**UNITED STATES DEPARTMENT OF THE INTERIOR**
**MINERALS MANAGEMENT SERVICE**
**GULF OF MEXICO OCS REGION**

NTL No. 2009-G40

Effective Date: January 27, 2010
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NOTICE TO LESSEES AND OPERATORS OF FEDERAL OIL, GAS, AND SULPHUR LEASES AND PIPELINE RIGHT-OF-WAY HOLDERS, OUTER CONTINENTAL SHELF, GULF OF MEXICO OCS REGION

# Deepwater Benthic Communities

This Notice to Lessees and Operators and Pipeline Right-of way Holders (NTL) supersedes NTL No. 2000-G20, effective December 6, 2000. It broadens the scope to cover all high-density deepwater benthic communities (not just high-density chemosynthetic communities), changes the definition of deepwater from 400 meters (1,312 feet) to 300 meters (984 feet), increases the separation distance from muds and cuttings discharge locations from 1,500 feet to 2,000 feet, provides clarification on conditions of approval, provides for an additional 1,000-foot buffer area beyond maximum anchor areas, no longer prescribes the text of summary statements, adds a guidance document statement and contact information, and makes minor administrative changes.

Under 30 CFR 250.216(a) and 30 CFR 250.247(a), the Minerals Management Service (MMS) Gulf of Mexico OCS Region (GOMR) requires that site-specific information regarding sensitive underwater features (including chemosynthetic communities) accompany each Exploration Plan (EP), Development Operations Coordination Document (DOCD**)**, and Development and Production Plan (DPP). Under 30 CFR 250.221(a) and 30 CFR 250.252(a), the MMS GOMR also requires that EP's, DOCD's, and DPP's be accompanied by a description of any monitoring systems that will measure environmental conditions or provide data or information on the impact of your proposed activities. Under 30 CFR 250.282, the MMS GOMR may require you to conduct monitoring programs and submit plans and reports.

## Purpose

The purpose of this NTL is to provide a consistent and comprehensive approach to protecting high-density deepwater benthic communities from damage caused by OCS oil and gas activities. For guidance on avoiding biologically sensitive areas in water depths less than 300 meters (984 feet), refer to NTL No. 2009-G39, Biologically-Sensitive Underwater Features and Areas.

## Definitions

For purposes of this NTL, ***high-density deepwater benthic communities*** are:

1. Features or areas that could support high-density chemosynthetic communities; or

2. Features or areas that could support high-density deepwater corals and other associated high-density hard bottom communities.

For purposes of this NTL, ***deepwater*** is water depths greater than 300 meters (984 feet).

**Background**

It is estimated that less than 1 percent of the deepwater Gulf of Mexico is occupied by features or areas that could support high-density deepwater benthic communities.

***Deepwater chemosynthetic communities*** were discovered in 1984 in the central Gulf of Mexico and have been studied extensively in recent years. Chemosynthetic communities include assemblages of tubeworms, clams, mussels, bacterial mats, and a variety of associated organisms. They are remarkable in that they use a carbon source independent of photosynthesis and the sun-dependent photosynthetic food chain that supports most other life on earth. Many of the species, while similar to those of other chemosynthetic communities, including vent communities of the Galapagos Ridge, are new to science. The necessary conditions for their growth exist only in relatively small, widely scattered habitats. Where favorable conditions do occur, dense chemosynthetic communities can develop. Features or areas that could support chemosynthetic communities include hydrocarbon-charged sediments associated with surface faulting, acoustic void zones associated with surface faulting, anomalous mounds or knolls, and gas or oil seeps.

***Deepwater coral communities*** are now known to occur at locations in the deepwater areas of the Gulf of Mexico. These communities occur almost exclusively on authigenic carbonates created by chemosynthetic communities. Common species include the scleractinian corals *Lophelia pertusa* and *Madrepora oculata*, the gorgonian *Callogorgia americana delta*, antipatharians, sponges, anemones, and various crustaceans. *Lophelia* has been found in water depths as shallow as 309 meters (1,014 feet) in the Gulf of Mexico and have been reported in water depths up to 3,000 meters (9,842 feet) in some parts of the world. Deep coral colonization can be on scattered small solitary features or spread over larger areas. These complex communities form three-dimensional structure that create habitat for hot-spots of biodiversity.

