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Model Legislation for the Administration of Subaqueous Hard Mineral Resources within Virginia Waters

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MODEL LEGISLATION FOR THE ADMINISTRATION OF SUBAQUEOUS HARD MINERAL RESOURCES WITHIN VIRGINIA WATERS

A Thesis

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Master of Arts

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William Jeffery Wardrop

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APPROVAL SHEET

This thesis is submitted in partial fulfillment of

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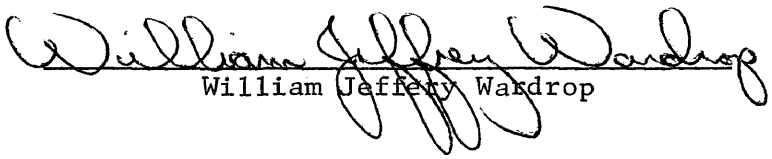

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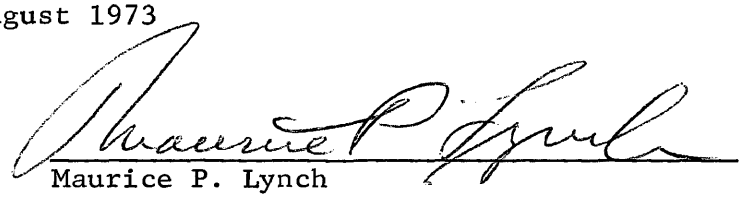

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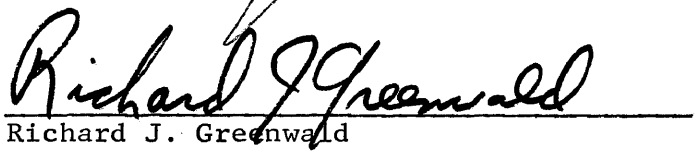

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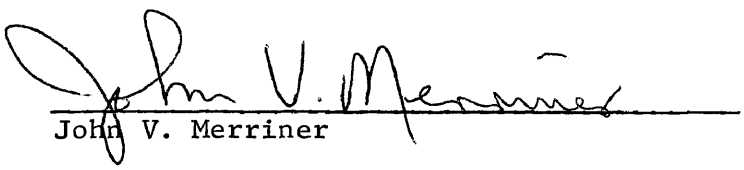

John V. Merriner

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ABSTRACT

Projected development of subaqueous hard mineral resources within the territorial waters of Atlantic coast states provided the impetus for the construction of a model legal regime in order to regulate such activity. The model was drawn up to comply with the specific legislative requirements of the Commonwealth of Virginia, but with minor modification it can be applied to most other Atlantic coast states. Present United States coastal state statutes on this subject were judged inadequate, therefore, the primary framework of the model was based on national legislation and domestic and international legislative proposals concerning offshore mining.

Virginia's most immediately promising marine hard mineral resources are sand and gravel. Present Virginia statutes were judged not sufficiently detailed to adequately handle marine sand and gravel exploitation, especially on the large scale that is predicted in the near future. A resurvey of Virginia's Baylor ground is recommended in order to facilitate the administration of subaqueous mineral exploitation. Leasing of mineral resources under the auspices of the Virginia Marine Resources Commission as has been the custom in the past is recommended.

A total of thirty-two sections of a model marine mineral law are discussed and analyzed with respect to conformance with present Virginia statutes. Key features of this legislation include: the assignment of the management function to the Virginia Marine Resources Commission; the adoption of a policy to encourage offshore development; the creation of a single, two-phase exploration and exploitation permit; and the inclusion of a pioneering clause.

MODEL LEGISLATION FOR THE ADMINISTRATION OF SUBAQUEOUS HARD MINERAL RESOURCES WITHIN VIRGINIA WATERS

INTRODUCTION

On January 9, 1969, the Commission on Marine Science, Engineering and Resources presented a comprehensive report on the status and future of marine science in the United States.[1] One section of the report dealt with the Federal government's role in the field of offshore mineral development. It stated:

> Many mining spokesmen have indicated that industry will undertake the costs of detailed surveys and development of mineral recovery technology. The government's role should be to provide . . . a proper legal-political-fiscal environment to permit the industry to develop on its own much of the required technology.[2]

Some industries are ready to engage in the exploitation of offshore hard mineral deposits, awaiting only the proper legal and administrative climate.[3] For this reason, it is appropriate for the states to undertake the task of creating legal regimes to govern offshore mineral development within the limits of their seabed resource management jurisdiction. This paper represents the first such attempt for the Commonwealth of Virginia.

The ability of an individual state to provide direct fiscal support to industry is limited because of state budgetary constraints. A state may, however, adopt favorable legal-political policies to encourage mineral development within its territory. These policies may take the form of exclusive exploitation rights for operators engaging in high risk operations, tax incentives, less stringent operating requirements or a myriad of other favorable conditions. A

state should, however, ensure that proposed favorable policies will not compromise environmental standards, nor allow the operator to engage in operations which would pose unnecessary risks to environmental quality. It also must not create or perpetuate monopoly or compromise the maintenance of public order.

Both industry and environmentalists have strong views as to how marine mineral exploitation should be conducted. Legislation adopted should be a compromise of opposing views taking into account environmental imperatives while providing proper protection of public rights and encouraging private enterprise and the production of value. It is the intent in this paper to present model legislation based on three assumptions. First, it has been assumed that there are legitimate businesses interested in and capable of developing hard minerals offshore.[4] Second, with increasing use rates and diminishing onshore supplies, greater attention will be focused in the near future on the search and recovery of minerals lying on the continental shelf and beyond.[5] Third, it will be necessary to offer industry certain legal predictability and incentives in order to promote offshore development due to the high risk and expense associated with this activity.

Limited information is available as to the extent of mineral deposits below the waters of the Chesapeake Bay and offshore Virginia. Deposits of sand, gravel, shell, and heavy minerals would seem to offer the greatest potential for exploitation by industry.

Sand and gravel (considered a single resource throughout this paper) offers the most promising opportunity for immediate exploration and exploitation. There is an estimated two billion tons of sand on

the inner shelf floor off Chesapeake Bay and gravel is distributed in patches mainly along the 20-30 meter isobath.[6] The technology to exploit this resource is available and economic conditions are favorable. Over $15,000,000. worth of sand and gravel are used in the Norfolk metropolitan area yearly and this area provides a ready market for large amounts of the material.[7] Due to its close proximity to the mining area, transportation costs for the operator would be low.[8] A hypothetical case study has shown that such an operation is economically feasibly utilizing a large hopper dredge.[9] Offshore deposits become more promising as land sources close to market are exhausted or removed from production.[10] Virginia and other Atlantic coast states consume large amounts of sand and gravel as construction aggregates. Prices (1971) in Virginia are approximately $1.12 per ton for sand and $1.72 per ton for gravel.[11]

Shell material within Chesapeake Bay is abundant, but many deposits are not available for exploitation at present due to their proximity to living oyster reef.[12] Relict deposits have been located off Virginia's coast and represent a potential mineable resource.[13] Size of these deposits relative to profitable exploitation has not been determined.

Heavy mineral deposits occur a few miles east of Virginia's barrier islands. Areas yielding samples containing 10 per cent to 20 per cent by weight of garnet, magnetite-ilmenite, hornblende, epidate, kyanite, sillimanite, andalusite, apatite, tourmaline, rutile and zircon have been located.[14] Ilminite (iron titanium oxide), rutile (titanium oxide) and zircon (zirconium silicate) are economically

important minerals occurring in combined percentages of 1 per cent to 1-1/2 per cent. Present technology has not been developed for separation of heavy minerals on a large scale and is the retarding factor in industrial development of an offshore heavy mineral industry.

Marine phosphorite deposits extend along the eastern coast of the United States from Florida to Virginia.[15] The lower Chesapeake Bay and offshore Virginia areas also are known to contain continuous phosphatic sediments of greater than 1 per cent P_2O_5.[16] Marine deposits of phosphorites have not been commercially exploited due to competitive land deposits and a lack of inexpensive development technology.[17] These deposits have great economic potential, but development cannot be expected in the near future. Many of these minerals are not being processed from subaqueous sites at present, but such sites have sufficient potential value to warrant additional exploratory mapping of deposits and improvement of mining and recovery technology.

Mineral resources off Virginia's coast are considered no richer than those of other middle Atlantic coast states. Thus, development of offshore, hard-mineral operations in this area could be greatly influenced by the legal climate of individual states. Industry would develop in that area which afforded the operator the most favorable and predictable conditions for exploitation.

Widespread speculation as to the true value of hard-minerals in the mid-Atlantic region is a product of insufficient offshore exploration in the area. Existing research on hard-minerals largely concerns surface deposits and hard-mineral deposits below the

surface of the sea-floor are poorly known.

Major problems facing development of marine hard-mineral mining concern the environmental effects of such activity. The presently accepted method for these operations is the use of a suction dredge. The operation may result in the suspension of large amounts of sediment and most probably the removal of substrate. The extent of damage caused by these operations can only be guessed and there exists a definite need for extensive study on these problems.

This model will provide incentive for further work as well as a basis for the enactment of a Virginia statute to govern the exploration and exploitation of hard-mineral resources within the area of Virginia's jurisdiction over these activities. This legislative recommendation is not drawn up to provide an immediate answer to a pressing problem. Quite often, legislation drawn up in a stop gap manner has shortcomings which become obvious after enactment. Careful planning and review are needed for rational allocation and management of offshore mineral resources.

METHODS

The study included an examination of coastal state law and Federal and International statutes and proposals. Major firms interested in offshore development were also polled for suggestions concerning provisions they would like to have included in any new legislative proposals. Because hard minerals offer the most immediate potential for economic development in Virginia, the decision was made to construct model legislation dealing exclusively with hard minerals.[18] The Deep Seabed Hard Mineral Resources Act[19] and the United States Draft of the United Nations Convention on the International Seabed Area[20] provided the basic framework from which the final model was constructed.

In studying present Virginia law which may have been applicable to model legislation, the Code of Virginia, 1950, was used extensively. In addition to this, research was carried out at the offices of the Virginia Marine Resources Commission in order to understand how existing laws have been applied.

HISTORICAL BACKGROUND

In order to understand the rationale behind the model legislation, an understanding of certain background information is desirable. The question of state versus federal jurisdiction of subaqueous offshore lands has had a brief but complex history which is summarized in the section entitled "the tidelands controversy." The remainder of the background information concerns actions, statutes, and conditions particular to the Commonwealth of Virginia which have some bearing on the formulation of offshore legislation for this state.

THE TIDELANDS CONTROVERSY

Prior to 1937, individual states exercised control over their adjacent seabed with no interference from the Federal government. In fact, between 1933 and 1937, mineral lease applications to the Federal government were rejected on the basis that the states owned the land.[21] However, in 1937 the Secretary of the Interior intimated that the Federal government would soon be leasing offshore oil and gas rights.[22] That same year, Congress also participated in an unsuccessful attempt to establish Federal ownership of the seabed for a distance of three miles from shore.[23] In 1945, the United States initiated original action in the Supreme Court against the State of California to prevent the state from granting oil and gas leases within three miles of its coastline.[24] The Supreme Court ruled in favor of the Federal government stating that the states had no right or jurisdiction over the adjacent seabed. This ruling, delivered in 1947, also called for the appointment of a Special Master to determine the line of ordinary low water in California, as this was to be the extent of state jurisdiction.[25] The Federal government then filed similar suits against Texas and Louisiana, and in 1950 the court ruled against both states.[26]

Strong sentiment in Congress for the plight of the coastal states resulted in the passage of the Submerged Lands Act in 1953.[27] The effect of that action was to quitclaim to the coastal states those

lands considered theirs prior to the original California ruling. The Act granted the states control over the submerged lands out to a three mile limit, but not to exceed three marine leagues (10.25 statute miles).[28] The constitutionality of the Act was challenged and upheld by the Supreme Court in 1954 in Alabama v. Texas.[29] The granting of a three marine league boundary was to be based on historical precedent. Texas was granted a three marine league boundary it claimed when it entered the Union in 1845. Florida was granted three leagues in the Gulf of Mexico since this was one of the provisions of its constitution upon readmission to the Union after the Civil War. Other coastal states were restricted to the three mile limit.

With the Outer Continental Shelf Lands Act of 1953, the United States extended its jurisdiction to all the outer continental shelf land not quitclaimed to the states by the Submerged Lands Act.[30] Disputes between the states and the Federal government continued after the passage of the Submerged Lands Act. The failure of the Supreme Court to specify base lines from which the three mile limit was to be measured resulted in several jurisdictional disputes between federal and state leasing authorities. Louisiana claimed that the inner boundary should not be its highly irregular coastline, but rather a Coast Guard Line established (for navigational purposes) by Congress and previously approved by the state.[31] The Supreme Court enjoined both governments from leasing in July of 1956. An Interim Agreement had been reached by October of that year which divided the offshore area into four zones. Zones one and four were administered exclusively by the State and Federal governments, respectively.[32] Lands in Zone

two would be leased only with mutual approval by state and federal authorities to prevent oil drainage, and approval of both parties was necessary. The Secretary of the Interior in consultation with the State of Louisiana could lease lands in zone three.[33]

In their confrontations with the Federal government over subaqueous bottomlands, the states usually received unfavorable rulings from the Supreme Court. The advent of new drilling techniques gave offshore operations greater range and thus required a determination as to the seaward extent of California's boundary. In 1965, the Supreme Court refused to consider the Santa Barbara Channel as an inland waterway.[34] The state's attempt to establish a straight baseline method for boundary determination was also rejected at that time.

