Note

THE OIL MEN AND THE SEA: THE FUTURE OF OCEAN RESOURCE DEVELOPMENT IN LIGHT OF SANTA BARBARA—SOME PROPOSALS TO RECTIFY CONTINUING INADEQUATE FEDERAL REGULATION OF OFFSHORE LEASING

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At the end of January 1969, when oil first sprang from a fissure on the sea floor near Union Oil Company's Platform A and drifted toward the shores of Santa Barbara,[1] "the underlying facts in the most disturbing of a recent series of pollution crises were about as murky as the ugly, dark oil slick staining hundreds of square miles of the Pacific."[2] Eight months later, in the midst of conflicting reports as to the condition of the area's beaches,[3] and notwithstanding several congressional committee hearings,[4] little more was known, or made known to the general public, of the direct and indirect causes of the oil leak disaster.[5]

The objective of this note is to delimit and clarify those causes through an examination of the framework of laws and regulations which control the oil drilling process seaward of the shoreline of California. Such an examination is of interest and import far beyond the value of documenting one oil spill and one incident of fouled beachfront.

Inasmuch as the regulations promulgated to govern industrial operations on offshore publicly owned territory are the primary means of

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1 For the first national report of the spill, see N.Y. Times, Jan. 31, 1969, at 50. col. 3. The blowout occurred on January 28. See note 110 *infra* and accompanying text.

2 N.Y. Times, Feb. 9, 1969, § 4, at 2, col. 5-6.

3 *Compare* "Take a long stroll down Santa Barbara's beachfront . . . [t]hough the sand on the beach looks reasonably clean, your feet are soon coated with black, sticky gunk." Wall Street Journal, Aug. 27, 1969, at 1, col. 1, *with* "Beaches and harbor areas, stained with oil last winter, now are clean . . . . Even the Santa Barbarans acknowledge the beaches have never looked better." Basye, *Santa Barbara Sparkling in Wake of Clean-Up Job*, 67 OIL & GAS J., Aug. 25, 1969, at 33.

4 *See, e.g., Hearings on S. 7 and S. 544 Before the Subcomm. on Air and Water Pollution of the Senate Comm. on Public Works*, 91st Cong., 1st Sess., ser. 2 (1969), and *Hearing on Oil Spillage—Santa Barbara, Calif. Before the Subcomm. on Flood Control and Subcomm. on Rivers and Harbors of the House Comm. on Public Works*, 91st Cong., 1st Sess., ser. 3 (1969).

5 *Compare* N.Y. Times, May 30, 1969, at 10, col. 1, *with Santa Barbara Claimed Back to Normal*, 67 OIL & GAS J., Sept. 8, 1969, at 37.

protecting the public interest involved, the effectiveness of and impetus for the regulations are questions of public concern. If those regulations are an unsatisfactory means of furthering the public interest, they must be revised accordingly. And if the oil spill at Santa Barbara arose out of an imperfect structure of drilling regulations, that fact is lamentable, but it should be, in larger perspective, a stimulus for the establishment of a better method of public regulation and control of public resources.

The following analysis will explore: (1) the economic growth potential of the sea which necessitates public interest-oriented regulation on national or international terms; (2) the present legal status of the ocean floor, and several legal and practical problems likely to arise upon increased exploitation of ocean resources; (3) the administration of the continental shelves of the United States; (4) the history of the Santa Barbara oil spill; and (5) the failures, as shown by the Santa Barbara incident, of the policies, laws, and regulations which compose the administrative structure of federal offshore mineral leasing. Finally, proposals for upgrading the administration of offshore leasing will be presented, with the admonition that if certain reforms are not soon made, the quality of the ocean environment of the world will be severely jeopardized.

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INTERNATIONAL LAW AND THE USE OF THE SEA

THE WEALTH OF THE OCEANS

Today there is little doubt that the sea has vast potential as an instrument of human progress and as a supply base of valuable natural resources.[6] Aside from fishing, transportation, and communication as traditionally practiced from ancient times, the numerous uses of the sea known to man and the highly sophisticated methods of resource exploitation at his disposal are products of recent technological advancement. Scientific achievement, under the influence of "hypertechnical logic,"[7] has enabled man to farm ocean fish by manipulating their fertilization process, isolate schools of fish with compressed air bubble fencing, and predict that the living resources of the sea are capable of feeding six billion people—nearly double the world's present population.[8]

The value of ocean mineral resources, whether in solution or lying in deposit on the ocean floor, is said to be incalculable.[9] Nevertheless, it

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[6] Recent legal writing attests to this fact, either by way of preface or extensive examination. *See, e.g.*, Brock, *Mineral Resources and the Future Development of the International Law of the Sea*, 22 JAG J. 39 (1967); Brooks, *Deep Sea Manganese Nodules: From Scientific Phenomenon to World Resource*, 8 NATURAL RESOURCES J. 401 (1968); Browning, *Exploitation of Submarine Mineral Resources Beyond the Continental Shelf*, 4 TEX. INT'L L.F. 1 (1968); Johnston, *Law, Technology and the Sea*, 55 CALIF. L. REV. 449 (1967); Kutner, *Habeas Marinus: Due Process of Inner Space—A Proposal*, 22 MIAMI L. REV. 629 (1968). *See also* J. MERO, THE MINERAL RESOURCES OF THE SEA (1965).

[7] Hypertechnical logic, as used by one author, "refers to reasoning that places maximum emphasis on the value of efficiency, skill and economy" with indifference toward the contemporary rationale of international law which would seek to limit policies and methods of development to those most likely to be accepted by the greatest number of states in the world community, thus curtailing disruptions of public order. Johnston, *supra* note 6, at 449 n.1.

[8] Kutner, *supra* note 6, at 632.

[9] It has been concluded that even with reference only to the Continental Shelf areas of the United States, "[o]n the time scale of exploration of the U.S. lands, that of the shelves is in the early 17th Century stage, and an appraisal of their potential at such stage is bound to be minimal." 2 PUB. LAND L. REV. COMM'N, STUDY OF THE OUTER CONTINENTAL SHELF LANDS OF THE UNITED STATES 5-A-105 (1968) [hereinafter cited as OCS STUDY].

One verification of past usage of the United States Continental Shelf areas shows substantial economic activity, though it may be no indicia of future uses:

Summary of Calendar 1964 (or Fiscal 1965) Economic Activity in U.S. Continental Shelf Regions by User Group

[In Millions of Dollars]

Mining and Petroleum	$1,704
Marine Engineering	2,320
Recreation	3,855
Health and Welfare	372
Transportation (1963 data)	11,280
Food and Agriculture	345
Defense and Space	1,319
Research and Development	232
Other Industry	10
State and Local Agencies (included in above totals)	—
TOTAL	$21,437

(a) This total represents gross economic activity based on different methods of assessing dollar volume. Consequently, the dollar values in each category cannot be compared directly. COAST AND GEODETIC

is estimated that the Continental Shelf areas of the United States alone contain 710 billion barrels of recoverable oil and 1,640 trillion cubic feet of natural gas.[10] Sodium chloride, sodium sulphate, potassium chloride, bromine, and magnesium chloride are presently being extracted from the sea,[11] and minerals currently mined offshore include sulphur, oyster shell, sand, gravel, and salt.[12] Reasoning by hypertechnical logic, it can be said that as it becomes more profitable to mine undersea resources, technological ingenuity will allow exploitation of minerals further from shore and deeper into the sea than is now possible; at that time estimations of the value of the ocean's resources will be more fully documented and today's assumptions regarding the mineral potential of the sea will be borne out.

Weather forecasting and climate control,[13] marine biological research,[14] disposal of waste material,[15] and storage of surplus stock in bulk quantities[16] compose other ways in which man employs the sea for his benefit. It has been proposed that tidal power may be harnessed by technologically advanced states to replace diminishing fuel sources.[17] Indeed, futuristic man may vacation at underwater resorts, or discover that, after surgical reconstruction, life in a submarine village is more purposeful than life in megalopolis:

> Mankind, pushed off the edge of overcrowded continents, finds itself at a turning point in its evolution. Advanced technology returns man to his pristine nature. The highest mammal on the scale of natural evolution, he has been made by cultural evolution with its technology into a clumsy, rapacious bird; now, technology is devising artificial gills for him, so that he can be

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SURVEY, U.S. DEP'T OF COMMERCE, DEVELOPMENT POTENTIAL OF U.S. CONTINENTAL SHELVES x (1966).

10 1 OCS STUDY, *supra* note 9, at 342.

11 Johnston, *supra* note 6, at 453.

12 Furthermore, regarding only United States Continental Shelf areas,

> [a]lso of prospective value in the near term are phosphorite deposits on the west coast, lime mud in the Gulf, gold in Alaskan waters, and a variety of other heavy minerals on Alaskan, Pacific, Gulf, and Atlantic shelves. Within the reach of present extractive technology but difficult to find are large metalliferous ore bodies that are almost certainly present beneath the shelves. Other minerals are present also—glauconite, barite, diatomaceous ooze, manganese oxide and associated metals, potash, geothermal energy, and perhaps others—but prospects for their development are further removed or are less certain than for the others.

2 OCS STUDY, *supra* note 9, at 5-A-104. For a detailed discussion of a specific type of sea mining, see Brooks, *supra* note 6.

13 Johnston, *supra* note 6, at 455-56.

14 Kutner, *supra* note 6, at 635-36.

15 Johnston, *supra* note 6, at 457 n.30.

16 *Id.* at 456. A 20-story high, 15,000-ton structure resembling an inverted champagne glass, capable of storing 500,000 barrels of oil, with all facilities located at sea and completely unmanned, now sits securely on the bottom of the Arabian Gulf. *Dubai's Unique Storage Tank is Installed Without Hitch*, 67 OIL & GAS J., Aug. 25, 1969, at 42.

17 Johnston, *supra* note 6, at 457-58.

fish again, and breathe and live down there where life began.[18]

In light of these projections on the wealth of the sea, it is imperative that the exploitation of resources in man's new domain be structured adequately to prevent the irresponsible devastation that has marked so much of man's past resource usage on land. Prior to the study of one instance of such devastation that has already blemished the sea, it is both natural and necessary to consider first the amorphous and still incomplete body of international law that applies to the use of the sea. Such a study will provide an overview of basic jurisdictional ambiguities, and will demonstrate the necessity for prompt international agreement on issues that, if left unattended, may lead to havoc as men and nations claim rights in the sea.[19]

THE LEGAL STATUS OF THE OCEANS

The doctrine of Freedom of the Seas, which is based on the arguments that "(1) the sea [is] not reducible to possession because of its limitlessness, and (2) the sea must remain free and open to all for navigation, trade and fishing because it is self-evidently adapted for the use of all,"[20] is credited to Hugo deGroot's *Mare Liberum*, first published in 1609.[21] This idea that "nature does not merely permit, but rather commands that the sea shall be held in common"[22] has been thought by some to have lost its impact in recent years,[23] but for others deGroot's "higher morality of shared use of the sea"[24] has increased appeal and application today.[25] The doctrine is currently important, but more for the

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[18] E. BORGESE, THE OCEAN REGIME 1-2 (1968), an occasional paper published by the Center for the Study of Democratic Institutions.

[19] Some of the dangers of possible user group conflicts in the absence of sensible planning are summarized in Kutner, *supra* note 6, at 637, where the author quotes the following from Calder, *The New Wild West*, 60 NEW STATESMAN 680 (1960):

> The story [of sea development] has all the traditional elements of a sea saga: the battle with winds, waves, and ice, the daring of exploration in bathoscopes at pressures where structural failure means instant death. It also has hard science and several embryo technologies. It has the promise of good fortune for all men; but it also has the threat of new stupidities and new cruelties. As man stretches his good spirit and greed, his scientific humility and his military pretension, into a new dimension, there are three quarters of the earth, almost virgin, to win, lose, or die for.

For an articulate argument in favor of collective international regulation as a means of reducing misuse of the sea's resources, see Wilkes, *The Use of World Resources Without Conflict: Myths About the Territorial Sea*, 14 WAYNE L. REV. 441 (1968).

[20] Wilkes, *supra* note 19, at 443.

[21] *Id.*

[22] H. DEGROOT (GROTIUS), DE IURE PRAEDAE COMMENTARIUS 232 (G. Williams & W. Zeydel transl. 1950).

[23] Christy, *Marine Resources and the Freedom of the Seas*, 8 NATURAL RESOURCES J. 424, 425 (1968).

[24] Wilkes, *supra* note 19, at 469.

[25] *See, e.g.*, Borgese, *The Republic of the Deep Seas*, THE CENTER MAGAZINE, May 1968, at 18, 23. For an historical study of deGroot's *Mare Liberum*, see Reppy, *The Grotian Doctrine of the Freedom of the Seas Reappraised*, 19 FORDHAM L. REV. 243 (1950).

limitations some nations are seeking to attach to it than for its viability as a universal principle.

Recent technological advancements, while creating new interest in the untapped resources of the sea, have concomitantly produced "increasing demands, unparalleled in scope and complexity, for extension of the exclusive authority of states over the oceans of the world."[26] Although a discussion of the process of international resolution of conflicting claims to the use of the sea is beyond the scope of this note,[27] it is necessary to state that the demands for exclusiveness brought on by scientific achievement have, in general, altered the doctrine of Freedom of the Seas[28] and stimulated international agreements to accommodate the claims,[29] but have not yet been disposed of satisfactorily. The conclusion shortly to be seen is that, even after considerable effort toward multinational agreement, any theory of allocation of the sea's resources similar to deGroot's "higher morality" is today subject to jeopardy at the hands of states which would take for themselves what has been called the "common heritage of mankind."[30]

Current international law has subdivided the sea into five classifications: (1) inland waters; (2) territorial waters; (3) the so-called contiguous zone; (4) the Continental Shelf; and (5) the high seas.[31] These classifications were recognized in four international conventions signed at Geneva in 1958.[32] Although the convention agreements are a major accomplishment "in clarifying and codifying international law,"[33] ambiguities are to be found in several fundamental sections, and questions

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[26] McDougal & Burke, *Crisis in the Law of the Sea: Community Perspectives Versus National Egoism*, 67 YALE L.J. 539 (1958).

[27] For such a discussion, see M. MCDOUGAL & W. BURKE, THE PUBLIC ORDER OF THE OCEANS (1962); M. MCDOUGAL & W. BURKE, OCEAN SCIENCES, TECHNOLOGY AND THE FUTURE INTERNATIONAL LAW OF THE SEA (1966); Burke, *A Contemporary Legal Problem in Ocean Development*, 3 INT'L LAW. 536 (1969).

[28] *See, e.g.*, Reppy, *supra* note 25, at 284.

[29] Grunawalt, *The Acquisition of the Resources of the Bottom of the Sea—A New Frontier of International Law*, 34 MILITARY L. REV. 101, 116 (1966).

[30] Borgese, *supra* note 25, at 21, 23.

[31] N. Ely, The Laws Governing Exploitation of the Minerals Beneath the Sea 2, Jan. 13, 1966 (speech presented before the New York Section of the American Institute of Mining, Metallurgical & Petroleum Engineers, New York City) (mimeographed). For purposes of this discussion, the territorial sea and the contiguous zone will be considered as one subdivision.

[32] The conventions were: (1) Convention on the Continental Shelf, adopted April 26, 1958 (U.N. Doc. A/CONF. 13/L. 55); (2) Convention on the Territorial Sea and the Contiguous Zone, adopted April 27, 1958 (U.N. Doc. A/CONF. 13/L. 52); (3) Convention on the High Seas, adopted April 27, 1958 (U.N. Doc. A/CONF. 13/L. 53 and corr.1); and (4) Convention on Fishing and Conservation of the Living Resources of the High Seas, adopted April 26, 1958 (U.N. Doc. A/CONF. 13/L. 54 and Add. 1). These conventions are collected in 2 OCS STUDY, *supra* note 9, at 1-B-1 *et seq.* For a discussion of these conventions, see Dean, *The Geneva Conference on the Law of the Sea: What was Accomplished*, 52 AM. J. INT'L L. 607 (1958).

[33] Campbell, *International Law Developments Concerning National Claims to and in Offshore Areas*, in OIL AND GAS OPERATIONS: LEGAL CONSIDERATIONS IN THE TIDELANDS AND ON LAND 46, 64 (R. Slovenko ed. 1963).

of jurisdictional and sovereignty claims require discussion.[34]

Briefly, the inland waters are those lying landward of a baseline which generally corresponds to the low water marks on the coast.[35] Indentations, bays, and islands create residual boundary ambiguities, but these are of minor importance here. The significant fact is that landward of the baseline, resources in the water and on the seabed are wholly within the sovereign control of the littoral state.[36]

Beyond the baseline of the internal waters lies the territorial sea—a narrow band of ocean that extends a nation's boundaries out from its shores.[37] The breadth of the territorial sea has never been universally agreed upon,[38] and today claims range from three to 200 miles from shore.[39] The Convention on the Territorial Sea and Contiguous Zone, however, establishes under article 24 a third classification, a "zone of the high seas contiguous to the territorial sea [which] . . . may not extend beyond twelve miles from the baseline from which the breadth of the territorial sea is measured." Although the Convention permits coastal nations to deal with matters within the 12-mile territorial sea and contiguous zone, subject to specific rights like innocent passage,[40] the littoral state generally has exclusive control of all mineral resources within the 12-mile limit.[41]

Beyond the territorial sea is the Continental Shelf area, which is of special pertinence here because the Convention on the Continental Shelf deals directly with exploration for and exploitation of mineral resources on the seabed. Although specific attention will be devoted to resource exploitation on the Continental Shelf of the United States, in the context of the Santa Barbara oil spill, the following historical summary of the Continental Shelf doctrine is presented to facilitate understanding of national and international claims to an important portion of the world's oceans, and demonstrate that the resolution of these claims will have an important bearing on the future intelligent development of the shelf.

In 1945, the United States through the Truman Proclamation asserted jurisdictional authority over the natural resources of its continental shelves.[42] This led to similar claims by other coastal

[34] It should be noted that Article 13 of the Convention on the Continental Shelf allows periodic revision of the agreement. *See also* McDougal, *Revision of the Geneva Conventions on the Law of the Sea—The Views of a Commentator,* NATURAL RESOURCES LAW., July 1968, at 19.

