

Environmental Accounting – Disclosures of Environmental Liability and the Shipping Sector

Owen Tang¹ and Brenton Fiedler²

¹ Department of Logistics and Maritime Studies, Hong Kong Polytechnic University, Hong Kong.
Email: lgtowen@inet.polyu.edu.hk

² School of Commerce, University of South Australia, Australia.
(Brenton Fiedler, Associate Professor, Associate Head of School of Commerce.

Abstract

In traditional financial statements reporting, environmental costs and benefits were typically ignored. About 30 year ago, some accounting scholars started to advocate the approach of social accounting, and they pointed out that a business entity should not focus on reporting financial performance only, a good set of accounting statements should report on an entity's environmentally sensitive actions on sustainability.

The Earth Summit (2002) established the *Global Reporting Initiative* to guide the accounting profession in reporting the environmental impact of the operations of business entities.

The aim of this conference paper is to investigate the development of accounting for environmental accountability, with particular reference to the shipping sector.

Keywords: Disclosure obligations, environmental liability, SEC, shipping, SOP 96-1

1. Introduction

Ships at sea can cause serious environmental damage in their day-to-day operations. Ships may:

- *burn fuel and illegally discharge used oil and/or bilge water,*
- *wash out tank vessels containing unpackaged chemicals, producing polluted rinse water, and*
- *generate domestic garbage from their crews.*

Most maritime economists acknowledge that GDP is a defective indicator of welfare. A ship accident or an oil spill can increase GDP but obviously decreases total welfare.¹ Consider China, where as international trades rise, ships are being built and put to the ocean each year, along with an associated increase in the tonnage of carbon dioxide. Are average Chinese citizens demanding higher environmental quality as they get richer? Probably. But environmental quality is not a goods on sale on the shelves of the shopping malls.

The primary function of economic policy is to recognize when the market fails to provide the right allocation of goods. China is attempting to provide for sound economic measurement of environmental quality. It is producing an experimental GDP figure that accounts for environmental damage and resource depletion.

Environmental goods are only deliverable if policy makers can be informed by sound measurement through environmental audits and disclosures. The aim of this conference paper is to investigate the development of accounting for environmental accountability, with particular reference to the shipping sector. The first section deals with the relationship between media attention and voluntary environmental disclosure. The second section discusses the environmental audit in Europe. The final section describes the environmental liabilities disclosures in the US.

¹ Mchugh, A. (2005) "Measure our welfare", The Australian Financial Review (15 August), p.22.

2. Media Attention and Voluntary Environmental Disclosure

In traditional financial statements reporting, environmental costs and benefits were typically ignored. About 30 years ago, some accounting scholars started to advocate the approach of social accounting, and they pointed out that a business entity should not focus on reporting financial performance only, a good set of accounting statements should report on an entity's environmentally sensitive actions on sustainability. In this section, the authors investigate what are the motivation factors for firms engaging in voluntary environmental disclosures.

A defining characteristic of corporate responsibility in the 21st century will be the need to communicate effectively with stakeholders on progress towards not only economic prosperity; but also social justice and environmental quality.² Researchers found from the recent history of corporate social and environmental reporting (CSER) that there exists a positive correlation between the number of disclosing social and environmental activities and better economic performance.³

Legitimacy theory researchers reasoned that non-disclosures of environmental liabilities would attract negative media attention, and negative media coverage hurts financial performances. Research was conducted to examine the role media coverage plays in increasing the public policy pressures faced by companies.⁴ For example, Liu & Taylor (2008)⁵ applied the media agenda-setting theory to study its relation with the disclosure of remuneration packages of a firm's directors and top executives. The researchers found that the more media attention during a year received by a firm relating to directors' and executives' remuneration; the greater was the additional (non-mandatory) disclosure of this information in the firm's annual report.

After the *Exxon Valdez* oil spill, Patten (1992)⁶ uses legitimacy theory to explain the effect of the oil spill on an increase in annual report disclosures by petroleum firms other than Exxon. Many prior studies on corporate disclosures have provided evidence that firms do voluntarily disclose information in their annual reports as a strategy to manage their legitimacy.⁷

For international efforts in promoting non-legal required environmental disclosures, the Global Reporting Initiative (GRI) produces one of the world's most prevalent standards for sustainability reporting. Sustainability reporting is a form of value reporting where an organization publicly communicates their economic, environmental, and social performance. GRI seeks to make sustainability reporting by all organizations as routine as financial reporting.

