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Can It Happen Here?

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Can It Happen Here?

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On March 24, 1989 the world was once again reminded of the fragile character of the relationship between man and nature, when the Exxon tanker, Valdez, ran aground in Alaska. The Exxon Valdez spilled 11 million gallons of toxic crude oil in Prince William Sound,[1] off the Alaskan coast, raising new concerns about the inadequacies of existing emergency response plans, loopholes in liability laws and the limits of cleanup technology. For Prince William Sound and surrounding waterways, the was an environmental nightmare: six national parks and thousands of wildlife species were affected.

Although, the spill in Alaska seems removed from those of us residing in the middle Atlantic states, recent spills on the Delaware River (800,000 gallons),[2] off the coast of Newport, Rhode Island (420,000 gallons),[3] and in the Houston Ship Channel (250,000 gallons),[4] have alerted many to the possibility of a major spill in the waters of the ecologically sensitive Chesapeake Bay. This article will address these concerns by exploring the possibility

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1. Washington Post, June 27, 1989, at A1, col. 1.

2. Id. at col. 2-3.

3. Id.

4. Id.

of an oil or petroleum product spill in the Chesapeake Bay; the article will conclude with suggestion for preventing such a disaster.

Special Characteristics of the Bay

The Chesapeake Bay measures 200 hundred miles in length, stretching from the mouth of the Susquehanna river in Pennsylvania, to the Tidewater area in Virginia.[5] The relative stillness of the Bay's shallow, warm waters makes it an ideal habitat for countless species of aquatic life and water fowl. The Bay supports a significant number of fishing and water-based industries, as well as tourist and recreational activities. The very characteristics of the Bay that make it a source of livelihood and enjoyment for many, would exacerbate the damage caused by an oil spill.

The Bay is largely enclosed and therefore has little flushing action, as do large open bodies of water such as the ocean. As a result, pollutants sink into the sediment of the Bay's shallow waters until they are re-suspended by wind or wave action, instead of being rapidly dispersed.[6] Ecological traumas that might have a less severe impact on colder, deeper bodies of water with more active flushing systems have a greater effect on the Chesapeake. One of the most extensive reports on the impact of oil spills in an estuarine environment was conducted by the Center for

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5. See The Bay on Borrowed Time: Hearings Before the Subcomm. on Water Resources of House Comm. on Public Works and Transportation, 101 Cong., 1st Sess. 3 (1989) [hereinafter - Hearings] (testimony of William C. Baker).

6. See J. Maroon, Statement on House Bill 1790, 3 (1989)

Environment and Estuary Studies at the University of Maryland. This study, titled Petroleum in the Estuary,[7] states that

> petroleum pollution is a greater threat in semi-enclosed bays and estuaries than in the open water because of the limiting nature of low flushing rates on the dilution of toxic hydrocarbons and recruitment of decimated populations of organisms...Traces of oil pollution have been observed [to remain] in the bays and estuaries with poor circulation for as long as eleven years.[8]

These same sentiments were echoed by Dr. Eugene Cronin, a widely respected Bay scientist who points to eight crucial characteristics of the Bay which could contribute to greater damage from oil pollution than would occur in other large bodies of water. These were:

1. The spilled oil will have long retention and much of it will reach useful shorelines because only twelve miles out of eight thousand miles around the edge of the Bay is open to the Atlantic Ocean.
2. Currents from winds and tides move surface materials over large areas and as a result, except for very small tributaries, there will be no local spills.
3. Estuarine circulation, with net upstream drift of deep water and associated materials, will prolong retention in the Bay and may extend the spread upstream.
4. Every edge of the bay is marsh, beach or developed shoreline and each can be greatly damaged by oil.
5. The extraordinary large crops of seafood species and other living organisms provide opportunity for unusually great destruction to such forms.
6. The presence of large numbers of larvae and eggs of many species in the nursery estuary and the unusual vulnerability of these life history stages provide opportunity for damages which could affect resources over a large part of the Atlantic Coast.
7. Migratory species must successfully pass through the entire length of the Bay without toxic damage or chemical interference.
8. Other stresses (thermal, nutrient, sediment etc.) are rapidly increasing in the Bay. These are cumulative, may be

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7. Id.

