DECISION MEMORANDUM FOR THE SECRETARY

July 10, 2010

TO: Secretary

FROM: Michael R. Bromwich Michael R. Bromwich /BTS
Director, Bureau of Ocean Energy Management, Regulation and Enforcement

cc: David J. Hayes
Thomas Strickland
Wilma Lewis
Steve Black
Hilary Tompkins

SUBJECT: Options regarding the suspension of certain offshore permitting and drilling activities on the Outer Continental Shelf

I. INTRODUCTION AND BACKGROUND

On April 20, 2010, the Deepwater Horizon, an offshore rig drilling an exploratory well located 52 miles from shore in nearly 5,000 feet of water, exploded. The Deepwater Horizon disaster caused the deaths of 11 workers and resulted in an oil spill that remains uncontained more than two months after the incident. On April 30, 2010, the President directed the Secretary to report, within 30 days, on "what, if any, additional precautions and technologies should be required to improve the safety of oil and gas exploration and production operations on the outer continental shelf." In response to this directive, on May 27, 2010, the Department of the Interior produced a report entitled "Increased Safety Measures for Energy Development on the Outer Continental Shelf" (the "Safety Report").

On May 28, 2010, the Secretary directed the Minerals Management Service, now the Bureau of Ocean Energy Management, Regulation and Enforcement ("BOEM" or "Bureau") to exercise its authority under the Outer Continental Shelf Lands Act ("OCSLA") to suspend certain deepwater drilling activities. BOEM issued a Notice to Lessees and Operators ("NTL") suspending permitting and drilling operations in the Gulf of Mexico and the Pacific region for operations in water depths greater than 500 feet for a period of six months. The six-month duration of the May 28 suspension was intended, among other things, to minimize the possibility of another catastrophic event; to ensure that operators similarly situated to Deepwater Horizon were operating in a safe manner; to take into account the expected timeline for killing the Macondo well; and to provide adequate time to obtain input from on-going investigations of the disaster and to develop regulations addressing the safety-related issues described in the Safety Report.

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On June 7, certain providers of support services to offshore oil and gas operations in the Gulf of Mexico filed a lawsuit in the federal court for the Eastern District of Louisiana seeking to have the May 28 suspension enjoined (the "*Hornbeck* litigation"). On June 22, the Court ruled that the plaintiffs were likely to succeed on their claim that the May 28 suspension was arbitrary and capricious and preliminarily enjoined enforcement of the suspension. The Department of the Interior appealed the Court's decision and requested that the Court of Appeals for the Fifth Circuit stay the injunction pending appeal. On July 8, the Fifth Circuit denied the stay motion on the grounds that the Department had not shown harm because there was no indication that the drilling activities subject to the suspension were likely to resume, but invited the government to seek emergency relief if such activities had resumed or were imminent.

While the Secretary, the Department of the Interior, and BOEM are complying with the Court's injunction in the *Hornbeck* litigation, the Secretary has an ongoing obligation to manage the outer continental shelf ("OCS") under OCSLA in a safe and environmentally sound manner. Pursuant to the Secretary's directive, BOEM has continued to review data and information concerning management of the OCS. As a result, our knowledge of the risks of certain types of oil drilling and the inadequacies of pre-existing blowout containment and oil spill response strategies has increased significantly. This options memorandum addresses the current facts and risks, and the options available to the Secretary to manage the OCS in a safe and environmentally sound manner and to assure the American public that OCS deepwater drilling will be conducted in a manner – and under conditions – that are safe for workers, coastal communities, and the environment. *See* 43 U.S.C. §§ 1332(b) and 1348; 30 C.F.R. 250.106.

To prepare the analysis and options contained in this Memorandum, BOEM has consulted with internal agency experts, including field operations personnel, and has comprehensively reviewed the existing record, which includes but is not limited to the following:

- the record related to the Safety Report,
- materials related to the *Hornbeck* litigation,
- daily BOEM incident reports,
- daily Departmental emergency management reports,
- various preliminary documents and testimony related to investigations of the Deepwater Horizon disaster and BP Oil Spill,
- thousands of pages of Congressional testimony relating to the Deepwater Horizon disaster and BP Oil Spill,
- materials presented by representatives of industry and coastal states, and

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- other relevant materials.[1]

This Memorandum summarizes the key considerations and information relating to the range of options available to the Secretary concerning drilling operations in the OCS.

II. SUMMARY

OCSLA authorizes the Secretary to prescribe regulations for the "suspension or temporary prohibition of any operation or activity, including production, pursuant to any lease or permit . . . if there is a threat of serious, irreparable, or immediate harm or damage to life (including fish and other aquatic life), to property, . . . or to the marine, coastal, or human environment . . .." 43 U.S.C. § 1334(a)(1). BOEM regulations provide that the agency may order suspensions of operations when activities "pose a threat of serious, irreparable, or immediate harm or damage" to human or animal life, property, any mineral deposit or the marine, coastal, and human environment" as described in Section 1334(a)(1) above or "[w]hen necessary for the installation of safety or environmental protection equipment." 30 C.F.R. §§ 250.172(b)-(c).

The Deepwater Horizon incident, and its aftermath, have provided new information about drilling on the OCS – in particular about (1) systemic safety issues that need to be addressed, (2) the inadequacies of a existing blowout containment strategies, and (3) the shortcomings of current oil spill response plans and resources. BOEM has sought to examine and analyze the new data and information (which we continue to develop and receive on a continuing basis) in order to provide the Secretary with the best and most complete information on which to make judgments about whether drilling suspensions are appropriate to reduce threats to life and the environment and to allow for improvements in safety and environmental protection equipment.

The Deepwater Horizon incident alone does not suggest that deepwater or other blowouts will be frequent events, but the record clearly demonstrates that such blowouts can occur and that they carry consequences greater than previously anticipated. Recent events also have made clear that there are systemic problems that apply across different types of offshore drilling, including, but not limited to, problems with blowout preventers (and not simply the type of blowout preventer that failed in the Deepwater Horizon tragedy), a lack of viable blowout containment strategies and capabilities, and inadequacies in oil spill response plans and resources, particularly in light of the ongoing response to the BP Oil Spill.

The growing body of evidence now demonstrates that there are number of steps that could be taken to increase workplace and drilling safety, to identify new safety measures that should be adopted, and to require industry participants to consider, develop, and present more adequate blowout containment and oil spill response capabilities. Although the root causes of the Deepwater Horizon tragedy may not be

[1] Attachment 1 to this memorandum is a list of information sources considered in connection with the preparation of this Memorandum.

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known for some time, it is clear, based on information developed from the time of Macondo well blowout through today, that some form of a temporary pause in drilling would be reasonable and appropriate, in order to allow time for improvements to be made in workplace and drilling safety, blowout containment capabilities, and deepwater oil spill response capacity.[2]

III. DISCUSSION

This section discusses the central considerations relevant to the options presented later in this Memorandum. The key factors for the Secretary to consider in determining whether suspensions of drilling permitting and operations on the OCS are appropriate in response to threats to the marine, coastal or human environments or for the installation of safety or environmental protection equipment are: (1) the current status of drilling safety and the implementation of safety measures; (2) current well control and spill containment capabilities; and (3) the current status of spill response capabilities. Although economic effects are not required to be considered before issuing a suspension, the Secretary may also properly consider the economic effects associated with drilling accidents as well as the economic effects of the suspension of drilling activity.

A. Drilling Safety

1. Current Industry Safety Practices, as Well as Regulation and Inspections Programs, Require Improvement

As detailed in the Safety Report, substantial improvement in the industry's safety practices and procedures relating to offshore drilling, especially with respect to deepwater drilling conducted from floating platforms, is necessary to achieve best practices.[3] Indeed, the "White Paper: Recommendations for Improving Offshore Safety" prepared by the Joint Industry Task Force to Address Offshore Operating Procedures and Equipment ("JITF"), which helped form the basis for many of the safety recommendations in the Safety Report, reflects that the drilling industry (including rig owners and operators, drilling contractors, lease holders, and trade associations) agrees

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2 I note that the European Union's Energy Minister, Günther Oettinger, recently called for a temporary ban on new drilling in the North Sea in light of the BP Oil Spill. In a speech on July 7, Minister Oettinger stated, "... given the current circumstances, any responsible Government would at present practically freeze new permits for drilling with extreme parameters and conditions. This can mean de facto a moratorium on new drills until the causes of the [Deepwater Horizon] accident are known and corrective measures are taken for such frontier operations as the ones carried out by the Deepwater Horizon. Governments need to make sure that the industry launches all possible measures to further improve safety and enhance disaster prevention levels to meet the highest possible standards also in extreme climatic or geophysical conditions." Speech by EU Commissioner of Energy Günther Oettinger, *Oil Exploration and Extraction – Risks, Liability, and Regulation* (European Parliament Plenary Session, July 7, 2010).

3 *See also,* BP, Blowout Preventer Testing Memorandum, presented at the Hearing on "Inquiry into the Deepwater Horizon Gulf Coast Oil Spill" (May 12, 2010) (stating that "[s]hort and long term actions are required to improve subsea BOP stack testing, reliability and intervention").

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that significant improvements are necessary with respect to drilling safety practices and procedures, particularly for drilling in deepwater.

Many of the drilling safety recommendations contained in the Safety Report are in the process of being implemented through industry compliance with NTL No. 5.[4] The safety requirements implemented through this NTL include certification requirements for blowout preventers ("BOPs"); requirements related to secondary control systems, such as remotely operated vehicle ("ROV") intervention capabilities, deadman systems and autoshears; new testing requirements; requirements relating to casing and cement design and casing installation procedures; and compliance certifications. Operators already are in the process of submitting documentation relating to these NTL requirements to BOEM for review and verification.

