HI-A-389A PARTIAL REMOVAL, SITE CLEARANCE

ESTABLISHMENT OF ARTIFICIAL REEF

DOCUMENTS

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UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL OCEAN SERVICE
Flower Garden Banks National Marine Sanctuary
4700 Avenue U, Building 216
Galveston, TX 77551

August 16, 2017

To All Interested Parties:

Under the National Environmental Policy Act (NEPA), an environmental review has been performed on the following action.

TITLE: Environmental Assessment for Authorization of U.S. Army Corps of Engineers permit SWG-2015-00068 to Texas Parks and Wildlife Department and Bureau of Safety and Environmental Enforcement Approval of Platform Decommissioning and Site Clearance Verification Plan (2012-217A) to W&T Offshore Inc. for the creation of an artificial reef through the abandonment of a partially removed gas platform in the Outer Continental Shelf Block High Island A-389A (HI-A-389A)

LOCATION: Within the boundaries of the Flower Garden Banks National Marine Sanctuary, 108 nautical miles southeast of the Freeport, Texas (125 miles southeast of Galveston, Texas) in the Gulf of Mexico

SUMMARY: The National Oceanic and Atmospheric Administration (NOAA), Office of National Marine Sanctuaries (ONMS), Flower Garden Banks National Marine Sanctuary (FGBNMS) proposes to issue an Authorization to Dale Shively, Texas Parks and Wildlife Department (TPWD), to allow for the abandonment in place of the lower portion of the base jacket of a decommissioned oil and gas platform and the abandonment of associated loose fragments or other debris that may become dislodged or collapse due to deterioration or other natural causes in the Outer Continental Shelf (OCS) of the Gulf of Mexico, Block High Island A-389A (HI-A-389A) for the establishment of an artificial reef within the boundaries of FGBNMS in accordance with U.S. Army Corps of Engineers (Corps) permit #SWG-2015-00068 (effective date May 31, 2017). FGBNMS also proposes to issue an Authorization to W&T Offshore, Inc. (W&T) for the Bureau of Safety and Environmental Enforcement (BSEE) approval of the platform decommissioning and site clearance verification plan for A-398A (Complex ID 10192-01, OCS-G 02759 OCS Federal Waters, Gulf of Mexico Region, Offshore Texas) (No. 2012-217A). The partial removal of the platform would be done through nonexplosive means and the remaining structure would serve as an artificial reef for which TPWD will be responsible for managing.

The proposed establishment of the Artificial Reef site has been permitted by the Corps, which prepared an environmental assessment (EA) dated May 11, 2017. The Corps EA describes the environmental effects of the decommissioning and artificial reef. The Bureau of Ocean and Energy Management (BOEM) provided a recommendation to BSEE to approve the W&T application for the High Island Area Block A398 Platform A decommissioning and site clearance verification plan. In accordance with a Memorandum of Agreement between BOEM and BSEE

dated October 3, 2011 concerning the "Environment and NEPA", BOEM prepared a related site-specific environmental assessment (BOEM/BSEE SEA) that BSEE relies on for NEPA compliance and a Finding of No Significant Impact (FONSI).

ONMS has reviewed and has incorporated by reference portions of the Corps EA and BOEM/BSEE SEA. The adverse effects of the proposed action are not expected to be significant. ONMS has prepared this EA to document compliance with the National Environmental Policy Act (NEPA) for the proposed action in accordance with 40 CFR 1500-1508, NAO 216-6A and associated Companion Manual. The establishment of Artificial Reefs within the boundaries of a National Marine Sanctuary are evaluated on a case-by-case basis.

RESPONSIBLE OFFICIAL: George P. Schmahl
Superintendent
NOAA Flower Garden Banks National Marine Sanctuary
4700 Ave. U, Bldg 216
Galveston, TX 77550
(409) 621-5151 ext. 102

The environmental review process led us to conclude that this action will not have a significant effect on the human environment. Therefore, an environmental impact statement will not be prepared. A copy of the finding of no significant impact (FONSI), including the supporting environment assessment (EA) prepared by ONMS, is enclosed for your information.

Although NOAA is not soliciting comments on this completed EA/FONSI, we will consider any comments submitted that would assist us in preparing future NEPA documents. Please submit any written comments to the responsible official named above.

Sincerely,

John Armor
Director
Office of National Marine Sanctuaries

Enclosure

Environmental Assessment for Authorization of U.S. Army Corps of Engineers permit SWG-2015-00068 to Texas Parks and Wildlife Department and Bureau of Safety and Environmental Enforcement Approval of Platform Decommissioning and Site Clearance Verification Plan (2012-217A) to W&T Offshore Inc. for the creation of an artificial reef through the abandonment of a partially removed gas platform in the Outer Continental Shelf Block High Island A-389A (HI-A-389A)

Prepared by:
National Oceanic and Atmospheric Administration
Office of National Marine Sanctuaries
Flower Garden Banks National Marine Sanctuary

August 16, 2017

1. PURPOSE AND NEED

1.1 Proposed Federal Action

The National Oceanic and Atmospheric Administration (NOAA), Office of National Marine Sanctuaries (ONMS), Flower Garden Banks National Marine Sanctuary (FGBNMS) proposes to issue an Authorization to Dale Shively, Texas Parks and Wildlife Department (TPWD), to allow for the abandonment in place of the lower portion of the base jacket of a decommissioned oil and gas platform and the abandonment of associated loose fragments or other debris that may become dislodged or collapse due to deterioration or other natural causes in the Outer Continental Shelf (OCS) of the Gulf of Mexico, Block High Island A-389A (HI-A-389A) for the establishment of an artificial reef within the boundaries of FGBNMS in accordance with U.S. Army Corps of Engineers (Corps) permit #SWG-2015-00068 (effective date May 31, 2017). FGBNMS also proposes to issue an Authorization to W&T Offshore, Inc. (W&T) for the Bureau of Safety and Environmental Enforcement (BSEE) approval of the platform decommissioning and site clearance verification plan for HI-A-389A (Complex ID 10192-01, OCS-G 02759 OCS Federal Waters, Gulf of Mexico Region, Offshore Texas) (No. 2012-217A). The partial removal of the platform would be done through nonexplosive means and the remaining structure would be donated to TPWD and serve as an artificial reef.

The proposed establishment of the Artificial Reef site has been permitted by the Corps, which prepared an environmental assessment (EA) dated May 11, 2017. The Corps EA describes the environmental effects of the decommissioning and artificial reef. The Bureau of Ocean and Energy Management (BOEM) provided a recommendation to BSEE to approve the W&T application for the High Island Area Block A389 Platform A decommissioning and site clearance verification plan. In accordance with a Memorandum of Agreement between BOEM and BSEE dated October 3, 2011 concerning the "Environment and NEPA", BOEM prepared a related site-specific environmental assessment (BOEM/BSEE SEA) that BSEE relies on for NEPA compliance and a Finding of No Significant Impact (FONSI).

ONMS has reviewed and has incorporated by reference portions of the Corps EA and BOEM/BSEE SEA. The adverse effects of the proposed action are not expected to be significant. ONMS has prepared this EA to document compliance with the National Environmental Policy Act (NEPA) for the proposed action in accordance with 40 CFR 1500-1508, NAO 216-6A and associated Companion Manual. The establishment of Artificial Reefs within the boundaries of a National Marine Sanctuary is evaluated on a case-by-case basis.

1.2 Purpose and Need for the Action

The purpose of issuing an Authorization to Dale Shively, Texas Parks and Wildlife Department (Corps' applicant) and a separate authorization to W&T Offshore, Inc. (BSEE's applicant) is to

allow for the decommissioning, partial removal, site clearance, and abandonment, within the sanctuary boundaries, of the lower portion of decommissioned oil and gas platform HI-A-389A. The authorization would also allow Texas Parks and Wildlife Department to leave in place associated loose equipment, components, or materials of the artificial reef structure that may become dislodged or collapse from the artificial reef due to deterioration or other natural causes when it is fully contained within a designated 20 square acres (935' x 935') extending around the center point of the HI-A-389A platform.

The need for the action is to allow for the creation of an artificial reef through the abandonment of the existing structure to enhance the habitat and diversity of fishery resources and increase commercial and recreational fishing opportunities. Terms and conditions issued as part of the ONMS authorization will ensure that establishment of the Artificial Reef Site, by abandonment of the structure or injury to coral or other bottom formation, will not result in significant adverse effects to sanctuary resources if any equipment, components, or materials of the artificial reef structure becomes dislodged or collapse due to deterioration or other natural causes.

1.3 Project Description

W&T Offshore, Inc. proposes to partially remove the top portion of HI-A-389A platform using non-explosive severance (i.e., abrasives or mechanical cutting). TPWD proposes to take ownership and liability of the lower portion of the partially removed gas structure, located within the boundaries of the Flower Garden Banks NMS, and include it in the Texas Parks and Wildlife Department's Artificial Reef Program. The liability taken on by TPWD is limited to the structure itself. The liability for the permanently plugged and abandoned pipelines and wells remains with W&T Offshore, Inc. The structure is be located within a 20-acre artificial reef site as depicted in Attachment 1, in a water depth of 410 feet. The structure remaining in place will rise to a minimum depth of - 65 feet below mean sea level. A side scan sonar site clearance survey using a high-resolution sonar survey (500 kHz or greater) will be performed by W&T Offshore, Inc. after the completion of the removal and reefing operations. W&T Offshore, Inc. will consult and coordinate with the FGBNMS to recover any debris identified in the site clearance survey. Trawl site activities will not be conducted for debris removal.

1.4 Project Location

The project is located within the southeast corner of East Flower Garden Banks National Marine Sanctuary (FGBNMS) and encompasses a production platform in the Outer Continental Shelf Block High Island A-389A (HI-A-389A) (see Attachment 1). The sanctuary is located approximately 125 miles southeast of the Galveston, Texas. FGBNMS contains the northernmost living coral reefs on the continental shelf of North America, as well as a variety of other important biological communities and geological features.

Location and Affected Waterway: The project is located approximately six (6) nautical miles (nm) north of the nearest safety fairway.

The location of the reef site is contained within a designated reef site bounded by the following coordinates:

North West Corner Latitude: 27° 54' 06.488" North; Longitude: 093° 34' 43.075" West
North East Corner Latitude: 27° 54' 06.060" North; Longitude: 093° 34' 32.689" West
South East Corner Latitude: 27° 53' 56.833" North; Longitude: 093° 34' 33.171" West
North West Corner Latitude: 27° 53' 57.261" North; Longitude: 093° 34' 43.556" West

1.5 Project History

HI-A-389A, an 8-pile (leg) production platform was installed by Mobil Exploration and Producing U.S. Inc. (Mobil) in 1981, prior to the designation of FGBNMS which took place in 1992. In September 1994, FGBNMS issued a certification authorizing Mobil to conduct oil and gas exploration and developmental operations (Certification FGBNMS-29-94). W&T Offshore, Inc. acquired the lease block in 2002. In October 2003, FGBNMS issued an authorization (Authorization FGBNMS-2003-009) to W&T Offshore, Inc. to construct a pipeline from Garden Banks 139 to HI-A-389A for the purpose of transporting product to HI-A-389A from GB-139 for processing and subsequent transportation to shore. Authorization FGBNMS-2003-009 included Special Condition 10, which specifically addresses abandonment and established that at the end of the useful life, W&T Offshore, Inc. would prepare an evaluation on whether to abandon in place or remove the pipeline and a decision would be made by the Sanctuary manager who could require mitigation measures. Discussions pertaining to removal between the original lease holder, Mobil Oil, were held in the early 1990's. The discussions between W&T Offshore, Inc. and FGBNMS regarding the fate of the platform resumed in 2011.

The original lease issued by the U.S. Department of the Interior, Minerals Management Service (now BOEM) to Mobil Exploration and Producing U.S. Inc. required the removal of the platform at the end of the productive life of the platform. U.S. Department of the Interior regulations at 30 C.F.R. 250.1725 require removal within one year of the end of production unless approval to maintain the structure to conduct other activities is received by BSEE. The lease for the platform expired on July 8, 2011.

Since installation of HI-A-389A, the underwater structure of the platform has become colonized with a variety of encrusting and other marine species, including invasive species, that have developed into a distinct benthic community and attracts abundant fish life. The platform has become a popular destination for recreational and commercial SCUBA divers, and recreational and commercial fishers.

In 2014, W&T Offshore, Inc. initiated negotiations for the platform to be established as an artificial reef as part of the TPWD Rigs-To-Reefs Program. Under separate, but related, permits to be issued by BSEE to W&T Offshore, Inc. the platform will be partially removed - the deck and top portion will be transported to shore. The lower section of the platform from to a minimum depth of - 65 feet below mean sea level and associated pipelines and wells, will be permanently plugged, abandoned, and remain in place as an Artificial Reef. Significant interest in converting the platform to an artificial reef on the part of the public and the sanctuary advisory council has led to the sanctuary's willingness to accept this abandoned structure within sanctuary boundaries. The artificial reef will be held under the liability of TPWD, and liability for the permanently plugged and abandoned pipelines and wells will remain with W&T Offshore, Inc.

1.6 Public Involvement

The ultimate fate of this platform has been the subject of considerable discussion since the installation in 1981. More recent and as a higher priority as decommissioning of the platform has come into play, consideration and more in depth reviews through the Sanctuary Advisory Council, and through public comment have taken place. Additionally, the FGBNMS Advisory Council created a Working Group in April 2011, focused on Artificial Reefs, and specifically the fate of HI-A-389A. A report, dated March 1, 2013, was developed by the Working Group, and a recommendation made to the FGBNMS Superintendent as to the fate of HI-A-389A. The recommendation from the Artificial Reef Working Group was to partially remove the platform, leaving the lower portion standing for fishing and diving activity.

During the comment period on the Corp EA, the public raised the following questions, which were deferred to NOAA and are addressed below:

- What is NOAA's policy about leaving human structures in a NMS when these structures are no longer needed or when the conflicting use no longer occurs?

NOAA does not have a specific policy about leaving human structures in a NMS. Such issues are reviewed on a case-by-case basis.

- Does platform removal set a precedent for NMS and if so how should this affect the decision that is recommended?

No. The proposed action does not establish a precedent for future actions and does not represent a decision in principle about a future consideration. The Office of National Sanctuaries (ONMS) reviews permit and authorization applications on a case-by-case basis and evaluates individual projects for effects to the human environment prior to issuance of an ONMS authorization or permit. Any future activities, including abandonment and acceptance of existing platforms into the Rigs-To-Reef Program, will be reviewed by ONMS independent of this proposed action, and separate environmental analysis will be conducted as required by NEPA.

- What is the risk that a storm or hurricane will damage the platform and the FGBNMS?

NOAA concurs with the response provided by the applicant in the Corps EA. Any risk of platform damage by a storm or hurricane should be minimal. Neither TPWD nor BSEE are aware of any Texas platforms that have been damaged by storm events since the artificial reef program was established in 1989. If by chance a storm event did damage the platform reef, TPWD would provide for an evaluation by structural engineers to determine the overall stability of the reefed structure.

- What will happen to debris that falls from the platform?

NOAA concurs with the response provided by the Corps EA. Any loose equipment, components, or artificial reef material that may fall from the platform and stay within the designated reef area depicted in Attachment 1 would remain in place. In the event that any equipment, components, or materials, including the components or materials of the artificial reef structure itself, are damaged, relocated, or lost due to weather or any other cause and falls partially or completely outside the designated artificial reef boundary depicted in Attachment 1, the authorization holder shall notify the FGBNMS Superintendent within 72 hours and request additional permits or approvals from FGBNMS, as necessary. The FGBNMS Superintendent will determine the best course of action on a case by case basis to avoid and minimize impacts to sanctuary resources. The authorization holder shall then, in consultation with FGBNMS, remove from the site, any such displaced equipment, components, or materials per the FGBNMS determination of the least damaging course of action.

- How much will operation/maintenance costs be each year for the platform?

NOAA concurs with the response provided by the Corps EA. There are no maintenance costs associated with the platform reef. As required, TPWD may place mooring buoys or marker buoys at the site and maintained through TPWD's ongoing buoy monitoring/maintenance contract.

- What is the risk of spreading disease or invasive species to the FGBNMS via the platform?

NOAA concurs with the response provided by the Corps EA. While there is scientific evidence that suggests that invasive species utilize petroleum platforms in the Northern Gulf of Mexico to expand their range, it is unlikely that the complete removal of this individual platform would significantly deter any invasive species moving in the marine sanctuary.

- What will be the environmental impacts of attracting more people to the FGBNMS.

NOAA concurs with the response provided by the Corps EA. It is anticipated that there would be no significant increase in attraction of visitors to the FGBNMS due to the proposed reefing of this platform. The majority of visitors to the marine sanctuary come to visit the banks proper, with occasional stops at the standing HI-A-389A platform. Once the structure is reefed, diving may actually decrease at the reef since it would then become a more advanced dive with the reef beginning at -65 feet below mean sea level.

- What is the carrying capacity of the FGBNMS with regard to visitors?

A carrying capacity for FGBNMS has not been determined.

- A. Will the operation of the platform to generate money (recreational fishing or diving operations) cause a conflict with protection of the FGBNMS? B. Who profits from the generation of this money?

In response to part A of this question, it is of the opinion of NOAA that the operation of the platform as an artificial reef will not conflict with protection of the FGBNMS. In response to part B, NOAA concurs with the response provided by the Corps EA. Any money generated through diving and fishing resides with local and state businesses. Those funds would then eventually go into the local economy.

- Will the operation of the platform to generate money create pressure on NOAA employees to not be as protective of the FGBNMS in comparison to if the platform did not exist?

NOAA concurs with the response provided by the Corps EA. TPWD does not charge a fee to dive or fish at any reef site, so the Artificial Reef program is not directly impacted by users of the reef. The mission of the Texas Artificial Reef Program is to preserve and enhance existing marine habitat. The proposed reef site would not be operated by TPWD (or NOAA) to generate money. NOAA will continue their current level of protection of the natural resources regardless of the presence of the platform (whether or not money is generated).

- Is it better to concentrate use farther away from the FGBNMS than right next to the East Flower Garden Bank?

NOAA concurs with the response provided by the Applicant in the Corps EA. HI-A-389A was installed at the current location in 1981 and for over 30 years has attracted a number of divers and fishermen. These users utilize the marine sanctuary in addition to the HI-A-389A structure. If the structure were moved to another location, there is no rationale to suggest that use of the sanctuary would decrease. Moving the platform to another reef site is feasible to enhance the marine habitat at another reef site, but would not attract divers since the depth would be significantly deeper (towed platforms are typically laid on their side, reducing the height of the reef profile off the ocean bottom).

- What is the possibility that leaving the platform may increase fishing on the FGBNMS?

NOAA concurs with the response provided by the Corps EA. It is also anticipated that there would be no significant increase in fishers to the sanctuary due to the reefing of the platform. If fishers continue to use the platform reef for fishing, that could reduce the fishing pressure on the natural reef.

- What effects will "leaving the platform in place" have on the boundary expansion or marine reserve designation?

This action will have no bearing or effect on the boundary expansion or marine reserve designation as it does not set a precedent (see above for additional explanation). This proposed action is within the current boundaries of the sanctuary. Each application for the establishment of an artificial reef is reviewed on a case-by-case basis.

- What security will be needed for the platform?

NOAA concurs with the response provided by the Corps EA. No security is needed on the artificial reef structures. No structure will remain above the water line, and the area would only accessible by SCUBA divers. NOAA is not anticipating any activity that would warrant security.

- Who will control or manage the platform?

FGBNMS and TPWD Artificial Reef Program will co-manage the platform.

See section 4.0 of this document (Coordination, pages 4-15 of the Corps EA, *SWG-2015-00068*) for further information.

2. Description of Alternatives

2.1 Alternative Considered but Rejected

The following alternative was considered but rejected:

Leave the structure completely in place, for the purpose of utilizing the above water deck and facilities for a research and monitoring station, giving long term access to the sanctuary from accommodation other than a research vessel. This option was rejected based on the excessive costs associated with maintenance and repair of the structure on an annual basis.

Four alternatives are being considered: Alternative 1: No Action Alternative (No Authorizations issued to W&T Offshore, Inc. or TPWD), Alternative 2: Issue Two ONMS Authorizations

allowing for decommissioning, site clearance, partial platform removal and the abandonment of HI-A-389A lower section – to a minimum depth of - 65 feet below mean sea level for the creation of the Artificial Reef, and Alternative 3: (Preferred) Issue Two ONMS Authorizations allowing for decommissioning, site clearance, partial platform removal and the abandonment of HI-A-389A lower section – to a minimum depth of - 65 feet below mean sea level for the creation of the Artificial Reef with mitigation requirements. Alternative 4: Environmentally Preferred Alternative - Complete Removal of HI-A-389A.

2.2 Alternative 1: No action alternative

Under the no action alternative, no authorization would be issued for platform decommissioning, partial removal and abandonment of the structure in order to create an artificial reef. As a result, the entire platform would remain in place. This is not a feasible alternative because abandonment of the platform within the FGBNMS would require action from NOAA and BSEE. NOAA would require a permit for the abandonment of the platform within the sanctuary and BSEE regulations require complete removal of HI-A-389A (30 C.F.R. 250.1725(a)). Additionally, according to section 2.5 of the BOEM/BSEE SEA, abandoned structures require continual maintenance and present base-use conflicts with future lease holders and other potential users of the Gulf of Mexico Outer Continental Shelf. This alternative also does not meet the underlying purpose and need.

2.3 Alternative 2: Issue Two ONMS Authorizations allowing for decommissioning, site clearance, partial platform removal and the abandonment of HI-A-389A lower section – to a minimum depth of - 65 feet below mean sea level,and for the creation of the Artificial Reef

Alternative 2 is to issue an ONMS Authorization to W & T Offshore, Inc. for the BSEE Approval of the platform decommissioning and site clearance verification plan for HI-A-389A, and issue a separate (but related) authorization to Dale Shively, Texas Parks and Wildlife Department for the Army Corps of Engineers permit in order to establish an artificial reef as part of the TPWD Rigs-To-Reefs Program. The lower portion of the platform would be left in place at a minimum depth 65 ft below sea level down to the seafloor at approximately 410 ft.

W & T Offshore, Inc. proposes to remove Platform A in High Island Block A389, Lease OCS-G 02759 using non-explosive severance methods. The structure is located within the Flower Garden Banks National Marine Sanctuary (FGBNMS). Abrasives or mechanical cutting will be the primary cutting method. The structure is located at a water depth of 410 feet (ft) (125 meters (m)) and lies approximately 120 miles (193 kilometers) from the nearest Texas shoreline. Operations will be conducted from an onshore support base in Intracoastal City, Louisiana. The operator will remove the deck and upper jacket of the structure at a minimum depth of – 65 ft below mean sea level (fsl). The lower jacket will be reefed in place in High Island A389. The

deck and upper jacket of the structure will be transported to shore for disposal. The maximum anchor radius employed by the lift vessel/derrick barge will be 4,000 ft (1,219 m). No anchors will be placed within the No Activity Zone or the boundary of the FGBNMS. In addition, the jacket of the structure will be utilized as an anchor point in the removal operations. The material barge transporting the deck and upper jacket of the structure will avoid the reef boundaries and No Activity Zone of the FGBNMS in transporting these components to shore for disposal. A side scan sonar site clearance survey will be performed after the completion of the removal and reefing operations. W&T will then donate the structure to TPWD for the purpose of creating an artificial reef.

Subsequent to the reefing operations and acceptance of the structure into the TPWD Rigs-To-Reefs Program, any loose equipment, components, or artificial reef material pieces that may fall from the platform due to deterioration or other natural causes within the designated reef area depicted in Attachment 1 may remain in place. In the event that any equipment, components, or materials, including the components or materials of the artificial reef structure itself, are damaged, relocated, or lost due to weather or any other cause and falls partially or completely outside the designated artificial reef boundary depicted in Attachment 1, TPWD shall notify the FGBNMS Superintendent within 72 hours of discovery and request additional permits or approvals from FGBNMS, as necessary. The FGBNMS Superintendent will determine the best course of action on a case by case basis to avoid and minimize impacts to sanctuary resources. TPWD shall then, in consultation with FGBNMS, remove from the site any such displaced equipment, components, or materials per the FGBNMS determination of the least damaging course of action.

FGBNMS regulations prohibit abandoning any structure, material, or other matter on the seabed of the sanctuary. FGBNMS regulations also prohibit injuring or removing or attempting to injure or remove any coral or other bottom formation, coralline algae or other plant, marine invertebrate, brine-seep biota, or carbonate rock within the Sanctuary. An application for authorization of the activity was received from TPWD on February 14, 2017. The application from W&T Offshore, Inc. was received on February 15, 2017.

2.4 Alternative 3: (Preferred) Issue Two ONMS Authorizations allowing for decommissioning, site clearance, partial platform for removal and the abandonment of HI-A-389A lower section – to a minimum depth of - 65 feet below mean sea level for the creation of the Artificial Reef with mitigation requirements

The preferred alternative is exactly as described in Alternative 2, with the exception of adding three mitigation requirements consistent with what is contained in the BOEM/BSEE SEA. The following mitigation measures are found in 2.4 of the BOEM/BSEE SEA and are included below:

1) Vessel-Strike Avoidance/Reporting: Follow the guidance provided under Notice to Lessees and Operators (NTL) No. 2016-G01 (Vessel Strike Avoidance and Injured/Dead Protected

Species Reporting). The NTL's guidance can be accessed on BOEM's internet website at http://www.boem.gov/BOEM-NTL-No-2016-G01/.

2) Non-recurring Mitigation (Topographic Features - post activity submittal): Bottom-disturbing activities associated with the structure removal activities proposed must avoid the "No Activity Zone" of the East Flower Garden Bank by a distance of at least 500-ft and must be placed outside the Sanctuary boundary. Include in a Post-removal Report as-built plat(s) at a scale of 1-in. = 1,000-ft. with DGPS accuracy, depicting the "as-placed" location of all anchors, anchor chains, and wire ropes on the seafloor deployed during the structure removal activities to show that the "No Activity Zone" was not physically impacted. Additionally, bottom disturbing activities must be distanced at least 100 ft. from any hard bottom habitat or potentially sensitive biological features. Site clearance shall be conducted within a radius of 1,320' using a high resolution side scan sonar survey and all identified debris shall be removed; the contractor shall not conduct trawl site clearance activities.

3) Post-Reefing Survey Requirements: The structure proposed for decommissioning will be abandoned-in-place as an artificial reef under the Rigs-to-Reefs Program. In order to verify compliance with OCSLA reefing (30 CFR § 250.1727(g)) and obstruction clearance requirements (30 CFR § 250.1740), W & T Offshore, Inc is required to conduct a high-resolution sonar survey (500 kHz or greater) of the permitted reefal material. Design the line spacing for side-scan and the display range to ensure 100 percent of the material permitted under this action is covered and it is demonstrated that the associated seabed (i.e. at a minimum the appropriate grid area listed in 30 CFR § 250.1741(a)) is clear of all obstructions apart from the reefal material. For a Side-Scan Sonar Survey, the side-scan system will need to be run with 30-meter line spacing to provide enough overlap in coverage. W & T Offshore, Inc is required to submit the Sonar Survey Report to this office at the same time they submit the required site clearance information required per 30 CFR § 250.1743(b).

4) Through coordination with NOAA FGBNMS, TPWD will implement annual biological monitoring of the community on and around the reef site. This will include the encrusting organism species such as corals and sponges, pelagic fish, mammal, and reptile species at the reef site, and the presence and proliferation of invasive species. TPWD will provide reports annually to FGBNMS summarizing findings, and notifying NOAA of any concerns, or changes in the biological communities, as well as status of invasive species. TPWD will include a summary of lionfish removals. At this time, TPWD will also report on observations of changes in structural integrity of the platform. If the structure poses a threat to the natural resources of the sanctuary, TPWD will immediately notify FGBNMS as soon as this information is known. TPWD will coordinate with FGBNMS to determine appropriate action and timeline.

5) TPWD will install and maintain an aid to navigation marker/mooring buoy for the duration of the Corps permit, at the discretion of the FGBNMS Superintendent.

2.5 Alternative 4: (Environmentally Preferred) Complete removal of HI-A-389A

Alternative 4 is to reject the request from TPWD to establish an artificial reef, and, instead, FGBNMS would issue an Authorization that would require the complete removal of HI-A-389A by W&T by non-explosive severance methods such as abrasive cutters, mechanical cutters, diver cutters, diamond wire cutters, or other non-explosive cutting tool (i.e., guillotine saw or hydraulic shears). Section 1.4.7.1. of the Programmatic Environmental Assessment for Structure-Removal Operations on the Gulf of Mexico Outer Continental Shelf (OCS EIS/EA MMS 2005-013), which is incorporated by reference in the BOEM/BSEE SEA for this project provides a detailed description of each non-explosive severance method. The platform legs would be cut below the mudline using one or more of the non-explosive severance methods, the entire structure picked up by barge, and transported either to shore for scrapping, or would be deposited within a designated artificial reef site outside of the sanctuary. After the completion of the removal operations, W & T Offshore, Inc. would be required to perform a side scan sonar site clearance survey using a high-resolution sonar survey (500 kHZ or greater). W&T Offshore, Inc. would also be required to consult and coordinate with the FGBNMS to recover any debris identified in the site clearance survey.

While this is a viable option, the level of interest and desire from the public through the Sanctuary Advisory Council, and public comments, to establish the site to enhance recreational opportunities to the scuba diving and fishing communities supported the decision to leave a portion of the structure in place.

