

The Cruise Industry and Environmental History and Practice:

Is a Memorandum of Understanding Effective for Protecting the Environment?

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Executive Summary

Major Findings:

- The cruise industry has a history of environmental offenses that undermine the ability to trust its word.
- The cruise industry has a pattern of making promises, but when a cruise line breaks a promise its executives argue that they didn't violate the law, they only broke their word.
- The pollutants produced by cruise ships are of sufficient quantity and concern that regulations based in law are the only means for dealing effectively with cruise industry environmental practices.
- States need to place a high priority on creating laws and regulations that apply to the cruise industry and which will protect a state's coastal waters and environment.

The cruise industry has for the past several years advocated that states enter into Memorandum of Understandings (MOUs) for dealing with discharges from cruise ships. Two states (Florida and Hawaii) have entered such agreements; however, others have chosen a legislative route because of concern with the need for monitoring of behavior and enforcement. Alaska has seen positive results with legislation it enacted in 2001. Though there have been violations, these have become less serious and less frequent. The cruise industry now deploys its most environmentally friendly ships to the Alaska market because of the state's regulations. This leaves ships with less stringent technology and practices to operate in the other states in the U.S. However, even ships with advanced technology have had serious accidents and system failures. The complex systems require that personnel be adequately trained, and, therefore, their effectiveness depends on the human element. Holland America Line's Ryndam, which discharged 40,000 gallons of sewage sludge in Juneau harbor, had advanced technology.

Because a Memorandum of Understanding is based on trust rather than law, it is most useful in situations where a party's word can be trusted. The cruise industry, unfortunately, has consistently demonstrated that its verbal and written promises do not correspond with behavior and practices. The cruise industry's actions support the conclusion in a recent report from the Paris-based Organization for Economic Cooperation and Development, which questions the environmental effectiveness and economic efficiency of voluntary approaches. Focusing specifically on environmental policy, it notes that there are few cases where voluntary approaches have improved the environment beyond a business-as-usual baseline.

Based on a review of cruise industry practices, and on the content of the MOUs currently in place in Hawaii and Florida, this paper argues that the MOU is not an effective means for dealing with cruise industry pollution. This conclusion is supported by a careful review and analysis of the International Council of Cruise Lines' mandatory environmental standards for cruise ships. These standards are in many ways simply a restatement of what is already contained in mostly inadequate federal legislation and international policies. They scarcely exceed the minimum requirements already in place.

States need to think carefully about the importance of the environment to their citizens and must take seriously regulation and control of the cruise industry. This paper provides intelligence and background that will be useful to state decision and policy makers as they confront this issue.

I – INTRODUCTION / CONTEXT

The cruise industry has advocated the past several years for voluntary approaches to environmental regulation, most recently in the form of a Memorandum of Understanding (MOU). To date, two U.S. jurisdictions have adopted the “MOU” approach. Two others have relied on legislation to address cruise ship practices. This report attempts to put into perspective the debate between these two approaches and to propose that legislation is far more effective and enforceable than voluntary agreements.

First, it presents the context in which the International Council of Cruise Line’s “Industry Standards (E-01-01)” were introduced. The backdrop was a series of multi-million dollar fines against cruise companies. These had followed a series of smaller fines involving similar and other industry practices. By 1999 and 2000, the industry was embarrassed and sought to project a positive image. Alaska responded to the violations with legislation that regulated wastewater discharges and air emissions. Alaska’s approach includes monitoring and fines for non-compliance. After 39 violations from 1999 through 2001, there has been only one violation in 2002 and in 2003. Wastewater violations have also become infrequent. The cruise industry (through ICCL), has at the same time lobbied several states and Canada to adopt a “memorandum of understanding” to deal with concerns over cruise ship wastes. Hawaii and Florida have signed such MOUs.

Second, the report looks at the difference between an MOU as an approach to environmental regulation and regulation by law. Given that the essential characteristic of an MOU is trust, the discussion focuses on whether the cruise industry’s word should be trusted. It also looks at whether an MOU provides anything more than maintaining the status quo.

Third, the report considers the issue of regulation: what are the limits under which the cruise industry should operate. It does not specify exact limits; however it does identify environmental concerns over which there is general disagreement and those on which there is general agreement. Practical solutions are proposed for resolving disagreements.

Finally, the report applies this information to the question of the best option for a state. There is a brief review of the pros and cons of MOUs and of the legislative route, and recommendations are made for how to proceed.

The Context: Pre – 1999

The issue of discharges from cruise ships hit the news in June 1998 when Royal Caribbean International paid a \$9 million fine in federal courts in San Juan and Miami for discharges of oily bilge. The Coast Guard investigation revealed that “...at various US ports, mariners allegedly removed the ejector pump bypass system’s rubber hose, then closed off the connection between the clean and oily bilge systems with a metal plate to conceal the existence and use of the hose to bypass the oily water separator.”¹ The company had been formally charged in December 1996², not for dumping but on a single count of making a false statement to the Coast Guard with regard to a discharge off Bermuda by the *Nordic Empress* and a single count for a discharge from the *Sovereign of the Seas* while en route to San Juan.

But Royal Caribbean was not the only cruise line in the news for environmental violations. The U.S. had begun stricter enforcement for pollution offenses in 1993 following a number of

¹ “Sovereign of the Seas’ Operator in Two Key Defensive Moves Against Coast Guard Oil Dumping Charges,” *Lloyd’s List*, December 23, 1996, p. 3

² See Glass, Joel. “Royal Caribbean Indicted After Alleged Oil Discharge Off Puerto Rico,” *Lloyd’s List*, December 21, 1996, p. 1

unsuccessful attempts to have the problem addressed by the state where offending ships were registered.³ The U.S. Government was forced to take direct action. The result is that between 1993 and 1998, there were 87 confirmed illegal discharges from cruise ships (81 cases involving oil; 6 involving garbage or plastic). An additional 17 "other alleged incidents" were referred to the countries where the cruise ships were registered.⁴ Some of these incidents received media attention: a half-million-dollar fine imposed after crew members on Princess Cruises' Regal Princess were photographed by passengers as they threw overboard plastic bags of garbage while off the Florida Keys, and a quarter-million-dollar fine after passengers and a musician on Regency Cruises reported the same behavior.

However, it was incidents in 1998 and 1999 that propelled the issue into national visibility, and put the cruise industry on the defensive. Less than a month after RCCL had paid its \$9 million fine, the company reported a new dumping episode to the U.S. Coast Guard.⁵ The offense was reported to the company by crewmembers and led to the firing of the two engineers. Based on this episode, and dozens of others investigated in other jurisdictions in the U. S., Royal Caribbean International pleaded guilty in July 1999 to twenty-one counts of dumping oil and hazardous chemicals and lying to the U.S. Coast Guard. They agreed to pay an \$18 million fine. The violations included not just oil but dry cleaning fluids, photographic chemicals, and solvents from the print shop. Alaska filed suit against Royal Caribbean International in August 1999 alleging seven counts of violating laws governing oil and hazardous waste disposal. In January of the following year, the company was fined of \$3.5 million for dumping toxic chemicals and oil-contaminated water into the state's waters.

In the midst of this, Holland America Line paid a one-million-dollar fine and one million dollars in restitution in October 1998 for a 1995 incident in which it pumped overboard oily bilge water in Alaska's Inside Passage. The assistant engineer reporting the incident received a reward of \$500,000 -- one-half of the company's fine.⁶

Alaska's Response

Alaskans had previously seen oil spills in and around Glacier Bay, some resulting from accidents at sea; however, the public outcry had been relatively limited. But the cases involving Holland America Line and Royal Caribbean International caught the state's attention. In addition to increasing support for head tax initiatives in Juneau and elsewhere, these offenses spurred a move by the state toward monitoring and regulation of cruise ships. The State Department of Environmental Conservation (DEC), with the U.S. Coast Guard, launched a cruise ship initiative in December 1999.

The initiative began with meetings between the State, U.S. Coast Guard, Environmental Protection Agency, cruise industry, and environmental groups. The goal of the meetings was to discuss the activities and operations of cruise ships with a view toward an assessment of possible environmental issues. When the workgroups realized there was little technical data to support industry claims, they developed a plan for sampling wastewater from cruise ships and for

³ In October 1992, the U.S. Government "...told the International Maritime Organization's Marine Environmental Committee meeting that it had reported MARPOL violations to the appropriate flag states 111 times, but received responses in only about 10% of the cases." See "U.S. Cracks Down on Marine Pollution," *Lloyd's List*, April 17, 1993, p. 3

⁴ See *United States General Accounting Office, Marine Pollution: Progress Made to Reduce Marine Pollution by Cruise Ships, but Important Issues Remain*, Washington, DC: GAO, February 2000, p. 4. (Doc #GAO/RCED-00-48)

⁵ See "After Apology and \$9 Million Punishment, Royal Caribbean Dumps Again," October 25, 1998, *Washington Post*, p. E 3

⁶ "Crewman Rewarded for Reporting Pollution," *Juneau Empire*, October 9, 1998.

monitoring air emissions. Participation in monitoring was voluntary. Thirteen of 24 ships refused to participate, choosing to go beyond three miles to dump raw sewage without monitoring and without limitations.