In 1967, the Court ruled that permanent artificial jetties could not be used as inner baselines in Texas. The Court ruled that acceptance of the 1845 boundary of three marine leagues made the shoreline as it existed in 1845 the baseline from which the jurisdictional boundary must be measured.[35] This, of course, settled the question of baselines for the State of Texas alone. Furthermore, the Court ruled that only eroded lands would be subject to an ambulatory coastline while accreted lands would not.[36] The Supreme Court recognized the inequities of the situation and blamed Congress for the result due to passage of inadequately defined legislation.

The State of Maine precipitated a new confrontation with the Federal government in 1969 by granting exploration rights for oil and gas to a private corporation on some 3.3 million acres of

submerged land lying up to 100 miles off the coast of Maine.[37] The United States brought suit against the thirteen Atlantic coast states for a final determination of its rights in all lands and natural resources of the bed of the Atlantic Continental Shelf more than three geographical miles from the coastline.[38] The Atlantic coast states are separately and independently asserting claims that rights granted by the British crown are still in effect. Virginia is claiming validity of early Royal charters--which grant a 100-mile zone to the state.[39] A Special Master was appointed in June, 1970, to gather testimony on this matter. At the present time no ruling has been handed down.

The basic proposals in this paper would be unaffected by a decision extending Virginia's rights beyond the three mile limit even though the seaward extent of Virginia's boundary is still in contention. An extended jurisdictional boundary would probably precipitate a great deal more interest in offshore development and would greatly increase the worth of Virginia's offshore resources.[40] Judging by the past actions of the Supreme Court, it seems unlikely that the states may expect a favorable ruling. Various alternatives to determining the baseline for Virginia have been described but at present, no official decision has been reached.[41]

PRESENT VIRGINIA STATUTES PERTINENT TO SUBAQUEOUS MINERAL DEVELOPMENT

Present Virginia statutes pertaining to mineral development may be found in Title 45.1 of the Code of Virginia. As this legislation was drawn up with the intent of regulating primarily coal mining, only a few sections have relevant application to the creation of new legislation governing offshore mineral development.

While this particular legislation does not provide the proper framework for offshore mining, certain provisions of this title can serve as useful guidelines in drawing up model legislation. Chapter 1 defines the General and Administrative Provisions dealing with mines and mining. Chapter 1, Section 45.1-21, paragraph (k) is a relevant provision in that it requires an annual report to the Division of Mines by the operator stating the names of operators and officers of the mine, the quantity of minerals removed and such other information as required by the Division. This section thus provides the state with data helpful in monitoring the extraction of the particular mineral and information needed for imposing fiscal requirements on the operator. Section 23 provides for a $25.00 license fee and Section 25 imposes fines of $25.00 to $200.00 per day for operating without a license.

Chapter 10 concerns itself with the "Rights of Adjacent Owners." The chapter contains only two sections, the first being of some

relevance to this study. Section 45.1-102 requires the consent of the adjacent property owner be obtained when operating a mine within five feet of another person's property line. Due to the very nature of water to more readily transport pollutants, silt, or other potentially damaging material from an offshore mine site, this statute is not suitable to be directly applied underwater. The remaining section of Chapter 10 allows for surveys to determine whether or not adjacent property is being trespassed upon. Since almost all subaqueous land is under state ownership, there would be little problem in this respect, unless two adjacent plots were issued under permits to two businesses.[42]

Violations and Penalties are provided for in Chapter 11. Penalties defined provide a general estimation of the severity with which the state treats offenders but are not directly applicable to an offshore situation.

The Commonwealth's Oil and Gas Code is defined in the thirty-eight sections in Chapter 12 of Section 45.1, and includes permit requirements, bonds, application fees, provisions for public hearings, lease terms, production requirements and penalties for noncompliance. The legislation allows many of the engineering specifications to be enumerated by the Chief Mine Inspector, rather than by actual statutes. It is evident throughout this legislation that its application is exclusively for development of oil and gas from onshore operations. The development of offshore oil and gas requires new legislation because of differences in technological requirements and the medium in which the work occurs. The requirements for bonds, public hearings,

development deadlines, et cetera are applicable to offshore operations with some modifications in terminology as befits marine based operations relative to land based operations.

Reclamation of the mine site is an environmental concern which has only recently been emphasized to any degree. Legislation concerning site reclamation was drafted and enacted as Title 45.1, Chapter 15 of the Code of Virginia in 1968. These sections require submission and approval of plans for reclamation of the mined area before a permit is granted. An additional bond is required and provisions are made for the inspection of reclamation projects. Injunctive relief can be sought if the operator is not responding to other methods forcing compliance. Mine site reclamation is an important aspect, as it is a measure which may reduce the long-term ecological impact of the development activity. Due to the greater awareness of environmental considerations, any new legislation should doubtlessly carry some requirements for necessary reclamation.

Title 45.1 is legislation adequate to govern onshore mining of hard minerals and oil and natural gas. The language in which the law was written makes it abundantly clear that consideration was never really given to offshore development. This is not surprising in view of the fact that there is no previous or existing history of substantial demand for this type of activity in Virginia.

Title 28.1 concerns itself with fish, oysters, shellfish and other marine life. It specifies the Marine Resources Commission's duties and responsibilities along with those of its Commissioner. Chapter 2, Section 28.1-23 describes the Commission's authority to

enact regulations. This is of particular importance in that any offshore legislation should be structured to allow the Commission to react to each unique situation in a timely and nondiscriminatory manner rather than presenting a rigid set of rules in the enabling legislation. The majority of this portion of the Code is of relatively little importance to the proposed legislation. Two provisions govern the use and sale of shell material (28.1-138 and 142) but neither address themselves to its extraction in the sense of mining activity.

Section 33.1-117 provides for the taking of road materials from streams, rivers, and watercourses for use by the State Highway Department. Basically, it gives the department the right to extract these minerals after approval of the plan of extraction by the Marine Resources Commission. This legislation does not conflict with proposals contained in this paper.

Title 62.1 deals with "Waters of the State, Ports and Harbors" and is the most important existing legislation relative to the subject of offshore hard mineral development. Section 1 states:

> All the beds of the bays, rivers, creeks, and the shores of the sea within the jurisdiction of this Commonwealth, and not conveyed by special grant or compact according to law, shall continue and remain the property of the Commonwealth of Virginia and may be used as a common by all the people of the States for the purpose of fishing and fowling, and of taking and catching oysters and other shellfish, subject to the provisions of Title 28.1 and any future laws that may be passed by the General Assembly . . .

No person can ". . . build, dump, or otherwise trespass upon or over or encroach upon or take or use any materials . . ." from the beds of Virginia's waters without statutory authority or a permit by

the Marine Resources Commission. Section 62.1-3, thus, calls for approval from the Marine Resources Commission and the State Water Control Board for any use of subaqueous beds. The regulation of dredging and construction below mean low water were the main activities to which this section is addressed. Permit fees of $25. or $100. are established depending on whether or not the project cost is above or below $10,000. Provision is included for the assessment of other lawful fees. Applications requiring dredging call for an assessment of ten cents per cubic yard removed except in the case of maintenance dredging. All royalties are to be credited to the Special Public Oyster Rock Replenishment Fund. Any and all agreements made under this section are subject to approval by the Attorney General and the Governor.

Chapter 19 of Section 62.1 is concerned with the Dredging of Sand and Gravel. It gives riparian owners rights to dig sand and gravel from deposits which extend uninterruptedly from the low water mark into abutting tidal water, and compensation for the loss of this right through condemnation. The main intent of the legislation is to prevent degradation of the shores of the State. Subaqueous beds are concerned only when they are continuous extensions of deposits on private property. Although the riparian owner has certain rights, the State retains title to the subaqueous land and can require the owner to meet requirements before resource utilization such as those outlined in this model legislation.

Section 62.1-4, entitled "Granting easements in and leasing of the beds of certain waters," allows the Marine Resources Commission

to grant easements and leases on all subaqueous beds except Baylor ground with the approval of the Attorney General and the Governor. The initial rental period is for five years, as is each subsequent renewal period. Rents and royalties are determined by the Marine Resources Commission as those deemed expedient and proper. The easements and leases allow for the prospecting and taking from the bottoms of gas, oil, minerals and mineral substances provided they do not interfere with the rights granted to the people of Virginia as specified in Section 62.1-1. Income from these rents and royalties is to be credited to the Special Public Oyster Rock Replenishment Fund as in Section 62.1-3. Reports of all leases are required to be submitted to the General Assembly annually. This is the only legislation which presently addresses itself to offshore mineral development in the Code of Virginia.

A HISTORY OF SECTION 62.1-4--GRANTING EASEMENTS IN AND LEASING OF THE BEDS OF CERTAIN WATERS

Section 62.1-4 was first added as an amendment to the Code of Virginia in 1946 and appears in the Acts of Assembly of that year as Chapter 389. It was originally introduced as House Bill 103 (Appendix B). The act appearing as section 3573-a was approved on March 29, 1946. Authority to lease the beds of the State's waters was originally delegated to the Attorney General, although each lease was to be approved and countersigned by the Governor. Baylor ground was exempted from those areas available for leasing and the lease period was set at five years, with right to renewal. The act specified that leases shall authorize exploration and exploitation of oil and gas, other minerals and mineral substances. The public right to fish, fowl, and take shellfish from the bottom could not be lost by the granting of a lease. The Attorney General and Commissioner of Fisheries (presently Commissioner of Marine Resources) were required jointly to submit an annual report of all leases made to the General Assembly.

The first changes in the act were instituted in 1958. Since the adoption of the Code of Virginia 1950, section 3573-a was redesignated 62-3. The amendment allowed the state to grant easements as well as leases to subaqueous beds. The state was also authorized to

grant "any other rights" in addition to prospecting and taking of oil and gas, and minerals and mineral substances. In reality, the amendment did little to change the overall characteristic of the law. This amendment appeared in Chapter 290 of the 1958 Acts of Assembly, and was approved March 12, 1958.

The authority to grant easements and leases under Section 62-3 was transferred from the Attorney General to the Commission of Fisheries on April 7, 1962. The Attorney General was only required to approve such leases but he retained the responsibility of reporting to the General Assembly annually. Along with the authority to grant easements and leases, the Commission of Fisheries was allowed to specify the rental royalties and other terms to be adhered to concerning these beds. Finally, the amendment inserted the following provision:

> All rents or royalties that are collected from such easements and leases shall be paid into the State Treasury to the credit of the Special Public Oyster Rock Replenishment Fund for the purposes of such fund. Expenditure and disbursements of all sums from such fund shall be made as provided in section 62.1-2.1.

The transferral of authority was the most significant result although none of these amendments created any drastic changes in the wording of the legislation. In 1968, the act was redesignated section 62.1-4. The text remained the same except that the name of the Commission of Fisheries was changed to the Marine Resources Commission. The present text of the act appears in Appendix C.

ARTICLE 175 AND BAYLOR GROUND

Any consideration of subaqueous exploitation in Virginia must take into consideration Article 175 of the Constitution of Virginia which defines certain limitations on the projected use of state-owned subaqueous lands. Article 175 states:

> The natural oyster beds.--The natural oyster beds, rocks and shoals, in the waters of this State shall not be leased, rented or sold, but shall be held in trust for the benefit of the people of this State, subject to such regulations and restrictions as the General Assembly may prescribe, but the General Assembly may, from time to time, define and determine such natural beds, rocks or shoals by surveys or otherwise.

Acting under Article 175, the Virginia General Assembly passed an act calling for a survey of all natural oyster rocks in 1892.[43] The purpose of this act was to hold all existing oyster rocks for public use. The General Assembly hired Lieutenant James B. Baylor of the United States Coast and Geodetic Survey for the project and the survey was completed in 1894.[44] The location of oyster bearing bottom was noted, but no further data was recorded. In many cases, local people indicated the location of oyster rock and Baylor marked those sites on maps. No boundary markers or reference stakes were used. Later, designation of Baylor ground had to be determined by engineers and surveyors. The original grounds contained about 210,000 acres of public rock, but provision was made in the original act for an increase in these public grounds by legislative action or by petition of local residents.[45] The total Baylor grounds on record

has been 243,271 acres since 1958.[46]

Baylor ground has caused some problems in the administration of subaqueous lands in Virginia. The process of changing the designation of Baylor ground in response to oyster production is quite involved, since the General Assembly has control over these lands. Many of the oyster beds on Baylor ground are no longer productive. Many of the grounds are in condemned areas due to the location of nearby industry or municipal effluents. In other areas, the oysters have not colonized Baylor ground in recent years, perhaps due to natural changes. Most state agencies concerned, including the Virginia Marine Resources Commission, admit that the present situation is unsatisfactory and that a complete redesignation of public oyster rock is desirable.[47] Projects which propose activities on Baylor ground require legislative action, for example, the expansion of the Newport News Shipbuilding and Drydock Company. The Baylor ground upon which expansion was proposed contained no productive oyster ground.[48] In spite of this, the proposed expansion had to be dealt with by the General Assembly. Had a more recent and adequate survey been conducted and used in the redesignation of Baylor ground, the problem never would have arisen and the Marine Resources Commission could have acted on the proposal. The writer contends that it is preferable for the Marine Resources Commission to act on such matters.