3.0 Affected Environment

3.1 Air Quality

The federal Clean Air Act requires the U.S. Environmental Protection Agency (EPA) to set National Ambient Air Quality Standards (NAAQS) for six common air pollutants. These commonly found air pollutants (also known as "criteria pollutants") are particulate pollution (often referred to as particulate matter), ground-level ozone, carbon monoxide, sulfur oxides, nitrogen oxides and lead. These pollutants are called "criteria" air pollutants because they are regulated by developing human health-based and/or environmentally-based criteria (science-based guidelines) for setting permissible levels.

The main sources of air pollution in the study area for the proposed expansion come from oil and gas industry operations, diesel exhaust from ship engines, and from incineration of garbage on vessels. Vessel traffic within the study area contributes to the degradation of air quality. Diesel exhaust has a high sulfur content, producing sulfur dioxide, nitrogen dioxide, and particulate matter in addition to common products of combustion such as carbon monoxide, carbon dioxide, and hydrocarbons. On the outer continental shelf, sources of air emissions can vary considerably, depending on the specifics of the operation. Offshore oil and gas sector operations, in particular,

may include evolving technologies and take place in different settings, making it difficult to generalize air emission potentials.

The *Year 2008 Gulfwide Emissions Inventory Study* (Wilson et al. 2010) indicates that, for calendar year 2008, OCS oil and gas production platforms and non-platform sources emitted the majority of criteria pollutants and greenhouse gases in the Gulf of Mexico on the OCS, with the exception of particulate matter and sulfur dioxide (primarily emitted from commercial marine vessels) and nitrous oxide (from biological sources). Oil and gas production platform and non-platform sources account for 93 percent of the total carbon monoxide emissions, 74 percent of nitrogen emissions, 76 percent of VOC emissions, 99 percent of the methane emissions, and 84 percent of the carbon dioxide emissions on the outer continental shelf. Natural gas engines on platforms represented the largest carbon monoxide emission source, accounting for 60 percent of the total estimated oil- and gas-related carbon monoxide emissions; and oil- and gas-related support vessels were the highest emitters of nitrogen, accounting for 35 percent of the total estimated emissions. Oil and natural gas production platform vents and fugitive sources account for the highest percentage of VOC and methane emissions. Support vessels (29% of total emissions), production platform natural gas turbines (15% of total emissions) and drilling rigs (12% of total emissions) emit the majority of the carbon dioxide emissions attributable to oil and gas production on the OCS.

Climate is defined as the average statistics of weather, which include temperature, precipitation and seasonal patterns such as storms and wind, in a particular region. Global climate change refers to the long-term and irrevocable shift in these weather related patterns, including the rise in the Earth's temperature due to an increase in heat-trapping or "greenhouse" gases in the atmosphere. Using ice cores and geological records, baseline temperature and carbon dioxide data extends back to previous ice ages thousands of years ago. Over the last 10,000 years, the rate of temperature change has typically been incremental, with warming and cooling occurring over the course of thousands of years. However, scientists have observed an unprecedented increase in the rate of warming over the past 150 years, roughly coinciding with the global industrial revolution, which has introduced tremendous amounts of greenhouse gases into the atmosphere.

Unlike emissions of criteria and toxic air pollutants, which have local or regional impacts, emissions of greenhouse gases (GHGs) that contribute to global warming or global climate change have a broader, global impact. Global warming is a process whereby GHGs accumulating in the atmosphere contribute to an increase in the temperature of the earth's atmosphere. The principal GHGs contributing to global warming are carbon dioxide, methane, nitrous oxide and fluorinated compounds. These gases allow visible and ultraviolet light from the sun to pass through the atmosphere, but they prevent heat from escaping back out into space.

Among the potential implications of global warming are rising sea levels, and adverse impacts on water supply, water quality, agriculture, forestry and habitats. In addition, global warming may increase electricity demand for cooling, decrease the availability of hydroelectric power and

affect regional air quality and public health. Like most criteria and toxic air contaminants, much of the GHG production comes from motor vehicles and to a lesser extent motorized marine vessels. Climate change affects public health because the higher temperatures result in more air pollutant emissions, increased smog and associated respiratory disease and heart-related illnesses. Climate change also affects ocean acidity, causing a decrease in the pH of the ocean, as a result of uptake of carbon dioxide from the atmosphere. This condition is called ocean acidification. Ocean acidification has potentially devastating ramifications for all ocean life; from the smallest, single celled algae to the largest whales.

3.2 Water Quality

Along the coast of the northern Gulf of Mexico, near-shore currents tend to flow from east to west. Beyond the coastal zone, water movement on the continental shelf off Texas, Louisiana, Mississippi and Alabama can be variable depending upon forcing mechanisms including tides, wind, heating, river runoff and interaction with shallow flow of the deep basin (Rezak et al. 1983). While these local conditions influence the current patterns in the northwestern Gulf of Mexico, it is the Loop Current and its associated "spin-off" eddies and gyres that are the main drivers of water circulation in the Gulf of Mexico (Sturges and Lugo-Fernandez 2005).

The Loop Current enters the Gulf of Mexico through the Yucatan Channel between Cuba and Mexico as a massive river of warm water, reaching speeds up to 6.5 feet/second (almost 4 knots) (Badan et al. 2005). The current flows northward, at times reaching as far as 28° N before looping clockwise along the west Florida shelf to exit through the Florida Straits. The waters of the Loop Current then join the waters of the Caribbean Current and the Antilles Current to flow northward along the southeastern U.S. coast and become the Gulf Stream. As the Loop Current reaches its maximum northern position in the Gulf of Mexico, it often becomes unstable, shedding large eddies (or gyres) that spin primarily clockwise as they drift westward at speeds of 0.6-5 miles/day. These eddies can have a diameter of 125-250 miles, and last for intervals of 0.5-18.5 months (Schmitz et al. 2005). Before they dissipate, these eddies can have a significant influence on current patterns in the northwestern Gulf of Mexico.

Runoff from precipitation on almost two-thirds of the land area of the continental U.S. eventually drains into the Gulf of Mexico primarily via the Mississippi River and other waterways leading to the Gulf of Mexico. The combined discharge of the Mississippi and Atchafalaya Rivers alone accounts for more than half the freshwater flow into the Gulf of Mexico and is a major influence on salinity levels in coastal waters on the Louisiana/Texas continental shelf. The annual freshwater discharge of the Mississippi/Atchafalaya River system represents approximately 10 percent of the water volume of the entire Louisiana/Texas shelf to a depth of 295 feet (90 meters) (GMFMC 1998), with a discharge of 600,000 cubic feet per second, or 1.5 billion cubic meters per day, at New Orleans (NPS 2015).

The fresh water and sediment mix with the salt water of the northern Gulf of Mexico, creating extensive areas of biologically rich estuarine and offshore habitats. Freshwater and sediment inflows also serve as a source of pollution from upstream agriculture, stormwater runoff, industrial activities, and wastewater discharges. In bottom water (the lowermost layer of ocean water), low oxygen availability (a condition known as hypoxia) is a major water quality problem in portions of the northern Gulf of Mexico and its estuaries, caused in large part by nutrient loading from river inflows. The input of nutrient-rich fresh water to the coastal area fuels phytoplankton blooms in the water column. Following the eventual transportation of dead and decaying plant material to the ocean floor, this organic-rich biomass undergoes decomposition by bacteria and results in the depletion of oxygen (eutrophication) at depth (DWH NRDA Trustees 2016). The Loop Current and Mississippi/Atchafalaya River system, as well as a semi-permanent, anticyclonic gyre in the western Gulf of Mexico, significantly affect oceanographic conditions throughout the Gulf of Mexico.

The reefs and banks of the northwestern Gulf of Mexico, and HI-A-389A, are located from 60-115 miles from the shore, so they are positioned well away from the normal influence of coastal runoff and nearshore eutrophication. Chlorophyll and nutrient levels are typically low, and indicative of oligotrophic oceanic conditions. Water temperatures in the region of the Flower Garden Banks typically range from 64°F (February) to 86°F (August), and salinity ranges from 34-36 parts per thousand (ppt).

Discharges to water of the U.S. Gulf of Mexico outside the FGBNMS boundary are regulated by the EPA under the Clean Water Act, the USACE under the Rivers and Harbors Act of 1899, and by BOEM and BSEE under the Outer Continental Shelf Lands Act, as described in section 4.6. Discharges inside the FGBNMS boundary are also regulated by FGBNMS.

Recent research has shown natural hydrocarbon seeps in the Gulf of Mexico to release between ~159,000 and ~596,000 barrels of hydrocarbons into the water column annually (Macdonald et al. 2015), compared with 3.19 million barrels released over the course of the 87 day Deepwater Horizon oil spill alone, with another ~44,000 barrels of dispersant applied in response to that event (DWH NRDA Trustees 2016). Studies have also documented low-level chronic effects of releases (pollutants ranging from solid wastes, to chemical contaminants, to sewage) from platforms (Kennicutt 1995), ships (Copeland 2008), and land-based sources (NOAA 1998). Produced water discharges, for example, are estimated at roughly 1 billion barrels per year. While concentrations of hydrocarbons contained in this discharge is low (e.g., limited under EPA's Region 6 NPDES general permit for offshore oil and gas activities to 29 mg/L monthly average or 42 mg/L daily maximum), the total volume is quite large (Veil et al. 2004, Veil 2008).

3.3 Marine Habitat

Coral Habitat

The action area is within soft bottom habitat which is used by marine infaunal communities adjacent to coral and other associated habitat at the East Flower Garden Bank. The East Flower

Garden Bank is a pear-shaped dome, measuring 8.7 by 5.1 km (5.4 by 3.2 mi) in size, sloping from its shallowest point at 17 m (55 ft) to the terrigenous mud seafloor at a depth of 100–120 m (330–390 ft). The eastern and southern edges of the bank slope steeply whereas the northern and western edges descend more gently (Figure 1.2.3). The primary habitat of the coral reef zone of the Flower Garden Banks is *Orbicella* (formerly *Montastraea*) habitat. This habitat includes at least 24 species of stony corals and is interspersed by sand channels comprised of coral sand (coral debris with molluscan and algal components). *Madracis* habitat occurs on the peripheral parts of the primary reef structure at East Flower Garden Banks in depths ranging from 90-140 feet (27-43 meters) where large knolls are characterized by almost monospecific stands of the small branching coral *Madracis auretenra* (formerly named *Madracis mirabilis).*

In East Flower Garden Bank here are also numerous thriving biological communities associated with hard bottom bank features in depths were sunlight is diminished (known as "mid-light" or "mesophotic" zones). *Mesophotic* coral habitats are typically found at depths ranging from ~100 feet (30 m) and extending to over 500 feet (~150 m) in tropical and subtropical regions (Puglise et al. 2009, NOAA 2011a, Hourigan et al. 2015, Sulak and Dixon 2015, DWH NRDA Trustees 2016). For purposes of this EA, the term *mesophotic* habitat is used to refer to biological communities associated with hard bottom features existing between approximately 165 feet (50 meters) and 980 feet (300 meters) deep. The use of 980 feet (300 meters) as the lower limit of this zone is consistent with other regulatory regimes (MMS 2009). This depth range has also been referred to as the "twilight zone" (Pyle 1996, Kahng et al. 2010). *Mesophoti*c reefs with horizontal summits harbor large populations of sponges, black corals (antipatharians), sea fans and sea whips (gorgonians), and feather stars. Variation between biological communities on features is attributable, in many cases, to differences in a variety of environmental parameters, especially the potential for sedimentation (Gittings et al. 1992). *Mesophoti*c corals and small, bottom-dwelling reef fish are common and conspicuous components of the *mesophotic* zone along the Pinnacles area, 165-500 feet (50-152 meters) deep in the northeastern Gulf of Mexico (Rezak et al. 1990, Gittings et al. 1992, Weaver et al. 2001). *Mesophotic* communities also make up the majority of hard bottom habitats in the deeper areas of the reefs and banks in the northwestern Gulf of Mexico. Most *mesophotic* corals are non-reef building, though they include reef-building corals in the deeper areas of the coral caps at East Flower Garden Bank.

Essential Fish Habitat

Congress enacted amendments to the MSA (P.L. 94-265) in 1996, establishing procedures for identifying Essential Fish Habitat (EFH) and requiring interagency coordination to further the conservation of federally managed fisheries. Rules published by NOAA's National Marine Fisheries Service (NMFS) (50 CFR 600.805 – 600.930) specify that any federal agency that authorizes, funds or undertakes, or proposes to authorize, fund or undertake an activity which could adversely affect EFH is subject to the consultation provisions of the MSA as described in the implementing regulations. This section and the associated impacts sections were prepared to meet these requirements.

EFH is defined as “those waters and substrate necessary to fish for spawning, breeding, feeding or growth to maturity” (GMFMC 1998, GMFMC 2005, NOAA 2009). The EFH rules encourage regional Fishery Management Councils to designate Habitat Areas of Particular Concern (HAPCs) within areas identified as EFH to focus conservation priorities on specific habitat areas that play a particularly important role in life cycles of federally managed fish species. HAPCs help focus research and conservation efforts on localized areas that are especially important ecologically or are vulnerable to degradation, and are subsets of the total area necessary to support healthy stocks of fish throughout all of their life stages. In general, oil and gas platforms are not recognized as EFH by the Gulf of Mexico Fisheries Management Council. However,HI-A-389A is located within an existing HAPC.

Detailed information on EFH for federally managed coral, shrimp, reef fish and coastal migratory pelagic species is provided in both the 1998 and the 2005 Generic Amendments of the Fishery Management Plans (FMPs) for the Gulf of Mexico prepared by the Gulf of Mexico Fishery Management Council (GMFMC).

Reef Fish and Coastal Migratory Pelagics FMPs: all estuaries; the US/Mexico border to the boundary between the areas covered by the GMFMC and the SAFMC from estuarine waters out to depths of 100 fathoms.

Coral and Coral Reef FMP: the total distribution of coral species and life stages throughout the Gulf of Mexico including: coral reefs in the North and South Tortugas Ecological Reserves, East and West Flower Garden Banks, McGrail Bank, and the southern portion of Pulley Ridge; hard bottom areas scattered along the pinnacles and banks from Texas to Mississippi, at the shelf edge and at the Florida Middle Grounds, the southwest tip of the Florida reef tract, and predominant patchy hard bottom offshore of Florida from approximately Crystal River south to the Florida Keys.

Information on EFH for most highly migratory species (tuna, billfish, and sharks) is contained in the 2009 Amendment 1 to the Consolidated Atlantic Highly Migratory Species Fishery Management Plan prepared by NMFS. Chapter 5 the 2009 Amendment 1 includes maps of designated EFH for each highly migratory species.

The placement of the structure of the platform has introduced a substrate upon which marine species have attached, and since the installation, has grown into an artificial habitat. The primary biological community is an encrusting community, dominated by bivalves, sponges, barnacles, hydroids, as well as non-native coral *(Tubastraea coccinea).* This habitat provides suitable structure for motile invertebrates including urchins and fireworms. The structure also provides excellent habitat for reef associated fishes – damselfish, wrasse, filefish, and angelfish, as well as pelagic species such as jacks, barracuda, sharks, manta rays, and sea turtles.

The platform is one of 10 active platforms within a 10 mile range of the HI-A-389A. It is located in very close proximity to sensitive biological communities including the healthiest coral reef in

the region (within 1.1 miles), and within 0.19 miles (997 feet) of patches of deepwater coral habitat, and within 0.97 miles of a unique brine seep feature on the east side of the East Flower Garden Bank feature.

3.4 Protected Species

The ESA of 1973 (16 U.S.C. §§1531, et seq.) requires federal agencies to conserve endangered and threatened species and to conserve the ecosystems upon which these species depend. Table 1 provides a list of federally recognized endangered or threatened species, as well as species of concern, reported to reside in or migrate through federal waters of the Gulf of Mexico. There is no designated critical habitat within the project area because it is made up of soft bottom substrate.

There are four coral species listed as "threatened" under the ESA that are found within the current sanctuary boundaries – Lobed Star Coral, Mountainous Star Coral, Boulder Star Coral and Elkhorn Coral. The three star coral species make up 35-40% of coral cover on the coral dominated crests of the East and West Flower Garden Banks (Johnston et al. 2015). There is one colony of Elkhorn Coral known to occur on each bank. None of these species have been documented on HI-A-389A.

The Warsaw Grouper, Nassau Grouper, Speckled Hind, Alabama Shad, Atlantic Bluefin Tuna, Dusky Shark, Sand Tiger Shark and Ivory Tree Coral all occur in the Gulf of Mexico and are listed as species of concern, which means they have been identified as species potentially at risk of becoming threatened or endangered, but require further study for listing.

Two species of endangered and threatened species of sea turtles, Hawksbill sea turtle (*Eretmochelys imbricata),* and Loggerhead sea turtle (*Caretta caretta*) are present in the action area. The natural habitat of hatchling sea turtles are sargassum rafts.

Table 1: Protected Species Occurring in or near the project site

Common Name	Scientific Name	Federal Status
Sperm Whale	*Physeter microcephalus*	Endangered
Fin Whale	*Balaenoptera physalus*	Endangered
North Atlantic Right Whale	*Eubalaena glacialis*	Endangered
Blue Whale	*Balaenoptera musculus*	Endangered
Sei Whale	*Balaenoptera borealis*	Endangered
Humpback Whale	*Megaptera novaeangliae*	Endangered
Green Sea Turtle	*Chelonia mydas*	Threatened
Loggerhead Sea Turtle	*Caretta caretta*	Threatened
Hawksbill Sea Turtle	*Eretmochyls imbricata*	Endangered
Kemp's Ridley Sea Turtle	*Lepichelys kempii*	Endangered
Smalltooth sawfish	*Pristis pectinata*	Endangered

Leatherback Sea Turtle	*Dermochelys coriacea*	Endangered
Lobed Star Coral	*Orbicella annularis*	Threatened
Mountainous Star Coral	*Orbicella faveolata*	Threatened
Boulder Star Coral	*Orbicealla franksi*	Threatened
Elkhorn Coral	*Acropora palmata*	Threatened
Gulf Sturgeon	*Acipenser oxyrhynchus desotoi*	Threatened
Warsaw Grouper	*Epinephelus nigritus*	Species of Concern
Nassau Grouper	*Epinephelus striatus*	Species of Concern
Speckled Hind	*Epinephelus drummondhayi*	Species of Concern
Alabama Shad	*Alosa alabamae*	Species of Concern
Atlantic Bluefin Tuna	*Thunnus thynnus*	Species of Concern
Dusky Shark	*Carcharhinus obscurus*	Species of Concern
Sand Tiger Shark	*Carcharias taurus*	Species of Concern
Ivory Tree Coral	*Oculina varicosa*	Species of Concern

3.5 Invasive Species

The Nonindigenous Aquatic Nuisance Species Prevention and Control Act (16 U.S.C. § 4701, *et seq.*) was initially passed by congress in 1990 and was amended by the National Invasive Species Act in 1996. This statute and implementing regulations at 33 CFR 151 provides the U.S. Coast.

Executive Order 13112, Invasive Species directs federal agencies to take actions to enhance prevention and control of invasive species. Specifically the Order states that each federal agency whose actions may affect the status of invasive species shall, to the extent practicable and permitted by law, use relevant programs and authorities to: (i) prevent the introduction of invasive species; (ii) detect and respond rapidly to and control populations of such species in a cost-effective and environmentally sound manner; (iii) monitor invasive species populations accurately and reliably; (iv) provide for restoration of native species and habitat conditions in ecosystems that have been invaded; (v) conduct research on invasive species and develop technologies to prevent introduction and provide for environmentally sound control of invasive species; and (vi) promote public education on invasive species and the means to address them. Finally, E.O. 13112 states that federal agencies have an affirmative duty to not authorize, fund or carry out actions that it believes are likely to cause or promote the introduction or spread of invasive species.

Non-native orange cup coral (*Tubastraea coccinea*) and Pacific lionfish (*Pterois volitans*) have been observed at HI-A-389A. The most abundant stony coral on HI-A-389A is the orange cup coral and is growing in high densities on the platform. It is generally accepted that the introduction of the orange cup coral is due to attachment on hulls of ships (Cairns 2000). To date, both lionfish and orange cup coral have been documented on the natural substrate at the

FGBNMS. These non-native species compete with native species for resource and therefore pose threats to local communities.

3.6 Socioeconomic Environment

Commercial Fishing
Fishery catch data (e.g., dockside landings reports) are not collected on a scale fine enough to discern fishing effort specifically for the area around the platforms, or the FGBNMS. However, VMS data are collected at much finer resolution and provide an indication of the regional use by commercial fishery permit holders targeting reef fish, coastal pelagics and highly migratory species. For the period of 2008-2014, an annual average of ~238 vessels operated in the north central Gulf of Mexico with reef fish permits, ~128 vessels operated in the study area with permits to fish for king mackerel, ~155 vessels operated in the region with permits to fish for tunas, swordfish, or sharks, and 28 vessels operated in the study area with permits to fish for shrimp in the Gulf of Mexico. Many vessels carried more than one permit type. Using data from trip report forms, NOAA also identified vessels that made trips with bottom longline gear from those identified in the study area. An annual average of 37 vessels carrying bottom longline gear was present in the study area over the same period.

Levesque and Richardson (2009, 2011) analyzed commercial fishing data from three federal data collection programs: NMFS General Canvass Landings Reporting System (GCLRS), Trip Interview Program (TIP) and NMFS Historical Landings Program (HLP). They reported that commercial landings in the Gulf of Mexico were stable during the 2003-2007 period, however lower than in the late 1980s. Types of fish landed commercially within the vicinity of FGBNMS were snapper, jacks, tuna/mackerel, shark, grouper and a variety of reef fish.

Platforms are known targets for commercial fishing.

Recreational Fishing
The recreational fishery of the Gulf of Mexico includes private individuals, rental boats, charter vessels, head boats and party boats. An average of 3.2 million recreational anglers took 23 million recreational fishing trips in the Gulf of Mexico annually between 2002 and 2011, contributing billions of dollars to the region's economy and supporting tens of thousands of jobs (NOAA 2011b, NOAA 2012a). The remoteness and difficulty of accessing the areas proposed for sanctuary expansion results in much lower use of these areas for recreational fishing than for the Gulf of Mexico as a whole. The private recreational sector in the Gulf of Mexico was surveyed through the NOAA's Marine Recreational Fisheries Statistics Survey (MRFSS) and is now surveyed through NOAA's Marine Recreational Information Program (MRIP), except for the state of Texas, where the TPWD uses a statistical area system with very large grid cells similar to NOAA's statistical areas. Between state and federal data sets, effort data are available for most of the Gulf of Mexico, but this data and the charter/headboat catch data collected by NOAA provides insufficient resolution to determine catch or understand other activity in the FGBNMS or other areas in the region. NOAA has analyzed VMS data to estimate the level of

use of proposed expansion alternatives by charter/head-boats, which showed an annual average of 60 charter/headboats operating in the study area with permits to fish for coastal migratory pelagic fish and 64 charter/headboats operating in the study area with permits to fish for reef fish. These vessels also may carry more than one permit type.

Platforms are known targets for recreational fishing.

Recreational Scuba Diving
There is very little information available on scuba diving off either Texas or Louisiana. There are no existing institutions that regularly gather information about scuba diving off Texas or Louisiana. In 1999-2000, the National Survey on Recreation and the Environment (NSRE) estimated the number of participants that went scuba diving off Texas and Louisiana. In 1999-2000, approximately 70,000 people age 16 or older went scuba diving off Texas and about 11,000 off Louisiana. Even with a sample size of 52,000, it was not a significant sample size to reliably estimate person-days of scuba diving for Texas and Louisiana (Leeworthy and Wiley 2001).

Platforms are popular dives throughout the region, including HI-A-389A. M/V FLING, the recreational dive charter operating out of Freeport, Texas, regularly visits HI-A-389A during its visits to the sanctuary each week between May and October. This operator runs up to three trips per week in high season.

3.7 Shipping and Marine Navigation

The Gulf Coast region contained 13 of the top 20 U.S. ports by tonnage in 2009, and 50% of all U.S. international trade tonnage passed through Gulf Coast ports in the same year (NOAA 2011b). The Ports of Houston, Galveston and New Orleans are among the world's busiest ports. Shipping fairways running close to, and in six instances through, the proposed expansion areas, funnel thousands of ships to the ports annually. For example, in the safety fairway south of East Flower Garden Bank, approximately 500 vessel tracks were recorded from 244 unique vessels during the period June 2014-September 2015 (Tony Reyer, ONMS Physical Scientist, personal communication).

Each year, more than 200 million tons of cargo move through the Port of Houston, carried by more than 8,000 vessels and 200,000 barge calls (Port of Houston 2015). A 2015 study by Martin Associates indicated that Houston channel-related businesses contributed 1,174,567 jobs throughout Texas, and helped generate more than $264.9 billion in statewide economic impact. Additionally, more than $5 billion in state and local tax revenues are generated by business activities related to the Port of Houston (Martin Associates 2015). In 2013, the Port of Galveston docked 912 ships, including 179 cruise ship calls. Over 1.2 million cruise passengers passed through the port, generating over $12 million in revenue. Close to 4.5 million tons of cargo were moved through Galveston that same year (Port of Galveston 2015).

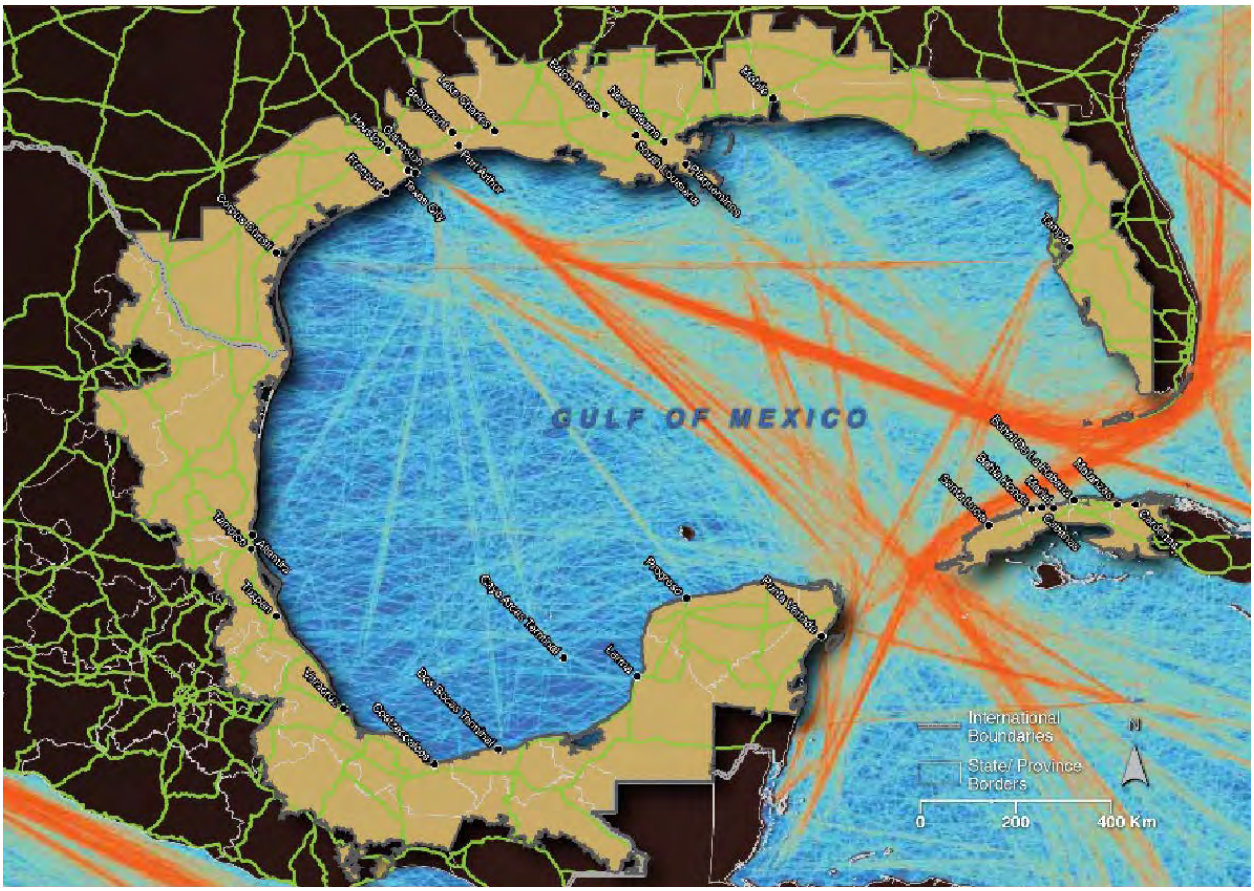


Figure 1. Commercial shipping routes in the Gulf of Mexico. Image credit: Yoskowitz et al. (2013).

The project is located approximately six (6) nautical miles (nm) north of the nearest safety fairway.

In order to determine the incidence of deep draft vessels operating in the vicinity of the FGBNMS, a query was made to IntelliEarth Maritime Solutions via the Office of National Marine Sanctuaries to determine the vessel traffic passing through and on the outskirts of the shipping fairway south of the EFGB (approximately 7 miles south of HI-A-389A) between June 2014 and September 2015. The summary reveals that a total number of 244 vessels in the dataset broadcast 1024 position within the small geographic area of interest during the period of interest. Of these vessels, a total of 32 vessels with a 15m (49.2126 ft) draught or deeper passed through 42 times (different days). The deepest draught reported was around 23m (75.4593ft) (see Table 2).

