

Student Note

Offshore Oil: A Frontier for International Lawmaking

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Introduction

On April 20, 2010, thousands of feet below layers of rock in the seabed of the Gulf of Mexico, oil and gas escaped through the cement that sealed the Macondo oil well.¹ The crew of the Deepwater Horizon drilling rig had finalized drilling and then plugging the well until such time as a permanent production platform would take over managing the site.² That day, the crew had conducted safety tests of well pressure and were satisfied that the well was secure.³ Several hours later, however, jets of mud exploded out of the water and shot above the drilling rig.⁴ The crew reported a blowout and began emergency procedures.⁵ However, the

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¹ DANIEL YERGIN, *THE QUEST: ENERGY, SECURITY, AND THE REMAKING OF THE MODERN WORLD* 247 (Penguin Press 2011).

² *Id.*

³ *Id.*

⁴ *Id.*

⁵ *Id.* at 247-48.

blowout preventer, a 450-ton apparatus designed to cut into the pipe and seal the well, failed by a measure of 1.4 inches to cut through the pipe.⁶

At 9:47 p.m., the crew heard hissing, which signified that gas was leaking from the well.⁷ Two minutes later, a series of explosions began to blow through the rig and set it aflame.⁸ Crew members fled by lifeboat, or by falling or jumping into the sea.⁹ One hundred and fifteen survivors either made it to a nearby ship, the Damon Bankston, or were found by the Coast Guard.¹⁰ Eleven people were killed.¹¹

Over 4.9 million barrels of oil, or approximately 205.8 million gallons, spilled into the Gulf of Mexico before the well was finally capped eighty-eight days later.¹² The Maconda well was pronounced “effectively dead” on September 19, once a relief well connected to the original well.¹³ According to the Flow Rate Technical Group, a group of scientists convened by the federal government to assess the spill, it was “the largest accidental release of oil into marine waters.”¹⁴

Much national legislation regulating the oil industry has been passed in the wake of disastrous oil spills. The National Environmental Policy Act (“NEPA”) was passed in 1969, following the Santa Barbara Oil Spill of the same year.¹⁵ Congress established the Oil Pollution Act and the Oil Spill Liability Trust Fund in 1990 following the Exxon Valdez Oil Spill in Alaska.¹⁶ However, these responses did not anticipate or adequately envision a response to a disaster the magnitude of the BP Deepwater Horizon Spill. Although the Exxon Valdez spill was catastrophic, there is a finite amount of oil in a tanker. Conversely, a blowout in a deepwater oil well poses a particularly serious threat because the potential size of a spill can be many times that of a tanker spill. Moreover, plugging a blowout

⁶ *Id.* at 248; *see also* Mika Grondahl, et al., *Investigating the Cause of the Deepwater Horizon Blowout*, N.Y. TIMES (Jun. 21, 2010), *available at* <http://www.nytimes.com/interactive/2010/06/21/us/20100621-bop.html> (providing diagrams of the blowout preventer and components).

⁷ *Id.*

⁸ *Id.*

⁹ *Id.*

¹⁰ *Id.*

¹¹ *Id.*

¹² *Id.* at 249; Bettina Boxall, *Oil Spill Size Near Upper Range of Earlier Estimates*, L.A. TIMES, (Aug. 3, 2010), *available at* <http://articles.latimes.com/2010/aug/03/nation/la-na-oil-spill-20100803>.

¹³ YERGIN, *supra* note 1, at 249.

¹⁴ Erin Aigner et al., *Tracking the Oil Spill in the Gulf*, N.Y. TIMES, (Aug. 2, 2010), *available at* <http://www.nytimes.com/interactive/2010/05/01/us/20100501-oil-spill-tracker.html>.

¹⁵ YERGIN, *supra* note 1, at 249.

¹⁶ *Id.*; U.S. EPA, *Oil Pollution Act Overview*, <http://www.epa.gov/osweroe1/content/lawsregs/opaover.htm>; U.S. Coast Guard, *The Oil Spill Liability Trust Fund (OSLTF)*, http://www.uscg.mil/npfc/About_NPFC/osltf.asp.

nearly 5,000 feet underwater where divers cannot easily swim necessitates specialized equipment and engineering ingenuity.¹⁷

Along with provoking a reevaluation of federal regulation of the offshore oil industry in the U.S., the BP Deepwater Horizon oil spill drew attention to the fact that international law does not specifically regulate offshore oil drilling. Although the spill did not apparently pollute other countries' shores or territorial waters, the potential for pollution beyond U.S. borders stirred a renewed interest in the need to address international impacts of offshore oil drilling at an international level. This paper will provide a brief overview of existing international maritime law and how this legal regime did not or would not adequately address pollution from offshore oil drilling in three situations: the 2009 Montara oil spill off the coast of Australia, the BP Deepwater Horizon spill, and offshore oil drilling in the Arctic.