As the Safety Report makes clear, BOEM regulatory and inspections programs can be improved as well. The Safety Report describes regulatory gaps and other shortcomings in the Bureau's current regulation of offshore drilling. Some of the Safety Report's recommendations for filling regulatory gaps may be accomplished through a subsequent NTL and/or rulemaking, and BOEM currently plans to issue additional safety-related requirements implementing certain of the Safety Report's recommendations within 120 days. These additional safety-related provisions may include requirements relating to (1) BOP and ROV testing and inspections standards; (2) fluid displacement procedures; (3) cementing practices; (4) safety cases; (5) BOP secondary control systems; and (7) ROV operating capabilities. BOEM also is considering further safety-related requirements relating to, for example, blind shear ram redundancy requirements and the establishment of deepwater well-control guidelines.

It also is clear that BOEM needs more robust and aggressive offshore facilities inspection programs. The Department has announced a major re-organization of BOEM to address concerns about conflicts of interest and to support vigorous regulatory oversight and enforcement. The Department also has announced plans for substantial increases in resources devoted to environmental and safety regulation and enforcement, including the proposal to add, subject to budget approval by Congress, more than 200 new engineers and inspectors. In addition, you have requested that your Safety Oversight Board, chaired by Assistant Secretary Wilma Lewis, provide you with input regarding inspections and other safety and enforcement-related issues by August 15, 2010.

Despite the recommendations contained in the Safety Report, which when fully implemented will represent substantial progress in promoting safer drilling procedures and practices, the root causes of the Deepwater Horizon disaster are not known. Even as the Macondo well continues to release oil into the Gulf of Mexico, several investigations and reviews have been commissioned to identify the root causes of the disaster, including a joint BOEM/U.S. Coast Guard investigation, the Presidential Commission's review,

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[4] NTL No. 2010-N05, National Notice to Lessees and Operators of Federal Oil and Gas Leases, Outer Continental Shelf (OCS): Increased Safety Measures for Energy Development on the OCS (June 8, 2010).

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and a review by the National Academy of Engineering ("NAE"). BP also has begun its own internal investigation of the Deepwater Horizon incident. It is anticipated that these reviews will provide additional information about the risk factors associated with deepwater drilling and recommend further measures to improve the safety of drilling in the OCS, including in deepwater. Until these investigations and reviews are completed, the Department, the drilling industry, and the public will not have a complete picture of the safety risks posed by deepwater drilling and the appropriate measures to mitigate those risks.[5]

2. Certain Drilling Activities and Conditions Involve Heightened Safety Risks

While all offshore drilling for oil and gas involves various risks, including the risk of equipment or systems failure, human error, and other occurrences that could threaten the safety of workers and/or endanger the environment, there are certain factors relating to equipment and drilling conditions that carry heightened risks of producing an event such as the BP Oil Spill.[6]

a. Equipment – Blowout Preventers

The most significant risk factors related to offshore drilling safety equipment are the control system differences between surface BOP stacks and subsea BOP stacks. The control system for subsea BOPs is much more complex than the control system for a surface BOP. The failure of the Deepwater Horizon BOP to stop flow from the Macondo well underscores this risk, although at this time the precise reasons for the Deepwater Horizon BOP's failure are not known. Nonetheless, it is clear that the problem with the Deepwater Horizon blowout preventer is not an isolated incident – problems have also been identified with the blowout preventers of the relief wells being drilled by BP. Because almost all blowout preventers are manufactured by a very small number of companies many BOPs may have similar problems.[7] Moreover, the BP Oil Spill has revealed challenges related to the repair of subsea blowout preventers and with the containment deepwater blowouts. Given the central role played by blowout preventers in

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[5] Industry executives have acknowledged this fact. *See e.g.*, Written Testimony of Steve Newman, Subcommittee on Oversight and Investigations, Hearing on "Inquiry into the Deepwater Horizon Gulf Coast Oil Spill" (May 12, 2010) ("Until we fully understand what happened on April 20, we cannot determine with certainty how best to prevent such tragedies in the future."); Written Testimony of Tim Probert, Subcommittee on Oversight and Investigations, Hearing on "Inquiry into the *Deepwater Horizon* Gulf Coast Oil Spill" (May 12, 2010), ("Halliburton cannot make any judgment or offer any theories about what happened until at a minimum the well owner has completed interviewing everyone on board to re-create the daily log of activities, including those that occurred after we successfully completed the cementing operations of the production casing string.")

[6] The discussion in Section III.A.2 regarding the safety risks associated with deepwater drilling is based on a memorandum prepared in consultation with senior BOEM staff who have engineering expertise and experience. *See* Memorandum from Walter Cruickshank, Deputy Director of BOEM, June 30, 2010.

[7] *See* E-mail from David Trocquet regarding "Relief Well BOP Testing Summary," July 1, 2010; Memorandum from Walter Cruickshank regarding "Similarity of all Subsea BOPs," July 10, 2010.

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the existing systems for containing oil from deepwater wells, it is critical that these devices are as safe and reliable as possible.

The major risk factors related to the various BOP configurations are discussed below, with the highest risk configuration discussed first.

- Subsea BOPs: Floating drilling rigs use subsea BOPs. In deepwater, floating drilling rigs drill exploration wells, as well as other types of wells. Well control procedures are significantly complicated by the location of the BOP stack. Subsea control systems are extremely difficult to repair while attached to the well, as the Deepwater Horizon incident amply demonstrates. With a subsea BOP system, if dangerous changes in fluid flow are not detected properly, the flow can enter the drilling riser prior to actuation of the BOP, and oil and gas fluids, under extreme pressure, can expand rapidly as they flow up the drilling riser to the rig. Current technology allows any fluid that gets past the BOP to be brought under control only by attempting to divert the uncontrolled flow. Therefore, well equipment to detect wellbore influx and the specialized training of crews to respond to these events are critical in drilling operations using subsea BOPs. Moreover, the BOPs' primary electrical and hydraulic control systems must be function-tested regularly to ensure that the systems will respond properly on demand. To ensure the redundancy of control systems, it is also critical that secondary control systems be properly maintained and tested. The new BOP inspection and testing requirements imposed for the BP relief wells identified performance problems with the BOPs for both of the relief wells, including significant problems with the deadman mechanism for one of the relief well BOPs.[8] These problems were corrected and successful tests were performed on both BOPs. The new testing procedures applied to the relief well subsea BOPs suggest that the apparent failure of the Deepwater Horizon's BOP might not be an isolated incident and that more rigorous testing of BOPs may identify additional, previously-undetected problems with BOP performance.

- Surface BOPs on floating facilities: Although they can use either type of BOP, platform rigs on floating production facilities typically use surface BOPs. Development drilling operations conducted from floating production facilities, which generally are used in deepwater development drilling at depths greater than 1,000 feet, employ a surface BOP stack located on the floating platform. As discussed further below, development wells generally involve less safety risk than exploration wells because the geologic and pressure conditions of these wells typically are well understood as a result of prior activity. However, drilling with a surface blowout preventer on floating vessels presents other risks because the high pressure riser and casing from the seafloor to the rig can be exposed to

[8] The deadman mechanism is a secondary control system on a subsea BOP stack. It is a safety system designed to automatically close the wellbore in the event of a simultaneous absence of hydraulic supply and signal transmission capacity in both subsea control pods.

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dynamic stresses, and the engineering for these stresses must be accounted for.[9] A failure of a high pressure riser due to these dynamic stresses can lead to uncontrolled flow below the surface blowout preventer system, which rests on the floating platform.

- Surface BOPs: Wells drilled in shallow water (less than 500 feet) with surface blowout prevention equipment carry a significantly lower risk profile because the wellhead and BOPs are accessible to intervention with surface equipment, and therefore do not require the use of ROVs as is necessary in deepwater drilling operations. Failures in control systems for surface BOPs can often be repaired while the system remains attached to the well. Surface BOPs do not have the same complications related to fluid flow after the BOP is actuated as do subsea BOPs – with BOP stacks on the surface of a rig and proper kick detection, there is not a significant chance of oil or gas flowing past the BOP stack. The use of a structural casing (drive pipe) for jack-up rig drilling adds protection against stresses from sea currents. Moreover, the shorter water column involved in shallow water drilling means that there is decreased potential for vortex-induced vibration ("VIV") than in deepwater drilling.

b. Factors That Correlate to Deepwater

Several factors that affect the risk profile of drilling operations correlate to water depth. These issues include:

- Type of rig and BOP: As discussed above, risks vary significantly depending on the type of BOP that can be employed by a drilling operation. Jack-up rigs, which rest on the sea floor, can be used in water depths up to 500 feet. Jack-up rigs use surface BOPs. In general, floating drilling rigs, which use subsea BOPs, operate in water depths of 500 feet or more, because jack-up rigs cannot reach the sea floor at such depths. Floating production facilities, on which platform rigs can use either type of BOP but typically use surface BOPs, are generally found in water depths of 1000 feet or more. In shallower depths, companies can use bottom-founded production facilities that are not exposed to the same dynamic stresses as floating production facilities, as described above.

- Flow rate from reservoirs: Deepwater wells can be very productive and have flow potentials that can be 5 to10 times higher than shallow water wells. These characteristics have been fully demonstrated by the Macondo well. Accordingly,

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[9] Well operations from a floating platform with a surface BOP stack and a high pressure riser (through the water column) are higher risk operations than drilling from a jack-up rig or a fixed platform. The single high pressure riser (or in some cases, a dual riser system) used by floating platforms is subject to environment forces such as vortex induced vibration (VIV) that make them more susceptible to stress fatigue. Jack-up rigs and fixed production platforms have more casing strings tied back to the surface of the rig or platform, which provide additional external support for the pressured casing. Also, because these tied back casing strings are used in shallower water operations with a shorter water column, they are less exposed to current induced stress.

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the worst-case discharge scenarios typically anticipate larger releases from deepwater wells.