[35] Ely, *supra* note 31, at 2-3.

[36] *Id.* at 3.

[37] *See generally* Wilkes, *supra* note 19.

[38] *Id.* at 442.

[39] *Id. See also* 1 OCS STUDY, *supra* note 9, at 37 n.11.

[40] Convention on the Territorial Sea and Contiguous Zone, Article 3, in 2 OCS STUDY, *supra* note 9, at 1-C-1.

[41] Ely, *supra* note 31, at 4.

[42] Having concern for the urgency of conserving and prudently utilizing its natural resources, the Government of the United States regards the natural resources of the subsoil and sea bed of the continental shelf beneath the

states.[43] Some of the claims differed significantly, however, as to the amount of sea and the degree of sovereignty involved,[44] and the need for uniformity of claims in the late 1940's became "painfully apparent."[45] These differences prompted the Geneva Conventions in 1958.

Whereas the Truman Proclamation did not define the Continental Shelf,[46] Article 1 of the Convention on the Continental Shelf provided:

> For the purpose of these articles the term 'continental shelf' is used as referring (a) to the seabed and subsoil of the submarine areas adjacent to the coast but outside the area of the territorial sea, to a depth of 200 metres or, beyond that limit, to where the depth of the superjacent waters admits of the exploitation of the natural resources of the said areas; (b) to the seabed and subsoil of similar submarine areas adjacent to the coasts of islands.

The United Nations' Conference on the Law of the Sea at Geneva adopted the Convention on the Continental Shelf after a majority of the 86 nations attending signed it, and the Convention became effective in 1964, following ratification by 22 member states.[47] The definition of the shelf enunciated in article 1 was thought at the time of the conference to be the most workable limitation on the claims of any state to jurisdiction over adjacent seas.[48] The 200-meter isobath delimitation was urged by those who believed it represented the general edge of most of the geologic shelf, and therefore would lend certainty to development of the shelf, and by those who felt technology was not likely to allow exploitation beyond a depth of 200 meters.[49] On the other hand, the flexible exploitability standard was sponsored by those who wished the boundary to be movable at a pace comparable with technological development.[50] The inclusion of both provisions in the final definition constituted a compromise, then, between the proponents of fixed certain boundaries and advocates of flexibility; it was "no clear victory for any school of thought on the subject."[51]

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high seas but contiguous to the coasts of the United States as appertaining to the United States, subject to its jurisdiction and control. . . . The character as high seas of the waters above the continental shelf and the right to their free and unimpeded navigation are in no way thus affected. Presidential Proclamation No. 2667, 10 Fed. Reg. 12303 (1945).

43 Grunawalt, *supra* note 29, at 113.

44 *Id.* at 114.

45 *Id.* at 116.

46 A subsequent State Department press release, however, termed it the "submerged land which is contiguous to the continent and which is covered by no more than 100 fathoms (600 feet) of water." Dep't of State Press Release, Sept. 28, 1945, *quoted in* address by Ambassador Arvid Pardo, Permanent Representative of Malta to the United Nations, 62 AM. SOC. OF INT'L L. 216, 218 (1968).

47 1 OCS STUDY, *supra* note 9, at 3, 36 n.5.

48 Grunawalt, *supra* note 29, at 118.

49 *Id.*

50 *Id.* at 119.

51 *Id.* at 118. Furthermore, a third term in the definition, *i.e.*, "adjacent to the coast," was thought to mitigate the fears of those who thought the exploitability

To say the least, this method of drawing boundaries on the shelf has inherent ambiguities. The question whether the exploitability principle is to be *the* standard for determining the boundaries of the Continental Shelf, and hence the "sovereign rights" of littoral states, has been a focal point of criticism by numerous commentators.[52] For the purpose of this note, further analysis of the intricacies of the Convention's definition is not warranted. It is appropriate to summarize, however, that although the Convention on the Continental Shelf as a whole has been well regarded,[53] the failings in the definition leave the issue of possible extension of national jurisdiction over the ocean's bed beyond the 200-meter isobath as unresolved as it was before the Convention.[54]

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principle could justify overextension of the claims of technologically advanced states. *See* Goldie, *The Exploitability Test—Interpretation and Potentialities*, 8 NATURAL RESOURCES J. 434, 447 (1968); Young, *The Legal Regime of the Deep-Sea Floor*, 62 AM. J. INT'L L. 641, 644 (1968).

However, an associate solicitor of the Department of the Interior may have given some the impression that the United States sought to "exploit" the exploitability principle. *See* Stone, *Legal Aspects of Offshore Oil and Gas Operations*, 8 NATURAL RESOURCES J. 478, 489 (1968).

[52] *See, e.g.*, Creamer, *Title to the Deep Seabed: Prospects for the Future*, 9 HARV. INT'L L.J. 205 (1968); Goldie, *The Contents of Davy Jone's Locker—A Proposed Regime for the Seabed and Subsoil*, 22 RUTGERS L. REV. 1 (1967); Grunawalt, *supra* note 29; Harlow, *Contemporary Principles of the International Law of the Sea*, 22 JAG J. 27 (1967); Krueger, *The Convention of the Continental Shelf and the Need for Its Revision and Some Comments Regarding the Regime for the Lands Beyond*, NATURAL RESOURCES LAW., July 1968, at 1; Comment, *Issues in International Law Created by Scientific Development of the Ocean Floor*, 19 SW. L.J. 97 (1965).

[53] Grunawalt, *supra* note 29, at 130; Krueger, *supra* note 52, at 6.

[54] Such ambiguity assumes, of course, that exploitation beyond 200 meters is, or will be, feasible. The assumption appears valid.

> Lest you conclude we have reached the outer limits of technological capability, I should point out that oil companies have done exploratory drilling in 4,500 feet of water. There have been serious proposals to recover phosphorite nodules from areas 40 miles off the California coast in water as deep as 1,500 feet, and to dredge manganese nodules from the Blake Plateau, 300 miles off the United States South Atlantic coast, in water as deep as 4,000 feet. The prospects for recovering manganese nodules at depths as great as 20,000 feet have received serious attention. Luce, *The Development of Ocean Minerals and the Law of the Sea*, NATURAL RESOURCES LAW., July 1968, at 29, 30.

See also Krueger, *supra* note 52, at 6.

Notwithstanding this patent ambiguity which certainly *may* be interpreted as creating a rolling frontier of national jurisdiction, it is generally conceded that the Continental Shelf was intended by the Convention framers to end far short of the median line dividing ocean space between opposite coastal states. Krueger, *supra* note 52, at 8. *See also* G.A. Res. 2340, 22 U.N. GAOR Supp. 16, at 14, U.N. Doc A/6716 (1967), which concludes that there is a limit to national jurisdiction by its use of the wording "underlying the high seas beyond the limits of present national jurisdiction." With reference to this quote, see Haight, *The Seabed and the Ocean Floor*, 3 INT'L LAW. 642 (1969).

Indeed, to refute the open ended exploitability extension theory, a former President of the United States has warned that:

> 'under no circumstances [. . .] must we ever allow the prospects of rich harvest and mineral wealth to create a new form of colonial competition among the maritime nations. We must be careful to avoid a race to grab and to hold the lands under the high seas. We must ensure that the deep seas and the ocean bottoms are, and remain, the legacy of all human beings.' Comments made by President Lyndon B. Johnson at the commissioning of

The high seas are defined in Article 1 of the 1958 Geneva Convention on the High Seas as "all parts of the sea that are not included in the territorial sea or in the internal waters of a State." Whereas the Convention on the Continental Shelf applies to the seabed and subsoil of the Continental Shelf, the Convention on the High Seas refers only to sea waters.[55] Although the high seas includes the water lying above the Continental Shelf, the Convention on the High Seas does not delimit national jurisdiction and the question of great concern remains: Assuming the existence of an exploitable seabed beyond the limits of present national jurisdiction, under what authority and for whose benefit will the natural resources of that area be taken?

At present there is no set of rules or widely held principles upon which to base competent jurisdiction of the non-national deep sea floor.[56] The only traditional criteria for legal regulation of the deep ocean bottom are that it be considered as *res nullius*, belonging to no one, and therefore freely available to the first appropriator; or as *res omnium communis*, belonging to all the world in common, and therefore exempt from unilateral exploitation.[57] These concepts are primitive, and arguments advocating their future full-scale implementation beg the question of determining what procedural safeguards and regulations are necessary to govern the taking of deep sea resources.[58] It is not surprising, then, that the dilemma created by recent advances in ocean industrial technology and the absence of applicable legal guidelines has been the genesis of a number of proposals for international deep sea regimes.[59]

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the new research ship, the Oceanographer, on July 13, 1966, *quoted in* Krueger, *supra* note 52, at 8.

55 Convention on the High Seas, in 2 OCS STUDY, *supra* note 9, at 1-D-1.

56 Christy, *Alternative Regimes for Marine Resources Underlying the High Seas*, NATURAL RESOURCES LAW., June 1968, at 63, 64.

57 Address by Ambassador Arvid Pardo, Permanent Representative to the United Nations, 62 AM. SOC. OF INT'L L. 216, 217 (1968). A third concept distinguishes "between the seabed and its subsoil: the seabed itself was *res communis*, while its subsoil could, in certain circumstances, be *res nullius*." *Id.*

58 Christy, *supra* note 56, at 64; Goldie, *supra* note 52, at 25.

59 The various characteristics and merits of proposed regimes have been subjected to lengthy discourse and criticism, and to add to that discussion here is not appropriate. The regimes range, however, from unlimited extension of the Continental Shelf—thereby allocating all of the ocean's resources to the coastal states—to vestment of the minerals of the deep sea floor in an international agency, which would regulate exploitation and distribute the rewards equally among all nations. *See* authorities cited note 52 *supra;* E. BORGESE, *supra* note 18; Bernfeld, *Developing the Resources of the Sea—Security of Investment*, NATURAL RESOURCES LAW., Jan. 1968, at 82; W. Vitzthum, The Legal Status of the Ocean Floor Beyond the Limits of National Jurisdiction—Some Recent Developments, July 4, 1969 (mimeographed manuscript on file at The Center for the Study of Democratic Institutions, Santa Barbara, Cal.).

Although no world power has initiated a formula which would lend certainty and predictability to the imminent exploitation of the deep seabed, Malta has presented a plan for an international regime to allocate the ocean's wealth to all mankind. *See* 22 U.N. GAOR Doc. A/6695, Aug. 17, 1967.

Also, Malta will be the host country for Pacem in Maribus, an international convocation to be held June 22 to July 3, 1970, sponsored by The Center for the Study of Democratic Institutions, Santa Barbara, Cal. The rationale behind the

It is submitted, however, that before dreams of international regimes of the sea can possibly be realized, man must learn to balance adequately the conflicting interests which bear directly upon his exploitation of resources, and thereby control the consequences of his activities, at the limits of ocean depth in which he can presently maneuver. If man cannot regulate effectively the operation of commercial enterprises just offshore from mainland, what hope has he of sufficiently protecting his environment as he transgresses the Continental Shelf into the high seas?

Having seen something of the international law affecting the use of the sea, and having considered the implications of that law in its current amorphic condition upon future exploitation of ocean resources, we can now examine the administration by the United States of that part of the sea which, more than other sea areas, has recently been subjected to actual resource extraction—the Continental Shelf.

THE CONTINENTAL SHELF OF THE UNITED STATES

FEDERAL-STATE BOUNDARY CONFLICT AND THE SUBMERGED LANDS ACT[60]

"[T]he original thirteen colonies [received from Great Britain] . . . title to all lands and water bottoms within their respective bound-

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convocation has been enunciated in this way:

> With more than 70 per cent of the earth's surface still no-man's-land under the oceans, and vested interests still relatively few, here is a chance:
>
> *to develop new forms of international cooperation at the industrial, the scientific, the political level;*
>
> *to attempt a new, constructive approach to the problem of disarmament and arms control;*
>
> *to create new patterns of cooperation and participation in development and in reducing the gap between developed and developing nations, and*
>
> *to provide a framework for the future pattern of international organization.*
>
> But the dangers ahead are equal to the opportunities.
>
> If the world community fails to take appropriate action, the consequences will be:
>
> *the large-scale pollution of the ocean environment, with lethal consequences for the earth as a whole;*
>
> *an extension of the armaments race to the ocean floor . . . and*
>
> *chaos and destruction following a new thrust of imperialism aimed at carving up the vast submarine lands the way Asia and Africa were carved up in past centuries.*

Pacem in Maribus, pamphlet prepared for the announcement of the proposed international convocation, by The Center for the Study of Democratic Institutions, Santa Barbara, Cal., July, 1969.

Unfortunately, the prospects of international agreement are not good. On May 23, 1969, Under Secretary of State Alexis Johnson indicated there will be no international agreement on a deep sea regime before 1980. 11 *Ocean Science News*, June 27, 1969, at 3. Also, for an illuminating article on how well the Maltese plan (*supra* note 59) impressed some members of the United States Congress, see Weissberg, *International Law Meets the Short-Term National Interest: The Maltese Proposal on the Sea-Bed and Ocean Floor—Its Fate in Two Cities*, 18 INT'L & COMP. L.Q. 41 (1969).

[60] 43 U.S.C. §§ 1301-15 (1964).

aries."[61] Consequently, the individual states have been held to own the minerals lying in the subsoil of the navigable waters within those boundaries.[62] Although at the time the United States won its independence from England there was no indication that individual coastal states took title to any adjacent sea or subsea territory,[63] the states for some time presumed jurisdictional authority over their marginal sea areas in similar fashion to their known jurisdiction over inland navigable waters.[64]

In 1897, however, when oil was first extracted from submerged fields off the shore of Summerland, Cal.,[65] the promise of riches on the bottom of the sea adjacent to the country's land mass prompted the beginnings of a dispute between federal and state governments over the boundaries delimiting the states' coastlines, which today has not been completely resolved.[66] Relying on a presumption of competent jurisdiction, California, Louisiana, and Texas by the end of the 1930's had enacted legislation controlling the exploitation of minerals in their offshore waters.[67] With the potential wealth of undersea minerals at stake, the United States challenged the states' assertion of jurisdiction, first through unsuccessful congressional action in 1937,[68] and secondly in 1945 in *United States v. California*,[69] where it was held that California was not the owner of the three-mile-wide belt of sea along its coast, but rather that the federal government, as against the state, had paramount rights in and power over that area of sea, including full dominion over the underlying seabed and subsoil resources.[70]

In response to the *California* decree, some members of Congress over a period of six years initiated various proposals to supplant federal "paramount" rights and dominion with state ownership;[71] that end was

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61 Stone, *United States Legislation Relating to the Continental Shelf*, 17 INT'L & COMP. L.Q. 103 (1968); *accord*, Gross, *The Maritime Boundaries of the States*, 64 MICH. L. REV. 639, 640 (1966), *citing* Martin v. Waddell, 41 U.S. (16 Pet.) 367, 410 (1842).

62 Manchester v. Massachusetts, 139 U.S. 240 (1891); Pollard's Lessee v. Hagan, 44 U.S. (3 How.) 212 (1845). When the Union was formed, the states ceded their vacant lands to the Union, but retained their interest in the bottoms and subsoils of navigable waters within their boundaries. States entering the Union after its formation came in on "equal footing," except for Texas, which by virtue of its being an independent nation prior to joining the Union, retained title to its vacant lands and water bottoms. Stone, *supra* note 61, at 103 n.3.

63 *See* United States v. California, 332 U.S. 19, 32 (1947).

64 Gross, *supra* note 61, at 640 n.10 and accompanying text.

65 Krueger, *The Development and Administration of the Outer Continental Shelf Lands of the United States*, 14 ROCKY MT. MIN. L. INST. 643, 675 (1968).

66 *See* Stone, *supra* note 61, at 104 n.9.

67 Krueger, *supra* note 65, at 675-77.

68 *Id.* at 677.

69 332 U.S. 19 (1947).

70 *Id.* at 29-39. Similar cases subsequently were brought against Louisiana and Texas, with the same result. United States v. Louisiana, 339 U.S. 699 (1950); United States v. Texas, 339 U.S. 707 (1950).

71 *See* Krueger, *supra* note 65, at 679. For a discussion of the early federal-state dispute over the marginal seas, see E. BARTLEY, THE TIDELANDS OIL CONTROVERSY (1953).

finally accomplished in the Submerged Lands Act of 1953.[72] This law vested in the coastal states title to the lands beneath navigable waters within the boundaries of the respective states, and the natural resources within such lands and waters, including the authority to lease the lands for mineral exploitation.[73] Further, the seaward boundary of the coastal states' jurisdiction was set at three geographical miles from the coastline.[74]

However, the problem of boundary demarcation continued after the Act, because it failed to define clearly the inland boundary along the coastline of the states; hence the beginning point of the states' seaward jurisdiction was left ambiguous. Under the Act, the "coast line" means the line of ordinary low water along that portion of the coast which is in direct contact with the open sea or the line marking the seaward limit of inland waters,[75] but "the seaward limit of inland waters," crucially, was not defined. However, ruling on a supplemental complaint filed by the United States in the original *California* action, the Supreme Court in 1965 settled, in good part, the inland boundary question by adopting pertinent definitive language of the Geneva Convention on the Territorial Sea and the Contiguous Zone.[76]

The Supreme Court subsequently applied the definitions of the Convention to the specific inland boundary questions which were raised in the rejuvenated *California* case, in a supplemental per curiam decree entered in 1966.[77] A technical discussion of those issues is not warranted here,[78] but by example it should be mentioned that the Court decided, in part, that the waters between the California mainland and islands as far as 50 miles offshore were not inland waters, and that, of a number of bays claimed by California as inland waters, only Monterey Bay fit within the technical definition of inland water prescribed by the Convention, and therefore could be claimed as such by the state.

After the second *California* case, a rational standard did become available for the determination of state inland waters. Although some thought the issue of inland boundaries was nearly settled,[79] that surely

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72 43 U.S.C. §§ 1301-15 (1964).