I. International Law and Offshore Oil Drilling Pollution

International law imposes obligations on states to “protect and preserve the marine environment”;¹⁸ however, the specific obligations related to the oil industry are geared towards regulating oil tankers, as opposed to offshore drilling.¹⁹ This is despite the fact that existing international law of the sea grew out of the discovery of massive reserves of oil and natural gas off of the U.S. coast and the concurrent advances in technology that allowed for offshore drilling.²⁰ In 1945, President Truman issued a proclamation claiming exclusive jurisdiction for the United States over the natural resources in the seabed and subsoil of the U.S. continental shelf.²¹ Consequently, rather than crying foul and rejecting U.S. claims, other maritime nations claimed sovereignty over their own continental shelves.²² Within five years, which is unusually rapid, a new principle of customary international law regarding jurisdiction over resources on

¹⁷ YERGIN, *supra* note 1, at 247; Rebecca K. Richards, *Deepwater Mobile Oil Rigs in the Exclusive Economic Zone and the Uncertainty of Coastal State Jurisdiction*, 10 J. Int'l Bus. & L. 387, 395-96 (2011).

¹⁸ United Nations Convention on the Law of the Sea, art. 192, Dec. 10, 1982, 1833 U.N.T.S. 397 [hereinafter UNCLOS].

¹⁹ Kate Galbraith, *Gap in Rules on Oil Spills From Wells*, NEW YORK TIMES (May 16, 2010) available at <http://www.nytimes.com/2010/05/17/business/energy-environment/17green.html>. See also UNCLOS, *supra* note 18.

²⁰ John A. Duff, *The United States and the Law of the Sea Convention: Sliding Back from Accession and Ratification*, 11 OCEAN & COASTAL L.J. 1, 3-4 (2006); Scott J. Shackelford, *Was Selden Right?: The Expansion of Closed Seas and Its Consequences*, 47 STAN. J. INT'L L. 1, 14-15 (2011).

²¹ Duff, *supra* note 20.

²² *Id.*

continental shelves had emerged.²³ Building upon these proclamations, in 1956, the United Nations hosted its first Conference on the Law of the Sea and began the process of codifying the law of the sea.²⁴

A. United Nations Convention on the Law of the Sea

Presently, 162 states are party to the United Nations Convention on the Law of the Sea (“UNCLOS”), which entered into force on November 16, 1994.²⁵ For parties to UNCLOS, the Convention governs “virtually all legal questions concerning the law of the sea.”²⁶ The U.S. is not a party.²⁷ However, in 1994 the U.S. signed the Agreement Relating to the Implementation of Part XI of the United Nations Convention on the Law of the Sea (“Implementation Agreement”), which “was intended to cure certain defects in the Convention to allow the U.S., as well as other industrialized nations, to become parties to it.”²⁸ Aside from Part XI, the U.S. recognizes the convention provisions as customary law.²⁹

Prior to UNCLOS, many states had wanted to extend territorial jurisdiction further than the previously-accepted three-mile limit in order to exploit oil, gas and other resources, regulate pollution, and defend national security.³⁰ Under UNCLOS, states can develop and manage natural resources in their Exclusive Economic Zone (“EEZ”), which extends 200 nautical miles from their shore.³¹ Once a state claims its EEZ, it can build offshore oil platforms for drilling.³²

However, UNCLOS does not specifically regulate offshore drilling practices. Rather, it imposes obligations on states to regulate offshore platforms construction, offshore drilling, and clean-ups of related pollution under general principles. Article 192 obliges states to “protect and preserve the marine environment,” regardless of whether pollution from oil

²³ *Id.*

²⁴ See *The United Nations Convention on the Law of the Sea: A historical perspective*, OCEANS AND LAW OF THE SEA, DIVISION FOR OCEAN AFFAIRS AND THE LAW OF THE SEA, (last accessed Mar. 26, 2012), http://www.un.org/Depts/los/convention_agreements/convention_historical_perspective.htm; Shackelford, *supra* note 20, at 13.

²⁵ *United Nations Convention on the Law of the Sea*, UN TREATY DATABASE, (Mar. 26, 2012), http://treaties.un.org/Pages/ViewDetailsIII.aspx?&src=TREATY&mtdsg_no=XXI~6&chapter=21&Tmpt=mtdsg3&lang=en#1.

²⁶ Duff, *supra* note 20, at 1.