Any new regime governing the use of subaqueous beds in Virginia should require a new survey and designation of Virginia's public oyster rock. Transferral of the responsibility for management and

disposal of Baylor ground to an administrative agency of the State rather than the General Assembly should also be considered. These actions would expedite the administration and management of the oyster population in particular and subaqueous lands in general.

PAST LEASING ACTIVITIES OF THE VIRGINIA MARINE RESOURCES COMMISSION

The Marine Resources Commission under the authority of Section 62.1-3 has granted numerous leases and easements for the extraction of mineral resources from Virginia's subaqueous beds.[49] Most of this activity has occurred within recent years, and the Commission's action has dealt exclusively with mining in the sense of dredging sand, gravel, shell, and clay (used in the manufacture of cement).[50]

The Commission's course of action has been to deal with each applicant individually, drawing up a contract meeting the specific needs of both parties, thereby resulting in some variation in the specific provisions (including royalty rates) of each contract. Information concerning some of Virginia's more notable operations provides an idea of the scope of past operations.[51]

The largest subaqueous operator in the Commonwealth's waters was also one of the first. Radcliff Materials, Inc., a firm based in Mobile, Alabama, was issued a lease to dredge shell material on October 12, 1962.[52] Radcliff dredged deposits in the Rappahannock River, Tangier and Pocomoke Sound, near Craney Island in Hampton Roads, and at other locations within the Chesapeake Bay. A total of 410,942 cubic yards of shell were taken during these operations at a royalty of from twelve cents to fifteen cents per cubic yard.

Royalty payments amounted to over $51,000.00 in revenue in Virginia.[53]

The contract drawn up between the Commonwealth and Radcliff consisted of twelve major sections summarized here:

1. Exploration and Survey. This section granted the right to survey and explore areas to determine if economically feasible deposits were present. The action could in no way endanger sea life or public and private rights in the area effected.

2. Granting. Both the Commission and the Virginia Institute of Marine Science were to concur on approval of the location.

3. Royalties. A royalty of twelve cents per cubic yard was charged for all shell except that sold to the Commission. A monthly report of extractions along with payment was required and Radcliff guaranteed a minimum annual payment of $10,000.

4. Shells for Commission. Specifics for the acquisition of shell by the State were detailed in this section.

5. Term and Renewal Option. The original lease was for a five-year period, although it was renewable for four additional five-year periods. Notification of renewal had to be given sixty days prior to expiration.

6. Termination by Commission. The Commission could terminate the lease if Radcliff defaulted on their payment, or shell reserves were found to be too low to allow continued dredging. In the event of termination, the minimum annual payment would be prorated.

7. Inspection. Commission inspectors were allowed to visit and inspect the operation at all reasonable times.

8. Protection of the Public. Radcliff agreed that none of its operations would interfere with public rights on the water specified in Section 62.1-1.

9. Protection of the Commission. Radcliff posted a bond of corporate surety of $20,000.

10. Exclusivity. The Commission agreed that shell dredging rights would not be granted to any other firm as long as Radcliff fulfilled the requirements of the agreement.

11. Assignability of Obligations. No assignment of Radcliff's interests would relieve it from the performance of its obligations unless relief was specifically designated.

12. Notice. All notices by Radcliff to the state were to be sent to the offices of the Marine Resources Commission.

This contract essentially covered all aspects of the project, although provisions for environmental protection were somewhat weak. The contract was more than adequate to handle any forseeable problems since the extraction of shell by dredge was a relatively well-known process. Radcliff and the state worked well under this agreement and any problems were handled by informal negotiations. Some of the shell dredged by Radcliff was purchased by the state under Section 28.1-94.1 for use in the Public Oyster Rock Replenishment Program.

Shell dredging continued until additional leases to operate in the James and Elizabeth Rivers were denied by the Virginia Marine Resources Commission due to their proximity to living oyster reef.[54]

As a result of this action by the state, Radcliff chose to cease mining and is no longer operating in Virginia.

Southern Materials, Inc., obtained a permit to dredge sand and gravel from the bed of the James River adjacent to Shirley Plantation in 1964. At a royalty of seven cents per ton, the 216,464 tons of sand and gravel extracted resulted in over $15,000. in royalties. Southern engaged in a much smaller operation in the Western Branch of the Elizabeth River in 1971. The 25,000 cubic yards removed were assessed at a rate of five cents per cubic yard.

The Lone Star Cement Corporation carried out the longest continual mining operation in Virginia's recent history. The lease authorized the removal of clay from the Nansemond River in the vicinity of Kings Highway Bridge. The original easement was granted on March 18, 1963, and continued for over nine years. During this period, Lone Star removed 858,850 tons of clay and paid over $44,170. in royalties. The contract was renewed in 1968, but recently lapsed when Lone Star failed to renew by March 18, 1973. Lone Star's failure to renew marked the end of the last significant mining operation in the Commonwealth's waters.[55] Information concerning some other operations carried out under 62.1-3 appears in Table 1.

There were certain standard provisions in each contract, some requested by the Attorney General and some more or less customary. These standard provisions are:

1. The State holds the right to revocation due to breach of contract.

2. Operations are subject to compliance to State Water Control Board regulations.

TABLE 1

SPECIFICS OF SOME LEASES GRANTED UNDER
SECTION 62.1-3

Operator	Area	Date	Material	Amount	Fee	Total Revenue ($)	Purpose of Work
Norfolk Dredging Company	Elizabeth River	7/27/71	NS[a]	400,000 yd^3	5¢ yd^3	20,000.00	Dredge channel
Sadler Materials Inc.	Little Creek	4/28/64	Sand	500,000 tons	5¢ ton	. .[b]	Acquire material
Thomas H. Andrews	Occoquan Bay	9/29/64	Sand and gravel		7¢ ton sand and gravel 5¢ ton other material	. .[c]	Acquire material
Aquia Corporation	Aquia Creek Stafford County	5/25/71	NS[a]	58,768 yd^3	5¢ yd^3	3,038.40	Dredge channel
Tropigas International Corporation	Southern Branch Elizabeth River	2/23/71	NS[a]	285,000 yd^3	5¢ yd^3	14,450.00	Lay pipeline
Tidewater-Raymond-Kiewit	Hampton Roads	3/28/72	NS[a]	16,700 yd^3	5¢ yd^3	935.00	Dredge channel

[a]NS--material not specified.

[b]Sadler stated that he could not make a profit unless rate was lowered to about 1-1/2¢ per ton. The operation was never begun.

[c]Permit was held in abeyance.

3. The license is nontransferable without State approval.

4. Rights of Virginians to fish, fowl, and take shellfish as specified in Section 62.1-1 are protected.

5. Baylor ground is exempt from any leasing procedure.

6. The licenses are subject to any leases currently in effect.

7. The licenses do not confer any interest in or title to the beds to the licensee.

8. State agents are allowed to inspect the operation at any reasonable time.

9. Projects are given specific deadlines.

10. Liability is always in the lessee.

In reviewing Virginia's past mineral activities, it is clear that previous operations do not approach the magnitude of operations predicted in the future. Estimates of the yearly production by a sand and gravel operator in the near future range from four- to nine-million tons.[56] At five cents per ton, this amounts to a yearly royalty from one operator of between $200,000.00 and $450,000.00.

Future offshore mineral development in Virginia can provide investment, profits, employment and royalties valued in millions of dollars. These operations are possible, provided the proper legal, administrative, and fiscal climates are right.

PROVISIONS OF THE MODEL LEGISLATION

> 62.1-197. Purpose--The purpose of this Act is to provide:
> That the exploration and exploitation of the hard mineral resources in submerged lands or tidelands of Virginia shall be carried out under permits pursuant to this Act and in a prudent and orderly manner complementing an overall scheme of coastal zone management for the Commonwealth, and
> That no subaqueous hard mineral mining activity shall proceed without reasonable provisions for the protection of the environment and reclamation of such submerged lands and tidelands as may be disturbed by the operation, and
> That a secure legal atmosphere may be created in order that mining operations may function effectively, and in an orderly manner, thereby providing revenues for the Commonwealth, employment, materials, and improvement of associated technology for protecting the environment, and
> That a legal structure may be created which allows multiple uses of the seabeds and subsoil thereunder.

This section enumerates the primary objective of this legislation. It envisions the creation of a secure legal atmosphere within which industry can function while at the same time ensuring adequate protection for the environment. An assumption is made that the policy of the Commonwealth will be the promotion of offshore mining. Given the present state of offshore technology, it would not be realistic to write draconian legislation and expect industry to flourish. Although it may seem that some provisions are weighted too heavily in favor of industry, the stimulus industry receives within the next few years may set the pace for future advancements in orderly marine hard mineral development with corresponding lessened pressures on land based areas containing similar materials.[57] The following sections are an attempt to provide such a stimulus.

While there are some attempts underway in various Atlantic coast states to draw up offshore mining legislation,[58] none of these east coast states have comprehensive legislation in this field at the present.[59] Virginia is in the position to be one of the first states to enjoy benefits from offshore mining and demonstrate leadership in administering the exploitation of mineral resources from beneath state waters.

> 62.1-198. Definitions--For the purpose of this Act:
> (a) "Commission" shall be taken to mean the Virginia Marine Resources Commission or such other public officer, employee, board, commission, or other authority that may by law be assigned the duties and authority of the Virginia Marine Resources Commission.
> (b) "Commissioner" shall be taken to mean the Virginia Commissioner of Marine Resources or such other public officer, employee, board, commission, or other authority that may by law be assigned the duties and authority of the Commissioner of Marine Resources.

The definitions of both Commission and Commissioner are taken from Section 28.1-1 of the Virginia Code. They were expanded by adding language from Section 45.1-2 to ensure that any successor agency would assume the responsibility for the execution of this legislation. The Marine Resources Commission was chosen to administer this new legislation because it has traditionally granted mineral rights to marine minerals within the Commonwealth under Sections 62.1-3 and 62.1-4. Past successful operations involving Radcliff Materials, Inc., and Lone Star Cement Corporation (pages 24-27) demonstrate the Commission's abilities to perform such activities satisfactorily.

> (c) "Mineral Resources" means coal, stone, sand, gravel, shell, metals, ores, minerals (excepting oil and gas), and any other nonliving material of commercial value found in

natural deposits on or in the seabed or subsoil thereunder.

Mineral resources are defined variously by different coastal states. Most states do not have comprehensive definitions of mineral resources in their offshore legislation. Instead, oil and gas and hydrocarbons are defined and little mention is made of hard minerals. In Maine the definition includes all naturally occurring mineral deposits exclusive of oil and gas, coal and lignite,[60] while in a Massachusetts proposal it includes oil, gas, fossil fuels, sulphur, metals, ores, minerals, rock, soil, sand, and gravel.[61] Presently in Virginia there is no specific definition for mineral resources for land based mining. The list of minerals chosen for this model legislation is drawn largely from the General Statutes of North Carolina.[62]

Particular emphasis was placed on enumerating only hard minerals in this model since this legislation was not drawn up with the intent of regulating oil and gas development. Exploitation of offshore oil and gas resources cannot effectively be carried out under this proposal, since the needs of the two industries, the degree of development, and the technology utilized are so dissimilar that separate legislation is needed for each.

> (d) "Submerged Lands" refers to those lands or mineral resources covered by tidal waters from the line of mean low water seaward to a distance as authority over exploration and exploitation of marine mineral resources may be properly claimed by the State.

Submerged lands are defined variously by coastal states as the area lying below the elevation of low water in the beds of all tidal and of nontidal navigable waters,[63] and those lands covered by coastal waters.[64] The question as to the extent of state mineral

resource jurisdiction into the Atlantic is currently before the United States Supreme Court.[65]

The definition chosen is drawn from that found in an Alaskan statute which provides an open-ended interpretation of the state's offshore jurisdiction.[66] In this way, allowance is made for any decision rendered by the Supreme Court.

> (e) "Tidelands" means all that land lying between and contiguous to mean low water and an elevation above mean low water equal to the factor 1.5 times the mean tide range at the site of the proposed operation.

The inclusion of tidelands broadens the authority of the Marine Resources Commission to regulate mineral operations slightly above mean high water. Traditionally and by statutes, rights of property owners in Virginia extend to mean low water.[67] However, operations in the tidelands could significantly affect marine environmental quality and should come under Commission scrutiny. The actual definition of tidelands is taken from the definition of wetlands found in Section 62.1-13.2 although the wetlands definition is further qualified. Use of this definition makes the Marine Resources Commission's areas of jurisdiction for different matters agree as closely as possible.

> (f) "Unclassified Land" means State lands that have not been classified by statute for alternate uses.

The term unclassified land comes from Alaska statutes and denotes lands which are free for exploration and exploitation.[68] It is needed to indicate that in Virginia there is land (notably Baylor ground) on which certain operations are prohibited by statute.[69] On such classified land, the Commission has no jurisdiction to grant

permits for mineral development. The Commission similarly would not grant mineral rights on areas that have already been granted or leased by them for other uses, if the competing activities were determined to be potentially harmful to one another.

> (g) "Qualified Operator" means any person or persons over 18 years of age, any partnership, limited partnership, corporation, or association of persons organized under the laws of the United States or of any State or territory thereof and qualified to do business in the Commonwealth of Virginia, whether acting individually, jointly, or through subsidiaries, agents, employees, or contractors.