Table 2. Summary of vessel traffic with drafts of 15m and deeper reported in query.

	23m (75.5ft) draught	22m (72.18ft) draught	21m (68.9ft) draught	20m (65.6ft) draught	17m (55.7ft) draught	16m (52.5ft) draught	15m (49.2ft) draught	TOTALS

Number of vessels	2	2	4	1	4	2	17	32
Number of points	3	2	11	2	17	8	42	85
Number of days	3	2	4	1	9	3	20	42

4.0 Environmental Consequences

This section evaluates the environmental consequences of the alternatives as described in Chapter 2 (Description of Alternatives). The environmental effects of these alternatives are evaluated within the context of the physical, biological, socioeconomic and historic and cultural setting.

Characterizing Effects

The National Environmental Policy Act (NEPA) requires consideration of the effects of major federal actions on the quality of the human environment (42 U.S.C. § 4332(c)). Effects are characterized as negligible, less than significant, or significant, and are also characterized by type (adverse or beneficial), context, intensity and duration (short- or long-term) (40 CFR § 1508.27). Effects can be further characterized by whether they affect resources directly or indirectly. The following definitions and characterizations were used for this analysis:

- Negligible effects – effects for which virtually no effect to a resource can be detected (whether beneficial or adverse), essentially "discountable" or hardly noticeable effects.
- Less than significant effects – effects that do not rise to the level of significance as defined below, or these can be thought of as "minor" effects.
- Significant effects – effects resulting in an alteration in the state of a physical, biological, historic/cultural or socioeconomic resource. Long-term or permanent effects or effects with a high intensity or frequency of alteration to a resource, whether beneficial or adverse, would be considered significant. The significance threshold is evaluated on a case-by-case basis, taking into consideration the context and intensity of each action and the status of the resources.
- Direct effects – effects that are caused by the action and occur at the same time and place.
- Indirect effects – effects that are caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable. Indirect effects may include growth-inducing effects and other effects related to induced changes in the pattern of land use, population density or growth rate, and related effects on air and water and other natural systems, including ecosystems.

- Minimization – actions that limit the degree or magnitude of the action and its implementation.
- Mitigation – actions that are taken or avoided in order to (a) avoid the impact altogether by not taking a certain action or parts of an action; (b) minimize impacts by limiting the degree or magnitude of the action and its implementation; (c) rectify the impact by repairing, rehabilitating, or restoring the affected environment; (d) reduce or eliminating the impact over time by preservation and maintenance operations during the life of the action; or (e) compensate for the impact by replacing or providing substitute resources or environments. (40 CFR § 1508.20)

4.1 Air Quality

Alternative 1: No Action
Under the No Action Alternative, FGBNMS would not authorize the Corps permit or BSEE approval and the entire platform would remain in place. No impacts to air quality are expected.

Alternative 2: Issue two ONMS Authorizations allowing for decommissioning, site clearance, partial platform removal and the abandonment of HI-A-389A lower section – to a minimum depth of - 65 feet below mean sea level for the creation of the Artificial Reef

Removal of the upper portion of the platform would require vessel support over a limited period of time. We also do not anticipate a noticeable increase in visitors to the site, we do not anticipate noticeable change in amount of vessel traffic (the only source of emissions affecting air quality) and therefore concur with the Corps assessment that pursuant to section 12.1 of the Corps' document, the determination that the activities proposed under this permit will not exceed *de minimis* levels of direct or indirect emissions of a criteria pollutant or its precursors. NOAA acknowledges the slight possibility of oil or gas leakage from the plugged wells. Monitoring protocols will enable any detection of any leaks that could occur. Monitoring information will allow for swift response in the slight chance that a leak happens to ensure that no significant effects to air quality occur.

Alternative 3: (Preferred) Issue two ONMS Authorizations allowing for decommissioning, site clearance, partial platform removal and the abandonment of HI-A-389A lower section – 65ft depth for the creation of the Artificial Reef with mitigation requirements

The effects from implementing the preferred alternative are expected to be the same as those discussed in alternative 2 because removal of the upper portion of the platform would use the same methodology.

Alternative 4: Complete removal of HI-A-389A

Removal of the entire platform would require vessel support over a limited period of time. We also do not anticipate a noticeable increase in visitors to the site, we do not anticipate noticeable change in amount of vessel traffic (the only source of emissions affecting air quality) and therefore concur with the Corps assessment that pursuant to section 12.1 of the Corps' document, the determination that the activities proposed under this permit will not exceed *de minimis* levels of direct or indirect emissions of a criteria pollutant or its precursors.

4.2 Water Quality

Alternative 1: No Action

Under the No Action Alternative the platform would remain in place at its current state. We anticipate that the structure would deteriorate overtime, which may lead some minor amounts of metals leaching into the water. Effects are expected to be negligible do to the localized area, the slow process of structure degradation and ocean currents.

Alternative 2: Issue two ONMS Authorizations allowing for decommissioning, site clearance, partial platform removal and the abandonment of HI-A-389A lower section – to a minimum depth of - to a minimum depth of - 65 feet below mean sea level for the creation of the Artificial Reef

Under Alternative 2, the lower section of the platform would remain in place at a depth of to a minimum depth of - 65 feet below mean sea level. We anticipate that the structure would deteriorate overtime, which may lead some minor amounts of metals leaching into the water. Effects are expected to be negligible do to the localized area, the slow process of structure degradation and ocean currents.

As part of this alternative, the wells will be plugged and the risk of the release of hydrocarbons is greatly reduced. NOAA acknowledges the slight possibility of oil or gas leakage from the plugged wells. Monitoring protocols will enable any detection of any leaks that could occur. Monitoring information will allow for swift response in the slight chance that a leak happens to ensure that no significant effects to water quality occur.

In addition, pursuant to section 10.5 of the Corps' document, a Water Quality Certification is not required. The project does not involve discharge of a pollutant in waters of the U.S. and the Clean Water Act is not triggered. Therefore, significant effects are not anticipated.

Alternative 3: (Preferred) Issue two ONMS Authorizations allowing for decommissioning, site clearance, partial platform removal and the abandonment of HI-A-389A lower section – to a minimum depth of - 65 feet below mean sea level for the creation of the Artificial Reef with mitigation requirements

Under Alternative 3, the effects are expected to be the same as those discussed in Alternative 2.

Alternative 4: Complete removal of HI-A-389A

Under Alternative 4, the entire platform would be mechanically cut below or at the mudline. Localized, short term disturbance of the seafloor and increased turbidity would occur during the removal operations. The wells would be plugged and the risk of hydrocarbons is greatly reduced. Under this alternative, there would be no leaching of minor amounts of metal from deterioration of the structure.

4.3 Marine Habitat

Alternative 1: No Action
Under the No Action, the habitat that the existing structure has created would remain in place, however its structural integrity would diminish overtime. Portions of the structure could break injuring species that are swimming through the area or have attached themselves to the structure. Effects are expected to be minimally adverse due to the presence of shallow structure that may provide additional opportunity for future colonization by invasive species.

Alternative 2: Issue two ONMS Authorizations allowing for decommissioning, site clearance, partial platform removal and the abandonment of HI-A-389A lower section – to a minimum depth of - 65 feet below mean sea level for the creation of the Artificial Reef

Pursuant to section 10.2 of the Corps' document, EFH species and complexes were considered, and determined to be minimally adversely affected, however the adverse effects were not described. The proposed abandonment and reefing of the structure would maintain habitat for these species. NOAA recognizes that the removal of the shade structure and shallow water structure will change the dynamics of the environment of the platform. The impacts of this are the subject of an ongoing monitoring conducted by FGBNMS, BSEE, and TPWD, and no adverse effects to essential fish habitat are expected. Some species are only known to inhabit the shallower portions of the reef. (e.g. Tessellated blennies, *Hypsoblennius invemar*) and may not survive the removal of the shallow structure.

The platform sits in soft bottom habitat, and therefore, does not interfere directly on natural hard bottom habitat. However, the soft bottom habitat is an environment utilized by marine infaunal communities. As the platform structure, weakens, corrodes or is impacted by storms, the structure may become unstable and pieces may fall off and land in the soft sediment. In the event the structure is partially outside the designated artificial reef zone, after consultation with NOAA, TPWD will either remove the structure, or move inside the designated artificial reef zone.

It is not anticipated that the removal of the upper portion of the platform, leaving the lower portion in place, will cause a significant change to the dynamics of the fish populations that currently inhabit the platform. Fish population will be the subject of ongoing monitoring activities by BSEE, FGBNMS, and TPWD. The platform structure itself is not considered EFH. Based on this information and the platform situated on soft bottom habitat, NOAA does not expect adverse effects to EFH.

Alternative 3: (Preferred) Issue two ONMS Authorizations allowing for decommissioning, site clearance, partial platform removal and the abandonment of HI-A-389A lower section – to a minimum depth of - 65 feet below mean sea level for the creation of the Artificial Reef with mitigation requirements

The same effects discussed in Alternative 2 are expected to be reflected under Alternative 3 because a portion of the structure would remain in place. However, implementation of the second mitigation measure-- avoidance of the no activity zone would provide added protection to the habitat.

Alternative 4: Complete removal of HI-A-389A

Under alternative 4, the complete removal of the platform would remove all artificial structure available for colonization, and existing attached marine organisms currently established would be adversely affected. If the platform was mechanically cut at mudline, and taken to shore, none of the attached marine organisms would survive. Motile species such as fish and sea turtles may be able to swim to the adjacent natural habitat, or to nearby platforms. This may cause short term impacts to individual species, making them more susceptible to predation. However, no take of protected species is expected and significant effects on species populations are not anticipated. Under this alternative, no substrate that is colonizable by invasive species would be available.

If the structure was placed into an existing artificial reef site, some attached and associated motile species may survive the move, and the structure would be available for future colonization. Some species are only known to inhabit the shallower portions of the reef (e.g. Tessellated blennies, *Hypsoblennius invemar*) and may not survive the removal of the shallow structure, or placement into a deeper environment. No significant effects anticipated from this alternative on any population that uses the platform.

4.4 Protected Species

Alternative 1: No Action

Minimal adverse impacts are anticipated under this alternative because the structure would remain in place, causing disruption to passing sargassum rafts – identified as critical habitat for hatchling sea turtles. As these rafts pass by platforms, they are disrupted, causing ever

decreasing sizes of rafts. This potentially can cause higher risk of predation to the hatchlings, and less access to food source. Additionally, platforms are prime habitat for large predatory fish species, including jacks and sharks. It has been observed that these predators often swim out to meet an incoming sargassum raft to forage on sargassum inhabitants. The structure is expected to continue to deteriorate over time. Deterioration may cause pieces of the structure to fall and potentially temporarily displace species found in the area.

Alternative 2: Issue two ONMS Authorizations allowing for decommissioning, site clearance, partial removal and the abandonment of HI-A-389A lower section – to a minimum depth of - 65 feet below mean sea level for the creation of an Artificial Reef

Pursuant to section 10.1 of the Corps' document, the Corps determined no effects to the two species of endangered and threatened species of sea turtles, Hawksbill sea turtle (*Eretmochelys imbricata),* and Loggerhead sea turtle (*Caretta caretta*). We, however, believe that the proposed action could provide a minor benefit hatchling sea turtles. Resident subadult and/or adult loggerhead sea turtles will likely move deeper on the structure, or move to the natural reef close by. Hatchling sea turtles are expected to benefit from this alternative in that impacts to sargassum rafts would be reduced compared to the No Action Alternative. The removal of the exposed shallow section of the platform will potentially positively affect hatchling sea turtles, primarily loggerhead sea turtles. The natural habitat of hatchling sea turtles are sargassum rafts. As these rafts pass by platforms, they are disrupted, causing ever decreasing sizes of rafts. This potentially can cause higher risk of predation to the hatchlings, and less access to food source. The partial removal of the platform is expected to decrease the instances of raft disturbance.

Alternative 3: (Preferred) Issue two ONMS Authorizations allowing for decommissioning, site clearance, partial platform removal and the abandonment of HI-A-389A lower section – to a minimum depth of - 65 feet below mean sea level for the creation of the Artificial Reef with mitigation requirements

The preferred alternative is expected to have no effect on subadult/adults of the two species of endangered and threatened species of sea turtles, Hawksbill sea turtle (*Eretmochelys imbricata),* and Loggerhead sea turtle (*Caretta caretta*). Resident subadult and/or adult loggerhead sea turtles will likely move deeper on the structure, or move to the natural reef close by. Hatchling sea turtles are expected to benefit from this alternative in that impacts to sargassum rafts would be reduced compared to the No Action Alternative. The removal of the exposed shallow section of the platform will potentially positively affect hatchling sea turtles, primarily loggerhead sea turtles. The natural habitat of hatchling sea turtles are sargassum rafts. As these rafts pass by platforms, they are disrupted, causing ever decreasing sizes of rafts. This potentially can cause higher risk of predation to the hatchlings, and less access to food source. The partial removal of the platform is expected to decrease the instances of raft disturbance.

Pursuant to section 3.4.1 of the BSEE/BOEM SEA, the proposed structure removal activities would generate short-term increases in background noise and may resuspend sediments as a result of any bottom disturbances. However, the use of non-explosive severance methods eliminates potential impacts to fish typically resulting from barotrauma associated with shock wave propagation. The distancing requirements and exclusion of bottom disturbing activities from within the Sanctuary boundary and No Activity Zone reduces the potential for adverse impacts to sessile benthic organisms through impingement and sedimentation. Habitat modification as a result of removing the upper portion of the jacket eliminates some artificial substrate from the water column, but will have negligible impact on fish and invertebrate resources. Short-term localized increases in turbidity and background noise as a result of the proposed activities could cause temporary shifts in the distribution of some fish.

Pursuant to section 3.3.1 of the BOEM/BSEE SEA, sea turtles can be impacted by the proposed activities by way of degradation of water quality and its associated short-term effects, and vessel collisions. Service vessels associated with the proposed activities pose a hazard to sea turtles located near the surface that would be at risk of collision with the vessels. However, to minimize the potential for vessel strikes, operators should implement the guidance provided under NTL No. 2016-G01 which contains vessel strike avoidance and injured/dead protected species reporting for sea turtles and other protected species (this appears as mitigation 1 in section 2 of this document). The NTL guidance can be accessed on BOEM's internet website at http://www.boem.gov/BOEM-NTL-No-2016-G01/. BOEM/BSEE concluded in the SEA that sea turtle injury is not expected from non-explosive structure removal operations, provided that existing guidelines and conditions of approval requirements are followed.

Overall, the impacts of the proposed action are expected to be negligible most of the time, with occasional impacts being potentially adverse but not significant.

Alternative 4: Complete removal of HI-A-389A

Alternative 4 would remove all structure available for sea turtles, or other threatened or endangered species. Resident subadult and/or adult loggerhead sea turtles will likely move to the natural reef close by. Hatchling sea turtles are expected to benefit from this alternative in that impacts to sargassum rafts would be reduced compared to the No Action Alternative. The removal of the platform will potentially positively affect hatchling sea turtles, primarily loggerhead sea turtles. The natural habitat of hatchling sea turtles are sargassum rafts. As these rafts pass by platforms, they are disrupted, causing ever decreasing sizes of rafts. Smaller rafts potentially can cause higher risk of predation to the hatchlings, and less access to food source. The removal of the platform is expected to decrease the instances of raft disturbance.

High resolution sidescan sonar (500 kHz or greater) will be utilized to conduct post-removal site clearance to determine the existence of any debris that may need to be removed. This frequency is at a level not likely to adversely affect marine mammals because it is outside of the hearing range of marine mammals that are known to occur in the action area (see Table 3).

Table 3. Hearing range information taken from Technical Guidance for Assessing the Effects of Anthropogenic Sound on Marine Mammal Hearing Underwater Acoustic Thresholds for Onset of Permanent and Temporary Threshold Shifts (July 2016).

Hearing Group	Generalized Hearing Range*
Low-frequency (LF) cetaceans (baleen whales)	7 Hz to 35 kHz
Mid-frequency (MF) cetaceans (dolphins, toothed whales, beaked whales, bottlenose whales)	150 Hz to 160 kHz
High-frequency (HF) cetaceans (true porpoises, *Kogia*, river dolphins, cephalorhynchid, *Lagenorhynchus cruciger* & *L. australis*)	275 Hz to 160 kHz
Phocid pinnipeds (PW) (underwater) (true seals)	50 Hz to 86 kHz
Otariid pinnipeds (OW) (underwater) (sea lions and fur seals)	60 Hz to 39 kHz

* Represents the generalized hearing range for the entire group as a composite (i.e., all species within the group), where individual species' hearing ranges are typically not as broad. Generalized hearing range chosen based on ~65 dB threshold from normalized composite audiogram, with the exception for lower limits for LF cetaceans (Southall et al. 2007) and PW pinniped (approximation).

4.5 Invasive Species

Alternative 1: No Action

Under the No Action Alternative, non-native orange cup coral and Pacific lionfish are expected to persist at HI-A-389A.

Alternative 2: Issue two ONMS Authorizations allowing for decommissioning, site clearance, platform removal, and the abandonment of HI-A-389A lower section – to a minimum depth of -65 feet below mean sea level for the creation of the Artificial Reef

Artificial reef structure is known to be colonizable and colonized by invasive species, specifically orange cup coral (*Tubastraea coccinea*) and Pacific lionfish (*Pterois volitans/miles*). Both of these species have been reported at HI-A-389A. The most abundant stony coral on HI-A-389A is the orange cup coral. It is acknowledged that the proximity of HI-A-389A to the natural habitat of the FGBNMS could result in the platform acting as a vector for the invasive species to enter and colonize the natural habitats. To date, both lionfish and orange cup coral have been documented at the FGBNMS. It is unlikely that the abandonment of the HI-A-389A could significantly increase the flow of invasive species into the sanctuary from what is currently in place, given the number of platforms with 10 miles of this platform. The removal of the shallow portion of the platform removes shallow water habitat that does not naturally occur in

the immediate vicinity of the sanctuary. This shallow water habitat has been utilized by species that do not naturally occur in the sanctuary, and require shallow water habitat, either as their primary environment, or as a stepping stone to deeper water habitats. Partial removal of the platform would lessen the proximity of an artificial structure (i.e. colonizable habitat by invasive species). TPWD will be authorized and requested to remove lionfish during their monitoring activities. It is recognized this will only be logistically feasible within SCUBA diving range.

Alternative 3: (Preferred) Issue two ONMS Authorizations allowing for decommissioning, site clearance partial platform removal and the abandonment of HI-A-389A lower section – to a minimum depth of - 65 feet below mean sea level for the creation of the Artificial Reef with mitigation requirements

We anticipate the same level of impacts as those discussed under Alternative 2.

Alternative 4: Complete removal of HI-A-389A

Under alternative 4, the complete removal of the structure would remove the possibility of use of the structure as a vector for invasive species, in close proximity to the natural habitat. This is the environmentally preferred alternative.

4.6 Socioeconomic Environment

Alternative 1: No Action

The No Action Alternative would include continued use of the underwater structure by recreational and commercial fishers and divers. No significant effects are anticipated.

Alternative 2: Issue two ONMS Authorization allowing for decommissioning, site clearance platform removal and the abandonment of HI-A-389A lower section –to a minimum depth of - 65 feet below mean sea level for the creation of the Artificial Reef

The proposed alternative will allow continued use of the underwater structure by recreational and commercial fishers and divers. A change in the amount or frequency of visitation to this platform is not expected to have a significant change under Alternative 2. No significant effects are anticipated.

Alternative 3: (Preferred) Issue two ONMS Authorizations allowing for decommissioning, site clearance, partial platform removal and the abandonment of HI-A-389A lower section –to a minimum depth of - 65 feet below mean sea level for the creation of the Artificial Reef with mitigation requirements

The proposed alternative will allow continued use of the underwater structure by recreational and commercial fishers and divers. A change in the amount or frequency of visitation to this platform

is not expected to have a significant change under Alternative 3. No significant effects are anticipated.

Alternative 4: Complete removal of HI-A-389A

Under alternative 4, the complete removal of the structure would remove all recreational benefits of the presence of the artificial reef structure for both scuba divers and fishers at this location.

4.7 Shipping and Marine Navigation

Alternative 1: No Action

Under the No Action Alternative, the platform would remain entirely in place and would be visible above the water's surface. No change in shipping and marine navigation is expected.

Alternative 2: Issue two ONMS Authorizations allowing for decommissioning, site clearance, platform removal, and the abandonment of HI-A-389A lower section – to a minimum depth of -65 feet below mean sea level for the creation of the Artificial Reef

Pursuant to Section 4.2 of the Corp's document, the United State Coast Guard (District 8, New Orleans) verified that the 65 feet cutoff is sufficient clearance for nearby vessel traffic and that marking the site with a navigational marker is not required. However, vessels drafting up to 65-76 feet utilize the safety fairway approximately 6 nautical miles from HIA389A. While 65 feet cutoff is sufficient for most nearby vessel traffic, some vessel draft deeper than this – up to 75.5 feet. At the request of the FGBNMS, the site will be marked with an Aid-To-Navigation Buoy for the duration of the Army Corps of Engineers permit, and beyond the permit's expiration, at the discretion of the FGBNMS Superintendent (See Section 1.4 of this document). As such, we do not anticipate significant effects to marine navigation.

Alternative 3: (Preferred) Issue two ONMS Authorizations allowing for decommissioning, site clearance, platform removal, and the abandonment of HI-A-389A lower section – to a minimum depth of - 65 feet below mean sea level for the creation of the Artificial Reef with mitigation requirements

The same effects are expected from the implementation of the preferred alternative as those discussed in Alternative 2. As such, we do not anticipate significant effects to marine navigation.

Alternative 4: Complete removal of HI-A-389A

Under alternative 4, the complete removal of all structure would remove the risk of a deep-draft vessel colliding with the partially removed structure and potentially putting the natural resources at risk. This is the environmentally preferred alternative.

4.9 Cumulative Impacts

The cumulative effect of the proposed action as described in the preferred alternative is the incremental environmental effect that the proposed action has when added to other past, present, and foreseeable future actions in the affected environment (40 CFR § 1508.7). Cumulative effects are critical to explore because individually insignificant actions may sometimes combine to cause significant adverse impacts. To identify potential cumulative effect concerns, ONMS considered the effects of the operations identified under the preferred alternative in conjunction with the effects associated with other past, present, and foreseeable future actions in the affected environment. The operations that were identified as having some potential to contribute to cumulative effects include those that could result in seafloor disturbance and impacts to living marine resources. These effects are described below.

Air Quality:

Shipping in general has shown a trend of bigger, deeper draft vessels, including those utilizing the Gulf of Mexico. The general increase in vessel traffic increases the potential risk of degradation to air quality. NOAA also acknowledges the slight possibility of oil or gas leakage from the plugged wells that could be discharged into the air. Monitoring protocols will enable any detection of any leaks that could occur. Monitoring information will allow for swift response in the slight chance that a leak happens to ensure that no significant effects to air quality occur. Significant cumulative effects on air quality are not expected by the implementation of the preferred alternative. Very limited number of vessels will support the project to decommission and partially remove a portion of the platform during a limited period of time. Visitation to the artificial reef by diving and fishing vessels is not expected to result in overall increase in vessel traffic compared to the No Action alternative.

Water Quality:

As discussed under air quality, shipping using bigger, deeper draft vessels, has been trending upward over time, including those utilizing the Gulf of Mexico. This increases the risk to marine natural resources through release of ballast water, graywater and wastewater. NOAA also acknowledges the slight possibility of oil or gas leakage from the plugged wells. Monitoring protocols will enable any detection of any leaks that could occur. Monitoring information will allow for swift response in the slight chance that a leak happens to ensure that no significant effects to water quality occur.

There will be limited vessel traffic to and from the area during the decommissioning, removal, and site clearance activities. Visitation to the artificial reef by diving and fishing vessels is not expected to result in overall increase in vessel traffic compared to the No Action alternative. Leaching from metal degradation would occur in minute quantities over time within active currents, and monitoring protocols will be in place to detect and address any leakage from the

plugged wells. Significant cumulative effects on water quality are not expected by the implementation of the preferred alternative.

Marine Habitat:

The platform is one of 10 active platforms within a 10 mile range of HI-A-389A. There are no TPWD artificial reefs within 10 miles of HI-A-389A. There is an upward general trend that oil and gas platforms are being decommissioned in the Gulf of Mexico. The removal of these artificial structures may lead to less habitat for some marine species. Given that the preferred alternative includes the remaining structure to be converted into an artificial reef, habitat that has existed for 36 years will remain for living resources. Due to the localized area and the limited number of platforms in this region, no significant cumulative effects on marine habitat are anticipated.

Protected Species:

The general trend of removal of structures in the region may have a positive impact on the regional integrity of sargassum rafts – lessening the circumstances by which the rafts are disrupted, and the loggerhead sea turtle hatchling are preyed upon, and increasing the hatchlings foraging ability. Over time this may lead to increased survivorship of hatchlings. This dynamic would be balanced by predatory species inhabiting the artificial reef. Impacts from the decommissioning, partial removal, and abandonment of the platform -- combined with the other threats protected species are facing in the area-- are not expected to be significant. Mitigation measures will reduce the risk of collisions, avoid sensitive areas (No Activity Zone), and the temporary disturbance during partial removal is not expected to have significant adverse effects to protected resources.

Invasive Species:

The presence of oil and gas structures provide opportunities for invasive species to utilize the structures as vectors throughout region. The development of artificial reefs in the region can potentially extend the range of invasive species. Rather than remove the structures in entirety, and the option to leave a portion or all of the structures on the seafloor leaves the opportunity for invasive species to colonize. However, significant effects are not expected because there has not been a noticeable increase in invasive species on the platform, relative to other nearby sites.

Socioeconomic Environment:

The establishment of artificial reefs has been implemented for the creation of structure to enhance commercial and recreational fishing opportunities regionally. As more structures are decommissioned and added to existing designated reef sites, this will continue to grow the size and complexity of the sites, thus increasing the habitat availability, and potentially density of target fish species. However, decommissioning of this platform is not expected to have

significant cumulative effects because use of the area is not expected to have a noticeable increase in visitors.

Shipping and Marine Navigation:

Shipping in general has shown a trend of bigger, deeper draft vessels, including those utilizing the Gulf of Mexico. This has been illustrated in the expansion, and need to deepen major ports, such as the Port of Houston. This potentially increases the risk to the natural resources through illegal anchoring, loss or cargo or trash, or release of ballast water, graywater and wastewater. However, implementation of the preferred alternative is not expected to result in significant adverse effects on shipping and navigation. A navigational aid will be left in place to notify vessels to avoid the area.

Safety:

Cumulative impacts to safety will be negligible given that the conditions will not be changed by this action.

5.0 Consultations

Consultations were conducted by the Corps (see sections 10.2 and 12 of Corps' document) and BOEM/BSEE (see section 4).

Magnuson-Stevens Act/Essential Fish Habitat
EFH. Adverse effects may include direct or indirect physical, chemical, or biological alterations of the waters or substrate and loss of, or injury to, benthic organisms, prey species and their habitat, and other ecosystem components, if such modifications reduce the quality and/or quantity of EFH. Adverse effects to EFH may result from actions occurring within EFH or outside of EFH and may include site-specific or habitat-wide impacts, including individual, cumulative, or synergistic consequences of actions." 50 CFR 600.910.

The trigger for EFH consultation is a Federal action agency's determination that an action or proposed action, funded, authorized or undertaken by that agency may adversely affect EFH. If a Federal agency makes such a determination, then EFH consultation is required. If a Federal action agency determines that an action does not meet the may adversely affect EFH test (i.e., the action will not adversely affect EFH), no consultation is required.

The Department of Commerce's guidelines for implementing the EFH coordination and consultation provisions of the MSA are at 50 CFR 600.905 - 930. These guidelines provide definitions and procedures for satisfying the EFH consultation requirements, that include the use of existing environmental review processes, General Concurrences, programmatic consultations or individual EFH consultations (i.e., abbreviated, expanded) when an existing process is not available. The EFH guidelines also address coordination with the Fishery Management Councils

(Councils), NOAA Fisheries EFH Conservation Recommendations to Federal and state agencies, and Council comments and recommendations to Federal and state agencies.

The issuance of these authorizations will not adversely impact any designated EFH within FGBNMS. The proposed reefing in place would maintain habitat for species.

Marine Mammal Protection Act

The Marine Mammal Protection Act (MMPA) of 1972 (16 U.S.C. 1361 et seq.), as amended, prohibits, with certain exceptions, the "take" of marine mammals in U.S. waters and by U.S. citizens on the high seas, and the importation of marine mammals and marine mammal products into the U.S. The MMPA defines "take" as: "to harass, hunt, capture, or kill, or attempt to harass, hunt, capture or kill any marine mammal." 16 U.S.C. § 1362. Harassment means any act of pursuit, torment, or annoyance that has the *potential to injure* a marine mammal or marine mammal stock in the wild (Level A harassment); or that has the *potential to disturb* a marine mammal or marine mammal stock in the wild by causing disruption of behavioral patterns, including, but not limited to, migration, breathing, nursing, breeding, feeding, or sheltering, but does not have the potential to injure a marine mammal or marine mammal stock in the wild (Level B harassment). 16 U.S.C. § 1362 16 U.S.C. § 1362.