- Over-pressured formations: Over-pressured formations are those geological formations with pressures that exceed the normal pressure expected at a given depth. While over-pressured formations may occur at any water depth and the cementing of over-pressured formations presents similar risks at all water depths, addressing over-pressured formations in deepwater drilling operations is more complex than in shallow water operations. In general, deepwater wells have more casing/liner strings, leaving less annular space between the casing and hole diameter. This makes cementing the hole more difficult. Higher than normal pressure formations further complicate the operation.

- Difficulties in spill response: The BP Oil Spill response has demonstrated that water depth, pressure, and temperature are major factors affecting the ability of well control crews to bring deepwater blowouts under control. Complications associated with responding to a deepwater blowout include inaccessibility of the well, methane hydrate formation at lower seafloor water temperatures, longer times needed to move ROVs and equipment from the surface to the work zone, and the need to work with larger and less available support equipment due to the greater water pressure.[10]

c. Type of Drilling Operation

Some drilling activities pose a greater potential for encountering a blowout than other types of drilling. This section of the memorandum provides a relative risk ranking of different types of OCS drilling activities, as well as discussion of steps that can be taken to mitigate the risks associated with these types of drilling. This discussion is limited to safety and risks of a blowout. It does not consider containment, spill response, and other factors that are important to decisions concerning how to proceed on the OCS and are addressed later in this memorandum.

- Exploration or confirmation well. These are wells drilled to find a new productive formation or to confirm a previous discovery. Typically, these wells are drilled with limited knowledge of specific wellbore parameters (such as pore pressures, fracture gradients, lost circulation, or abnormal pressure zones). Therefore, casing and cementing programs must be designed to reach designated target zones while crews collect relevant well bore and formation data. If an exploration well results in a discovery, knowledge of these parameters improves, and therefore subsequent confirmation wells typically have less risk. After drilling crews reach a target zone, the well may be permanently or temporarily abandoned. Temporary abandonment is used when the operator wants to convert the well to a production well, which involves the setting of a production casing or

[10] *See*, Memorandum by Dr. Marcia McNutt, Director of the United States Geological Survey, regarding "USGS Support for Macondo Well Control and Containment; Observations Regarding Technical Problems with Deepwater Efforts," June 27, 2010.

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liner. Temporary abandonment may present safety risks if casing programs or cementing procedures are modified to accommodate well dimensions to allow high production volumes. Operators do not always know in advance of drilling whether the initial exploration well may be converted to a production well. The Macondo well falls into this well-type category.

- Exploration or confirmation well where drilling activities stop before reaching target zone. This type of well is drilled to a specific geologic formation and then temporarily abandoned until a specific risk mitigation action has been taken. The well is drilled with little or limited knowledge of specific wellbore parameters (such as pore pressures, fracture gradients, lost circulation, or abnormal pressure zones), and therefore casing and cementing programs must be designed to reach designated target zones while crews collect relevant well bore and formation data. Because there already has been a discovery, which improves knowledge of these parameters, confirmation wells generally have less risk than exploratory wells. The well casing and cementing programs must be designed to accommodate a temporary stoppage in the drilling activity before the operator proceeds to its intended drilling target – *i.e.*, drilling of the well may be halted before the operation reaches a productive interval.

- Workover activities. These activities take place after a well has begun producing, but where the wellbore or completion equipment requires additional work to bring the well back to full production. These operations occur on wells with a known production reservoir and greater knowledge of the relevant geologic information. However, the activity typically occurs with the wellbore open to the production zone. Suspension of workover activity could result in the loss of production from already producing fields.

- Development wells. These wells typically are drilled into a known production reservoir and relevant geologic information is known to the operator. The drilling, casing, and cementing programs are similar to wells previously drilled into the reservoir, and therefore the risks associated with these programs are lower than those related to the drilling of exploration wells. Also, the drilling equipment and well procedures are similar to those used in the previous wells for the production project. These wells typically are considered routine. However, in certain cases, prior to drilling past the well's intermediate casing, a review might be necessary to determine whether the well has progressed as planned and whether the plans for drilling through the production zone and completion of the well are still appropriate.

- Waterflood and injection wells. Injection wells are drilled into a reservoir for production maintenance purposes, including, for example, to maintain reservoir pressure (gas injection) or to push oil toward the production well (waterflood), to increase recovery of oil from the reservoir. These wells are drilled into a known production reservoir and typically all relevant geologic information is known to the operator. The drilling, casing, and cementing programs are similar to

previously drilled wells. Drilling equipment and well procedures are similar to those used in the previous wells for the production project. These wells are typically considered routine and lower risk.

- Disposal wells. These wells are drilled to dispose of unwanted materials, including, for example, produced waters injected into subsurface reservoirs. To the extent that they are drilled into hydrocarbon-bearing reservoirs, the risks associated with disposal wells are similar to waterflood and injection wells.

- Drilling riser-less portion of wells. Certain wells may be drilled without BOPs or risers because they are not drilled into hydrocarbon formations. For example, shallow cores are typically drilled less than 1000 feet into the seabed to sample stratigraphy and sediment type in connection with stability analysis. Another example of this type of drilling is for scientific research. For example, a Joint Industry Project (JIP), which includes government agencies as partners (DOE, USGS, BOEM), is currently focused on characterizing methane hydrates as a production source. The wells in this JIP, though in deep water, are shallow wells that are not drilling into oil formations, and therefore are drilled riser-less and without a BOP. This category of drilling includes the drilling of shallow sections of deepwater wells.

d. Natural Gas Reservoirs

Once an initial discovery well has been drilled, the Bureau and the operator have information on the gas-to-oil ratio of the reservoir. While not significantly affecting the safety risk factor considerations related to different types of drilling activities discussed above, the risk that a leak from a natural gas reservoir will cause a major environmental disaster is significantly less than from a predominately oil-bearing reservoir. While natural gas reservoirs typically contain liquid, these liquids generally are light components, such as gas condensates, which tend to evaporate and do not present the environmental hazards as oil.

3. Safety Issues Associated with the Suspension of Drilling

We have heard concerns that the original six-month moratorium on offshore drilling at depths of 500 feet and greater poses certain safety risks. In a presentation to the Secretary on June 21, 2010, a Powerpoint presentation prepared by certain industry consultants claimed that "the moratorium as currently defined INCREASES risk when drilling is eventually resumed" because as a result of the moratorium[11]:

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[11] This presentation has been mischaracterized as a presentation that was made by the National Academy of Engineering. The presentation was made by Ken Arnold, an industry consultant. Mr. Arnold was accompanied by some of the individuals who had provided technical comments on the Safety Report. Some of these individuals had been recommended by the National Academy of Engineering ("NAE") for their technical expertise; the NAE itself was not involved in the review.

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- Some drilling would be stopped in the middle of operations.[12]

- The best mobile offshore rigs would leave the Gulf of Mexico to be used in offshore drilling operations elsewhere in the world.

- Experienced drilling staff would also be lost from the Gulf of Mexico region.

- There would be an increase in tanker traffic, which also presents risks of spills.[13]

While we appreciate that the industry consultants raised all possible concerns, the claimed risks relating to inexperienced crews and increased tanker traffic are, at best, speculative. We are aware of no data that support the conclusion that there is any significant causal relationship between the moratorium and alleged increases in these risk factors. Moreover, while the statistical probability of an oil spill resulting from a tanker incident may be higher than that of a spill resulting from a deepwater blowout, as demonstrated by the BP Oil Spill, the consequences of a deepwater blowout can be orders of magnitude more severe than a tanker spill.

4. Industry and Expert Proposals Regarding the Resumption of Deepwater Drilling

In their June 21, 2010 presentation to the Secretary, the consultants told the Department that they believe a "moratorium is needed." However, the consultants argued that any suspension in drilling should be redefined to reduce the risks, described above, that they claim are associated with the moratorium. The consultants suggested that the redefined moratorium (1) "remove the requirement for stopping operations;" (2) "require the implementation of many of the recommendations of the [Safety Report], including some not already included in NTL 05"; and (3) "allow drilling of 'low risk' wells to maintain [Gulf of Mexico] drilling equipment and expertise."

The consultants' presentation described certain types of drilling as "risky wells," the drilling of which they suggested should be suspended. The "risky wells" identified in the consultants' presentation included (1) exploration wells to previously undrilled strata; (2) drilling to deepen existing wells to previously undrilled strata; and (3) high pressure and high temperature wells, which typically involve drilling to great depths below the sea floor.

The consultants also listed the following "less risky" types of drilling (in order of their assessment of increasing degree of risk) that, they asserted, should be allowed to proceed under the current safety conditions, including compliance with NTL No. 5:

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12 The original moratorium NTL directed operators to cease drilling only after reaching a safe stopping point that would permit temporary abandonment of the well.

13 Powerpoint Presentation to Secretary of Interior, June 21, 2010.

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- Wells that are abandoned before reaching producing zones;
- Water disposal wells to non-producing reservoirs.
- Re-entries and sidetracks;[14]
- Water disposal wells to producing reservoirs and waterflood and gas injection wells;
- Development wells to known reservoirs;
- Workovers;
- Drilling to the base of the salt section in deep exploration wells; and
- Delineation wells to non-producing reservoirs.

Other representatives from the drilling industry also have offered proposals that would allow industry to resume or continue drilling operations. As discussed above, the JITF provided various safety-related recommendations that helped form the basis for many of the recommendations contained in the Safety Report, many of which in turn were implemented through NTL No. 5. On June 25, 2010, the American Petroleum Institute ("API") communicated JITF's position that these "prior JITF recommendations establish conditions in which safety, environmental and public interests will be well protected."[15] API also proposed that the following types of drilling operations should be allowed after compliance with NTLs No. 5 and No. 6:

- Rigs with subsea BOPs be allowed to drill non-target or objective sections of any wellbore.
- Platform rigs (whether fixed or floating) and MODUs with surface BOPs be allowed to drill wells and conduct well operations inclusive of target sections (*i.e.*, hydrocarbon zones).
- With respect to exploratory drilling, allow the drilling of (1) hole sections where the operator can provide evidence that there is minimal risk of the presence of

[14] Re-entries are drilling operations that take place in a previously drilled wellbore. Sidetracks are a type of re-entry drilling in which the operation starts in a pre-existing wellbore and then, at some depth, drills out of the pre-existing wellbore to a new target. Because, depending on the operation, this drilling might involve new hydrocarbon targets, including a different reservoir than accessed by the pre-existing wellbore, it potentially involves more risk than, for example, development drilling into a fully-characterized reservoir.