Damage to high-density deepwater benthic communities could result from oil and gas activities that disturb the seafloor in the immediate vicinity of these communities. Such activities include (but are not limited to) drilling, anchoring, placing seafloor templates, discharging muds and cuttings, and installing pipelines.

**Policy**

If you propose activities that could disturb seafloor areas in water depths 300 meters (984 feet) or greater, maintain the following separation distances from high-density deepwater benthic communities:

1. At least 2,000 feet from each proposed muds and cuttings discharge location; and

2. At least 250 feet from the location of all other proposed seafloor disturbances (including those caused by anchors, anchor chains, wire ropes, seafloor template installation, and pipeline construction). Seafloor disturbances include all "temporary" disturbances caused during mooring operations (e.g., anchor deployment, setting, and retrieval) as well as those caused by anchoring activities conducted prior to a MODU arriving on location (e.g., pre-installation of suction piles and cables; where seafloor impacts are much greater while the cables are located on the seafloor prior to being pulled taut and attached to the MODU).

Whenever you propose seafloor disturbances within 500 feet of a high-density deepwater benthic community, the MMS GOMR will apply a condition of approval to the EP or DOCD to require that you submit an as-placed anchor plat depicting the actual seafloor disturbances (anchors, anchor chains, wire ropes, pipelines, etc.) that occurred and demonstrating that the community was not physically impacted. Since the MMS also strongly encourages you to submit a ***maximum anchor radius*** rather than a specific anchor pattern with your EP or DOCD (because this allows for the maximum flexibility of anchoring operations without triggering submittal of a revised plan), the as-placed anchor plat condition of approval applied whenever high-density deepwater benthic communities are located within your maximum anchor radius will include an additional 1,000-foot buffer area beyond your proposed maximum anchor radius to prevent possible inadvertent contact with the communities.

For pipelines to be installed by anchored pipeline lay vessels, the MMS GOMR will apply a condition of approval on the pipeline application to require that you submit an as-placed anchor plat whenever high-density deepwater benthic communities are located within the **maximum area** that the pipeline lay barge anchors and chains may disturb. For pipelines to be installed by dynamically positioned pipeline lay vessels, the MMS GOMR will apply a condition of approval on the pipeline application to require that you submit a pipeline plat depicting the as-placed position of the pipeline and demonstrating that the high-density deepwater benthic communities were not physically impacted, whenever the proposed pipeline centerline is within 500 feet of such communities, as determined by MMS.

On a case-by-case basis, the MMS GOMR may allow a shorter separation distance than those outlined above. Such a determination may be based on additional information you provide to the MMS GOMR (e.g., photo-survey, video-survey) that documents whether high-density deepwater benthic communities ***actually exist in the areas of concern***. A meeting with MMS GOMR personnel may be necessary to discuss this additional information before approval of a shorter separation distance can be given.

Refer to the MMS Internet website at http://www.gomr.mms.gov/homepg/regulate/environ/knowndwbenthic.pdf for a list of ***known*** high-density deepwater benthic communities. Note that the location of these communities may be delineated by only a single point (latitude and longitude). In such cases, use your judgment to determine the boundary of the known deepwater benthic community. The separation distances given in Items Nos. 1 and 2 above apply to the boundary, not the single delineation point.

**Procedures**

So that the MMS GOMR can make determinations regarding the possibility of high-density deepwater benthic communities being present and the potential of their being harmed by exploration, development, and pipeline construction activities, provide the following information:

1. If you propose activities in an EP or DOCD that could disturb seafloor areas in water depths 300 meters or greater, include the information outlined in Attachment A of this NTL in one copy of your EP or DOCD.
2. If you propose activities in a pipeline application that could disturb seafloor areas in water depths 300 meters or greater, include the information outlined in Attachment B of this NTL in one copy of your pipeline application.

The MMS GOMR will analyze the above information during its review of your OCS plan or pipeline application. If the MMS GOMR determines that high-density deepwater benthic communities might be present and could potentially be harmed by your proposed activities, the MMS GOMR will instruct you to:

1. Amend the OCS plan or pipeline application to relocate the proposed activities to avoid impacting the possible high-density deepwater benthic communities;
2. Amend the OCS plan or pipeline application to provide additional information (perhaps including a photo-survey, a video-survey, or already available information) that documents whether high-density deepwater benthic communities exist in the areas of concern; or
3. Adhere to certain conditions of OCS plan or pipeline application approval such as (a) using a remotely operated vehicle to set anchors precisely or taking other measures to ensure that your proposed seafloor disturbances do not impact high-density deepwater benthic communities, (b) monitoring impacts caused by the proposed activities, (e.g., submitting as-placed anchor plats or as-placed pipeline plats depicting the actual seafloor disturbances and demonstrating that the high-density deepwater benthic communities were not physically impacted), or (c) adhering to any other condition deemed necessary by the MMS GOMR.