The results of monitoring during the summer of 2000 were, in the words of Alaska's governor, "disgusting and disgraceful." Seventy-nine of 80 ships' effluent had levels of fecal coli form or total suspended solids that would be illegal on land – up to 100,000 times the federal standard. This was true of both blackwater and graywater.⁷ As well, all samples indicated that "conventional pollutants" were part of the wastewater. According to the Juneau port commander for the Coast Guard, the results were so extreme that it might be necessary to consider possible design flaws and capacity issues with the Coast Guard-approved treatment systems that were currently in use.⁸

Monitoring of air emissions also gave reason for concern. The Environmental Protection Agency had cited six cruise ship companies (involving thirteen ships) for air pollution violations in the 1999 season. The situation had not improved. In August 2000, state investigators charged seven companies (Holland America Line, Princess Cruises, Celebrity Cruises, Norwegian Cruise Line, Carnival Cruise Line, and World Explorer Cruise Line, and Crystal Cruises) for fifteen violations of state smoke-opacity standards when their ships were docked in Juneau between mid-July and mid-August.

The monitoring results had three direct effects. First, in a bid to repair its image, Princess Cruises announced in late-September 2000, that its ships would plug into Juneau's power supply while in port instead of running their polluting engines in port to generate electricity. The initiative, which required an investment of \$4.5 million by the cruise line and \$300,000 by the city, began in July 2001.

Second, the federal government responded. Alaska's Senator Frank Murkowski introduced legislation that regulated the dumping of raw sewage in a specific area of Alaska's Inside Passage: the Alexander Archipelago, including within the Kachemak Bay National Estuarine Research Reserve. Passed in December 2000, the bill extends protection to "donut holes" that had been previously treated as outside federal waters and where such disposal was common.⁹ The legislation also set standards for treated sewage, banned discharges while ships were within one mile of shore, and empowered the State of Alaska to regulate blackwater (sewage) discharged into state waters.¹⁰

Third, it led to the Alaska Cruise Ship Initiative. Based on the results of monitoring done during the summer of 2000, Alaska Governor Tony Knowles introduced in March 2001 legislation designed to strengthen state monitoring of the cruise industry's waste disposal practices. The legislation would enforce state clean air and water standards for cruise ships. It would also create

⁷ A number of explanations were explored for finding fecal coli form in graywater (including the possibility that that open drains in the galley were used by some crew members in place of the toilet), but no consensus was reached. There was a report of fecal coli form counts in graywater being higher than 9 million per m/L. The allowable limit is 200 per m/L. See "Knowles Steps Up Pressure On Congress For Action On Cruise Ship Discharges," Press Release #00252, Office of the Governor, October 6, 2000 <www.gov.state.ak.us/press/00252.html>

⁸ See McAllister, Bill. "A Big Violation on Wastewater: Some Ship Readings 100,000 Times Allowed Amount," *The Juneau Empire*, August 27, 2000

⁹ See McAllister, Bill. "Cruise Initiative Brought About Federal, State Lows," *Juneau Empire*, November 18, 2001

¹⁰ In particular, it provides that "The geometric mean of the samples from discharge during any 30-day period does not exceed 20 fecal coliform/100 ml and not more than 10 percent of the samples exceed 40 fecal coliform/100ml. See H.R. 5666, Making Miscellaneous Appropriations For The Fiscal Year Ending September 30, 2001, And For Other Purposes, Section 1404 (C.3)

a fee of one dollar per passenger to pay for pollution monitoring programs, inspections, and enforcement by state officials. The Act passed Alaska's House of Representatives on May 3, Alaska's Senate on June 20, and took effect on July 1, 2001

What the law provided was three things:

- A verified program of sampling, testing, and reporting of wastewater and air discharges;
- Enforceable standards for what cruise ships may discharge in Alaska waters; and
- Payment by the cruise ship industry of the costs of the program.

Because Senator Murkowski's legislation made it explicit that the State of Alaska has the right to regulate the discharge of blackwater from cruise ships, other states are likely to have similar authority. A study of the impacts of cruise ships by the National Association of Attorneys General concurs that §312 of the Clean Water Act does not pre-empt more stringent state regulation in this field, such as state reporting requirements. The report states that,

Any pre-emption analysis in this area would proceed under the generally more permissive provisions of the CWA rather than the oil pollution statutes discussed in *United States v. Locke*. Although the CWA explicitly prohibits further state regulation of MSDs [citing §312 of the CWA], state regulation in this field is likely permissible if it is based on local conditions and does not contradict established international or federal standards. With respect to interstate and international commerce issues, reporting statutes, such as California's or Alaska's described below, are not directed at conduct at sea, but at conduct within state waters. They do not deal with prohibited subjects such as design, operation, or staffing of ships, nor do they require development of a response plan, as in *Locke*, but only the reporting of actual discharges within state waters and provision of other information maintained by the vessel.

States which have the ability to enforce the CWA and RCRA in areas within their jurisdiction could prosecute violations occurring in port or in near-shore waters. States may also enact statutes under the savings clauses of the CWA that allow more stringent standards than federal law [citing §510 of the CWA].¹¹

Section 510 of the Clean Water Act specifically authorizes states to adopt and enforce more stringent standards or limits on discharges, and more stringent controls and abatement of pollution, than is required under the CWA. 33 USC 1370. Section 510 prohibits states from adopting more lenient, but not more stringent, standards than provided under the CWA.¹² This clearly demonstrates Congress' intent *not* to pre-empt state antipollution efforts. Bass River, supra at 166. "The courts have held, without exception that the Act does not pre-empt state

¹¹ *Floating Cities, Urban Problems: A Report By The National Association Of Attorneys General Cruise Ship Workgroup*, Spring 2002, at 22.

¹² Section 510 of the CWA provides *inter alia* that, "[e]xcept as expressly provided in this chapter, nothing in this chapter shall (1) preclude or deny the right of any State or political subdivision thereof or interstate agency to adopt or enforce (A) any standard or limitation respecting discharges of pollutants, or (B) any requirement respecting control or abatement of pollution; except that if an effluent limitation, or other limitation, effluent standard, prohibition, pre-treatment standard, or standard of performance is in effect under this chapter, such State or political subdivision or interstate agency may not adopt or enforce any effluent limitation ... which is less stringent than the effluent limitation ... under this chapter; or (2) be construed as impairing or in any manner affecting any right or jurisdiction of the States with respect to the waters (including boundary waters) of such States. 33 USC 1370.

remedies but vests the states with authority to impose controls more stringent than those required by the federal scheme." *Id.*, citing *Chevron*, supra at 483; *Menzel v. County Utilities Corp.*, 712 F.2d 91, 93 n. 3 (4th Cir.1983) (sewage treatment regulations); *Pennsylvania Coal Mining Association v. Watt*, 562 F.Supp. 741, 746-47 (M.D.Pa.1983) (standards for surface mining effluents).

Thus it should be appropriate to ban the discharge of treated or untreated sewage and graywater from large passenger vessels in state waters without EPA pre-emption under 33 1422(f)(3). Discharge of sewage is governed by MARPOL IV (to which the U.S. is not a signatory) and by the Federal Water Pollution Control Act (FWPCA),¹³ which prohibits the discharge into navigable water of any pollutant.

Alaska's Cruise Ship Initiative has had positive affects. Air emission violations have reduced from 39 between 1999 through 2001, to one in each of the past two years. Violations of wastewater discharge standards are almost nil, compared to four in the first two months of its implementation. And advanced wastewater treatment systems, which are allowed to discharge in Alaska's waters, have been decertified when they have failed standards and recertified after repair (see Appendix 1 for a list of ships certified to discharge in Alaska's waters).