[15] E-mail from Erik Milito, API, to the Deputy Secretary regarding "API/Industry Suggestions for Allowing Industry to Resume/Continue Drilling," June 25, 2010.

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hydrocarbons, and (2) delineation wells where the prior discovery well has defined pore pressure and the fracture gradient profile for the area.

- With respect to development drilling, (1) immediately allow the drilling of riserless sections where the BOP is not deployed based on appropriate shallow hazard information because there is no hydrocarbon potential, and (2) permit the drilling of field development wells where pore pressure, fracture gradient, and other potential hazards are well understood.[16]

As described above, the industry consultants' presentation and the API proposal were focused on safety and drilling issues. Neither of these presentations discussed other factors relevant to the consideration of whether the suspension of drilling operations on the OCS currently is necessary to ensure safe conditions for workers, coastal communities, and the environment, including (1) the current capacity to contain an uncontrolled blowout in deepwater, and (2) the availability of resources necessary to respond to a second oil spill while the BP oil spill response is ongoing. Those key considerations are discussed in the following two sections of this memorandum.

B. Attention Must Be Devoted to Post-Blowout Containment Strategies and Capabilities

Deepwater blowouts have been rare occurrences, and the BP Oil Spill is an unprecedented oil spill and ecological disaster. The statistical infrequency of deepwater blowouts, however, accounts for only one of the factors that must be considered in evaluating whether it currently is safe to proceed with deepwater drilling in the OCS. Also relevant to the risk analysis are the catastrophic consequences – in terms of the health and safety of workers, effects on the regional and national economies, and damage to the environment – of an uncontrollable blowout and spill, regardless of the probability of such an event.

For these reasons, DOI regulations require those seeking to engage in offshore drilling to have an adequate response plan in the event of a catastrophe.[17] If such a response plan – addressing both containment and clean-up – was not provided or was obviously inadequate, drilling could not be approved in the first place because it would not be in compliance with applicable regulations. The Deepwater Horizon incident, as well as the ongoing response to the BP Oil Spill, have clearly revealed the inadequacy of response plans, and steps must be considered to ensure that those engaged in drilling offshore are complying with current regulations.

Moreover, there have been significant problems with the combined response to the BP Oil Spill, including with the adequacy and functionality of the equipment that was staged and deployed in connection with attempts to contain the spill; the adequacy of the

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[16] *Id.* This API proposal also included suggestions regarding well design and operations procedures and safety and training regarding risk management.

[17] *See, e.g.*, 30 C.F.R. §251.1(a); 30 C.F.R. §254.23; 30 C.F.R. §254.30; 30 C.F.R. §254.2.

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applicable Offshore Spill Response Plan ("OSRP") components and their implementation; the sufficiency of interagency review of OSRPs; and the expertise and training of personnel involved in the BP Oil Spill containment efforts.

With regard to the containment issues, the oil drilling industry has limited capability to stop an uncontrolled blowout of an oil well in deepwater. BP's inability, after 80 days, to contain the Macondo blowout and spill provides continuing evidence of this fact. The most realistic prospect of finally stopping the uncontrolled release of oil from the Macondo well is the drilling of relief wells, which ultimately are expected to take more than three months to complete and have their own attendant risk of failure (hence the simultaneous drilling of redundant relief wells in response to the BP Oil Spill). In Congressional testimony, industry executives have admitted that the industry currently is unprepared to effectively stop deepwater oil well blowouts, and that many of the containment methods attempted with respect to the Macondo blowout have been improvised and were untested.[18] BOEM's daily incident reports concerning the BP Oil Spill chronicle the multiple unsuccessful or partially successful attempts to contain the Macondo well blowout.

Experience gained over the past two months in seeking to contain the Macondo well suggests that industry can, with renewed focus, develop strategies that will better equip the industry, and the government, to respond to an uncontrolled blowout in deepwater. The ready availability of relief wells (including, potentially, the simultaneous drilling of safety wells to accompany particularly dangerous drilling activities) the pre-staging of special risers, caps, and other containment equipment, the dedication of ROVs to undertake containment activities, and other strategies all have the potential to materially improve well containment capabilities. Although industry has begun organize efforts to address strategies and options for subsea well control and blowout containment, much work remains to be done in order to develop viable containment and response options as well as to achieve an appropriate level of preparedness in the event of another deepwater wild well.[19]

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[18] See, Memorandum from Dr. Marcia McNutt, Director of the United Stated Geological Survey regarding "USGS Support for Macondo Well Control and Containment; Observations Regarding Technical Problems with Deepwater Efforts," June 28, 2010 ("Better Planning: It has simply taken too long to bring all of the containment efforts on line as BP and contractors have had to design, build, and test equipment for the first time"). *See also, e.g.*., Testimony of Rex Tillerson, Hearing on "Drilling Down on America's Energy Future: Safety, Security and Clean Energy," Subcommittee on Energy and Environment (June 15, 2010). *See also* Written Testimony of Lamar McKay, Chairman and President of BP America, Senate Environment and Public Works Committee, Economic and Environmental Impacts of the Recent Oil Spill in the Gulf of Mexico (May 11, 2010).

[19] *See* API submissions regarding "Enhanced Industry Capability for Offshore Operations" and "Joint Industry Task Force to Address Subsea Well Control and Oil Spill Response", July 6, 2010. The JITF document states that "The Joint Industry Task Force on Subsea Well Control and Containment has been formed to review current subsea well control preparedness and response options to determine their efficacy throughout all offshore operations." This task force "will review intervention and containment at the seafloor" and "will focus on other well control procedures including well shut in, kill methods, as well as subsea containment and collection methods" (emphasis in original).

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C. Limited Spill Response Resources Are Available to Battle Another Deepwater Spill

The unprecedented deployment of spill response equipment and cleanup crews to the vicinity of the Macondo well and regional shorelines in response to the BP Oil Spill raises serious concerns about the industry's and the government's current ability to respond in a meaningful way to another deepwater spill.[20] The table below describes the resources currently deployed in response to the BP Oil Spill.

Oil Spill Response Assets On-Scene – June 27, 2010	
Personnel	38,927
Deployed Boom (Feet)	7,659,405 Total
Vessels	6,458*
Fixed Wing Aircraft	37*
Helicopters	72*
*These figures do not include staged or ordered assets	

Source: DOI Office of Emergency Management, Emergency Management Situation Report, Gulf of Mexico Oil Spill, June 28, 2010

In light of this massive mobilization of the nation's spill response capability to address a single blowout event, there may be insufficient resources currently available to respond should another deepwater spill occur while the BP Oil Spill containment and clean-up effort is ongoing. Companies conducting drilling operations in the OCS are required to submit regional oil spill response plans identifying the resources available to sufficiently respond to a worst case discharge.[21] The resources identified in these plans include sufficient skimming and storage vessels, dispersant stockpiles, and dispersant equipment to respond to an estimated worst case discharge at a particular well.[22] These plans estimate that exploratory wells with mobile drilling operations will have a greater worst case discharge than other types of wells.[23] For example, below are the estimated worst case discharge rates (in barrels) in five Gulf of Mexico Regional Response Plans

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[20] Shallow water spills tend to be more confined and easier to address, if only because of the smaller geographic area affected by the spill. For example, with respect to the BP Oil Spill, it has been estimated that each molecule of oil can take as much as three hours to reach the surface, thereby creating conditions that allow for the spill to spread over a large geographic area. *See, e.g.*, David A. Fahrenthold and Juliet Eilperin, "Depth of Oil Spill Obscures Impact," (May 15, 2010) ("[T]his oil is flowing out nearly a mile underwater, and takes, by one estimate, three hours to reach the surface.").

[21] *See* 30 CFR 254, et. seq.

[22] *See, e.g.*, BP, ExxonMobil, Shell, Chevron, ConocoPhillips Gulf of Mexico Regional Response Plans.

[23] *See, e.g.*, BP, ExxonMobil, Shell, Chevron, ConocoPhillips Gulf of Mexico Regional Response Plans.

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for a well within 10 miles of shore, a well beyond 10 miles of shore, and an exploratory well.[24]

Well Type	Worst Case Discharge in Gulf of Mexico Regional Response Plan				
	BP	ExxonMobil	Chevron	Shell	ConocoPhillips
< 10 miles	28,033	7,000	6,390	10,104	N/A
> 10 miles	177,400	11,955	63,065	163,223	30,358
Exploratory Well	250,000	160,000	236,780	205,000	40,000

Different companies' regional response plans will identify many, if not all, of the same resources in a region as available to respond to a worse case discharge at one of their wells.[25] As the Chairman and CEO of ExxonMobil testified before Congress, "[regional response] plans look the same because in fact they call upon the same resources to respond."[26]

The BP Oil Spill alone is taxing these shared response resources to the limit. Industry executives have testified and stated repeatedly that they already have offered all available resources to the BP Oil Spill.[27] U.S. military and foreign resources are already being utilized in the response effort.[28] The Coast Guard has determined that the number of oil spill response vessels (OSRV) skimming oil is inadequate to recover the oil released from the BP Oil Spill, and additional skimming vessels are being ordered and manufactured to aid with the response.[29] Despite these efforts, the Coast Guard recently determined that "There are simply not enough U.S. [oil spill response vehicles] capable of skimming oil available to keep up with the pace at which oil flows from the

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[24] BP, ExxonMobil, Shell, Chevron, ConocoPhillips Gulf of Mexico Regional Response Plans.