This definition establishes two basic requirements for an offshore operator and is patterned after legislation from both North Carolina and Alaska.[70] These requirements provide that the operator must be a resident agent upon whom a process can be served. Further, Section 202 of this model gives the Commissioner the authority to impose additional requirements prior to the granting of permits.

> (h) "Pioneer" means any qualified operator employing new or untried technology for exploiting a mineral resource which is presently not being developed in paying quantities from the marine environment.

Pioneer is a term not found in other state legislation. It is included to allow the state to provide some stimulus and encouragement to new methods of exploration and exploitation of mineral resources presently not being extracted in paying quantities. The term was included so as to differentiate between those who are and are not eligible for pioneering advantage.[71]

> (i) "Prospecting" is that operation conducted for the purpose of mapping, sampling bottom or subbottom materials, making geophysical or geochemical measurements, or comparable activities so long as such operation is carried out in a manner that does not significantly alter the surface or subsurface of the seabed.

> (j) "Exploration" is that detailed observation and evaluation activity which follows the location and selection of a mineral deposit of potential economic interest and which has, as its objective, the establishment and documentation of the nature, shape, concentration, and tenor of an ore deposit and the nature of the environmental factors which will affect its mineability. It does include such removal or conversion for any other purpose such as sampling, experimenting in recovery methods or testing equipment or plant for recovery or treatment of mineral resources.
>
> (k) "Exploitation" is that activity which has, as its immediate objective, the removal of or conversion of raw mineral resources (without regard to profit or loss) for the primary purpose of marketing or commercial use.

Prospecting, exploration, and exploitation are differentiated in order to clear up any question as to which operations require a permit. Prospecting in the sense defined is not construed to warrant a permit.[72] While prospecting is not specifically mentioned in either the Submerged Lands Act or the Outer Continental Shelf Lands Act, proposed offshore mining legislation does recognize the need to allow complete freedom to pursue such activities.[73] Exploration and exploitation are distinguished in order to specify the operations which could be allowed under each phase of the permit.

> (l) "Commercial Production" means recovery of mineral resources at a substantial rate as determined by the Commissioner.

The determination as to what level constitutes commercial production is delegated to the Commissioner. The operator may be working under certain favorable status conditions until commercial production is reached. The latitude afforded the Commissioner allows him to extend or curtail these favorable status conditions in a manner which best serves the interests of the Commonwealth.

> 62.1-199. Permits--All operations are covered by a single permit. Granting of the permit authorizes exploration. A

> supplemental authorization to exploit must be obtained by the operator in conformity with Sections 214, 215, and 216 herein, prior to the initiation of exploitation under the permit.

Issuance of separate permits was rejected since difficulty would be encountered in progressing from an exploration permit into an exploitation permit. No operator would be willing to undertake extensive and costly exploration of an area without some guarantee of first right to exploit said area. A two-part permit guarantees that if the qualified operator fulfills certain requirements, he will be granted the first opportunity to exploit. A single permit system also requires less administrative effort.

The word "permit" was chosen for use in this model legislation. As Jacobson and Hanlon state:

> We prefer the term "permit" to the more traditional "lease." The word "lease" implies the notion of a recognized estate in land, something too substantial and too burdened with possibly uncontrollable aspects of centuries-old Anglo-American property law. "Permit" reflects more accurately our intention that the ocean miner be given a revocable bare privilege to enter onto public land for the purpose of extracting mineral resources; of the more-or-less descriptive terms available, it appears to be least cluttered with preexisting definitional concepts. In short, "permit" implies more freedom in the trustee-state to design the legal relationship between the miner and the public landowner.[74]

In the past, oyster leases granted in Virginia have essentially become irrevocable holdings which has resulted in the removal of much land from consideration for other possible uses. This is especially noteworthy since many of these lands are no longer producing oysters.

> 62.1-200. Activities Requiring a Permit--Prospecting does not require a permit. No person shall explore for or exploit any mineral resources in areas subject to the provisions of this Act without first applying for and obtaining a permit from the Commission in the manner specified in this Act. No

> provision of this Act shall deny riparian owners rights specified in Chapter 19 of Section 62.1.

Prospecting should not require a permit because it is not in the American ethic to regulate intellectual and scientific inquiry and would be much too difficult and time consuming to regulate activities which, as defined, cannot cause any significant disturbance to the seabed or its subsoil. Any prospecting which utilizes acoustic, magnetic, photographic, or similar noncontact methods of detection need not be regulated by the Commonwealth. Any action which causes significant environmental impact or disturbance to the seabed or its subsoil will come under State jurisdiction. The rights of riparian owners to exploit sand and gravel are not abridged although any activities on state-owned bottom will require compliance with the requirements of this legislation.

> 62.1-201. Issuance of Permits--The Commission shall have the responsibility for issuing exploration and exploitation permits for mineral resources in Virginia's unclassified submerged lands and tidelands.

This section spells out the responsibility of the Commission for administering this act. The area of jurisdiction is generally that specified in Section 28.1-3 although it is also extended by the tidelands definition.[75]

> 62.1-202. Qualifications--Permits shall be issued only to qualified operators. The Commissioner may prescribe certain technical and financial requirements of qualified operators in order to assure effective and orderly development of the permit area. These additional requirements shall be applied on a nondiscriminatory basis to all permit holders or applicants Permits granted prior to the passage of this Act must meet new requirements at the time of renewal.

Basic qualifications are outlined in the definition of qualified

operator. Beyond these basic qualifications, the Commissioner is given some discretion in setting additional regulations. These may include adequacy of financial resources, insurance coverage, and technical capabilities in order to assure that only reputable, financially stable operators are engaged in these operations. The reason for not putting all these regulations into the statutes is the difficulty of later modifying them if conditions warrant. In order to prevent any charges of discrimination, it is recommended that the Commissioner establish these requirements in writing.

> 62.1-203. Application Procedure--Any qualified operator desiring to apply for a permit shall complete and mail two sealed approved application forms to the Marine Resources Commission. The Commission shall publicly open all applications on the last working day of each month. At that time, the Commission shall forward copies of the applications to the Virginia Institute of Marine Science for resource and environmental comments and the State Water Control Board for water quality comments. The executive body of the county or city in which the land lies should it be so designated or the executive body of the county or city bearing the closest geographical proximity to the site of the proposed activity should also receive an application for comment.[76] The Commission shall also consult with any Federal or State agency which may have pertinent information concerning an application.

The application procedure requires the use of approved application forms. This allows the Commissioner to specify what information must be submitted.

The Commissioner is at liberty to add or delete information requirements as the situation dictates since the requirements are not written into the legislation as in some Virginia statutes. All applications are publicly opened on the last working day of each month to ascertain the possible need for competitive bidding as specified in

62.1-206.

Copies of the application are sent to the State Water Control Board and the Virginia Institute of Marine Science as well as the local governmental unit nearest the site in order that they may be kept informed of existing or proposed activities in areas of concern to them and provided an opportunity to supply information for use during the initial decision-making process.

> 62.1-204. Mineral Categories--Applications shall identify the category of minerals in the specific area for which the permit is sought. Permits shall be issued for all minerals in any one of the following categories:
> Category I--Minerals occurring at the surface of the seabed excepting oil and gas.
> Category II--Other minerals including category I minerals that occur beneath the surface of the seabed excepting oil and gas.

The category of mineral being exploited must be specified in the application.[77] Category I or surface minerals differ from category II or subsurface minerals in the type of exploration and exploitation activities necessary to mine them. Surface minerals are currently exploited by dredging, an operation with which the Commission is familiar. The exploration and exploitation of subsurface mineral deposits is presently an unperfected art at best, and may require close scrutiny until procedures become established. The multiple use Section (62.1-221) allows for the granting of exploration and exploitation rights for different categories of minerals in the same area.

> 62.1-205. Allocation--A permit as specified herein shall be issued by the Commissioner to the first qualified person who makes written application and tenders the fee for the block specified in the application.

Permits for mineral rights should be issued on a first-come, first-served basis. While competitive bidding is a well-established procedure in offshore oil lease sales, the procedure has come under attack by those in the hard mineral industry. The present costly bidding system effectively eliminates the small to medium company and favors the corporate giants.[78] Companies in the hard mineral business feel that competitive bidding requires too much capital to be allocated to the acquisition of the mineral rights and leaves the operator much less development capital to be used for proving the resource and creating its associated technology.[79] A law which purports to stimulate activity in this field can better accomplish its goal by reducing the use of the competitive bidding procedure.

> 62.1-206. Competitive Bidding--In the event the Commission receives more than one permit application for the same category of minerals in the same area or portion thereof, within the same calendar month, the permit shall be awarded on the basis of competitive bidding between the applying parties. The competitive bidding procedure is as follows:
>
> 1. All bidding shall be by sealed bids and may be for the whole or any particularly described portion of the area disputed.
> 2. Notification that bids are necessary shall be sent by the Commission within thirty working days of the opening of the application.
> 3. All bids shall be filed with the Commissioner at the Commission's main office within thirty working days after notification that bids are necessary. No bid filed subsequent to this date shall be considered.
> 4. Bids shall be accompanied by a cashier's or a certified check for the amount of the offered consideration (or bonus) and shall be made payable to the State Treasurer.
> 5. All bids shall be opened by the Commission in public at the main office fifteen working days after the receipt of all bids.
> 6. The Commission may accept the highest qualified bonus bid with respect to a particular tract.
> 7. A qualified bid is one made strictly in accordance with the requirements set down in advance by the Commission.

> 62.1-207. Documentation--Any applicant desiring a permit shall be required to:
>
> (a) Submit charts containing boundaries of the proposed area along with a complete description of the permit area including depths, total area involved, significant fauna (oyster beds, et cetera), distance from the shoreline, and any other pertinent data required by the Commissioner.
>
> (b) Provide a general description of the procedures and equipment to be used in the operation.
>
> (c) Provide general information as to the effects said activities may have on the water quality and other physical and biological parameters of the general area.
>
> (d) Provide general information on financial status and insurance coverage.

The documentation provision provides guidelines to both the Commission and the operator. It helps the Commissioner in outlining the information he should require, and provides the operator with some indication as to what is required of him. The requirements are of a general nature allowing the Commissioner some discretion in requesting the amount of detail necessary.

General information concerning the environmental effects of the proposed activity should be sufficient. It should be remembered that this information may concern only exploration activities. The environmental effects of exploration may be minimal, and an environmental impact statement will later be required prior to authorization to exploit.

> 62.1-208. Rejection of Applications--Notice of rejection of applications must be accompanied by a detailed explanation of the Commission's reasons for its actions.

The Commission should always account for its actions. In order to foster a spirit of cooperation between the Commonwealth and industry, it is necessary that the channels of communication always be open. Any time an operator's request is denied, he should be told the

Commission's reasons for such action. This will be an aid in promoting understanding between both parties and may serve to prevent arbitrary action in the future.

> 62.1-209. Work Requirements and Relinquishment--
> (a) In the exploration phase, prior to attaining commercial production, the permittee shall meet the following minimum annual work requirements for each block:
>
> | Years | Amount per annum |
> |---|---|
> | 1-4 | $10,000.00 |
> | 5-7 | $20,000.00 |
> | 8-10 | $30,000.00 |
>
> The minimum annual work requirement for a portion of a block shall be a proportional fraction of the above. Expenditures for off-site operations, facilities, or equipment shall be included in computing up to 50 per cent of the required minimum expenditures where such off-site expenditures are directly related to development of the licensed block or blocks. Expenditures in any year in excess of the required minimum may be credited to later years by the permittee.
> (b) The permittee shall provide the Commission with a bimonthly report of activities on the site, to include the amount of money spent during that period and the amount of material removed. The Commission shall publish regulations to specify information to be included in this report. The permittee shall present in his bimonthly report sufficient evidence that exploration is proceeding at an acceptable rate on the permit site. Failure to meet the specified work requirements in any one year shall require the permittee to show cause why the Commission should not revoke the permit. Where circumstances beyond the control of a permittee impair his ability to develop any portion of the seabed or subsoil held under such permit, the term of the permit and the dates for complying with any other permit condition shall be extended for an equal length of time.
> (c) Prior to authorization to exploit, the operator shall be required to relinquish one-half of the initial land area under the permit within three years of grant of the permit and one-half of the remaining unrelinquished area within the next two years. The relinquished requirement shall not apply to permits issued for areas of one-quarter of a block or less. Permittees may at any time relinquish rights to all or part of the permit area.

Work requirements are quite common in offshore legislation.[80] Their primary objectives are to prevent speculative holding of offshore blocks and to push forward development on the site. The

Commonwealth has an interest in seeing that the offshore sites are not tied up for excessive periods of time without evidence of significant development. By major industry standards, the monetary requirements are quite modest. Thus, small operators could function within the same framework. Furthermore, the intention of the requirements is to make known the Commonwealth's desire that the site be worked within a reasonable time period. This provision should not be construed as a penalty of any sort, but should help the operator assess the Commonwealth's expectations of his endeavor.

The operator will not be required to meet work requirements if he is prevented from doing so because of circumstances beyond his control. Acts of war and acts of God are obviously circumstances beyond his control, but many other circumstances create questions of fact which can only be determined by administrative review or, at last resort, litigation. It would be almost impossible to categorically declare which circumstances are beyond an operator's control as they are usually dependent upon a number of variables particular to each incident.