**Guidance Document Statement**

The MMS issues NTL's as guidance documents in accordance with 30 CFR 250.103 to clarify, supplement, and provide more detail about certain MMS regulatory requirements and to outline the information you provide in your various submittals. Under that authority, this NTL sets forth a policy on and an interpretation of a regulatory requirement that provides a clear and consistent approach to complying with that requirement. However, if you wish to use an alternate approach for compliance, you may do so, after you receive approval from the appropriate MMS office under 30 CFR 250.141.

**Paperwork Reduction Act Statement**

The information collection provisions of this NTL are intended to provide clarification, description, or interpretation of requirements contained in 30 CFR 250, Subparts B and J. The Office of Management and Budget (OMB) has approved the information collection requirements for these regulations and assigned OMB Control Numbers 1010-0151 and 1010-0050, respectively.

**Contact**

Please direct any questions concerning this NTL regarding EP's and DOCD's to the MMS GOMR Plans Section by telephone at (504) 736-2581 or by e-mail at elizabeth.peuler@mms.gov and regarding OCS pipeline applications to the MMS GOMR Pipeline Section by telephone at (504) 736-2547 or by e-mail at alex.alvarado@mms.gov.

[original signed]

Lars T. Herbst
Regional Director

## Attachment A

## HIGH-DENSITY DEEPWATER BENTHIC COMMUNITIES INFORMATION FOR OCS PLANS

**Include the following in your EP or DOCD if you propose activities that could disturb seafloor areas in water depths 300 meters (984 feet) or greater:**

A. Map(s). A legible map or separate maps prepared using high-resolution seismic information at a scale of 1 inch = 1,000 feet, oriented to true north, and depicting bathymetry and the following, at a minimum, if applicable:

1. Seafloor and shallow geological features and areas that could be disturbed by the proposed activities, including those located outside your lease or unit. If your proposed activities involve anchoring, also depict seafloor and shallow geological features located within an additional 1,000-foot buffer area beyond the proposed maximum anchor radius. This buffer area is required to maintain consistency with NTL No. 2009-G27 (which allows an increase in the proposed anchor radius of up to 152 meters (500 feet) without having to revise your approved plan) and the physical disturbance avoidance distance of 250 feet (plus an additional 250 feet buffer distance for as-placed anchor plat submittal) for high-density deepwater benthic communities provide in this NTL. The seafloor and shallow geologic features you depict should include, as a minimum, those that could support high-density deepwater benthic communities such as:
    a. hydrocarbon-charged sediments associated with surface faulting;
    b. acoustic void zones associated with surface faulting;
    c. mounds or knolls;
    d. gas or oil seeps; and
    e. hard bottom (in deepwater, hard bottom is typically created by chemosynthetic bacteria producing authigenic carbonates).
2. The surface location of each proposed well and platform.
3. A circle depicting a 2,000-foot radius around each proposed surface location identified in Item No. 2 above.
4. The proposed ***maximum anchor radius*** (i.e., the maximum area where anchors, anchor chains, wire ropes, etc., may cause seafloor disturbances) for each proposed well and platform. Seafloor disturbances include all "temporary" disturbances caused during mooring operations (e.g., anchor deployment, setting, and retrieval) as well as those caused by anchoring activities conducted before a MODU arrives on location (e.g., pre-installation of suction piles and cables, where seafloor impacts are much greater while the cables are located on the seafloor prior to being pulled taut and attached to the MODU). We strongly encourage you to submit the ***maximum anchor radius*** rather than specific anchor patterns with your EP or DOCD, since this allows for the maximum flexibility of anchoring operations without triggering submittal of a revised plan. As provided in NTL No. 2009-G27, submittal of a revised EP or DOCD is necessary when you change any anchor location in the MMS GOMR approved anchor array pattern

associated with your activities, or you increase the approved anchor radius by more than 152 meters (500 feet).