[25] *See, e.g.,* BP, ExxonMobil, Shell, Chevron, ConocoPhillips Gulf of Mexico Regional Response Plans; testimony by ExxonMobil CEO and Chairman Mr. Tillerson before the House Subcommittee on Energy and Environment, June 15, 2010.

[26] Testimony by ExxonMobil CEO and Chairman Mr. Tillerson before the House Subcommittee on Energy and Environment, June 15, 2010.

[27] *See, e.g.,* Testimony by BP, ExxonMobile, Chevron, and ConocoPhillips executives before the House Subcommittee on Energy and Environment Hearing, June 15, 2010.

[28] Admiral Thad Allen, June 25, 10, and 1, 2010 briefings; Daily Administration updates on Deepwater Horizon response, June 28, 2010.

[29] Memorandum from BP Deepwater Horizon Oil Spill Federal On-Scene Coordinator Rear Admiral Watson to National Incident Command (June 16, 2010); Admiral Thad Allen, June 25, 2010 briefing and June 18, 2010 briefing. *See also* 33 CFR 154, 155 & 40 CFR 112, *Temporary Suspension of Certain Oil Spill Response Time Requirements to Support Deepwater Horizon Oil Spill of National Significance Response* (sent to Federal Register June 28, 2010) (amending Coast Guard and Environmental Protection Agency rules to allow certain commercial and military vessels normally required to be available for spill in other areas to assist in the Gulf).

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[Macondo] well."[30] Accordingly, the Coast Guard and EPA amended their oil spill response time requirements to allow certain commercial and military vessels normally required to be available for spills in other regions to be deployed in support of the BP Oil Spill response.[31] The National Oceanic and Atmospheric Administration ("NOAA"), for its part, has stated that its Office of Response and Restoration "is fully engaged in responding to the Deepwater Horizon spill" and that "[a]lthough unlikely, if another large spill was to occur simultaneously in another location across the United States, NOAA would have difficulty responding to its complete ability."[32] In a June 28, 2010 meeting between Interior officials and representatives from the drilling industry, the industry was unable to provide assurances that resources exist that would be available to address a second oil spill.

Finally, as concerns about the recent Tropical Storm Alex system in the Gulf of Mexico demonstrate, clean-up operations during hurricane season are subject to multiple weather-related complications, difficulties, and delay.[33] For example, despite taking a path away from the Macondo site, ocean conditions generated by Alex still required all 510 skimmers responding to the BP Oil Spill to be temporarily recalled to shore.[34] Moreover, the storm surge from a hurricane or other significant storm could distribute oil over a wider area and carry the oil into the coastline and inland.[35]

Therefore, under the present conditions, there are serious concerns about whether the government and operators have the capacity to mount a prompt and effective containment and clean-up effort in the event of another significant deepwater spill, whatever its probability. Before deepwater drilling activity resumes, it would be prudent – and necessary as a legal matter in order to have adequate response plans as required by

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30 June 16, 2010 Memorandum from Rear Admiral Watson to the National Incident Command. *See also,* Joshua Schneyer, Reuters, "Analysis: BP clean-up leaves U.S. vulnerable to another spill," July 6, 2010.

31 *See* "Temporary Suspension of Certain Oil Spill Response Time Requirements to Support Deepwater Horizon Oil Spill of National Significance Response." 33 CFR 154, 155 and 40 CFR 112. Sent to the Federal Register on June 28, 2010.

32 Written statement of NOAA Administrator Lubchenco to the Senate Committee on Commerce, Science and Transportation, May 18, 2010.

33 Admiral Thad Allen, June 25, 2010 Briefing (stating that a storm would have a "very negative effect" on containment efforts because it will require breaking production and getting production units to a safe locale. *See also* Admiral Thad Allen, June 26, 2010 Briefing and 28, 2010 Briefing (stating that if evacuation is required as a result of a tropical storm, the containment effort would be delayed by about 14 days).

34 "Waves from Storm Hinder Spill Effort," New York Times, June 30, 2010, citing statements by Coast Guard Rear Adm. Paul F. Zukunft.

35 Admiral Thad Allen June 28 Briefing; NOAA Hurricane Factsheet, http://www.deepwaterhorizonresponse.com/posted/2931/NOAA_fact_sheet_on_hurricanes_and_oil_spills.572167.pdf.

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the regulations referred to above – for companies to work with BOEM, the Coast Guard, and other authorities, to determine whether adequate spill response resources are available to address a future deepwater spill event.

D. Economic and Environmental Impacts Associated with Drilling Accidents and the Suspension of Drilling Activity

1. The Human, Economic, and Environmental Consequences of the BP Oil Spill

The BP Oil Spill has created severe economic and environmental consequences. The consequences of another deepwater oil spill of equal or comparable magnitude to the BP Oil Spill (or even second spill of significantly less magnitude) could be equally severe. Indeed, a second spill potentially could have even greater negative consequences if it were to occur before additional resources could be identified to contain and respond to such an event.

Eleven rig workers were killed in the Deepwater Horizon explosion. In addition, the spill has had a major impact on the fishing, shrimping, tourism, commercial retail, and other industries in the Gulf of Mexico region. For example, NOAA has reported that, as of June 14, approximately 32.3% of Gulf waters have been closed to fishing.[36] While some affected fishers and other workers have found employment related to the oil spill response, the economic consequences of the oil spill are having a dramatic impact on livelihoods and communities throughout the region – and that impact will continue for the foreseeable future. Although it is too soon to quantify the economic effects that the BP Oil Spill has had – and will continue to have – on the region's fishing, seafood, tourism and recreation industries, there can be little doubt that the damage to these sectors will be substantial. According to the Chief Economist at the Climate Center of the Natural Resources Defense Council, in 2007, the number of direct and indirect jobs supported per million dollars of sales in the Gulf of Mexico ocean economy were as follows: oil and gas sector: 4.6%; commercial fishing sector: 19.8%; and tourism and recreation sector: 18.0%.[37] Moreover, the breadth of the economic devastation caused by the spill is reflected by the fact that BP has reserved $20 billion for claims related to the BP Oil Spill.

The extent of the BP Oil Spill's impact on fish, wildlife, and plant resources remains to be fully seen and calculated, but already the effects have been dramatic.[38]

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[36] Statement of Michael R. Taylor, FDA Deputy Commissioner, to the Subcommittee on Health of the House Energy and Commerce Committee, June 16, 2010.

[37] *See*, Declaration of Laurie Johnson, Ph.D., in Support of Intervenors-Appellants' Motion for Injunction Pending Appeal, *Hornbeck Offshore Serv. v. Salazar*, No. 10-30585 (5th Cir. June 29, 2010).

[38] Testimony of Michael C. Voisin, Subcommittee on Insular Affairs, Oceans and Wildlife, Hearing on "Our Natural Resources at Risk: The Short And Long Term Impacts of the Deepwater Horizon Oil Spill" (June 10, 2010); Written Testimony of Jane Lyder, Deputy Assistant Secretary of Fish and Wildlife and Parks, Natural Resources Subcommittee on Insular Affairs, Oceans and Wildlife on "Our Natural

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Hundreds of miles of shoreline and wetlands in the Gulf states already have been affected by oil from the Macondo well. The Department of Interior believes that 35 National Wildlife Refuges located in the Gulf are at risk due to the oil spill.[39] The entire Gulf ecosystem will be adversely affected throughout the food chain including marine plankton, fish and shellfish, birds, marine mammals, and other wildlife.

BP reports that, to date, response costs associated with the BP Oil Spill are approximately $3.12 billion, and that figure is expected to increase substantially by the time the spill is fully resolved.[40]

2. The Economic Effect of the May 28 Suspension

Neither OCSLA nor the implementing regulations require that economic effects be considered before issuing a suspension. Nevertheless, such effects may be considered in determining the scope of any suspension of drilling activity. There is no question that the imposition of a suspension on deepwater drilling activity will have a significant, negative economic impact on direct and indirect employment in the oil and gas industry, as well as other secondary economic consequences. These economic effects must be considered against the backdrop of the substantial economic effects associated with the on-going BP Oil Spill and the potential economic damages that another deepwater accident would cause before adequate safety, containment and spill response approaches are identified.

Although it is difficult to estimate with precision the economic consequences of a deepwater drilling moratorium, the following discussion provides relevant benchmarks that underscore the significance of those economic effects.

First, as a general matter, the Gulf of Mexico OCS currently accounts for 30% of domestic oil production and 11% of domestic natural gas production. Production operations in deepwater areas at depths greater than 1000 feet account for about 80% of the oil production and 45% of the natural gas production in the Gulf of Mexico, or approximately 24% of the oil and 5% of the natural gas produced domestically. This

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Resources at Risk: The Short and Long Term Impacts of the Deepwater Horizon Oil Spill," (June 10, 2010) ("The scope and impacts of this spill are extraordinary. We do not know at this time the extent of the impacts, but we believe that in all likelihood, they will affect fish and wildlife and plant resources in the Gulf – and across the country – for years, if not more likely decades, to come."); Testimony of Jane Lyder, Deputy Assistant Secretary of Fish and Wildlife and Parks, Natural Resources Subcommittee on Insular Affairs, Oceans and Wildlife on "Our Natural Resources at Risk: The Short and Long Term Impacts of the Deepwater Horizon Oil Spill," (June 10, 2010) ("Hundreds of miles of Louisiana shoreline have been directly impacted by oil.... We believe 35 National Wildlife Refuges located in the Gulf are potentially at risk from the oil spill. So far, two have been directly impacted by oil – Breton (LA) and Bon Secour (AL). Only Breton NWR has been closed to the public.")