Periodically throughout the exploration phase of the permit term, the operator shall be required to relinquish fractions of the land leased. This relinquishment requirement (together with rented fees based upon permit areas) forces the operator to narrow his search as quickly as possible, and allows for the speedy return of seabed and subsoil to the Commonwealth. Because rental fees are nominal, they are not, by themselves, much of an inducement for the operator to relinquish unnecessary land. The combination of relinquishment

and rental requirement provides such an inducement.[81]

> 62.1-210. Permit Duration--Permits for the exploration phase shall be granted for an initial period of four years, renewable at the permittee's request for an additional three years. The permittee may be granted a second three-year extension upon presentation of substantial evidence as to why the permit should be renewed. At the time of renewal, the permittee shall be subject to the permit terms and conditions in effect at that time, except those provisions relating to size and location of the permit. The Commission may prescribe shorter periods for the exploration of sand, gravel, and shell material.

Offshore operations of today may require up to ten years exploratory work and accompanying technical design effort before a profitable method can be implemented.[82] The renewal periods allow the state to reassess the operator's progress and modify certain requirements if conditions indicate such a necessity. This long exploration period may also act as an incentive to those who wish to explore for minerals presently unknown in Virginia's waters. It promotes such action by allowing enough time to discover a mineral and develop suitable technology for its exploitation within the exploration phase. The Commission is given some discretion in limiting the exploration period if it is deemed that present technology has reached a level where the exploration operations can be conducted in a relatively short period.

> 62.1-211. Size--Permit areas within the Chesapeake Bay and its tributaries shall be granted in blocks of not more than 1,000 acres. Other permit areas shall be granted in blocks no larger than 5,760 acres. The Commission may limit the number of blocks granted under permit at any one time to any one operator.[83]

The limited area of the Chesapeake Bay coupled with its high incidence of marine activity of all types prompted recommendation for

the granting of smaller blocks within the Bay. The size was arbitrarily chosen and may not be a realistic area on which an operation can take place. Operators requiring a smaller area may apply for a partial block and those requiring a larger area may be granted multiple blocks. The offshore block sizes conform with present Federal standards. Because Federal and State lands are adjacent to one another, the previously existing Federal block size is recommended for the sake of consistency. There is no limitation on the number of blocks the Commission may grant or anything preventing them from granting fractions of blocks if they so desire. This should allow the Commission adequate flexibility to handle any problem concerning this point.

> 62.1-212. Rental--All permit areas shall be charged an annual rental fee of $500.00 per block or proportional amount of a portion thereof prior to authorization to exploit and $1.50 per acre annually thereafter for so long as the permit remains in force.[84]

While the rental fee results in a higher cost for operators within the Chesapeake Bay, it is, in any event, a minimal fee and presents no undue hardship to the operator. The $1.50 per acre annual rental fee is in agreement with the fee levied for oyster ground as provided in Section 28.1-109-(11). Rental fee based on size will provide some inducement to release and reclaim land as soon as possible so as not to pay additional annual rental for land that has already been exploited or will not be exploited. As in the case of all fees except those in Section 62.1-219, the purpose is not to gain an appreciable amount of revenue, but to require minimal expenditures to cover the Commonwealth's costs for administrating exploration and

exploitation activities.

> 62.1-213. Authorization to Exploit--An authorization to exploit shall be granted upon application for an initial exploitation period of ten years, and shall be renewed upon reapplication at five-year intervals thereafter so long as minerals are being extracted in paying quantities. The permit shall terminate if once the permittee has produced in paying quantities, he subsequently fails to do so over a continuous period exceeding thirty-six months, so long as such failure is not due to conditions beyond his control. At the time of renewal, the permittee shall be subject to the permit terms and conditions in effect at that time, except those provisions relating to size and location of the permit area. Prior to authorization to exploit the operator must provide the state with his exploratory data in order that an assessment of the value of the claim be made. This data will be held in strict confidence.

This provision ushers in the second phase of this two-part permit. Once mineral deposits of commercial quantities and quality are proved and the associated technology is developed, the operator may seek authorization to exploit. The time periods are generally in accord with those presently found in Section 62.1-4 although the initial period is longer in this proposal. This initial period was increased in order to allow the industry time to cope with unexpected difficulties without having to go through a renewal process which may impose the burden of revised standards.

The operator may close down operations for up to thirty-six months for any reason which makes continued exploitation unprofitable. Any extension beyond this period would require proof from the operator that he is being prevented from activities due to circumstances beyond his control.

Subjecting the operator to any new standards in effect at the time of renewal keeps all operators in conformance with environmental

protection measures as well as any other conditions which experience gained subsequent to the original grant of rights may have dictated.

> 62.1-214. Environmental Impact Statement--
> (a) The Commissioner shall request that the Virginia Institute of Marine Science (VIMS) prepare an environmental impact statement taking into full account any environmental reports prepared by the permittee. The Commissioner shall not issue an authorization to exploit until such an environmental impact statement has been submitted to and considered by the Commission. Said environmental impact statements shall conform as closely as practicable under the particular circumstances to the form and substance of similar instruments required under other Federal and Virginia legislation dealing with the environmental impacts of mineral resource development.
> (b) Prior to authorization for exploitation, the permittee may recover marine resources without payment of royalty thereon in order to experiment in recovery methods or test equipment or plant for recovery or treatment of mineral resources providing that appropriate State agencies may use this activity as an observable scientific experiment in preparation of associated environmental impact statements.

In light of present governmental and citizen concern for environmental protection, the preparation of an environmental impact statement for any exploitation carried out under this Act is a precondition to grant of exploitation rights. The general problem is one of who is to bear the burden of cost for the preparation of the statement. Extensive environmental impact statements may cost $100,000.00 or more to prepare. This is obviously too much of a burden for either the state or the operator to handle. If the entire cost was placed on the operator, the situation would not be equitable. The initial operators would pay for a complete study, while subsequent permittees would be able to utilize much of the base line data collected in the initial study. The greatest burden would be levied on the first operators and would thus serve to prevent or delay their entry into

exploitation.

The Commonwealth does possess the financial capability to initiate extensive environmental impact statements on any of these projects, however, it must be assured that the cost of preparing these statements will be met by fees or royalties from the operations. After the initial few statements, the cost per statement should be greatly reduced because of ability to use developed baseline data. On small projects, VIMS can use much the same procedure it does in the Wetlands Act. Essentially, a comment by VIMS on possible environmental consequences is drawn up relying on information presently available in VIMS data banks and an on-site inspection of the permit area. Unless there exists serious unresolved questions, this procedure may be adequate. In any event, the state will be responsible for the preparation of some extensive impact statements which will amount to a considerable cost. In order to make this venture less of a financial burden, industry and government should work together as much as possible in the sharing of costs for such environmental reports. The American Mining Congress or some other trade organization may be pursuaded to put up money for the establishment of baseline data regarding offshore mining operations. Another proposal may be to offer the operator an option to finance the impact statement with the provision that an equal amount of royalties will be waived when production commences. The financing of such environmental research is a difficult problem to solve. Perhaps information from the New England Offshore Mining Environmental Study can provide useful data for other Atlantic coast states or a

system of Federal grants can be established to aid such research.[85] In any event, the time to gather this relevant baseline data is now, before the lack of this information serves to delay development.

Authorization to exploit is contingent upon Commission consideration of the environmental impact statement. In order that such statements exhibit some conformity, it was specified that every effort be made to follow the form established by the Federal government and other Virginia legislation dealing with statement preparation. Specifically, the provisions found in Section 102, paragraph c, of the National Environmental Policy Act should be used as a guideline.

The future progress of the operation depends on the Commission's reaction to the impact statement. If studies indicate the probability of final adverse environmental effects, the authorization to exploit may not be granted and the permit may be revoked.

> 62.1-215. Restoration Plans--Prior to the time of grant of authorization to exploit, the permittee shall be required to submit a plan of restoration for the granted area, if such restoration is deemed necessary. Restoration may start no later than two months after the close of operations and must be completed within one year of commencement. Permit expiration or revocation shall not relieve the operator from restoration responsibilities.

For years, land based, mining operations created great damage because they failed to provide some form of reclamation for the mined area. It should be a policy, from the outset, that a restoration plan or comment relating why such a plan is not necessary accompany any scheme of development on subaqueous property. If reclamation is deemed necessary, it is desirable to have the land returned to its initial state quickly in order that it be available for other uses.

This is the primary reason for the one-year deadline. The question of the necessity for subaqueous reclamation is a difficult one and will probably require much study.

> 62.1-216. Fee for Authorization to Exploit--The permittee shall submit a check to the State Treasurer in the amount of $500.00 when applying for authorization to exploit.

The use of this fee is not specified but it is intended to defray administrative costs. Fees of this sort are common in this type of legislative program.[86]

> 62.1-217. Reporting--The permittee shall be required to submit a bimonthly report during exploitation. The Commissioner shall specify information to be included in this report but must include as a minimum the volume of material removed and the value at the minehead of such material.

This section requires the continuation of the reporting procedure instituted during the exploration phase. These reports may carry more information and of a different nature since the operation is essentially different. The information may be used to keep the public abreast of on-site activities while at the same time providing useful information for the management of the resource.

> 62.1-218. Security--No authorization to exploit shall become effective until the permittee has deposited security, in an escrow account of a state approved bank, acceptable in form to the Commission and adequate to cover restoration if deemed necessary. Nothing in this clause shall limit the use of the security to restoration. The balance remaining of the security deposit upon termination of the permit for any reason and upon satisfaction of all restoration requirements herein specified shall be returned to the permittee within three months of such termination and satisfaction.

Any operation having the potential of adverse environmental consequences must provide some security to cover the mitigation of

such consequences should the operator default on the agreement. This is the nature of a security account. In order to prevent any misunderstandings, the Commission should establish some regulations as to what are considered legitimate circumstances for withdrawals from the security account.

> 62.1-219. Permit Fees--The Commissioner shall establish a minimal fee for the issuance of permits. The fee shall be charged so that all administrative costs (excluding environmental impact statements) are covered, and in no case shall it exceed $500.00.

A high initial fee was felt to be an undue burden on small operators within the Bay. The $500.00 fee seemed to strike an acceptable balance between a significant and a token fee. Although these permit fees are relatively modest, they do represent an increase over Virginia's present fees found in Section 62.1-3.[87]

> 62.1-220. Inspection--Commission inspectors shall be allowed entry to and inspection of operations at any reasonable time. Transportation to and from the site will be the responsibility of the Commonwealth. The Commission and its inspectors shall guarantee the confidentiality of proprietary information and procedures previously identified in writing to the Commission, to which they are exposed in the performance of their duty for the term of the permit or fifteen years, whichever period is the longer.

For any statute to be an effective vehicle for management, it must be enforceable and enforced. The regulations concerning the actual operating procedures shall be the main focus of the enforcement activity. If the operator was to provide transportation for the inspectors, the on-site personnel would be aware of the scheduled inspection time. This situation would not necessarily provide the inspectors with a true picture of the manner in which operations are carried out on the site. If inspectors are properly instructed in what

to look for, they will be exposed to machinery and operational procedures which represent trade secrets. Once informed of these secrets in the line of duty, the inspectors and the Commission are required to maintain the confidentiality of this information. These guarantees of confidentiality are made in order that the operator will not become reluctant to release information for fear trade secrets will be exposed. A requirement that information and procedures deemed to be trade secrets must be so designated by the operator in writing is provided to protect Commission personnel from suits.

> 62.1-221. Multiple Use--Exploration and exploitation of the natural resources of Virginia's tidelands and submerged lands shall not result in any unjustifiable interference with other activities in the marine environment. No permit shall preclude scientific research by any person in permit areas where such activities do not interfere with permit activities by the permittees. Two or more permittees to whom permits have been issued for different materials in the same or overlapping areas shall not unjustifiably interfere with the activities of each other. Reasonable priority shall be given the first permittee in any dispute between permittees.[88]

These permits only grant the operator the right to explore for and exploit the mineral resources of the permit area. The permit does not grant away anymore than the rights to a specific category of hard mineral, therefore, boating, fishing, oil and gas activities, and other activities will be allowed provided they do not unreasonably interfere with previously established mining activity. However, hard mineral activities must not unreasonably interfere with these other activities, which remain lawful and are entitled to the full exercise of their rights. Most legislation pertaining to offshore activities recognizes the need for multiple use of the areas involved.

Long-established activities such as shipping and fishing should not be unduly interfered with in order to allow relatively short-term mineral development.

> 62.1-222. Hearings--Public hearings on the exploration phase are not required, but may be scheduled if the Commissioner feels that it is necessary to gain pertinent information concerning the proposed work. The Commissioner shall schedule and hold not less than one public hearing prior to granting authorization to exploit.

Any offshore activity on the Atlantic coast will be the object of much curiosity. Many questions resulting from this curiosity can be answered through public hearings. The provision stated sets the absolute minimum for public hearings. A large operation may call for a number of hearings through all different phases of the operation. The number will depend on the amount of public interest, the complexity of problems encountered and other factors. Small sand and gravel or shell operations may only require one hearing. The requirement has an open-ended maximum and the determination as to the need for more hearings will be in the hands of the Commissioner. The hearing was required prior to authorization to exploit for two reasons. First, it was felt that exploration activities added appreciably to scientific knowledge of the area without causing significant environmental disturbance. Secondly, the hearing should be held just prior to exploitation in order that the operator presents the most current exploitation plans. A hearing held much earlier may contain mainly speculation as to the methods to be employed, on the one hand, and as to environmental impact, on the other. Experience and the advent of new discoveries may cause

the operator to radically change his plan of operation and thus make any previous information useless.