Section 101(a)(5)(A-D) of the MMPA provides a mechanism for allowing, upon request, the "incidental," but not intentional, taking, of small numbers of marine mammals by U.S. citizens who engage in a specified activity (other than commercial fishing or directed research on marine mammals) within a specified geographic region. The NMFS Office of Protected Resources (OPR) processes applications for incidental takes of small numbers of marine mammals. Authorization for incidental takes may be granted if NMFS finds that the taking would be of small numbers, have no more than a "negligible impact" on those marine mammal species or stocks, and not have an "unmitigable adverse impact" on the availability of the species or stock for "subsistence" uses. NMFS' issuance of an incidental take authorization also requires NMFS to make determinations under NEPA and Section 7 of the ESA.

The purpose of issuing incidental take authorizations (ITAs) is to provide an exemption to the take prohibition in the MMPA, and to ensure that the action complies with the MMPA and NMFS' implementing regulations. ITAs may be issued as either: 1) regulations and associated Letters of Authorization (LOAs); or 2) Incidental Harassment Authorizations (IHAs). An IHA can only be valid for 1 year and LOAs can be valid for up to 5 consecutive years. An IHA may be issued when the action has the potential to result in harassment only (Level B Harassment, i.e., injury or disturbance). If the action has the potential to result in serious injury or mortality, or to result in harassment only and is planned for multiple years, then an IHA may not be issued, but an LOA and regulations may be issued if NMFS makes the required findings.

The issuance of these authorizations, with associated protective measures in the terms and conditions, is not likely to result in the take of any marine mammals protected under the MMPA. Therefore, no permit pursuant to MMPA is being sought.

Coastal Zone Management Act
Under the Coastal Zone Management Act (16 U.S.C. § 1456) and federal consistency regulations (15 C.F.R. Part 930), states with federally-approved coastal management programs are required to develop a list of federal license or permit activities that have reasonably foreseeable effects on any coastal use or resource of the state, and which the state agency wishes to review for consistency with its management program.

The Coastal Zone Management Act (CZMA, 16 U.S.C. § 1451) was enacted in 1972 to encourage coastal states, Great Lake states, and U.S. Territories and Commonwealths (collectively referred to as "coastal states" or "states") to preserve, protect, develop, and where possible, to restore or enhance the resources of the nation's coastal zone. The CZMA is a voluntary program for states; currently, thirty-four coastal states have a federally approved coastal management program except Alaska, which voluntarily withdrew from the program in 2011. Section 307 of the CZMA is known as the "federal consistency" provision.
The federal consistency provision requires federal actions (inside or outside a state's coastal zone) that affect any land or water use or natural resource of a state's coastal zone, to be consistent with the enforceable policies of the state coastal management program (CMP). The term "effect on any coastal use or resource" means any reasonably foreseeable effect on any coastal use or resource resulting from the activity, including direct and indirect (cumulative and secondary) effects. The federal consistency regulations at 15 C.F.R. part 930 set forth detailed timeframes and procedures that must be followed carefully.

Federal license or permit activities (subpart D) are activities conducted by a non-federal entity that require a federal license, permit, or other type of authorization. If the proposed activity has reasonably foreseeable effects on a state's coastal uses or resources, then the permit applicant must submit a Consistency Certification to the state CMP. All federal license or permit activities occurring in the coastal zone are deemed to affect coastal uses or resources if the state CMP has listed the particular federal license, permit or authorization in the state CMP "federal consistency list" approved by NOAA, available at https://coast.noaa.gov/czm/consistency/states/. The federal consistency regulations also identify situations in which an applicant may need to submit a Consistency Certification to the state even if the proposed license or permit activity is not included on the state's federal consistency list. If an applicant is required to submit a Consistency Certification to a state, then the federal agency cannot authorize the proposed activity unless and until the state has concurred with the applicant's Consistency Certification. If a state fails to respond within the required timeframe then concurrence is presumed.

Pursuant to Section 10.6 of the Corp's document, a CZMA consistency concurrence is not required for this action. NOAA concurs with this decision because none of the affected Gulf States (particularly Louisiana, Alabama, or Texas) include platform removal permits as listed activities in their CMP, the Corps published public notice of the proposed activity on its agency website in November 2015, and none of the Gulf States (including Texas) have requested an opportunity to review the unlisted activity (*see* 15 C.F.R. 930.54). This is consistent with

Section 1.5.8 of the Programmatic Environmental Assessment for Structure-Removal Operations on the Gulf of Mexico Outer Continental Shelf (OCS EIS/EA MMS 2005-013), which is incorporated by reference in the BOEM/BSEE SEA for this project. Accordingly, CZMA consistency concurrence is not required.

Endangered Species Act

The Endangered Species Act (ESA) of 1973 as amended (16 U.S.C. § 1531, et seq.), provides for the conservation of species that are endangered or threatened throughout all or a significant portion of their range, and the conservation of the ecosystems on which they depend. The ESA directs all Federal agencies to work to conserve endangered and threatened species and to use their authorities to further the purposes of the Act. NMFS works with U.S. Fish and Wildlife Service (USFWS) to manage ESA-listed species. Generally, NMFS manages marine species, while USFWS manages land and freshwater species.

A species is considered endangered if it is in danger of extinction throughout all or a significant portion of its range. A species is considered threatened if it is likely to become an endangered species within the foreseeable future. When listing a species as threatened or endangered, NMFS or FWS also designate critical habitat for the species to the maximum extent prudent and determinable. 16 USC § 1533(a)(3).

Section 7(a)(2) of the ESA states that each Federal agency shall, in consultation with the Secretary, insure that any action they authorize, fund, or carry out is not likely to jeopardize the continued existence of a listed species or result in the destruction or adverse modification of designated critical habitat. In fulfilling these requirements, each agency must use the best scientific and commercial data available. The consultation process is further developed in regulations promulgated at 50 CFR §402.

The ESA requires action agencies to consult or confer with the Services when there is discretionary Federal involvement or control over the action. When a Federal agency's action "may affect" a protected species, that agency is required to consult formally with NMFS or FWS, depending upon the endangered species, threatened species, or designated critical habitat that may be affected by the action (50 CFR §402.14 (a)). Federal agencies are exempt from this general requirement if they have concluded that an action "may affect, but is not likely to adversely affect" endangered species, threatened species, or designated critical habitat and NMFS or the USFWS concurs with that conclusion (50 CFR §402.14 (b)). This is commonly referred to as "informal consultation". This finding can be made only if ALL of the reasonably expected effects of the proposed action will be beneficial, insignificant, or discountable. An action agency shall confer with the Services if the action is likely to jeopardize the continued existence of a proposed species or result in the destruction or adverse modification of proposed critical habitat.

Most consultations are conducted informally with the Federal agency or a designated non-Federal representative. When the biological assessment or other information indicates that the

action has no likelihood of adverse effect (including evaluation of effects that may be beneficial, insignificant, or discountable), the Services provide a letter of concurrence, which completes informal consultation. The agency is not required to prepare a biological assessment for actions that are not major construction activities, but, if a listed species or critical habitat is likely to be affected, the agency must provide the Services with an account of the basis for evaluating the likely effects of the action.

Action agencies initiate formal consultation through a written request to the Services. To comply with the section 7 regulations, the initiation package is submitted with the request for formal consultation and must include the materials listed in 50 CFR §402.14(c). If a biological assessment is required, formal consultation cannot be initiated until the biological assessment is completed. The contents of biological assessments prepared pursuant to the Act are largely at the discretion of the action agency although the regulations provide recommended contents (50 CFR §402.12(f)). Formal consultations determine whether a proposed agency action(s) is likely to jeopardize the continued existence of a listed species (jeopardy) or destroy or adversely modify critical habitat (adverse modification), and they are documented by a biological opinion (BiOp). They also determine and authorize the amount or extent of anticipated incidental take in an incidental take statement, identify reasonable and prudent alternatives, if any, when an action is likely to result in jeopardy or adverse modification, and identify ways the action agencies can help conserve listed species or critical habitat when they undertake an action.

The BOEM/BSEE SEA documents consultation with NMFS regarding approvals related to this project. As section 4 of the SEA indicates: "The NMFS concluded that this category of decommissioning activities will not likely jeopardize the continued existence of any threatened or endangered species under their purview. Additionally, they concluded that this type of "standard" decommissioning activity may result in injury or mortality of loggerhead, Kemp's ridley, green, hawksbill, and leatherback turtles. Therefore, they established a cumulative level of incidental take and discussed various measures necessary to monitor and minimize this impact. As a result of these efforts, a Biological Opinion (BO) and Incidental Take Statement (ITS) were issued in August of 2006. In accordance with the provisions of Section 7 of the Endangered Species Act (ESA), as amended, the proposed activity operations are covered by the BO and ITS, which address the explosive-severance categories and site-clearance trawling activities analyzed in the PEA (USDOC, NMFS, 2006)." ONMS is relying on this consultation for compliance with the ESA.

National Historic Preservation Act

Section 106 of the National Historic Preservation Act of 1966 (NHPA) (54 U.S.C. § 300101 *et. seq.*) requires federal agencies to take into account the effects of their undertakings on historic properties in accordance with regulations issued by the Advisory Council on Historic Preservation (ACHP) at 36 C.F.R. Part 800. The regulations require that federal agencies consult with states, tribes, and other interested parties (consulting parties) when making their effect determinations.

The regulations establish four basic steps in the NHPA 106 process: determine if the undertaking is the type of activity that could affect historic properties, identify historic properties in the area of potential effects, assess potential adverse effects, and resolve adverse effects. The first step in the process is for the responsible federal agency to determine whether the undertaking is a type of activity that could affect historic properties. Undertakings consist of any project, activity, or program funded in whole or in part under the direct or indirect jurisdiction of a federal agency, including those carried out by or on behalf of a federal agency; those carried out with federal financial assistance; those requiring a federal permit, license or approval; and those subject to State or local regulation administered pursuant to a delegation or approval by a federal agency. Historic properties are properties that are included in the National Register of Historic Places or that meet the criteria for the National Register. If so, the agency must identify the appropriate State Historic Preservation Officer/Tribal Historic Preservation Officer (SHPO/THPO) to consult with during the process. http://www.achp.gov/shpo.html. It should also plan to involve the public, and identify other potential consulting parties. Consulting parties may include Indian tribes and Native Hawaiian organizations, local governments, permit or license applicants, and interested members of the public. If it determines that it has no undertaking, or that its undertaking is a type of activity that has no potential to affect historic properties, the agency has no further Section 106 obligations.

If the agency's undertaking could affect historic properties, the agency must identify historic properties in the area of potential effects. If the agency finds that no historic properties are present or affected, it provides documentation to the appropriate State Historic Preservation Officer/Tribal Historic Preservation Officer (SHPO/THPO) and, barring any objection in 30 days, proceeds with its undertaking.

If the agency finds that historic properties are present, it proceeds to assess possible adverse effects, in consultation with the SHPO/THPO. If the parties agree that there will be no adverse effect, the agency proceeds with the undertaking and any agreed-upon conditions. If they find that there is an adverse effect, or if the parties cannot agree and ACHP determines within 15 days that there is an adverse effect, the agency begins consultation to seek ways to avoid, minimize, or mitigate the adverse effects.

The agency consults to resolve adverse effects with the SHPO/THPO and others, who may include Indian tribes and Native Hawaiian organizations, local governments, permit or license applicants, and members of the public. ACHP may participate in consultation when there are substantial impacts to important historic properties, when a case presents important questions of policy or interpretation, when there is a potential for procedural problems, or when there are issues of concern to Indian tribes or Native Hawaiian organizations.

Consultation usually results in a Memorandum of Agreement (MOA), which outlines agreed-upon measures that the agency will take to avoid, minimize, or mitigate the adverse effects. In some cases, the consulting parties may agree that no such measures are possible, but that the

adverse effects must be accepted in the public interest. The ACHP provides helpful checklists on its website for drafting and reviewing agreements.

If consultation proves unproductive, the agency or the SHPO/THPO, or ACHP itself, may terminate consultation. If a SHPO terminates consultation, the agency and ACHP may conclude an MOA without SHPO involvement. However, if a THPO terminates consultation and the undertaking is on or affecting historic properties on tribal lands, ACHP must provide its comments. The agency head must take into account ACHP's written comments in deciding how to proceed.

Based on an Archaeological and Hazard survey conducted by Gulf Ocean Services for W&T Offshore, Inc. in June 2014, there are no known cultural or historic resources within the action area. Therefore, consultation with SHPO pursuant to NHPA was not initiated.

Federal Policy on Artificial Reefs

A National Fishing Enhancement Act of 1984 and the EPA based upon Federal and international law, provides guidance for development of artificial reefs. Also, guidance is provided by the Coastal Artificial Reef Planning Guide adopted by the Gulf, Atlantic and Pacific States Marine Fisheries Commissions, and Guidelines for Marine Artificial Reef Materials produced by the Gulf States Marine Fisheries Commission.

The Gulf States, Atlantic States and Pacific States Marine Fisheries Commissions asked NMFS to allow the states to develop revisions to the National Artificial Reef Plan. The revised plan places emphasis on the habitat implications of artificial reefs than on other functions or outcomes. The revised plan does not list approved material for artificial reef construction, but specifies criteria for materials. The revised plan recommends conducting baseline and follow-up evaluations and monitoring to determine if reefs meet objectives set for them. Under the revised plan, artificial reefs may be used to restore and enhance habitat, as sanctuaries, as reef management areas for effort control or to resolve spatial and use-conflict.

ADDITIONAL MITIGATION MEASURES

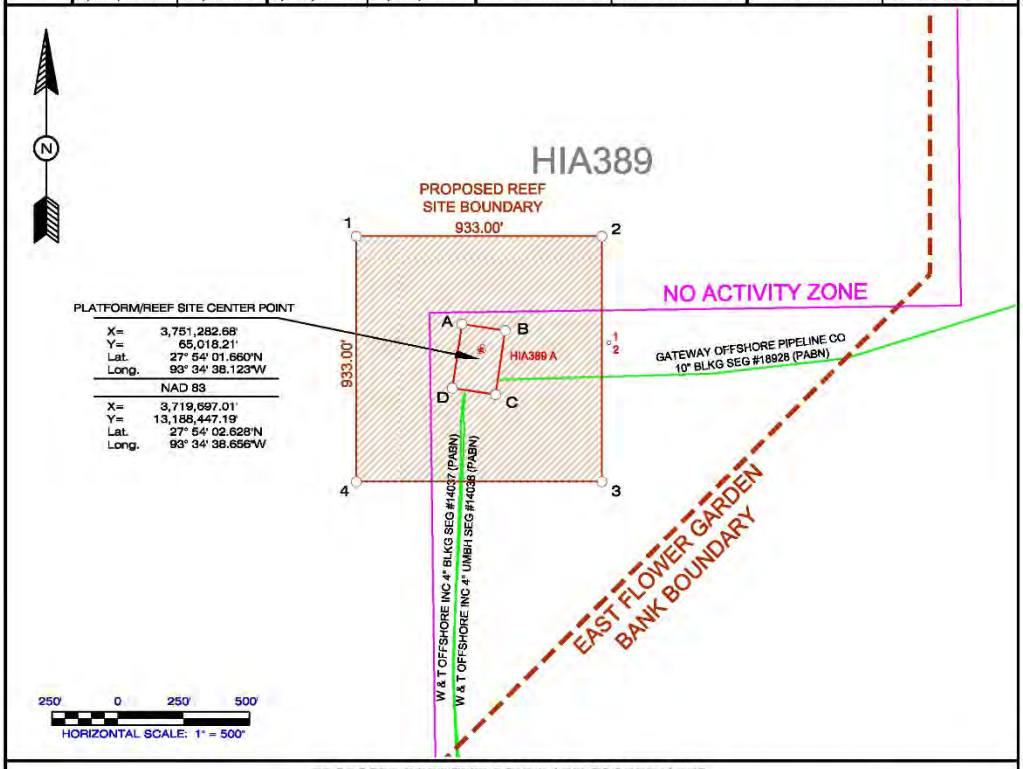
A. Through coordination with NOAA FGBNMS, TPWD will implement annual biological monitoring of the community on and around the reef site. This will include the encrusting organism species such as corals and sponges, pelagic fish, mammal, and reptile species at the reef site, and the presence and proliferation of invasive species. TPWD will provide reports annually to FGBNMS summarizing findings, and notifying NOAA of any concerns, or changes in the biological communities, as well as status of invasive species. TPWD will include a summary of lionfish removals. At this time, TPWD will also report on observations of changes in structural integrity of the platform. If the structure poses a threat to the natural resources of the sanctuary, TPWD will immediately notify FGBNMS as soon as this information is known. TPWD will coordinate with FGBNMS to determine appropriate action and timeline.

B. TPWD will install and maintain an aid to navigation marker/mooring buoy for the duration of the Corps permit at the discretion of the FGBNMS Superintendent.

Attachment 1

PLATFORM COORDINATES

CORNER	X (NAD 27)	Y (NAD 27)	X (NAD 83)	Y (NAD 83)	LAT (NAD 27)	LONG (NAD 27)	LAT (NAD 83)	LONG (NAD 83)
A	3,751,217.73'	65,151.17'	3,719,632.06'	13,188,580.16'	27° 54' 03.005" N	93° 34' 38.777" W	27° 54' 03.973" N	93° 34' 39.311" W
B	3,751,382.00'	65,126.44'	3,719,796.33'	13,188,555.42'	27° 54' 02.685" N	93° 34' 36.691" W	27° 54' 03.653" N	93° 34' 37.495" W
C	3,751,345.36'	64,883.06'	3,719,759.70'	13,188,312.04'	27° 54' 00.295" N	93° 34' 37.495" W	27° 54' 01.263" N	93° 34' 38.028" W
D	3,751,181.09'	64,907.79'	3,719,595.42'	13,188,336.77'	27° 54' 00.615" N	93° 34' 39.311" W	27° 54' 01.583" N	93° 34' 39.844" W



PROPOSED REEF SITE BOUNDARY COORDINATES

CORNER	X (NAD 27)	Y (NAD 27)	X (NAD 83)	Y (NAD 83)	LAT (NAD 27)	LONG (NAD 27)	LAT (NAD 83)	LONG (NAD 83)
1	3,750,816.18'	65,484.71'	3,719,230.50'	13,188,913.70'	27° 54' 06.488" N	93° 34' 43.075" W	27° 54' 07.456" N	93° 34' 43.608" W
2	3,751,749.18'	65,484.71'	3,720,163.51'	13,188,913.70'	27° 54' 06.060" N	93° 34' 32.689" W	27° 54' 07.028" N	93° 34' 33.223" W
3	3,751,749.18'	64,551.71'	3,720,163.51'	13,187,980.68'	27° 53' 56.833" N	93° 34' 33.171" W	27° 53' 57.801" N	93° 34' 33.704" W
4	3,750,816.18'	64,551.71'	3,719,230.50'	13,187,980.68'	27° 53' 57.261" N	93° 34' 43.556" W	27° 53' 58.229" N	93° 34' 44.090" W

NOTES:

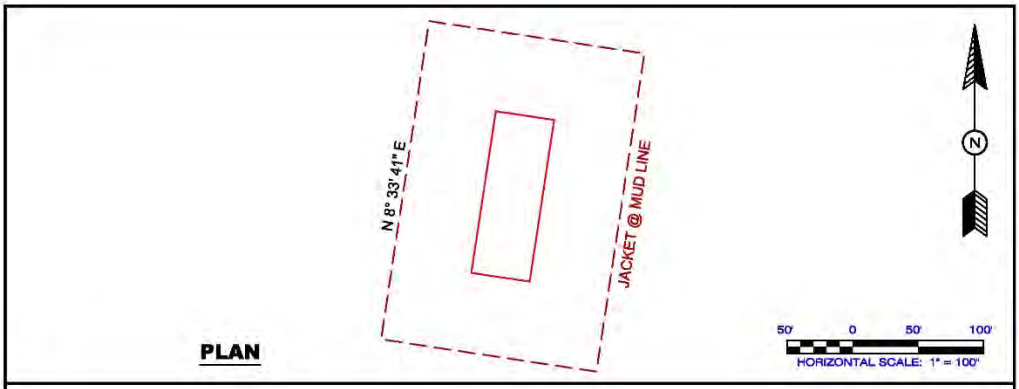
1. *Coordinates are referenced to the Texas Coordinate System of 1927, South Central Zone. Units are in U.S. Survey Feet.*
2. *Position of structure is based on side scan sonar data collected on June 6-7, 2014.*
3. *Revised on Oct. 10, 2014 to adjust reef site limits and cutoff point.*
4. *Revised on Dec. 15, 2014 to adjust reef site boundary limits.*

W&T OFFSHORE

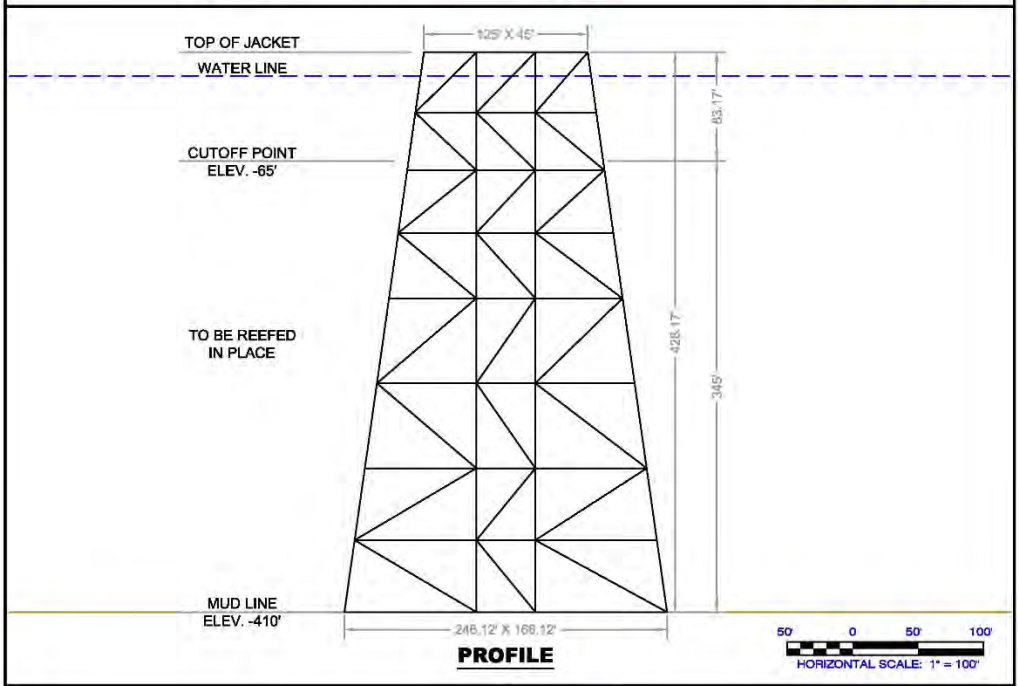
PROPOSED REEF MAP

HIGH ISLAND AREA BLOCK A389
"A" STRUCTURE

PREPARED FOR: W & T OFFSHORE, INC.	FILENAME: 14-0828_HIA389_REEF
DATE SURVEYED: JUN 6-7, 2014	DRAFTED BY: C.D.B.
GULF OCEAN SERVICES OFFSHORE GEOPHYSICAL SURVEYS	DATE: DEC 15, 2014
	REV NO.: 2
	SHEET: 1 OF 3



PLAN



PROFILE

NOTES:

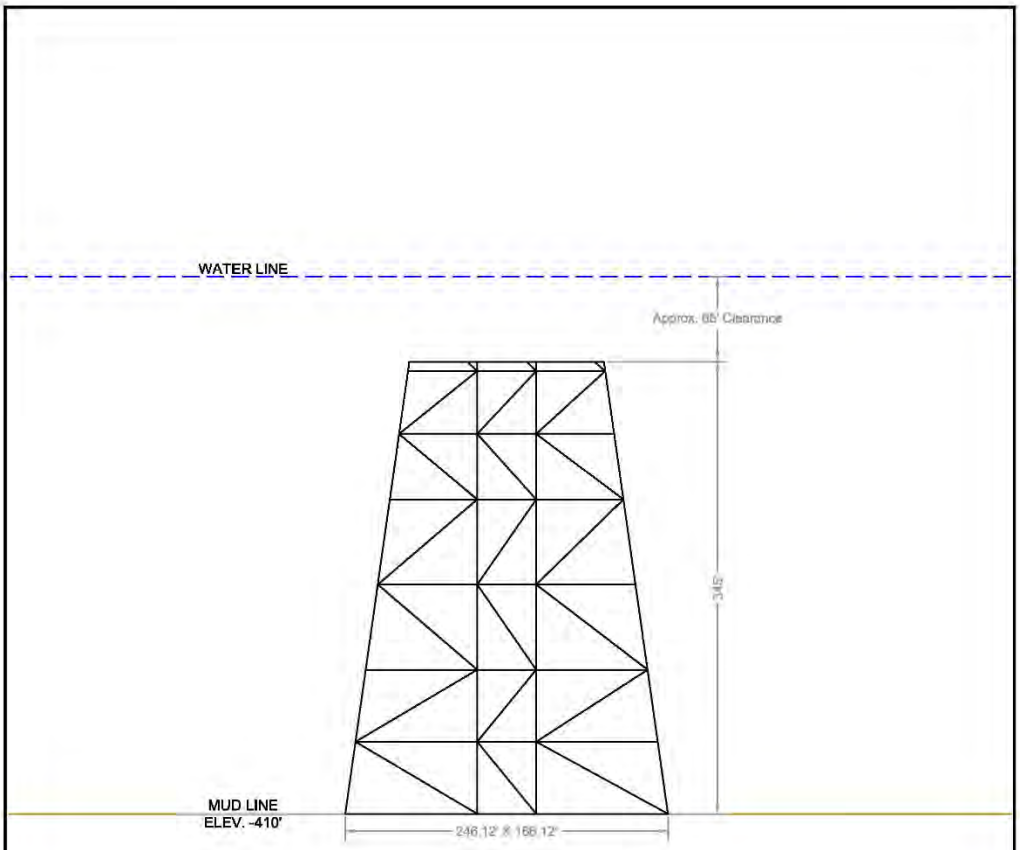
1. *Coordinates are referenced to the Texas Coordinate System of 1927, South Central Zone. Units are in U.S. Survey Feet.*
2. *Position of structure is based on side scan sonar data collected on June 6-7, 2014.*
3. *Revised on Oct. 10, 2014 to adjust reef site limits and cutoff point.*
4. *Revised on Dec. 15, 2014 to adjust reef site boundary limits.*

W&T OFFSHORE

PROPOSED REEF MAP

HIGH ISLAND AREA BLOCK A389
"A" STRUCTURE

PREPARED FOR: *W & T OFFSHORE, INC.*	FILENAME: *14-0828_HIA389_REEF*
DATE SURVEYED: *JUN 6-7, 2014*	DRAFTED BY: *C.D.B.*
GULF OCEAN SERVICES OFFSHORE GEOPHYSICAL SURVEYS	DATE: *DEC 15, 2014*
	REV NO.: *2*
	SHEET: *2 OF 3*



NOTES:

1. *Coordinates are referenced to the Texas Coordinate System of 1927, South Central Zone. Units are in U.S. Survey Feet.*
2. *Position of structure is based on side scan sonar data collected on June 6-7, 2014.*
3. *Clearances based on construction drawings.*
4. *Revised on Oct. 10, 2014 to adjust reef site limits and cutoff point.*
5. *Revised on Dec. 15, 2014 to adjust reef site boundary limits.*

W&T OFFSHORE

PROPOSED REEF MAP

HIGH ISLAND AREA BLOCK A389
"A" STRUCTURE

PREPARED FOR: *W & T OFFSHORE, INC.*	FILENAME: *14-0828_HIA389_REEF*
DATE SURVEYED: *JUN 6-7, 2014*	DRAFTED BY: *C.D.B.*
GULF OCEAN SERVICES OFFSHORE GEOPHYSICAL SURVEYS	DATE: *DEC 15, 2014*
	REV NO.: *0*
	SHEET: *3 OF 3*

FINDING OF NO SIGNIFICANT IMPACT

The Council on Environmental Quality (CEQ) Regulations state that the determination of significance using an analysis of effects requires examination of both context and intensity, and lists ten criteria for intensity (40 CFR 1508.27). In addition, the National Oceanic and Atmospheric Administration believes it is appropriate to also consider whether the proposed actions have the potential to result in the introduction or spread of a nonindigenous species.

Each criterion is discussed below with respect to the proposed action and considered individually as well as in combination with the others. Additional information to support this finding of no significant impact can be found in the Environmental Assessment for Authorization of U.S. Army Corps of Engineers permit SWG-2015-00068 to Texas Parks and Wildlife Department and Bureau of Safety and Environmental Enforcement Approval of Platform Decommissioning and Site Clearance Verification Plan (2012-217A) to W&T Offshore Inc. for the creation of an artificial reef through the abandonment of a partially removed gas platform in the Outer Continental Shelf Block High Island A-389A (HI-A-389A), hereafter "EA".

1. Can the proposed action reasonably be expected to cause both beneficial and adverse impacts that overall may results in a significant effect, even if the effect will be beneficial?

