Deepwater Port License Application
Blue Marlin Offshore Port (BMOP) Project

Volume IIa – Offshore Project Components Environmental Evaluation (Public)
Topic Report 10: Coastal Zone, Recreation, and Aesthetics

Submitted to:

Maritime Administration
Office of Deepwater Ports and Offshore Activities
1200 New Jersey Avenue SE, W21-309
Washington, DC 20590

United States Coast Guard
Commandant (CG-OES-2)
Stop 7509
2703 Martin Luther King Jr. Ave. SE
Washington, DC 20593-7509

Submitted by:

Blue Marlin Offshore Port LLC
8111 Westchester Drive
Suite 600
Dallas, Texas 75225

September 2020

This page left blank intentionally.

Deepwater Port License Application
Blue Marlin Offshore Port (BMOP) Project

Volume I:	General (Public), including Deepwater Port License Application and Appendices (*under separate cover*)
Volume IIa:	**Offshore Project Components Environmental Evaluation (Public)** **(*herein*)**
Volume IIb:	Onshore Project Components, Environmental Evaluation (Public) (*under separate cover*)
Volume III:	Technical Information [***Confidential***] (*under separate cover*)
Volume IV:	Company and Financial Information [***Confidential***] (*under separate cover*)

This page left blank intentionally.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

DEEPWATER PORT LICENSE APPLICATION APPENDICES

LIST OF APPENDICES	
Topic Report	**Volume I General (Public)**
A	Figures
B	Project Schedule
C	Permit Applications
C-1	U.S. Army Corps of Engineers Section 10/404 Permit Application/Coastal Zone Consistency Form / Louisiana Coastal Use Permit (CUP) Application; Section 408 Application
C-2	U.S. Environmental Protection Agency National Pollutant Discharge Elimination System (NPDES) Permit Applicability Evaluation
C-3	LDEQ General Permit No. LAG670000
C-4	U.S. Environmental Protection Agency Region 6 Prevention of Significant Deterioration (PSD) Air Permit Application (Public)
C-5	Title V Application
C-6	112g Application (Public)
Appendix	**Volume IIa Offshore Project Components Environmental Evaluation (Public)**
A	Offshore Project Mapping
B	Agency and Stakeholder Correspondence
B-1	Agency Correspondence
B-2	Meeting Minutes
C	Cumulative Impacts Analysis – Offshore and Onshore
D	Essential Fish Habitat Assessment
E	Marine Mammal Assessment
F	Oil Spill Consequence Analysis and Risk Assessment
F-1	Evaluation of Hydrocarbon Discharges from the Blue Marlin Offshore Port Project Using OILMAPLAND and SIMAP Trajectory, Fate, and Effects Modeling (Public Version)
F-2	Oil Spill Risk (Probability) Assessment for Blue Marlin Offshore Port (BMOP) Project
F-3	Blue Marlin Offshore Port Tactical Response Plan (Public Version)
G	Air Emissions Calculations
G-1	Emissions Calculations for Offshore Construction, Stationary, and Mobile Sources
G-2	National Environmental Policy Act Air Dispersion Modeling Report
Appendix	**Volume IIb Onshore Project Components Environmental Evaluation (Public)**
A	Onshore Project Mapping
A-1	USGS Topographic Quadrangle Maps
A-2	Aerial Alignment Sheets
A-3	National Wetland Inventory (NWI) Maps
A-4	Natural Resource Conservation (NRCS) Soils Maps
A-5	Land Use Maps
B	Typical and Site-Specific Detail Drawings
B1	Typical Drawings

LIST OF APPENDICES	
B1-1	Typical Upland Crossing ROW Configuration
B1-2	Typical Upland Workspace Construction Area - Parallel Transmission Line & Foreign Pipeline
B1-3	Typical Upland Workspace Construction Area - Parallel Transmission Line & Foreign Pipeline
B1-4	Typical Agricultural Crossing ROW Configuration
B1-5	Typical Push/Pull Wetland Crossing ROW Configuration
B1-6	Typical Saturated Wetland Crossing ROW Configuration
B1-7	Typical Unsaturated Wetland Crossing ROW Configuration
B1-8	Typical Lake Construction ROW Configuration
B1-9	Typical Waterbody Wet Open Cut Construction Configuration
B1-10	Typical Construction Bored Road Crossing
B1-11	Typical Construction Shore to Shore HDD
B1-12	Typical Shore to Water HDD Construction
B1-13	Typical Construction Water to Shore HDD
B1-14	Typical Water to Water HDD Construction
B1-15	Typical 42-inch Pipeline Dredged HDD Hole Overbend Tie-In Method
B1-16	Typical Lake Barge Dredging
B1-17	Typical Lake Barge Pipe Lay
B1-18	Typical Construction Straw Bale Dewatering Structure
B1-19	Typical Construction Filter Bag
B1-20	Typical Onshore Pipeline Launcher
B1-21	Typical Mainline Valve
B1-22	Typical Mainline Valve on Platform
B2	Site-Specific Drawings of Onshore Facility Components
B2-1	Site-Specific Drawing – BMOP Pump Station
B2-2	Site-Specific Drawing – Station 501
B2-3	Site-Specific Drawing – Stingray Tap Removal Site
B2-4	Site-Specific Drawing - Station 701
B3	Site-Specific HDD Drawings
C	Onshore Project Construction and Mitigation Plans
C-1	Onshore Construction Best Management Practice (BMP) Plan
C-2	Revegetation Plan
C-3	Spill Prevention and Response (SPAR) Plan
C-4	Unanticipated Discovery Plan
C-5	Horizontal Directional Drill (HDD) Contingency Plan
D	Natural Resource Field Survey Reports
D-1	Wetland and Waterbody Delineation Report
D-2	Listed Species Report (Public Version)

