantages. From every point of view it was both his duty and his interest to stop the discharge immediately.

It follows that in their Lordships' view the only question is whether a reasonable man having the knowledge and experience to be expected of the chief engineer of the *Wagon Mound* would have known that there was a real risk of the oil on the water catching fire in some way: if it did, serious damage to ships or other property was not only foreseeable but very likely.

In their Lordships' view a properly qualified and alert chief engineer would have realised there was a real risk here. If a real risk is one which would occur to the mind of a reasonable man in the position of the defendant's servant and which he would not

brush aside as far-fetched and if the criterion is to be what that reasonable man would have done in the circumstances, then surely he would not neglect such a risk if action to eliminate it presented no difficulty, involved no disadvantage, and required no expense.

In the present case the evidence shows that the discharge of so much oil onto the water must have taken a considerable time, and a vigilant ship's engineer would have noticed the discharge at an early stage. The findings show that he ought to have known that it is possible to ignite this kind of oil on water, and that the ship's engineer probably ought to have known that this had in fact happened before. The most that can be said to justify inaction is that he would have known that this could only happen in very exceptional circumstances. But that does not mean that a reasonable man would dismiss such a risk from his mind and do nothing when it was so easy to prevent it. If it is clear that the reasonable man would have realised or foreseen and prevented the risk then it must follow that the appellants are liable in damages."⁴⁵

A risk management program brings together the basic risk techniques with alternative methods of treating risk. Whilst *recognition*, *avoidance* and *reduction* remain the pivotal points of any risk management plan, a corporation needs strategies to treat both expected (*foreseeable*) and unexpected risks, including those risks which are uninsurable. With risk management, the options are often generated by the more frequently asked questions: should we avoid or transfer risk? Should we retain and manage risk? Knowing how to design and develop an environmental self assessment program, how to prioritise sectors within the domain of corporate operations and how to encourage a culture of environmental risk awareness throughout the organisation are some of the key features of a risk management plan.

In risk management strategy the object of the exercise is to minimise costs (*liability*) by managing risk and the "the word management implies informed control; it does not necessarily mean removing the cause of the risk".⁴⁶ To achieve a high level of success in the development of an environmental due diligence programme it will be necessary to integrate the basic risk management protocols with the management processes which are used by corporations to avoid or manage environmental risks and potential liabilities. The essential risk management steps have changed very little over the decades these include:

- (1) Risk identification
- (2) Risk quantification
- (3) The appropriate choice of risk reduction methodology
- (4) Risk reduction programme implementation
- (5) Performance and evaluation of risk management procedures
- (6) Allocation of resources to fund the remaining risks

Risk identification incorporates elements of environmental auditing, assessment against documented control standards pertinent to environmental exposures⁴⁷ and insight into hypothetical risk exposure. Audits of plant, operations and compliance procedures are undertaken at different levels of intensity depending on the perceived need to verify the extent of the potential environmental liability. “Many corporations undertake a phase one audit to gain a preliminary assessment of the environmental risks associated with their activities and determine priorities for the gradual development of a comprehensive environmental due diligence programme. Environmental audits however, can only provide a satisfactory component of an Environmental Due Diligence Programme if they properly identify environmental risks and relevant law, adequately assess existing compliance and recommendations for improved levels or system of compliance are implemented by the corporation.”⁴⁸ Craig⁴⁹ suggests the typical stages of an environmental audit include problem recognition, risk identification, audit inspections and reporting.

It is important to stress the need for a comprehensive approach to environmental audit in order to verify the existence or otherwise of a requisite state of affairs. “If the [audit] protocol is not comprehensive, then risk or compliance issues identified may not be the subject of an audit inspection.”⁵⁰ Where voluntary auditing of sites is regularly undertaken, corporations should ensure the audit protocol addresses the investigation of environmental management issues to the satisfaction of any regulatory authority.

The process of risk quantification or evaluation relies heavily on a series of assumptions, which must be made in order to prioritise the allocation of limited corporate resources. Assumptions will be made about the significance of one risk over another but arguably the ‘most serious risks are those which occasion physical harm as well as economic loss.’⁵¹ For example the pollution of a river system can precipitate both an ecological and financial

disaster, destroying marine life and the river's ecosystems, causing financial hardship to the local industry and the community reliant upon the integrity of the river system for health and prosperity.⁵²

The probability that a claim will arise from the storage or transport of hazardous chemicals is based on claims data together with assumptions which could be made on the capability of the storage facilities and accident rate of the prime transporters. Every leak or spillage presents a scenario of variable outcomes related to the magnitude of the leak or spillage, the degree of containment and the cost of remediation. Risk managers utilise the term "expected value" to express in monetary terms the risk losses expected over a period of time from corporate operations. The "expected value" takes into consideration 'a determination of the probability or chance that losses will occur; the impact the losses would have upon the financial affairs of the company, should they occur, and the ability to predict the losses that will actually occur during the budget period.'⁵³