> 62.1-223. Assessment--
> (a) A severance fee shall be placed on every metric ton of material of commercial value removed in the mining operation during the exploitation phase. The fee shall be determined by the Commission using a percentage (between 2 per cent and 10 per cent) of the current market value at the minehead of the mineral resource(s) being exploited.
> (b) Pioneers shall operate under a 75 per cent reduction in severence fee for the first three years of commercial production or until such time as the operation has been shown capable of producing a profit, whichever occurs first.

The Commonwealth will derive its revenue from offshore mineral operations by the use of a severance fee. Because ores differ as to quality, some flexible provision for the assessment of a severance fee was needed. Flexibility was achieved by taking a percentage of the value of the ore at the minehead. Since value at the minehead fluctuates with economic conditions, the assessment would always be equitable, once established. The Commission may charge from 2 per cent to 10 per cent of the value at the minehead.[89] Allowing the assessment value to fluctuate with market conditions while at the same time allowing an 8 per cent range within which the Commission may set rates provides both parties with sufficient guidelines within which an agreeable settlement can be reached. The reduced severance fee for pioneers is a favorable treatment provision which assures the innovating operator that, should his venture fail, his losses through severance fee will be minimal. At the same time, the Commonwealth is receiving some revenue from such activity.

> 62.1-224. Penalties--Any person who violates any provision of this Act, or of the regulations promulgated under this Act, or provisions of a permit issued under this act shall

> be liable to a civil penalty of not less than $100.00 nor more than $1,000.00 for each violation. No penalty shall be assessed until the person charged shall have been given notice and an opportunity for a hearing of such violation. In determining the amount of penalty, the gravity of the violation, prior violations, and the demonstrated good faith of the person in attempting to achieve rapid compliance after notification shall be considered by the Commissioner. Each day that such offense goes uncorrected after notification may be deemed a separate offense. The Attorney General or his designate may bring actions for equitable relief to enjoin an imminent or continuing violation of this Act, of regulations promulgated under this Act, or of provisions of permits issued under this Act, and the proper courts of the Commonwealth of Virginia shall have jurisdiction to grant such relief as the equities of the case may require.[90]

Penalty sections are added to give teeth to any legislative proposal. The penalty provisions of this model act both as deterrents to wrongdoing as well as providing monetary and injunctive sanctions against offenders. This section merely sets the guidelines and structure through which penalties are applied. The severity with which penalties are applied will be left to the discretion of the Commissioner and the Courts.

> 62.1-225. Suspension of Operations--The Commission may, through the appropriate court, seek injunctive relief from exploration and exploitation operations in progress if there is sufficient evidence to support the claim that substantial irreversible environmental damage may result due to continued operations. The suspended permittee shall be granted immediate recourse to a court having appropriate jurisdiction.

To preclude the possibility of irreversible environmental damage, the Commission through the proper court is given a mandate to suspend any potentially dangerous activities. This provision was laid down in the legislation in order that all parties to the agreement recognize it as a standard operating procedure. While a suspension of activities should not be resorted to indiscriminately, it should

be recognized as a legitimate procedure. Since there is a great deal of uncertainty as to the environmental repercussions of offshore mining activities, it may be necessary to suspend certain operations once they are in progress. This would apply particularly to first-of-a-kind operations and until more sufficient data on its possible consequences is obtained. Once operations become commonplace, the need for suspension will diminish. In any circumstance, where operations have been suspended, the permittee affected shall be granted immediate legal recourse. Such recourse should prevent abuse of this very powerful control mechanism.

> 62.1-226. Liability--Each permittee shall be liable for and shall agree to indemnify the Commonwealth or individuals against any loss, damage, claim, demand or action, caused by, arising out of, or connected with the use of the permit area by the permittee and/or agents thereof. No provision of this article shall be construed to relieve the operator of any responsibilities to individuals, the Federal government, or other State agencies.

Many environmentalists say that nothing short of absolute and strict liability is acceptable to control offshore activities.[91] Absolute or strict liability requires the operator to be liable for any and all activities and their consequences even if he has no control over them. This presumably covers acts of God. Absolute liability is being proposed for Massachusetts offshore legislation.[92] Absolute liability was considered unreasonable, especially for a legislative management proposal which lists as one of its objectives a secure legal atmosphere to encourage subaqueous mineral development. The stated liability provisions are believed adequate to meet all forseeable problems and represent a rational approach to the

problem.

> 62.1-227. Transferability--Permits shall be transferable with the approval of the Commission, provided the transferee is a qualified operator. A transfer fee of not less than $1,000.00 nor more than $5,000.00 shall be paid to the State Treasury by the transferor.[93]

The transfer of a permit from one operator to another will allow the continuation of operations on the site. Transferability may promote fuller exploitation of the permit site and was, therefore, considered a useful provision for this legislation. The fee is a standard provision found in Federal and International offshore mining proposals.[94] The Commissioner retains the right to decide if transfer or assignment shall relieve the assignor of all duties, obligations or liability imposed by the original grant of the permit. He can, if he wishes, authorize the transfer only on the condition that the transferor and the transferee remain jointly and severally responsible if circumstances so demand.

APPENDIX

APPENDIX A

CHAPTER 21

MARINE MINERAL RESOURCES

Section:

62.1-197. Purpose--The purpose of this Act is to provide:

That the exploration and exploitation of the hard mineral resources in submerged lands or tidelands of Virginia shall be carried out under permits pursuant to this Act and in a prudent and orderly manner complementing an overall scheme of coastal zone management for the Commonwealth, and

That no subaqueous hard mineral mining activity shall proceed without reasonable provisions for the protection of the environment

and reclamation of such submerged lands and tidelands as may be disturbed by the operation, and

That a secure legal atmosphere may be created in order that mining operations may function effectively and in an orderly manner, thereby providing revenues for the Commonwealth, employment, materials, and improvement of associated technology for protecting the environment, and

That a legal structure may be created which allows multiple uses of the seabeds and subsoil thereunder.

62.1-198. Definitions--For the purpose of this Act:

(a) "Commission" shall be taken to mean the Virginia Marine Resources Commission or such other public officer, employee, board, commission, or other authority that may by law be assigned the duties and authority of the Virginia Marine Resources Commission.

(b) "Commissioner" shall be taken to mean the Virginia Commissioner of Marine Resources or such other public officer, employee, board, commission, or other authority that may by law be assigned the duties and authority of the Commissioner of Marine Resources.

(c) "Mineral Resources" means coal, stone, sand, gravel, shell, metals, ores, minerals (excepting oil and gas), and any other nonliving material of commercial value found in natural deposits on or in the seabed or subsoil thereunder.

(d) "Submerged Lands" refers to those lands or mineral resources covered by tidal waters from the line of mean low water

seaward to a distance as authority over exploration and exploitation of marine mineral resources may be properly claimed by the State.

(e) "Tidelands" means all that land lying between and continguous to mean low water and an elevation above mean low water equal to the factor 1.5 times the mean tide range at the site of the proposed operation.

(f) "Unclassified Land" means State lands that have not been classified by statute for alternate uses.

(g) "Qualified Operator" means any person or persons over eighteen years of age, any partnership, limited partnership, corporation, or association of persons organized under the laws of the United States or of any State or territory thereof and qualified to do business in the Commonwealth of Virginia, whether acting individually, jointly, or through subsidiaries, agents, employees, or contractors.

(h) "Pioneer" means any qualified operator employing new or untried technology for exploiting a mineral resource which is presently not being developed in paying quantities from the marine environment.

(i) "Prospecting" is that operation conducted for the purpose of mapping, sampling bottom or subbottom materials, making geophysical or geochemical measurements, or comparable activities so long as such operation is carried out in a manner that does not significantly alter the surface or subsurface of the seabed.

(j) "Exploration is that detailed observation and evaluation activity which follows the location and selection of a mineral

deposit of potential economic interest and which has, as its objective, the establishment and documentation of the nature, shape, concentration, and tenor of an ore deposit and the nature of the environmental factors which will affect its mineability. It does include such removal or conversion for any other purpose such as sampling, experimenting in recovery methods or testing equipment or plant for recovery or treatment of mineral resources.

(k) "Exploitation" is that activity which has, as its immediate objective, the removal of or conversion of raw mineral resources (without regard to profit or loss) for the primary purpose of marketing or commercial use.

(l) "Commercial Production" means recovery of mineral resources at a substantial rate as determined by the Commissioner.

62.1-199. Permits--All operations are covered by a single permit. Granting of the permit authorizes exploration. A supplemental authorization to exploit must be obtained by the operator in conformity with Sections 214, 215, and 216 herein prior to the initiation of exploitation under the permit.

62.1-200. Activities Requiring a Permit--Prospecting does not require a permit. No person shall explore for or exploit any mineral resources in areas subject to the provisions of this Act without first applying for and obtaining a permit from the Commission in the manner specified in this Act. No provision of this Act shall deny riparian owners rights specified in Chapter 19 of Section 62.1.

62.1-201. Issuance of Permits--The Commission shall have the responsibility for issuing exploration and exploitation permits for mineral resources in Virginia's unclassified submerged lands and tidelands.

62.1-202. Qualifications--Permits shall be issued only to qualified operators. The Commissioner may prescribe certain technical and financial requirements of qualified operators in order to assure effective and orderly development of the permit area. These additional requirements shall be applied on a nondiscriminatory basis to all permit holders or applicants. Permits granted prior to the passage of this Act must meet new requirements at the time of renewal.

62.1-203. Application Procedure--Any qualified operator desiring to apply for a permit shall complete and mail two sealed, approved application forms to the Marine Resources Commission. The Commission shall publicly open all applications on the last working day of each month. At that time, the Commission shall forward copies of the applications to the Virginia Institute of Marine Science for resource and environmental comments and the State Water Control Board for water quality comments. The executive body of the county or city in which the land lies should it be so designated or the executive body of the county or city bearing the closest geographical proximity to the site of the proposed activity should also receive an application for comment. The Commission shall also consult with any Federal or State agency which may have pertinent information concerning an application.

62.1-204. Mineral Categories--Applications shall identify the category of minerals in the specific area for which the permit is sought. Permits shall be issued for all minerals in any one of the following categories:

Category I--Minerals occurring at the surface of the seabed excepting oil and gas.

Category II--Other minerals including Category I minerals and geothermal energy that occur beneath the surface of the seabed excepting oil and gas.

62.1-205. Allocation--A permit as specified herein shall be issued by the Commissioner to the first qualified person who makes written application and tenders the fee for the block specified in the application.

62.1-206. Competitive Bidding--In the event the Commission receives more than one permit application for the same category of minerals in the same area or portion thereof, within the same calendar month, the permit shall be awarded on the basis of competitive bidding between the applying parties. The competitive bidding procedure is as follows:

1. All bidding shall be by sealed bids and may be for the whole or any particularly described portion of the area disputed.

2. Notification that bids are necessary shall be sent by the Commission within thirty working days of the opening of the application.

3. All bids shall be filed with the Commissioner at the

Commission's main office within thirty working days after notification that bids are necessary. No bid filed subsequent to this date shall be considered.

4. Bids shall be accompanied by a cashier's or a certified check for the amount of the offered consideration (or bonus) and shall be made payable to the State Treasurer.

5. All bids shall be opened by the Commission in public at the main office fifteen working days after the receipt of all bids.

6. The Commission may accept the highest qualified bonus bid with respect to a particular tract.

7. A qualified bid is one made strictly in accordance with the requirements set down in advance by the Commission.

62.1-207. Documentation--Any applicant desiring a permit shall be required to:

(a) Submit charts containing boundaries of the proposed area along with a complete description of the permit area including depths, total area involved, significant fauna (oyster beds, et cetera), distance from the shoreline, and any other pertinent data required by the Commissioner.

(b) Provide a general description of the procedures and equipment to be used in the operation.

(c) Provide general information as to the effects said activities may have on the water quality and other physical and biological parameters of the general area.

(d) Provide general information on financial status and

insurance coverage.

62.1-208. Rejection of Applications--Notice of rejection of applications must be accompanied by a detailed explanation of the Commission's reasons for its actions.

62.1-209. Work Requirements and Relinquishment--

(a) In the exploration phase, prior to attaining commercial production, the permittee shall meet the following minimum annual work requirements for each block.

Years	Amount per annum
1-4	$10,000.00
5-7	$20,000.00
8-10	$30,000.00

The minimum annual work requirement for a portion of a block shall be a proportional fraction of the above. Expenditures for off-site operations, facilities, or equipment shall be included in computing up to 50 per cent of the required minimum expenditures where such off-site expenditures are directly related to development of the licensed block or blocks. Expenditures in any year in excess of the required minimum may be credited to later years by the permittee.

(b) The permittee shall provide the Commission with a bimonthly report of activities on the site, to include the amount of money spent during that period and the amount of material removed. The Commissioner shall publish regulations to specify information to be included in this report. The permittee shall present in his bimonthly report sufficient evidence that exploration is proceeding

at an acceptable rate on the permit site. Failure to meet the specified work requirements in any one year shall require the permittee to show cause why the Commission should not revoke the permit. Where circumstances beyond the control of a permittee impair his ability to develop any portion of the seabed or subsoil held under such permit, the term of the permit and the dates for complying with any other permit condition shall be extended for an equal length of time.