73 *Id.* § 1311.

74 Claims asserted by law before the states entered the Union, or those subsequently approved by Congress, were to be honored. *Id.* § 1312. Preadmission claims could not exceed three geographical miles into the Atlantic and Pacific Oceans or three marine leagues (nine geographical miles) into the Gulf of Mexico. *Id.* § 1301(b).

75 *Id.* § 1301(c).

76 United States v. California, 381 U.S. 139 (1965). *See generally* Gross, *supra* note 61, at 658; Note, *International Law—Maritime Boundaries of California—Extent of Submerged Lands Granted to the States by Congress*, 7 HARV. INT'L L.J. 339 (1966).

77 United States v. California, 382 U.S. 448 (1966).

78 See 1 OCS STUDY, *supra* note 9, at 134 *et seq.*; Gross, *supra* note 61, at 658.

79 *Cf.* Stone, *supra* note 61, at 106.

was not an accurate assumption.[80] Without examining all of the unresolved issues of state boundary disputes, the following example raises the overriding question—how can man expect meaningful regulation of offshore industrial activity if the elementary issue of jurisdiction over the adjacent seas has not been settled?

The example is this: Although the second *California* decree may be said to have prescribed a fixed boundary delimiting the areas of submerged lands under state and federal jurisdiction,[81] other language in the opinion clearly states that both natural and artificial changes in the state's coastline will compel complementary changes in the offshore federal-state boundary, *i.e.*, at the three-mile limit of state jurisdiction.[82] If ownership of the submerged lands will vacillate with this ambulatory boundary, which in turn is dependent merely upon the construction or demolition of coastline appurtenances, effective regulation of drilling operations or other activities on those lands would appear to be spurious, at least in the absence of uniform federal and state regulations.

THE OUTER CONTINENTAL SHELF LANDS ACT[83]

Scarcely three months after enactment of the Submerged Lands Act, Congress passed the Outer Continental Shelf Lands Act to establish exclusive federal jurisdiction over the seabed and subsoil beyond the limits of state control and to provide for the administration of resource exploitation and mineral leasing in the outer shelf areas. Under the Act, the Outer Continental Shelf is "all submerged lands lying seaward and outside of the area of lands beneath navigable waters, as defined in [the Submerged Lands Act], and of which the subsoil and seabed appertain to the United Sates and are subject to its jurisdiction and control."[84]

Most important for this study are the provisions of the Act pertaining to the authorization for mineral leasing on Outer Continental Shelf lands and the promulgation of regulations which govern the administra-

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80 *See, e.g.*, 1 OCS STUDY, *supra* note 9, at 142.

81 *See* 381 U.S. at 166-67.

82 *See id.* at 177. The *California* ambulatory boundary rule recently was affirmed and relied upon by the Supreme Court in adjudicating the boundaries of Texas, which thereby lost between 17,000 and 35,000 acres as a result of natural coastline erosion between 1845 and 1969, United States v. Louisiana, 394 U.S. 1 (1969), and Louisiana, United States v. Louisiana, 394 U.S. 11 (1969).

83 43 U.S.C. §§ 1331-43 (1964). The Act is thoroughly examined in Christopher, *The Outer Continental Shelf Lands Act: Key to a New Frontier*, 6 STAN. L. REV. 23 (1953) and 1 OCS STUDY, *supra* note 9, at 169. Current administration of the Act is described in Barry, *The Administration of the Outer Continental Shelf Lands Act*, NATURAL RESOURCES LAW., July 1968, at 38. For congressional discussion of the bill before passage, see *Hearings on S. 1901 Before the Senate Comm. on Interior and Insular Affairs*, 83d Cong., 1st Sess. (1953).

84 43 U.S.C. § 1331(a) (1964). Consequently, the shoreward boundary of federal jurisdiction is tied to the seaward boundary of state jurisdiction. See note 81 *supra* and accompanying text. The seaward boundary of federal jurisdiction, of course, is subject to the obscurities of the definition found in the Convention on the Continental Shelf.

tion of drilling and production operations on those lands. In view of the magnitude of the economic value of the Outer Continental Shelf resources and the interest of the public in safe and efficient resource development, those regulatory provisions should be examined to determine what policy considerations underlie the United States' program for allocation and exploitation of the country's subsea resources.

Under the Act, "[i]n order to meet the urgent need for further exploration and development of the oil and gas deposits of the submerged lands," the Secretary of the Interior is authorized to grant leases to qualified persons under competitive bidding pursuant to "regulations promulgated in advance."[85] The Secretary is charged with administering the lease provisions of the Act, and he "shall prescribe such rules and regulations as may be necessary to carry out such provisions."[86] Furthermore, "[t]he Secretary may at any time prescribe and amend such rules and regulations as he determines to be necessary and proper in order to provide for the prevention of waste and conservation of the natural resources" of the outer shelf lands, and "such rules and regulations shall apply to all operations conducted under a lease issued" under the Act.[87]

The foregoing material has provided an overview of the general nature of some of the legal problems associated with resource exploitation of the ocean floor, and of the Continental Shelf in particular. With this background, we shall now proceed to examine a specific problem and show that the resultant contamination arising from one instance of faulty management could be multiplied a hundredfold until the entire ocean environment is destroyed.

In the subsequent discussion of the rationale behind the leasing of the Santa Barbara Channel and an analysis of the spill itself, it should be borne in mind that the Secretary of the Interior has been authorized by an act of Congress to prescribe regulations governing exploring, leasing and drilling on the Outer Continental Shelf. Upon a critical examination of the leasing and drilling regulations thus prescribed, to determine how the Secretary's responsibility was discharged, it will be seen that in form and substance the regulations paradoxically contributed heavily to the Santa Barbara environmental disaster.

THE SANTA BARBARA CHANNEL OIL POLLUTION INCIDENT

OIL, REVENUES, AND AESTHETICS

The story of the Santa Barbara oil spill is one of a conflict of legitimate interests. The coastal area in and around Santa Barbara enjoys a

85 43 U.S.C. § 1337(a) (1964).
86 *Id.* § 1334(a)(1).
87 *Id.*

year-round Mediterranean climate and a scenic beach and mountain environment. The community is firmly established as a retirement, tourist, recreation, research, and education center; in fact, 80 percent of its basic income is derived from those industries.[88] Known as the Riviera of the West, the area is dependent almost wholly upon the aesthetic attraction its climate, beaches, and scenery hold for visitors. Preservation of these environmental resources is of prime concern to the community.

On the other hand, vast amounts of oil and gas are known to exist in submerged lands offshore from Santa Barbara and have created an interest on the part of the energy industries in the development of those resources. Similarly, both the California and federal governments share this interest in the exploitation of mineral resources in offshore tracts, for as owners of the valuable lands, they are the recipients of bonus and royalty payments which stem from lease sales and the resultant production of oil and gas. The evolution of oil exploration in the Santa Barbara Channel demonstrates how the interests of environmental protection have been subordinated to the interests of mineral resource allocation and development.

Offshore oil first achieved major importance in the Santa Barbara region in 1928, when a rich strike was discovered in drilling conducted from ocean piers near Ellwood, Cal. Ten years later, in anticipation of further oil discoveries, California began awarding oil leases out as far as three miles from shore. At this time, however, wells were slant drilled from land.[89]

By 1955 a multitude of oil rigs near shore threatened the appearance of the Santa Barbara tourist area, and California created a 16-mile sanctuary extending along the coastline of Santa Barbara and out from shore a distance of three miles. No drilling was allowed in the sanctuary unless wells beyond its boundaries threatened to drain oil from deposits beneath the protected lands.[90]

In 1965, when the Supreme Court determined that submerged lands beyond three miles from the outer limit of inland waters belong to the United States,[91] speculation among Santa Barbara local officials arose that offshore drilling on federal leases would drain oil from state lands and that the prohibitions of the sanctuary would be lifted to protect state oil.[92]

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[88] *See* statement of Richard S. Whitehead, Santa Barbara County Director of Planning, *Hearings on S. 7 and S. 544 Before the Subcomm. on Air and Water Pollution of the Senate Comm. on Public Works*, 91st Cong., 1st Sess., ser. 2, pt. 2, at 271 (1969) [hereinafter cited as *Hearings on S. 7 and S. 544*].

[89] *Id.* at 270.

[90] *Id.* The act creating the sanctuary is the Cunningham-Shell Tidelands Act of 1955, CAL. PUB. RES. CODE § 6871 *et seq.* (West 1956). The Act is discussed in Krueger, *State Tidelands Leasing in California*, 5 U.C.L.A.L. REV. 427, 446 *et seq.* (1958).

[91] United States v. California, 381 U.S. 139 (1965).

[92] *See* statement of George Clyde, member of the Santa Barbara County Board of Supervisors, *Hearings on S. 7 and S. 544, supra* note 88, pt. 2, at 280. With the

Shortly after, the federal government sold one offshore drainage tract abutting California lands[93] and it was recognized that further federal leasing was indeed imminent. Santa Barbara county officials in February 1967 initiated conferences with Interior Department personnel to impress upon them

> the concern of the people of Santa Barbara County that uncontrolled construction of platforms would have a detrimental effect on the esthetic values of the south coast area, resulting in irreparable harm to the tourist, convention and vacation industry as well as affecting the desirability of the area from a residential standpoint.[94]

During the late spring of 1967, the county board of supervisors asked that the federal government delay leasing procedures for one year so that all ramifications of leasing could be evaluated. The government failed to answer the request of the board, but in September, 1967, the Department of the Interior proposed a temporary two-mile-wide buffer zone beyond the state sanctuary, in which no drilling would be permitted.[95] In response to this proposal, the county board of supervisors prepared a study which requested that only a small part of the channel be made available for drilling, that the number of platforms in the area be kept to a minimum, and that the federal buffer zone be extended in one direction to augment the shelter afforded the state sanctuary. None of these requests was granted by the Interior Department, although the two-mile buffer zone was maintained.[96]

Notwithstanding the alienation of the Santa Barbara community towards offshore drilling,[97] on February 6, 1968, the federal government leased 363,000 acres of the Santa Barbara Channel, for which bonus payments of $603 million were received.[98] United States Government Lease OCS-P-0241, on which the blowout later occurred, was awarded

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California decision, "the sanctuary off of Santa Barbara was mortally endangered." *Id.*

[93] On December 15, 1966, 20,000 acres were leased to Phillips Petroleum Co. on a high bid of about $21,000,000. This was a drainage tract sale, ostensibly made to prevent production drainage from federal lands by state lessees. Chronology of Significant Events Leading to Federal Lease Sales in the Santa Barbara Channel, prepared by the United States Geological Survey, in *id.*, pt. 3, at 812.

[94] Statement of George Clyde, *supra* note 92, pt. 2, at 280.

[95] *Id.*

[96] *Id.* at 281. According to Mr. Clyde, "if the eastern extension [of the buffer zone] had been granted, it would have prevented the present drilling of Union's oil well which is now spilling." *Id.*

The federal buffer zone was not made *permanent*, however, until after the Santa Barbara blowout. *See* N.Y. Times, Mar. 22, 1969, at 22, col. 3.

[97] It should be noted that although the general belief is that residents of Santa Barbara were concerned wholly with damage to aesthetic values caused by unsightly drilling rigs in offshore waters, they were in fact equally troubled by pollution damage stemming from well blowouts. *Compare* N.Y. Times, Feb. 9, 1969, § 4, at 2, col. 5, *with* statement of George Clyde, *supra* note 92, pt. 2, at 281.

[98] 1 OCS STUDY, *supra* note 9, at 549; Chronology of Significant Events Leading to Federal Lease Sales in the Santa Barbara Channel, prepared by the United States Geological Survey, in *Hearings on S. 7 and S. 544*, *supra* note 88, pt. 3, at 812.

to Union Oil Co., Gulf Oil Co., Mobil Oil Co., and Texaco, Inc., on a high bonus joint bid of $61,418,000.[99]

The aversions of the Santa Barbarans, however, did not go entirely unnoticed in the immediate aftermath of the leasing. Then Secretary of the Interior Stewart L. Udall, in a memorandum to W.T. Pecora, Director of the Geological Survey, dated February 17, 1968, wrote:

> The recent oil and gas lease sale offshore Santa Barbara places a heavy responsibility on the Department for supervision of oil company operations in that area.
>
> The sale was held over strong local protests that oil and gas development in the Santa Barbara channel would damage scenic values of aesthetic and economic importance to the community. We believe that our decision to lease was sound, and that under the regulations we propose any damage will be minimal. . . . Pollution from oil spills in drilling and production is an additional hazard which we must take every possible means to avoid.

Despite the prelease articulation of opposition arguments, it was not until after the blowout in the channel that the pressures which caused the Secretary to override the local interests were revealed and analyzed.[100] There were four major factors considered by the Department of the Interior in its decision to lease the offshore tracts.

First, it was observed within the Department that the west coast was a crude oil deficit area. Production on the offshore federal leases would feed oil into a petroleum hungry market, thereby reducing the region's dependence on other production centers. Notably, the discovery of huge oil deposits in Alaska had not been made at the time of the lease sale in 1968. According to former Secretary Udall, "if [the Alaska discovery] . . . had occurred only a few months earlier, it might have made a substantial difference in the making of the decision" to conduct the Santa Barbara lease sale.[101]

A second consideration was that the Bureau of the Budget, at that time suffering from a deficit of its own, was "hungry for revenues."[102] It has been suggested that the economic aspects of the lease sale constituted the "overriding" consideration behind the decision to carry out the sale, particularly when balanced against the objections of the Santa Barbarans.[103]

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[99] 2 OCS STUDY, *supra* note 9, at 8-D-7.

[100] *See generally* statement of Stewart L. Udall, former Secretary, United States Department of the Interior, *Hearings on S. 7 and S. 544, supra* note 88, pt. 4, at 1278; N.Y. Times, Mar. 25, 1969, at 30, col. 3; N.Y. Times, Mar. 11, 1969, at 31, col. 4.

[101] *See* statement of Stewart L. Udall, *supra* note 100, at 1279.

[102] *Id.* at 1280. The influence of the Bureau of the Budget over the administration of federal lands is discussed in M. CLAWSON & B. HELD, THE FEDERAL LANDS: THEIR USE AND MANAGEMENT 186 (1957).

[103] Senator Robert J. Dole, in addressing former Secretary Udall before a subcommittee hearing, noted that a memorandum prepared by the Secretary's assistant for Outer Continental Shelf mineral leasing indicated there were

Third, since the oil companies had spent "considerable money" on prelease exploratory research, their interests in recouping their investments were also taken into consideration by the Department.[104] It has not been accurately determined just how great an influence the oil industry had upon the Department of the Interior in its decision to lease the tracts in the channel, but the implications of post-oil spill analyses are that the influence was substantial,[105] and that the industry had an inside track in discovering the intention of the Department to proceed with the leasing.[106]

Finally, the decision to lease seemed to have been made in the absence of any reluctance or apprehension on the part of Interior Department personnel. Former Secretary Udall, in reviewing the minor attention paid to the possibility of pollution due to earthquake, hurricane, or other hazards, emphasized that the best available advice was not of a precautionary nature. He stated, after the spill:

> I have to say, and I think the record shows that, that at the time we made the Santa Barbara decision there was no dissent in the Department. This was a sort of conservation 'Bay of Pigs.' . . . I made the decision, and I made it getting the best advice I could get in the Department, but there was nobody

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three primary objectives [of the sale]: No. 1 being production of maximum revenues to the Government; No. 2, conservation of petroleum resources and identification of reserves; and No. 3, stimulation of the National, State, and/or local economies. *Hearings on S. 7 and S. 544*, *supra* note 88, pt. 4, at 1293.

Senator Dole also mentioned a letter written by J. Cordell Moore, Assistant Secretary for Mineral Resources, dated December 1, 1967, in which Mr. Moore reflected upon the efforts of the Santa Barbara community to have the lease procedures slowed down: "I can not see how these people can expect us to absorb any additional revenue losses merely because of their further obsession to protect their view." *Id.*

104 *See* statement of Stewart L. Udall, *supra* note 100, at 1279.

105 It was obvious to all of us involved in the long discussion during 1967 that everyone in the mineral resources section of the Interior Department was hell-bent to lease this channel and get drilling started. Whether it was the desire to get the money for the Federal Government, to establish a good record on the fiscal side or pressure from oil companies, I do not know, but the attitude was there from the beginning, and it still exists.

I do know that we all had the impression that the oil industry, and this may be an understatement, had great influence in the Department.

. . . .

. . . I know that the oil industry was very anxious to get everything drilled in the area to open it all up. . . .

I will have to say that I can't say that the oil industry influenced the Department of the Interior. I do know that within a matter of minutes after we said anything to the Department of the Interior, the oil industry knew exactly what we said verbatim.

Statement of George Clyde, *supra* note 92, pt. 2, at 281-82, 284. The oil industry withstood severe criticism in 1969, *see, e.g.*, Dugger, *Oil and Politics*, ATLANTIC, Sept. 1969, at 66; Smith, *In Oil Industry, Troubled Waters Resist Calming*, N.Y. Times, May 18, 1969, § 3, at 1, col. 1, and apparently has continued its influence into the seventies. *See* N.Y. Times, Feb. 24, 1970, at 42, col. 2.

106 It has been suggested that a letter to the Department of the Interior, dated September 25, 1967, and written by a senior vice president of a large oil company, revealed that the industry knew, even at that early date, that the federal government intended to approve the proposed leasing in spite of the protests of Santa Barbara residents. N.Y. Times, Mar. 25, 1969, at 30, col. 4-5.