[39] Written testimony of Jane Lyder, Deputy Assistant Secretary of Fish and Wildlife and Parks, House Natural Resources Subcommittee on Insular Affairs, Oceans, and Wildlife, June 10, 2010.

[40] BP press release, "Update on Gulf of Mexico Oil Spill 05 July," July 5, 2010.

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discussion summarizes various economic analyses of the effects of the six-month May 28 suspension of the drilling of new and current wells in the deep waters of the Gulf of Mexico, all of which assume a complete cessation of drilling during the entire six-month period of the original moratorium (which is a broader cessation in drilling activity than required by the May 28 suspension, which allowed certain types of drilling to continue).

Mobile Offshore Drilling Units ("MODUs") are capable of moving to offshore fields in various parts of the world based on their contractual arrangements. Therefore, any count of deepwater offshore drilling rigs in a particular region represents a snapshot in time. When the BP Oil Spill occurred, there were 36 floating drilling rigs that were either operating in the Gulf of Mexico, were between wells in the Gulf of Mexico, or were scheduled to come to the Gulf of Mexico to begin operations before the end of 2010. In addition, there were 19 platform rigs on floating production facilities in the Gulf of Mexico at that time. When the May 28 suspension was put into effect, there were a total of 33 drilling rigs conducting operations in water depths of at least 500 feet – 26 floating rigs and 7 platform rigs. Twenty-one of these rigs were required to reach a safe stopping point and to suspend drilling operations, and all have done so. The remaining 12 rigs have been conducting operations allowed under the moratorium.

An initial review by BOEM identified some of the economic effects of the May 28 suspension as follows:[41]

- Employment: The analysis of employment and spending effects of the May 28 suspension assumed that direct employment on rigs affected by the suspension, along with the employment of supply crews, would stop during the term of the suspension and then resume normally once the rigs resume operations. Because drilling is not capable of immediately returning to current levels once the ban is lifted, the analysis assumed that drilling would re-start a month after the suspensions were lifted. Moreover, because some rigs would have left the Gulf of Mexico for other regions in the world, it likely would take even longer for certain drilling activities to resume than assumed in this analysis.

    - Lost direct employment would affect approximately 9,450 workers.

    - Lost jobs from indirect and induced effects would affect approximately 13,797 workers.

  While the six-month suspension affects the drilling rigs in deepwater, it does not affect the oil and gas workers staffing shallow-water drilling operations or the nearly 1,000 manned oil and gas production platforms in the Gulf of

[41] MMS Economics Division, June 10, 2010, *MMS Economic Impact Assessment*.

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Mexico. Onshore supply and support for production platforms and shallow-water drilling can continue with limited interruptions.[42]

More than 85% of employment on offshore rigs and platforms in the Gulf of Mexico occurs on production platforms and shallow-water drilling operations, not drilling rigs in deeper water covered by the May 28 suspension.

BP has announced that it will contribute $100 million to a foundation to support oil rig workers affected by suspensions in drilling. However, BP recently stated that it will not pay moratorium-related expenses in excess of the pledged $100 million.[43] Also, the Administration has proposed legislation that would create a new program of unemployment assistance, modeled after the Disaster Unemployment Assistance Program, to provide benefits to workers who lose their jobs as a result of a spill of national significance.[44]

- Spending: To calculate the spending effects of the drilling delay, BOEM considered the daily cost of the rig and the number of days the rig would not be drilling. Industry spending not incurred in 2010 for both current wells and new wells is estimated at $10.2 billion, of which $4.7 billion is the direct impact associated with the drilling rigs, and the rest is the combination of indirect and other effects.

- Production: Based on the number of drilling rigs available in deep water and the average time it takes to drill a well, BOEM has estimated the number of wells not drilled during the moratorium that otherwise would have been drilled. Using this estimate and historical data on the proportion of wells that are development wells, the proportion of exploration wells that lead to commercial discoveries, average daily production, the time to first production, and the annual decline, BOEM has calculated the projected daily production from each of the wells affected by the drilling pause over the next three years. We estimate that for the 3-year period beginning in FY 2010, aggregate production would decline, but would start to recover beginning in FY 2013.

Fiscal Year	Net Effects	
	Oil (MMbbl)	Gas (Bcf)
2010	**(1.7)**	**(4.2)**
2011	**(30.5)**	**(73.5)**
2012	**(54.6)**	**(131.6)**

[42] Administration talking points circulated to Governors and other Gulf leaders regarding economic impacts, June 10, 2010.

[43] Jonathan Tilove, "Moratorium Claims to be Considered with Others from Gulf of Mexico Spill," Times-Picayune, June 28, 2010.

[44] White House Office of the Press Secretary, June 16, 2010, *Claims And Escrow Fact Sheet.*

For FY 2011, this equates to a 4.4% decline in Gulf of Mexico production, with an estimated gross value of $2.6 billion.

- Government Revenues: BOEM estimates that the federal government (and state governments receiving any share of federal revenues) would lose $1.5 million in rentals in FY 2010, $170 million in royalties in 2011, and $522 million in tax revenue from OCS production in 2011. Any moratorium on drilling activities has an effect on government revenues, as would reductions or delays in lease sales as a result of the BP Oil Spill. Because statutory deepwater royalty relief provisions are about to expire, it is not clear how revenues from lease sales might have been affected, even absent the Deepwater Horizon incident and BP Oil Spill.

Wood-Mackenzie Research and Consulting has independently estimated the impacts of a 6-month moratorium.[45] The firm's estimates include the following projections:

- 50 to 100 wells would be affected, resulting in delayed spending of $1.6 to $2.9 billion.

- The impact on 2011 production would be about 80,000 boe/day, or about 4% of deep water production. Production would be lower through 2014 and then recover thereafter.

- Mobile offshore drilling units (MODUs) capable of drilling in deep water are in high demand globally, and they typically cost several hundred thousand dollars per day to lease. The companies to which these rigs are contracted likely will not want to bear those daily costs if the rigs are prevented, even temporarily, from operating in the Gulf of Mexico, and therefore will move them to other locations around the world. The testimony of oil company executives confirms that the MODUs would be redirected to other parts of the world, at least in the short term, in the event of a moratorium.[46] The return of these rigs could take time, adding an additional delay to new drilling after the expiration of any suspension period. Therefore, the suspension of exploratory drilling operations could lead to a loss of drilling capacity in the OCS.

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[45] Wood Mackenzie, May 2010, *Upstream Insight: Deepwater Horizon tragedy: near-term and long term implications in deepwater Gulf of Mexico.*

[46] Testimony of Exxon CEO Rex Tillerson before the Subcommittee on Energy and Environment (June 15, 2010) ("[W]e will redirect the rights and the equipment elsewhere. The stuff is too expensive to just let sit around."); Testimony of Shell CEO Marvi Odum before the Subcommittee on Energy and Environment (June 15, 2010) ("[T]hese are big, expensive pieces of equipment..... That piece of equipment needs to find a home where it's working and generating revenue, and that's what those pieces of equipment will do as soon as they work that out.")

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- Government receipts would be reduced in 2011, including a reduction of $120-150 million in royalties and $300-500 million in taxes.

Finally, the Louisiana Department of Economic Development (LED) estimates that the suspension of active drilling alone will result in a loss of 3,000 to 6,000 jobs in the first two to three weeks of the suspension, and potentially 10,000 jobs in Louisiana within a few months. If the suspension of active drilling continues for an extended period, LED estimates that the State potentially could lose 20,000 existing and potential jobs over a 12 to 18 month period.[47] These figures do not take into account the multiplier effect these job losses could have on the broader economy of the Gulf region.

IV. OPTIONS

As discussed above, the Secretary and BOEM are authorized under OCSLA and the relevant regulations to suspend drilling permitting and operations on the OCS when (1) there is the threat of "serious, irreparable, or immediate" harm to human or animal life or the "marine, coastal, or human environment," or (2) when "necessary for the installation of safety or environmental protection equipment." 30 C.F.R. § 250.172.

The key factors for the Secretary to consider in evaluating the options presented below are, as discussed above, the following: (1) the current status of workplace and drilling safety and the implementation of safety measures; (2) current well control and blowout and wild well containment capabilities; and (3) the current status of oil spill response capabilities. Also relevant to the Secretary's consideration of these options are the economic and environmental effects associated with drilling accidents and the economic effects of the suspension of drilling activity.

Option 1 – No suspension of drilling.

- Under this option, the Department would allow drilling to go forward under the workplace and drilling safety, blowout containment, and oil spill response conditions that currently exist. Compliance with the safety requirements of NTL No. 05 would still be required, but all drilling activity, including deepwater exploratory drilling, could resume prior to any additional rulemaking or completion of the reviews of the Deepwater Horizon incident.

Pros:

- Minimizes the immediate economic effects of the drilling suspension on the drilling industry.

- Stops the loss of resources, in terms of drilling equipment and drilling personnel, from the Gulf of Mexico region.

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[47] Letter from Louisiana Governor Bobby Jindal to the President and the Secretary of the Interior, June 2, 2010.

- Requiring compliance with NTL No. 5 addresses certain safety concerns.

Cons:

- Allows operations with known safety risks to continue before all new safety requirements are in place.

- Allows operations, with the associated risk of another uncontrolled deepwater blowout and additional spills or other incidents, to continue while containment and spill response resources are occupied by the BP Oil Spill response.

- Allows the riskiest drilling activities, including those similar to the Deepwater Horizon operation, to go forward before the development of strategies and options for deepwater blowout containment have been completed.

Option 2 – Issue a new suspension of drilling until November 30, 2010.