The Earth Summit (2002) established the *Global Reporting Initiative* to guide the accounting profession in reporting the environmental impact of the operations of business entities. GRI Guidelines are regarded to be widely used. As of January 2009, more than 1,500 organizations from 60 countries use the Guidelines to produce their sustainability reports.⁸

3. Environmental Audit in Europe

International convention sets the standard of good behavior, but it does not acquire legal force unless being enacted into domestic law, but it exerts a stronger binding effect, at least psychologically than voluntary

² Wheeler, D. and J. Elkington (2001) "The End of the Corporate Environmental Report? Or the Advent of Cybernetic Sustainability Reporting and Communication"; *Business Strategy and the Environment*; Vol. 10; No. 1; pp.1-14.

³ Kolk, A. (2003) "Trends in Sustainability Reporting by the Fortune Global 250"; *Business Strategy and the Environment*; Vol. 12; No. 5; pp. 279-291.

⁴ Brown, N. and Deegan, C. (1998) "The Public Disclosure of Environmental Performance Information - A Dual Test of Media Agenda Setting Theory and Legitimacy Theory"; *Accounting and Business Research*; Vol. 29; No. 1; pp. 21-41.

⁵ Liu, J., and D.W. Taylor (2008) "Legitimacy and Corporate Governance Determinants of Executives' Remuneration Disclosures"; *Corporate Governance: an International Review*; Vol. 8; May (forthcoming)

⁶ Patten, D.M. (1992) "Intra-industry Environmental Disclosures in Response to the Alaskan Oil Spill: a Note on Legitimacy Theory"; *Accounting, Organizations and Society*; Vol. 17; No. 5; pp. 471-475.

⁷ Patten, D.M. (1991) "Exposure, Legitimacy, and Social Disclosure"; *Journal of Accounting and Public Policy*; Vol. 10; No. 4; pp. 297-308.

⁸ <http://www.globalreporting.org/AboutGRI/WhatWeDo/>

disclosures. This section devotes to cross-national audit based on an international convention.

In 2000, the audit institutions of Cyprus, Greece, Italy, Malta, the Netherlands, Turkey, and the UK started a coordinated audit of marine pollution from ships based on the Marpol Convention.⁹ Many auditors with international experience recognize the difficulty in conducting such audit, especially in reaching clarity on the meaning of audit concepts and criteria.¹⁰

The 2006 joint report on the coordinated audit¹¹ has two parts: The first part outlines an ideal situation: a country called “Maretopia” that has adopted many good measures to prevent marine pollution and environmental damage from ships. To describe such an ideal state, the report drew on good practices found in one or more of the national audits.

In the second part, the report presents findings from the national audits. In some cases, the report points to similarities in the national findings. In others, the report cites observations worth mentioning because of their nature or relevance for other countries. The report summarizes how countries took action to prevent pollution by:

- (1) *carrying out ship inspections and waste collection in ports*
- (2) *dealing with offenders and preparing for incidents.*

One of the report’s purposes was to encourage countries to emulate good practices in learning from others’ mistakes. To ensure the comparability of audit findings, an audit scheme of four main audit elements was established. From the beginning, the group agreed to audit the following:

- (1) *surveys and inspections of ships*
- (2) *waste collection in ports*
- (3) *dealing with offenders*
- (4) *preparing for incidents.*

4. Environmental Liabilities Disclosures in the US

National laws, such as court cases, regulations, and accounting standards, provides the strongest binding force in enforcing a standard of behavior. This section investigates the US laws relate to environmental liabilities disclosures.

The US has become more concern about environmental liabilities disclosures since 1990s. After the *Levine* case,¹² both the US Securities and Exchange Commission (SEC) and the Association of Certified Public Accountants (AICPA) issued policy documents in such area.¹³ It is thus important for shipping companies involve US trades to understand the SEC's position on disclosure obligations of environmental liability.

⁹ Knaap, P (2010) “Lessons from the Coordinated Audit on Marine Pollution from Ships” *International Journal of Government Auditing* (January), pp. 16 – 19.

¹⁰ The 2007 INTOSAI/Working Group on Environmental Auditing (WGEA) paper titled *Cooperation Between SAIs: Tips and Examples for Cooperative Audits*. This paper was based primarily on experiences with cooperative environmental audits and is available on the WGEA Web site at www.environmental-auditing.org (under WGEA Publications). All of the paper’s 22 tips apply to the Marpol audit.

¹¹ Netherlands Court of Audit, *Marine pollution from ships—Joint report based on national audits 2000 –2003*, The Hague, October 18, 2006 (http://www.courtsofaudit.com/english/News/Audits/Introductions/2006/10/Marine_pollution_from_ships).