²⁷ *United Nations Convention on the Law of the Sea*, UN TREATY DATABASE, *supra* note 25.

²⁸ Duff, *supra* note 20, at 2.

²⁹ Yee Huang, *International Law Implications of the BP Oil Spill*, CENTRE FOR PROGRESSIVE REFORM (June 8, 2010), <http://www.cprblog.org/CPRBlog.cfm?idBlog=FBF393AA-EE0A-FF0C-695B9BA163B50BDB>.

³⁰ Shackelford, *supra* note 20, at 15-16.

³¹ *Id.* at 23-24.

³² *Id.*

spills reaches the shores of other states.³³ Article 208 requires coastal states to “adopt laws and regulations to prevent, reduce and control pollution of the marine environment arising from or in connection with seabed activities subject to their jurisdiction and from . . . installations and structures under their jurisdiction.”³⁴ It further requires that “[national] laws, regulations and measures . . . be no less effective than international rules, standards and recommended practices and procedures.”³⁵

Nevertheless, these general principles have not yet successfully been used to provide legal redress from oil spills from offshore drilling. As one blogger puts it, “the strength of UNCLOS,” as it relates to offshore platforms, “is its framework for international cooperation and its attempt to harmonize standards for this pollution.”³⁶

B. International Maritime Organization Code for the Construction and Equipment of Mobile Offshore Drilling Units

The International Maritime Organization (“IMO”) is a specialized agency under the auspices of the United Nations system and was established by the Convention on the International Maritime Organization.³⁷ UNCLOS references the IMO as the “competent international organization” in various provisions regarding “the adoption of international shipping rules and standards in matters concerning maritime safety, efficiency of navigation and the prevention and control of marine pollution from vessels and by dumping.”³⁸ The IMO established the Code for the Construction and Equipment of Mobile Offshore Drilling Units, which member states are supposed to incorporate into national legislation. The U.S., for example, meets its obligations in this regard with statutes and regulations that are implemented by the U.S. Coast Guard.³⁹ However, this Code does not provide “safety standards for drilling operations.”⁴⁰

³³ UNCLOS, *supra* note 18; and James Harrison, *The Gulf of Mexico Oil Spill and International Law*, INTERNATIONAL LAW OBSERVER (May 31, 2010), <http://internationallawobserver.eu/2010/05/31/the-gulf-of-mexico-oil-spill-and-international-law/>.

³⁴ UNCLOS, *supra* note 18, art. 208(1).

³⁵ *Id.* art. 208(3).

³⁶ Huang, *supra* note 29.

³⁷ Implications of the United Nations Convention on the Law of the Sea for the International Maritime Organization, LEG/MISC.6 at 7 (Sep. 10, 2008), *available at* <http://www.imo.org/ourwork/legal/documents/6.pdf>.

³⁸ *Id.*

³⁹ Hari M. Osofsky, *Multidimensional Governance and the BP Deepwater Horizon Oil Spill*, 63 FLA. L. REV. 1077, 1083-84 (2011).

⁴⁰ Harrison, *supra* note 33.

C. *Convention for the Prevention of Pollution from Ships*

The International Convention for the Prevention of Pollution from Ships (“MARPOL 73/78”) regulates the disposal of waste generated by the normal operation of vessels.⁴¹ MARPOL 73/78 is the primary convention dealing with preventing marine pollution by ships caused by accidents or normal operation.⁴² As of December 2001, 161 states are party to the treaty.⁴³

The U.S. implements its obligations under MARPOL 73/78 through the Act to Prevent Pollution from Ships (“APPS”), under the lead of the U.S. Coast Guard.⁴⁴ In particular, the APPS allows for civil and criminal penalties for violations of MARPOL 73/78 or regulations promulgated thereunder.⁴⁵ Furthermore, the APPS states that “any action taken under this chapter shall be taken in accordance with international law.”⁴⁶

The definition of “ships” under MARPOL 73/78 includes offshore oil rigs that are “fixed or floating platforms.”⁴⁷ However, the MARPOL 73/78 definition of “discharge” excludes the “release of harmful substances directly arising from the exploration, exploitation and associated off-shore processing of sea-bed mineral resources.”⁴⁸ Nevertheless, under Annex I of MARPOL 73/78, fixed or floating offshore oil rigs must comply with the requirements “applicable to ships of 400 tons gross tonnage and above other than oil tankers” and may not discharge oil or oily mixtures into the sea “except when the oil content of the discharge without dilution does not exceed 15 parts per million.”⁴⁹ However, the IMO Unified Interpretations of MARPOL 73/78 clarify the limits to which the treaty applies to offshore oil installations.⁵⁰ Of the five categories of discharge from offshore installations, the Annex I requirements only apply to two categories: the discharge of oil from “contaminated ballast” and from “machinery space drainage,” which is produced by generators, fuel tanks, and pumps of

⁴¹ U.S. EPA, *Marpol 73/78*, <http://www.epa.gov/owow/ocpd/marpol.html> (last accessed Dec. 21, 2011).