Issue a suspension of drilling until November 30, 2010 and compile additional information on (1) drilling and workplace safety requirements, (2) wild well intervention and blowout containment, (3) oil spill response capabilities, and (4) whether any oil and gas drilling activities might be allowed prior to the expiration of the suspension based on the level of risk posed by such activities.[48]

- Suspension would apply to all permitting and drilling for offshore drilling operations using either a subsea BOP or a surface BOP on a floating facility, with the same limited exceptions as applied under the May 28 suspension.[49]

Pros:

- Policy remains consistent with previous suspension decision, and the new suspension decision is based on an extensive record and additional information, including information collected since May 28.

- Provides time for BOEM to continue to collect information relevant to workplace and drilling safety, deepwater blowout containment, oil spill response capacity, and the risks associated with various types of drilling.

    - Provides the potential for certain types of drilling activities to resume before the expiration of the suspension period.

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[48] *See* Memorandum from the Secretary to the Director of the Bureau of Ocean Energy Management, Regulation, and Enforcement regarding "Safety of Deepwater Drilling on the Outer Continental Shelf", July 7, 2010.

[49] In the previously-issued suspensions, the 500-foot delineation served as a proxy for the risks associated with using subsea BOPs and surface BOPs on floating facilities.

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- Permits time for the BP Oil Spill response to continue while reducing risk of a second significant spill event.

- Permits time for the development of deepwater blowout containment strategies and options.

Cons:

- The standards and requirements necessary for the resumption of drilling activity remain undefined in the near-term.

- All activities have some risk, so the resumption of drilling, if any is permitted before the expiration of the suspension period, could still result in a spill, even before the response to the BP Oil Spill is complete.

- The resumption of drilling activities, if any, even prior to November 30 may not be sufficient to keep all of the current fleet of floating drilling rigs in the Gulf of Mexico. Some of these rigs, which are necessary to explore and develop the deep water areas of the Gulf of Mexico, would likely move overseas to stay gainfully employed. The extent and timing of their return after the suspensions are lifted is uncertain, leading to a possible long-term decrease in OCS investment and production.

Option 3 – Prohibit deepwater drilling activities using subsea BOPs, or surface BOPs on floating facilities, but provide opportunities for an early exit from the moratorium based on the achievement of specified requirements relating to workplace and drilling safety, blowout containment, and oil spill response.

1. **Impose a suspension of drilling**. Suspend all permitting and drilling for offshore drilling operations using either a subsea BOP or a surface BOP on a floating facility.

   - This suspension of drilling would be based on consideration of four key factors (1) workplace and drilling safety; (2) blowout and wild well containment capabilities; (3) oil spill response capabilities; and (4) economic and other effects of both the BP Oil Spill and the original moratorium.

   - Allow for the same limited exemptions, such as for completions and workovers, as under the original moratorium.

2. **Establish a framework for relief from the new moratorium based on the achievement of defined safety, blowout containment, and oil spill response requirements for types of drilling.** Under this option, the duration of the moratorium is tied to industry's meeting defined standards and requirements related to (1) workplace and drilling safety, (2) blowout and wild well containment, and (3) oil spill response capabilities. No drilling subject to suspension can proceed unless and until all three categories of requirements have

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been satisfied. The purpose of suspensions, as authorized under OCLSA and 30 C.F.R. §§ 250.172(b)-(c), is to allow time for installation of safety and environmental protection equipment through compliance with NTL No. 5, the additional safety measures recommended in the Safety Report, and the development of strategies and options for the containment of deepwater blowouts and wild wells. Moreover, these suspensions are necessary due to the serious threat to life and the marine, coastal, and human environments currently posed by the BP Oil Spill and the absorption of oil spill response resources necessary to combat and clean up that major oil spill.

a. Workplace and Drilling Safety Requirements

- For drilling activities not already exempt from suspension, BOEM will establish specific requirements, which, if satisfied, would make individual drilling operations eligible to receive an APD. These workplace and drilling safety requirements are as follows:
    - Compliance with the Safety NTL, as well as verification of compliance by BOEM or third parties where appropriate.
        - Operators have begun submitting materials in response to the safety requirements of the Safety NTL, which are currently under review by BOEM.
    - Compliance with new safety-related requirements that will be required under a second safety NTL or interim final rule.[50]
        - The target timetable for issuance of these additional safety requirements is within 120 days.
- After compliance with the Safety NTL and the new NTL/Interim Rule (as well as the blowout containment and oil spill response requirements listed below), APDs for certain types of drilling activities may be approved by BOEM.
    - For example, (1) drilling short of hydrocarbon-bearing target zones; and (2) field development wells where geologic and formation conditions are understood.
- Compliance with additional rules for higher-risk activity, including deepwater exploratory drilling using subsea BOPs, may be required.[51]

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[50] These safety requirements include, (1) BOP/ROV testing and inspections; (2) fluid displacement procedures; (3) cementing practices; (4) SEMS rule; (5) IADC safety case; (6) BOP secondary control requirements; and (7) ROV operating capabilities.

[51] Such safety requirements may include, for example, requirements relating to blind sheer rams and deepwater well control guidelines.

- BOEM would evaluate, based on information from investigations of the Deepwater Horizon incident and other sources, whether additional safety requirements should be imposed before certain types of drilling should be permitted.

b. Blowout Containment Requirements

- BOEM would meet with representatives from industry and other interested parties regarding the development of blowout containment strategies and options.
- Operators would be required to submit, by a date established by BOEM, plans identifying near-term strategies and resources for the containment of deepwater blowouts. Such options may include:
  - Stockpiled or on-site containment structures, such as freestanding risers, containment domes, etc.
  - ROV fleet dedicated to containment responses.
  - Rule for simultaneous drilling of at least one relief well for deepwater exploratory wells.
    - The capability to initiate drilling of a relief well within 15 days of a blowout.
  - Roving MODUs for the drilling of relief wells.
  - Industry and government research and development initiatives.
- Because the development of containment strategies and technologies will be an ongoing and long-term process, these submissions would also address blowout containment strategies and technologies that can be developed over the long-term.

c. Oil Spill Response Requirements

- Flow from the Macondo well must be stopped.
- Operators must submit updated oil spill response plans that demonstrate compliance with applicable regulatory requirements, taking into account the spill response related commitments associated with the BP Oil Spill.[52]

Pros:

- Ties the resumption of activities to meeting specified safety criteria.
- Reduces economic impact by allowing the opportunity for drilling activities to resume if workplace and drilling safety, blowout containment, and oil spill response requirements are met.

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[52] *See, e.g.*, 30 C.F.R. §251.1(a); 30 C.F.R. §254.23; 30 C.F.R. §254.30.

- Permits time for the BP Oil Spill response to continue while reducing risk of a second significant spill event.

- Permits time for and creates incentives for the development of deepwater blowout containment strategies and options.

- Provides certainty as to the duration of drilling suspensions and the potential for early lifting of suspensions.

Cons:

- Establishes standards for the resumption of drilling activities without the benefit of additional information collection.

- All activities have some risk, so the resumption of drilling could still result in a spill, even before the response to the BP Oil Spill is complete.

- The resumption of drilling activities may not be sufficient to keep all of the current fleet of floating drilling rigs in the Gulf of Mexico. Some of these rigs, which are necessary to explore and develop the deep water areas of the Gulf of Mexico, would likely move overseas to stay gainfully employed. The extent and timing of their return after the suspensions are lifted is uncertain, leading to a possible long-term decrease in OCS investment and production and a related decrease in government revenues.

Option 4 – Implementation of the suspensions under terms consistent with the proposals set forth by industry consultants and the API , as described above in subsection II.A.4. Under this option, a number of types of drilling activities would resume upon compliance with NTL No. 5.

- Representatives from the drilling industry have offered proposals that would allow industry to resume or continue certain drilling operations that they characterize as presenting a relatively low risk after the implementation of certain safety measures. The proposals are described in Subsection II.A.4 above.

Pros:

- This option presumably would meet with acceptance from much of the industry.

- Minimizes economic effects by permitting the relatively immediate resumption of certain types of drilling.

Cons:

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- Allows operations with known safety risks to continue before all new safety requirements are in place.

- Allows operations, with the associated risk of another uncontrolled deepwater blowout, additional spills or other incidents, to continue while containment and spill response resources are occupied by the BP Oil Spill response.

V. CONCLUSION

Based on review of the substantial record, including consultation with experienced BOEM personnel, we believe that the discussion above, and the four options set forth in the preceding section, establish the framework for the Secretary to decide how to exercise the authority conferred on him by 43 U.S.C. § 1334(a)(1) and 30 C.F.R. §§ 250.172(b)-(c).

Attachment 1

Date: July 10, 2010
Summary of Decision File

The following is a summary of documents and information included in contained in the Decision File:

30-Day Safety Report and Supporting Documents: The Department of Interior's May 27, 2010 Report entitled "Increased Safety Measures for Energy Development on the Outer Continental Shelf" (the "Safety Report"), as well as the following documents from record that formed the basis for that report:

- The April 27, 2010 Memorandum from Wilma Lewis to the Secretary entitled, "Immediate Response Measures Pending Investigation of the BP oil spill;"
- Notes from Department of Interior Meetings with Various Experts and Industry / NGO representatives;
- The API Joint Industry Task Force Recommendations;
- The "Fact Sheet Notebook" summarizing the events of the BP oil spill;
- Correspondence from various petroleum companies in response to the Secretary's request for recommendations;
- Comments and Recommendations from experts affiliated with the National Academy of Engineering;
- MMS Studies (Cited in Table 3 of the Safety Report).

Information Provided by BOEM Internal Experts: Information obtained from consultation with BOEM internal experts, including experts from BOEM's Gulf of Mexico Region. BOEM experts provided comments regarding the risks inherent in certain offshore drilling equipment, water depth, and various drilling activities, as well as the adequacy of current response plans and containment resources. They also suggested various options for addressing the risks of deepwater drilling.