No. The proposed action involves issuance of two separate, but related authorizations to Texas Parks and Wildlife Department (TPWD) and to W&T Offshore, Inc. Together, the authorizations allow for decommissioning, partial removal, and site clearance of a gas platform, HI-A-389A, and the subsequent acceptance of the lower portion of the platform, into TPWD's Rigs-To-Reefs Artificial Reef Program. There are no significant adverse impacts anticipated as a result of the proposed partial removal and abandonment of the structure. There are minor beneficial impacts anticipated. In particular, the removal of the surface structure is expected to benefit the hatchling sea turtle sargassum habitat, by removing the structure that breaks up the sargassum rafts. Leaving the lower portion of the structure in place provides opportunities for recreational diving, and enhances commercial and recreational fishing. The platform has been in place since 1981, eleven years before the FGBNMS was designated, therefore this action does not significantly change the existing condition. There are negative impacts anticipated – the utilization of the structure by invasive species, however, these impacts would not be considered significant because there is no noticeable difference in the amount and diversity of invasive species within the platform compared to nearby areas. In addition, the preferred alternative involves removal of shade structure which may likely change the dynamic of the environment that is currently being monitored. Over time, the artificial reef is expected to deteriorate which would lead to minor amounts of metal leaching into the water and possibly collapse which may impact marine infaunal communities. Overall, none of these adverse effects are expected to result in significant effects considering the limited range and slow rate of impacts over time.

2. Can the proposed action reasonably be expected to significantly affect public health or safety?

No. No significant negative impacts to public health or safety are expected in connection with the proposed action because mechanical removal will be done by remote operation and no divers are being used during the partial removal activities where there is the greatest risk of human injury. The integrity of the structure may decrease overtime which may result in a remote risk of injury to divers.

3. Can the proposed action reasonably be expected to result in significant impacts to unique characteristics of the geographic area, such as proximity to historic or cultural resources, park lands, prime farmlands, wetlands, wild and scenic rivers, or ecologically critical areas?

No. While the activity is taking place within the Flower Garden Banks National Marine Sanctuary, the structure has been in place since 1981, prior to sanctuary designation, without significant impact to the natural resources. The Corps of Engineers staff archaeologist reviewed the project site for cultural resources and found that there are no previously recorded historic properties known to exist within the proposed permit area. In addition, the permit area was investigated for historic properties and none were found as documented in the report titled "Archaeological and Hazard Survey, "A" Structure Location, Block A389, High Island Area, Gulf of Mexico" prepared by Gulf Ocean Services and dated June 2014. The Corps of Engineers staff archaeologist determined the project had no potential to cause effects. NOAA concurs with this finding of no adverse effect.

4. Are the proposed action's effects on the quality of the human environment likely to be highly controversial?

No, the proposed action's effects on the quality of the human environment are not expected to be controversial. On the contrary, allowing the abandoned structure to remain in place provides recreational and commercial fishers and divers continued access to the resource.

5. Are the proposed action's effects on the human environment likely to be highly uncertain or involve unique or unknown risks?

No. Oil and gas structures are routinely decommissioned and removed. Additionally, TPWD's Rig-to-Reefs Artificial Reefs program has a long and successful history of establishing reef sites. The effects of the proposed action have a low degree of uncertainty or unknown risk.

6. Can the proposed action reasonably be expected to establish a precedent for future actions with significant effects or represent a decision in principle about a future consideration?

No. The proposed action does not establish a precedent for future actions and does not represent a decision in principle about a future consideration. The Office of National Sanctuaries (ONMS) review permit and authorization applications on a case-by-case basis and evaluates individual projects for effects to the human environment prior to issuance of an ONMS authorization. Any future activities, including decommissioning, removal, abandonment and implementation of existing platforms into the Rigs-To-Reef Program, would be reviewed by ONMS independent of this proposed action, and separate environmental analysis would be conducted as required by NEPA.

7. Is the proposed action related to other actions that when considered together will have individually insignificant but cumulatively significant impacts?

No. The proposed action is not related to other actions that when considered together would have cumulatively significant impacts. Given the density of oil and gas structures, and possibility of sanctuary expansion, it is anticipated that similar activities (reefing of oil and gas structures) may be proposed in the future. These projects would not be expected to have any cumulative adverse impacts.

8. Can the proposed action reasonably be expected to adversely affect districts, sites, highway, structures, or objects listed in or eligible for listing in the National Register of Historic Places or may cause loss or destruction of significant scientific, cultural, or historical resources?

No. The proposed action would not adversely affect areas listed in or eligible for listing in the National Register of Historic Places (NRHP), or cause loss or destruction of significant scientific, cultural or historic places. The Corps of Engineers staff archaeologist reviewed the project site for cultural resources and found that there are no previously recorded historic properties known to exist within the proposed permit area. In addition, the permit area was investigated for historic properties and none were found as documented in the report titled "Archaeological and Hazard Survey, "A" Structure Location, Block A389, High Island Area, Gulf of Mexico" prepared by Gulf Ocean Services and dated June 2014.

9. Can the proposed action reasonably be expected to have a significant impact on endangered or threatened species, or their critical habitat as defined under the Endangered Species Act of 1973?

No. The proposed action will not have significant impacts on endangered or threatened species or their critical habitat. Two species of endangered and threatened species of sea turtle, Hawksbill sea turtle (*Eretmochelys imbricata)* and Loggerhead sea turtle (*Caretta caretta)* are known to utilize the structure. The removal of the exposed shallow section of the platform is expected to have minor beneficial impacts on hatchling sea turtles, primarily loggerhead sea turtles. The natural habitat of hatchling sea turtles are sargassum rafts. As these rafts pass by platforms, they are disrupted, causing ever decreasing sizes of rafts. This potentially can cause higher risk of predation to the

hatchlings, and less access to food source. The partial removal of the platform is expected to decrease the instances of raft disturbance.

There will be temporary acoustic impacts from the partial removal of the platform using mechanical techniques. These are not expected to be significant as sonar frequencies utilized for surveys conducted are beyond the hearing range of marine mammals that may be within the area. Pre and post removal surveys will use side scan sonar at or above 500 kHz to identify debris left behind to be removed by W&T Offshore, Inc. As such, adverse effects are not expected.

10. Can the proposed action reasonably be expected to threaten a violation of Federal, state, or local law or requirements imposed for environmental protection?

No. The proposed action does not threaten a violation of federal, state, or local law requirements imposed for the protection of the environment. The applicant would operate with all necessary and required permits from Federal, state, and local agencies.

11. Can the proposed action reasonably be expected to result in the introduction or spread of a nonindigenous species?

Artificial reef structure is known to be colonizable and colonized by nonindigenous species, specifically orange cup coral (*Tubastraea coccinea*) and Pacific lionfish (*Pterois volitans*) throughout the region. Both of these species have been reported at HI-A-389A. The most abundant stony coral on HI-A-389A is the orange cup coral. It is acknowledged that the proximity of HI-A-389A to the natural habitat of the FGBNMS could result in the platform acting as a vector for the invasive species to enter and colonize the natural habitats. To date both lionfish and orange cup coral have been documented on the natural reefs at the FGBNMS. The continued existence of artificial reef structure results in the continued available structure for colonization by invasive species. However, it has been determined that it is unlikely that the abandonment of the HI-A-389A could significantly increase the flow of invasive species into the sanctuary.

DETERMINATION

In view of the information presented in this document and the analysis contained in the supporting document, *Environmental Assessment for Authorization of Department of the Army permit SWG-2015-00068 to Texas Parks and Wildlife Department for the creation of an artificial reef through the abandonment of a partially removed oil and gas platform, HIA389A,* prepared for the Proposed Action, it is hereby determined that the Proposed Action will not significantly impact the quality of the human environment as described above and in the supporting decision memo. In addition, all beneficial and adverse impacts of the proposed action have been addressed to reach the conclusion of no significant impacts. Accordingly, preparation of an environmental impact statement for this action is not necessary.

8/17/2017

John Armor
Director
Office of National Marine Sanctuaries
National Oceanic and Atmospheric Administration

Date

MEMORANDUM FOR RECORD

SUBJECT: Department of the Army Environmental Assessment and Statement of Findings for the Above-Referenced Standard Individual Permit Application

This document constitutes the Environmental Assessment, 404(b)(1) Guidelines Evaluation, as applicable, Public Interest Review, and Statement of Findings for the subject application.

1.0 Introduction and Overview: Information about the proposal subject to one or more of the Corps of Engineers (Corps) regulatory authorities is provided in Section 1, detailed evaluation of the activity is found in Sections 2 through 11 and findings are documented in Section 12 of this memorandum.

1.1 Applicant: Texas Parks and Wildlife Department (TPWD)
Artificial Reef Program
4200 Smith School Road
Austin, Texas 78744-3291
POC: J. Dale Shively

1.2 Activity location: The project site is located within the boundaries of Flower Garden Banks National Marine Sanctuary in the Gulf of Mexico, near a production platform in the Outer Continental Shelf Block HI-A-389, approximately 108 nautical miles southeast of the Freeport jetties, in approximately 410 feet of water.

Approximate central coordinates:
North West Corner Latitude: 27° 54' 06.488" North; Longitude: 093° 34' 43.075" West
North East Corner Latitude: 27° 54' 06.060" North; Longitude: 093° 34' 32.689" West
South East Corner Latitude: 27° 53' 56.833" North; Longitude: 093° 34' 33.171" West
North West Corner Latitude: 27° 53' 57.261" North; Longitude: 093° 34' 43.556" West

1.3 Description of activity requiring permit: The applicant proposes to create an artificial reef from an 8-pile (leg) production platform in the OCS in Block HI-A-389. Such activities include reefing one obsolete oil and gas production structure at the proposed reef location.

1.3.1 Proposed avoidance and minimization measures: The applicant has stated that they have avoided and minimized the environmental impacts by utilizing the obsolete oil and gas production structure that is existing at this location. All floatable material will be removed prior to placement, and all tanks, compartments and enclosures would be cleaned to Environmental Protection Agency standards prior to placement.

1.3.2 Proposed compensatory mitigation: The applicant is not proposing mitigation for this activity.

1.4 Existing conditions and any applicable project history: The project site is situated within the boundaries of the Flower Garden Banks National Marine Sanctuary at High Island, block HI-A-389, in the Gulf of Mexico. The depth of water at this location is

approximately 410 feet. There is an existing obsolete oil rig platform. This platform is the same platform that is being proposed to create the artificial reef.

This project was previously coordinated as a Regional General Permit. Due to the proposed artificial reef being located within a National Marine Sanctuary, the proposed project did not fit the Regional General Permit. This proposed project is being re-evaluated under a Standard Permit.

Jurisdictional determination of Waters of the United States (US): An approved jurisdictional determination was issued. See the administrative record.

1.5 Permit Authority: Section 10 of the Rivers and Harbors Act of 1899 (33 USC 403), as extended by the Outer Continental Shelf Lands Act (43 USC 1333(e))

2.0 Scope of review for National Environmental Policy Act (i.e. scope of analysis), Section 7 of the Endangered Species Act (i.e. action area), and Section 106 of the National Historic Preservation Act (i.e. permit area)

2.1 Determination of scope of analysis for National Environmental Policy Act (NEPA):

The determination of the scope of analysis for the Corps federal action is guided by Corps NEPA implementing regulations at 33 CFR 325, Appendix B. The scope is established to address the impacts of the specific activity requiring a Department of the Army (DA) permit and those portions of the entire project over which the Corps has sufficient control and responsibility to warrant federal review. When determining whether there is sufficient control and responsibility to include portions of the project beyond the limits of the Corps jurisdiction in the scope, factors from Appendix B that may be considered include:

1) Whether or not the regulated activity comprises "merely a link" in a corridor type project; 2) Whether there are aspects of the upland facility in the immediate vicinity of the regulated activity which affect the location and configuration of the regulated activity; 3) The extent to which the entire project will be within Corps jurisdiction; and 4) The extent of cumulative Federal control and responsibility.

Once the scope of analysis is defined under NEPA, this is the geographic area within which the Corps is responsible for evaluating effects of activities. Direct, indirect, and cumulative effects of the activities within this scope will be evaluated.

The scope of analysis includes the specific activity requiring a Department of the Army permit. Other portions of the entire project are not included because the Corps does not have sufficient control and responsibility to warrant federal review.

Final description of scope of analysis: The NEPA scope of analysis is limited to the regulated activities which include the reefing of an obsolete oil and gas structure

within the 933-feet by 933-feet project area (approximately 20 acres) in the Gulf of Mexico. The project site is entirely within navigable waters of the U.S.

2.2 Determination of the "action area" for Section 7 of the Endangered Species Act (ESA):

Action area means all areas to be affected directly or indirectly by the Federal action and not merely the immediate area involved in the action. "Action" is defined to mean all activities or programs of any kind authorized, funded, or carried out, in whole or in part, by Federal agencies in the US or upon the high seas. In the context of this decision, the federal action being contemplated is authorization of an activity in waters of the US under one or more of the Corps regulatory authorities.

The action area includes only those areas comprising waters of the US that will be directly affected by the proposed work or structures. Activities outside of waters of the US are not included.

Final description of the action area: The action area will cover those areas as described in the final NEPA scope analysis.

2.3 Determination of permit area for Section 106 of the National Historic Preservation Act (NHPA):

The NHPA scope is defined as "permit area." The permit area for an undertaking is defined in 33 CFR 325, Appendix C. Permit area means those areas comprising waters of the US that will be directly affected by the proposed work or structures and uplands directly affected as a result of authorizing the work or structures. The following three (3) tests must all be satisfied for an activity undertaken outside of waters of the US to be included within the "permit area": 1) Such activity would not occur but for the authorization of the work or structures within the waters of the US; 2) Such activity is integrally related to the work or structures to be authorized within waters of the US (or, conversely, the work or structures to be authorized must be essential to the completeness of the overall project or program); and 3) Such activity is directly associated (first order impact) with the work or structures to be authorized.

The permit area includes only those areas comprising waters of the US that will be directly affected by the proposed work or structures. Activities outside of waters of the US are not included because all three tests identified in 33 CFR 325, Appendix C(g)(1) have not been met.

Final description of the permit area: The permit area will cover those areas as described in the final NEPA scope analysis.

3.0 Purpose and Need

3.1 Purpose and need for the project as provided by the applicant and reviewed by the

Corps: To develop an artificial reef in the Gulf of Mexico to augment natural fisheries habitat for juvenile reef fish and public benefit, in OCS Block High Island A-389.

3.2 Basic project purpose, as determined by the Corps: Establishment of an artificial reef.

3.3 Water dependency determination: N/A, Section 10 only activity.

3.4 Overall project purpose, as determined by the Corps: The establishment of an artificial reef in the Gulf of Mexico, in OCS Block High Island A-389, in accordance with the Texas Artificial Reef Program.

4.0 Coordination

4.1 Public Notice (PN)
Date PN issued: 10 November 2015
Date PN comment period ended: 27 November 2015

4.2 The results of coordinating with agencies and persons during the PN period are identified below in Table 1, including a summary of issues raised.

Table 1

Agency and/or Person provided with notice of proposal	Response received	Date Received	Comments/Issues Raised
US Environmental Protection Agency (EPA)	No		
US Fish and Wildlife Service (FWS)	No		
National Marine Fisheries Service (NMFS) Habitat Conservation Division (HCD)	Yes	13 November 2015	No Objection
US Coast Guard (USCG)	No		
Texas Commission on Environmental Quality (TCEQ)	No		
Texas Parks and Wildlife Department (TPWD)	No		
Texas General Land Office (GLO)	No		
Texas State Historic Preservation Officer (SHPO)	No		

Table 1			
Agency and/or Person provided with notice of proposal	Response received	Date Received	Comments/Issues Raised
National Oceanic and Atmospheric Administration (NOAA) – Office of Coast Survey – Marine Chart Division	Yes	12 November 2015	See below for discussion.
Flower Garden Banks National Marine Sanctuary Advisory Council	Yes	12 November 2015	Supportive
NOAA – Flower Garden Banks National Marine Sanctuary (FGBNMS)	Yes	27 November 2015	See below for discussion.
The Ocean Foundation, et. al.	Yes	25 November 2015	See below for discussion.
Turtle Island Restoration Network	Yes	25 November 2015	See below for discussion.
Brandt Mannchen	Yes	23 November 2015	See below for discussion.
Jesse Cancelmo	Yes	10 November 2015	Supportive
Paul Sammarco	Yes	11 November 2015	Supportive
Clint Moore	Yes	10 November 2015	Supportive
Joyce and Frank Burek	Yes	14 November 2015	Supportive
Bess Bright	Yes	15 November 2015	Supportive
Lori L.	Yes	17 November 2015	Supportive
Joseph Holden	Yes	18 November 2015	Supportive
Sandy Bryan	Yes	25 November 2015	Supportive

Additional discussion of submitted comments, applicant response and/or Corps' evaluation:

The National Oceanic and Atmospheric Administration (NOAA) – Office of Coast Survey – Marine Chart Division provided comments stating that upon notification that the reef construction has commenced, the reef would be depicted on NOAA navigational products. NOAA requested that the tidal datum be specified as Mean

Low Water (MLW) or Mean Lower Low Water (MLLW) associated with the 65-foot clearance as depicted on the cross-section diagram of the Project Plans. In addition, NOAA noted that the latitude and longitude coordinates provided in the PN and referenced to as NAD 83 horizontal datum did not match the NAD 83 coordinates provided on Page 2 of the Project Plans, but instead matched the NAD 27 coordinates on Page 2 of the Project Plans.

NOAA – Flower Garden Banks National Marine Sanctuary (FGBNMS) provided comments by letter dated 27 November 2015. FGBNMS stated that the project as proposed is prohibited by FGBNMS regulations at 15 CFR 922.122(a)(4). As such, approval is required by FGBNMS for the project to proceed. FGBNMS provided comments to clarify that the project site is the currently in place production platform, not "near" the platform and that the coordinates were in NAD 27 rather than NAD 83 as referenced. In regards to the project description, FGBNMS clarified that no placement of structural material would occur during the proposed project, but rather the top portion of an existing structure (the production platform) would and must be removed and hauled out of the Sanctuary. FGBNMS stated that no additional material may be allowed to be placed in this site as part of the proposed project. Due to the stated depth clearance proposed at 65 feet, FGBNMS requested evaluation by the United States Coast Guard as to the need for an aid to navigation for the proposed artificial reef and that, at a minimum, the applicant maintain a lighted aid to navigation buoy at the reef site. In addition, FGBNMS noted that the use of artificial reef structures by invasive species as vectors to natural habitat within the sanctuary boundaries is of concern. At least 2 invasive species have been documented to utilize the existing platform, lionfish and orange cup coral. FGBNMS also noted that the proposed reef site is in close proximity to the healthiest coral reef in the region (within 1.8 kilometers), within 304 meters of known deepwater coral habitat, and within 1.4 km of a significant brine seep feature. Finally, the FGBNMS stated that a complete monitoring plan that provides for pre- and post-construction biological monitoring of the structure is necessary. The plan should include a monitoring schedule and reporting requirements and should be submitted to FGBNMS for review and approval prior to implementation.

The Ocean Foundation, et. al., provided comments by letter dated 25 November 2015. In their comments, the Ocean Foundation stated that an Environmental Impact Statement should be prepared to analyze the proposed project in accordance with NEPA and requested that a public hearing be held. The letter went on to highlight concerns over effects to the sensitive biological and cultural resources and geological features within the marine sanctuary from the proposed project and the precedent that the potential authorization may set. The comments reference NOAA's April 2012 Sanctuary Expansion Action Plan, the original implementing regulations for the marine sanctuary, and the Bureau of Ocean Energy Management's designation of "no activity zones" for "Biologically-Sensitive Underwater Features and Areas" which include the marine sanctuary. Further, the letter requests the analysis of the proposed project's effects in regards to invasive species, polluted sediments, and geoinstability.

Turtle Island Restoration Network (TIRN) provided comments by letter dated 25 November 2015 and stated their opposition to the proposed project, repeatedly stating that oil and gas companies should not be allowed to "dump" obsolete platforms into the ocean. TIRN stated concerns over the potential for overfishing and the spread of invasive species associated with artificial reefs. Lastly, TIRN recommended that if the proposed project is authorized, that the following requirements be included in the permit:

- Removal of all non-native coral from the artificial reef. The removal program should be continuous for the life of the artificial reef, or until at least ten years past the last sighting of non-native coral at the site through a monitoring program.
- Removal of all lionfish at the site associated with the artificial reef. The removal program should be continuous for the life of the artificial reef, or until at least ten years past the last sighting of lionfish at the site through a monitoring program.
- Funding for a long-term research program to monitor the impacts of artificial reefs including non-native coral and lionfish. Scientists studying artificial reefs have noted that the discussions surrounding artificial reefs need to evolve from the single issue of attraction versus production to an evaluation of the overall ecological performance of fishes at natural versus artificial reefs and how these dynamics change over time.

Mr. Brandt Mannchen provided personal comments by letter dated 14 November 2015. Mr. Mannchen objected to the proposed project, to the PN comment period being 15 days rather than 30 days, requested that a public hearing be held, and that a NEPA EA/EIS be prepared. Mr. Mannchen stated that the mission of the "Office of National Marine Sanctuaries" is violated and endangered by this proposal. Mr. Mannchen stated his concern over the precedent that authorization of the proposed project might set. Mr. Mannchen listed the written and verbal correspondence he has provided to NOAA since 2006 regarding his concerns over the issues associated with the proposed project. Mr. Mannchen stated that concern over the existing habitat and species associated with the platform should not be justification for leaving the structure reefed in place. He also commented on the use by the platform as habitat for invasive species, specifically lionfish and non-native corals, and states that the man-made structure detracts from the natural visual beauty of the marine sanctuary. Mr. Mannchen stated his concern over the "conflict of interest" in regards to the Sanctuary Advisory Council's support for the proposed project. Mr. Mannchen posed the following questions:

- What is NOAA's policy about leaving human structures in a NMS when these structures are no longer needed or when the conflicting use no longer occurs?
- Does platform removal set a precedent for NMS and if so how should this affect the decision that is recommended?
- What is the risk that a storm or hurricane will damage the platform and the FGBNMS?
- What will happen to debris that falls from the platform?

- How much will operation/maintenance costs be each year for the platform?
- What is the risk of spreading disease or invasive species to the FGBNMS via the platform?
- Who is responsible and liable if portions of the platform damage the FGBNMS?
- What will be the environmental impacts of attracting more people to the FGBNMS?
- What is the carrying capacity of the FGBNMS with regard to visitors?
- Will the operation of the platform to generate money (recreational fishing or diving operations) cause a conflict with protection of the FGBNMS? Who profits from the generation of this money?
- Will the operation of the platform to generate money create pressure on NOAA employees to not be as protective of the FGBNMS in comparison to if the platform did not exist?
- Is it better to concentrate use father away from the FGBNMS than right next to the East Flower Garden Bank?
- What is the possibility that leaving the platform may increase fishing on the FGBNMS?
- What effects will "leaving the platform in place" have on the boundary expansion or marine reserve designation?
- What security will be needed for the platform?
- Who will control or manage the platform?

Mr. Mannchen continued his comments by stating his concern that the reefing of the existing structure would require additional funding by NOAA for management and protection of the structure rather than the natural reef. He reiterates his concerns over invasive species. Mr. Mannchen concluded his comments by stating that a full analysis of all platforms within and near the FGBNMS should be considered for their impacts once they are to be decommissioned to determine collectively and cumulatively what is best for the FGBNMS in regards to nearby artificial reefs, and that total removal of this particular platform is the best option for the short and long-term biological and ecological integrity of the FGBNMS.

4.3 Internal coordination conducted within the Galveston District Corps (Corps) offices on: 25 February 2015 and 27 October 2015

Note: Internal coordination was first conducted on 25 February 2015 for this project when the original request made by the applicant was for authorization under the Galveston District's Regional General Permit (RGP) for Artificial Reefs. Due to the project's location within the Flower Garden Banks National Marine Sanctuary, it must be reviewed under a Standard Permit process and cannot be authorized via the RGP. As such, a second internal coordination was conducted on 27 October 2015 when the applicant re-applied.

The Programs and Project Management Division, Real Estate (RE) Division, Operations Division (OD-Navigation and OD-Operations), Engineering and Construction Division (including area offices) (E&C), Southwestern Division Regional

Planning and Environmental Center (RPEC), Project Management Office (PM), and the Regulatory Division's Compliance Branch (RD-C) and Corps staff archeologist (RD-P) were coordinated with during the Internal Review period. Reference Table 2 for summary of responses received.

Table 2			
Corps Office	Response received	Date Received	Comments/Issues Raised
RE	Yes	27 February 2015	No Objection
OD-Navigation & OD-Operations	No		
E&C	No		
RPEC	No		
PM	No		
RD-C	No		
RD-P	Yes	27 February 2015	See Section 10.3

No responses were received during the second internal coordination period.

4.4 Were comments raised that do not require further discussion because they address activities and/or effects outside of the Corps' purview? Yes

If yes, provide discussion: The Ocean Foundation, et. al., provided comments by letter dated 25 November 2015. In their comments, the Ocean Foundation referenced NOAA's April 2012 Sanctuary Expansion Action Plan, the original implementing regulations for the marine sanctuary, and the Bureau of Ocean Energy Management's (BOEM) designation of "no activity zones" for "Biologically-Sensitive Underwater Features and Areas" which include the marine sanctuary. Further, the letter requests the analysis of the proposed project's effects in regards to polluted sediments beneath the platform and geoinstability caused by the removal of oil and gas.

It is within NOAA's purview to consider whether the reefing of the existing platform within the marine sanctuary is appropriate in regards to the April 2012 Sanctuary Expansion Action Plan and the implementing regulations for the marine sanctuary, as NOAA must issue a separate federal authorization for the reefing to be approved. It is within BOEM's, or more specifically the Bureau of Safety and Environmental Enforcement's (BSEE), purview to consider past, current, and future proposed actions within "no activity zones" designated by their agency. It is also within BSEE's purview to analyze the effects of the operation of the platform during production, including the discharge of polluted sediments and the potential geoinstability created by these operations. Under Section 10 of the Rivers and Harbors Act of 1899 (33 USC 403), as extended by the Outer Continental Shelf Lands Act (43 USC 1333(e)), the Corps must consider the installation and presence

of structures attached to the sea bed in the context of their effects to navigation and their potential hazard therein. The operations conducted at these installations is beyond the Corps' regulatory authority.

Turtle Island Restoration Network (TIRN) provided comments by letter dated 25 November 2015 and stated their opposition to the proposed project, repeatedly stating that oil and gas companies should not be allowed to "dump" obsolete platforms into the ocean.

The proposed project does not involve the placement of a structure in a new location within the marine sanctuary. The proposed project would allow for an existing structure to remain in place so that existing habitat is left as undisturbed as possible after the platform is decommissioned.

Mr. Brandt Mannchen provided personal comments by letter dated 14 November 2015. Mr. Mannchen stated that the mission of the "Office of National Marine Sanctuaries" is violated and endangered by this proposal. Mr. Mannchen listed the written and verbal correspondence he has provided to NOAA since 2006 regarding his concerns over the issues associated with the proposed project. Mr. Mannchen stated his concern over the "conflict of interest" in regards to the Sanctuary Advisory Council's support for the proposed project. Mr. Mannchen posed the following questions:

- What is NOAA's policy about leaving human structures in a NMS when these structures are no longer needed or when the conflicting use no longer occurs?
- Does platform removal set a precedent for NMS and if so how should this affect the decision that is recommended?
- How much will operation/maintenance costs be each year for the platform?
- Who is responsible and liable if portions of the platform damage the FGBNMS?
- What is the carrying capacity of the FGBNMS with regard to visitors?
- Will the operation of the platform to generate money (recreational fishing or diving operations) cause a conflict with protection of the FGBNMS? Who profits from the generation of this money?
- Will the operation of the platform to generate money create pressure on NOAA employees to not be as protective of the FGBNMS in comparison to if the platform did not exist?
- Is it better to concentrate use father away from the FGBNMS than right next to the East Flower Garden Bank?
- What is the possibility that leaving the platform may increase fishing on the FGBNMS?
- What effects will "leaving the platform in place" have on the boundary expansion or marine reserve designation?
- What security will be needed for the platform?
- Who will control or manage the platform?

Mr. Mannchen continued his comments by stating his concern that the reefing of the

existing structure would require additional funding by NOAA for management and protection of the structure rather than the natural reef.

Mr. Mannchen provided comments about and asked questions that are beyond the Corps' purview and regulatory authority. The Corps cannot make a determination regarding NOAA's missions, prior discussions and correspondence with NOAA staff, potential conflicts of interest with Sanctuary Advisory Council members, or answer questions regarding NOAA's policies or precedents set by said policies, budget considerations, liability beyond the Corps permit, profits and other monetary considerations, management of NOAA's trust resources, the sanctuary's boundary expansion, or who will control or manage the structure once the reef is established.

4.5 Were comments and/or concerns forwarded to the applicant for response? Yes

Date(s) the applicant provided a response to the comments and issues: 28 January 2016

The applicant provided a response directly to NOAA Marine Chart Division and the Corps via electronic mail on 12 November 2015 specifying that the tidal datum is MLLW for the 65-foot clearance and provided the correct NAD 83 coordinates which match Page 2, Project Plans NAD 83 coordinates for clarification. This information was again provided in the 28 January 2016 letter from the applicant.

The applicant provided a response in regards to NOAA FGBNMS's letter, noting the corrections on location coordinate data and description as given in the letter. The applicant clarified that the project design would leave the base of the petroleum platform (HI-A-389 A) standing from the ocean bottom at -410 feet to the cutoff depth of -65 feet. The upper portion of the petroleum jacket and deck would be taken into shore by W&T Offshore, Inc., and scrapped. No additional platform components or other reefing material would be placed at the designated 20-acre reef site. In addition, the applicant is currently working with the FGBNMS to finalize the draft Memorandum of Agreement that would allow this reefing project to proceed within the Sanctuary. This agreement will detail the type of biological monitoring that would occur at the platform reef to include: methods of sampling, sampling timeframe, and how much of the monitoring would be conducted by the applicant. The applicant has received written verification from the US Coast Guard (District 8, New Orleans) that the 65 feet cutoff is a sufficient clearance for nearby vessel traffic and that marking the site with a navigational marker is not required. This is approximately the same depth as found at the Sanctuary. Vessel drafting 65-75 feet as suggested in the FGBNMS letter would utilize the safety fairways. It is approximately 6 nautical miles from HI-A-389 to the nearest safety fairway. However, TPWD would follow any US Coast Guard requirements on marking the reef site.