⁴² Kathryn T. Martin, *U.S. Control Over Extraterritorial Water Pollution: The Interplay between International and Domestic Law*, 22 J. NAT. RESOURCES & ENVTL. L. 209, 211 (2009).

⁴³ U.S. EPA, *supra* note 41.

⁴⁴ *Id.*

⁴⁵ Martin, *supra* note 42.

⁴⁶ *Id.*

⁴⁷ International Convention for the Prevention of Marine Pollution from Ships, Nov. 2, 1973, 1340 U.N.T.S. 184, *as modified by* Protocol, Feb. 17 1978, 1340 U.N.T.S. 61. art. 2(4) [hereinafter MARPOL 73/78].

⁴⁸ *Id.* art. 2(3)(b)(ii); ZHIGUO GAO, ED., ENVIRONMENTAL REGULATION OF OIL AND GAS 103-104, 1998.

⁴⁹ MARPOL 73/78, *supra* note 47, Annex I Regulation 21.

⁵⁰ GAO, *supra* note 48, at 105.

offshore installations.⁵¹ But MARPOL 73/78 Annex I does not regulate the discharge of oil from “offshore processing drainage,” “production water discharge,” or “displacement water discharge,”⁵² which are the forms of pollution “directly related to offshore petroleum production.”⁵³

II. Case Studies

The potential for offshore oil drilling pollution to have international impacts, combined with the lack of international law regulating offshore oil drilling, provides a frontier for international lawmaking. By addressing existing gaps, international law could help prevent spills and could provide greater security and clarity for managing cleanups and compensation after spills. Currently, nearly all aspects of offshore oil drilling are regulated by national governments. Massive spills have occurred in territories of countries, such as the United States and Australia, that have relatively sophisticated legal systems in general and comprehensive regulations for offshore oil drilling in particular. Offshore drilling in territories with less-developed legal systems could lead to a greater likelihood of a spill and to more damaging consequences. The Montara Oil Spill off the coast of Australia shows that even countries with developed legal systems can have massive failures in regulatory vigilance, leading to international environmental damage and complicated liability issues. The BP Deepwater Horizon spill is another example of a developed regulatory system failing to prevent a spill, although in a situation that did not lead to international damage from oil pollution. Even so, the BP Deepwater Horizon spill highlighted problems caused by unclear jurisdictional authority under international law for mobile offshore drilling units (“MODUs”) that are registered in states other than where they are drilling. Lastly, the potential for a spill from offshore oil drilling in the Arctic, where there are many territorial claims and a great potential for international impacts if a spill occurred, should be a significant impetus toward developing an international regulatory regime to prevent spills and to address their impacts once they occur.

A. *Montara Oil Spill – Timor Sea, 2009*

On August 21, 2009, the Montara Wellhead Platform (“WHP”) suffered a blowout and began discharging oil and gas into the Timor Sea,

⁵¹ Unified Interpretations of MARPOL 73/78 Annex I, 56.2.

⁵² *Id.*

⁵³ GAO, *supra* note 48, at 106.

approximately 260 kilometers northwest of Western Australia.⁵⁴ The Montara Commission of Inquiry (“Montara Commission”), established by the Australian Government, later reported that at 5:30 am (CST) a “small ‘burp’ of oil and gas . . . travelled a distance of four kilometres from the reservoir beneath the sea bed” and escaped from a well.⁵⁵ Around two hours later, the well “kicked with such force that a column of oil, fluid and gas was expelled from the top of the well, through the hatch on the top deck of the WHP, hitting the underside of the West Atlas drilling rig and cascading into the sea.”⁵⁶ PTTEP Australasia (“PTTEPAA”) reported that the blowout released between 200 and 400 barrels of oil per day,⁵⁷ although a representative later admitted to the Montara Commission that initial releases were likely as high as 1,000 to 1,500 barrels of oil per day.⁵⁸ The blowout also released “unknown amounts of gas, condensate and water.”⁵⁹ Response teams eventually intercepted the well on November 1, 2009 and began attempting to plug the well with “heavy mud,” a man-made drilling fluid.⁶⁰ However, a fire started that damaged the Montara WHP and the West Atlas rig.⁶¹ The fire and spill were halted on November 3, 2009, when the pumping of heavy mud finally “killed” the well.⁶² The blowout was Australia’s first major marine-based oil spill from an offshore oil platform, rather than a ship.⁶³