(c) Prior to authorization to exploit, the operator shall be required to relinquish one-half of the initial land area under the permit within three years of grant of the permit and one-half of the remaining unrelinquished area within the next two years. The relinquishment requirement shall not apply to permits issued for areas of one-quarter of a block or less. Permittees may at any time relinquish rights to all or part of the permit area.

62.1-210. Permit Duration--Permits for the exploration phase shall be granted for an initial period of four years, renewable at the permittee's request for an additional three years. The permittee may be granted a second three year extension upon presentation of substantial evidence as to why the permit should be renewed. At the time of renewal, the permittee shall be subject to the permit terms and conditions in effect at that time, except those provisions relating to size and location of the permit. The Commission may prescribe shorter periods for the exploration of sand, gravel, and shell material.

62.1-211. Size--Permit areas within the Chesapeake Bay and its tributaries shall be granted in blocks of not more than 1,000 acres. Other permit areas shall be granted in blocks no larger than 5,760 acres. The Commission may limit the number of blocks granted under permit at any one time to any one operator.

62.1-212. Rental--All permit areas shall be charged an annual rental fee of $500.00 per block or proportional amount of a portion thereof prior to authorization to exploit and $1.50 per acre annually thereafter for so long as the permit remains in force.

62.1-213. Authorization to Exploit--An authorization to exploit shall be granted upon application for an initial exploitation period of ten years, and shall be renewed upon reapplication at five-year intervals thereafter as long as minerals are being extracted in paying quantities. The permit shall terminate if once the permittee has produced in paying quantities, he subsequently fails to do so over a continuous period exceeding thirty-six months, so long as such failure is not due to conditions beyond his control. At the time of renewal, the permittee shall be subject to the permit terms and conditions in effect at that time, except those provisions relating to size and location of the permit area. Prior to authorization to exploit, the operator must provide the state with his exploratory data in order that an assessment of the value of the claim be made. This data will be held in strict confidence.

62.1-214. Environmental Impact Statement--

(a) The Commissioner shall request that the Virginia Institute of Marine Science (VIMS) prepare an environmental impact statement taking into full account any environmental reports prepared by the permittee. The Commissioner shall not issue an authorization to exploit until such an environmental impact statement has been submitted to and considered by the Commission. Said environmental impact statements shall conform as closely as practicable under the particular circumstances to the form and substance of similar instruments required under other Federal and Virginia legislation dealing with the environmental impacts of mineral resource development.

(b) Prior to authorization for exploitation, the permittee may recover marine resources without payment of royalty thereon in order to experiment in recovery methods or test equipment or plant for recovery or treatment of mineral resources providing that appropriate State agencies may use this activity as an observable scientific experiment in preparation of associated environmental impact statements.

62.1-215. Restoration Plans--Prior to the time of grant of authorization to exploit, the permittee shall be required to submit a plan of restoration for the granted area, if such restoration is deemed necessary. Restoration may start no later than two months after the close of operations and must be completed within one year of commencement. Permit expiration or revocation shall not relieve the operator from restoration responsibilities.

62.1-216. Fee for Authorization to Exploit--The permittee shall submit a check to the State Treasurer in the amount of $500.00 when applying for authorization to exploit.

62.1-217. Reporting--The permittee shall be required to submit a bimonthly report during exploitation. The Commissioner shall specify information to be included in this report but must include as a minimum the volume of material removed and the value at the minehead of such material.

62.1-218. Security--No authorization to exploit shall become effective until the permittee has deposited security, in an escrow account of a state approved bank, acceptable in form to the Commission and adequate to cover restoration if deemed necessary. Nothing in this clause shall limit the use of the security to restoration. The balance remaining of the security deposit upon termination of the permit for any reason and upon satisfaction of all restoration requirements herein specified shall be returned to the permittee within three months of such termination and satisfaction.

62.1-219. Permit Fees--The Commissioner shall establish a minimal fee for the issuance of permits. The fee shall be charged so that all administrative costs (excluding environmental impact statements) are covered, and in no case shall it exceed $500.00.

62.1-220. Inspection--Commission inspectors shall be allowed entry to and inspection of operations at any reasonable time. Transportation to and from the site will be the responsibility of the

Commonwealth. The Commission and its inspectors shall guarantee the confidentiality of proprietary information and procedures previously identified in writing to the Commission to which they are exposed in the performance of their duty, for the term of the permit, or fifteen years, whichever period is the longer.

62.1-221. Multiple Use--Exploration and exploitation of the natural resources of Virginia's tidelands and submerged lands shall not result in any unjustifiable interference with other activities in the marine environment. No permit shall preclude scientific research by any person in permit areas where such activities do not interfere with permit activities by the permittees. Two or more permittees to whom permits have been issued for different materials in the same or overlapping areas shall not unjustifiably interfere with the activities of each other. Reasonable priority shall be given the first permittee in any dispute between permittees.

62.1-222. Hearings--Public hearings on the exploration phase are not required, but may be scheduled if the Commissioner feels that it is necessary to gain pertinent information concerning the proposed work. The Commissioner shall schedule and hold not less than one public hearing prior to granting authorization to exploit.

62.1-223. Assessment--

(a) A severance fee shall be placed on every metric ton of material of commercial value removed in the mining operation during the exploitation phase. The fee shall be determined by the Commission

using a percentage (between 2 per cent and 10 per cent) of the current market value at the minehead of the mineral resource(s) being exploited.

(b) Pioneers shall operate under a 75 per cent reduction in severance fee for the first three years of commercial production or until such time as the operation has been shown capable of producing a profit, whichever occurs first.

62.1-224. Penalties--Any person who violates any provision of this Act, or of the regulations promulgated under this Act, or provisions of a permit issued under this Act shall be liable to a civil penalty of not less than $100.00 nor more than $1,000.00 for each violation. No penalty shall be assessed until the person charged shall have been given notice and an opportunity for a hearing of such violation. In determining the amount of penalty, the gravity of the violation, prior violations, and the demonstrated good faith of the person in attempting to achieve rapid compliance after notification shall be considered by the Commissioner. Each day that such offense goes uncorrected after notification may be deemed a separate offense. The Attorney General or his designate may bring actions for equitable relief to enjoin an imminent or continuing violation of this Act, of regulations promulgated under this Act, or of provisions of permits issued under this Act, and the proper courts of the Commonwealth of Virginia shall have jurisdiction to grant such relief as the equities of the case may require.

62.1-225. Suspension of Operations--The Commission may, through the appropriate court, seek injunctive relief from exploration and exploitation operations in progress if there is sufficient evidence to support the claim that substantial irreversible environmental damage may result due to continued operations. The suspended permittee shall be granted immediate recourse to a court having appropriate jurisdiction.

62.1-226. Liability--Each permittee shall be liable for and shall agree to indemnify the Commonwealth or individuals against any loss, damage, claim, demand or action, caused by, arising out of, or connected with the use of the permit area by the permittee and/or agents thereof. No provision of this article shall be construed to relieve the operator of any responsibilities to individuals, the Federal government, or other State agencies.

62.1-227. Transferability--Permits shall be transferable with the approval of the Commission, provided the transferee is a qualified operator. A transfer fee of not less than $1,000.00 nor more than $5,000.00 shall be paid to the State Treasury by the transferor.

APPENDIX B

ORIGINAL VERSION OF 62.1-4

Chapter 389.--An Act to amend the Code of Virginia by adding a new section numbered 3573-a authorizing the leasing by the State of the beds of certain waters within the jurisdiction of the State, for certain purposes. (HB 103)

Approved March 29, 1946

Be it enacted by the General Assembly of Virginia:

1. That the Code of Virginia be amended by adding a new section numbered thirty-five hundred seventy three a, as follows:

Section 3573-a. Leasing of the beds of certain waters.--The Attorney General with the consent and approval of the Governor, shall have authority to lease the beds of such of the waters within the jurisdiction of the State, without the Baylor survey as they deem proper, for periods not exceeding five years, with the right to renew the same for additional periods not exceeding five years each to such persons and upon such terms as they deem expedient and proper, which leases shall authorize the lessees to prospect for and take from the bottoms covered thereby, oil, gas, and such other minerals and mineral substances as are therein specified, provided that no such lease shall in any way affect or interfere with the rights vouchsafed to the people of the State concerning fishing, fowling and the catching and taking of oysters and other shellfish, in and from the bottoms so leased,

and the waters covering the same. All leases made under the authority granted by this section, shall be executed in the name and for and on behalf of the State, by the Attorney General, and shall be countersigned by the Governor; and the Commissioner of Fisheries and the Attorney General of all such leases so made on or before the first day of December preceding the convening of each regular session thereof.

APPENDIX C

PRESENT VERSION OF 62.1-4

62.1-4. Granting easements in, and leasing of, the beds of certain waters.--The Marine Resources Commission, with the approval of the Attorney General and the Governor, may grant easements in, and may lease, the beds of the water of the State, without the Baylor Survey. Every such easement or lease may be for a period not exceeding five years, may include the right to renew the same for an additional period not exceeding five years, each shall specify the rent royalties and such other terms deemed expedient and proper. Such easements and leases may, in addition to any other rights, authorize the grantees and lessees to prospect for and take from the bottoms covered thereby, oil, gas, and such other minerals and mineral substances as are therein specified; provided, that no such easement or lease shall in any way affect or interfere with the rights vouchsafed to the people of the State concerning fishing, fowling, and the catching and taking of oysters and other shellfish, in and from the bottoms so leased, and the waters covering the same. All easements granted and leases made under the authority granted by this section, shall be executed in the name and for and on behalf of the State, by the Attorney General, and shall be countersigned by the Governor, all rents or royalties collected from such easements or leases shall be paid into the State treasury to the credit of the

Special Public Oyster Rock Replenishment Fund for the purposes of such fund. Expenditures and disbursements of all sums from such fund shall be made as provided in 62.1-3. The Commissioner of Marine Resources and the Attorney General shall make reports to the General Assembly of all such easements granted or leases so made, such reports to be made on or before the first day of December preceding the convening of each regular session thereof. (Code 1950, 62-3; 1958, c. 920; 1962, c. 637; 1968, c. 659.)

NOTES

NOTES

[1]Commission on Marine Science, Engineering and Resources, "Our Nation and the Sea" (Washington, D.C.: Government Printing Office, 1969). [Report.]

[2]Commission on Marine Science, Engineering and Resources, "Industry and Technology: Keys to Oceanic Development," Vol. II (Washington, D.C.: Government Printing Office, 1969), p. 189. [Report.]

[3]A letter dated April 10, 1973, from R. B. Ziegler of IHC Dredger Division stated that offshore sand and gravel operations were considered economically viable by his company and that two mining vessels were presently under construction to dredge sand and gravel from offshore deposits.

Deepsea Ventures, Inc., has a hydraulic dredger which, in 1970, dredged manganese nodules in 800 meters on the Atlantic Continental Shelf in an equipment test leading to the design of a deep ocean mining rig. The company's present interest is in the recovery of manganese nodules in the Pacific Ocean.

From time to time, local dredging companies have engaged in limited operations for the recovery of clay, sand, gravel, and shell material from Virginia waters. There is reason to believe that such operations may be conducted in the future.

[4]Supra note 2, at 190.

[5]D. Brobst and W. Pratt, "United States Mineral Resources," U.S. Geological Survey Professional Paper No. 820, pp. 561-566 (1972).

[6]M. Nichols, "Shelf Sediments Off Chesapeake Bay, General Lithology and Composition," Virginia Institute of Marine Science Special Scientific Report No. 64, 1972. Gravel deposits have been estimated at 143 sq. km. but it is not known if these are surface outcroppings of more extensive beds.

[7]Economic Associates, Inc., "The Economic Potential of the Mineral and Botanical Resources of the United States Continental Shelf and Slope," 1968.

[8]Presently sand and gravel are shipped to the Norfolk Metropolitan area from Richmond resulting in high transportation costs.

[9]J. Davenport, Incentives for Ocean Mining: A Case Study in Sand and Gravel, 5 Marine Technology Society Journal 35-40 (1970).

[10]Supra note 5, at 563.

[11]N. Taney, comments on Incentives for Ocean Mining: A Case Study in Sand and Gravel, 5 Marine Technology Society Journal 41-43 (1971).

[12]A letter dated November 26, 1965, from the Virginia Commissioner of Marine Resources to Radcliff Materials, Inc., stated that the Commission was rejecting Radcliff's shell dredging application because the work area was within one mile of living oyster reef.

[13]A. Merrill, K. Emery, R. Meyer, Ancient Oyster Shells on the Atlantic Continental Shelf, 147 Science 398-400 (1965).

[14]M. Nichols, "Inventory of Mineral Resources on the Continental Shelf Off Chesapeake Bay." [Mimeographed.]

[15]Supra note 5.

[16]F. Manheim, "Mineral Resources Off the Northeastern Coast of the United States," U.S. Geological Survey Circular No. 669, p. 12 (1972).

[17]M. Spangler, "New Technology and Marine Resource Development: A Study in Government-Business Cooperation," pp. 246-271 (1970).

[18]The potential for rapid economic development of sand and gravel in Virginia is discussed on text pages 4-6.

[19]Deep Seabed Hard Mineral Resources Act, originally introduced in the 1st Session 92nd Congress as Senate Bill 2801.