The applicant provided a response in regards to The Ocean Foundation, et. al., letter, noting the comments contained therein. The applicant stated that the Texas Artificial Reef Program has a mission of creating and maintaining existing marine habitat in

the Gulf of Mexico and preserving the 30+ years of marine life that currently exists on the petroleum structures through the Rigs-to-Reefs program sanctioned by other federal agencies. The applicant would follow the Corps permitting process as required. As designed, the applicant believes that the proposed reefing project provides the least damaging removal option to the local marine environment.

The applicant provided a response in regards to the Turtle Island Restoration Network's letter, nothing the comments contained therein. The applicant reiterated their response provided for The Ocean Foundation, et. al., and also stated that biological monitoring of the platform jacket remaining in place would occur by the applicant's and FGBNMS programs through a Memorandum of Agreement as a condition of the reef site permit.

The applicant provided responses to Mr. Brandt Mannchen's specific questions from his comment letter. The applicant deferred some of the questions specific to NOAA policies or the marine sanctuary to NOAA as the appropriate agency to make the determinations. In response to the question regarding the risk that a storm or hurricane could damage the platform and marine sanctuary resources, the applicant stated that the proposed reefing project is designed to have only the base remaining in an upright position (from the ocean bottom at -410 feet to -65 feet near the surface). The upper portion of the jacket and deck would be taken into shore and scrapped. Any risk of platform damage by a storm or hurricane would be minimal. The applicant is not aware of any Texas platforms that have been damaged by storm events since the artificial reef program was established in 1989. If by chance a storm event did damage the platform reef, an evaluation by structural engineers would determine the overall stability of the reef. In response to the question regarding what would happen to debris that falls from the platform, the applicant that loose pieces that may fall from the platform and stay within the designated reef area would remain in place. Any pieces that migrate outside the designated 20-acre reef would be removed or placed back into the reef near the platform base by the applicant. In some instances, the applicant and the FGBNMS would jointly determine if a piece of loose material may or has the potential to damage any portion of the Sanctuary outside the designated reef site and what course of action to take. The applicant stated that there is no maintenance cost associated with the platform reef. As required, the applicant may place mooring buoys or marker buoys at the site and maintained through the applicant's ongoing buoy monitoring/maintenance contract. The applicant also stated that while there is some scientific evidence that suggests that invasive species can utilize petroleum platforms in the Norther Gulf of Mexico to expand their range, it is unlikely that the complete removal of this platform would significantly deter any invasive species moving into the marine sanctuary. The applicant stated that, as the owner of the proposed reef, the applicant would remove any portion of the platform that migrates outside the designated 20-acre reef area. The applicant and the FGBNMS would jointly determine if a piece of loose material may or has the potential to damage any portion of the sanctuary outside the designated reef site and what course of action to take. The applicant stated that it is anticipated that there would be no significant increase in attraction of visitors to the

FGBNMS due to the proposed reefing of this platform. The majority of visitors to the marine sanctuary come to visit the banks proper, with occasional stops at the standing HI-A-389 A platform. Once the structure is reefed, diving may actually decrease at the reef since it would then become a more advanced dive with the reef beginning at -65 feet. The applicant responded that any money generated through diving and fishing resides with local and state businesses. Those funds would then eventually go into the local economy. The applicant does not charge a fee to dive or fish at any reef site, so the Artificial Reef program is not directly impacted by users of the reef. The mission of the Texas Artificial Reef Program is to preserve and enhance existing marine habitat. The proposed reef site would not be operated by the applicant to generate money. In response to the question of whether it would be better to concentrate use farther away from the marine sanctuary rather than right next to the East Flower Garden Bank, the applicant stated that the HI-A-389 A structure was installed at the current location in 1981 and for 34 years has attracted a number of divers and fishermen. These users utilize the marine sanctuary in addition to the HI-A-389 A structure. If the structure were moved to another location, there is no rationale to suggest that use of the sanctuary would decrease. Moving the platform to another reef site is feasible to enhance the marine habitat at another reef site, but would not attract divers since the depth would be significantly deeper (towed platforms are typically laid on their side, reducing the height of the reef profile off the ocean bottom). The applicant also stated that it is anticipated that there would be no significant increase in fishermen to the sanctuary due to the reefing of the platform. The majority of the visitors to the sanctuary come to visit the banks proper, with occasional stops at the standing platform. If fishermen continue to use the platform reef for fishing, that could reduce the fishing pressure on the natural reef. Lastly, the applicant stated that no security is needed on artificial reef structures and that the Artificial Reef Program would be the manager of the platform.

4.6 Corps' evaluation of applicant's response:

Based on review of the applicant's response to the comments provided by the NOAA Marine Chart Division, the concerns raised have been adequately clarified and addressed.

Based on our review of the applicant's response to the comments provided by NOAA FGBNMS, the subsequent coordination with NOAA FGBNMS, and the letter of no objection received from NOAA FGBNMS dated 29 November 2016, we have determined that the concerns raised have been adequately addressed.

The Corps has evaluated the concerns raised in the comment letter provided by the Ocean Foundation and the applicant's response to those concerns. The applicant substantiates the purpose and need of the project based on the Texas Artificial Reef Program and the Rigs-to-Reef Program, both of which are derived from the implementation of the Texas Artificial Reef Act of 1989. This act followed the National Fishing Enhancement Act of 1984 (33 U.S.C. §2101 et seq.), which directs the Secretary of Commerce to develop and publish a long-term National Artificial

Reef Plan (NOAA Technical Memorandum, NMFS OF-6, 1985) to promote and facilitate responsible and effective artificial reef use. Through these regulations and polices, at both the national and state level, the applicant has considered and proposed a project which would be in compliance with all requirements, including pursuing the required permits and authorizations from all federal agencies with regulatory authority over the project. As designed, the applicant contests that the proposed reefing project provides the least damaging removal option to the local marine environment. Based on the applicant's response, coordination with NOAA FGBNMS, and the Corps review, the concerns regarding invasive species would continue to be managed by balancing the preservation of existing marine habitat for desirable benthic and pelagic marine species, while a monitoring effort by both the applicant and the NOAA FGBNMS would allow for an adaptive management plan in response to invasive species and their presence at the project site. Further, the Corps has evaluated and supplies this document as environmental analysis to demonstrate that, based on our review, the proposed project would not have a significant impact on the quality of the human environment. Therefore, an environmental impact statement is not required (reference Section 12.3). Please see Section 4.7 regarding the request for a public hearing.

The Corps has evaluated the concerns raised in the comment letter provided by TIRN and the applicant's response to those concerns. The applicant reiterated their response in regards to the similar Ocean Foundation concerns for TIRN, and the Corps considers that per the applicant's provided information and response, as well as the discussion provided in the preceding paragraph of the Corps evaluation, TIRN's comments have been addressed.

The Corps has evaluated the concerns raised in the comment letter provided by Mr. Brandt Mannchen and the applicant's response to those concerns. The Corps also defers the comments and questions specific to NOAA regulatory authority to NOAA FGBNMS as the appropriate federal agency to provide a response (reference to Section 4.4). The Corps has evaluated the applicant's response regarding specific questions Mr. Mannchen posed and has determined the responses adequately address these questions regarding storm/hurricane damage risks, debris management, operation maintenance costs, liability concerns, visitor numbers and attraction potential to the marine sanctuary due to the proposed project (including changes to fishing pressure at the site and within the sanctuary), invasive species, economics, security, and management and control of the project site. Mr. Mannchen's objection to the 15-day PN comment period is noted. The use of a 15-day comment period is allowed by regulation (33 CFR 325.2(d)(2)), and it is up to the district engineer to determine the length of the comment period. Aesthetics (i.e. the natural beauty of the marine sanctuary) are considered in Section 7.2 of this document. Further, the Corps has evaluated and supplies this document as environmental analysis to demonstrate that, based on our review, the proposed project would not have a significant impact on the quality of the human environment. Therefore, an environmental impact statement is not required (reference Section 12.3). Please see Section 4.7 regarding the request for a public hearing.

4.7 Was a public meeting and/or hearing requested and, if so, was one conducted? Yes, a public meeting/hearing was requested but was not held.

During the public notice comment period, we received a request to hold a public hearing for the proposed project. The intent of a public hearing is to solicit information or evidence that might assist us in the evaluation of this permit action. Prior to a permit application submission to the Corps, public hearings were held regarding the proposed project, providing the public with an opportunity to give input to other parties considering approval or authorization of the project. The Corps has reviewed correspondence provided to NOAA FGBNMS prior to the receipt of a Department of the Army permit application in regards to the potential concerns over and opposition to the proposed project as far back as 2008. Based on our review of all the information submitted during the public notice comment period and subsequent evaluation process, we have determined that there is sufficient information to render a decision on this permit request. It is unlikely that any new information would be gained by holding a public hearing. Therefore, a public hearing will not be held.

5.0 Alternatives Analysis. (33 CFR Part 325 Appendix B(7), 40 CFR 230.5(c) and 40 CFR 1502.14). An evaluation of alternatives is required under NEPA and under the Section 404(b)(1) Guidelines for projects that include the discharge of dredged or fill material. NEPA requires discussion of a reasonable range of alternatives, including the no action alternative, and the effects of those alternatives; under the Guidelines, practicability of alternatives is taken into consideration and no alternative may be permitted if there is a less environmentally damaging practicable alternative.

5.1 Site selection/screening criteria: In order to be practicable, an alternative must be available, achieve the project purpose (as defined by the Corps), and feasible when considering cost, logistics and technology.

Corps-determined criteria for evaluating alternatives:

This is a Section 10 authorization. Therefore, it is not subject to the practicable alternative test of the 404(b)(1) guidelines. However, pursuant to Appendix B, a discussion of alternatives is required when there are unresolved conflicts concerning alternative uses of available resources. Based on the comments submitted during the public coordination period, there were concerns raised regarding other possible alternatives for the subject project.

The Texas legislature passed the Artificial Reef Act of 1989, which directed the Texas Parks and Wildlife Department to promote, develop, maintain, monitor, and enhance the artificial reef potential in state waters. To fulfill these purposes, TPWD was directed to develop a state artificial reef plan in accordance with Chapter 89 of the Texas Parks and Wildlife code. As directed by the legislature, an artificial reef covered under this Plan must be sited, constructed, maintained, monitored, and

managed in a manner that: 1) enhances and conserves fishery resources to the maximum extent practicable; 2) facilitates access and use by Texas recreational and commercial fishermen; 3) minimizes conflicts among competing uses of water and water resources; 4) minimizes environmental risks and risks to personal and public health and property; 5) is consistent with generally accepted principles of international law and national fishing law and does not create any unreasonable obstruction to navigation; 6) uses the best scientific information available; and 7) conforms to the state artificial reef plan. TPWD's Artificial Reef Program focuses its efforts on three types of materials: 1) decommissioned drilling rigs in the Rigs-to-Reefs Program; 2) highway bridge materials and other sources of concrete and heavy-gauge steel in the Nearshore Reefing Program; and 3) large marine vessels in the Ships-to-Reefs Program.

When considering an application for an artificial reef, as defined in 33 CFR 322.2(g), the Corps reviews TPWDs provisions for siting, constructing, monitoring, operating, maintaining, and managing the proposed artificial reef and determines if those provisions are consistent with the following standards: 1) the enhancement of fishery resources to the maximum extent practicable; 2) the facilitation of access and utilization by United States recreational and commercial fishermen; 3) the minimization of conflicts among competing uses of the navigable waters or waters overlying the outer continental shelf and of the resources in such waters; 4) the minimization of environmental risks and risks to personal health and property; 5) generally accepted principles of international law; and 6) the prevention of any unreasonable obstructions to navigation.

For the proposed project, the applicant specifically considered the following siting criteria:

1. Preserve the greatest amount of structure and associated biological community.
2. Create as little impact as possible to the marine sanctuary during the reefing process.
3. Maintain safe navigation over and around the remaining structure.
4. Maintain ease of use for the public.

Based on the Corps and applicant siting criteria discussed above, 5 alternatives were considered.

5.2 Description of alternatives:

5.2.1 No action alternative: Structure is removed in its entirety and not included in the Texas Artificial Reef Program. This alternative requires the removal of the structure to 15 feet below the mud line. No reef site permit is required.

5.2.2 Off-site alternatives

Off-site alternative 1: Tow to existing reef site – Remove structure from current location and tow to an established reef site not within the sanctuary boundary. This proposal requires the removal of the structure to 15 feet below the med line. No new reef site permit required.

5.2.3 On-site alternatives

On-site alternative 1 (applicant's preferred alternative): Reef structure on site with a 65 feet clearance on a 20 acre reef site. No additional material would be added to the site in the future. Decks and portion of jacket (legs) shallower than 65 feet would be removed and taken to shore. The bottom around the platform would not be dredged. All conductors would remain in place.

On-site alternative 2: Reef the structure on site with a 28 feet clearance on a 20 acre reef site. No additional material would be added to the site in the future. Decks and portion of jacket (legs) shallower than 28 feet would be removed and taken to shore. The bottom around the platform would not be dredged. All conductors would remain in place.

On-site alternative 3: Reef structure on site with a 65 feet clearance on a 20 acre reef site. No additional material would be added to the site in the future. Decks would be removed and taken to shore, and the upper portion of the jacket from -65 feet to +18 feet would be placed on the sea floor next to the base.

5.3 Evaluate alternatives that are not practicable or reasonable: With the no action alternative, a complete loss of marine habitat associated with the structure would occur. In addition, the primary environmental consideration would be the resuspension of silt, sand, and particles due to excavating the pilings and conductors to 15 feet below the mud line during removal and the disruption of benthic habitat. The surrounding area within a 100-foot radius of the platform would be dredged to remove any platform components/pieces that may have accumulated during the operation of the platform since it was installed in 1981, further disrupting bottom habitat.

With the offsite alternative, the primary environmental consideration affecting the sanctuary would be the associated resuspension of silt, sand, and particles due to excavating the pilings and conductors to 15 feet below the mud line during removal and the disruption of benthic habitat. The surrounding area within a 100-foot radius of the platform would be dredged to remove any platform components/pieces that may have accumulated during the operation of the platform since it was installed in 1981, further disrupting bottom habitat. Once the platform is towed to another reef site, the resulting reef habitat would be of lower quality compared to reefing in place due to lower light levels at deeper depths at the new reef site. Platforms that are towed are picked up by a crane barge and placed on a transport barge, then placed on their side at the new reef site. The final orientation of the structure (since it is

laying on its side versus in an upright orientation) places most of the structure at a deeper depth than where the platform originated.

From a biodiversity perspective, on-site alternative 2 would be beneficial and would maintain 89% of the structure and associated biological community. However, from a practical standpoint, the hazard to navigation risk is too high to be acceptable by the US Coast Guard or the applicant.

On-site alternative 3 is the standard procedure for partial removal projects. It maintains the highest percentage of established biological community by keeping the entire jacket structure while providing safe navigational clearance. At the request of NOAA FGBNMS, this alternative was rejected in order to create as little impact to the benthic habitat as possible during the reefing process. Although placing the top section on the sea floor would not cause the same resuspension of silt, sand, and particles as a full removal, it was still determined to be an unacceptable risk of negative biological impact when considering the overall goal of FGBNMS.

As such, on-site alternative 1, the applicant's preferred alternative, would have the 65 foot clearance that approximately matches the clearance over the Flower Garden Banks proper, providing suitable navigation clearance, as approved by the US Coast Guard. The structure would remain in a known location and would be accessible to visitors to the sanctuary. Acute disturbance to the local environment would be kept to a minimum by not having to remove the structure below the mud line and would maintain and preserve 81% of the structure and associated biological community.

5.4 Least environmentally damaging alternative under the 404(b)(1) Guidelines (if applicable) and environmentally preferred alternative under NEPA:
The Clean Water Act is not applicable for this project, as it is both structural in nature and beyond the limits of Clean Water Act jurisdiction. The applicant's preferred alternative is the least disruptive and most logistically practicable alternative. Therefore, on-site alternative 1 is the environmentally preferred alternative under NEPA.

6.0 Evaluation for Compliance with the Section 404(b)(1) Guidelines. N/A, the proposed project is subject to only Section 10 of the Rivers and Harbors Act of 1899.

7.0 General Public Interest Review (33 CFR 320.4 and RGL 84-09)
The decision whether to issue a permit will be based on an evaluation of the probable impacts, including cumulative impacts, of the proposed activity and its intended use on the public interest as stated at 33 CFR 320.4(a). To the extent appropriate, the public interest review below also includes consideration of additional policies as described in 33 CFR 320.4(b) through (r).

7.1 All public interest factors have been reviewed and those that are relevant to the proposal are considered and discussed in additional detail. Reference Table 11 and any discussion that follows.

Table 11	Effects					
	None	Detrimental	Neutral (mitigated)	Negligible	Beneficial	N/A
1. Conservation					X	
2. Economics					X	
3. Aesthetics				X		
4. General Environmental Concerns					X	
5. Wetlands						X
6. Historic Properties	X					
7. Fish and Wildlife Values					X	
8. Flood Hazards						X
9. Floodplain Values						X
10. Land Use						X
11. Navigation				X		
12. Shore Erosion and Accretion						X
13. Recreation					X	
14. Water Supply and Conservation						X
15. Water Quality				X		
16. Energy Needs						X
17. Safety				X		
18. Food and Fiber Production						X
19. Mineral Needs						X
20. Consideration of Property Ownership						X
21. Needs and Welfare of the People						X

Discussion:

Conservation: The proposed project would modify the natural resource characteristics of the project area. Properly constructed and sited artificial reefs provide shelter, calm waters, and influence water currents so that fish save energy while swimming against the current. They attract smaller organisms which are vital sources of food for different marine species, and they serve as visual reference points for fish that forage away from the reef and increase the overall reef area which can host a larger number of reef fish.

Economics: The proposed project may provide local economic benefits because the existing structure attracts fish to a known location and is therefore a popular attraction for commercial and recreational fishermen, divers, and snorkelers.

Aesthetics: The structure would no longer be visible from the surface. It would only be visible to divers specifically diving on the structure.

General Environmental Concerns: The proposed project would affect general environmental concerns such as the chemical, physical, and biological characteristics of the aquatic environment. Properly sited and constructed artificial reefs generally result in a net benefit to the biological and physical composition of the aquatic environment by providing shelter and improving the carrying capacity of the site. However, to minimize potential adverse effects to the chemical composition of the environment, materials will be required to meet applicable requirements published under section 204 of the National Artificial Reef Plan.

Fish and Wildlife Values: The proposed project would continue to enhance aquatic habitat for many species of marine fish and wildlife. While the proposed project may not mimic the natural habitat characteristics, favoring certain species at the expense of other species, the overall quality of aquatic habitat would be greatly diminished if the existing structure were to be removed in its entirety. Properly constructed and sited artificial reefs provide shelter, calm waters, and influence water currents so that fish save energy while swimming against the current. They also attract smaller organisms which are vital sources of food for different marine species and they serve as visual reference points for fish that forage away from the reef and increase the overall reef area which can host a larger number of reef fish.

Navigation: The US Coast Guard determined that no Private Aids to Navigation are required with the 65 feet clearance. However, NOAA FGBNMS has determined that a marker buoy and/or mooring buoy should be installed to reduce the navigational hazard concern. See Sections 4.5 and 4.6 for discussion on the proposed project's effect on navigation.

Recreation: Artificial reefs attract fish to a known location and are therefore popular attractions for commercial and recreational fishermen, divers, and snorkelers. Authorization of an artificial reef by the Corps requires the facilitation of access and utilization by United States recreational and commercial fishermen. The existing structure provides recreational opportunities in its current state, and the proposed project would make the structure a permanent location for recreational fishing and diving.

Safety: The proposed project would be subject to state and federal safety laws and regulations. Therefore, adverse effects to safety of the project area will be negligible.

Historic Properties Factor: See Section 10.3 of this document for information regarding how the Corps has determined that it has fulfilled its responsibilities under Section 106 of the NHPA.

7.2 The relative extent of the public and private need for the proposed structure or work:

There is no private need for the proposed artificial reef. The reef would provide continued hard substrate and structural habitat for the existing biological community which it supports, as well as providing the public with continued commercial and recreational fishing and diving opportunities.

7.3 If there are unresolved conflicts as to resource use, explain how the practicability of using reasonable alternative locations and methods to accomplish the objective of the proposed structure or work was considered.

Discussion: N/A

7.4 The extent and permanence of the beneficial and/or detrimental effects that the proposed work is likely to have on the public and private use to which the area is suited:

Detrimental effects are expected to be minimal and temporary.

Beneficial effects are expected to be minimal and permanent.

The detrimental effects of the proposed reefing of the structure would be most acute during the reefing process due to the removal activities. After the reefing process is complete, the continued beneficial effects of the structure's presence would remain permanently.

8.0 Consideration of Cumulative Impacts

(40 CFR 230.11(g) and 40 CFR 1508.7, RGL 84-9) Cumulative impacts result from the incremental environmental impact of an action when added to all other past, present, and reasonably foreseeable future actions. They can result from individually minor but collectively significant actions taking place over a period of time. A cumulative effects assessment should consider both direct and indirect, or secondary, impacts. Indirect impacts result from actions that occur later in time or are farther removed in distance from the original action, but still reasonably foreseeable.

Every permit application must be considered on its own merits. Its impacts on the environment must be assessed in light of historical permitting activity, along with anticipated future activities in the area. Although a particular project may constitute a minor impact in itself, the cumulative impacts that result from a large number of such projects could cause a significant impairment of water resources and interfere with the productivity and water quality of existing aquatic ecosystems.

Cumulative impacts can result from many different activities including the addition of materials to the environment from multiple sources, repeated removal of materials or organisms from the environment, and repeated environmental changes over large areas and long periods. More complicated cumulative effects occur when stresses of

different types combine to produce a single effect or suite of effects. Large, contiguous habitats can be fragmented, making it difficult for organisms to locate and maintain populations between disjunctive habitat fragments. Cumulative impacts may also occur when the timings of perturbations are so close in space that their effects overlap.

8.1 Identify/describe the direct and indirect effects of the proposed activity:
The direct effects of the proposed activity are associated with the work that would occur during the reefing activities to the existing platform and the presence of the structure standing on the sea floor. The primary change in the environment during the proposed project would be the removal of the decks and their associated sources of pollution and the jacket shallower than -65 feet. The removal of the upper portion of the jacket would result in the loss of shallow water habitat that is not available anywhere else in the area except on nearby standing platforms. This removal is necessary to minimize risks to navigation. Secondary impacts to the local ecosystem due to the removal would be a temporary increase in marine noise due to large vessel operations and the physical cutting of the structure. There would be no explosives used during the removal process. This increase in noise is expected to last approximately 1-2 weeks. In addition, a decrease in point source pollution can be expected post-reefing.

8.2 The geographic scope for the cumulative effects assessment is: The open waters and benthic habitat of the offshore, submerged areas of the Gulf of Mexico.

8.3 The temporal scope of this assessment covers: A review of the Corps Regulatory database for the vicinity of the project area spanning the past 5 years was performed. Similarly, the Corps analysis will estimate future impacts for the next 5 years.

8.4 Describe the affected environment: The affected environment involves offshore, subaqueous bottom of the Gulf of Mexico. Most of the Corps database for analyzing cumulative impacts is predicated on a watershed basis, using hydrologic unit codes. Work on the continental shelf is primarily structural in nature and is dominated by pipelines and oil and gas exploration rigs. Work offshore rarely involves fill or work in special aquatic sites. Coral reefs would be the exception. Key resources of concern in this watershed are benthic and pelagic habitats.

Past and present actions, outside the Corps jurisdiction, have been oil and gas exploration, removal and transport. While these actions did not require a Corps permit, they did require Bureau of Safety and Environmental Enforcement and Bureau of Ocean Energy Management approval and oversight.

Past and present actions, within the Corps jurisdiction, that have been authorized for impacts within the scope of this assessment were analyzed by a review of the Corps regulatory database. It is important to note that the majority of these actions that were authorized did not result in a loss of Waters of the US. Many permits are authorized and not constructed for a variety of reasons. Nevertheless, a review of

authorized activities does provide some indication of potential stressors and impacts on the environment. There is no watershed data available for the outer continental shelf, and many projects authorized for oil and gas exploration were permitted prior to the implementation of the Corps electronic database. Because of the location of the project area, in open water on the continental shelf, it is reasonable to assume that only structural components (pipelines and rigs) associated with oil and gas exploration and production occurred.

8.5 Determine the environmental consequences: Reasonably foreseeable future actions within the continental shelf include construction and maintenance of oil and gas infrastructure. Associated infrastructure, such as pipelines and rigs, may be constructed. The need for these actions is expected to be driven by market demands and economics.

The impacts from these present and future actions on the continental shelf of the Gulf of Mexico, if constructed/completed, include benthic and open water habitat disruption and disturbance; temporary impacts to water quality; and some pressure on aquatic areas requiring Corps permits.

Reasonably foreseeable future actions that could also affect these aquatic resources include impact to aquatic habitat for additional oil and gas exploration; maintaining existing infrastructure, such as pipelines and rigs; and construction activity in the area.

8.6 Discuss any mitigation to avoid, minimize or compensate for cumulative effects: As required by the Texas Artificial Reef Plan and the NOAA FGBNMS, the applicant would maintain and be responsible for the proposed reef over the course of its existence. Per coordination with NOAA FGBNMS, the applicant would be required to conduct biological monitoring of the reef to record and document the community, including the encrusting organism species such as corals and sponges, pelagic fish, mammal, and reptile species at the reef site, and the presence and proliferation of invasive species. This monitoring would be used to inform future decisions in regards to the potential reefing of other production platforms currently or proposed to be within marine sanctuary boundaries.

8.7 Conclusions regarding cumulative impacts:

When considering the overall impacts that will result from this project, in relation to the overall impacts from similar past, present, and reasonably foreseeable future projects, the cumulative impacts are not considered to be significantly adverse. Compensatory mitigation will not be required to offset the impacts associated with the proposed project. It is likely similar activities will be proposed in the future, and these will be subject to the appropriate review process at that time.

9.0 Mitigation
(33 CFR 320.4(r), 33 CFR Part 332, 40 CFR 230.70-77, 40 CFR 1508.20 and 40 CFR 1502.14)

9.1 Avoidance and Minimization: When evaluating a proposal including regulated activities in waters of the US, consideration must be given to avoiding and minimizing effects to those waters. Avoidance and minimization measures are described above in Sections 1 and 3.

Were any other mitigative actions including project modifications discussed with the applicant that were implemented to minimize adverse project impacts? (see 33 CFR 320.4(r)(1)(i)) Yes

Through coordination with the NOAA FGBNMS, the applicant has agreed to implement biological monitoring of the community on and around the proposed reef site, as well install a marker/mooring buoy as an aid to navigation.

9.2 Is compensatory mitigation required to offset environmental losses resulting from proposed unavoidable impacts to waters of the US? No

If no, rationale: No mitigation is required because the activity consists of change in purpose and modification of an existing structure that would not cause a cumulative adverse impact to aquatic resources.

10.0 Compliance with Other Laws, Policies, and Requirements

10.1 **Section 7(a)(2) of the Endangered Species Act (ESA):** Refer to Section 2.1 for description of action area for Section 7.

10.1.1 Has another federal agency taken steps to document compliance with Section 7 of the ESA and completed consultation(s) as required? No

10.1.2 Known species/critical habitat present: Yes

Name of species and/or critical habitat considered:

Marine Species	Scientific Name	Status
hawksbill sea turtle	*Eretmochelys imbricata*	Endangered
loggerhead sea turtle	*Caretta caretta*	Threatened

Effect determination(s): No effect

Basis for determination(s):

The sea turtle species listed above occur in the action area and may be present at the time of the proposed activity, but there are no plausible (i.e. no credible) routes of effects (beneficial or adverse) to the species due to the mobile and migratory nature of these species. It would require a series of exceedingly rare events to occur in a particular sequence in order for the proposed regulated activities to affect these species. Due to conservation measures practiced during reefing activities, no effect, neither beneficial nor adverse, have been observed to these particular species as a result of the regulated activities. The action area is within critical habitat for the loggerhead sea turtle; however, the constituent elements of this area of critical habitat would involve affecting the Sargassum mats found during varying times of the year. The interrelated and interdependent actions of the regulated activities do not involve effects to the Sargassum mats beyond baseline conditions during typical vessel traffic operations. Therefore, the proposed project will have no effect on these species or any designated critical habitat.

10.1.3 Was Section 7 ESA consultation required? No, consultation was not required.

Based on a review of the information above, the Corps has determined that it has fulfilled its responsibilities under Section 7(a)(2) of the ESA.

10.2 **Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act), Essential Fish Habitat (EFH).**

10.2.1 Has another federal agency taken steps to comply with the EFH provisions of the Magnuson-Stevens Act? No

10.2.2 Did the proposed project require review under the Magnuson-Stevens Act? Yes

10.2.3 EFH species or complexes considered: The following is a summary of the type of species listed in the Gulf of Mexico Fishery Management Plans: red drum, triggerfishes (Balistidae), jacks (Carangidae), wrasses (Labridae), snappers (Lutjanidae), tilefishes (Malacanthidae), groupers (Serranidae), and coastal migratory pelagic species, shrimps, stone crabs, and spiny lobsters.