Jenkins & Collins⁵⁴ cited the example of a company with 30 underground tanks which were installed 10-15 years ago and considered the 'expected value' of the risk on a 50% probability that a leak from each tank had contaminated the surrounding soil, requiring remediation at a cost of \$10,000 per tank. In this case the 'expected value' of the risk is calculated at \$150,000 (i.e. $30 \times .5 \times 10,000$). However the methodology employed in the calculation "is, of necessity, often based on many assumptions."⁵⁵ When risk is prioritised on a cost-benefit basis there is also an underlying assumption "that cost and benefit can be measured in the same units (dollars) and that all competing interventions can be costed and produce dollar benefits."⁵⁶

Whether the cost of degrading the environment has a price calculable with any accuracy is debatable, but "the use of expected values and cost-benefit analysis will certainly provide a first approximation to the question of where to spend risk management dollars."⁵⁷

Accept, Minimize or Terminate?

In practice, corporations regularly explore the range of risk reduction options available or at least consider a cost-benefit analysis of any improvement to the existing environmental management system. By emphasising the management of risk through *informed* control, risk management becomes an educative process, assisting the preservation of

environmental integrity. In the process the corporation develops a heightened awareness of its exposure to liability and the risk of environmental damage is lessened.

If the primary object of risk management is to institute preventative measures which will minimise the occurrence of risk or if possible, virtually eliminate it,⁵⁸ what options are available to achieve this task? Insurance may effectively *transfer* the risk but will not of itself prevent loss. In the first place, the risk is unlikely to be fully insured, even where all the prerequisites of an efficient environmental management system are demonstrably present. On the other hand it may be possible to *transfer* the risk by contracting out the hazardous elements of the manufacturing process or by transferring the risk exposure liability through the incorporation of indemnity clauses in legal contracts.⁵⁹

Ultimately, risk can be avoided by *substitution* of a non-hazardous material for a hazardous one or by changing the process to eliminate, through the introduction of new technology, exposure to a specific risk. If substitution or process change will not solve the exposure problem, then termination of the particular risk hazard may well be the safest, if not most satisfying option, to safeguard the environment.⁶⁰

Endnotes

1. Business Council of Australia (1992) 'Principles of Environmental Management,' page 10, A1. Environmental Protection' and see page 14: A10. Assessment and Management of Environmental Risk: (a) Assess, to the extent practicable using available methods and technology, the potential environmental impacts of business operations, products and services so that available environmental problems can be prevented.
2. Ibid (pages 10-14)
3. For example the Three Tiers categorisation of offences under the *Protection of the Environment Operations Act 1997* (NSW) establishes the prosecution protocol
- 4 *Donoghue v Stevenson* [1932] AC 562.
5. See the discussion in John G. Fleming, "The Law of Torts" (1992) Law Book Co. at pages 144-145
- 6 Ibid at 144. It is not required that the plaintiff be foreseeable as an identified individual, he need only belong to a class of persons within the foreseeable range
- 7 [1998] NSW LEC 126.
8. [1994] 2 WLR 53; [1994] 1 ALL ER 53
- 9 Water standards at the time of purchase of the borehole in 1976 were not as rigorous as the new standards set by the World Health Organisation in 1980. By 1982 the Department of Environment had informed the water industry that the maximum admissible concentration of organochlorin compounds was one microgram per litre. Eventually the regulations setting water quality standards were included in the Water Industry Act 1991.
- 10 An aquifer is a layer of chalk rock beneath the earth's surface which holds water but allows the water to percolate to the surface intermittently.
11. *Cambridge Water Co. v Eastern Counties Leather PLC.* [1994] 2 WLR 53 at 67
12. (1866) L.R.I Ex. 265 at pp 279-280. In Australia the rule in *Rylands v Fletcher* has been absorbed into the general law of negligence and the rule no longer applies.
13. *Cambridge Water Co v Eastern Counties Leather PLC.* (1994) 2 WLR 53 at 77
14. Ibid at 81
- 15 Ibid. Lord Goff also referred to the Council of Europe's Draft Convention on Civil Liability for damage resulting from activities dangerous to the environment (Strasbourg 26 January 1993) article 5.1 and paragraph 48 of the Explanatory Report.
16. Ibid at 80
17. J. Gordon "OK Tedi: The Law Sickens from a Poisoned Environment" (1995) 69 LIJ 114
18. No 5782 of 1994 (Dagi); No 6861 of 1994 (AMBETU); No 6862 of 1994 (Maun)
19. Note 17
20. Note 17