LIST OF APPENDICES	
D-3	Benthic (Oyster) Survey Report [Final Report to be submitted at a later date] TPWD and LDWF correspondence included.
E	Onshore Air Quality Calculations
F	Noise Assessment for HDD Operations
Appendix	**Volume III Confidential Information**
A	Landowner List
B	Oil Spill Consequence Analysis
B-1	Evaluation of Hydrocarbon Discharges from the Blue Marlin Offshore Port Project Using OILMAPLAND and SIMAP Trajectory, Fate, and Effects Modeling (Full Version)
B-2	Blue Marlin Offshore Port Tactical Response Plan (Full Version)
C	Geotechnical Investigation
D	Geophysical and Hazard Survey
E	Archeological Investigations (Onshore and Offshore)
E-1	Onshore Texas Archeological Investigations
E-2	Onshore Louisiana Archeological Investigations
E-3	Offshore Archeological Investigations
E-4	Sabine Lake Archeological Investigations
F	DWP Design Basis
G	Port Operations Manual
H	MetOcean Criteria Report
I	DWP Components and Layout
J	Pipeline Conversion Study with Stingray Mainline Integrity Assessment
K	BSEE ROW and Conversion Application Material
L	Listed Species Report (Full Version)
M	Air Permit Applications
M-1	U.S. Environmental Protection Agency Region 6 Prevention of Significant Deterioration (PSD) Air Permit Application (Full Version)
M-2	112g Application (Full Version)
Appendix	**Volume IV Confidential Company and Financial Information**
A	Applicant, Affiliate, and Consultant Information
B	Affidavit of Citizenship
C	Certificate of Formation
D	Limited Liability Company Operating Agreement
E	Financial Plan, Annualized Projections and Operating Costs, Throughput
F	Affiliate Financial Reports
G	Cost Estimates
G-1	Construction Cost Estimate
G-2	Decommissioning Cost Estimate
G-3	Operations Cost Estimate
H	Proposals and Agreements

ABBREVIATIONS AND ACRONYMS

AIS	Automatic Information System
Applicant	Blue Marlin Offshore Port LLC
ASA	American Sportfishing Association
BMOP	Blue Marlin Offshore Port
bph	barrels per hour
BSEE	Bureau of Safety and Environmental Enforcement
BTS	Bureau of Transportation Statistics
CALM	Catenary Anchor Leg Mooring
CFR	Code of Federal Regulations
CPRA	Coastal Protection and Restoration Authority
CUP	Conditional Use Permit
CWA	Clean Water Act
CZMA	Coastal Zone Management Act
DWP	Deepwater Port
DWPA	Deepwater Port Act
EC	East Cameron
FAA	Federal Aviation Administration
FERC	Federal Energy Regulatory Commission
GOM	Gulf of Mexico
LCRP	Louisiana Coastal Resources Program
LDNR	Louisiana Department of Natural Resources
LDWF	Louisiana Department of Wildlife and Fisheries
LQ	living quarters
MARAD	United States Maritime Administration
MLV	mainline valve
MP	milepost
MRIP	Marine Recreational Information Program
NMFS	National Marine Fisheries Service
NOAA	National Oceanic and Atmospheric Administration
NT	Nederland Terminal
OCS	Outer Continental Shelf
OD	outer diameter
PLEMs	Pipeline End Manifolds
Project	Blue Marlin Offshore Port Project
RHA	Rivers and Harbors Act
ROW	right-of-way
Texas RRC	Texas Railroad Commission
U.S.	United States
USACE	United States Army Corps of Engineers
USCG	United States Coast Guard
USDOT	United States Department of Transportation

USFWS	United States Fish and Wildlife Service
VBT	Vent Boom Tripod
VLCCs	very large crude carriers
WC	West Cameron

PROJECT FAST FACTS

General Project Terminology	
Applicant	Blue Marlin Offshore Port LLC
Project Name	Blue Marlin Offshore Port (BMOP)