¹² *Levine v. NL Industries, Inc.* 717 F. Supp. 252 (S.D.N.Y. 1989), aff’d, 926 F.2d 199 (2d Cir. 1991).

¹³ For example, the SEC issued Staff Accounting Bulletin No. 92 (“SAB 92”) in 1993, which provides guidance to disclosure obligations relating to contingent environmental liability. See GAO-04-808, *Environmental Disclosure: SEC Should Explore Ways to Improve Thinking and Transparency of Information*, July 2004, at <http://www.gao.gov/new.items/do4808.pdf> in which the US Government Accountability Office reported that the SEC “is taking steps to increase the tracking and transparency of key environmental information.” In 1996, the Association of Certified Public Accountants (AICPA) issued its Statement of Position (SOP 96-1) which provides even more guidance with respect to accounting for environmental liabilities.

In 1982, the SEC introduced Regulation S-K as part of its integrated disclosure rules. In addition to the general Rule 10b-5 requirement of full and fair disclosure, Regulation S-K contains two express rules concerning environmental reporting obligations: Item 101, paragraph (c)(i)(xii), requiring disclosure of the material effects of compliance with environmental laws; and Item 103, Instruction 5, requiring disclosure of pending environmental litigation when such litigation:

- (1) is material
- (2) involves a potential monetary loss exceeding ten percent of the corporation's assets, or
- (3) is brought by the government seeking a monetary sanction that is likely to exceed \$100,000.

Legal researchers observed that the SEC has stepped up its monitoring of environmental liability disclosure requirements since the 90s,¹⁴ particularly in connection with corporations designated as “potentially responsible parties” (“PRPs”) under the Comprehensive Environmental Response Compensation and Liability Act of 1980 (“CERCLA”).¹⁵ This enhanced enforcement was partially in response to a Wall Street Journal article that reported that certain SEC staffers had merely taken note of the failure of numerous corporations to disclose contingent CERCLA liabilities and criticized the lack of an imminent SEC crack down.¹⁶

5. *Levine Case*

In *Levine*, a holding company failed to disclose the non-compliance with environmental laws of its subsidiary in its Annual Report, the shareholders filed an action against the holding company. A uranium processing facility owned by the Department of Energy and operated by the subsidiary of the holding company. The shareholders argued that the holding company should disclose in its Form 10-K about violations of emissions standards at its uranium processing facility. The facility accounted for no more than 0.2% of the holding company's annual gross income. The operating contract required the Department of Energy to indemnify the holding company for liability related to environmental law violations.

The court dismissed the claim. The court determined that the holding company was not obligated to disclose the particular violations occurred at the uranium processing facility in Form 10-K for the following reasons:

- (1) *The Department of Energy was ultimately responsible for environmental liabilities*
- (2) *Since the facility accounted for no more than 0.2% of the holding company's annual gross income, the costs of compliance with environmental laws could not have impacted the holding company's capital expenditures, earnings, or competitive position.*
- (3) *The holding company was not aware of any legal proceedings contemplated with respect to the environmental violations, and thus the information could not be disclosed as a pending legal proceeding.*

On appeal, although the Second Circuit affirmed the lower court's dismissal,¹⁷ the Second Circuit cautioned that the Form 10-K would require the disclosure about the cost of non-compliance with environmental regulations. In other words, the holding company would have had a duty to disclose the costs related to environmental violations of its subsidiary in its Form 10-K if:

- (1) *such costs had been material, and*
- (2) *the Department of Energy does not indemnify the liabilities of environmental law violation.*

6. **SAB 92**

About two years after the *Levine* decision, the SEC published SAB 92 in 1992, which answers a series of specific questions pertaining to accounting and disclosure obligations of the contingent environmental

¹⁴ Geltman, E. (1992) Disclosure of Contingent Environmental Liabilities by Public Companies under the Federal Securities Laws, 16 Harv. Envtl. L. Rev. 129, 130-131.

¹⁵ 42 U.S.C. §§ 9601-9675 (1988).

¹⁶ See Amal K. Naj, See No Evil: Can \$100 Billion Have “No Material Effect” On Balance Sheets? Huge Toxic-Waste Cleanup Will Burden Many Firms; S.E.C. Questions Disclosure: Death Between the Weeds, WALL ST. J., May 11, 1988, at 1.

¹⁷ *Levine v. NL Indus., Inc.*, 926 F.2d 199 (2d Cir. 1991).

liabilities. SAB 92 only application to public US companies. SAB deals with the following issues relating to contingent environmental liabilities:

(1) Whether it is appropriate to offset in the balance sheet about a likely claim for recovery against a probable contingent liability, and report the net amount in the balance sheet. The interpretive response: —no ordinarily” appropriate. SAB 92 stated that in order to present potential consequences of the contingent claim fairly, there should be separate presentation of gross liability and of related claim for recovery in the balance sheet.