- 21 John Gordon, *Plaintiff*, Issue 41, October 2000 (pages 11-12)
- 22 Ohio Ct Cm Pls, No. 89-570 6 December 1994 (Stark County) The case is extracted from The Bureau of National Affairs Inc., Washington, DC, ABNA's Environmental Due Diligence Guide' Vol 4, No. 1, 1995.
23. 36 Fed. Cl. 574 (1996)
- 24 In *TPC v AbbcO Iceworks* (1994) 52 FCR 96, Burchett J (at 116) noted: "Where both a corporation and its officers are at risk of prosecution, to require discovery of the corporation is to make available documents which may accuse its officers. But their privilege has never been, nor should it be a shield against the use of incriminating evidence – only a right to decline to be themselves the authors of their own destruction by producing the evidence."
- 25 *Environment Protection Authority v Caltex Refining Co. Pty Ltd* (1993) 178 CLR 477.
- 26 See S.10 Environmental Offences and Penalties Act 1989 (NSW) (*repealed*) or S.66B1) Environmental Protection Act 1970 (Vic).
- 27 See Rules of the Supreme Court of NSW Part 36 Rules 13 & 16 and Page 518 of the Judgement.
- 28 (1993) 179 CLR 479 at 547.
- 29 See Puls J., "Corporate Privilege – Do Directors Really have a Right to Silence since Caltex and ABBCO Iceworks?" (1996).
- 30 See Lipman Z., & Roots L., "Protecting the Environment through Criminal Sanctions: The Environmental Offences and Penalties Act 1989 (NSW)" (1995) 12 EPLJ 16 at 28.
- 31 Z. Lipman & L Roots "Protecting the Environment through Criminal Sanctions" (1995) EPLJ 16 at 18
32. M E Kris and G N Vanelli, *Todays Criminal Enforcements Program: Why you may be Vulnerable and Why you should Guard Against Prosecution Through Environmental Audit* (1991) 16 Columbia Law Journal 227
33. Ibid at 248
34. Ibid at 247
35. See Frost & Seigel, "Environmental Audits: How to protect them from disclosure." 5 Toxic L. Rep. (BNA) 1211 (Feb. 27, 1991).
36. On September 1995 the National Environment Protection Council Act 1994 (Cth) was proclaimed and by 20 October 1995 all States and Territories throughout Australia had introduced legislation, bearing in each instance, the title, National Environmental Protection Council Act for the purpose of recognising in each jurisdiction, mandatory standards, guidelines and protection measures promulgated under the Commonwealth's NEPC Act.
37. Environment Protection Authority (NSW) EPA Prosecution Guidelines, July 1993.
38. Pinch. D, 'Gaining Management Commitment,' address presented at the Environmental Due Diligence seminar, Sydney 26 November 1993.
39. See 'EPA Prosecution Guidelines' pages 25-26

40. The powers given to the Victorian EPA are made possible through the provisions of the Environment Protection (General Amendment) Act 1989 (Vic) and the Industrial Waste Management (Waste Minimisation) Policy declared under the Environmental Protection Act.
41. S. Jenkins & J. Collins 'Assessing the Environmental Risk of Operations,' Environmental Due Diligence Seminar, Sydney, 26 November, 1993, National Management Education Centre.
42. See generally the observations in *Bolton v Stone* [1951] A.C. 850
43. *Overseas Tankship (UK) Ltd v Miller Steamship Co. Pty. Ltd.* (The Western Mound No 2) [1967] 1 A.C. 617 per Lord Reid
44. Ibid
45. Ibid
46. *Supra* Note 43
47. Jenkins & Collins (see Note 43) cite for example 'building drain intercepts, air emission, scrubbers and tanker loading' as typical 'exposure points and add 'some standards are expressed in legislation or regulations; others are embodied in internationally accepted standards, others belong to the general technical literature.'
48. Donna Craig 'Environmental Law - Corporate Responsibilities and Commercial Transactions' in Environmental Outlook, Law and Policy (1994) Boer, Fowler & Gunningham (Eds), Federation Press.
49. Ibid
50. Ibid
51. See W.D. Duncan & S.J. Traves 'Due Diligence' (1995) LBC at page 27
52. In 1996 Wallis Lake in New South Wales became polluted through the unlawful discharge of effluent from septic tanks causing a serious outbreak of hepatitis in NSW for consumers of Wallis Lake oysters. Apart from the obvious health implications the livelihood of the oyster farmers was severely disrupted.
53. B. Simpson 'Risk Management' Australian & New Zealand Insurance Reporter, loose leaf, CCH, para 37-100.
54. Op. Cit. Note 43
55. Ibid
56. Ibid
57. Ibid
58. See Duncan & Traves *supra* at page 35
59. See Jenkins & Collins Note 43 . The authors cite the example of a glass fibre factory which opted to subcontract its resins production to a reputable chemical formulating business.
60. The closing of the USA Nuclear Power station at Three Mile Island is the classic example cited by Jenkins & Collins. The New South Wales Governments decision to prohibit mining near Lake Cowal, because the risk of pollution through the extraction process could not be eliminated, is a further example.