Effect determination: Minimal adverse effect

Basis for determination: The proposed reefing in place would maintain habitat for these species. Reefing activities may have minimal and temporary adverse effects, however ambient conditions would soon return to the site upon completion of the reefing activities.

10.2.4 Date EFH assessment completed by Corps and transmitted to NMFS: 10 November 2015

Summary of NMFS EFH Comments:
Per the NMFS electronic mail, dated 13 November 2015, any adverse effects that might occur on marine and anadromous fishery resources would be minimal. EFH consultation procedures had been satisfied and no further consultation is required for this action.

Based on a review of the information above, the Corps has determined that it has fulfilled its responsibilities under EFH provisions of the Magnuson-Stevens Act.

10.3 **Section 106 of the National Historic Preservation Act (Section 106):** Refer to Section 2.2 for permit area determination.

10.3.1 Has another federal agency taken steps to comply with Section 106 and completed consultation(s) as required? No

10.3.2 Known cultural resource sites present and/or survey or other additional information needed? No known cultural resources were present, but survey was needed.

Identify cultural resource site(s): N/A

Effect Determination(s): No potential to cause effects

Basis for determination(s): The Corps staff archaeologist reviewed the project site for cultural resources and found that there are no previously recorded historic properties known to exist within the proposed permit area.

In addition, the permit area was investigated for historic properties and none were found as documented in the report titled "Archaeological and Hazard Survey, "A" Structure Location, Block A389, High Island Area, Gulf of Mexico" prepared by Gulf Ocean Services and dated June 2014.

10.3.3 Was Section 106 NHPA consultation required?

The Corps staff archeologist determined the project had no potential to cause effects. Consequently, in accordance with the April 25, 2005, memorandum titled "Revised Interim Guidance for Implementing Appendix C of 33 CFR Part 325 with the Revised Advisory Council on Historic Preservation Regulations at 36 CFR Part 800" concurrence by the State Historic Preservation Officer is not required.

Based on a review of the above information, the Corps has determined that it has fulfilled its responsibilities under Section 106 of the NHPA.

10.4 **Tribal Trust Responsibilities**

10.4.1 Was government-to-government consultation conducted with Federally-recognized Tribe(s)? No, consultation with tribes was not required. The public notice was

provided to those tribes within the Galveston District Area of Responsibility. No response was received from any federally recognized Native American Tribes and/or affiliated groups.

Based on a review of the information above, the Corps has determined that it has fulfilled its tribal trust responsibilities.

10.5 **Section 401 of the Clean Water Act – Water Quality Certification (WQC)**

10.5.1 Is a Section 401 WQC required, and if so, has the certification been issued or waived? N/A, a WQC is not required.

10.6 **Coastal Zone Management Act (CZMA)**

10.6.1 Is a CZMA consistency concurrence required, and if so, has the concurrence been issued, waived or presumed? N/A, a CZMA consistency concurrence is not required.

10.7 **Wild and Scenic Rivers Act**

10.7.1 Is the project located in a component of the National Wild and Scenic River System, or in a river officially designated by Congress as a "study river" for possible inclusion in the system? No

The Corps has determined that it has fulfilled its responsibilities under the Wild and Scenic Rivers Act.

10.8 **Effects on Corps Civil Works Projects (33 USC 408)**

10.8.1 Does the applicant also require permission under Section 14 of the Rivers and Harbors Act (33 USC 408) because the activity, in whole or in part, would alter, occupy, or use a Corps Civil Works project? No, there are no federal projects in or near the vicinity of the proposal.

10.9 **Corps Wetland Policy (33 CFR 320.4(b))**

10.9.1 Does the project propose to impact wetlands? No

10.9.2 Based on the public interest review herein, the beneficial effects of the project outweigh the detrimental impacts of the project.

10.10 **Other (as needed):** For compliance with the Marine Protection, Research and Sanctuaries Act, the Corps coordinated via the PN and subsequently through conference calls, meetings, and further written correspondence with the NOAA FGBNMS to ensure that the agency charged with the authority to prohibit reefing activities within the Flower Garden Banks National Marine Sanctuary had no objections to the proposed project. By letter dated 29 November 2016, the NOAA

FGBNMS stated it had no further objections so long as the conditions in Section 11.2 below were required as part of the Department of the Army permit.

11.0 Special Conditions

11.1 Are special conditions required to protect the public interest, ensure effects are not significant and/or ensure compliance of the activity with any of the laws above? Yes

11.2 Required special condition(s)

Special condition(s):

1. The permittee understands and agrees that, if future operations by the United States require the removal, relocation, or other alteration, of the structure or work herein authorized, or if, in the opinion of the Secretary of the Army or his authorized representative, said structure or work shall cause unreasonable obstruction to the free navigation of the navigable waters, the permittee will be required, upon due notice from the Corps of Engineers, to remove, relocate, or alter the structural work or obstructions caused thereby, without expense to the United States. No claim shall be made against the United States on account of any such removal or alteration.

2. When structures or work authorized by this permit are determined by the District Engineer to have become abandoned, obstructive to navigation or cease to be used for the purpose for which they were permitted, such structures or other work must be removed, the area cleared of all obstructions, and written notice given to the Corps of Engineers, Galveston District, Regulatory Division, Chief of the Compliance Branch within 30 days of completion.

Rationale: In accordance with 33 CFR 325.4 Conditioning of permits, the district engineer will add special conditions to Department of Army permits when such conditions are necessary to satisfy legal requirements or to otherwise satisfy the public interest requirements. The above special conditions are required for fulfillment of the public interest requirements specified according to 33 CFR 320.4(o)(3) Navigation.

3. An Aid-To-Navigation Buoy will be installed and maintained for the duration of the Department of the Army permit. The specifications of the buoy will be agreed to in advance of deployment, in writing, by the Corps, NOAA, and TPWD, and will be designed to provide aid to navigation to vessels in the area, and if possible, be utilized as a mooring buoy for vessels up to 100 feet in length.

4. A biological monitoring program agreed upon in writing by NOAA and TPWD will be conducted annually for the duration of the permit.

Rationale: The above special conditions are required for compliance with the Marine Protection, Research and Sanctuaries Act.

12.0 Findings and Determinations

12.1 Section 176(c) of the Clean Air Act General Conformity Rule Review: The proposed permit action has been analyzed for conformity applicability pursuant to regulations implementing Section 176(c) of the Clean Air Act. It has been determined that the activities proposed under this permit will not exceed deminimis levels of direct or indirect emissions of a criteria pollutant or its precursors and are exempted by 40 CFR Part 93.153. Any later indirect emissions are generally not within the Corps' continuing program responsibility and generally cannot be practicably controlled by the Corps. For these reasons a conformity determination is not required for this permit action.

12.2 Presidential Executive Orders (EO):

12.2.1 EO 13175, Consultation with Indian Tribes, Alaska Natives, and Native Hawaiians: This action has no substantial effect on one or more Indian tribes, Alaska or Hawaiian natives.

12.2.2 EO 11988, Floodplain Management: This action is not located in a floodplain.

12.2.3 EO 12898, Environmental Justice: The Corps has determined that the proposed project would not use methods or practices that discriminate on the basis of race, color or national origin nor would it have a disproportionate effect on minority or low-income communities.

12.2.4 EO 13112, Invasive Species: The evaluation provided above included invasive species concerns in the analysis of impacts at the project site.

12.2.5 EO 13212 and EO 13302, Energy Supply and Availability: The proposal is not one that will increase the production, transmission, or conservation of energy, or strengthen pipeline safety.

12.3 Findings of No Significant Impact: Having reviewed the information provided by the applicant and all interested parties and an assessment of the environmental impacts, I find that this permit action will not have a significant impact on the quality of the human environment. Therefore, an environmental impact statement will not be required.

12.4 Public interest determination: Having reviewed and considered the information above, I find that the proposed project is not contrary to the public interest.

PREPARED BY:

Emilee Samples

Date: 11 May 2017

Emilee R. Samples
Regulatory Project Manager

REVIEWED/APPROVED BY:

Kristi N. McMillan

Date: 11 May 2017

Kristi N. McMillan
Leader, Central Evaluation Unit
Regulatory Division, Galveston District

UNITED STATES GOVERNMENT MEMORANDUM

Structural Removal 2012-217A

To: Regional Environmental Officer, GOMR, Office of Environmental Compliance, Bureau of Safety and Environmental Enforcement (MS GE466 MS G)

Through: Chief, Environmental Operations Section, Office of Environment, GOM OCS Region (MS GM881A)

From: Unit Supervisor, Environmental Operations Section, Office of Environment, GOM OCS Region (MS GM633B)

Subject: National Environmental Policy Act Review of W & T Offshore, Inc.'s Structural Removal Application Number 2012-217A

Our National Environmental Policy Act (NEPA) review of the subject action is complete and results in a recommendation that the proposed action be approved with a Finding of No Significant Impact (FONSI), conditioned as indicated below:

The Bureau of Ocean Energy Management (BOEM) has prepared a Site-Specific Environmental Assessment (SEA) (No. 2012-217A) complying with the NEPA regulations under the Council on Environmental Quality (40 CFR § 1501.3 and § 1508.9), the United States Department of the Interior, NEPA implementing regulations (43 CFR part 46), and BOEM policy, which require an evaluation of proposed major federal actions, which under BOEM jurisdiction includes structure removal activity on the Outer Continental Shelf (OCS). We make the following recommendation to Bureau of Safety and Environmental Enforcement (BSEE) in concordance with the Memorandum of Agreement between BOEM and BSEE regarding "*Environment and NEPA*," dated October 3, 2011.

The Proposed Action: W & T Offshore, Inc. (W & T) proposes to remove Platform A in High Island Block A389, Lease OCS-G 02759 using non-explosive severance methods. The structure is located within the Flower Garden Banks National Marine Sanctuary (FGBNMS). Abrasives or mechanical cutting will be the primary cutting method. The structure is located at a water depth of 410 feet (ft) (125 meters (m)) and lies approximately 120 miles (193 kilometers) from the nearest Texas shoreline. Operations will be conducted from an onshore support base in Intracoastal City, Louisiana. The operator will remove the deck and upper jacket of the structure at a minimum depth of – 65 ft below mean sea level (fsl). The lower jacket will be reefed in place in High Island A389. The deck and upper jacket of the structure will be transported to shore for disposal. The maximum anchor radius employed by the lift vessel/derrick barge will be 4,000 ft (1,219 m). No anchors will be placed within the No Activity Zone or the boundary of the FGBNMS. In addition, the jacket of the structure will be utilized as an anchor point in the removal operations. The material barge transporting the deck and upper jacket of the structure will avoid the reef boundaries and No Activity Zone of the FGBNMS in transporting these components to shore for disposal. A side scan sonar site clearance survey will be performed after the completion of the removal and reefing operations. All debris identified in the site clearance survey will be removed by the operator. According to the operator, the structure will be removed because there is no further utility and the RUE has expired.

Factors Considered in this Determination: The impact analysis for the proposed activity focused on the decommissioning activities, the site clearance activities, and the resources that may be potentially impacted. The impact producing factors (IPF) include: (1) emissions from decommissioning vessels/equipment; (2) vessel discharges and turbidity; (3) seafloor disturbances from mooring activities; and (4) habitat modification (via removal of the facilities from the OCS).

In this SEA BOEM has considered three alternatives: (1) no action, (2) proposed action as submitted; and (3) the proposed action with additional conditions of approval. BOEM has assessed the impacts of the proposed action on the following significant resources:

1) Marine mammals;
2) Sea turtles;

3) Fish resources and essential fish habitat;
4) Benthic Resources; and
5) Archaeological resources.

Resources on the sea bottom could be disturbed if they were present; such as benthic biological communities and shipwrecks. Because direct contact is potentially the most disruptive potential impact for resources fixed or lying on the sea bottom, it is weighted most heavily out of all other potential impact factors. Impact significance levels are explained in Section 3.1 of SEA 2012-217A. Potential impacts from the proposed activities to topographic features, marine mammals and sea turtles have been mitigated to non-significance. Potential impacts to fish resources and essential fish habitat, archaeological resources, and benthic resources from the proposed activities were determined to be insignificant.

Alternatives and Conditions of Approval: In the SEA No. 2012-217A BOEM has considered three alternatives: (1) no action; (2) proposed action as submitted; and (3) proposed action with conditions of approval. Our evaluation in this SEA recommends alternative 3 and serves as the basis for approving the proposed action. BOEM concludes that no significant impacts are expected to occur to any affected resource by allowing the proposed action to proceed, provided that the specific conditions of approval identified below are met by the operator.

- **VESSEL-STRIKE AVOIDANCE/REPORTING:** Follow the guidance provided under Notice to Lessees and Operators (NTL) No. 2016-G01 (Vessel Strike Avoidance and Injured/Dead Protected Species Reporting). The NTL's guidance can be accessed on BOEM's internet website at http://www.boem.gov/BOEM-NTL-No-2016-G01/

- **NON-RECURRING MITIGATION (TOPOGRAPHIC FEATURES – POST ACTIVITY SUBMITTAL):** Bottom-disturbing activities associated with the structure removal activities proposed in your application must avoid the "No Activity Zone" of the East Flower Garden Bank by a distance of at least 500-ft and must be placed outside the Sanctuary boundary. Include in your Post-removal Report as-built plat(s) at a scale of 1-in. = 1,000-ft. with DGPS accuracy, depicting the "as-placed" location of all anchors, anchor chains, and wire ropes on the seafloor deployed during the structure removal activities to show that the "No Activity Zone" and the FGBNMS was not physically impacted. Additionally, bottom disturbing activities must be distanced at least 100 ft. from any hardbottom habitat or potentially sensitive biological features.

  Site clearance shall be conducted within a radius of 1,320' using a high resolution side scan sonar survey and all identified debris shall be removed; the contractor shall not conduct trawl site clearance activities.

- **POST-REEFING SURVEY REQUIREMENTS:** Our review indicates that the structure proposed for decommissioning will be abandoned-in-place as an artificial reef under the Rigs-to-Reefs Program. In order to verify compliance with OCSLA reefing (30CFR§250.1727(g)) and obstruction clearance requirements (30CFR§250.1740), you are required to conduct a high-resolution sonar survey (500 kHz or greater) of the permitted reefal material. Design the line spacing for side-scan and the display range to ensure 100 percent of the material permitted under this action is covered and it is demonstrated that the associated seabed (i.e. at a minimum the appropriate grid area listed in 30CFR§250.1741(a)) is clear of all obstructions apart from the reefal material.

  For a Side-Scan Sonar Survey, the side-scan system will need to be run with 30-meter line spacing to provide enough overlap in coverage.

  You are required to submit the Sonar Survey Report to this office at the same time you submit the required site clearance information required per 30CFR§250.1743(b).

Conclusion: BOEM has evaluated the potential environmental impacts of the proposed action. Based on the SEA No. 2012-217A, we conclude that the proposed action would have no significant impact on the environment provided that the avoidance measures required by the specific conditions of approval are met by the operator. An Environmental Impact Statement is not required.

Acting Unit Supervisor, Environmental Operations Section BOEM Office of Environment, GOM OCS Region	August 17, 2017 Date

UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF OCEAN ENERGY MANAGEMENT
GULF OF MEXICO OCS REGION
NEW ORLEANS, LOUISIANA

SITE-SPECIFIC ENVIRONMENTAL ASSESSMENT

OF

STRUCTURE-REMOVAL APPLICATION ES/SR NO. 12-217A

FOR

W & T Offshore, Inc.

IN

High Island Block A389
Lease OCS-G 02759

Date Submitted: March 5, 2015
Commencement Date: August 17, 2017

RELATED ENVIRONMENTAL DOCUMENTS

Programmatic Environmental Assessment for Structure-Removal Operations
on the Gulf of Mexico Outer Continental Shelf (OCS EIS/EA MMS 2005-013)

Final Environmental Impact Statement for Gulf of Mexico OCS Oil and Gas Lease Sales: 2017-2022;
Gulf of Mexico Lease Sales 249, 250, 251, 252, 253, 254, 256, 257, 259, and 261;
(OCS EIS/EA BOEM 2017-009)

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1. PROPOSED ACTION

The purpose of this Site-Specific Environmental Assessment (SEA) is to assess if the specific impacts associated with proposed decommissioning activities, outlined in ES/SR 12-217A initially submitted by W & T Offshore, Inc. (W & T) on June 23, 2016, will significantly affect the quality of the human, coastal, and marine environments within the meaning of Section 102(2)(c) of the National Environmental Policy Act (NEPA) and whether an Environmental Impact Statement (EIS) must be prepared. W & T proposes to remove Platform A from High Island Block A389 in the Western Planning Area safely and with minimal degradation to the environment while adhering to the *Outer Continental Shelf Lands Act* (OCSLA) regulations, binding lease agreements, and other enforceable OCS-related laws.

This SEA tiers from several National Environmental Policy Act (NEPA) documents which evaluated a broad spectrum of potential impacts resulting from decommissioning activities across the Eastern, Central, and Western Planning Areas of the Gulf of Mexico (GOM) Outer Continental Shelf (OCS):

- Structure-Removal Operations on the Gulf of Mexico Outer Continental Shelf: Final Programmatic Environmental Assessment (PEA) (USDOI, MMS, 2005);
- Gulf of Mexico OCS Oil and Gas Lease Sales: 2017-2022; Gulf of Mexico Lease Sales 249, 250, 251, 252, 253, 254, 256, 257, 259, and 261; Final Environmental Impact Statement (Multisale EIS) (USDOI, BOEM, 2017).

"Tiering" provided for in the NEPA implementing regulations (40 CFR Part 1502.20 and §1508.28) is designed to reduce and simplify the scope of subsequent environmental analyses. Tiering is also subject to additional guidance under the United States Department of the Interior (DOI) regulations at 43 CFR 46.140. Under the DOI regulation the site-specific analysis must note the conditions and effects addressed in the programmatic document that remain valid and which conditions and effects require additional review.

Chapter 3 of this SEA will focus on information including a brief discussion of the known effects on analyzed resources and relates to the environmental effects of this action. Where applicable, relevant affected environment discussions and impact analyses from the PEA and Multisale EIS are summarized and utilized for this site-specific analyses, and are incorporated by reference into this SEA. Relevant conditions of approval identified in the previous PEA and Multisale EIS have been considered in the evaluation of the proposed action.

W & T proposes to reef the lower jacket of Platform A in High Island Block A389 in place. Platform A is located in the Flower Garden Banks National Marine Sanctuary. The location of the platform in the Sanctuary represents a unique circumstance which requires consultation and coordination between BSEE, BOEM, the FGBNMS, the U.S. Army Corps of Engineers (USCOE), and the Texas Parks and Wildlife Department (TPWD). Disposal of obsolete offshore oil and gas platforms is not only a financial liability for the oil and gas industry but it can also be a loss of productive marine habitat. The use of obsolete oil and gas platforms for reefs has proven to be highly successful. Their availability, design profile, durability, and stability provide a number of advantages over the use of traditional artificial reef materials. To capture this valuable fish habitat, the States of Louisiana, Texas, and Mississippi, in 1986, 1989, and 1999, respectively, passed enabling legislation and signed into law a Rigs to Reef (RTR) program to coincide with their respective States' Artificial Reef Plan. Alabama and Florida have no RTR legislation. The State laws set up a mechanism to transfer ownership and liability of the platform from oil and gas companies to the State when the platform ceases production and the lease is terminated. The company (donor) saves money by donating a platform to the State (recipient) for a reef rather than scrapping the platform onshore. The States' artificial reef planning areas, general permit areas, and permitted artificial reef sites within the area of influence are discussed in the Multisale EIS (USDOI, BOEM, 2017, Chapter 3.3.2.1.2 and Appendix A.15).

1.1. BACKGROUND

BOEM and Bureau of Safety and Environmental Enforcement (BSEE) are mandated to manage the orderly leasing, exploration, and development of OCS oil, gas, and mineral resources while ensuring safe operations and the protection of the human, coastal, and marine environments. One purpose of BOEM's regulatory program is to ensure adequate environmental reviews are conducted on all decommissioning

proposals that would help support human health and safety while simultaneously protecting the sensitive marine environment.

During every stage of exploration, development, and production of oil, gas, and mineral (sulfur) operations, structures are set on or into the seafloor to:

- Aid with and/or facilitate well operations and protection;
- Emplace drilling and production platforms and vessel moorings;
- Install pipelines; and
- Deploy subsea equipment.

To satisfy the regulatory requirements and lease agreements for the eventual removal of these structures, decommissioning operations employ a wide range of activities that oversee any topsides removal (decking and structure above the waterline), seafloor severing, component lifting and loading, site-clearance verification work, and final transportation of the structure back to shore for salvage or to an alternate OCS site for reuse or reefing.

The scope of the effects on GOM resources from activities proposed in W & T's ES/SR application, 12-217A, were fully discussed and analyzed in the PEA. Neither the specific location, equipment, nor the duration of this proposal will result in impacts different from those discussed in the PEA and Multisale EIS prepared since that time.

1.2. PURPOSE AND NEED FOR THE PROPOSED ACTION

The purpose of the proposed action is to sever and remove all objects from the seafloor safely and with minimal degradation to the environment while adhering to the decommissioning guidelines of the *OCSLA* regulations, binding lease agreements, and other enforceable OCS-related laws. The proposed action also serves a secondary purpose for BOEM by providing measures to ensure that nothing will be exposed on the seafloor after a decommissioning that could interfere with navigation, commercial fisheries, or future oil and gas operations in the area.

The proposed action is needed to allow W & T to comply with OCSLA regulations (30 CFR Part 250.1703 and § 250.1725); wherein, operators are required to remove their facilities and associated seafloor obstructions from their leases within one year of lease termination or after a structure has been deemed obsolete or unusable. These regulations also require the operator to sever bottom-founded objects and their related components at least 15 feet (ft) (4.6 meters (m)) below the mudline (BML) (30 § 250.1728(a)). For reefing or partial reefing of structures, 30 CFR Part 250.1730 allows for departure of complete structure removal. A discussion of the other legal and regulatory mandates to remove abandoned oil and gas structures from Federal Waters can be found in the PEA.

In response to the proposed action in W & T's application, BOEM has regulatory responsibility, consistent with the OCSLA and other applicable laws, to approve, approve with modifications or conditions of approval, or deny the application. BOEM's regulations provide criteria that BOEM will apply in reaching a decision and providing for any applicable conditions of approval.

1.3. DESCRIPTION OF THE PROPOSED ACTION

W & T proposes to remove Platform A in High Island Block A389, Lease OCS-G 02759 using non-explosive severance methods. The structure is located within the Flower Garden Banks National Marine Sanctuary (FGBNMS). Abrasives or mechanical cutting will be the primary cutting method. The structure is located at a water depth of 410 ft (125 m) and lies approximately 120 miles (193 kilometers) from the nearest Texas shoreline. Operations will be conducted from an onshore support base in Intracoastal City, Louisiana. The operator will remove the deck and upper jacket of the structure at a minimum depth of – 65 ft below mean sea level (bsl). The lower jacket will be reefed in place in High Island A389. The deck and upper jacket of the structure will be transported to shore for disposal. The maximum anchor radius employed by the lift vessel/derrick barge will be 4,000 ft (1,219 m). No anchors will be placed within the No Activity Zone or the boundary of the FGBNMS. In addition, the jacket of the structure will be utilized as an anchor point in the removal operations. The material barge transporting the deck and upper jacket of the structure will avoid the reef boundaries and No Activity Zone of the FGBNMS in transporting these components to shore for disposal. A side scan sonar site clearance survey will be performed after the completion of the removal and reefing operations. All debris identified in the

site clearance survey will be removed by the operator. According to the operator, the structure will be removed because there is no further utility and the RUE has expired (W & T, 2016).

2. ALTERNATIVES CONSIDERED

2.1. THE NO ACTION ALTERNATIVE

Alternative 1— If selected, the operator would not undertake the proposed structural decommissioning activities. If the proposed activities are not undertaken, all environmental impacts, including routine, accidental, or cumulative impacts to the environmental and cultural resources described in the PEA, Multisale EIS, SEISs and this SEA relative to the proposed action would not occur.

2.2. THE PROPOSED ACTION AS SUBMITTED

Alternative 2— If selected, the operator would undertake the proposed activities as requested in their plan. This alternative assumes that the operator will conduct their operations in accordance with their lease stipulations, the OCSLA and all applicable regulations (as per 30 CFR §550.101(a)), and guidance provided in all appropriate NTLs (as per 30 CFR §550.103). However, no additional, site-specific conditions of approval would be required by BOEM.

2.3. THE PROPOSED ACTION WITH ADDITIONAL CONDITION(S) OF APPROVAL

Alternative 3—This is BOEM's *Preferred Alternative* — If selected, the operator would undertake the proposed activity, as requested and conditioned by stipulations, regulations, and guidance (similar to Alternative 2); however, BOEM would require the operator to undertake additional conditions of approval as identified by BOEM (listed in Section 2.4 below and described in the effects analyses) in order to fully address the potential site and project specific impacts of the proposed action.

2.4. SUMMARY AND COMPARISON OF THE ALTERNATIVES

Alternative 1, the no action alternative, would prevent the timely removal of obsolete or abandoned structures within a period of one year after termination of the lease or upon termination of a right-of-use and easement. Alternative 1 would not result in any impacts to the environmental resources analyzed in Chapter 3, but it does not meet the underlying purpose and need.

Alternative 2 would allow for the removal of obsolete or abandoned structures, but would not include any conditions of approval or monitoring beyond what was stated in the application. However, BOEM has determined that additional conditions of approval are needed to minimize or negate possible environmental impacts

Alternative 3 is the preferred alternative, based on the analysis of potential impacts to resources described in Chapter 3, because it meets the underlying purpose and need and also implements conditions of approval and monitoring requirements (described directly below) that adequately limit or negate potential impacts.

Protective Measures Required under the Preferred Alternative

The need for, and utility of, the following protective measures are discussed in the relevant impact analysis chapters of this SEA. The following protective measures and reporting requirements were identified to ensure adequate environmental protection:

- **VESSEL-STRIKE AVOIDANCE/REPORTING:** Follow the guidance provided under Notice to Lessees and Operators (NTL) No. 2016-G01 (Vessel Strike Avoidance and Injured/Dead Protected Species Reporting). The NTL's guidance can be accessed on BOEM's internet website at http://www.boem.gov/BOEM-NTL-No-2016-G01/.
- **NON-RECURRING MITIGATION (TOPOGRAPHIC FEATURES – POST ACTIVITY SUBMITTAL):** Bottom-disturbing activities associated with the structure removal activities proposed in your application must avoid the "No Activity Zone" of the East Flower Garden Bank by a distance of at least 500-ft and must be placed outside the Sanctuary boundary. Include in your Post-removal Report as-built plat(s) at a scale of 1-in. = 1,000-ft. with DGPS accuracy, depicting the "as-placed" location of all anchors,

anchor chains, and wire ropes on the seafloor deployed during the structure removal activities to show that the "No Activity Zone" was not physically impacted. Additionally, bottom disturbing activities must be distanced at least 100 ft. from any hardbottom habitat or potentially sensitive biological features.

Site clearance shall be conducted within a radius of 1,320' using a high resolution side scan sonar survey and all identified debris shall be removed; the contractor shall not conduct trawl site clearance activities.

- **POST-REEFING SURVEY REQUIREMENTS:** Our review indicates that the structure proposed for decommissioning will be abandoned-in-place as an artificial reef under the Rigs-to-Reefs Program. In order to verify compliance with OCSLA reefing (30CFR§250.1727(g)) and obstruction clearance requirements (30CFR§250.1740), you are required to conduct a high-resolution sonar survey (500 kHz or greater) of the permitted reefal material. Design the line spacing for side-scan and the display range to ensure 100 percent of the material permitted under this action is covered and it is demonstrated that the associated seabed (i.e. at a minimum the appropriate grid area listed in 30CFR§250.1741(a)) is clear of all obstructions apart from the reefal material.

  For a Side-Scan Sonar Survey, the side-scan system will need to be run with 30-meter line spacing to provide enough overlap in coverage.

  You are required to submit the Sonar Survey Report to this office at the same time you submit the required site clearance information required per 30CFR§250.1743(b).

2.5. ALTERNATIVES CONSIDERED BUT NOT ANALYZED IN DETAIL

Other alternatives considered but not analyzed in detail include:

- "In-situ" abandonments only (no decommissioning permitted).
- Decommissionings with "unlimited" severance options (no limit on explosive charge).
- Decommissionings with "seasonal' severance options (seasonal removal restrictions).

These alternatives were not proposed by the operator and are not allowed for the following reasons:

- In-situ abandonments would require modifications to the OCSLA to allow for expired lease obstructions and increased navigation hazards. Abandoned structures would require continual maintenance and present space use conflicts with future leaseholders and other potential users of the GOM OCS.
- Employing unlimited severance options to remove a structure was not analyzed in detail because the potential impact zone for marine protected species is directly related to explosive charge size.
- Seasonal removal was not analyzed further because this option relied upon incomplete seasonal data and failed to account for intermittent decommissioning needs.

W & T's proposed action meets the objectives of the purpose and need while being feasible under the regulatory directives of the OCSLA and all other applicable guidance.