(2) For a situation where the reporting company is jointly and severally liable as a potentially responsible party, but there is a reasonable basis for apportionment of costs from the other parties. The issue is: whether the reporting company must recognize a liability with respect to costs apportioned to the other responsible parties. The interpretive response is no; however, if it is probable that the other parties will not fully pay costs apportioned to them, the reporting company should include a best estimate on the amount expects to pay.

(3) SAB 92 states that if the amount of the obligation and the time are reliably determinable for a specific site, then the reporting entity may discount an environmental liability to reflect the time value of money. The notes to the financial statements should provide in detail the basis and amount of discounting.

(4) SAB 92 provides that liabilities for site restoration or related exit costs that may occur on the sale or abandonment of a property should be disclosed in the notes to the financial statements. Such disclosures should generally include the nature of the costs involved, the total anticipated cost, the total costs accrued to date, and the range and amount of reasonably possible additional losses. In addition, the reporting company should disclose liability for remediation of environmental damage to a previously disposed of asset.

(5) SAB 92 specifies that where a reporting company expects to incur site restoration costs, post-closure and monitoring costs, or other environmental exit costs at the end of the useful life of an asset, these costs can be accrued over the useful life of the asset. The accrual of the liability would be recognized as an expense.

7. SOP 96-1 and SOP 03-2

The accounting profession has been relatively slow in addressing the challenges of environmental issues from an external perspective. Two recent statement of positions, SOP 96-1 “Environmental Remediation Liabilities”¹⁸ and SOP 03-2 “Attest Engagements on Greenhouse Gas Emissions Information,” address environmental issues for public companies. The following table provides a listing of the accounting and auditing authoritative guidance for companies facing environmental dilemmas:

Summary of Authoritative Accounting and Auditing Guidance for Environmental Issues
FAS 5: Accounting for Contingencies
FASB Interpretation 14: Reasonable Estimation of the Amount of a Loss - An Interpretation of FAS 5
FASB Interpretation 39 - Offsetting of Amounts Related to Certain Contracts
APB Opinion 20 - Accounting for Changes
AICPA SOP 94-6: Disclosure of Certain Significant Risks and Uncertainties
EITF 90-8: Capitalization of Costs to Treat Environmental Contamination
EITF 89-13: Accounting for the Cost of Asbestos Removal
SEC Staff Accounting Bulletin 92: Accounting and Disclosures Relating to Loss Contingencies

¹⁸ Accounting Standards Executive Comm., Am. Inst. of Certified Pub. Accountants, Statement of Position 96-1: Environmental Remediation Liabilities (1996) [hereinafter SOP 96-1].

GASB Statement 18: Accounting for Municipal Solid Waste Landfill Closure and Postclosure Care Costs

In an effort to clarify the standards for disclosing environmental liabilities, the AICPA issued its Statement of Position (SOP) 96-1, which provides guidance on accounting issues related to the measurement and disclosure of environmental remediation liabilities.¹⁹ This SOP96-1 provides professional accountants with much needed guidance on dealing with several aspects of environmental law that was not provided in the authoritative guidance listed in the above table.

SOP 96-1 applies to fiscal years beginning after December 15, 1996, and applies to all companies that prepare financial statements in accordance with generally accepted accounting principles.

The SOP identifies certain stages of a remediation effort as benchmarks that should be considered when determining that an environmental liability is probable, reasonably estimable, and therefore should be disclosed.²⁰

In addition, SOP 96-1 requires that the entity also include in the estimate the incremental direct costs of the remediation effort.²¹

Overall, SOP 96-1 provides perhaps the most comprehensive coverage of the disclosure of environmental remediation liabilities arising under CERCLA. It does, however, have its limitations. One limitation is that it does not apply to accounting for the costs associated with the voluntary cleanup of contaminated sites.²²

SOP 96-1 by its express terms also does not apply to situations where the government is seeking not only remedial costs but also natural resource damages,²³ nor does it apply to the frequently encountered litigation situation where hazardous substance contamination has resulted in a toxic tort action.

Another shortcoming is that SOP 96-1 also does not provide guidance on the accounting treatment associated with the costs incurred to comply with applicable environmental laws or the substantial attorneys' fees that arise in an effort to recoup costs through a contribution action that were above and beyond one's fair share of contaminated site costs. [FN255]²⁴

A final shortcoming is that the SOP 96-1 standard fails to address climate change risk in any fashion.