Introduction of the Memorandum of Understanding

We need to put the move toward a Memorandum of Understanding as an approach to environmental regulation into context. Six days after Royal Caribbean agreed to a 21 federal count plea agreement and was fined \$18 million – following the \$9 million fine the year before – the International Council of Cruise Lines issued a press release affirming the cruise industry's commitment to maintaining a clean environment and to keeping our oceans clean. The ICCL further stated:

Regrettably, there have been violations of environmental laws involving cruise lines in the past few years. These incidents have served as an important wake up call, causing our industry to redouble its efforts to improve its environmental performance.¹⁴

Several months later, Celebrity Cruises' Mercury allegedly released perchlorethylene (PERC) into San Francisco Bay. After being given a run-around by the EPA, a couple brought the matter to Bluewater Network. Despite the eyewitness account, the company denied the allegation.¹⁵ The EPA subsequently undertook its own criminal investigation and no charges were laid. However, according to Bluewater Network, it was informed in a meeting with Celebrity Cruises that the discharge was not perchlorethylene, but was a deck cleanser. The cleanser included as ingredients arsenic, cadmium, and lead. But they were apparently in small enough quantities that the EPA chose not to press charges on that particular item. Celebrity's attorney's were advised by Bluewater Network that passengers were liable to come into direct physical contact with the cleansers through their bare feet and that their use should be discontinued, They were further advised that they were violating California's Proposition 65, which specifies that people must be warned when in the presence of toxic chemicals.

In 2000, the Justice Department subpoenaed records from Norwegian Cruise Line, after its parent company, Star Cruises, reported it had uncovered questionable practices prior to its

¹³ See 33 U.S.C. § 1311

¹⁴ ICCL press release, July 28, 1999

¹⁵ Shaw, Robinson. "Suit Filed Over Cruise Line Pollution," *Environmental News Network*, July 6, 2000

ownership of the company.¹⁶ Carnival Corporation was also subpoenaed in 2000 for records relating to the environmental practices of ships with each of its six cruise lines.¹⁷ In April 2002 Carnival Corporation pleaded guilty to six counts of falsifying records in relation to oil discharges. In the plea agreement the company admitted to dumping oily waste from five ships operated by Carnival Cruise Line and also admitted that employees had made false entries in record books from 1998 to 2001. Carnival Corporation paid a \$9 million fine and agreed to contribute \$9 million to environmental projects over five years. In addition, Carnival agreed to five years of court supervision and also pledged to hire new managers and to put in place an executive-level environmental standards program.¹⁸

However, Carnival's commitment to protecting the environment was called into question once again after The Wall Street Journal reported the following on August 28, 2003:

"In a petition filed with the U.S. District Court in Miami late last month, Carnival's probation officer in Fort Lauderdale, Fla., accused the company of violating terms of its probation by filing 12 false audit reports and asked that Carnival be required to pay another community-service fine.

Carnival officials said they fired three environmental-compliance employees responsible for the reports. But the company didn't admit to violating its probation.

In a settlement signed Monday by U.S. District Judge K. Michael Moore, Carnival agreed to hire four additional auditors to oversee the compliance program and provide additional training for staff. Carnival doesn't admit to any wrongdoing in the settlement pact, and the company isn't subject additional fines."

In July 2002, Norwegian Cruise Line signed a plea agreement with the U.S. Department of Justice in which it pleaded guilty to the discharge of oily bilge water between May 1997 and May 2000, and to falsifying discharge logs. The company was fined \$1 million and ordered to pay \$500,000 toward environmental service projects in South Florida.¹⁹ Federal prosecutors described the sentence as lenient.²⁰

In the time between Carnival's plea bargain and NCL's plea bargain, the International Council of Cruise Lines issued on June 11, 2001, "New Environmental Standards for Cruise Ships." This was two days after the Alaska Senate had cleared the way for approval of the Alaska Cruise Ship Initiative. The environmental standards are laid out in "Cruise Industry Waste Management Practices and Procedures (E-01-01)," which were issued in December 2001. This document forms the basis for the Florida and Hawaii Memorandums of Understanding with the cruise industry. The Florida Department of Environmental Protection signed an MOU in December 2001 with the International Council of Cruise Lines and Florida-Caribbean Cruise Association. Hawaii's Governor signed an MOU with the North West Cruiseship Association in October 2002.

The core elements of the Florida MOU and the Hawaii MOU are presented in Table 1 (next page). As can be seen, they are identical except for one minor exception. Hawaii requires a ship to be 4

¹⁶ Wendy Doscher. "Rough Seas for Cruise Line," *Miami Daily Business Review*, July 18, 2000

¹⁷ See Sharon L. Crenson. "Cruise Ship Inquiry Expands," *Associated Press*, February 15, 2001

¹⁸ "Carnival Pleads Guilty to Charges," *Associated Press*, April 19, 2003

¹⁹ "Model Suspect NCL Escapes with \$1.5m Pollution Fine," *Lloyd's List*, August 2, 2002

²⁰ See Marilyn Adams. "U.S. Keeps Wary eye on Cruise Ships for More Pollution," *USA Today*, November 8, 2002

miles from the coastline (rather than 3 in Florida) for discharge of treated sewage and wastewater, but in Hawaii ships with advanced wastewater treatment systems are exempt from this requirement.

The Hawaii MOU is currently being negotiated by the state after the public and other stakeholders expressed concerns that the voluntary agreement was not adequate. The state is considering adding reporting and monitoring requirements. Several editorials appeared in Hawaii newspapers in September 2003 calling for more stringent standards.

In Key West, Florida, the community is voicing its concern over increased cruise ship traffic without adequate protections. The city of Key West recently allowed cruise ships to exceed weekly call limits established in city ordinance, which was made public only after a local newspaper reporter published the information. Some residents are calling for higher fees on cruise ships entering the port to pay for environmental protections and monitoring to prevent damage to coral reefs and other natural resources.

Other Jurisdictions

We will put off until later a discussion of the content of the ICCL's E-01-01. It is more important now to consider developments in other jurisdictions. Three are of particular interest: California, Washington, and Canada.

TABLE 1: Comparison of Florida MOU and Hawaii MOU

Florida

- Accepts the ICCL Industry Standard E-01-01, titled Cruise Industry Waste Management Practices.
- FCCA and ICCL agree to discharge waste waters outside of Florida territorial waters.
- Such waste management practices and procedures meet or exceed standards set forth in Florida laws and applicable regulations.
- Florida and the FCCA/ICCL understand that the USCG has federal jurisdiction over environmental matters.
- USCG has developed guidelines relating to inspection of waste management practices and procedures which have been adopted by the cruise industry. Florida may request and inspect all records for cruise vessels entering Florida territorial waters.
- Florida, FCCA, and ICCL are working with EPA to develop national practice for assigning EPA identification number to hazardous generators. Florida shall have the right to inspect all such records upon request.

Hawaii

- Accepts the ICCL Industry Standard E-01-01, titled Cruise Industry Waste Management Practices.
- Discharge of wastewater is prohibited within four miles of the coastline, except ships that have an advanced wastewater treatment system which may discharge beyond one mile from the coastline.
- Such waste management practices and procedures meet or exceed standards set forth in Florida laws and applicable regulations.
- Hawaii and the NWCA understand that the USCG has federal jurisdiction over environmental matters.
- USCG has developed guidelines relating to inspection of waste management practices and procedures which have been adopted by the cruise industry. Hawaii agrees to 1st request records.
- The ICCL, NWCA is working with EPA to develop national practice for assigning EPA identification number to hazardous generators. Hawaii shall have the right to inspect all such records upon request.

- The FCCA and ICCL have adopted a uniform procedure for the application of RCRA to cruise vessels entering Florida. Florida accepts these procedures. FCCA/ICCL agrees to provide an annual report. RCRA records shall be available to Florida upon written request.
- Florida recognizes that waste management practices are undergoing constant assessment and evaluation. Understood it will be an ongoing process. All parties agree to continue to work with each other.
- The NWCA has adopted a uniform procedure for the application of RCRA to cruise vessels entering Hawaii. Hawaii accepts these procedures. NWCA agrees to provide an annual report. RCRA records shall be available to Florida upon written request.
- Hawaii recognizes that waste management practices are undergoing constant assessment and evaluation. Understood it will be an ongoing process. All parties agree to continue to work with each other.
- NWCA acknowledges its operating practices are required to comply with Marine Mammal Protections Act and the Invasive Species Act.

California

California has taken a legislative route. In 2001, legislation applying to ballast water for all vessels took effect. It provided several options for treatment of ballast water before discharge in state waters. The most feasible option was conducting a 200-mile exchange at sea before discharging. Though there were other options, such as an alternative exchange zone and use of appropriate technology, neither was practically available. The only choice was the 200-mile exchange. Two-thirds of cruise ships ignored the law. They complied only after a lawsuit was filed by a coalition of environmental groups and heard by a state court.²¹ A judge ordered Carnival Cruise Lines not to dump untreated ballast water in California waters and the other plaintiffs agreed out of court to do the same.