5. A circle depicting the maximum anchor radius (plus the 1,000-foot buffer area) around each proposed surface location identified in Item No. 2 above.

Be advised that your EP or DOCD may reference a map(s) previously submitted with your shallow hazards survey (see NTL No. 2008-G05) for display of Items Nos. 1 through 5 above. However, the MMS GOMR encourages you to submit a copy of the map(s) with your EP or DOCD.

On a case-by-case basis, the MMS GOMR may allow you to use 3-D seismic information in lieu of high-resolution seismic information to produce the aforementioned map. On a case-by-case basis, the MMS GOMR may also allow you to present interpreted 3-D seismic information in a meeting with MMS GOMR personnel in lieu of or in addition to providing the map. You should note, however, that 3-D surface anomaly data alone do ***not*** depict the subsurface acoustic characteristics necessary for adequate high-density deepwater benthic community analysis, and the presence of a strong reflector revealed in 3-D surface anomaly depiction is not a prerequisite for the existence of a high-density deepwater benthic community.

B. Analysis. Using high-resolution seismic information, or 3-D seismic information (as allowed on a case-by-case basis by the MMS GOMR), and any other pertinent information available, identify all seafloor features and areas that could be disturbed by your proposed activities, including those located outside your lease or unit. If your proposed activities involve anchoring, also identify seafloor and shallow geological features within an additional 1,000-foot buffer area beyond the proposed maximum anchor radius. Discuss the likelihood of your proposed activities disturbing these seafloor and shallow geologic features.

For ***each*** proposed well and platform surface location and associated anchor pattern, if applicable, provide a summary statement addressing the following:

1. Confirming that high-density deepwater benthic communities are ***not*** located within 2,000 feet of each proposed muds and cuttings discharge location

2. Whether high-density deepwater benthic communities ***are/are not*** located within the maximum anchor radius (plus an additional 1,000-foot buffer area beyond the proposed maximum anchor radius.)

**Attachment B**

## HIGH-DENSITY DEEPWATER BENTHIC COMMUNITIES INFORMATION FOR PIPELINE APPLICATIONS

**Include the following in your pipeline application if you propose pipeline activities that could disturb seafloor areas in water depths 300 meters (984 feet) or greater:**

A. Map(s). A legible map or separate maps prepared using high-resolution seismic information at a scale of 1 inch = 1,000 feet, oriented to true north, and depicting bathymetry and the following, at a minimum, if applicable:

1. Seafloor and shallow geological features and areas that could be disturbed by the proposed pipeline activities, including anchors, anchor chains and wire ropes. The seafloor and shallow geologic features you depict should include, as a minimum, those that could support high-density deepwater benthic communities such as:
   (a) hydrocarbon-charged sediments associated with surface faulting;
   (b) acoustic void zones associated with surface faulting;
   (c) mounds or knolls;
   (d) gas or oil seeps; and
   (e) hard bottom (in deepwater, hard bottom is typically created by chemosynthetic bacteria producing authigenic carbonates).
2. The route of the proposed pipeline.
3. The ***maximum*** area that the pipeline-lay barge anchors and chains may disturb.

On a case-by-case basis, the MMS GOMR may allow you to use 3-D seismic information in lieu of high-resolution seismic information to produce the aforementioned map. On a case-by-case basis, the MMS GOMR may also allow you to present interpreted 3-D seismic information in a meeting with MMS GOMR personnel in lieu of or in addition to providing the map. You should note, however, that 3-D surface anomaly data alone do ***not*** depict the subsurface acoustic characteristics necessary for adequate deepwater benthic community analysis, and the presence of a strong reflector revealed in 3-D surface anomaly depiction is not a prerequisite for the existence of a deepwater benthic community.

B. Analysis. Using high-resolution seismic information, or 3-D seismic information (as allowed on a case-by-case basis by the MMS GOMR), and any other pertinent information available, identify all seafloor features and areas that could be disturbed by your proposed pipeline activities. Discuss the likelihood of your proposed pipeline activities disturbing these seafloor and shallow geologic features.

For ***each*** proposed pipeline segment and associated anchor pattern, if applicable, provide a summary statement addressing the following:

1. Confirm that high-density deepwater benthic communities are ***not*** located within 250 feet of the proposed pipeline route.

2. Whether high-density deepwater benthic communities ***are/are not*** located within the maximum area that the pipeline lay barge anchors may disturb.