> hammering on the door and there is nothing in the record in the weeks or months immediately before the decision that would indicate someone was saying, 'This is a mistake,' and predicting that what occurred would occur.[107]

The lack of apprehension within the Department of the Interior over leasing the channel tracts perhaps can be explained as a function of one or any combination of the first three considerations. Increased development of a resource that is necessary for the maintenance of an energy-consuming regional economy, additional revenues for the national treasury, and a recoupment of $200 million spent exploring for oil are legitimate factors to be considered in deciding whether to promote the exploitation of offshore resources. On the other hand, the countervailing interests of protecting, as far as possible, the environment of a large coastal area that depends on that environment for its economic well-being, and of developing national resources in a manner consistent with the national public interest, may demand more attention than was paid them in the Santa Barbara decision. However, due to the unavailability of sufficient information or a required method whereby all pertinent information could be collated and considered, the Department of the Interior personnel may have been unable to determine the potential hazards inherent in the lease sale decision, thus making a completely informed judgment impossible. But when the decision to lease was made,

> the whole emphasis was on getting the drilling started, getting the revenues coming in and doing whatever was necessary to compromise the esthetic problem with the local people . . . with very little focus, if any at all, upon the pollution aspects of it.[108]

The government's attitude toward compromising the aesthetic problem is indeed borne out by a Department of the Interior memorandum dated February 5, 1968, which was prepared with reference to the desirability of holding public hearings before the Santa Barbara lease sale:

> 'Discussion centered around "public interest" aspects in our offshore operations. I pointed out that we had handled our own public relations business in Santa Barbara through City, County, State people and had chose not to go the public hearing route.
>
> . . . .
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> 'We tried to warn L.A. District Engineer of Corps [sic] of what he faced and we preferred not to stir the natives up any more than possible.'[109]

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107 Statement of Stewart Udall, *supra* note 100, at 1280.

108 Statement of Senator Edmund S. Muskie, *Hearings on S. 7 and S. 544, supra* note 88, pt. 4, at 1288.

109 The memorandum, signed by an assistant to the Assistant Secretary of the Interior, was quoted by Senator Alan Cranston in *Hearings on S. 7 and S. 544, supra* note 88, pt. 4, at 1291.

THE BLOWOUT ON A-21[110]

Approximately 11 months after the lease sale, drilling began on Union Oil Co.'s Platform "A," six miles offshore from the Santa Barbara community. When the drilling of well A-21 commenced, four wells had already been drilled from the same platform and were nearly ready to begin production, pending the completion of a submerged pipeline which was to carry the platform's recovered oil ashore to a processing plant.[111]

Well A-21 was drilled to its total intended depth of 3,479 feet by January 28, 1969. Well casing, an impermeable metal pipe placed on the sides of a well bore hole to prevent oil and drilling mud from seeping into the surrounding strata, was extended from the platform floor into the seabed and was cemented into the uppermost 239 feet of the well hole, directly below the ocean bottom and above a stratum of sand containing an oil pool. The casing program for A-21 did call for a full string of casing, extending to the bottom of the well at 3,479 feet, but this additional casing was to be put in place only after the drilling to that depth had been accomplished. In order to set the casing at 239 feet, the oil company had to obtain approval of a "variance" in its casing program from USGS. Under the then current Federal operating regulations, and without a variance, the uppermost casing would have had to extend to a depth of 880 feet.[112]

Upon reaching the 3,479-foot level, the drillers began to extract the drill pipe and bit out of the hole. When 720 feet of pipe had been withdrawn, drilling mud and gas surged up the shaft and sprayed out of the wellhead on the drilling platform. An attempt was made to drop the drill pipe back down to the bottom of the well, so that drilling mud could be circulated throughout the well to counteract and stifle the pressure of the flowing gas, but this was unsuccessful because the drilling pipe was clogged and was not manueverable. Furthermore, the drill bit was plugged, thus prohibiting any circulation of mud throughout the upper part of the well.[113]

Perforation of the plugged pipe was finally accomplished and heavy

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[110] For a general discussion of the history and causes of the oil spill, see N.Y. Times, Feb. 9, 1969, § 4, at 2, col. 5. For a technical description of Union Oil Co.'s efforts to abate the spill as it occurred, see the statement of John R. Fraser, vice president, Western Region, Union Oil & Gas Division of the Union Oil Co., in *Hearings on S. 7 and S. 544, supra* note 88, pt. 3, at 552. An extensive analysis of concurring natural conditions, including the presence of an open fault beneath the ocean floor, low barometric pressure conditions, and the conjunction of the sun and the new moon on earth tides at the time of the spill, which may have caused the spill, is found in Burmister, *The Role of Natural Conditions and Forces and Weather in the Santa Barbara Oil Seepage Disaster*, in *Hearings on S. 7 and S. 544, supra* note 88, pt. 2, at 905.

[111] Statement of John R. Fraser, *supra* note 110, at 552.

[112] *Id.* at 586-88.

[113] *Id.* at 552-53.

drilling mud was circulated into the well to kill the flow of mud and hydrocarbons. By February 7, ten days after the initial blowout, the well apparently was under control. At that point, the well hole was filled with cement from the 2,883-foot depth to near the level of the sea floor.[114] Most of the oil which polluted the Santa Barbara Channel escaped not from the well itself, however, but from fissures in the crust of the sea bottom near the well. Consequently, abatement of leakage at the wellhead did not end the spill.[115]

The generally accepted technical explanation of the blowout and concurrent fissure seepage is as follows: Upon reaching the 3,479-foot depth level, Union Oil drillers penetrated a highly pressurized pool of oil. This oil, under its own pressure, surged up the uncased well bore and came into contact with an unpressurized pool of oil lying in a stratum of sand not far below the bottom of the metal casing, which, as noted, extended 239 feet beneath the surface of the ocean floor. (Had the variance not been granted and had the 880-foot casing requirement been complied with, however, the spill might not have occurred.) Oil coming from the lower pool moved laterally into, and pressurized, the shallower pool. Following the path of least resistance, oil in the shallower pool forced its way into a diagonal geological fissure, or faultline, and moved along the fissure to the ocean floor, finally escaping into the sea.[116] The oil formed a slick which, after being held at sea by winds for five days, eventually contaminated 45 miles of beaches in and around Santa Barbara.[117]

The amount of damage caused by the Santa Barbara blowout, like the amount of oil estimated to have spilled, has not been accurately determined.[118] However, the following is a speculative but nonetheless con-

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[114] *Id.* at 553.

[115] Oil was still leaking from fissures near the platform nine months after the well had been plugged. MacDonald & Easton, *Santa Barbarans Cite an 11th Commandment: "Thou Shalt Not Abuse the Earth,"* N.Y. Times, Oct. 12, 1969, § 6 (Magazine), at 32.

[116] *See* Burmister, *supra* note 110, at 908; MacDonald & Easton, *supra* note 115, at 142-43; N.Y. Times, Feb. 9, 1969, § 4, at 2, col. 5.

[117] The slick, aside from surrounding an island wildlife sanctuary and blackening the Santa Barbara beaches, spread "over 200 miles and affected the coast as far south as the Mexican border." MacDonald & Easton, *supra* note 115, at 143, col. 5.

Union Oil Co. attempted to control the spread of the slick by utilizing chemical dispersants, distributed over the oil by crop dusting planes and small boats; by the application of fluid catalytic cracking catalyst, which it was hoped would absorb the oil and sink it; by surrounding and holding the slick with various booms made of steel, telephone poles, inflated plastic, and plastic filled with styrofoam; by skimming the oil off the water with a specially equipped seagoing derrick barge; and by spreading straw on the oil, which would absorb the oil at a ratio of one ton of straw to five tons of oil, and which had to be collected manually by kelp pickers. The use of straw proved the most effective. *See* statement of Thomas H. Gaines, coordinator, Air & Water Conservation, Union Oil Co. of California, *Hearings on S. 7* and *S. 544, supra* note 88, pt. 3, at 884.

[118] An analysis of the amount of oil spilled points out the following anomaly: Union Oil's initially quoted estimate of 5,000 barrels a day was later with-

ceivable summary of the effects of the recent spill:

> . . . [I]mmediate effects—death of a number of birds, sea mammals, and smaller life forms; future effects—possible depletion of some larger life forms in the Santa Barbara Channel, probable reduction in the quality of human life. If oil continues to degrade the local environment, public apathy and disappointment replace optimism and pride. The blight will spread throughout the area and lead eventually to the production of yet another technological slum in a nation already over-endowed with wasted urban regions.[119]

In view of the severity of the contamination caused by the Santa Barbara oil spill, it is necessary to investigate the scheme of regulations governing offshore oil drilling to determine whether the disaster could have been prevented. Toward that end, it is appropriate to ask several central questions which will expose fundamental flaws in the present regulatory structure and lead to a needed reappraisal of the United States' development of its Continental Shelf resources. First, upon what kind of standards are the leasing and drilling regulations based? Second, how, and upon what information, are those regulations formulated?

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drawn, and lowered to 500 barrels a day. A scientist . . . who inspected the channel every day from the air, estimated the minimum flow at 5,000 barrels a day, or over 2,000,000 gallons in the 10½ days before the well was plugged. MacDonald & Easton, *supra* note 115, at 143.

See also statement of Dr. Robert R. Curry, assistant professor, Department of Geography and Environmental Sciences, University of California, *Hearings on S. 7 and S. 544, supra* note 88, pt. 3, at 634, 650.

The amount of damage and its effects have been equally difficult to ascertain. After the spill, it was observed:

> The complete effects on the environment of spilled oil are not sufficiently well known and further detailed studies are badly needed. Effects on birds, larger wildlife, and natural beauty are easy to observe, but effects on unobtrusive animals, microorganisms, and the net effects on the food chain and the ecological habitats of marine wildlife are poorly known. FIRST REPORT OF THE PRESIDENT'S PANEL ON OIL SPILLS, EXECUTIVE OFFICE OF THE PRESIDENT, OFFICE OF SCIENCE & TECHNOLOGY, THE OIL SPILL PROBLEM 11 (1969) [hereinafter cited as THE OIL SPILL PROBLEM].

[119] Statement by Dr. Norman K. Sanders, Department of Geography, University of California, Santa Barbara, in *Hearings on S. 7 and S. 544, supra* note 88, pt. 3, at 893, 894.

One aspect of Dr. Sanders' prediction appears to have been realized. A sociologist at the University of California at Santa Barbara has documented the "radicalization" of the Santa Barbara community in the aftermath of the spill. Frustrated by the impotence of their own attempts to prevent drilling in the channel, and disillusioned by the impact of the "all-powerful oil lobby," citizens who were irate over the spill committed acts usually associated with radical groups, *i.e.*, "sit-downs blocking oil trucks; yacht sail-ins circling off-shore wells; non-negotiable demands at City Hall; talk, even, of blowing up oil rigs with high explosives." San Francisco Chronicle, Sept. 3, 1969, at 1, col. 1, reporting on address by Harvey L. Molotch, Studying the Action of the Outraged Citizens as They Tried to Find the Right Political Buttons to Press to Turn Off the Leak and Prevent a Repetition, delivered to the 64th annual meeting of the American Sociological Association, San Francisco, Sept. 2, 1969.

The legal system has not been overlooked in the aftermath of the spill. An early collection of the claims arising out of the pollution incident is found in *Hearings on S. 1219 Before the Subcomm. on Minerals, Materials, and Fuels of the Senate Comm. on Interior and Insular Affairs*, 91st Cong., 1st Sess., at 58 (1969).

Third, using the Santa Barbara incident as an example, what is wrong with the regulations? Finally, what is necessary to insure the promulgation of adequate regulations?

ADMINISTRATION OF MINERAL LEASING— PRE-SANTA BARBARA

STANDARDS INADEQUATE TO PROTECT THE PUBLIC'S INTEREST

The Outer Continental Shelf Lands Act (OCSL Act) does not particularize standards to govern the execution of its provision regarding leasing and the administration of leases. The Secretary of the Interior, in administering the provisions of the Act, is merely directed to prescribe rules and regulations necessary to carry out such provisions,[120] and he has the authority to amend the rules "as he determines to be necessary and proper" to prevent waste, conserve natural resources, and protect correlative rights in the shelf.[121] In granting leases, the Secretary must follow certain standards, but he retains discretionary powers which blur the statutory requirements.[122]

The regulations promulgated pursuant to the Act similarly do not establish adequate standards or guidelines for the conduct of exploration, leasing and drilling on the Outer Continental Shelf. This will be evident upon an examination of the regulations pertaining to the activities of the Bureau of Land Management (BLM), which is authorized to execute the issuance of mineral leases on the Outer Continental Shelf,[123] and of the United States Geological Survey (USGS), the agency charged with the administration of exploration and drilling operations on the shelf.[124]

The regulations discussed here are those which were in effect at the time of the Santa Barbara leasing and blowout; examination of subsequently enacted regulations is reserved for a later section.

The regulations promulgated by the Secretary under which the Bureau of Land Management issues leases in accordance with the OCSL Act specify, *inter alia*, that "all leases will be issued competitively upon the [Interior] Department's motion or upon a request describing the area and expressing an interest in leasing a unit or units . . . ."[125] The procedure which has developed under this section, however, is for the Di-

120 See note 86 and accompanying text *supra*.
121 See note 87 and accompanying text *supra*.
122 For instance, although the Act states that bidding must be by sealed bids and based upon a cash bonus with a royalty fixed at no less than 12½ percent, or upon the basis of royalty, with a fixed cash bonus, and that the Secretary is authorized to grant leases to the highest responsible bidder, the Secretary, under his authority to prescribe regulations for bidding procedures, has reserved the right to reject any and all bids presented to him. *See* 43 U.S.C. § 1337(a) (1964) and 43 C.F.R. § 3382.5 (1969).
123 43 C.F.R. § 3382.1 (1969).
124 30 C.F.R. § 250.10 (1969).
125 43 C.F.R. § 3382.1 (1969).

rector to wait until industry has shown sufficient interest in an area before the decision is made to offer the area for lease.[126] The reason is that because the regulations fail to provide policy standards by which the Secretary of the Interior, or the Director, is to make a judgment as to the value of leasing specific tracts, the BLM is compelled to rely on *industry's* knowledge, desires, and judgment regarding lease proposals.

The BLM regulations also are deficient in not specifying factual criteria for the decision to lease or not to lease. Importantly, there is no regulatory provision which insures that all of the potential ramifications of a proposed leasing will be considered by BLM in its decision. Under the regulations, industry requests for leasing are considered, but there is no absolute requirement that those who oppose leasing be heard. Consequently, the desirability of increased oil production and predictions of increased revenue to the government receive attention from BLM as a matter of rule, but comparable attention does not have to be given to arguments that the aesthetic attractiveness and total environmental quality of the area surrounding the proposed well sites may be substantially impaired.

Section 1334 of the OCSL Act illustrates another major failure of the BLM regulations to establish adequate standards to govern its own activities. This section grants the Secretary of the Interior authority to make rules necessary and proper to prevent waste and provide for the conservation of natural resources on the outer shelf and also states: "In the enforcement of conservation laws, rules, and regulations the Secretary is authorized to cooperate with the conservation agencies of the adjacent States."[127]

Within the regulations, under the title "Cooperative Conservation Provisions," rules pertaining to unit plans, pooling, and drilling agreements are specified,[128] but there is no directive relative to the manner in which, if at all, federal conservation provisions are to be coordinated with adjacent state conservation agency regulations.[129] Notwithstanding an

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[126] *See* 1 OCS STUDY, *supra* note 9, at 187.
[127] 43 U.S.C. § 1334(a)(1) (1964).
[128] 43 C.F.R. § 3381 (1969).
[129] "Conservation," as the term is used in conjunction with oil production, has highly sophisticated overtones, and a precise definition is nearly unobtainable. Fundamentally, however, it relates to statutory restrictions imposed upon the amount of oil allowed to be produced from a given well. The effect of the restrictions is that only the amount of oil which the market will absorb is produced, or that the market price of oil is determined by the amount of oil that reaches the market, under the so-called "market demand" formula. The Interstate Oil Compact Commission, under the stated purpose "to conserve oil and gas by the prevention of physical waste thereof from any cause," has written into the Compact a functional definition of the market demand concept of conservation:

> ARTICLE VI. Each State joining herein shall appoint one representative to a commission hereby constituted and designated as the Interstate Oil Compact Commission, the duty of which Commission shall be to make inquiry and ascertain from time to time such methods, practices, circumstances and conditions as may be disclosed for bringing about conserva-

explicit assertion by the Department of the Interior of its intention to exercise exclusive conservation regulatory authority on the Outer Continental Shelf, the vagueness in the above regulations has led to the establishment of a system whereby the conservation schemes of at least two coastal states are utilized to regulate production on federal leases off their shores.[130] Not only is this procedure whereby an individual state regulates an important natural resource belonging to the public patently in contravention of that public's interest in the resource, but this state usurpation of regulatory authority, acquiesced in by the agency commanded to protect the public interest, has "absolutely no legal justification whatsoever."[131]

The Secretary of the Interior has also promulgated regulations which prescribe the duties of the USGS and the responsibilities of lessees on the Outer Continental Shelf.[132] Primarily, the Geological Survey is charged with administering drilling and production operations and enforcing provisions of the outer shelf leases.[133] The duties of the USGS can be classified into two functions. First, the agency has the proprietary responsibility of protecting the interests of the federal government. This it does mainly by collecting monies due the government from lease sales and royalty payments.[134] Second, the USGS in its supervisory capacity es-

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tion and the prevention of physical waste of oil and gas, and at such intervals as said Commission deems beneficial it shall report its findings and recommendations to the several states for adoption or rejection.

However, the explanation of conservation is not quite this simple. *See* W. LOVEJOY & P. HOMAN, ECONOMIC ASPECTS OF OIL CONSERVATION REGULATION (1967) (the Compact section quoted above is at 44 therein).

130 After the OCSL Act was passed, the federal government for some time permitted Louisiana to apply her conservation regulations to federal leases on the outer shelf off her shores. Under the practice which thereby has developed,

> operators on the outer continental shelf first obtain state permits concerning allowables, wellspacing and other factors which might affect the rate of production. The Department of the Interior . . . subsequently reviews the decision of the state and thereby ensures that the conditions imposed by the Department of the Interior are the same as those imposed by the state. 1 OCS STUDY, *supra* note 9, at 223-24.

Thereafter, in an amendment to a notice of a lease sale of lands offshore Louisiana scheduled for June, 1967, the Secretary of the Interior asserted exclusive federal jurisdiction and control over conservation matters on the Outer Continental Shelf, and announced his intention to publish regulations to govern them. *Id.* at 224, 561. Subsequently, "a dispute arose" between the affected states, Louisiana and Texas (California does not have prorationing or production allowables—the elements of conservation, nor did it sign the Interstate Oil Compact), and the federal government. "Since publication of [the notice] the Secretary has neither entered into an agreement with any state nor has he promulgated federal conservation regulations." *Id.* at 225.