Information Provided by Industry Representatives: Information provided in meetings between officials of the Department of Interior and representatives of the drilling industry, including:

- A June 21, 2010 meeting between the Secretary and industry consultants, in which the consultants made a PowerPoint presentation that discussed, among other things, claimed risks associated with suspension of drilling, suggested methods for reducing these claimed risks, and a proposal to allow drilling to resume in certain categories of wells;

- A June 28, 2010 meeting between Interior officials and operators and rig owners currently operating in federal waters in the Gulf of Mexico. Suggestions provided

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by various industry operators with regard to the resumption of drilling operations in the Gulf of Mexico, including suggestions for well design, operation procedures, rig equipment, safety and training risk management and well control system certification and maintenance.

Daily Incident Reports: Information contained in the daily reports from the site of the BP oil spill issued since the spill, including:

- BOEM's Offshore Incident Report Daily Updates;
- U.S. Department of the Interior, Office of Emergency Management Emergency Daily Situation Reports;
- U.S. Department of the Interior, Office of Emergency Management Spot Reports.

Briefings by National Incident Commander: Information provided by Admiral Thad Allen in daily briefings from the National Incident Command Center.

Macondo Well Intervention and Containment Efforts: Information related to specific well control and containment efforts for the Macondo well blowout, as well as testing and performance difficulties encountered with the blowout preventers (BOPs) being used for the two relief wells being drilled to intercept and kill the Macondo well.

Oil Spill Regional Response Plans: The provisions of the Gulf of Mexico regional response plans of BP, Chevron, Conoco Phillips, ExxonMobil, and Shell.

Congressional Hearing Testimony: Information from Congressional testimony related to the BP oil spill, including testimony regarding the possible causes of the spill, the efforts to contain the spill, the environmental and economic impacts of the spill, the economic consequences of a possible moratorium on deep-sea drilling, the adequacy of current preparedness plans in responding to a similar incident, and the availability of resources to respond to another spill. BOEM conducted a comprehensive review of transcripts, written testimony, and related documents from the following hearings:

- House Committee On Energy and Commerce, Subcommittee On Oversight and Investigations, *Inquiry into the Deepwater Horizon Gulf Coast Oil Spill* (May 12, 2010)
- House Committee on Transportation and Infrastructure, *Hearing on Deep Horizon Oil Spill Prevention and Response Measures and Natural Resource Impacts* (May 19, 2010)
- House Committee on Natural Resources, *Hearing on The Outer Continental Shelf Oil and Gas Strategy and Implications of the Deepwater Horizon Rig Explosion* (May 26, 2010)

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- House Committee on Natural Resources, *Hearing on Outer Continental Shelf Oil and Gas Strategy and Implications of the Deepwater Horizon Rig Explosion* (May 27, 2010)House Committee on Energy and Commerce, Subcommittee on Energy and Environment, *Hearing on Response Efforts to the Gulf Coast Oil Spill* (May 27, 2010)

- House Committee on Energy and Commerce, Subcommittee on Oversight and Investigations, *Hearing on the Local Impact of the Deepwater Horizon Oil Spill* (June 7, 2010)

- House Committee on Energy and Environment, *Hearing on Beneath the Surface of the BP Spill: What's Happening Now, What's Needed Next* (June 9, 2010)

- House Committee on Energy and Commerce, Subcommittee on Energy and the Environment, *Hearing on The BP Oil Spill: Human Exposure and Environmental Fate* (June 10, 2010)

- House Committee on Natural Resources, Subcommittee on Insular Affairs, Oceans and Wildlife, *Oversight Hearing on Our Natural Resources at Risk: The Short and Long Term Impacts of the Deepwater Horizon Oil Spill* (June 10, 2010)

- House Committee on Energy and Commerce, Subcommittee on Energy and Environment, *Hearing on Drilling Down on America's Energy Future, Safety Security and Clean Energy* (June 15, 2010)

- House Committee on Natural Resources, Subcommittee on Insular Affairs, Oceans and Wildlife, *Hearing on Ocean Science and Data Limits in a Time of Crisis: Do NOAA and Fish and Wildlife Service Have the Resources to Respond?* (June 15, 2010)

- House Committee on Energy and Commerce, Subcommittee on Health, *Hearing on Health Impacts of the Deepwater Horizon Oil Spill* (June 16, 2010)

- House Committee on Energy and Commerce, Subcommittee on Oversight and Investigation, *The Role of BP in the Deepwater Horizon Explosion and Oil Spill* (June 17, 2010)

- House Committee on Education and Labor, *Hearing on Worker Health and Safety Standards Related to the Oil Industry, Oil Rigs and Drilling* (June 23, 2010)

- House Committee on Natural Resources Hearing, *Hearing on State Planning for Offshore Energy Development: Standards for Preparedness* (June 24, 2010)

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- Senate Committee on Commerce, Science and Transportation Hearing (May 18, 2010)
- Senate Committee on Energy and Natural Resources Hearing (May 11, 2010)
- Senate Committee on Environment and Public Works, *Hearing on Economic and Environmental Impacts of the Recent Oil Spill in the Gulf of Mexico* (May 11, 2010)
- Senate Committee on Homeland Security and Governmental Affairs, *Hearing on the Gulf Coast Catastrophe: Assessing the Nation's Response to the Deepwater Horizon Oil Spill* (May 17, 2010)
- Senate Committee on Commerce, Science and Technology, *Hearing on Potential Impacts of the Deepwater Horizon Oil Spill on Marine and Coastal Ecosystems* (May 18, 2010)
- Senate Committee on Environment and Public Works, *Hearing on Federal Response to the Recent Oil Spill in the Gulf of Mexico* (May 18, 2010)
- Senate Committee on Energy and Natural Resources Hearing (May 25, 2010)
- Senate Committee on Environment and Public Works, *Legislative Hearing on S. 3305, The Big Oil Bailout Prevention Liability Act of 2010* (June 9, 2010)
- Senate Committee on Homeland Security and Governmental Affairs, Subcommittee on State, *Hearing on Local and Private Sector Preparedness and Integration* (June 10, 2010)
- Senate Committee on Health, Education, Labor and Pensions, *Hearing on the Deepwater Horizon Oil Spill* (June 15, 2010)
- Senate Committee on Small Business Hearing (June 17, 2010)
- Senate Committee on Energy and Natural Resources Hearing (June 24, 2010)

Information Provided by the U.S. Coast Guard: Information provided by the U.S. Coast Guard relating to the BP Oil Spill and oil spill statistics and information in relation to the 1979 Cameche oil spill in Corpus Christi, Texas.

Documents Related to the Joint Investigation of the BP Oil Spill: Information provided during the public hearings in the joint Coast Guard - BOEM investigation of the causes of the BP oil spill, including:

- Transcripts from USCG/BOEM Joint Investigation Public Hearings of May 11 – May 12, 2010;

- Transcripts from USCG/BOEM Joint Investigation Public Hearings of May 26 – May 29, 2010;

- Documents that have been made available in the course of the joint investigation.

Notices to Lessees and Operators (NTLs): A review of information contained in, and provided pursuant to, the following Notices to Lessees and Operators of Federal Oil and Gas Leases in the Outer-Continental Shelf:

- NTL No. 2010-N05: Increased Safety Measures for Energy Development on the OCS (effective June 8, 2010); and

- NTL No. 2010-N06: Information Requirements for Exploration Plans, Development and Production Plans, and Development Operations Coordination Documents on the OCS (effective June 18, 2010).

Economic Impact Analysis: Public records and internal memoranda analyzing the economic effects of a six-month suspension in deepwater drilling in the Gulf of Mexico, as well as the economic impacts of the oil spill on the local economy.

Hornbeck Litigation Materials: Court rulings, briefs, motions, declarations and other materials submitted in connection with the Hornbeck litigation, including but not limited to:

- The June 22, 2010 U.S. District Court Order and Reasons granting Motion for Preliminary Injunction

- The June 22, 2010 U.S. District Court Order Prohibiting US from Enforcing the Moratorium

- The July 7, 2010 Fifth Circuit Court Order Denying Motion to Stay Pending Appeal

Other Information Regarding Deepwater Drilling or the BP Oil Spill:

- Wood MacKenzie: *Deepwater Horizon* tragedy: near-term and long-term implications in deepwater Gulf of Mexico;

- Preliminary results of various investigations into the causes of the BP oil spill, including BP's own interim investigation briefings;

- The Joint Industry Task Force Recommendations to Improve Offshore Safety of Drilling & Completion Operations;

- Memorandum: The Department of Interior and MMS's Economic Analysis of the 6-Month Moratorium (June 14, 2010);

- Memorandum from Dr. Marcia McNutt, Director of the United States Geological Survey regarding "USGS Support for Macondo Well Control and Containment: Observations Regarding Technical Problems with Deepwater Efforts" (June 28, 2010);

- MMS Economic Impact Assessment: Effects of Drilling Pause for 6 Months (June 10, 2010);

- Letter from Louisiana Governor Bobby Jindal to the President and the Secretary of the Interior, June 2, 2010, summarizing LA Department of Economic Development's analysis of employment impacts;

- Memorandum from BP Oil Spill Federal On-Scene Coordinator Rear Admiral Watson to National Incident Command (June 16, 2010);

- "Temporary Suspension of Certain Oil Spill Response Time Requirements to Support Deepwater Horizon Oil Spill of National Significance Response." 33 CFR 154, 155 and 40 CFR 112. (Sent to the Federal Register on June 28, 2010);

- Memorandum summarizing the activities of the Joint Industry Task Force to Address Subsea Well Control and Oil Spill Response;

- Memorandum entitled "Enhanced Industry Capability for Offshore Operations" summarizing improvements in regulatory, safety and response capabilities in the Gulf of Mexico;

- Memorandum from Solicitor Hilary Tompkins entitled "Overview of Blowout Causes;"

- Memorandum from BOEM Deputy Director Walter Cruickshank to Tommy Beaudreau entitled, "Relative Risk of Drilling Activities."

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