Despite these limitations, SOP 96-1 is a very useful tool. It provides guidance in determining from an accounting and disclosure perspective how to treat environmental remedial costs that can arise as a result of CERCLA liability. One of the most helpful aspects of SOP 96-1 is a case study that is provided in Appendix B, where the concepts of the statement are applied to various events a PRP routinely encounters in the life cycle of a hypothetical Superfund site.²⁵

SOP 03-2, "Attest Engagements on Greenhouse Gas Emissions Information," was issued on September 22, 2003. It was issued in response to the concerns of greenhouse gases existing in the atmosphere. Because of the

¹⁹ For a comprehensive account of the events leading up to this Statement of Position, see Howard B. Epstein and Aaldert Ten Veen, Position Statement Clarifies Liability Disclosures, *The National Law Journal* (Mar. 17, 1997) at B18.

²⁰ The scope of SOP 96-1 is limited to environmental remediation liabilities resulting from a threat of litigation, a claim, or an assessment.

²¹ These incremental direct costs would include: the cost of completing the remedial investigation/ feasibility study; fees of law firms for work related to determining the extent of required remedial actions; fees of engineering and consulting firms for site investigations and developments of remedial action plans; and the costs of post-remediation monitoring required by the remedial action plan.

²² SOP 96-1 does not apply to the voluntary cleanup of contaminated property, nor does it apply to remedial activities that may arise as a result of the cessation of facility operations. SOP 96-1, at 48-49.

²³ *Id.*

²⁴ SOP 96-1, at 33.

²⁵ SOP 96-1, at 90-95.

Kyoto Protocol, a voluntary agreement signed by companies to reduce the effects of greenhouse gases, some US companies with foreign operations may have to meet emission targets set forth in the Kyoto Protocol. SOP 03-2 also provides example of letters and reports that can be used by professional auditors in providing attest engagements concerning greenhouse gas emissions.

8. FIN 47

The latest pronouncement from the accounting profession through FASB that has implications for the financial treatment of environmental liabilities is FASB Interpretation Number 47 (FIN 47), which became effective December 31, 2005.²⁶

FIN 47 arose out of a need for more consistent financial accounting treatment of liabilities associated with the sale or shut down of tangible assets such as ports or shipyards.

Examples of the need to account for such liabilities provided in FIN 47 include the hypothetical situation that the owner of an old shipyard that contains asbestos, the owner must account for the liabilities associated with the future need to remove and properly dispose of the asbestos in the event demolition. Thus, FIN 47 has broad environmental liability disclosure implications for potential future events.

9. Environmental Disclosures after Sarbanes-Oxley Act (S-O Act)

Although the S-O Act does not expressly change any of the environmental disclosure requirements, it did lead to greater scrutiny on quantifying and certifying environmental liabilities.²⁷ In particular Section 404 of the S-O Act requires CEOs and CFOs to make a number of certifications, including that internal controls are designed so that material information relating to the company is made known to them, that they have evaluated these controls within 90 days prior to filing, and that all significant weaknesses in the controls have been disclosed to the auditors and the audit committees.²⁸ In addition, the S-O Act requires that outside auditors review these certifications about the adequacy of controls.²⁹ Therefore, reporting companies must carefully consider how they can quantify environmental liabilities, disclose those liabilities and set up the appropriate controls to assure that estimates are properly and timely evaluated and updated.³⁰

10. Conclusion

As our planet becomes increasingly aware of the importance of environmental issues, so too must companies understand their social responsibilities with respect to the environment. And as the SEC intensifies its scrutiny on disclosure regarding environmental liabilities, the companies must familiar their disclosure obligations under the SEC law.

Acknowledgements

This research was supported by The Hong Kong Polytechnic University under grant number G-U638 project title: "*Accounting Implications for Lease Classification in Acquiring Transportation Assets*".

²⁶ Fair Value Measurements, Statement of Fin. Accounting Standards No. 157, §5 (Fin. Accounting Standards Bd. 2006); Accounting for Conditional Asset Retirement Obligations, FASB Interpretation No. 47, at FIN47-2 (Fin. Accounting Standards Bd. 2005) [hereinafter FIN 47].

²⁷ McKenna, Long & Aldridge LLP, After Sarbanes-Oxley: Environmental Cost Estimations, Disclosures, and Controls, Environmental Advisory (March 31, 2005), at http://www.boardmember.com/network/mckenna_env0305.pdf.

²⁸ Id.

²⁹ Id.

³⁰ See Id.