3. DESCRIPTION OF THE AFFECTED ENVIRONMENT AND ENVIRONMENTAL IMPACTS

3.1. INTRODUCTION

The discussion below will: (1) describe/summarize the pertinent potentially affected resources; (2) determine whether the proposed action and its impact-producing factors (IPF) will have significant impacts on the human, coastal, or marine environments of the GOM; and (3) identify significant impacts, if any, that may require further NEPA analysis in an EIS. The description of the affected environment and impact analysis are presented together in this section for each resource.

For each potentially affected resource, BOEM staff reviewed and analyzed all currently available peer-reviewed literature and integrated these data and findings into the analyses below. The analyses cite the best available, relevant scientific literature. BOEM performed this analysis to determine whether W & T's proposed activities will significantly impact the human, coastal, or marine environments of the GOM. For the impact analysis, resource-specific significant criteria were developed for each category of the affected environment. The criteria reflect consideration of both the context and intensity of the impact at issue (see 40 CFR § 1508.27). The criteria for impacts to environmental resources are generally classified into one of the three following levels:

- Significant Adverse Impact (including those that could be mitigated to no significance);
- Adverse but Not Significant Impact; or
- Negligible Impact.

Preliminary screening for this assessment was based on a review of this relevant literature; previous SEAs; the PEA (USDOI, MMS, 2005); and the Multisale EIS (USDOI, BOEM, 2017); and relevant literature pertinent to historic and projected activities. BOEM initially considered the following resources for impact analysis:

- air quality;
- water quality (coastal and marine waters);
- marine mammals (including ESA-listed species and strategic stocks);
- sea turtles (all are ESA-listed species);
- fish and invertebrate resources;
- commercial fisheries;
- recreational fishing;
- habitat resources;
- benthic resources;
- archaeological resources;
- pipelines and cables;
- military use, warning, and test areas;
- navigation and shipping; and
- FGBNMS.

In the PEA, the impact analysis focused on a broad group of decommissioning activities and resources with the potential for impacts. The IPFs include: (1) emissions from decommissioning vessels/equipment; (2) vessel discharges and turbidity; (3) seafloor disturbances from mooring activities; and (4) habitat modification (via removal of the facilities from the OCS). However, for the purposes of this SEA, BOEM has not included impact analyses for resources that were considered but determined to have minimal risk of being affected by the proposed decommissioning activities. The following resource categories were considered, but not analyzed:

- air quality;
- water quality (coastal and marine waters);
- commercial fisheries;
- benthic resources;

- pipelines and cables;
- military use, warning, and test areas; and
- navigation and shipping.

For this SEA BOEM evaluated the potential impacts from the applicant's proposed activities in the GOM on the following resource categories:

- marine mammals (including threatened/endangered and non-ESA-listed species);
- sea turtles (all are ESA-listed species);
- fish and invertebrate resources;
- benthic resources; and
- archaeological resources.

3.2. MARINE MAMMALS

The life history, population dynamics, status, distribution, behavior, and habitat use of baleen and toothed whales can be found in Chapter 3.2.1 of the PEA and Chapters 4.1.1.11 and 4.2.1.12 of the Multisale EIS, and is incorporated by reference. Marine mammals occur in the inshore, coastal, and oceanic waters of the GOM with the greatest diversity and abundance of cetaceans found in the oceanic and OCS waters. Twenty-one species of cetaceans regularly occur in the Gulf of Mexico (Jefferson et al., 1992; Davis et al., 2000) and are identified in the NMFS Gulf of Mexico Stock Assessment Reports (Waring et al., 2016), in addition to one species of Sirenian (USDOI, BOEM, 2017). There are marine mammal species that have been reported from Gulf waters, either by sighting or stranding, that are not considered because they are relatively rare (Wursig et al. 2000; Mullin and Fulling, 2004).

3.2.1. Impact Analysis

The IPFs for marine mammals from decommissioning and structural removal were discussed in Chapter 4.3.1 of the PEA (USDOI, MMS, 2005). Effects of oil and gas activity on marine mammals were also discussed in Chapters 4.1.1.11 and 4.2.1.12 of the Multisale EIS. This SEA tiers from both of these documented analyses. BOEM concluded in the PEA that marine mammal injury is not expected from nonexplosive structure-removal operations, provided that existing guidelines and condition(s) of approval requirements are followed.

OCS service vessels associated with the proposed activities also pose a hazard to marine mammals located near the surface that would be at risk of collision with the vessels. To minimize the potential for vessel strikes, operators should implement the guidance provided under NTL No. 2016-G01 which contains vessel strike avoidance and injured/dead protected species reporting for sea turtles and other protected species. The NTL guidance can be accessed on BOEM's internet website at http://www.boem.gov/BOEM-NTL-No-2016-G01/.

3.2.1.1. Alternatives

Alternative 1: Non-approval of the proposed action would prevent applicants from conducting the proposed activities and the IPFs on marine mammals would not occur. No vessel traffic related to the operations eliminates a risk of collisions with marine mammals.

Alternative 2: Approval of the proposed action would allow the applicant to conduct the proposed activity with no additional condition(s) of approval implemented by BSEE. Example of potential impacts to marine mammals without applying condition(s) of approval and monitoring include, but are not limited to vessel collisions.

Alternative 3: Approval of the proposed action with additional condition(s) of approval allows the applicant to conduct the proposed activity, but with condition(s) of approval and monitoring measures.

Conclusion: Although there could be impacts to marine mammals from the proposed action, proper adherence to the conditions of approval and monitoring measures would prevent or lessen the impacts of the proposed action on marine mammals.

3.3. SEA TURTLES

The life history, population dynamics, status, distribution, behavior, and habitat use of sea turtles can be found in Chapter 3.2.2 of the PEA and Chapters 4.1.1.12 and 4.2.1.13 of the Multisale EIS and is incorporated by reference into this SEA. Five highly migratory sea turtle species are known to inhabit the waters of the GOM (USDOI, BOEM, 2017). All five species of sea turtles have been listed as endangered or threatened since the 1970's. Critical habitat has been designated for the Northwest Atlantic Ocean Loggerhead sea turtle population segment (DPS) in the GOM (Federal Register, 2014a).

3.3.1. Impact Analyses

The IPFs for sea turtles from the proposed activities were discussed in the PEA (USDOI, MMS, 2005). The effects oil and gas activity on the proposed action on sea turtles was also discussed in Chapter 4.2.1.13 and 4.1.1.12 of the Multisale EIS. This SEA tiers from both of these analyses. Sea turtles can be impacted by the proposed activities by way of degradation of water quality and its associated short-term effects, and vessel collisions.

The potential for lethal effects could occur from chance collisions with OCS service vessels associated with the proposed activities.

BOEM concluded in the PEA that sea turtle injury is not expected from non-explosive structure-removal operations, provided that existing guidelines and conditions of approval requirements are followed.

OCS service vessels associated with the proposed activities pose a hazard to sea turtles located near the surface that would be at risk of collision with the vessels. To minimize the potential for vessel strikes, operators should implement the guidance provided under NTL No. 2016-G01 which contains vessel strike avoidance and injured/dead protected species reporting for sea turtles and other protected species. The NTL guidance can be accessed on BOEM's internet website at http://www.boem.gov/BOEM-NTL-No-2016-G01/.

Most removal activities are expected to have sublethal effects on marine turtles. The impacts of the proposed action are expected to be negligible most of the time, with occasional impacts being potentially adverse but not significant. No significant adverse effects on the population size and recovery of any sea turtle species in the GOM are expected.

3.3.1.1. Alternatives

Alternative 1: Non-approval of the proposed action would prevent applicants from conducting the proposed activities. The impact producing factors to sea turtles would not occur. The chance for collisions with OCS service vessels associated with decommissioning activities would be eliminated.

Alternative 2: Approval of the proposed action would allow the applicant to conduct the proposed activity with no additional conditions of approval and monitoring measures required by BOEM. Examples of potential impacts to sea turtles would be degradation of water quality and its associated short-term effects, and vessel collisions. The potential for lethal effects could occur from the chance collisions with OCS service vessels associated with decommissioning activities.

Alternative 3: Approval of the proposed action with additional conditions of approval allows the applicant to conduct the proposed activity, but with conditions of approval and monitoring measures identified by BOEM NTL No. 2010-G05 (Decommissioning Guidance for Wells and Platforms). This NTL specifies conditions of approval requirements in the new ESA and MMPA guidance that requires trained observers to watch for protected species of sea turtles and marine mammals in the vicinity of the structures to be removed. Mitigative measures will be implemented by BSEE, in coordination with NMFS and in accordance with the NMFS ESA consultation requirements and the MMPA take-regulations.

Conclusion: Although there could be impacts to sea turtles from the proposed action, proper adherence to the conditions of approval and monitoring measures as outlined above would preclude or lessen the impacts of the proposed action on sea turtles.

3.4. FISH AND INVERTEBRATE RESOURCES

An overview of the life history, population dynamics, status, distribution, behavior, and habitat use of fishes and invertebrates can be found in Chapters 4.6.1 (Topographic Features); 4.7 (Fish and Invertebrate Resources); and 4.9.5 (Protected Corals) of the Multisale EIS (DOI, BOEM, 2017) and Chapter 3.2.3 of

the PEA, and is incorporated by reference into this SEA. Additionally, BOEM consults with the National Marine Fisheries Service's (NMFS) on potential impacts to essential fish habitat resulting from OCS oil and gas-related activities in the Gulf of Mexico. In cooperation with the NMFS, BOEM developed and implemented a range of seafloor survey requirements and activity-specific protective buffers to reduce the possibility of adverse impacts to sensitive habitat. A detailed programmatic Essential Fish Habitat Assessment (USDOI, BOEM, 2016) was completed and is incorporated by reference. The assessment determined that decommissioning activities similar to those proposed are not expected to adversely impact essential fish habitat.

Threatened or Endangered Species

Two protected fish species (Gulf sturgeon [*Acipenser oxyrhynchus desotoi*] and smalltooth sawfish [*Pristis pectinata*]) are found in the northern Gulf of Mexico, but not within the area of interest; they inhabit and have critical habitat in onshore waters. A third protected species, Nassau grouper (*Epinephalus striatus*), has been documented as a transient or rarely occurring species in the area of interest. At the time of publication, the final listing determination cited insufficient information as the reason for being unable to designate critical habitat for this species (81 FR 42268). Although Nassau grouper are a shallow water reef-associated species, the Flower Garden Banks are considered to be outside this species' typical distribution. Spawning occurs in winter and no documented spawning sites are located in the Gulf of Mexico. These fish species are not considered to be impacted by a proposed action because they are found away from activities that could cause an impact.

Among the shelf-edge banks, the Flower Garden Banks have been identified as exceptionally important components of the GOM ecosystem. These banks represent the northernmost colonies of hermatypic corals and may provide larvae/recruits for other coral reefs far away (Goodbody-Gringley et al., 2012). On September 10, 2014, the *Federal Register* published a final rule listing 22 coral species as threatened and three coral species as endangered under the ESA (*Federal Register*, 2014b). A full list of corals in the GOM that are protected under the ESA may be found in **Table 4-17** of the 2017-2022 Multisale EIS (DOI, BOEM, 2017). Distribution of the listed species within U.S. Exclusive Economic Zone ranges from the State of Florida, Flower Garden Banks National Marine Sanctuary, and the U.S. territories of Puerto Rico, U.S. Virgin Islands, and Navassa Island. Although the majority of elkhorn coral (*Acropora palmata*) distributions are outside of the area of interest, isolated colonies were discovered on both the West and East Flower Garden Banks (Johnston et al, 2013). Because these colonies of elkhorn coral are located in the Flower Garden Banks National Marine Sanctuary, this species is considered for the following impact analysis. Additionally, the boulder star coral (*Orbicella franksi*), lobed star coral (*Orbicella annularis*), and mountainous star coral (*Orbicella faveolata*) were listed as threatened. This Orbicella species complex occurs in the western Atlantic and greater Caribbean, including the Flower Garden Banks and has historically been a dominant component of the Flower Garden Banks coral reefs. These coral species have high susceptibility to negative impacts from sedimentation and physical impingement as a result of bottom disturbing activities.

Non-ESA-Listed Species

Shelf-edge banks, such as the Flower Garden Banks, generally exhibit the greatest range of habitat types of all the topographic features because they have the greatest vertical relief (Rezak et al., 1983). In general, banks that have the greatest vertical relief also possess the greatest number of habitat categories. The habitats of topographic features can be classified into seven categories. All of these categories can be found on the various shelf-edge banks, although not all of them occur simultaneously at the same bank (Rezak et al., 1983). These habitats range from the reef-building, shallow-water corals, the most complex and diverse of the habitat types, to less diverse habitats found in the high-turbidity nepheloid layer.

Coastal pelagic species traverse shelf waters of the region throughout the year. The distribution of most species depends upon water-column characteristics that vary spatiotemporally. Coastal pelagic species with an affinity for vertical structure are often observed around topographic features and offshore platforms, where they are best classified as transients rather than resident fishes. Where hard bottom occurs, demersal species and opportunistic reef fish species more commonly associated with the mid- or inner-shelf may also be found. In addition, pelagic fishes primarily found in waters associated with neither the shore nor the seafloor may also be found in association with shelf-edge banks.

3.4.1. Impact Analyses

The IPFs for fish and invertebrate resources resulting from decommissioning and structure removal activities are discussed in the 2017-2022 Multisale EIS (DOI, BOEM, 2017) and PEA (USDOI, MMS, 2005). This SEA tiers from both of these documented analyses.

The proposed structure removal activities would generate short-term increases in background noise and may resuspend sediments as a result of any bottom disturbances. However, the use of non-explosive severance methods eliminates potential impacts to fishes typically resulting from barotrauma associated with shockwave propagation. The distancing requirements and exclusion of bottom disturbing activities from within the Sanctuary boundary and No Activity Zone reduces the potential for adverse impacts to sessile benthic organisms through impingement and sedimentation. Habitat modification as a result of removing the upper portion of the jacket eliminates some artificial substrate from the water column, but will have negligible impact on fish and invertebrate resources. Short-term localized increases in turbidity and background noise as a result of the proposed activities could cause temporary shifts in the distribution of some fishes.

Impacts resulting from decommissioning activities are typically mitigated through the Topographic Features Stipulation. However, due to the location of the proposed activities, specific protective measures are recommended to mitigate potentially significant adverse impacts to ESA listed coral species. The Conditions of Approval, if implemented as described in section 2.4 of this document, will allow for the proposed non-explosive decommissioning activities to take place with **negligible** impacts to protected coral species and **negligible** effect on non-ESA-listed fish and invertebrate resources.

3.4.1.1. Alternatives

Alternative 1: Non-approval of the proposed action would prevent applicants from conducting the proposed activities. The IPFs on fish or essential fish habitat would not occur.

Alternative 2: Approval of the proposed action would allow the applicant to conduct the proposed activities with no additional condition(s) of approval and monitoring measures required by BOEM. As described in the analyses above, significant adverse impacts to ESA listed coral communities could occur. Impacts to fish resources could be locally adverse, but not significant.

Alternative 3: Approval of the proposed action with additional condition(s) of approval would allow the applicant to undertake the proposed activities and impacts to ESA-listed coral communities and non-ESA-listed fish and invertebrate resources would be expected to be negligible.

Conclusion: Although the proposed action could impact fish and invertebrate resources, if the proposed mitigations and conditions of approval are applied, impacts would be expected to be localized, of short duration, and have negligible effect.

3.5. BENTHIC BIOLOGICAL RESOURCES

A description of live bottom habitats can be found in Chapters 4.6.1 (Topographic Features and Associated Communities), 4.6.2 (Pinnacles and Low-Relief Features and Associated Communities), and 4.3.1 (Estuarine Systems) of the 2017-2022 Multisale EIS (DOI, BOEM, 2017) and in Chapter 4.3.4 of the PEA. These descriptions are incorporated by reference into this SEA.

The vast majority of the Gulf of Mexico has a soft, muddy bottom in which burrowing infauna are the most abundant invertebrates; so-called soft-bottom communities. A much smaller area is occupied by hard bottom habitat. Hard bottoms are naturally occurring, rocky, consolidated substrates that are geological (e.g., exposed sedimentary bedrock) or biogenic (e.g., carbonate relic coral reef) in origin. These habitats occur throughout the GOM but are relatively rare compared with the soft bottoms. Hard bottoms, particularly those having measurable vertical relief, can serve as important habitat for a wide variety of marine organisms. The attached flora and fauna of live bottoms, such as large sponges and structure-forming corals, further enhance the structural complexity of the benthic environment. Complex structure offers shelter that can be attractive to smaller invertebrates and fishes (Fraser and Sedberry, 2008), which, in turn, can provide food for a variety of larger fishes, including some commercially important fisheries (Szedlmayer and Lee, 2004; Gallaway et al., 2009).

In the Gulf of Mexico, topographic features are known to function as large-sized, hard substrate habitats that enable settlement of sensitive benthic organisms, concentrate fishes, and substantially contribute to the ecology of the GOM. Many of these features have been identified as locations of particular value that may require a greater degree of protection from OCS oil- and gas-related activities. As such, beginning in 1973, BOEM's predecessor agency established and implemented a Topographic Features Stipulation that applies conditions to OCS oil- and gas-related activities occurring in the vicinity of these features.

Adherence to the provisions of the Topographic Features Stipulation helps protect the resources by distancing OCS oil- and gas-related activities away from the most sensitive areas of topographic features in order to minimize negative impacts of routine activities and accidental events. The stipulation establishes a No Activity Zone around the most ecologically sensitive core area of each identified topographic feature, within which no bottom-disturbing activities are allowed. Additionally, BOEM extends a 500-ft (152-m) buffer around each of these No Activity Zone boundaries, further restricting bottom-disturbing activity. The additional 500-ft (152-m) buffer policy was developed in consultation with NOAA to further protect areas of topographic features that were not originally included in the defined No Activity Zones.

3.5.1. Impact Analyses

The IPFs for benthic resources from decommissioning and structural removal were discussed in Chapter 4.6 of the 2017-2022 Multisale EIS (DOI, BOEM, 2017) and Chapter 3.2.4 of the PEA (USDOI, MMS, 2005). This SEA tiers from both of these analyses. The IPFs associated with the proposed action that could adversely impact hard bottom habitat include: direct physical contact (impingement) from bottom disturbing activities (e.g., anchoring and progressive-transport) and sedimentation resulting in covering or smothering sensitive habitats. Adherence to the requirements specified in the Topographic Features Stipulation would typically minimize impacts in the vicinity of topographic features. Due to the location of the proposed decommissioning activities, specific mitigations and conditions of approval were recommended to minimize the potential for adverse impacts to sensitive habitat features.

3.5.1.1. Alternatives

Alternative 1: Non-approval of the proposed action would prevent applicants from conducting the decommissioning activities. There would be no bottom disturbances from vessel anchoring or resuspension of sediment that could result in crushing, covering, or smothering of sensitive habitats.

Alternative 2: Approval of the proposed action would allow the applicant to conduct the proposed activities with no additional conditions of approval required by BOEM. Without implementation of the conditions of approval noted in Chapter 2.4, potential impacts to benthic habitat resources include crushing or burial of sensitive live bottom habitat and associated sessile benthic communities. The operator proposes decommissioning activities at a site located near ESA listed coral species. Impingement upon or burial of hard bottom habitat in this area could result in significant adverse impacts to these communities.

Alternative 3: Approval of the proposed action would allow the applicant to undertake the proposed activities with additional conditions of approval as identified by BOEM in Chapter 2.4. These mitigation measures are expected to decrease or negate the potential for impact to benthic habitat resources from the proposed action.

Conclusion: Although benthic resources could be impacted by the proposed action, the proposed mitigations and conditions of approval would preclude or minimize impacts to these resources.

3.6. ARCHAEOLOGICAL RESOURCES

Archaeological resources are any material remains of human life or activities that are at least 50 years of age and that are of archaeological interest (30 CFR Part 551.1). A description of archaeological resources (prehistoric and historic) can be found in Chapter 4.13.1 of the Multisale EIS and Chapter 3.3.2 of the PEA, and is incorporated by reference into this SEA. As obligated under OCSLA regulations (30 CFR § 551.6 (a) (5)), applicants are not allowed to disturb archaeological resources while conducting their proposed activities.

Geographic features that have a high probability for associated prehistoric sites in the northwestern and north central Gulf (from Texas to Alabama) include barrier islands and back barrier embayments, river channels and associated floodplains and terraces, and salt dome features. Also, a high probability for prehistoric resources may be found landward of a line which roughly follows the 45 m bathymetric contour.

Historic archaeological resources on the OCS include shipwrecks and light houses. Investigations identified over 4,000 potential shipwreck locations in the Gulf, nearly 1,500 of which occur on the OCS (Garrison et al., 1989). Historic shipwrecks have, to date, been primarily discovered through oil industry sonar surveys in water depths up to 9,000 ft (2,743 m). In both 2005 and 2011, BOEM revised its guidelines for conducting archaeological surveys and expanded the list of blocks requiring a survey and assessment. The list of blocks is available on BOEM's website under NTL No. 2005-G07 and NTL No. 2011-JOINT-G01. Since 2005, over 30 possible historic shipwrecks have been reported in the expanded area. At present, some form of survey is required for all new bottom disturbing activities.

3.6.1. Impact Analyses

The IPFs on archaeological resources from proposed activities were discussed in Chapter 4.4.1 of the PEA (USDOI, MMS, 2005). The effects of oil and gas activity on archaeological resources were discussed in Chapter 4.13.2 Chapter 3.3.2.6.6 of the Multisale EIS documents activities related to OCS sand borrowing. of the Multisale EIS and both are incorporated here by reference. The IPFs associated with the proposed action that could affect archaeological resources include: direct physical contact from anchoring activities.

3.6.1.1. Alternatives

Alternative 1: Non-approval of the proposed action would prevent applicants from conducting the decommissioning activities. There would be no bottom impacts from vessel anchoring activities that could result in potential loss of any known or unknown historic archaeological resource.

Alternative 2: Approval of the proposed action would allow the applicant to conduct the proposed action with no additional conditions of approval and monitoring measures required by BOEM. Examples of potential impacts to archaeological resources and the following analysis include, but are not limited to, damage to potential archaeological resources from the proposed activity. More details on the potential for impact absence that results from imposing the conditions of approval are described in Chapter 4.4.1 of the PEA. The operator proposes decommissioning activities at sites that may be located near potential archaeological resources which, without additional conditions of approval, may lead to potential impacts to those sites. This alternative would not adequately limit or negate potential impacts to archaeological resources.

Alternative 3: Approval of the proposed action would allow the applicant to undertake the proposed activities with additional conditions of approval that BOEM would require the locations for new bottom-disturbing activities to be reviewed for any archaeological resources before action is taken. Alternative 3 limits or negates potential impacts on archaeological resources by avoiding known archaeological resources.

Conclusion: Although there could be impacts to known archaeological sites from the proposed action, proper adherence to the conditions of approval and existing requirements negates or minimizes the potential for significant impacts to these resources.

3.7. CUMULATIVE IMPACTS

Cumulative impacts are discussed in the 2017-2022 Multisale EIS (DOI, BOEM, 2017) for resources not directly considered in this SEA and for protected and non-protected species of marine mammals (Chapter 4.5.3), sea turtles (Chapter 4.5.4), protected and non-protected species of fish and invertebrate resources (4.7), habitat resources (Chapters 4.6.1, 4.6.2, and 4.3.1), archaeological resources (Chapter 4.5.7), and benthic resources (Chapter 4.5.6). Based on the cumulative impact scenarios and assessments presented in the Multisale EIS and the potential effectiveness of protective NTLs and lease stipulations, BOEM expects that potential cumulative impacts from decommissioning activities (i.e. vessel discharges, nonexplosive-severance products, habitat modification, vessel anchoring, progressive transport, site-clearance, and sediment redistribution) would not be significant.

With respect to the cumulative practice of artificial reefing of decommissioned structures, the practice of using artificial reefs to enhance fisheries along the U.S. coastline has been occurring for nearly 200 years. Purpose-built structures (e.g., wooden huts, cinder block reefs, and concrete pyramids) and obsolete materials (e.g., decommissioned vessels and damaged concrete pipe) have been intentionally deposited in estuarine and marine environments to add bottom relief, attract fishes, and improve angler access and success. As a result of research into the potential benefits and adverse impacts resulting from specific artificial reef designs, materials, and siting, the National Artificial Reef Plan and subsequent revision in 2007 were developed to provide guidance to artificial reef coordinators, fisheries managers, and other parties on recommended siting, construction, management, and monitoring of artificial reefs.

Although BOEM and BSEE support the enhancement of habitat and fishing and diving opportunities through the reuse of decommissioned OCS structures, structure-removal permit applications requesting a departure under the Rigs-to-Reefs Policy must undergo technical and environmental reviews. The relevant policy details the minimum engineering and environmental standards that operators/lessees must meet to be granted approval to deploy a structure as an artificial reef. Conditions of approval are applied as necessary to minimize the potential for adverse effects to sensitive habitat and communities in the vicinity of the structure and proposed artificial reef site. Additionally, structures deployed as artificial reefs must not threaten nearby structures or prevent access to oil and gas, marine mineral, or renewable energy resources. Additional information is detailed in Chapters 3.1.6.2 and 3.3.2.1.2 of the 2017-2022 Multisale EIS (DOI, BOEM, 2017).

4. CONSULTATION AND COORDINATION

Consultation and interagency coordination efforts were undertaken during and subsequent to the preparation of the PEA. The NMFS concluded that this category of decommissioning activities will not likely jeopardize the continued existence of any threatened or endangered species under their purview. Additionally, they concluded that this type of "standard" decommissioning activity may result in injury or mortality of loggerhead, Kemp's ridley, green, hawksbill, and leatherback turtles. Therefore, they established a cumulative level of incidental take and discussed various measures necessary to monitor and minimize this impact. As a result of these efforts, a Biological Opinion (BO) and Incidental Take Statement (ITS) were issued in August of 2006. In accordance with the provisions of Section 7 of the Endangered Species Act (ESA), as amended, the proposed activity operations are covered by the BO and ITS, which address the explosive-severance categories and site-clearance trawling activities analyzed in the PEA (USDOC, NMFS, 2006).

A similar incidental-take rulemaking effort was conducted with NMFS under Subpart I of the Marine Mammal Protection Act (MMPA) to cover protected marine mammals that could be affected by decommissioning operations. The Final Rule was published on June 19, 2008 (FR, 2008). The decommissioning conditions of approval prescribed under the promulgated regulations are nearly identical to those proposed/analyzed in the 2005 PEA and are included as terms and conditions of the 2006 ESA BO and ITS. Similarly, the conditions of approval recommended and analyzed in this SEA were developed from the programmatic NEPA, ESA, and MMPA guidance.

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6. PREPARERS

NEPA Coordinator

Bruce Cervini	Physical Scientist

Contributors

Scott Sorset	Marine Archaeologist—Archaeological Issues
Holli Ensz	Physical Scientist—Air Quality Issues
Tre Glenn	Biologist—Marine Mammal and Sea Turtle Issues
Mark Belter	Biologist—Benthic Resources
Arie Kaller	Biologist—Essential Fish Habitat and Fish Resources
Erin O'Reilly	Physical Scientist—Water Quality Issues
Doug Peter	Biologist—Artificial Reef Issues

Reviewer(s)

Casey Rowe	Acting Unit Supervisor, Senior Environmental Scientist

7. APPENDIX

Appendix A - Conditions of Approval Requirements

APPENDIX A

CONDITIONS OF APPROVAL REQUIREMENTS

Mitigation Requirements

VESSEL-STRIKE AVOIDANCE/REPORTING: Follow the guidance provided under Notice to Lessees and Operators (NTL) No. 2016-G01 (Vessel Strike Avoidance and Injured/Dead Protected Species Reporting). The NTL's guidance can be accessed on BOEM's internet website at http://www.boem.gov/BOEM-NTL-No-2016-G01/.

NON-RECURRING MITIGATION (TOPOGRAPHIC FEATURES – POST ACTIVITY SUBMITTAL): Bottom-disturbing activities associated with the structure removal activities proposed in your application must avoid the "No Activity Zone" of the East Flower Garden Bank by a distance of at least 500-ft and must be placed outside the Sanctuary boundary. Include in your Post-removal Report as-built plat(s) at a scale of 1-in. = 1,000-ft. with DGPS accuracy, depicting the "as-placed" location of all anchors, anchor chains, and wire ropes on the seafloor deployed during the structure removal activities to show that the "No Activity Zone" was not physically impacted. Additionally, bottom disturbing activities must be distanced at least 100 ft. from any hardbottom habitat or potentially sensitive biological features.

Site clearance shall be conducted within a radius of 1,320' using a high resolution side scan sonar survey and all identified debris shall be removed; the contractor shall not conduct trawl site clearance activities.

POST-REEFING SURVEY REQUIREMENTS: Our review indicates that the structure proposed for decommissioning will be abandoned-in-place as an artificial reef under the Rigs-to-Reefs Program. In order to verify compliance with OCSLA reefing (30CFR§250.1727(g)) and obstruction clearance requirements (30CFR§250.1740), you are required to conduct a high-resolution sonar survey (500 kHz or greater) of the permitted reefal material. Design the line spacing for side-scan and the display range to ensure 100 percent of the material permitted under this action is covered and it is demonstrated that the associated seabed (i.e. at a minimum the appropriate grid area listed in 30CFR§250.1741(a)) is clear of all obstructions apart from the reefal material.

For a Side-Scan Sonar Survey, the side-scan system will need to be run with 30-meter line spacing to provide enough overlap in coverage.

You are required to submit the Sonar Survey Report to this office at the same time you submit the required site clearance information required per 30CFR§250.1743(b).