Three pieces of legislation directed at environmental regulation of the cruise industry were introduced in the California state legislature in 2003. AB 121 prohibits cruise ships from dumping sewage sludge or oily bilge water into state waters and seeks federal support to extend the bans to marine sanctuaries along the California coast; AB 471 prohibits ships from using onboard waste incinerators while within 20 miles of the coast and would eventually require ships within 25 miles of the California coast to use low-sulfur diesel fuel;²² and AB 906 prohibits the discharge hazardous waste in state waters and seeks federal support to extend the ban to marine sanctuaries along the California coast. Two of the bills (AB 121 and AB 906), sponsored by the San Francisco-based Bluewater Network, have become law. AB 471 is held over in the Senate Appropriations Committee and is not expected to be considered until next year.²³ More comprehensive cruise pollution bills will also be introduced in the next session to address graywater and blackwater and other pollution streams not addressed in the 2003 legislation.

²¹ See "Luxury Cruise Lines Sued for Illegal Dumping: Lawsuit Aims To Halt Illegal Dumping Of Ballast Water By Fun Ships In California Ports." Joint Press release from Bluewater Network, Environmental Law Foundation, San Diego BayKeeper, and Surfrider Foundation, April 24, 2002.

<http://www.bluewaternet.org/press_releases/pr2002apr24_ss_ballastwater.pdf>

²² Conversion to on-road diesel fuel would reduce particulate matter by 58 per cent, oxides of nitrogen emissions by 11 percent, and sulphur emissions by 99.6 per cent. The additional cost to a cruise ship is estimated to be approximately \$2000 to \$3000 per voyage. Source: Russell Long, Executive Director, Bluewater Network.

²³ See "Bills Prohibiting Discharges in State Waters Passes Senate," *Sarasota Herald Tribune*, September 8, 2003.

It initially appeared that all three bills would pass with little debate. However, the cruise industry increased its lobbying efforts when it saw that the bills had little opposition. They effectively stopped AB 471 in its tracks, and they removed from AB 121 and AB 906 controls over graywater and blackwater. Key factors that produced changes in the bills, aside from direct political pressure, was concern in the appropriations committee about the economic bottom line rather than the environment, that two committee members were facing tough elections in 2004 and didn't wish to be perceived as "too green," and a committee staffer who unduly influenced the process.

Perhaps influencing support for the bills was an August 2003 report prepared by the state Environmental Protection Agency and the state Water Resources Control Board. It concluded, "Many vessels are not complying with international, state or federal standards in regards to handling hazardous materials, garbage, and discharges or treatment of graywater or sewage." The report said it found 'particularly troubling' the discharging of sludge 12 miles out to sea, and the lack of monitoring of shipboard treatment plants and graywater, which has been found to contain higher fecal coli form counts than treated sewage.²⁴

Washington

Though Washington State does not have an MOU, efforts are underway to put one in place that would cover all discharges.²⁵ These efforts need to be seen in the context that voluntary measures have not appeared to be effective.²⁶ Despite assurances given by the cruise industry to the Port of Seattle that Alaska standards would be followed by cruise ships in Washington state waters, the Norwegian Sun on May 3, 2003 was cited for the illegal discharge of 16,000 gallons of raw sewage into the Strait of Juan de Fuca (just off Whidbey Island). The company claimed it was a mistake and has appealed the citation it received from the state of Washington on the grounds that the state does not have the power to regulate cruise ships.²⁷ The matter is now before the Pollution Control hearings Board (PCHB 03-088), where Bluewater Network and Ocean Advocates have sought to intervene as respondents. One has to wonder, if the state does not have the power to regulate cruise ships, then how can an MOU with the state have any effect? It is difficult to imagine entering into an MOU with an industry when the industry claims that the state has no authority to regulate them and is challenging the boundaries of the state's borders. While we do not have the time to debate the challenges before the PCHB here, it is important to note that the Strait of Juan de Fuca is comprised of waters historically recognized as internal waters of the United States and of the State of Washington.

It was also recently disclosed that contrary to assurances that ships using the new cruise pier at Terminal 30 would use only low sulfur fuels in order to reduce dockside pollution, this has not been the practice. The Port of Seattle now claims that the requirement was voluntary, but it had previously twice (in October 2002 before the Puget Sound Clean Air Agency and in January 2003 in a written assurance to the Army Corps of Engineers) given assurances that use of low sulfur

²⁴ Ken Weiss. "Cruise Line Pollution Prompts Legislation," *Los Angeles Times*, August 18, 2003. Also see: *Report to the Legislature: Regulation of Large Passenger Vessels in California*, Cruise Environmental Task Force, August 2003.

²⁵ See Robert McLure. "Cruise Ships Not Using Low-Pollution Fuels After All," *Seattle Post-Intelligencer*, September 11, 2003.

²⁶ See Eric Scigliano. "Cruising is Bruising: As the Port Seeks More Cruise Ships, Critics Decry Inconsistent Environmental Regulations," *Seattle Weekly*, November 27 – December 3, 2002.

²⁷ See Barney Burke. "Cruise lines, State, Talk Pollution," *Jefferson County Leader*, July 9, 2003, and Robert McLure. "Cruise Ships Not Using Low-Pollution Fuels After All," *Seattle Post-Intelligencer*, September 11, 2003.

fuels would be a condition for ships docking at Terminal 30. In a January 8, 2003, assurance to the Army Corps of Engineers, the port stated:

In order to make sure that all applicable air quality standards are met, diesel-powered cruise vessels using T-30 as a homeport will use on-road diesel fuel, or a similar fuel with less than 0.05 per cent sulfur. Turbine-powered cruise vessels will use fuel with no more than 0.5 per cent sulfur while home porting at T-30.²⁸

The Port of Seattle is in a conflicted position around these issues because it has the dual role of being the developer of the cruise terminal and is the lead agency reviewing the environmental issues. The Port issued its project a mitigated Determination of Non Significance (DNS) with regards to the development of T-30. The mitigation involved the use of low sulfur fuels while the ships were moored at the terminal.

While cruise ships committed to using Terminal 30 knowing the conditions, the cruise industry now argues that the cruise engines can't operate properly on low-sulfur fuels. "Tom Dow, vice president of Princess Tours, said his company plans to remedy the problem next year by substituting two cruise ships with cleaner burning engines for the single vessel calling...²⁹ in Seattle in 2003. He minimizes the impact of Princess' ships by pointing out that his ship will be in Seattle only 18 days this year, and only for part of those days. "That's a tiny fraction of the parade of ships that enters and exits Puget Sound."³⁰ Of course he fails to mention that cruise ships use generators 5-10 times the size of those found on freighters due to their much greater electricity demand.

These statements get at the core of the problem. There was a promise made with regard to fuels used when ships agreed to shift from Vancouver to Seattle, but the promise was empty because it didn't correspond with practice. There are promises now that they will do better next year, but without monitoring cruise ship practices and setting enforceable standards, there is no way to know whether they are keeping to their word.

This viewpoint is supported by the way in which it became public that low sulfur fuels were not being used. At the last minute, while the California legislature was considering a bill that would require use of low sulfur fuel in California state waters, cruise industry lobbyists claimed that it wasn't technically possible for a ship to shift to low sulfur fuel. Bluewater Network, being aware of the commitments made to Seattle and the requirements in Seattle, contacted the Port of Seattle and asked, "Aren't you using low sulfur fuel there?" The answer: "well, no they're not. Not any more."³¹ The Port claims to have notified the Puget Sound Clean Air Agency as soon as they found out about this change. In fact low sulfur fuels were never used at the Port and the Air agency was not notified until over three months into the cruise season.

Canada

Canada has not yet committed to a plan, but it has had under consideration for the past year or so the issuance of "Environmental Guidelines for the Operation of Cruise Ships in Waters Under Canadian Jurisdiction." These guidelines are in many respects the same as the ICCL's E-01-01. However they differ from the ICCL's specifications in terms of stricter standards for air emissions, disposal of incinerator ash, and disposal of non-hazardous, non-food waste. The guidelines rely

²⁸ Robert McCCLure. "Cruise Ships Not Using Low-Pollution Fuels After All," *Seattle Post-Intelligencer*, September 11, 2003.

²⁹ *ibid*

³⁰ *ibid*

³¹ *ibid*

on voluntary compliance and this appears to be a sticking point to their being finalized.³² The standards specified in the guidelines will be discussed later.

³² For a complete discussion of the Canadian guidelines, see Ross A. Klein. *Charting a Course: The Cruise Industry, The Government of Canada, and Purposeful Development*, Ottawa: Canadian Center for Policy Alternatives, September 2003.