131 *Id.* at 565, *quoting* letter from Ramsey Clark, acting Attorney General, to Stewart L. Udall, Secretary of the Interior, Dec. 13, 1966. For an analysis of conservation policies, and the implications of federal regulation on federal leases offshore Texas and Louisiana, see 1 OCS STUDY, *supra* note 9, ch. 9, at 555.

132 30 C.F.R. § 250 *et seq.* (1969).

133 *See id.* § 250.10.

134 *See* Henderson, *Participation by United States Geological Survey in the Administration of Federal Laws and Regulations Governing Mineral Leasing, Drilling and Producing Operations on Outer Continental Shelf Lands in Gulf of Mexico,*

tablishes and enforces regulations pertaining to drilling development plans, well locations, drilling platforms, well-spacing and well-casing requirements, daily operating obligations, and approval of lease assignments and cancellations.[135]

Regulations in effect prior to the Santa Barbara spill stated that USGS is to execute its responsibilities in accordance with the general standard "that all operations shall conform to sound conservation practice and shall be conducted in such manner as to protect the natural resources of the Outer Continental Shelf and result in their maximum economic recovery."[136] Furthermore, the policy considerations of preventing damage, waste of natural resources, and injury to life or property are to underlie regulations issued by USGS in the performance of its duties.[137]

The general standards which lessees must meet under these regulations are equally vague. Generally, the lessee must obey the terms of his lease, the OCSL Act and its concomitant regulations, as well as the written orders of the USGS supervisor, and he "shall take all reasonable precautions to prevent damage or waste of any natural resource or injury or property or the aquatic life of the seas."[138] The lessee is also bound by the following provisions with regard to maintaining control of wells:

> The lessee shall take all reasonable precautions for keeping all wells under control at all times and shall provide at the time any well is started the proper high-pressure fittings and equipment as the supervisor may prescribe or approve. A conductor string of casing must be cemented throughout its length, and all strings of casing must be securely cemented and anchored unless other procedure is authorized or prescribed by the supervisor.[139]
>
> The lessee shall take all reasonable precautions to prevent any well from blowing open and shall take immediate steps and exercise due diligence to bring under control any such well.[140]

With reference to pollution, the regulations require only that "[t]he lessee shall not pollute the waters of the high seas or damage the aquatic life of the sea . . . ."[141]

Aside from these general policy prescriptions, the regulations under consideration do little but outline roughly, with no other attention given

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in OIL & GAS OPERATIONS: LEGAL CONSIDERATIONS IN THE TIDELANDS AND ON LAND, 239, 242 (R. Slovenko ed. 1963).

135 *Id.*; 1 OCS STUDY, *supra* note 9, at 212.

136 30 C.F.R. § 250.11 (1969).

137 *See id.* § 250.12. Additionally,

> [t]he supervisor is authorized to require a lessee by written notice to suspend any operation . . . which endangers life or threatens immediate, serious, or irreparable damage to the leased deposits or other valuable mineral deposits. *Id.* at (b).

138 *Id.* § 250.30.

139 *Id.* § 250.40(a).

140 *Id.* § 250.40(b).

141 *Id.* § 250.42.

to minimal standards of conduct, the basic functions of the USGS supervisor,[142] the operating requirements for lessees,[143] and the essentials of production measurement,[144] default procedure,[145] and operating reports required of lessees.[146]

The USGS Regional Oil and Gas Supervisor for the Pacific Region, under his authority to issue orders and rules to prevent damage or waste of Outer Continental Shelf natural resources, or injury to life or property,[147] issued nine such orders prior to the Santa Barbara blowout.[148] These orders apply to operations in the Santa Barbara Channel, and come closer than do other regulatory or statutory provisions to specifying particular standards to be observed by federal lessees in the conduct of their drilling operations. The two most important orders, for the purposes of this note, concern casing and "blowout preventer" requirements for drilling,[149] and pollution.[150]

In conjunction with the regulation quoted above regarding "control of wells," Pacific OCS Order No. 2 fixes minimum requirements for casing and blowout preventer programs for each well. The first casing which is set in the well bore hole is called "conductor casing"; it "shall be set at a minimum depth of 300 feet below the ocean floor and in no event at a greater depth than 500 feet."[151] The next string of casing, "surface casing," is to be set not deeper below the ocean bottom than 3,500 feet, but the minimum depth depends upon the proposed total depth of the well. If the well will be less than 7,000 feet deep, 25 percent of the proposed total depth must be set with casing. Between 7,000 and 10,000 feet, 2,000 feet of casing is required; and if the well is going to be deeper than 10,000 feet, 2,500 feet of casing is necessary.[152] "Intermediate casing," a third type, "shall be set and cemented when required by well conditions."[153] Finally, "production casing" must be cemented "in all

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142 *Id.* § 250.10-.20.
143 *Id.* § 250.30-.48.
144 *Id.* § 250.60-.69.
145 *Id.* § 250.80-.82.
146 *Id.* § 250.90-.96.
147 *Id.* § 250.12(a).
148 *See Hearings on S. 7 and S. 544, supra* note 88, pt. 3, at 781-88.
149 OCS Order No. 2, *Hearings on S. 7 and S. 544, supra* note 88, pt. 3, at 781.
150 OCS Order No. 7, *Hearings on S. 7 and S. 544, supra* note 88, pt. 3, at 786. A third order enunciates special requirements for fixed platforms in the Santa Barbara Channel. It was published in response to requests from the Santa Barbara community that the number of rigs in the channel be kept to a minimum. It provides that at least 20 wells must be drilled from each rig, unless a platform having less wells is "fully justified" by prior drilling records and approved by the USGS supervisor. Also, the order states that each platform will be "camouflaged by paint" and "subject to a design which will give the best appearance available to the industry." OCS Order No. 9, *Hearings on S. 7 and S. 544, supra* note 88, pt. 3, at 788.
151 OCS Order No. 2, *Hearings on S. 7 and S. 544, supra* note 88, pt. 3, at 782.
152 *Id.*
153 *Id.* However, the order does not designate well conditions that would call for intermediate casing.

wells prior to completion as a producer, unless approved for completion as a 'tubingless completion.' "[154]

One blowout preventer,[155] which can be operated by remote control, must be installed in the bore hole before drilling may progress below the conductor casing, and no less than three must be utilized while drilling below the surface casing. All blowout preventers must be tested at least once a week while drilling.[156] Finally, any deviation from these casing and blowout preventer requirements "must be justified to and approved by the Geological Survey on an individual well or field basis. The Geological Survey may require deviation from this program when, in its opinion, such deviation is necessary for the proper control of a well."[157]

Pacific OCS Order No. 7, regarding pollution, states that "[a]ll oil and gas well drilling and producing operations shall be conducted in such a manner as to preclude the pollution of the waters of the Pacific Ocean."[158] It also provides that no oil or other hydrocarbon, in any combination, shall be disposed of into the sea, and that no mud containers or solid wastes "which may be harmful or hazardous to life or property, or which result in an unsightly appearance," shall be dumped into the Pacific Ocean. The sole reference to pollution cleanup strategy is the statement: "Immediate corrective action shall be taken in all cases where accidental pollution has occurred."[159]

The Pacific OCS Orders in general, and those mentioned here in particular, like the corresponding sections of the OCSL Act and its regulations, are unsuccessful in their attempt to shape universally satisfactory procedures to be followed in drilling operations on the Outer Continental Shelf. In some respects the orders are too broad, and their utility as guidelines or directives is negligible. An order that "immediate corrective action" must be taken in the event of accidental pollution is virtually meaningless in the absence of a specific cleanup plan which could be implemented according to the type of pollution, the site of the pollution, the various dangers expected to be encountered under different kinds of spills, and other conditions that would attach to a particular pollution occurrence.

In other respects, the orders are too specific, too exact, and inflexi-

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154 *Id.* A "tubingless completion" is a well completion using no casing, since "tubing," although somewhat of a misnomer, is similar to "casing." P. THRUSH, A DICTIONARY OF MINING, MINERAL, AND RELATED TERMS 1171 (1968) (definition of "tubing").

155 Blowout Preventer. A rotatable or stationary device attached to drive-pipe or casing at the collar of a borehole, consisting of an assemblage of bypass and gate or disk valves which may be closed around the drill rods, or which can be closed completely if the drill rods are withdrawn from the borehole. Used to contain and control the flow of liquids or gases under high pressure encountered while drilling a borehole. P. THRUSH, *supra* note 154, at 117.

156 OCS Order No. 2, *Hearings on S. 7 and S. 544, supra* note 88, pt. 3, at 782.

157 *Id.*

158 OCS Order No. 7, *Hearings on S. 7 and S. 544, supra* note 88, pt. 3, at 786.

159 *Id.*

ble. To say that conductor casing must be set at a certain depth, and surface casing at a depth equal to a quarter of the proposed depth of the well, is to discount from consideration the factors that necessitate the very use of casing. Each well is drilled under distinct geological conditions; rock strata, producing sands, fault incidences, and earthquake hazards are encountered in no regular fashion in different parts of the Outer Continental Shelf. Consequently, operating rules for such things as casing and blowout prevention devices should not set singular exact specifications applicable to all wells without regard to drilling condition variances, but should be broad enough in scope to take particular variances into consideration.

This discussion has shown that the OCSL Act, regulations pursuant to that Act, and orders promulgated in accordance with the regulations all share a lack of definitiveness in setting forth standards of required procedure for Outer Continental Shelf operations. Yet, these are the guidelines and rules under which tremendous amounts of publicly owned land and resources are leased and exploited. They are also the regulations upon which the public must rely for the protection of its interests in the public lands, and upon which communities such as Santa Barbara must depend for assurances against environmental despoilation.

If it is assumed that the federal regulations in effect at the time of the Santa Barbara spill lacked satisfactory operating standards, the basis on which these regulations were devised must be examined. This will permit an analysis of the operational effectiveness of the regulations in the context of the Santa Barbara spill.

FORMULATION OF REGULATIONS: INADEQUACIES IN THE PROCESS

Generally, where the function of a federal public land agency is not primarily concerned with the permanent disposal of public lands, the formulation of regulations within the agency becomes a matter of administrative routine rather than policy-making.[160] The absence of statutory guidelines for rulemaking within such an agency contributes to the routinization of that process.[161] The BLM and the USGS are two agencies characteristic of this description.

Although the OCSL Act and the regulations issued pursuant to its directives do not articulate any specific tangible policy of the United States regarding what standards must be observed by permittees and lessees in exploring, leasing, and drilling on the outer shelf, some policy

160 *See* PUB. LAND. L. REV. COMM'N, ADMINISTRATIVE PROCEDURES AND THE PUBLIC LANDS 241 (1969) [hereinafter cited as ADMINISTRATIVE PROCEDURES]. For a general analysis of policy formation and decisionmaking within agencies dealing with federal lands, see M. CLAWSON & B. HELD, THE FEDERAL LANDS: THEIR USE AND MANAGEMENT 132 (1957).

161 ADMINISTRATIVE PROCEDURES, *supra* note 160, at 242.

objectives have to operate in order to result in formulation of regulations. It is believed that liberal policy objectives underlie the development of the shelf.[162] With such objectives in mind, it could be said that the regulations governing those activities are not made purely as a matter of administrative routine with no harmonizing guidelines. Yet, it is difficult to determine what policy considerations do come into play when decisions are made in these two agencies of the Department of the Interior. Their separate functions offer some clues.

Rulemaking in the BLM

The Bureau of Land Management supervises the leasing of outer shelf lands only after the crucial policy decision—whether to lease or not—has been made by the Secretary of the Interior.[163] But because of BLM's participation in that leasing process and its interrelationship with USGS, it is worthwhile to investigate rulemaking within BLM.

Although none of the agencies concerned with public lands management have within their regulations general provisions for the formulation of regulations,[164] BLM has published its own "regulations on regulations."[165] The purpose of this manual of directives for rulemaking is "to issue policy and procedures for proposal and review of regulations."[166]

In essence it lists, or rather commingles, four methods of initiating regulation proposals. The first method involves proposals by members of the BLM staff. They must be routed through the Division of Management Analysis, to the Office of Legislation and Cooperative Relations, where the proposal is reviewed "for possible interest of outside groups and Advisory Boards," and then to the Office of Information for "press release if necessary." The "policy" noted in the manual under this routine is that "BLM personnel must not attempt to discuss the Bureau's

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162 Under the broad objective of managing the federal lands "in a manner to provide maximum benefit to the general public," these specific policy objectives have been extrapolated from discourse relating to the development of the outer shelf: (1) the desire for efficient resource management; (2) encouragement of private participation in resource expropriation; (3) maximization of revenue to the Government through the leasing system; (4) encouragement of multiple uses of resources; (5) advancement of knowledge and development of technology; and (6) the protection of environmental quality. Krueger, *supra* note 65, at 688-90. The question remains, however, whether these objectives are being realized to their maximum potential under the regulations forged by the administrators.

163 At the present time, the critical aspects of the leasing program, i.e. the issuance of calls for nominations and the noticing of lease sales, rest exclusively with the Secretary of the Interior. 1 OCS STUDY, *supra* note 9, at 186.

For a discussion of the mechanics of federal leasing procedures, see generally Brumfield, *State and Federal Laws and Regulations on Offshore Leasing, Drilling and Production*, in OIL AND GAS OPERATIONS: LEGAL CONSIDERATIONS IN THE TIDELANDS AND ON LAND, 226, 227 (R. Slovenko ed. 1963); Barry, *supra* note 83, at 43.

164 ADMINISTRATIVE PROCEDURES, *supra* note 160, at 242.

165 BUREAU OF LAND MANAGEMENT MANUAL 1761.05, Dec. 11, 1967.

166 *Id.* 1761.01.

position on proposed regulations with . . . the public" until the proposals have been sent "through normal supervisory channels for review" and "cleared by the Washington Office and presented if necessary to Advisory Boards and other interested parties."[167]

Secondly, the manual authorizes any BLM office to propose new regulations or amendments. Field drafts of the proposals are to be sent to the Washington office through "normal supervisory channels," and again, that office may return the draft proposals to state offices, "for presentation to Advisory Boards and other interested parties." No policy, other than the recommendation that the regulations be drafted carefully (since "they must be understandable to members of the public, as well as to specialists in the subject field") appears under this section.[168]

Next, under the heading "Proposed Rule Making," the staff of the Washington office may prepare proposals "on the basis of all comments from interested parties." The format of these proposals is then reviewed by the Branch of Directives and Records Management, and "subject-matter specialists in the field and in the Washington office evaluate the content of the proposed regulations." "Legislation and Cooperative Relations reviews for possible interest of outside groups and Advisory Boards, and determines whether there is any need for external distribution." Then follows a 20-step routing from "originator" to "management analysis" for review and clearance in the Washington office.[169]

Fourth and finally, under the title "Final Rule Making," the manual states that "regulations may be prepared in final rule making form, without going through the usual proposed rule making process," if "no additional requirements" are imposed on the public by doing so, and if the rights of the public are not thereby affected adversely. However, even these proposals must be cleared through the 20-step procedure found in the "Proposed Rule Making" section.[170]

Even upon careful reading, the Bureau's manual for the "policy and procedure" of proposing regulations is confusing. It has been described in these terms:

> This exasperating document traverses its limited ground four times. . . . In addition to evincing no policy, this "manualized" statement should be enough to deter anyone other than a most determined administrator, or one faced with some crisis such as new legislation, from attempting to propose regulations or amendments.[171]

The incoherence of the manual notwithstanding, at least two important comments can be made as to how the regulations under which BLM

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167 *Id.* 1761.01-.05.
168 *Id.* 1761.1-.13.
169 *Id.* 1761.2-.23.
170 *Id.* 1761.3-.31.
171 ADMINISTRATIVE PROCEDURES, *supra* note 160, at 242, 243.

operates are written. First, whether the proposed regulation or amendment is initially suggested by a staff member, a Bureau office, or an "interested party," the agency reserves the discretion to reject the proposal at various levels, with the ultimate decision lying with the Secretary of the Interior. Second, whenever the possibility arises that the proposal may significantly affect "advisory" groups or "other interested parties," those persons are asked to comment on the proposal.[172] Interested parties are not described in the manual, but there is little doubt that they are, in our context, the oil companies who are the lessees of the Outer Continental Shelf lands. It remains to be seen just how influential these interested parties are in the formulation of regulations under which they explore, lease, and drill on the shelf.

Rulemaking in USGS

The process by which regulations are promulgated within the United States Geological Survey is of major importance to this discussion because these regulations pertain to offshore operating activities and have been a focal point of debate in the aftermath of the oil spill off the Santa Barbara coast.

Under the regulations applicable at the time of the Santa Barbara spill, there was no defined procedure for the promulgation of regulations and amendments within USGS.[173] This lack of rulemaking guidelines has been named as a contributing factor to the routinization of the rulemaking process within an agency not primarily concerned with the disposal of public lands.[174] The consequence of such routinization being that policy foundations relating to the subject of the regulation become

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[172] The Bureau of Land Management publishes important proposals for new or changed regulations in the Federal Register. Written comments on the proposals are solicited from any interested party, and these suggestions may be incorporated in the regulation when it is finally issued. *See* ADMINISTRATIVE PROCEDURES, *supra* note 160, at 245.

[173] The closest thing to such a procedure in the old regulations was that "[a]fter appropriate hearings, the supervisor [of the USGS] may establish field rules to govern the development and method of production of a pool, field, or area." 30 C.F.R. § 250.11 (1969). The August 22, 1969, amendments read, in part:

> The supervisor may issue other orders, and rules to govern the development and method of production of a pool, field, or area. Prior to the issuance of OCS orders and other orders and rules, the supervisor may consult with, and receive comments from, lessees, operators, and other interested parties. 34 Fed. Reg. 13544 (1969).