8. Id.

sygernistic, and generally increase the scale of damage from an additional stress like oil.[9]

The Chesapeake Bay Foundation News, a quarterly publication of the Chesapeake Bay Foundation, compared a potential Bay spill to the spill in Prince William Sound in its June, 1989 issue. The article states, "because of it's vast shoal waters, it's narrowness, it's extensive shoreline beaches and marshes, and it's role as a nursery for juvenile fish and shellfish, the level of destruction in the Chesapeake would be even greater than in the deep, rocky shores of the Prince William Sound."[10]

The National Oceanic and Atmospheric Administration (NOAA), recognizes the Chesapeake Bay as one of the most ecologically sensitive areas in the United States. NOAA rates toxic spill sensitivity of coastal areas on a scale of one to ten, with ten being the most sensitive.[11] The Chesapeake Bay reportedly has few areas below nine; some areas received ratings up to eleven, placing them above the maximum measure on NOAA's standard scale.[12]

Is The Fear of a Spill Unfounded?

In 1976, off Smith Point, Virginia, a tugboat captain towed his barge across a shoal in a short-cut attempt. Waves washing

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9. Id. at 3-4.

10. Baker, Exxon and Texaco Drill For Oil in Virginia, 14 **Chesapeake Bay Foundation News** 1, 2 (1989).

11. Hearings, supra note 5, at 3 (testimony of William C. Baker).

12. Id.

over the grounded barge ripped open a hatch resulting in a spill of 250,000 gallons of No. 8 oil, a dense and heavy mixture.[13] On August 24, 1988, a 37 year old barge split open, also near Smith Point, resulting in a spill of 212,000 gallons of oil.[14] Though there have been numerous spills on the Bay over the years, these two are the largest to date.[15] The spills off of Smith Point demonstrate the very real possibility of a major spill on the Chesapeake.

The chances for another major spill on the Chesapeake Bay are greatly enhanced by the fact that exploratory drilling is presently taking place near the Bay. Several years ago, oil companies launched a series of seismic tests on the Chesapeake to establish the probability of oil reserves beneath it.[16] Lobbying by several environmental groups has led to legislation in Maryland and Virginia which prohibits, for the time being, natural gas and oil exploration directly on the Bay.[17] Drilling, however can still take place near the Bay, laterally beneath it, and in the upland regions.[18]

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13. Id.

14. Richmond Times Dispatch, June 13, 1989, at B1, col. 1.

15. Hearings, supra note 5, at 4 (testimony of William C. Baker).

16. Baker, supra note 10, at 1.

17. Letter from J. Kabler to Members of the Chesapeake Bay Foundation (June 1989).

18. Baker, supra note 10, at 1.

In early 1989, a well work permit was issued to Texaco, Inc. in Westmoreland County, Virginia, which is located on Virginia's Northern Neck. Texaco hopes to find oil or gas in the Triassic sandstones that were deposited in an area known as the Taylorville Basin. On May, 8, 1989, Texaco Inc., and Exxon Corp., began drilling the exploratory well on Virginia's Northern Neck, near the Potomac River. This area drains into the Potomac, less than a mile away, which in turn feeds into the Bay.[19]

Texaco officials have promised that if oil is found, they will use overland trucks or pipelines to transport it to refineries in Yorktown or Delaware City. They point to strong government regulations as a means of insuring the safe handling of these Petroleum products. However, the recent major spills in Delaware, Rhode Island and Alaska demonstrate that government regulations in themselves are not enough to insure the safe, responsible transportation of oil. Indeed, these recent spills highlight the potential incompatibility between the oil industry and the environmentally sensitive waterways such as the Chesapeake Bay.

Ramifications of Oil Industry Development

The unavoidable consequences of oil drilling coupled with the unique characteristics of the Bay make it especially susceptible to oil damage. Inevitably, oil drilling produces incidental spillage; and oil transportation, as recent events indicate, is far

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19. Id.

from fail-safe.

The disposal of drilling muds is one part of the drilling process that could have deleterious effects on the Bay. These fluids, labeled drilling muds, are packed down the drill shaft during drilling to aid in lubrication and maintenance of pressure.[20] In the past, it was common practice to dispose of this waste by pumping it overboard from water based rigs; however, because, this waste often contains oil and toxic metals, many states have since required that drilling muds be deposited on land.[21] This affords a unique problem for Virginia because landfill space for industrial waste is already difficult to find.[22] As a result, disposal plans will have to incorporate the problem of landfill scarcity.

Another problem common to the oil industry is the disposal of "produced waters." These oil contaminated waters are a by-product of the oil coming to the surface. This water occurs naturally with the oil and it is often treated and disposed of in the surface waters.[23] Because of the fragile nature of the Bay, disposal of this waste water would have a marked environmental impact.