II – MOU VERSUS LEGISLATION

We have seen two models for dealing with management of cruise ship wastes. In the case of California and Alaska, the state has relied on legislation. In the case of Hawaii and Florida, Memoranda of Understanding have been chosen. What is the fundamental difference between these two approaches? The key element distinguishing the two is “trust”. This presents a difficult problem if we take seriously the words of California Assemblyman Joe Simitian: “Regrettably, cruise lines have a history of violating their agreements and gaming the system. ‘Trust us’ is no longer an effective environmental policy.”³³ Some may view this as a strong statement. What is the foundation for distrust?

The Issue of Trust

The cruise industry would not dispute that its environmental record in the 1990s was not good. There have been comparatively few violations in 2001 through 2003 – scarcely more than a dozen. Table 2 (next page) provides a summary of reported environmental events in 2001, 2002, and 2003.

It is within the context of these “accidents” or “mistakes” that the cruise industry asks governments to trust them. Trust, after all, is what a Memorandum of Understanding is based on. It doesn’t legislate standards. It permits the cruise industry to promise, as long as government doesn’t pass legislation, that it will follow all laws and regulations presently in effect. There are two problems with this sort of arrangement.

First, if the industry is agreeing to follow all laws, then why is a MOU needed? Put another way: if something is already illegal, isn’t it redundant to promise that you won’t do it? With the exception of Hawaii, which sets a four mile limit for wastewater discharge rather than three, neither of the MOUs exceeds standards in current U.S. law. It would appear that the only party benefiting from the MOU is the cruise industry, because in the meantime the state government has agreed not to take the legislative route to regulation and control.

A second question regarding an MOU is how we know the party is complying. The MOU is a voluntary statement. There are no provisions for monitoring or observing behavior, and there are no penalties (other than those that already exist under state law) to the cruise line for non-compliance. It is not that cruise ships are necessarily violating their word – it is a question of how we know that they are not violating their word.

TABLE 2: Summary of Environment “Events” – 2001 – 2003

Date	Event
2001	<p>May – the Norwegian Sky discharged treated sewage in the Alexander Archipelago. Fecal coli form 3500 times the allowable federal standard and suspended solids 180 times the standard.³⁴</p> <p>May – the Westerdam accidentally discharged gray wastewater while docked in Juneau. A passerby who noticed an odd color and odor in the water reported the incident to the Coast Guard. It was estimated that 100 gallons of graywater was discharged when a valve failed to close completely.</p>

³³ Ken Weiss. “Cruise Line Pollution Prompts Legislation,” *Los Angeles Times*, August 18, 2003.

³⁴ See Rosen, Yereth. “Alaskans See Drawbacks to Booming Cruise Business,” *Reuters News Service*, June 29, 2001

	<p>June – Mercury was charged with discharging treated wastewater in Juneau. Although the ship had cutting-edge technology for treatment of wastewater, it hadn't yet received approval to discharge in protected areas. Tests of the wastewater indicated that it was more acidic than permitted for discharging within a mile from shore.³⁵</p> <p>June -- Rhapsody of the Seas illegally discharged 200 gallons of graywater into Juneau's harbor when wastewater was being transferred to a holding tank. The holding tank had exceeded its capacity and the wastewater was discharged through an overboard discharge valve.³⁶</p> <p>Summer – 11 ships (6 companies) cited for violation of Alaska's air opacity standards. \$247,500 in fines; \$165,000 in fines was suspended.</p> <p>December – Court-required audit cited the Zenith of offloading at Tampa as non-hazardous waste as a 55 gallon drum of hazardous waste was offloaded.</p>
2002	<p>February – Caronia detained and fined by Brazilian authorities after nearly 8000 gallons of heavy fuel oil spilled into Guanabara Bay near Rio de Janeiro. Departure delayed one day and ship fined \$410,000.</p> <p>August – Ryndam discharges approximately 40,000 gallons (250 gallons according to HAL) of sewage sludge into Juneau harbour. Referred to grand jury; status unknown.</p> <p>Summer – 1 ship cited for violation of Alaska's air opacity standards.</p> <p>October – Crystal Harmony Reported in March 2003 that contrary to a written promise to not discharge in the Monterey Bay Marine Sanctuary, the ship had in fact discharged 36,000 gallons of treated bilge, treated sewage, and graywater.</p>
2003	<p>January – Ecstasy accidentally discharged 60 gallons of graywater while anchored at Avalon Bay (Catalina Island, California), approximately one-half mile from land.</p> <p>February – A couple aboard the Norwegian Wind reported observing whole beer bottles, whole wine bottles, beer and pop cans, corks, plastic plates, plastic utensils, plastic cups and organic material all being tossed into the ocean from the back of the ship. The ship was between Hawaii and Fanning Island. The company insists it did nothing illegal. Discharge of plastics is strictly forbidden anywhere at sea. The incident is being investigated by the US Coast Guard and EPA.</p> <p>May – Norwegian Sun is cited for the illegal discharge of 16,000 gallons of raw sewage into the Strait of Juan de Fuca (just off Whidby Island, a popular vacation resort).</p> <p>Summer – 1 ship cited for violation of Alaska's air opacity standards.</p>

In many respects, an MOU maintains the status quo. This should not be surprising. A report issued in June 2003 by the Paris-based Organization for Economic Co-operation and Development (OECD) comes to a similar conclusion. The report questions the environmental effectiveness and economic efficiency of voluntary approaches. Focusing specifically on environmental policy, it notes that there are few cases where voluntary approaches have improved the environment beyond a business-as-usual baseline.³⁷

But trust remains a key issue. Can we trust the industry? In October 2002, Crystal Cruises gave a written promise that it would not discharge anything while in the Monterey Bay Marine Sanctuary. Several months later it was learned that they had violated their written commitment.

³⁵ McAllister, Bill. "Celebrity Illegally Dumping in Port," *Juneau Empire*, June 5, 2001

³⁶ Dye, Kathy. "Ship Pumps Laundry Water Into City Harbor," *Juneau Empire*, June 19, 2001.

³⁷ Organization for Economic Co-operation and Development. *Voluntary Approaches to Environmental Policy: Effectiveness, Efficiency, and Usage in Policy Mixes*, Paris: OECD, 2003.

When asked why they did not report the incident, the company's vice president of marine operations stated that the company had not violated the law; it had only broken its word.³⁸ The International Council of Cruise Lines' president, Michael Crye, similarly dismissed the violation of Crystal Cruises' written promise several months later when he told a news reporter that the ship's discharge of 36,000 gallons of wastewater, treated sewage, and oily bilge occurred 14 miles from the coast so it wasn't illegal.³⁹

The industry's position in relation to the Crystal Harmony does not infuse confidence in the industry's word. They are governed by law, but their word is another thing. This is also seen in their relationship with the Port of Seattle around use of low sulfur fuel and in Carnival Cruise Lines "incidental discharge" one-half mile from land while anchored in Avalon Bay, Catalina Island.⁴⁰

Is Monitoring Necessary?

The basic question is whether monitoring and enforcement is necessary. Experience may be the best answer. In jurisdictions where regulations have been legislated and enforced, behavior has changed. There were initial violations that appeared to "test" the law, but it would appear that in time there was compliance. This has been the case with the Alaska Cruise Ship Initiative, it was the case in regards to discharge of ballast water in California waters, and was also the experience of Cayman Islands and the Bermuda when they began enforcing environmental regulations in the early 1990s.⁴¹

III – LIMITS ON EFFLUENTS AND DISCHARGES

An issue separate from whether a state uses an MOU or legislation is the limits set for wastes from cruise ships. On some points, there is little debate between the cruise industry and its critics. On other points, the difference in view is great. It would be instructive to go through each item included in the ICCL's Cruise Industry Waste Management Practices and Procedures (E-01-01) and to discuss differences of view. Where possible, suggestions will be made for bridging disagreements.

The first seven items in E-01-01 are different types of hazardous waste. They include

- A. Photofinishing, including X-Ray development fluid waste
- B. Dry-cleaning waste fluids and contaminated materials
- C. Print shop waste fluids
- D. Photocopying and laser print cartridges
- E. Unused and outdated pharmaceuticals
- F. Fluorescent and mercury vapor lamp bulbs
- G. Batteries

³⁸ For details, see Ross A. Klein. *Cruising – Out of Control*, Ottawa: Canadian Centre for Policy Alternatives, 2003. p. 14.

³⁹ Ed Fletcher. "Cruise Ships Are in the Cross Hairs," *The Sacramento Bee*, June 23, 2003.

⁴⁰ Correspondence from Elaine Heldewier, Director of Environmental Programs, Carnival Cruise Lines, to Nancy Kampas, California State Water Resources Control Board, RE: "Notice of Release of Graywater at Santa Catalina Island," January 16, 2003.