In reporting to the Montara Commission, PTTEPAA claimed that the blowout was caused by a failure of the float on the casing shoe and a failure to install a 320mm Pressure Containment Cap (PCC) instead of a 244mm PCC on the well.⁶⁴ The failure of the float of the casing shoe led to the “incorrect cementing of the well.”⁶⁵ The Montara Commission found

⁵⁴ *Montara oil spill*, DEPARTMENT OF SUSTAINABILITY, ENVIRONMENT, WATER, POPULATION AND COMMUNITIES, <http://www.environment.gov.au/coasts/oilspill.html> (last accessed Nov. 26, 2011); Tina Hunter, *The Montara Oil Spill and the National Marine Oil Spill Contingency Plan: Disaster Response or Just a Disaster?*, AUSTRALIAN & NEW ZEALAND MARITIME LAW JOURNAL, Vol 24, No 2 at 47 (2010) available at

<https://maritimejournal.murdoch.edu.au/index.php/maritimejournal/article/viewFile/140/186>.

⁵⁵ *Report of the Montara Commission of Inquiry* at 5, 21 (June 2010)

<http://www.ret.gov.au/Department/Documents/MIR/Montara-Report.pdf>.

⁵⁶ *Id.* at 5.

⁵⁷ *Id.* at 301.

⁵⁸ *Id.*

⁵⁹ *Id.* at 38.

⁶⁰ *Id.* at 39; *60 Minutes: Deepwater Horizon's Blowout*, Part 1 (television broadcast Aug. 22, 2010), available at

<http://www.cbsnews.com/stories/2010/08/19/60minutes/main6787685.shtml?tag=currentVideoInfo;segment>

Title.

⁶¹ *Report of the Montara Commission of Inquiry*, *supra* note 55, at 39.

⁶² *Id.*

⁶³ Hunter, *supra* note 54, at 46.

⁶⁴ *Id.* at 48.

⁶⁵ *Id.*

that PTTEPAA “did not observe sensible oilfield practices at the Montara Oilfield” and that “[m]ajor shortcomings in the company’s procedures were widespread and systemic.”⁶⁶ The Montara Commission also found that the blowout likely would have been prevented if PTTEPAA had followed its Well Construction Standards and the well control practices that were approved by the delegate of the Designated Authority (“DA”), the Northern Territory Department of Resources (“NT DoR”).⁶⁷ However, the Montara Commission found that:

the NT DoR was not a sufficiently diligent regulator: it should not have approved the Phase 1B Drilling Program for the Montara Oilfield in July 2009 as it did not reflect sensible oilfield practice; it also adopted a minimalist approach to its regulatory responsibilities. The way the regulator (the NT DoR) conducted its responsibilities gave it little chance of discovering PTTEPAA’s poor practices. In this case, the regulatory dog did not bark.⁶⁸

The Montara Commission estimated that over the 74-day period, the blowout leaked between 400 and 1500 barrels of oil a day, making it Australia’s third largest marine oil spill.⁶⁹ Between 1965 and 1984, there had been six blowouts from offshore drilling operations, which either leaked no oil or negligible amounts of oil.⁷⁰ However, the Montara spill affected an area of approximately 90,000 square kilometers with oil sheen and weathered oil patches.⁷¹ In addition to the environmental damage that the oil spill posed, the Montara Commission noted that the dispersants used during the clean-up were a cause for environmental concern.⁷²

However, the Montara Commission stated that the environmental impacts from the dispersants and the oil “may never be fully known.”⁷³ The Montara WHP is in a remote location about which there was “little baseline data about species and habitats.”⁷⁴ Therefore, although samples of species and habitat were taken after the spill, comparing the current health of the area to that of the area before the spill is difficult. The information that the Montara Commission gathered showed that “the dispersant/oil mix

⁶⁶ *Report of the Montara Commission of Inquiry*, *supra* note 55, at 6.

⁶⁷ *Id.* at 6-7.

⁶⁸ *Id.* at 6.

⁶⁹ *Id.* at 38, 301.

⁷⁰ *Id.* at 38.

⁷¹ *Id.* at 5, 23.

⁷² *Id.* at 23.