[20]"United States Draft of the UN Convention on the International Seabed Area," submitted by the U.S. Government as working paper for discussion purposes on August 3, 1970.

[21]A. Lewis, Capsule History and Present Status of the Tidelands Controversy, 3 Natural Resources Lawyer 620 (1970).

[22]J. Corbitt, Federal-State Offshore Oil Dispute, 11 William and Mary Law Review 755 (1970).

[23]Id.

[24]U.S. v. California, 332 U.S. 19 (1946).

[25]Supra note 21, at 625.

[26]U.S. v. Texas, 339 U.S. 707 (1950); U.S. v. Louisiana, 339 U.S. 699 (1950).

[27]Submerged Lands Act, 43 U.S.C. § 1301-15 (1964).

[28]O. Stone, Legal Aspects of Marine Oil and Gas Operations, 15 Institute of Mineral Law 21-68 (1968).

[29]Alabama v. Texas, 347 U.S. 272 (1954).

[30]Outer Continental Shelf Lands Act, 43 U.S.C. § 1331-43 (1964).

[31]A. Lewis, The State-Federal Interim Agreement Concerning Offshore Leasing and Operations, Slovenko Oil and Gas 93-100 (1963).

[32]Id.

[33]Supra note 21, at 623.

[34]Id. at 625.

[35]U.S. v. Louisiana, 389 U.S. 155 (1967).

[36]Supra note 21, at 627.

[37]Id. at 629.

[38]Letter from Gerald L. Baliles, Assistant Attorney General, Commonwealth of Virginia, to Maurice B. Rowe, Secretary of Commerce and Resources, explaining the status of Virginia's offshore boundary dated September 28, 1972.

[39]Three charters granted by James I, King of England, provide the basis for the 200 mile claim. These charters were granted in 1606, 1609, and 1612 and conferred certain rights to the colony as far as 800 miles offshore.

[40]The Federal government has not issued regulations on hard mineral leasing under the Outer Continental Shelf Lands Act although twenty years have passed since its enactment. This has frustrated the Act as it applies to hard minerals. Perhaps state action will provide greater opportunities to develop minerals.

[41]M. Lynch, W. Hargis, and R. Byrne, "Delimitation of the Boundary between the Internal Territory and the Territorial Sea of the Commonwealth of Virginia," Virginia Institute of Marine Science Special Report in Applied Marine Science and Ocean Engineering No. 17, 1971.

[42]The accurate delineation of boundaries on subaqueous blocks presents a problem. Virginia is presently equipped with the Hastings Raydist system within the Chesapeake Bay. Although the system is costly, it would be desirable and helpful for the Commonwealth to install the system for offshore Virginia. Its full implementation would provide the most accurate means available for the location of block boundaries as well as providing an invaluable tool for oceanographic research.

[43]Virginia Acts of Assembly 1892, Chapter 511. Partial surveys of oyster rock were carried out by Winslow in 1879 and W. K. Brooks in 1905.

[44]J. Baylor, "Survey of Oyster Grounds in Virginia," Report presented to the Governor of Virginia, 1892.

[45]D. Haven, W. Hargis, and P. Kendall, "A Study of the Public and Private Oyster Industry of Virginia 1931-1971." [Unpublished.]

[46]Id.

[47]M. Rogers, Virginia Marine Resources Commission, personal communication.

[48]G. Cauthen, Virginia Marine Resources Commission, personal communication.

[49]All contracts studied cited 62.1-3 as the authority for the Commission's actions. While this provision does provide for the granting of rights to "take and use material," its main emphasis is on dredging and construction. The Commission considers the extraction of sand, gravel, and shell material as dredging to be authorized under 62.1-3 rather than mining as specified in 62.1-4. The writer contends that the material and its intended use should be the criteria for determining which statute should apply and would, therefore, place dredging of sand, gravel, and shell under 62.1-4.

[50]Prior to 1962, the Virginia Marine Resources Commission (VMRC) had never collected revenues for the extraction of subaqueous materials. Letter from VMRC Commissioner to the Executive Secretary of the Texas Game and Fish Commission dated May 29, 1962.

[51]Lease was the term used in contracts on file at the VMRC. Preference for the use of the word permit is discussed on page 36.

[52]Information regarding amounts, royalties, and other particulars of leases granted under 62.1-3 were obtained from the files of VMRC.

[53]Some of the shell removed was bought by the Commonwealth for the Public Oyster Rock Replenishment Program. The value of the shell was subtracted from the amount of royalty due.

[54]Supra note 12.

[55]The State Highway Department and the Department of Corrections are state agencies which remove materials from the beds of Virginia's waters. The amounts taken, however, are relatively insignificant.

[56]Supra note 9, at 39.

[57]Commission on Marine Science, Engineering and Resources, "Marine Resources and Legal-Political Arrangements for Their Development" (Washington, D.C.: Government Printing Office, 1969), pp. vii-89. [Report.]

[58]Replies from the South Carolina Development Board and the Massachusetts Department of Natural Resources indicated that studies of offshore mining legislation were underway in these two states.

[59]J. Jacobson and T. Hanlon, Regulation of Hard Mineral Mining on the Continental Shelf, 50 Oregon Law Review 373-460 (1971).

[60]Maine Mining Law for State-Owned Lands, T.10 Maine Revised Statutes, ch. 401, § 2101-b (1964).

[61]Proposed rules and regulations for the Division of Mineral Resources, Commonwealth of Massachusetts. [Unpublished material.]

[62]General Statutes of North Carolina, § 74-49.

[63]California Administrative Code, Title 2, Division 3, § 1901(g).

[64]Supra note 61.

[65]United States v. Maine et al., No. 35, Original.

[66]11 Alaska Statutes, 601.43.

[67]Code of Virginia, 1950, § 62.1-2.

[68]11 Alaska Statutes, 601.434.

[69]Exception of Baylor Ground from the leasing of subaqueous beds is found in § 62.1-4.

[70]General Statutes of North Carolina, 74-49(g); 11 Alaska Statutes, 603.1(f).

[71]Reference to "pioneer" is found in § 223, para. (b), of this model.

[72]Present prospecting procedures allowed by this provision do not pose any environmental threats. The administrative burden created by the regulation of such activity would not, in the estimation of the writer, be worth any advantages such regulation might bring and would impose an unprecedented attempt to regulate scientific thought and action.

[73]Supra note 19.

[74]Supra note 59, at 447.

[75]According to § 28.1-3, the jurisdiction of the Commission "shall extend to the fall line of all tidal rivers and streams . . ." The tidelands definition extends Commission jurisdiction up to 1.5 times the mean tide range above mean low water at any project site.

[76]If the area in question lies within a river, the county boundaries extending to the center of that river should be used to indicate which governmental unit should receive the Commission's notice. If the area lies within a bay or offshore, the closest geographical proximity should be used. Section 15.1-1031 indicates that county and city jurisdiction in areas bordering the Chesapeake Bay and the Atlantic Ocean shall extend only to piers, wharves, et cetera.

[77]This provision is a modification of § 5.1, Appendix A, to the United States Draft of the UN Convention on the International Seabed Area, August 3, 1970. This document contains three categories of minerals, the two mentioned in this proposal plus fluids or minerals extracted in a fluid state. This model legislation is not designed to effectively regulate this third mineral category nor should it limit the future options available to the offshore oil and gas operator.

[78]C. Ensign, Operational Aspects of Ocean Mining, 55 Mining Congress Journal 93-98 (1969).

[79]R. Greenwald, Special Counsel Deepsea Ventures, Inc., personal communications.

[80]Work requirements are found in §§ 7, Deep Seabed Hard Mineral Resources Act, and § 6.5, Appendix A of the United States Draft of the UN Convention on the International Seabed Area.

[81]Relinquishment requirements are found in § 8 of the Deep Seabed Hard Mineral Resources Act, and §§ 5.3-5.5, Appendix A of the United States Draft of the UN Convention on the International Seabed Area.

[82] Supra note 79.

[83] Section 28.1-109, para. (10), sets block size limits within the Chesapeake Bay for oyster grounds. A maximum of 5,000 acres is allowed to any one person. Within the rivers and streams, the maximum is 3,000 acres. No mention is made of offshore block sizes because oysters do not occur there.

[84] Section 28.1-109, para. (10), establishes a minimum rental of $0.75 per acre for oyster ground within the Chesapeake Bay below 15 feet. All other ground is charged an annual rental fee of $1.50 per acre.

[85] Project NOMES was originally a 4-year, $5,000,000.00 joint study sponsored by the Commonwealth of Massachusetts and the National Oceanic and Atmospheric Agency (NOAA) of the Department of Commerce, to determine if offshore aggregate mining is feasible from an ecological standpoint. The project was never officially announced, but has been going on for about a year. It ran into trouble from environmental groups and unexpected costs of spoil disposal. Some of the biological studies will be continued by the Commonwealth of Massachusetts and some NOMES personnel will continue to work on marine mining problems, but the bulk of the study has been halted.

[86] Such a provision is found in §§ 4.1, Appendix A of the United States Draft of the UN Convention on the International Seabed Area.

[87] Section 62.1-3 requires "a fee of twenty-five dollars shall be paid for issuing each such permit as a charge for such permit, but if the cost of the project or facility is to be more than $10,000.00, the fee paid shall be one hundred dollars . . ." These fees are lower than those proposed in the model because they do not cover actions requiring large amounts of money to administer and enforce the legislation.

[88] This provision was modeled after similar legislation in the Deep Seabed Hard Mineral Resources Act and the United States Draft of the UN Convention on the International Seabed Area.

[89] According to Richard J. Greenwald, supra note 79, a current assessment equal to 3 per cent to 5 per cent of the value at the minehead is customary for land based metal ores. Acceptable assessment for deep ocean ores has not been established.

[90] This provision was taken almost verbatim from the penalty provision of the Marine Protection, Research, and Sanctuaries Act of 1972, Public Law 92-532.

[91] Supra note 59.

[92] Supra note 61.

[93] Payments made to the Virginia State Treasury conform with provisions in § 62.1-4.

[94] Supra note 88.

SELECTED BIBLIOGRAPHY

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Baylor, James. "Survey of Oyster Grounds in Virginia." Report presented to the Governor of Virginia, Richmond, Virginia, 1892.

Brobst, Donald A., and Pratt, Walden P. "United States Mineral Resources." U.S. Geological Survey Professional Paper No. 820. Washington, D.C.: Government Printing Office, 1973.

Commission on Marine Science, Engineering and Resources. "Industry and Technology Keys to Oceanic Development." Washington, D.C.: Government Printing Office, 1969. [Report.]

_____. "Marine Resources and Legal-Political Arrangements for Their Development." Washington, D.C.: Government Printing Office, 1969. [Report.]

_____. "Our Nation and the Sea." Washington, D.C.: Government Printing Office, 1969. [Report.]

Corbitt, James. "Federal-State Offshore Oil Dispute." William and Mary Law Review, XI (1970), 755-70.

Davenport, Joan M. "Incentives for Ocean Mining: A Case Study in Sand and Gravel." Marine Technology Society Journal, V (1971), 35-40.

Economic Associates, Inc. "The Economic Potential of the Mineral and Botanical Resources of the United States Continental Shelf and Slope." Washington, D.C.: Government Printing Office, 1968. [Report.]

Ensign, Chester O. "Operational Aspects of Ocean Mining." Mining Congress Journal, LV (1969), 93-98.

Haven, D., Hargis, W. S., and Kendall, P. "A Study of the Public and Private Oyster Industry of Virginia 1931-1971." [Pending publication.]

Jacobson, J., and Hanlon, T. A. "Regulation of Hard Mineral Mining on the Continental Shelf." Oregon Law Review, L (1971), 373-460.

Lewis, Austin W. "Capsule History and Present Status of the Tidelands Controversy." Natural Resources Lawyer, III (1970), 620-36.

_____. "The State-Federal Interim Agreement Concerning Offshore Leasing and Operations." Slovenko Oil and Gas, 1963, pp. 93-100.

Lynch, M. P.; Hargis, W. J.; and Byrne, R. "Delimitation of the Boundary between the Internal Territory and the Territorial Sea of the Commonwealth of Virginia." Special Report in Applied Marine Science and Ocean Engineering No. 17, Virginia Institute of Marine Science, Gloucester Point, Virginia, 1971.

Manheim, Frank T. "Mineral Resources Off the Northeastern Coast of the United States." U.S. Geological Survey Circular No. 669. Washington, D.C.: Government Printing Office, 1972.

Merrill, A. S.; Emery, K. O.; and Rubin, Meyer. "Ancient Oyster Shells on Atlantic Continental Shelf." Science, CXLVII (1965), 398-400.

Nichols, Maynard M. "Inventory of Mineral Resources on the Continental Shelf Off Chesapeake Bay." [Mimeographed.]

_____. "Shelf Sediments Off Chesapeake Bay: General Lithology and Composition." Special Scientific Report No. 64, Virginia Institute of Marine Science, Gloucester Point, Virginia, 1972.

Spangler, Miller B. New Technology and Marine Resource Development: A Study in Government-Business Cooperation. New York: Praeger Publishers, 1970.

Stone, Oliver L. "Legal Aspects of Marine Oil and Gas Operations." Institute of Mineral Law, XV (1968), 21-68.

Taney, Norman E. "Comments on Incentives for Ocean Mining: A Case Study in Sand and Gravel." Marine Technology Society Journal, V (1971), 41-43.

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