⁴¹ See Ross A. Klein, Left in Its Wake, *Alternatives Journal*, 28:4 (Fall) 2002, p. 24

There are few core differences between the cruise industry and its critics on these substances and wastes.⁴² Environmentalists would prefer that cruise ships move wholly to digital photography in order to eliminate photofinishing waste, that they eliminate dry-cleaning in order to eliminate the problem of perchlorethylene (PERC), and that vegetable dyes be used in printing whenever possible.⁴³ These may all be changes that the industry makes on its own for economic reasons.

As stated in E-01-01, the handling of hazardous wastes is governed under the Resource Conservation and Recovery Act (RCRA). The waste must be properly labeled and properly handled onshore. Given the potential for mistakes – as the case mentioned earlier in which the Zenith offloaded improperly labeled hazardous waste in Tampa – some argue that there should be monitors on cruise ships, and that logs be kept of all on-loading and offloading of hazardous materials.

This view is further supported by disagreements over the application of the RCRA. For instance, it is presently unclear whether cruise ships are classified as “small quantity generators,” meaning they generate more than 100 kg but less than 1,000 kg of hazardous waste per month, or “large quantity generators” (generating more than 1,000 kg per month). The former is subject to less stringent record-keeping and reporting requirements under the Resource Conservation and Recovery Act (RCRA); for instance, they are not required to prepare biennial reports which describe the quantities of hazardous wastes generated and offloaded, outline efforts undertaken to reduce the volume and toxicity of wastes generated, and compare changes in waste volume and toxicity with previous years (40 C.F.R. § 262.41). Some cruise companies maintain that they should be considered “conditionally exempt small quantity generators” (generating less than 100 kg of hazardous waste per month) and therefore not be subject to basic requirements of notification of hazardous waste activity or application for EPA identification numbers which enable tracking of hazardous waste generated on cruise ships.⁴⁴

Furthermore, it is unclear whether each ship should be considered as a distinct generator under RCRA, or whether a company as a whole or a facility which may store hazardous wastes from

⁴² A National Research Council report indicates that up to 30% of all types of vessels may be unlawfully dumping millions of gallons of oily water into our oceans and marine sanctuaries each year. Estimates provided by Royal Caribbean International indicate that a typical cruise ship generates an estimated 110 gallons of photo chemicals, five gallons of dry cleaning waste (PERC), ten gallons of used paints, and five gallons of expired chemicals on a one-week voyage. Volumes of other hazardous wastes are unknown. These toxic substances can cause scarring, death, or reproductive failure in fish, shellfish, and other marine organisms. In addition, they can accumulate in fish tissue, leading to fish consumption advisories.

⁴³ PERC is a listed hazardous waste that can cause cancer and birth defects in humans, and small amounts of PERC in water have been shown to be toxic to aquatic animals, who can store the chemical in their fatty tissues. Metals, such as silver, mercury, and lead, bind to sediment and are transported to coastal waters through sedimentation. These toxic substances can cause scarring, death, or reproductive failure in fish, shellfish, and other marine organisms. In addition, they can accumulate in fish tissue, leading to fish consumption advisories. Mercury is a persistent, bioaccumulative and toxic pollutant (PBT) that can build up in the food chain to levels that are harmful to humans and ecosystem health. Benzene, a volatile organic compound (VOC), is a known human carcinogen.

⁴⁴ International Council of Cruise Lines (ICCL) Talking Points on Obtaining a US EPA Number for Ship Generated Hazardous Waste. December 1, 1999 Meeting between Florida DEP, Florida-Caribbean Cruise Association, and ICCL; Florida DEP. Interoffice Memorandum: Cruise Line EPA ID Numbers. January 13, 1999; Letter from Satish Kastury, Environmental Administrator, Florida DEP Hazardous Waste Regulation Section, to Edward Domanico, Hazardous Materials Specialist, Inc. February 10, 1999.

several ships should be considered as the generator, and therefore which category of generator they fall under (conditionally exempt, small or large quantity generator).⁴⁵

In addition, it appears as though the EPA is interpreting the exemption in 40 C.F.R. § 261(c) for hazardous wastes generated on board certain vessels to mean that key sections of RCRA (40 C.F.R. § 262-265, 268, 270, 271, and 124 or the notification requirements of section 3010 of RCRA) do not apply to hazardous waste while a ship is sailing, but only when the waste has been landed on shore.⁴⁶

Bilge and Oily Water Residue

Current requirements under the International Convention for the Prevention of Pollution from Ships (MARPOL) and under U.S. law are that oil content of a discharged effluent must be less than 15 parts per million (ppm) and that it not leave a visible sheen on the surface of the water. This is also the standard adopted in E-01-01. The Canadian voluntary guidelines vary a bit from this. They distinguish between "internal waters" and "inland waters". In the former the limit is 15 ppm; in the latter it is 5 ppm. The Canadian guidelines also ban oily discharges in the Arctic.

The problem posed to a policy maker is whether a blanket 15 ppm is acceptable. Should there be areas where the discharge limit should be set lower, or where there should be no discharge? There are convincing arguments for this. Areas in Alaska that are considered for aquaculture (which includes parts of the Inside Passage) have discharge limits of 15 parts per billion. A California Fish and Game official told Bluewater Network that "no level of oily water is safe" in coastal waters. His view supports the legislated standard of 15 parts per billion in aquaculture areas of Alaska. While the Alaska standard is apparently not enforced, it reflects a scientific judgment about a safe level for discharge.

The disagreement on bilge and oily water residue between the environmental community and the cruise industry is mainly concerned with where it may be discharged and the level to which it is filtered. Environmentalist concerns are supported by common industry practices in the 1990s and into 2000 where ships would routinely bypass oily water separators and discharge oily bilge directly overboard without treatment. The California Cruise Ship Task Force cites a new federal report that found that 15 to 30 percent of all large vessels illegally dump oil into the sea, more than a million tons a year.⁴⁷

There are also some who are concerned about the content of bilge and oily water residue – they question whether there is also hazardous waste included in that waste stream. Without monitoring of these wastes, we have no way to know the contents of effluent discharged through the oily water separator.

Glass, Cardboard, Aluminum and Steel Cans

Given that ICCL policy is to recycle where possible, and to incinerate what can't be recycled, the only possible difference of opinion is where incinerators may or may not be used. Many ports prohibit use of incinerators while a ship is in port. This prohibition could be extended to 3 miles,

⁴⁵ Ibid. EPA Region 9 RCRA Fact Sheet: RCRA ID Number Policy for Non-Naval Marine Vessels that Generate and/or Transport RCRA Waste. August 13, 1998; Florida DEP Interoffice Memorandum. Cruise Line Industry & EPA ID Numbers. August 23, 1999

⁴⁶ Letter from Marcia E. Williams, Director of US EPA Office of Solid Waste, to Ernest Corrado, Vice President of the American Institute of Merchant Shipping on Raw Material Transport Vessel Exclusion for all Wastes Generated on Such Vessels. September 3, 1986.

⁴⁷ See California Cruise Ship Environmental Task Force. *Report to the Legislature: Regulation of Large Passenger Vessels in California*, August 2003.

12 miles, 25 miles, or further. It is worth noting that the State of California has established that air emissions generated between 27 and 100 miles off the coast could negatively impact the air quality of the state.⁴⁸

Incinerator Ash

The standards in E-01-01 allow incinerator ash to be discharged at sea. The Canadian guidelines, in contrast, classify all incinerator ash as hazardous waste and prohibit its discharge into waters under Canadian jurisdiction. The contrast in these positions could not be more extreme. Of note are studies that raise concern about the content of incinerator ash. When plastics burn they may produce furans, dioxins, and heavy metals; concern has also been expressed that particles of plastic may be left in the ash. Simply put, incineration by-products such as ash residue may be toxic and potentially harmful to water quality and marine life if discharged into the water, particularly if the wastes that are incinerated include toxic waste such as batteries, fluorescent lights or other hazardous materials.

While regulations for shipboard incinerators do exist under the International Maritime Organization, they are inadequate to protect human health and the environment, regardless of whether cruise companies are complying with them. Annex V of MARPOL 73/78, Section 5.4, acknowledges that the state-of-the-art in marine incinerators is not highly advanced, primarily because the technology has not yet been subject to constraints either on air emissions or on the types of materials that could be incinerated. It states that marine incinerators in current use do not include any provision for air pollution control. It further advises that the use of incinerators in urban areas should be discouraged because their use will add to possible air pollution in these areas. MARPOL does not prohibit the use of incinerators in port areas.

Wastewater Reclamation

This section expresses ICCL's commitment to water conservation and to employing technologies that allow reclamation of graywater for reuse. There are no known disagreements.