⁷³ *Id.*

⁷⁴ *Id.* at 39.

could have had an adverse effect on coral spawn and fish larvae and other shallow subsurface species,” which is difficult to measure and understand without baseline data.⁷⁵ Moreover, scientific monitoring did not begin immediately after the spill occurred and did not adequately monitor the subsurface effects of the oil/dispersant mix.⁷⁶ The subsurface habitats and species were of particular concern because the dispersants act to sink oil.⁷⁷

Unlike the BP Deepwater Horizon oil spill, the Montara spill affected EEZ areas of neighboring countries.⁷⁸ The Montara Commission recognized evidence that oil had entered Indonesian and Timor Leste waters “to a significant degree.”⁷⁹ Indonesian Transport Minister, Freddy Numberi, reported that the Montara spill had caused “direct losses of 500 billion rupiah (\$55.16 million)” to Indonesia.⁸⁰ The Governor of Indonesia’s East Nusa Tenggara province called for damages to be paid for the injury to the province’s fishing industry caused by the oil pollution.⁸¹ He also claimed damage to Rote Island’s seaweed harvesting industry.⁸² Following an investigation by the Indonesian government, which concluded that oil from the Montara spill had entered Indonesian territory, the Thai Prime Minister and Indonesian Prime Minister discussed compensation for affected Indonesians.⁸³ The Thai Prime Minister was involved because PTTEPAA was registered in Thailand. The Thai Minister gave assurances that legal action could be avoided and that a compensation package of over 100 million baht could likely be arranged.⁸⁴

B. *BP Deepwater Horizon Oil Spill – Gulf of Mexico, 2010*

The Macondo Well, where the BP Deepwater Horizon spill occurred, was located some fifty miles off the coast of Louisiana in the U.S. EEZ.⁸⁵ Despite concerns that the spill would affect Cuba’s shoreline or that the Gulf Loop Current would carry the spill towards Europe,

⁷⁵ *Id.* at 23.

⁷⁶ *Id.* at 26, 39.

⁷⁷ *Id.* at 26.

⁷⁸ See Hunter, *supra* note 54, at 47-48 (providing an overhead image of the spill location and its distance from neighboring countries).

⁷⁹ *Report of the Montara Commission of Inquiry*, *supra* note 55, at 26.

⁸⁰ *Indonesia seeks compensation over Timor Sea oil spill*, REUTERS (Jul 22, 2010), <http://www.reuters.com/article/2010/07/22/us-indonesia-environment-compensation-idUSTRE66L0K020100722>.

⁸¹ *Indonesia: Australian damages sought for Timor sea oil pollution*, Adnkronos International, <http://www.adnkronos.com/AKI/English/Business/?id=3.1.1290721864> (*last accessed* Nov. 26, 2011).

⁸² *Id.*

⁸³ *Thai Energy Min Optimistic over Oil Spill Dispute with Indonesia*, ASIA PULSE (Oct. 10, 2011).

⁸⁴ *Id.*

⁸⁵ Campbell Robertson, *Oil Leaking Underwater from Well in Rig Blast*, N.Y. TIMES (Apr. 24, 2010), <http://www.nytimes.com/2010/04/25/us/25rig.html> at A14.

evidence of such international impacts never materialized.⁸⁶ Nevertheless, the BP Deepwater Horizon spill illustrates several key gaps in international maritime law related to offshore drilling.

Unlike the Montara oil spill, which occurred under some 250 feet of water,⁸⁷ the seabed where the Macondo Well was drilled was nearly 5,000 feet below the surface of the Gulf of Mexico.⁸⁸ Deepwater oil wells are those that are drilled at 1,000 feet or more below the surface water.⁸⁹ Drilling at such depths poses added challenges in preventing, halting, and containing oil spills.⁹⁰ The greater pressure, the colder temperatures, and the different currents create particular problems for equipment.⁹¹ When problems arise, human divers cannot address them because of the depth; rather, workers must instead rely on remotely operated vehicles (“ROVs”).⁹² It is more difficult to contain spills with booms, which are relatively ineffective due to the deep plumes of oil that are produced and because of greater wave action in deep waters.⁹³

From a legal standpoint, one of the complications created by deepwater offshore drilling is the characterization of the drilling rigs as “vessels” and the implications thereof.⁹⁴ Offshore drilling in shallow water uses fixed rigs that are attached to the seabed with legs made of steel or concrete.⁹⁵ This structure is not feasible in deep water because the length of the legs would not be economically or structurally sound.⁹⁶ Deepwater drilling rigs, however, are mobile.