The new provision in regulating operations in section 250.12(1) (a) reads:

> [t]he supervisor shall receive, and shall, when in his judgment it is necessary, consult with or solicit advice from lessees, field officials of interested Departments and agencies, including the Fish and Wildlife Service, Federal Water Pollution Control Administration, Bureau of Land Management, Coast Guard, Department of Defense, Corps of Engineers, and representatives of State and local governments. 34 Fed. Reg. 13544 (1969).

These additions to the regulations amount to a mere codification of the procedure previously used by the USGS in formulating its rules and regulations.

[174] *See* notes 160 & 161 *supra* and accompanying text.

somewhat obscure, it would follow that the formulation of regulations in USGS is a matter of routine administration rather than public interest-oriented policy construction. The following assessment bears this out.

USGS does not conduct formal proceedings for rulemaking.[175] Proposals for new regulations may be made by the Secretary of the Interior,[176] or his representatives,[177] or by mineral lessees operating on the Outer Continental Shelf.[178] When a proposal for a new regulation or amendment has been initiated, it is examined by the agency in light of data available in the USGS Washington office or data "collected by field employees who are experienced in enforcing the provisions of law and *by conferences with those in the mining industry who have the specialized knowledge and experience which fit them to advise of needed regulation or modification.*"[179] Then, if the proposed regulation constitutes a substantial change in the existing regulations, *the views of the persons in the industry who are to be affected are sought* when a draft of proposed regulations is published in the Federal Register and comments and criticisms are solicited. After 30 days' notice, if substantial changes are suggested, the suggestions are reviewed and a revised draft is made and adopted.[180] It is important to note that if the differences between the initial draft and the suggestions made by the affected industry are "more than minor differences," USGS holds a conference to iron out the disagreements, "usually with a committee appointed by affected members of the industry, but occasionally an open hearing is called at some place in the area where the regulations are to operate."[181]

After final adoption of a proposed regulation, USGS usually issues a press release explaining the rationale of the new rule. "Sometimes, also, a letter is written to those whose suggestions were not adopted explaining why they were not,"[182] but it is not the practice of the agency "to accompany any rule issued after informal proceedings with a recital that all relevant matter presented to the agency has been considered."[183] Shortly thereafter, the regulation is published in the Federal Register and is made available in pamphlet form.[184]

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175 HOUSE COMM. ON GOV'T OPERATIONS, SURVEY AND STUDY OF ADMINISTRATIVE ORGANIZATION, PROCEDURE AND PRACTICE IN THE FEDERAL AGENCIES, AGENCY RESPONSE TO QUESTIONNAIRE, 85th Cong., 1st Sess., pt. 5, answer to question 5, at 532 (1957) [hereinafter cited as QUESTIONNAIRE]. Although this questionnaire is more than 10 years old, "[i]t appears that the practices so reported have not changed so far as can now be ascertained." ADMINISTRATIVE PROCEDURES, *supra* note 160, at 258 n.96.

176 *See* 43 U.S.C. § 1334 (1964).

177 See 30 C.F.R. §§ 250.2, 250.11, *as amended* in 34 Fed. Reg. 13544 (1969).

178 *See* QUESTIONNAIRE, *supra* note 175, answer to question 8, at 532.

179 *Id.*, answer to question 3(a), at 531 (emphasis added).

180 *Id.*, answer to question 3(b), at 531 (emphasis added).

181 *Id.*, answer to question 3(c), at 531.

182 *Id.*, answer to question 3(d), at 531.

183 *Id.*, answer to question 10(a), at 533.

184 *Id.*, answer to question 3(e), at 531.

From the foregoing summary, it is apparent that rulemaking in USGS is similar to rulemaking in BLM. The impetus for rules or amendments comes either from within the agency itself or from the industry which is regulated by the agency. Regardless of how initiated, the proposals are examined by the affected industry, and industry suggestions are taken into account in the final drafting of the rule. The end product is a rule which is purportedly intended to regulate certain industry activities but which has been partially written, if not initiated, by the particular industry itself. Such methods approach self-regulation.[185]

Under these conditions, the rulemaking process within the Geological Survey cannot be fairly regarded as an instrument for policy formulation dictated by the interests of the public. The overly broad, sparse reflections of policy found in existent regulations, and the inadequate operating standards, are subject to more criticism when it is seen that in the interest of what has been termed "workability,"[186] much of the substance of policy and standards is prepared not by the public's agent, the USGS, but by industry.

This conflict in the regulatory scheme between what is and what should be has its origins in the nature of offshore exploitation of mineral resources and in the capacity of USGS as presently funded and staffed to regulate this exploitation effectively. It is clear that the oil industry gathers, evaluates, and controls nearly all of the scientific knowledge required to anticipate and to regulate offshore mineral exploitation. The industry's possession and retention of that knowledge obviously minimizes the competency of USGS to formulate satisfactory regulations and to supervise drilling operations efficiently. Thus, an examination of USGS participation in Outer Continental Shelf leasing is a necessary step in evaluating the impact of the entire regulatory structure. To tie together the results of insufficient internal policy standards and the influence of the oil industry on the USGS rulemaking procedure, we will examine the participation of USGS from prelease activity to its supervision of drilling operations and the effect on this participation of what is probably the

185 [I]n framing regulations dealing with any phase of the offshore oil industry, the best source of information and assistance has been the industry itself. The regulation pursuant [sic] to the Outer Continental Shelf Lands Act followed full hearings . . . preceded by wide distribution of the proposed regulations for examination and comment. All comments received were considered, and interested parties were given the opportunity to present their views in person. The degree of industry-government cooperation approached self-regulation by the industry itself, which remains the best solution for any regulatory problem. Kerrins, *Coast Guard Regulations in the Tidelands*, in OIL AND GAS OPERATIONS: LEGAL CONSIDERATIONS IN THE TIDELANDS AND ON LAND, 256, 266 (R. Slovenko ed. 1963).

186 Industry participation in the preparation of operating regulations is defended on the grounds that, among other things, the regulations must be kept reasonable, workable, and practicable to accommodate the congressional intent of developing the resources of the outer shelf. Kerrins, *supra* note 185, at 266. *See* note 276 *infra*.

single most important contributory factor to current mismanagement of the Outer Continental Shelf resources—the nondisclosure rule.

THE COMPETENCY OF USGS: LEASING AND THE NONDISCLOSURE RULE

The Outer Continental Shelf Lands Act does not specify how the Secretary of the Interior is to determine what outer shelf submerged lands are to be leased. A practice has developed, under the auspices of a subsequent regulation[187] in which the oil industry, upon obtaining prelease exploration permits from USGS, first explores the outer shelf in search of underwater tracts with oil productivity potential, and subsequently requests that the Bureau of Land Management lease lands that appear promising.[188] The federal government itself presently does not conduct research operations designed to reveal the geological structure and oil potential of offshore lands[189] and consequently BLM, in evaluating industry lease requests, is compelled to rely upon exploration data obtained by industry and submitted to USGS in accordance with terms of the exploration permits.[190]

The information which industry gathers in its exploratory activities is divided into two classifications: geological and geophysical data.[191] Geological surveys study and analyze rock formations on the surface to produce a geological projection of subsurface formations. These surveys also undertake analysis and correlation of samples of rock extracted from deep drilled wells, or from shallow slim holes by a process known as core drilling.[192] A geophysical survey, on the other hand, is "[t]he accurate measurement and recording of certain physical quantities in the outer rock shell of the earth, the object being to learn the nature and contour of underground geological structures."[193] Although geophysical

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187 43 C.F.R. § 3382.1 (1969).

188 *See* Krueger, *supra* note 65, at 691. Exploratory work is authorized by the Outer Continental Shelf Lands Act:

> Any agency of the United States and any person authorized by the Secretary may conduct geological and geophysical explorations in the Outer Continental Shelf, which do not interfere with or endanger actual operations under any lease maintained or granted pursuant to this subchapter, and which are not unduly harmful to aquatic life in such area. 43 U.S.C. § 1340 (1964).

For a thorough examination of exploration activity on the shelf, see 1 OCS STUDY, *supra* note 9, at 175.

189 1 OCS STUDY, *supra* note 9, at 604.

190 *Id.* at 602.

191 *See generally id.* at 175.

192 H. WILLIAMS & C. MEYERS, OIL AND GAS TERMS 174 (2d ed. 1964).

193 *Id.* at 176 (emphasis added):

> The principal methods are (1) seismic, in which the rate of transmission of shock waves through the earth is measured and recorded by a seismograph. . . . (2) Gravity, which measures the intensity of gravity at different points on the earth's surface. . . . *Faults may be detected because the force of gravity is slightly greater on one side of a fault, the denser rocks being closer to the surface there.* (3) Magnetic, which meas-

data requires "a substantial amount of sophisticated interpretation before it has value,"[194] such data once interpreted will reveal to the highest degree possible the nature of subsurface geological structures, including faults, fissures, and other irregularities in bedrock formations. Also, the whereabouts of oil deposits are best estimated by using geophysical information.

Although the regulations in effect at the time of the Santa Barbara spill empowered USGS to "stipulate reasonable requirements [on industry] for the taking of formation samples or cores to determine the identity and character of any formation,"[195] in practice USGS only requires that industry's geological data be open to inspection, and it does not compel the industry to submit any geophysical data.[196] Geophysical data is not requested of industry by USGS because, purportedly (1) USGS is not technically capable of conducting analysis and interpretation of the raw data; (2) *"USGS lacks adequate storage facilities to accommodate all the data" that a geophysical disclosure request would elicit;* and (3) "[s]erious security problems would exist since any leak of such data could be very damaging to the individual oil companies and accordingly to USGS."[197] Because of this incapacity to digest and evaluate technical data in great amounts,[198] USGS does not seek to obtain even the maximum geological data that permit terms allow.[199] Furthermore, geological information which is submitted to USGS by industry is classified under the regulations as proprietary and is usually not available for public inspection;[200] even BLM never sees it![201]

Not surprisingly, then, at the prelease stage "USGS often does not have sufficient geophysical or geological data to evaluate tracts being considered for lease offer. BLM relies, therefore, to a great extent upon industry nominations in its tract selection process."[202]

The consequences of this reliance have been reported to be:

> (1) Industry has determined the areas of the outer continental shelf which are explored and consequently developed.

> ures the magnetic intensity of the earth's field at different points by use of a magnetometer to obtain data regarding the structure of the earth's crust. . . . (4) Electrical, which measures the electrical resistance of the earth from place to place. . . . (5) Geochemical or 'halo' method, which analyzes a series of soil samples gathered with an auger for their hydrocarbon and mineral content.

194 1 OCS STUDY, *supra* note 9, at 185.

195 30 C.F.R. § 250.14(b) (1969).

196 *See* 1 OCS STUDY, *supra* note 9, at 185. *See also* statement of William Pecora, Director, USGS, in *Hearings on S. 7 and S. 544, supra* note 88, pt. 4, at 981.

197 1 OCS STUDY, *supra* note 9, at 185 (emphasis added).

198 This is due to inadequate funding and staffing. *Id.* at 185, 603. *See generally* statement of William Pecora, *supra* note 196, at 988-92.

199 1 OCS STUDY, *supra* note 9, at 603.

200 *See* 30 C.F.R. § 250.34(c) (1969).

201 1 OCS STUDY, *supra* note 9, at 199.

202 *Id.* at 603.

> (2) At the time of lease sales the Federal Government has had less knowledge of the resource involved than bidders for it. It has, therefore, neither been able to efficiently screen the tracts nominated nor effectively evaluate the bids made.
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> . . . .
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> . . . .
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> (5) Both the Federal Government and industry have had less than complete information regarding the extent of the resource at the time of the sale. This factor has had the effect of increasing the revenue from tracts which are later proven to contain no resource or a marginal one and decreasing revenue from tracts which are proven to contain a substantial resource.[203]

The limitations upon the ability of the BLM to act informatively, which arise from its dependence on industry data, are significant at the lease sale stage also. After final selection of the areas to be leased, and when the size of tracts to be offered[204] and the time of offerings[205] have been determined, industry submits its bids. Thereafter, the BLM must decide, on the basis of the evaluation of industry's raw geological data made by the USGS, which bids to reject or accept, and finally, to whom to award the lease.[206] In light of the economic significance that attaches to a lease sale of lands containing vast amounts of publicly-owned natural resources, it goes without saying that "[t]his function of review and analysis would be more complete if U.S. Geological Survey and consequently BLM possessed the knowledge of the bidders regarding the tracts under consideration."[207]

In addition to its significance at the prebidding and lease sale stages of the mineral lease procedure, the lack of geological and geophysical knowledge on the part of USGS has direct consequences on the agency's ability to supervise drilling and production operations once leases have been awarded. Under the general supervisory authority of USGS, regulations in effect prior to the Santa Barbara disaster provided that before any operations were begun, the regional supervisor of USGS was authorized

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[203] *Id.* at 604-05. An additional consequence is that BLM is "vulnerable to the confusion" created by dummy nominations submitted by companies in order to keep their competition off balance and to protect their own evaluations of prelease exploration data. *Id.* at 190.

[204] *Id.* at 191.

[205] *Id.* at 193.

[206] For a discussion of BLM's participation in the bidding procedure in general, see 1 OCS STUDY, *supra* note 9, at 196-98.

[207] *Id.* at 616. *See also* statement of William Pecora, *supra* note 196, at 988:

> We have been asked for facts and general information in areas that we cannot provide because we have not the personnel nor the funds to pursue the acquisition of that information offshore.
>
> The situation on land is much better for us because we have been operating a longer time. But offshore, particularly with respect to the last decade, where the activity has increased geometrically, *we find that we are in an unfortunate position of not being able to provide the information that may be considered adequate to get a fair market value estimate of the leased area itself.* (emphasis added).

to grant lessees "the right of use or an easement to construct and maintain platforms, fixed structures, and artificial islands, and to use the same for carrying on operations . . . ."[208] Once the lessee was prepared to proceed with drilling operations, the Supervisor "shall [have inspected] and [regulated] operations,"[209] and was authorized to act upon the requests, applications, and notices made or given by an operator or lessee under the regulations in this part and to require compliance with lease terms . . . regulations . . . and . . . applicable law."[210]

More specifically, the regulations required that the lessee submit to USGS an acceptable plan for its prediscovery work on the lease.[211] This plan was to include the projected location of drilling rigs, the location and proposed well-casing program of the first well to be drilled on the lease, and "structural interpretations based on available geological and geophysical data."[212] After a discovery had been made on the lease, the lessee was to provide USGS with a plan of development for the lease,[213] which was to specify the number, location, and expected drilling duration of all wells proposed for the lease, plans for additional drilling and production structures, the well-casing program for the area, and supplementary structural interpretations.[214] Furthermore, the development plan was to be approved by USGS, and modification from time to time was permitted if conditions so warranted.

In judging the propriety of the proposed plans, particularly the well-spacing and well-casing programs, the USGS supervisor was to base his determination on what was "necessary for the proper development of the lease, giving due consideration to the location of drilling platforms, the geological and reservoir characteristics of the field, and the number of wells that [could] be economically drilled."[215] On its face, this is another example of the vague standards of supervision discussed earlier.

After approval, and when the well had reached the drilling and production stages of development, the lessee was required to maintain, conveniently available to the supervisor, complete records of well opera-

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208 30 C.F.R. § 250.18(a) (1969). *See generally* 1 OCS STUDY, *supra* note 9, at 230. The lessee must also obtain from the Army Corps of Engineers a permit to build a structure on the Outer Continental Shelf. *Id.* at 232.

Note: Where private corporations attempted to construct their own islands on the Outer Continental Shelf by dredging and bulkheading reefs, and United States sued to enjoin such construction, the court held that reefs were not islands but subsoil and seabed, since they were submerged at mean high water; consequently, reefs came within OCSL Act and a construction permit from Army was required. United States v. Ray, 294 F. Supp. 532 (S.D. Fla. 1969). *See* Comment, 55 VA. L. REV. 1005 (1969).

209 30 C.F.R. § 250.12 (1969).

210 *Id.* § 250.11.

211 *Id.* § 250.34(a). *See also id.* § 250.91.

212 *Id.* § 250.34(a). Information obtained under this regulation is limited in amount and is proprietary in nature. *See* note 200 *supra* and accompanying text.

213 *Id.* § 250.34(b).

214 The qualification in note 212 *supra* also applies to this information.

215 30 C.F.R. § 250.17(a) (1969).

tions.[216] In fact, the lessee could be required to furnish daily drilling reports, "together with such other pertinent information as the supervisor may require."[217]

This authority would seem to imply that USGS had the competence to analyze objectively the particular nuances and geological conditions of each well before operations were begun and as the well was being drilled. The regulations appear to have vested in the USGS supervisor the authority to extract from the lessee's files all the pertinent scientific interpretive data which would be essential for a thorough consideration of drilling and operational plans.

However, as the foregoing discussion indicates, the apparent competence of USGS is illusory: Due to the shortcomings in the manner in which the agency's regulations are formulated as well as in the regulations themselves plus the agency's own incapacity to fend for itself, USGS cannot hope to control the conduct of mineral lessees in a manner sufficient to reduce instances of pollution caused by, say, a malfunction in well equipment, an earthquake, or seepage from fissures which cut through accidentally pressurized producing sands. Although recognizing that USGS cannot be expected to obtain all of the required information on its own, it is clear that the oil industry obtains, albeit through large expenditures, the most complete knowledge about the geology of the submerged lands in question. However, oil companies will not divulge to anyone, including USGS, their data or data interpretations out of fear of competition,[218] a practice in which USGS acquiesces by not demanding dis-

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[216] *Id.* § 250.37(a) states:

The well records shall include:

> [C]omplete records of the production, drilling, redrilling, deepening, repairing, cementing, alterations to casing, plugging, abandoning, and all other well operations, including electrical or radioactive well logs and directional well surveys. The records shall show all the formations penetrated, the content and character of oil, gas, other mineral deposits, or water in each formation; the kind, weight, size, and landed depth of casing used in drilling each well on the leased lands; and any other information obtained in the course of well operations.

[217] *Id.* § 250.37(e).