Spillage from the routine operation of oil rigs affords another opportunity for the possible pollution of the Bay. Operation and maintenance problems, faulty tanks, and leaky pipes

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20. Maroon, supra note 6, at 1.

21. Id.

22. Id.

23. Chesapeake Bay Region Threatened By Oil and Gas Development, Chesapeake Bay Foundation Newsletter 1, 2 (1989).

are facts of life in the oil industry.[24] While the amount of spillage in each incident may be very small, the amount of oil being stored and transferred from even a moderate number of drilling operations could add up to hundreds of gallons per day spilling into the Bay.[25] It is believed that the toxicity of the oil would especially effect the bottom dwelling aquatic life in the Bay by harming the larvae and eggs these species.[26]

Along with the potential hazards of oil drilling listed above, there is always the potential for an oil rig to "blow out," or for underwater seeps to develop. A blow out of an oil well is caused by pressurized oil in the ground. History has shown that this is a rather uncommon occurrence;[27] however, if it were to happen it could mean the dispersal of thousands of gallons of crude oil into the Bay and it's tributaries.

Because crude oil comes out of the ground in many fractions, it can display many different effects once it is spilled.[28] Some of the more soluble fractions often exhibit strong toxicity while other parts are heavy enough to sink to the bottom. This

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24. Id.

25. Id.

26. Id.

27. See id. at 2.

28. Maroon, supra note 6, at 2.

fractioning presents a problem for removal and clean up, as has been discovered by clean-up crews in Alaska.[29]

Recommendations

Preventive measures that could be taken to decrease the possibility of an oil spill in the Bay grouped into two categories: First, preventive measures to be employed while oil is being extracted from the ground; Second, preventive measures to be taken while oil is being transported. If oil exploration continues near the Bay, as it appears it will, authorities must find ways to ensure safe extraction and transportation.

Some recommendations for safe extraction include creating standards and procedures for permitting and bonding oil and gas wells, establishing methods of enforcement that would authorize an oil and gas inspector to take legal actions against the violators, and instituting a Well Review Board that would review enforcement actions and hear appeals of the Inspector's decisions.[30] These moves would help regulate the use of the oil wells as they are being initially set up. In addition, the government must establish standards and procedures for regulating well spacing, and for

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29. Id.

30. Virginia Coal and Energy Commission, Initial Staff Report of the Joint Subcomm. to Study the Oil and Gas Act, H.J. Res. 364, 1989 2d Spec. Sess. 2 (1989).

designating drilling units to prevent waste and to obtain the maximum recovery of oil and gas reserves from a field.[31]

Several proposals have been put forth to address the environmental protection aspects of oil exploration.[32] The Virginia Oil and Gas Acts, which were enacted in 1982 and amended in 1989, contain Articles that would establish standards for safe and environmentally sound operation of wells and gathering pipelines.[33] The Articles include provision that would provide for the protection of groundwater and surface water, establish erosion and sediment control requirements and establish standards for plugging and abandonment of wells.[34] These measures are designed to make the removal of oil a much safer proposition and if followed, could prevent a major spill in the Bay.

The problem of oil transportation by barge, was addressed by the Coast Guard Marine Safety Office located in Hampton Roads, Virginia.[35] The Office had several recommendations including a one-time mandatory inspection of the hulls of all barges built over thirty years ago, a requirement that vessels built for river service be restricted to river service, and a periodic gauging of

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31. Id.

32. Id.

33. Id.

34. Id.

35. Richmond Times Dispatch, June 13, 1989 at B1, col. 3.

all vessels no longer able to withstand heavy strain.[36] These inspections would detect metal fatigue in vessels no longer able to withstand heavy strain.[37]

To the surprise of environmental groups, the Coast Guard did not adopt these seemingly common-sensical recommendations. Admiral P. A. Yost's office[38] concluded that "such actions is not justified by the occurrence of a single casualty of this type."[39] The Coast Guard did agree, however, to conduct a nationwide survey of barge failure and if class structural problems were revealed to be a major problem, would reconsider the recommendations.[40]

Although Texaco officials have promised that if oil is discovered they will transport it by pipeline or overland trucks, oil company promises have historically outstripped performance. Oil production on and near the Chesapeake Bay must be rigidly monitored and all safety regulations strictly enforced if the Bay is to survive. If the oil industry is here to stay in the Chesapeake Bay, we must use all means necessary to protect the Bay from future pollution. Otherwise, we may never reclaim it.

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36. Id.

37. Id. at col. 2.

38. Admiral Yost is Commandant of the Coast Guard.

39. Id. at col. 1.

40. Id. at cols. 1-2.