Graywater
Blackwater

We can take these together because the ICCL standards are the essentially the same for both.

ICCL member lines have agreed to discharge blackwater/graywater only while the ship is underway and proceeding at a speed of not less than 6 knots..., and that blackwater/graywater will not be discharged in port and will not be discharged within 4 nautical miles from shore or such other distance agreed to with authorities having jurisdiction or provided for by local law, except in an emergency, or where geographically limited. The member lines have further agreed that the discharge of blackwater/graywater will comply with all applicable laws and regulations.

Let's first consider what this paragraph says. It states that ICCL member lines will maintain a 4 mile limit for all wastewater discharges, except where otherwise provided by local law. Based on U.S. law, this means a cruise ship can discharge graywater virtually anywhere and can discharge

⁴⁸ Ibid

raw sewage once beyond the three mile limit. This is perhaps why the State of Hawaii made the 4 mile limit explicitly a part of its MOU. The issue being raised is that the regulation does not unequivocally state that there will be no discharges within four miles nautical miles from shore.

Comparing the ICCL regulations with a commitment made by Royal Caribbean Cruises Limited provides a different perspective. On August 1, 2003, Jack Williams (President) and William Wright (vice President) wrote a letter: "To Our Travel Partners: Our Environmental Practices." They clearly stated that with regard to both graywater and blackwater RCCL ships discharge only when 12 nautical miles from shore and traveling at a speed of 6 or more knots. RCCL is to be complimented for taking that step. If the second largest cruise company in the world is willing to make a public commitment of this sort, it would suggest that twelve miles is a reasonable baseline to be applied to all cruise ships. With this as a baseline, some jurisdictions may wish to extend their no-discharge zone further. However, they may also wish to monitor RCCL to confirm that ship practices are consistent with the company's stated policy.

Advanced Waterwater Treatment Systems (AWTS)

Alaska's Cruise Ship Initiative gave an incentive to cruise lines installing an AWTS. Ships using such a system are permitted to discharge wastewater (which is regularly sampled for compliance with Alaska discharge standards) anywhere in state waters. Those not having an AWTS must go beyond three miles of the shore (and outside the Alexander Archipelago) before they may discharge graywater or blackwater. In 2003, 17 of the 33 cruise ships sailing Alaska's waters were certified for continuous discharge because they had an AWTS.

The percentage split in Alaska could mislead one to believe that AWTS have become an industry standard. To the contrary, most of the ships with AWTs are devoted to the Alaska market because of Alaska's regulations and requirements. There are comparatively few ships with AWTS in the general North American market. The cruise industry would argue that the investment – approximately \$2.5 million per ship – is too great. However, let's put this into perspective. If the industry devoted what it spent on "advertising and marketing" in 2000 to retrofitting ships with AWTs, it could upgrade the entire North American fleet and have a quarter billion dollars left over. What better advertising than being able to say that one's company is environmentally friendly when it comes to treatment of wastewater?

There is a good argument for requiring all ships to retrofit with an AWTS. When Alaska did its monitoring in 2000 it was measuring the performance of traditional Marine Sanitation Devices (MSDs). These MSDs are certified by the US Coast Guard, and the Coast Guard confirms that an MSD is installed on a ship. However before Alaska's monitoring there had no monitoring of the effluent produced by these systems. As already mentioned above, the results were, in the words of Alaska's governor, "disgusting and disgraceful." Seventy-nine of 80 ships' effluent had levels of fecal coli form or total suspended solids that would be illegal on land – up to 100,000 times the federal standard. This was true of both blackwater and graywater. As well, all samples indicated that "conventional pollutants" were part of the wastewater. Ships with these MSDs choose to discharge outside Alaska's waters so we have no knowledge about the content of the effluent and whether things have improved since 2000.

The downside of AWTS needs to also be pointed out. During a trade show I asked the manufacturer of a leading AWTS what the main problem was with his system – what was his competitor going to say to one-up him? He responded in all honesty that his system, like all AWTS, still had difficulty in reducing nitrogen from sewage and other wastes. He further explained that a nutrient rich effluent posed little problem when released in already nutrient rich water such as Alaska, but that it is a problem when released in nutrient poor areas, especially

around reefs. This isn't an argument against AWTs – they are a vast improvement over the MSDs – it only raises the point that regulations of discharges from AWTs may be different in the Caribbean and Hawaii than in areas such as Alaska.

One other concern about AWTs is the complete content of effluent. Though the State of Alaska does monitor these systems, their concern is mainly with fecal coli form and total suspended solids. They measure for chemicals as well, but not for all chemicals. This is a concern because waste streams on ships may be mixed resulting in solvents and cleansers with hazardous chemicals making their way into the system. As well, Alaska permits an acceptable limit for chlorine despite scientific intelligence that indicates its potential harm to sea life.

While the AWTs is a vast improvement over the MSD, the effluent from these systems is not as often suggested by the industry "drinking water quality." I recently had a vice president of a major cruise corporation scoff at those in the industry who would drink blackwater treated by an AWTs. He said he might be agreeable to drinking treated graywater, but "blackwater is always blackwater." He was clear that he would not touch the stuff. If it is unsafe for human consumption, then we need to also be concerned about the impact on the oceans and coastal waters.

These systems are also complex. Operators need to be specially trained, and the systems require regular maintenance. In the ideal, training and maintenance could be assumed to be non-problematic. However, in the real world, ships with AWTs have had accidents resulting in discharges of substantial volumes of raw sewage and sewage sludge. In the case of the Norwegian Sun and the Ryndam, the discharges were blamed on human error. This reinforces the need for vigilance on the part of the cruise ship, but also on the part of state governments interested in protecting their coastal environment.

Training and Educational Materials

There has been no debate or discussion about this final element in E-01-01.

What is left out of E-01-01

Four things are visibly absent from E-01-01: disposal of plastic, air quality and fuels used, ballast water, and sewage sludge.

Plastic: Disposal of plastic at sea is strictly prohibited under MARPOL and perhaps that is why it is not mentioned. However, it is relevant insofar as it may be contained in incinerator ash and in light of the report from the Norwegian Wind in February 2003 in which plastic was observed being thrown overboard.

Air quality and fuels: These are potentially two separate issues regarding engine emissions. In Alaska, air quality is measured in terms of air opacity. In other areas, the matter is approached by requiring use of low sulfur fuels. Canada's guidelines for example specify that ships use marine diesel as the fuel for primary propulsion instead of bunker oil once they are within 10 miles of port. There is ongoing debate by the industry about the ability of ships to change from one fuel to another. This debate should be viewed in the context of Bermuda's longstanding policy of requiring ships in its waters to use cleaner burning fuels than normally used in other jurisdictions. If the debate is truly intractable, then a policy should be promulgated requiring ships to always use low-sulfur fuels (marine gas oil has a sulfur content of 0.2 to 1.5 percent as

required in the European Union versus a content of 3 per cent for bunker oil). The environmental benefit far outweighs the modest cost differential.

Incinerators are also an issue as regards air quality. Cruise ships are equipped with incinerators and boilers that are uncontrolled by US air pollution regulations, allowing cruise operators to expose vessel crew and passengers to hazardous emissions such as dioxins--for which there are no safe exposure levels--mercury, and fine particulate matter. These emissions may also affect air quality in coastal and in port areas.

Cruise ships have reported that they incinerate and burn a variety of wastes, including hazardous wastes, oil, oily sludge, sewage sludge, medical and bio-hazardous waste, outdated pharmaceuticals, and other solid wastes such as plastics, paper, metal, glass, and food.⁴⁹ A cruise ship may burn 1 to 2.5 tons per day of oily sludge in these incinerators and boilers.⁵⁰ The emissions from onboard incineration include dioxins, nitrogen oxide, sulfur oxide, carbon monoxide, carbon dioxide, particulate matter, hydrogen chloride, toxic metals such as lead, cadmium and mercury, and hydrocarbons.⁵¹

These emissions need to be carefully considered in terms of regulation of cruise ship air emissions, both in terms monitoring for the content of those emissions and where the emissions are to be permitted. As already stated, the State of California has established that air emissions generated between 27 and 100 miles off the coast could negatively impact the air quality of the state.⁵²

Ballast water: The bio-invasers brought with ballast water have been identified as a problem in most ports – they cause more than \$137 billion a year in damage in the United States.⁵³ California has addressed the issue through legislation. If not already covered in state legislation, this is an item that needs to be addressed either in an MOU or in legislation regulating cruise ship discharges.

Sewage sludge: Sewage sludge is an issue because some of the new AWTS have been installed on ships without companion units for dewatering sewage sludge to a sufficient degree that it can then be incinerated. In those instances, a ship can produce as much as 20 to 30 tons of sludge per day. Most jurisdictions would have an apparent interest in regulating where and how this sludge is discharged.