[218] *See* note 197 *supra* and accompanying text. Oil companies are adamantly opposed to disclosing information which might jeopardize their respective competitive positions. The following statements bear this out:

> Industry's position, stated quite simply, is that the . . . policy of requiring the disclosure to the Government of those closely guarded trade secrets is in direct conflict with the highly competitive free enterprise system under which industry has operated in the past . . . .
>
> In many companies, interpretive data such as geological and geophysical structure maps, paleontological data and similar information are, even within the company, seen only by the person preparing this information and a senior official of the company . . . . Quite understandably, industry is seriously disturbed over the possibility that these interpretive opinions will be seen by numerous Government personnel and . . . even by outsiders.

Statement by Thomas G. Kelliher, vice president, Getty Oil Co., Houston, Texas, before the Public Land Law Review Commission, Feb. 21, 1969 (mimeographed).

> [W]e feel strongly that the federal government should not enter into an

closure of all the information that it could under a careful reading of the regulation. This is termed the nondisclosure rule.

The conclusion that must be drawn from this is that primarily as a result of this nondisclosure rule at no stage in the proceedings from prelease exploration to operational supervision is either BLM or USGS, upon whom BLM must depend, ever in a position to make an independently informed judgment either as to the value or advisability of leasing any particular tract or, once leased, as to the propriety of the lessee's operational conduct. It is submitted that under present conditions—policy, law, regulations, and facts—the USGS has not been in a position to regulate oil industry activity on federal offshore leases in a manner fully consistent with the public interest. The inadequacies of the regulations in

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independent exploratory or developmental program offshore nor do we think that they should require from private individuals or companies additional geophysical or geological information. And specifically, we strongly oppose their requiring *any* interpretive data. . . . To blandly state or assume that matters of this type, if disclosed to a federal agency, would remain confidential is obviously unsound to those who have had experience in dealing with federal agencies.

Letter from Thomas G. Kelliher, vice president, Getty Oil Co., Houston, Texas, to Milton A. Pearl, Director, Public Land Law Review Commission, 1730 K Street, N.W., Washington, D.C., Jan. 6, 1969.

(1) We strongly oppose any action which would cause the release upon request to the United States Geological Survey of highly-confidential interpretive geological data gained at great expense to the permittee and/or lessee and which would cause said data to be made available to the public after ten years and we contend they are in violation of the historical practices and established custom of our free enterprise, competitive and incentive system which has successfully met our nation's fuel energy requirements and which has resulted in great income to the Government.

(2) We strongly oppose the compelled disclosure from a prospective buyer to a prospective seller of information expensively come-by on the part of the buyer when it can be assumed the prospective seller (the Government) is to use this information in order to reject offers to buy when they consider the offers too low, while accepting offers which they may consider to be too high.

(3) We oppose that philosophy of government which would use the taxpayer's dollars to engage the Government as a separate party in geological exploration or in the highly-risky development of offshore mineral resources.

(4) We oppose any action that would allow data, furnished by the permittee and/or lessee to the United States Geological Survey, to be made available to the public after a period of ten years has elapsed. In many cases there will be areas permitted for survey which will not be offered for lease until after the ten-year period has elapsed and the expensive work paid for by an individual operator could be used against that operator competitively by another. This practice will not promote the exploration and development of our offshore mineral resources.

(5) Interpretive data represents private opinions which may be based on optimism or on pessimism as is often shown by the wide range in bids offered for the same tract by different operators. This data constitutes valuable trade secrets and is protected by its owners to the end that only a few individuals having decision-making authority have access to it. . . . [If given to] persons in Government beyond the control of its original owner . . . its confidential status would then be in question, thus destroying its competitive value.

Resolution adopted by the Board of Directors of the Western Oil and Gas Association at a meeting in Los Angeles, Cal., Feb. 19, 1969.

effect at the time of the Santa Barbara oil spill speak loudly and spell out their failures.

REGULATORY INADEQUACIES EXPOSED BY THE SANTA BARBARA SPILL

After having observed the oil slick in the channel for the first time, Secretary of the Interior Walter J. Hickel was reported to have said that the pollution was "as much the fault of the Government as anyone," and that the oil industry had followed the federal regulations but that the rules had not been rigid enough to prevent the pollution.[219] Shortly thereafter former Secretary Udall stated that he alone bore the responsibility for the damage caused by the leak, for although the channel was known to be a geologically faulted area, his department saw no need for stronger regulations.[220] However, no single causation explanation is adequate. Multiple factors are involved and the following circumstances all contributed to the blowout and pollution damage.

First, neither the Outer Continental Shelf Lands Act nor the regulations issued pursuant to its authority prior to the Santa Barbara spill mandated a public hearing before a lease sale. In early January 1968, one month before the sale of the channel leases, Resolution No. 6560 of the City of Santa Barbara was presented to the Department of the Interior.[221] It was a request for a prohibition on the issuance of such leases until the Department could meet for a "full discussion" with state and local officials regarding possible lease restrictions for environmental protection. However, no hearing, public or private, was held, and the city's request was denied on February 9, 1968, three days after the lease sale.[222] The Department's reasons for denying the request were that in its opinion adequate discussions with state and local people had been going on for some time, and the report that the county board of supervisors had submitted to the Department sufficed as a presentation of the community's concern for its environment.[223]

It should be noted here in conjunction with the public hearing issue that the Army Corps of Engineers, pending its determination as to whether to award permits for the construction of drilling platforms in federal waters, has discretion to hold public hearings to consider objections to proposed platforms.[224] Although the procedure followed at the

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219 N.Y. Times, Feb. 4, 1969, at 78, col. 1.

220 N.Y. Times, Feb. 9, 1969, at 1, col. 3.

221 *See* Letter from Russell E. Train, Under Secretary of the Interior, to Milton A. Pearl, Director, Public Land Law Review Commission, Feb. 21, 1969.

222 *Id.*

223 *Id.* The report of the county board of supervisors is discussed in the text accompanying note 95 *supra.*

224 The Secretary of the Army is authorized by the OCSL Act to prevent obstruction of navigation by artificial islands or fixed structures on the Outer Continental Shelf, and must grant a permit before a well rig is constructed. 43 U.S.C. § 1333(f) (1964). *See* 1 OCS STUDY, *supra* note 9, at 235, and statement

time of the Santa Barbara lease sale was such that USGS generally accepted and considered objections to proposed leasing based upon pollution, conservation, and aesthetic grounds, and the Corps of Engineers usually devoted its attention mainly to objections founded on navigation aspects, the Corps nevertheless had the authority to deny a permit for aesthetic reasons.[225]

However, since there was no provison in the appropriate regulations for mandatory or permissible public hearings at any stage in the leasing process, the efforts of the Santa Barbara community to protest the deployment of offshore platforms on aesthetic and other grounds was frustrated. The City of Santa Barbara initiated an objection to the permit application of Union Oil Company's Platform A, but subsequently withdrew it.[226] The Santa Barbara County Board of Supervisors, on prior notification that "the Corps' primary interest was navigation," saw no worth in "going through the futile gesture of asking for a public hearing."[227] Consequently, no public hearing was held by the Department to air objections to the lease sale[228] or the construction of rigs in the Santa Barbara Channel.

A second important conclusion indicated by investigations into the blowout is that USGS lacked sufficient geological and geophysical information regarding the Santa Barbara Channel.[229] It did not have technical information equal to that of the oil companies before the lease sale,[230] and after drilling had begun it was not able to make its own determination as to the previously stated casing variance request independent of "the lessee's presentation."[231]

Aside from the general disadvantages accruing to USGS and BLM from the nondisclosure practice, USGS may have been placed in a particularly bad position in supervising activities in the Santa Barbara Channel because the nondisclosure "rule" precluded the agency from obtaining information concerning geological hazards peculiar to that area. Specifically, it had been well known that the channel was an unstable geologic structure, with sporadic earthquake occurrences and complex subsurface

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of Col. Norman E. Pehrson, District Engineer, Army Corps of Engineers, Los Angeles, Cal., in *Hearings on S. 7 and S. 544, supra* note 88, pt. 3, at 540.

225 *See* statement of Col. Norman E. Pehrson, *supra* note 224, at 541, 549.

226 *Id.* at 540.

227 Letter from George Clyde, Santa Barbara County Board of Supervisors, to Senators Joseph Montoya, Robert Dole, Alan Cranston, and George Murphy, Feb. 24, 1969, printed in *Hearings on S. 7 and S. 544, supra* note 88, pt. 3, at 551.

228 At least 30 objections to the lease sale were registered with the Department of the Interior. See letter from Russell E. Train, *supra* note 221.

229 *See, e.g.*, letter from Russell E. Train, *supra* note 221. *See also* statement of Senator Cranston in *Hearings on S. 1219 Before the Subcomm. on Minerals, Materials, and Fuels of the Senate Comm. on Interior and Insular Affairs*, 91st Cong., 1st Sess., at 13 [hereinafter cited as *Hearings on S. 1219*].

230 Statement of William Pecora, *supra* note 88, at 995.

231 Statement of D.W. Solanas, Regional Supervisor, Oil and Gas Div., U.S. Geological Survey, in *Hearings on S. 7 and S. 544, supra* note 88, pt. 3, at 685.

fault planes.[232] However, since the presence of such faults can be determined only by extensive analysis of seismic and other geophysical data, the absence of such geophysical information would preclude USGS from considering the total hazard potential of the area when it made its leasing recommendations to BLM. This suggestion was verified in an investigation following the oil spill:

> Senator Cranston. . . . Granting that the Government would be better able to evaluate bids with that information regarding the presence or absence of oil, would it also be better able to evaluate the wisdom of granting leases in relationship to the geological faults that might be present if it got the information?
>
> Mr. Cassell. Yes; I think the fuller knowledge they had in their possession would better enable them to judge the wisdom with which leases should be awarded.
>
> Senator Cranston. . . . The absence of that information would seem to me to indicate that the Government let these leases without being able to evaluate whether the bids were good or bad in terms of potential revenues and also has led to the letting of these leases without knowledge of the Government of geological faults and instabilities that were a major contributing factor to the spill that occurred.[233]

A third inadequacy in the regulatory scheme employed at the time of the blowout related to the capacity of USGS to inspect drilling operations in progress. Two USGS employees, a district engineer and a petroleum technician, were charged with overseeing all drilling and production work in the Santa Barbara Channel.[234] Normally, under USGS practice a well is inspected only once during its drilling period.[235] This one-shot inspection procedure has been criticized as falling patently short of adequate inspection:

> [T]he U.S. Geological Survey has not monitored or run a surveillance over these operations that would be adequate enough to protect the public interest.
>
> If you are going to say one visit by one man during the course of a drilling operation is enough, I think you will not find even if you search through the world any approximating unanimity on that particular conclusion.
>
> The oil companies have delivered to the U.S. Government approximately $602 million. That is the figure that has been thrown around here, and that is what is at stake as far as the Government is concerned. If we have to use two men in this

232 *See, e.g.*, statement of Dr. Robert R. Curry, assistant professor, Dep't of Geography & Environmental Sciences, University of California, Santa Barbara, in *Hearings on S. 1219, supra* note 229, at 129.

233 Statement of J.K. Cassell, Standard Oil Co. of Calif., in *Hearings on S. 1219, supra* note 229, at 113.

234 *See* statement of D.W. Solanas, *supra* note 231, at 662.

235 *Id.* at 682. Platform A, however, was not inspected at all during the week and a half of drilling prior to the blowout. *Id.* at 696.

particular area for all these drilling operations, I think that is very poor economy for the public interest.[236]

To recapitulate: three major flaws in the federal regulation of offshore activities were suggested by the channel spill. First, the rules did not insure that hearings would be held to allow objections to the lease sale or the construction of drilling platforms to be stated and answered publicly. Second, USGS did in fact know too little of the geology of the submerged lands which were to be leased; this same lack of knowledge was manifested by the agency's reliance on the lessee's "presentation" in deciding whether to grant the casing variance request. Finally, USGS's supervisory capacity, particularly its inspection procedure, is indeed limited to an extent that the public interest involved is affected detrimentally.

The pollution of the sea caused by the spill precipitated three other problems: (1) It is impossible, under present technology, to abate and control a major oil pollution occurrence at sea;[237] (2) the lack of a single governmental agency to coordinate pollution combatant efforts seriously impairs any cleanup process;[238] and (3) because the drilling regulations

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236 Statement by Senator Joseph M. Montoya, in *Hearings on S. 7 and S. 544, supra* note 88, pt. 3, at 682.

237 The ineptitude of the methods used to combat the Santa Barbara spill caused the President's Panel on Oil Spills to state flatly: "The United States has neither the technical nor the operational capability to cope satisfactorily with a large-scale petroleum spill in the marine environment. The technology does not exist to prevent virtually all of the oil in a massive spill from being deposited on shore." THE OIL SPILL PROBLEM, *supra* note 118, at 6. *See also* Note, *Continental Shelf Oil Disasters: Challenge to International Pollution Control*, 55 CORNELL L. REV. 113 (1969).

It is somewhat ironic that chemical detergents and emulsifiers used to disperse oil on the sea are highly toxic in themselves, and may do as much or more damage to marine life as the oil. Swift, Touhill, Templeton & Roseman, *Oil Spillage Prevention, Control, and Restoration—State of the Art and Research Needs,* in OIL POLLUTION: PROBLEMS AND POLICIES 31, 40, 45-46 (S. Degler ed. 1969).

238 Statement of Paul De Falco, Jr., Director, Pacific Southwest Region, Federal Water Pollution Control Administration, *Hearings on S. 7 and S. 544, supra* note 88, pt. 3, at 806. Numerous federal and California state agencies worked under the direction of the on-the-scene commanders:

> The Federal agencies [included] the Coast Guard of the Department of Transportation, the Corps of Engineers of the Department of Defense, the Office of Emergency Preparedness, the Weather Bureau of the Commerce Department, the Fish and Wildlife Service Bureaus of Commercial Fisheries and Sport Fisheries and Wildlife, the Geological Survey, the National Park Service, and the Federal Water Pollution Control Administration of the Department of the Interior.
>
> The California State agencies included State department of conservation, division of oil and gas and division of forestry; State disaster office, State water resources control board, regional water quality control board for the central coastal area, and the department of fish and game. *Id.* at 806-07.

A report of the inadequacy of the hierarchy of California state pollution agencies is found in N.Y. Times, Feb. 9, 1969, at 77, col. 1.

To coordinate efforts in the future, the President's Panel recommended:

> *Responsibility for developing technology on oil spills should be vested in a single federal authority, with mandates to stimulate private industry involvement and to work coordinately with local governments. . . .*
>
> *Similarly, there is need to assign to a single agency the operational*

prior to the disaster did not dictate standards and methods for preventing and controlling oil pollution,[239] and did not impose sufficient penalties to insure adherence to such rules,[240] they proved inadequate "to deter oil companies from drilling in a manner likely to cause pollution."[241] Pollution control measures and sanctions deserve separate consideration, but since they have been the subject of much recent writing,[242] they will be covered here only to the extent they appear in the regulations promulgated by the federal government in the wake of the Santa Barbara oil spill.

ADMINISTRATION OF MINERAL LEASING— POST-SANTA BARBARA

On February 17, 1969, Secretary Hickel issued a new regulation which provided that:

> If the waters of the high seas are polluted by the drilling or production operations of the lessee, and such pollution damages or threatens to damage aquatic life, wildlife, or public or private property, the control and removal of the pollutant and the reparation of any damage, to whomsoever occurring, proximately resulting therefrom shall be at the expense of the lessee.[243]

Additionally, the regulation provided that if the polluter failed to clean up spilled oil, state or federal authorities could do so at the expense of the lessee. This absolute liability imposition was apparently issued without the approval of the oil companies,[244] and after considerable pressure from the industry,[245] including the initiation of a law suit,[246] the regulation was diluted.[247] Consequently, a polluter is now strictly liable only

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responsibility for dealing with an oil spill. THE OIL SPILL PROBLEM, *supra* note 118, at iii.

239 *See* note 141 *supra* and accompanying text.

240 A violation of applicable regulations issued pursuant to the Outer Continental Shelf Lands Act is "punishable by a fine of not more than $2,000 or by imprisonment for not more than six months, or by both . . . and each day of violation shall be deemed to be a separate offense." 43 U.S.C. § 1334(a)(2) (1964).

241 Note, *Pollution of the Sea*, 1 U.C.D.L. REV. 167, 206 (1969).

242 *See, e.g.*, Mendelsohn, *Maritime Liability for Oil Pollution—Domestic and International Law*, 38 GEO. WASH. L. REV. 1 (1969); Sweeney, *Oil Pollution of the Oceans*, 37 FORDHAM L. REV. 155 (1968); Note, *Continental Shelf Oil Disasters: Challenge to International Pollution Control*, 55 CORNELL L. REV. 113 (1969); Note, *Pollution of the Sea*, 1 U.C.D.L. REV. 167 (1969).

243 34 Fed. Reg. 2503, 2504 (1969).

244 The preface to the new regulation reads:

> It is the policy of the Department whenever practicable, to afford the public an opportunity to participate in the rule making process. This procedure is deemed unnecessary in this case because the amendment involves public property. Furthermore, it is contrary to the public interest to delay the effective date of this amendment. 34 Fed. Reg. 2503 (1969).

245 *See* MacDonald & Easton, *supra* note 115, at 156.

246 *See* N.Y. Times, April 10, 1969, at 1, col. 7.

247 Regulations issued August 22, 1969, and in effect at the time of this writing provide that "[t]he lessee's liability to third parties, other than for cleaning up the pollutant . . . shall be governed by applicable law." 34 Fed. Reg. 13547 (1969).

for the cost of cleanup, but fault must be proved to allow third party recovery for other damages resulting from the pollution.