MODUs are drilling rigs used for deepwater wells and they are capable of floating and navigating between drill sites.⁹⁷ Due to their mobile nature, some national laws and treaties, including UNCLOS, have

⁸⁶ See Howard LaFranchi, *International sensitivities: What if BP oil spill heads for Cuba?*, THE CHRISTIAN SCIENCE MONITOR (Jun. 11, 2010), <http://www.csmonitor.com/USA/Foreign-Policy/2010/0611/International-sensitivities-What-if-BP-oil-spill-heads-for-Cuba>; John M. Broder, *Scientists Warn Oil Spill Could Threaten Florida*, N.Y. TIMES, (May 17, 2010), <http://www.nytimes.com/2010/05/18/us/18spill.html>; *Seeking Answers on Oil Spill as Questions Mount*, N.Y. TIMES (Jun. 25, 2010), <http://www.nytimes.com/2010/06/26/us/26primerWEB.html?pagewanted=all>.

⁸⁷ Keith Bradsher, *Relief Well Was Used to Halt Australian Spill*, N.Y. TIMES (May 2, 2010), <http://www.nytimes.com/2010/05/03/us/03montara.html>, at A14.

⁸⁸ YERGIN, *supra* note 1, at 247.

⁸⁹ Richards, *supra* note 17, at 390.

⁹⁰ *Id.* at 395.

⁹¹ *Id.*

⁹² *Id.* at 396.

⁹³ *Id.*

⁹⁴ *Id.* at 388.

⁹⁵ Offshore Drilling, NATURALGAS.ORG, http://www.naturalgas.org/naturalgas/extraction_offshore.asp (last visited, Mar. 27, 2012).

⁹⁶ Richards, *supra* note 17, at 396.

⁹⁷ *Id.* at 397.

characterized MODUs as “vessels.”⁹⁸ For example, in the U.S. a “MODU means a vessel, other than a public vessel of the United States, capable of engaging in drilling operations for exploration or exploitation of subsea resources.”⁹⁹

Some commentators argue that “the vagueness of coastal state jurisdictional authority over these rigs unacceptably increases the risk of accidents.”¹⁰⁰ Under UNCLOS, a vessel is subject to the jurisdiction of the flag state in which it is registered, which means that a coastal state “does not have the plenary authority to completely regulate the drilling and production operations . . . in the EEZ.”¹⁰¹ For example, Deepwater Horizon was a MODU that operated in the U.S. EEZ, but which was registered in the Marshall Islands and subject to the “exclusive jurisdiction” of the latter.¹⁰² Given the public backlash against BP following the spill, it is not surprising that the oil company voluntarily cooperated with the U.S. in the cleanup process. However, this might not be the case in future spills. Moreover, the vagueness in jurisdictional authority may have contributed to lax regulatory oversight of the BP Deepwater Horizon operations that, in turn, may have failed to prevent the oil spill.¹⁰³

C. Arctic Offshore Drilling

The Arctic contains a disproportionate amount of the world’s petroleum resources, given that it covers approximately six percent of the surface area of the planet, yet holds approximately twenty-two percent of the world’s undiscovered, technically recoverable petroleum resources.¹⁰⁴ The U.S. Geological Survey estimates that the Arctic holds “90 billion barrels of oil, 1,669 trillion cubic feet of natural gas, and 44 billion barrels of natural gas liquids,” of which approximately eighty-four percent is

⁹⁸ *Id.*

⁹⁹ 33 C.F.R. § 140.10 (2011).

¹⁰⁰ Richards, *supra* note 17, at 387.

¹⁰¹ *Id.*

¹⁰² *Id.*

¹⁰³ See Broder, *supra* note 86 (In May 2010, the top federal regulator of offshore drilling in the gulf, Chris Oynes, announced his resignation following allegations that he “had failed to collect billions of dollars in revenues owed the federal government and had been lax in its oversight of the safety practices of offshore drillers.”).

¹⁰⁴ U.S. Geological Survey, *Circum-Arctic Resource Appraisal: Estimates of Undiscovered Oil and Gas North of the Arctic Circle*, at 1, available at: <http://pubs.usgs.gov/fs/2008/3049/fs2008-3049.pdf>; U.S. Department of the Interior, U.S. Geological Survey, *90 Billion Barrels of Oil and 1,670 Trillion Cubic Feet of Natural Gas Assessed in the Arctic* (July 23, 2008), Press Release, http://www.usgs.gov/newsroom/article.asp?ID=1980&from=rss_home. See also, Lars Kullerud, *A green Arctic*, *Nature* Vol 478 at 179 (Oct. 13, 2011).

estimated to occur offshore.¹⁰⁵ The journal *Nature* reports that the “high price of oil is driving companies northwards, with drilling taking place or planned off the coast of Greenland and in the Kara, Barents and Chukchi seas.”¹⁰⁶ In addition to drilling and exploration for petroleum resources, governments are increasing scientific research and military training activities in the Arctic,¹⁰⁷ which some see as “a prelude to claiming rights to resources in vast swathes of territory under the United Nations Convention on the Law of the Sea.”¹⁰⁸