What Should the Limits Be?

While limits are not proposed for various effluents and waste streams, the discussion above identifies the areas around which there is environmental concern and attempts to delineate different positions and options. It identifies concerns that need to be included in the consideration of limits. The decision of what limits should be adopted should follow careful consideration of the options available, and review of scientific knowledge bearing on that decision.

⁴⁹ California Cruise Ship Environmental Task Force. *Report to the Legislature: Regulation of Large Passenger Vessels in California*, August 2003.

⁵⁰ *ibid*

⁵¹ Bluewater Network's EPA petition on cruise ship incineration, April 2000

⁵² California Cruise Ship Environmental Task Force. *Report to the Legislature: Regulation of Large Passenger Vessels in California*, August 2003.

⁵³ Craig Welch. "Regulations not Halting Aquatic Invaders," *Seattle Times*, September 8, 2003

IV – IS AN MOU THE WAY TO GO?

As tempting as it may be for a state to enter into a Memorandum of Understanding with the cruise industry, history suggests that this is not the best policy. The Organization for Economic Cooperation and Development also suggests that voluntary approaches to environmental regulations are neither effective nor efficient. If a state is concerned with protecting its environment, it has little choice but to choose a legislative route.

This conclusion is predicated on the cruise industry's behavior, both historically and recently. The industry has demonstrated a lack of respect for the environment, and it has also demonstrated a lack of respect toward those who have trusted its word. Crystal Cruises' discharges in the Monterey Bay Marine Sanctuary, the Norwegian Sun's discharges in Puget Sound, Carnival Cruise Line's discharges off Catalina Island, and the nonuse of low sulfur fuels in the Port of Seattle are each examples of a cruise company giving its word and then behaving differently. The industry has also demonstrated disregard for laws, but at least in those cases there is opportunity for a jurisdiction to take action and to prosecute the offense.

That is the issue. The cruise industry can promise whatever it likes, but the question is what standards are enforceable. Without legislative standards, and without provisions for monitoring and penalties for noncompliance with standards, there is little assurance that what a government wants from the cruise industry it will actually see in behavior. After all, in both the Norwegian Sun discharge and the discharge by the Crystal Harmony, the industry in the end has taken a fall back position that what it did is OK because they didn't break the law. In the case of the Crystal Harmony they say the discharges were beyond twelve miles, so no government has jurisdiction. In the case of the Norwegian Sun, they argue that the State of Washington has no jurisdiction to regulate cruise ships.

These are sobering facts that need to be taken seriously by policy makers and legislators as they consider how to proceed with their regulation of the cruise industry. California Assemblyman Joe Simitian (D – Palo Alto) states the situation as clearly as it can be stated: **"Regrettably, cruise lines have a history of violating their agreements and gaming the system. 'Trust us' is no longer an effective environmental policy."**⁵⁴

We conclude with a clear and concise recommendation. States need to adopt clear regulations with the force of law if they wish to deal effectively with discharges from cruise ships. That is the only way that the cruise industry will take the regulations seriously, and the only way to ensure that the intent of policy makers and governments is realized in industry practice. In the ideal world, regulations promulgated by the International Maritime Organization (IMO) and reflected in the International Convention for the Prevention of Pollution from Ships (MARPOL), would be sufficient; failing that, U.S. federal legislation would protect coastal waters. However, in the real world current regimes are inadequate. States are left with responsibility to look after their own self-interest and to protect their environment.

We further recommend that states take a careful look at the risks associated with cruise ship wastes, at the loopholes available to cruise ships given their foreign-registration and the fact that they are owned by non-US registered corporations. States must enact regulations that protect both the coastal environment and the sea life it contains, and protects those living adjacent to the coast who are exposed to air emissions and the range of pollutants produced by cruise ships.

⁵⁴ Ken Weiss. "Cruise Line Pollution Prompts Legislation," *Los Angeles Times*, August 18, 2003.

APPENDIX 1

Large* Commercial Passenger Vessels Discharge Status and Wastewater Treatment – Alaska

Vessel Operator	Vessel Name	Total Persons on Board	Graywater (GW) Treatment System Manufacturer	Blackwater (BW) Treatment System Manufacturer	Discharging in Alaska**	
					GW	BW
Bergshav Mgmt	World	3024	Unknown	Unknown	No	No
Carnival Cruise Lines	Carnival Spirit	3059	Rochem (Reverse osmosis (RO))	Triton Format (Biological) / Rochem (RO)	No	Yes, no galley
Celebrity Cruises	Mercury	2867	Mixed with BW	Rochem	Yes	Yes
Celebrity Cruises	Infinity	3035	Unknown	Hamann	No	No
Celebrity Cruises	Summit	3035	Unknown	Hamann	No	No
Crystal Cruises	Crystal Harmony	1485	Unknown	Triton Format	No	No
Hapag-Lloyd	Europa	682	Unknown	Unknown	No	No
Holland America	Amsterdam	2107	Unknown	Unknown	No	No
Holland America	Maasdam	1854	Mixed with BW	Zenon	Yes	Yes
Holland America	Prinsendam	1100+	Unknown	Unknown	No	No
Holland America	Ryndam	1854	Mixed with BW	Zenon	Yes	Yes
Holland America	Statendam	1854	Mixed with BW	Zenon	Yes	Yes
Holland America	Veendam	1854	Mixed with BW	Zenon	Yes	Yes
Holland America	Volendam	2060	Mixed with BW	Zenon	Yes	Yes
Holland America	Zaandam	2060	Mixed with BW	Zenon	Yes	Yes
Japan Cruise Line	Pacific Venus	750+	Unknown	Unknown	No	No
Kyma Ship Mgmt	Topaz	1400+	Unknown	Unknown	No	No
Mariser Marine	Universe Explorer	1070	Unknown	Unknown	No	No
Mitsui OSK	Nippon Maru	430	Unknown	Orca II	No	No
Norwegian Cruise Line	Norwegian Sky	2820	Mixed with BW	Scanship	Yes	Yes
Norwegian Cruise Line	Norwegian Sun	2886	Mixed with BW	Scanship	Yes	Yes
Norwegian Cruise Line	Norwegian Wind	2380	Mixed with BW	Scanship	Yes	Yes
Princess Cruises	Coral Princess	2800	Accommodations mixed with BW	Hamworthy Bioreactor	Yes	Accommodations only
Princess Cruises	Dawn Princess	2850	Accommodations mixed with BW	Hamworthy Bioreactor	Yes	Accommodations only
Princess Cruises	Island Princess	2286	Accommodations mixed with BW	Hamworthy Bioreactor	Yes	Accommodations only
Princess Cruises	Pacific Princess	1150	Accommodations mixed with BW	Hamworthy Bioreactor	Yes	Accommodations only
Princess Cruises	Star Princess	3750	Accommodations mixed with BW	Hamworthy Bioreactor	Yes	Accommodations only
Princess Cruises	Sun Princess	2850	Accommodations mixed with BW	Hamworthy Bioreactor	Yes	Accommodations only
Radisson Seven Seas	Seven Seas Mariner	1200	Mixed with BW	Hamworthy	Yes	Yes
Royal Caribbean	Legend of the Seas	2543	Unknown	Hamann	No	No

Royal Caribbean	Radiance of the Seas	2959	Unknown	Hamann	No	No
Royal Caribbean	Vision of the Seas	3178	Unknown	Hydroxyl	No	No

*A large vessel has overnight accommodations for 250 or more passengers

** Alaska water extends 3 miles from the coastline and includes the Alexander Archipelago. Only vessels that discharge into Alaska waters are required to meet wastewater sampling and reporting requirements.

Source: Alaska Department of Environmental Conservation
<http://www.state.ak.us/dec/press/cruise/documents/2003largeshipwwtable.htm>

APPENDIX 2

Cruise Lines By Cruise Corporation

Carnival Corporation	Royal Caribbean Cruises Ltd	Star Cruises
Carnival Cruise Line Holland America Line Windstar Cruises Holland America Tours Westmark Hotels Gray Line Princess Cruises Princess Tours Seabourn Cruise Line Aida (Germany) A'Rosa (Germany) Costa Cruises (Italy) Cunard Line (UK) Ocean Village (UK) P&O Cruises (UK) Swan Hellenic (UK) P&O Australia	Celebrity Cruises Royal Caribbean International Island Cruises (j/v with First Choice – UK)	Norwegian Cruise Line Orient Line Star Cruises (Asia)
66 Ships 100,000 berths 17 on order	26 ships 53,000 berths 2 ships on order	20 ships 26,000 berths 2 ships on order