Effective March 28, 1969, Pacific OCS Order No. 2[248] was replaced by new operating procedures promulgated by Secretary Hickel for federal lessees off the coast of California.[249] Generally, the new order provides that more casing is required on all wells, that blowout prevention equipment and test measures be strengthened, and that additional antipollution devices and pollution control equipment be maintained on or nearby each drilling platform. The casing requirements have been criticized as "not designed to eliminate danger due to seismic damage to well casing and . . . in general not cognizant of variations in sea-floor geologic conditions to be met on the tectonically active western coasts of the United States."[250] Pollution control rules have also been said to overlook the potential hazards of earthquakes and seismic seawaves.[251] "In short, the new regulations will help to offset chances of pollution due to oil spill . . . but major pollution hazards still exist and these federal regulations do not address themselves directly to them."[252]

More significant are the provisions of Pacific OCS Order No. 10 that any major variance from the new casing requirements must be approved by Geological Survey headquarters in Washington, rather than by a field engineer as was the past practice, and that more frequent scheduled and unscheduled inspections are to be conducted by representatives of USGS. Upon analysis, each provision is meaningless. First, what is a "major" variance? Could the type of variance granted before the Santa Barbara spill be granted in the field under the new requirement—bearing in mind that had that particular variance not been granted the spill may not have occurred? Furthermore, there is no benefit in allowing only Washington headquarters to decide whether to grant a variance, because we have seen that the scope of geological and geophysical knowledge is severely limited *throughout* USGS.

The second provision—that more inspections be conducted—is beneficial but impracticable, given the present structure of USGS. Since the budget and personnel resources of USGS are so limited that prior to the Santa Barbara disaster a well could be inspected only once during drilling, there is little chance that more frequent inspections can be conducted until those conditions are improved within the agency. And

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248 *See* note 149 *supra* and accompanying text.

249 OCS Order No. 10, March 28, 1969, in *Hearings on S. 1219, supra* note 229, at 49-53.

250 Addendum to testimony of Dr. Robert R. Curry, assistant professor, Dep't of Geography & Environmental Sciences, University of California, Santa Barbara, in *Hearings on S. 7 and S. 544, supra* note 88, pt. 3, at 647.

251 *Id.* at 648.

252 *Id.* Dr. Curry has made technical recommendations for the prevention of pollution incidents associated with oil well drilling and recovery. *Id.* at 650-52. The recommendations have been reviewed by the USGS. *Id.* at 698-700.

again, inspection and review of the operations on a particular well, no matter how many times repeated, are meaningless unless the inspector has a thorough knowledge of the subsurface geologic structure through which the well is being drilled.

Following the issuance of Order No. 10, the offshore leasing and drilling regulations of BLM and USGS were amended extensively, effective August 22, 1969.[253] Public reception of the new rules has been favorable, although doubt has been expressed that the reformation is complete enough.[254] It will be seen that such doubt is well warranted.

NEW BLM REGULATIONS—INADEQUACIES

A major BLM amendment provides that upon the initial consideration of an area for leasing, the Director of BLM may request that USGS prepare "a summary report describing the general geology and potential mineral resources of the area."[255] He may also, under the same section, "request other Federal agencies to prepare reports describing to the extent known and any other valuable resources contained within the general area and the potential effect of mineral operations upon the resources or upon the total environment." This section may be thought to allow USGS to explore the Outer Continental Shelf, collect geologic and geophysical data on its own, and interpret the information independent of industry sources. Whether that will come to pass is contingent upon budget and staff changes within USGS. At least the potential for federal exploration and federal agency coordination exists within a broad reading of the regulation.

The other principal BLM revision, amending section 3381.4, deals with the responsibilities of the BLM Director in selecting offshore tracts for mineral leasing. Most importantly, he shall "evaluate fully the potential effect of the leasing program on the total environment, aquatic resources, aesthetics, recreation, and other resources in the entire area during exploration, development and operational phases."[256] In making this evaluation, the Director is authorized to consider the recommendations of "appropriate Federal agencies," and he "may consult with State agencies, organizations, industries and individuals."[257]

Although this amendment specifically prescribes an evaluation of

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253 34 Fed. Reg. 13544-50 (1969).
254 *See* N.Y. Times, Aug. 23, 1969, at 26, col. 2.
255 43 C.F.R. § 3381.2, in 34 Fed. Reg. 13549 (1969).
256 43 C.F.R. § 3381.4, in 34 Fed. Reg. 13549 (1969).
257 When the Department of the Interior published its *proposed* amendments in the Federal Register, in accordance with BLM rulemaking procedure, section 3381.4 did not authorize the Director to consult with "industries." After comments from the "public" were reviewed and the new draft finalized, "industries" appeared in the regulation. *Compare* 34 Fed. Reg. 9932 (1969), *with* 34 Fed. Reg. 13549 (1969). *See also* note 266 *infra*.

resources and the effects of leasing upon the environment, it affords little change from prior practice toward accomplishing a valid evaluation. First, public hearings continue to be discretionary. There is no assurance that those who oppose the selection of certain tracts for leasing will be heard beyond the arbitrary confines of the files of the Department of the Interior. Also, there is no statement in the rules as to how the effects of leasing upon the total environment are to be weighed against the monetary interests of those who desire the leasing.[258]

Of special interest is the provision within revised section 3381.4 that "[t]he Director shall develop special leasing stipulations and conditions when necessary to protect the environment and all other resources, and such special stipulations and conditions shall be contained in the proposed notice of lease offer." This rule may be interpreted to mean that USGS can compel oil companies to disclose all of their geological and geophysical data and interpretations as a condition precedent to participation in lease sales. Assuming that USGS could digest such information and make use of it in its supervisory capacity, this regulation would be a long step in the desired direction of ensuring that the regulatory agencies have adequate knowledge of the lands to be leased and the geologic structures through which the wells are to be drilled. On the other hand, what develops in practice under this new regulation unfortunately may be similar to the situation under the prior regulations.[259]

NEW USGS REGULATIONS—INADEQUACIES

The most publicized accomplishment of the new regulations pertinent to USGS supervised operational activities is that the technical requirements for well casing, cementing, drilling mud, and blowout prevention equipment are strengthened.[260] Notwithstanding this publicity the fact is that the policy foundations of the new USGS regulations are not

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[258] It is interesting to note that between the time of the publication of the Department of Interior's proposed amendments and the effective date of the new rules, the oil industry publicly opposed the federal government's plan to hold public hearings and make full evaluations of the effects of any leasing on the total environment. *See* N.Y. Times, Aug. 3, 1969, at 37, col. 3.

[259] See note 212 *supra* and accompanying text.

[260] *See* 30 C.F.R. § 250.41, in 34 Fed. Reg. 13546 (1969). Certain things must be taken into account in drilling wells:

> The design of the integrated casing, cementing, drilling mud, and blowout prevention program shall be based upon sound engineering principles, and must take into account the depths at which various fluid or mineral-bearing formations are expected to be penetrated, and the formation fracture gradients and pressures expected to be encountered, and other pertinent geologic and engineering data and information about the area. 30 C.F.R. § 250.41(a), in 34 Fed. Reg. 13546 (1969).

Of course, the regulatory agency can be sure that the rule is being complied with only if the agency itself is cognizant of the variables and "other pertinent geologic and engineering data." Therein lies a limitation upon the effectiveness of the new technical regulations.

different than they were under the prior rules.[261] Additionally, certain changes in the general supervisory functions of USGS demonstrate that the nature of the new regulations, rather than correcting the inadequacies of the old ones, have legitimatized the prior procedure of rule formulation and implementation. The regional supervisor now has the authority to issue OCS Orders and other rules "to govern the development and methods of production" of an area[262] and where it is necessary "to effectively supervise operations and to prevent damage to, or waste or [sic], any natural resource, or injury to life or property."[263] *However*, prior to issuing orders relating to the development of an area, the supervisor *may* consult with lessees, operators, and other interested parties;[264] and before prescribing orders to prevent damage or injury to natural resources, life, or property, he "*shall* receive . . . advice from lessees, field officials or interested departments and agencies . . . and representatives of State and local governments."[265]

Thus, the regulations now explicitly provide for USGS reliance upon industry advice and assistance in the formulation of operational regulations.[266] Therefore, since the new regulations do not definitely provide for the disclosure of industry's scientific data,[267] the dysfunctional predicament we have seen USGS placed in under the prior rules has not been alleviated in any respect.

The regional supervisor is authorized to approve "minor departures" from OCS Orders and other regulations when he deems it necessary, but "major departures" must be approved by the Chief, Conser-

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261 Prior policy is discussed at note 136 *supra* and accompanying text.

262 30 C.F.R. § 250.11, in 34 Fed. Reg. 13544 (1969).

263 30 C.F.R. § 250.12, in 34 Fed. Reg. 13544 (1969).

264 See note 262 *supra*.

265 See note 263 *supra* (emphasis added).

266 The regulations proposed by the Department of the Interior did not include the rule that the USGS supervisor shall receive advice from or consult with lessees, either in devising orders for the development of an area or in preventing damage, waste or injury. *Compare* 30 C.F.R. § 250.11 and .12, in 34 Fed. Reg. 7381 (1969), *with* 30 C.F.R. § 250.11 and .12, in 34 Fed. Reg. 13544 (1969).

Also, the proposed regulations, unlike the finally adopted rules, would have given the supervisor the power to "issue OCS orders amplifying the requirements of the regulations . . . when such amplifications apply to an entire region or a major portion thereof." 30 C.F.R. § 250.11, in 34 Fed. Reg. 7381 (1969).

267 Section 250.97 of the new USGS regulations provides that all scientific data, maps, and interpretations that come into USGS hands shall remain unavailable for public inspection "so long as the lease remains in effect or until such time as the supervisor determines that release of such information is required and necessary for the proper development of the field or area." 30 C.F.R. § 250.97, in 34 Fed. Reg. 13548 (1969).

The same section, as proposed by the Department of the Interior, would have allowed public inspection of that information when it was "administratively determined that release of such information is required and necessary for the proper development of the field or area or *otherwise in the public interest*." 30 C.F.R. § 250.97, in 34 Fed. Reg. 7385 (1969) (emphasisa dded).

A liberal construction of the latter, had it been accepted, would permit USGS and BLM to obtain information necessary to effectively evaluate areas proposed for leasing and supervise drilling and production operations.

vation Division, of the Geological Survey.[268] Again, as in the earlier OCS Order No. 10, the distinction between minor and major is left ambiguous.

The final significant amendment to the USGS regulations is that the supervisor may "suspend any operation, including production, which in his judgment threatens immediate, serious or irreparable harm or damage to life, including aquatic life, to property, to the leased deposits . . . *or to the environment.*"[269] He may also suspend any operation, including production, if the lessee fails to abide by applicable law, lease terms, regulations, or other orders.[270] These provisions are beneficial.[271]

Taken together, the new orders and regulations issued in response to the Santa Barbara oil spill appear to rectify most of the shortcomings of the old regulations. Polluters, after the oil industry vented its wrath before the Department of the Interior, are now strictly liable only for any cleanup costs arising out of their pollution. More comprehensive drilling and production operational requirements, including more frequent inspections and the utilization of antipollution and pollution control devices, have been imposed by OCS Order No. 10 and the revised USGS regulations. Under the new BLM rules, the effects of leasing upon the environment are to be considered in lease selection procedure, and the coordination of related federal agencies is suggested. Also, the BLM amendments may be read broadly to call for an end to the nondisclosure rule, or at least to authorize independent federal geological and geophysical data collection and interpretation.

However, the disadvantages of the nondisclosure rule pervade the entire regulatory scheme, and in effect neutralize the apparent benefits of the revised regulations. Since the federal government has not obtained information relative to the geology of its offshore lands, and because the oil industry will not divulge its information, the federal government can not correctly evaluate the worthiness of leasing particular lands, nor can it meaningfully accept or reject competitive bids on proposed leases. Further, without mandatory public hearings, objections to lease proposals based upon third party knowledge and concern of possible adverse effects of leasing will not be heard. After the letting of a lease, the federal government cannot disapprove proposed lease development plans on the basis that the plans do not take into account the geology of subsurface formations and the potential pollution hazards there-

268 30 C.F.R. § 250.12(b), in 34 Fed. Reg. 13544-45 (1969).
269 30 C.F.R. § 250.12(c), in 34 Fed. Reg. 13545 (1969) (emphasis added).
270 30 C.F.R. § 250.12(d)(3), in 34 Fed. Reg. 13545 (1969).
271 The adopted regulation on suspensions is considerably more lenient than that proposed by the Department of the Interior. Whereas the latter did not provide for a time limit on suspension, the former does. *Compare* 30 C.F.R. § 250.12(c), (d), in 34 Fed. Reg. 7381 (1969), *with* 30 C.F.R. § 250.12(c), (d), in 34 Fed. Reg. 13545 (1969).

in, because the Government is not at all cognizant that those particular formations and hazards exist. For the same reason, federal supervision and inspection of drilling and production operations are of questionable value. Written orders and requirements may be sound technically, but if enforced in a manner so as to allow deviation on the advice of the regulated party, then the rules are but shams.

PROPOSALS

Many solutions have been suggested to reform the administration and management of offshore activities on the federal portion of the Continental Shelf.[272] One is that an adjacent state should be allowed to regulate operation activities on federal submerged lands off its coast.[273] This would provide no guarantee, however, that the quality of supervision would supersede even that of the present inadequate federal regulations. Additionally, offshore operators would be frustrated unjustifiably by a myriad of inconsistencies in the states' requirements.

Another proposed solution is that USGS conduct geological and geophysical explorations, on its own or by private contract, to relieve its reliance upon industry data. USGS would then supply its information to the oil industry. This has several advantages, not the least of which are that the federal government would be able to select lease tracts having the greatest productivity potential,[274] and that USGS would be a knowledgeable supervisor and regulator of drilling activities. The disadvantages of this proposal are, in part, that the cost of USGS exploration might not be offset by increased revenues from the resultant better selection of lease tracts, and that the industry would duplicate exploration spending since the companies probably would not care to rely upon government information.[275] Accordingly, these two alternatives should be rejected as unsatisfactory, and the following proposals should be adopted.

First, a clarification of federal policy is necessary to define the

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[272] A compilation of some of the alternatives is found in 2 OCS STUDY, *supra* note 9, at 12-D-1.

[273] Prior to the Santa Barbara disaster, California had requested that it be authorized to regulate federal leases in the channel. *See* statement of Kerry W. Mulligan, chairman of the California Water Resources Board, in *Hearings on S. 1219, supra* note 229, at 82-83.

Ironically, in congressional investigations of the pollution incident, it was demonstrated that California offshore regulations are more adaptable to varying geologic conditions and require the disclosure of more scientific data than do the federal regulations. *See* statement of Francis J. Hortig, Executive Officer of the California State Lands Division, in *Hearings on S. 7 and S. 544, supra* note 88, pt. 3, at 475; statement of James G. Stearns, Director, Department of Conservation, State of California, *id.* at 605. *See also* General Summary of Federal and State Regulatory Procedures for Offshore Oil and Gas Exploration, Drilling, and Development, in *Hearings on S. 1219, supra* note 229, at 164.

[274] *See* 2 OCS STUDY, *supra* note 9, at 12-D-11.

[275] *Id.* at 12-D-12.

standards and priorities which attach to offshore resource exploitation. No longer is it sufficient to dwell solely upon the "urgent need" for the development of resource deposits of federal submerged lands. Conflicting uses of the marine environment and the potential impairment of aesthetic qualities of the total environment must be considered on equal grounds with the traditional influence of the private and public quest for new revenues, which has in the past brought about the despoilation of so much of man's environment.

Toward this end, public hearings should be established as a mandatory part of the leasing process. Since the Santa Barbara disaster has demonstrated that large areas and many communities can be affected by the blowout of one well, when a community fears that its livelihood or aesthetic attractiveness will be jeopardized in the event of leasing, the community must be heard. Furthermore, the community deserves ample, informed assurance that its fears are malapropos, and that the drilling will be conducted under the supervision of a competent regulatory agency. However, since the validity of hearings of this nature will turn on the degree of knowledge possessed by the attending adversaries, a second keystone proposal is necessary.

It is simply that oil companies should be compelled to divulge to USGS all of their geological and geophysical data and interpretations at the time they nominate areas for future leasing, or at the time BLM offers tracts of known productivity potential. Failure to provide that information should preclude a company from participation in the lease sale. Concurrently, USGS must be revitalized to enable it to digest and apply that information in its supervisory functions, as the tract selection advisor to BLM, and in writing its own regulations free from the influence of "interested parties." Most importantly, USGS would then be an *independent* administrative agency,[276] and would be capable of analyzing lease nominations, development plans, and daily operational methods from its own source of knowledge.

As an adjunct to these proposals, the recommendations of the President's Panel on Oil Spills that sufficient technical and operational capabilities be devised to cope satisfactorily with large scale marine oil spills, and that a single federal agency be authorized to develop and coordinate multi-government and multi-agency programs for pollution prevention, must be implemented. If the beneficial *and* harmful foreseeable consequences of a proposed lease sale are weighed against each other at public hearings in which the advocates of all the involved interests are sufficiently informed, and if knowledgeable supervision of operations

[276] A recent book of interest is L. KOHLMEIER, THE REGULATORS (1969), which documents the thesis that administrative agencies, established to protect the public interest, frequently align themselves more closely with the interests of the industry they are charged with regulating.

and adequate hazard control devices exist, oil exploitation on the Outer Continental Shelf surely can be accomplished consistent with the public interest.

The mismanagement of ocean resource development, as demonstrated by this analysis of the Santa Barbara oil spill, has enormous implications for the relationship of ocean technology and the quality of the world environment. We know that the ocean offers tremendous natural resources which can be exploited for the benefit of mankind. But if the errors already committed in the regulation of resource development, even at this early stage in ocean technology, are allowed to continue as man ventures further and deeper into the sea, catastrophes many times more detrimental than the Santa Barbara leak may occur.

The stumbling blocks in the path to beneficial and prudent resource development, however, are that the nations of the world have not yet established an orderly process for distributing rights to the sea's resources, and that the exploitation of resources is not regulated—at least by the United States— in a way that protects against degradation of the environment as well as it promotes the quest for public and private revenues. With each new technological achievement moving him further out from shore, man must address himself to the task of devising an internationally acceptable legal system to be applied to the high seas and deep seabed in order to insure that all possible protective measures are taken to prevent despoilation of the sea. If the necessary awareness and initiative are lacking there remains little hope of conserving the environment of the oceans, and of the world.