Under UNCLOS, countries can claim rights to drill in the Arctic by showing that the area claimed is an extension of that country’s continental shelf.¹⁰⁹ To date, only Russia and Norway have submitted such claims.¹¹⁰ Russia has claimed areas up to the North Pole, including territory over which Denmark and Canada may also have valid claims based on their geography.¹¹¹ Russia, Canada, and Denmark may also have valid claims to the Lomonosov Ridge, due to its high topography.¹¹² However, even countries that do not border the Arctic are making moves towards staking claims, such as China and South Korea, which maintain a presence in the area with icebreakers.¹¹³

Signatories to UNCLOS can submit claims within ten years after they ratify.¹¹⁴ Denmark ratified UNCLOS in 2004, Canada in 2003, Russia in 1997, Norway in 1996, and Iceland in 1985, while the U.S. has signed, but not yet ratified it.¹¹⁵ Nations, therefore, have a limited time to submit claims, and it is unclear how the region will be broken up.

In 2008, scientists from Durham University published a map showing the full melange of claims, potential claims based on the continental shelf, claimed EEZ boundaries, boundaries agreed to by treaty, overlapping claims, and overlapping EEZ areas.¹¹⁶ The scientists drew up

¹⁰⁵ U.S. Geological Survey, *Circum-Arctic Resource Appraisal: Estimates of Undiscovered Oil and Gas North of the Arctic Circle*, *supra* note 104, at 4.

¹⁰⁶ *The New North*, *Nature* Vol 478, at 173 (Oct. 13, 2011).

¹⁰⁷ See U.S. Department of the Interior, U.S. Geological Survey, *90 Billion Barrels of Oil and 1,670 Trillion Cubic Feet of Natural Gas Assessed in the Arctic*, *supra* note 104; Daniel Cressey, *Open Water*, *Nature* Vol 478 at 174 (Oct. 13, 2011).

¹⁰⁸ Cressey, *supra* note 107, at 174.

¹⁰⁹ *Id.* at 176; *The New North*, *supra* note 106.

¹¹⁰ *The New North*, *supra* note 106.

¹¹¹ See *The New North*, *supra* note 106.

¹¹² *Id.*

¹¹³ Cressey, *supra* note 107, at 176.

¹¹⁴ *Id.*

¹¹⁵ *Status of the United Nations Convention on the Law of the Sea*, United Nations Treaty Collection, http://treaties.un.org/Pages/ViewDetailsIII.aspx?&src=TREATY&mtdsg_no=XXI-6&chapter=21&Tempt=mtdsg3&lang=en (last visited March 28, 2012).

¹¹⁶ *Maritime jurisdiction and boundaries in the Arctic region*, INTERNATIONAL BOUNDARIES RESEARCH UNIT AND DURHAM UNIVERSITY, available at http://news.bbc.co.uk/2/shared/bsp/hi/pdfs/06_08_08_arcticboundaries.pdf.

the map following international outrage when Russia planted a flag on the seabed at the North Pole.¹¹⁷ The authors explained: “We have attempted to show all known claims; agreed boundaries and one thing that has not appeared on any other maps, which is the number of areas that could be claimed by Canada, Denmark and the US.”¹¹⁸

Conclusion

Offshore oil drilling provides a frontier for the development of international law. Existing international law does not adequately address responses to oil spills from offshore oil rigs. In cases such as the Montara oil spill, compensation and cleanup is generally dealt with by domestic law of the countries in which a spill occurs and where the participants are registered. Australia, for example, has a relatively developed legal system to address regulating oil drilling and adjudicating liability. However, if a spill occurs in the territory of a less developed legal system, the consequences could be even more disastrous. Existing international law does not adequately address the vagueness of jurisdictional authority for MODUs that are registered in states other than the EEZ area in which they are drilling. Lastly, an international convention that deals with specific rules and standards for both shallow and deepwater drilling would also provide better guidance for safely conducting drilling in the Arctic. A well blowout in the Arctic could potentially create oil pollution that would threaten many countries' territories and interests in a sensitive ecological area. International law could address these gaps, furnish greater security and clarity for regulations to prevent spills, and provide for the management of cleanups and compensation after spills.

¹¹⁷ *Arctic Map shows dispute hotspots*, BBC NEWS, (Aug. 5, 2008), http://news.bbc.co.uk/2/hi/staging_site/in_depth/the_green_room/7543837.stm

¹¹⁸ *Id.*