BMOP Location and General Information	
Nederland Terminal (NT)	The location where the oil for BMOP originates. This is the existing Sunoco Partners Marketing & Terminals L.P. facility located in Nederland, Jefferson County, Texas
New 42-inch Pipeline	37.02 miles of 42-inch pipeline from NT to Station 501
Existing Mainline from Cameron parish Louisiana to WC 509	Cameron Parish, Louisiana Louisiana State Blocks: WC 11, 20, 21 OCS Blocks: WC 21, 44, 43, 58, 79, 78, 95, 114, 113, 132, 133, 148, 169, 170, 183, 196, 205, 212, 213, 224, 230, 241, 245, 246, 255, 258, 259, 266, 269, 276, 275, 277, 282, 408, 431, 432, 433, 456, 459, 482, 483, 484, 508, 509
Deepwater Port Location (Platform – CALM Buoys)	West Cameron Block 509 (WC 509) West Cameron 508 (WC 508) East Cameron 263 (EC 263)
Deepwater Port Water Depth	156 to 162 feet water depth
Loading Capacity	80,000 barrels per hour (bph)

BMOP Deepwater Port Components	
Existing Stingray Pipeline (Mainline)	One existing 36-inch Outer Diameter (OD) pipeline, approximately 104 miles long from Station 501 in Cameron Parish, Louisiana to WC 509. This line consists of the existing 36-inch OD subsea line from WC 509 to Station 701 and the existing 36-inch OD onshore line from Station 501 to Station 701.
Deep Water Port (DWP)	The offshore loading facility site located in WC 509, WC 508, and EC 263. The facilities consist of the existing WC 509 Platform Complex; two new PLEMs and CALM Buoys in WC 508 and EC 263; two new Crude Oil Loading Pipelines from the WC 509 Platform Complex to the PLEMs and the flexible hoses attached to the CALM Buoys. The WC 509 Platform Complex will be converted from gas service to oil and gas service. The converted platforms will support oil export and natural gas transportation.
WC 509 Platform Complex (509 Complex)	The existing WC 509 Platform Complex consists of three platforms and two Vent Boom Tripods (VBT). The WC 509A Platform is the natural gas gathering platform. This will also house the 36-inch riser and pig barrel of the crude oil Mainline. The WC 509B Platform currently is the natural gas compression and control platform. It houses natural gas compressors, separators, the Control Room and Platform Complex's utilities. The WC 509B Platform will continue to house the natural gas separation facilities and the Platform Complex's utilities. It will also house the crude oil Control Room, metering facilities, and pig barrels for the two Crude Oil Loading Lines. The WC 509C Platform is the Living Quarters (LQ) platform and will continue in that role. The WC 509 VBTs are utilized to bridge the natural gas vent piping

BMOP Deepwater Port Components	
	to a point approximately 660 feet from the 509B Platform and will continue in this role for any planned and emergency natural gas blowdowns.
WC 148 Platform	The existing WC 148 Platform will be converted from natural gas transportation service to oil transportation service. All gas piping facilities on the deck will be removed and replaced with new pipe and a new Mainline Valve (MLV). This valve will be able to be remotely operated.
Catenary Anchor Leg Mooring (CALM) System	There will be two floating Calm Buoys installed approximately 4,710 feet and 6,085 feet from the WC 509B Platform. The CALM Buoys will be installed with a minimum of 5,000 feet separation. Each Buoy will be moored in place with 6 or more anchor chains connected to engineered anchors installed at locations around the Buoy. Flexible hoses will be connected from the PLEMs to the Calm Buoys. Floating flexible hoses will also be connected to the CALM Buoy and, during loading, the opposite end will be connected to the ship. CALM Buoy No. 1 will be installed in WC 508 and CALM Buoy No. 2 will be installed in EC 263.
Crude Oil Loading Pipelines	Two 36-inch diameter pipelines from the existing WC 509B Platform to the PLEMs.
Pipeline End Manifold (PLEM)	One PLEM will be installed on the seafloor at each CALM Buoy. Each PLEM will be connected to a 36-inch Crude Oil Loading Pipeline from the WC 509B Platform and a CALM Buoy floating above the PLEM. The two PLEMs will be in WC 508 and EC 263.
VLCC or other Crude Carrier	Very Large Crude Carriers (VLCCs), Suezmax, Aframax or other large capacity seafaring vessels.
Meter for Measuring Departing Crude Oil	The DWP will have two-meter stations with associated prover and lab facilities. One of the meter stations will be located at the new BMOP Pump Station adjacent to the NT and one will be located on the offshore crude export platform (WC 509B Platform).
Pre-fabrication Yards	Existing yards will be used along the northern Gulf of Mexico (GOM) coast.
Support Facility	An onshore support base will be established at an existing port facility to provide the necessary security to support the DWP operations.

BMOP Onshore Pipeline Components	
BMOP Pump Station	The onshore metering, pumping, and pig launcher station will be located in Nederland, Texas, adjacent to the existing NT.
Onshore Crude Oil Pipeline	A new, approximate 37.02-mile, 42-inch OD pipeline connecting the existing NT in Jefferson County, extending across Orange County, Texas to the existing 36-inch OD Mainline at Station 501 in Cameron Parish, Louisiana.
Station 501	The existing NGPL/Stingray interconnect facility (Station 501) will be abandoned and demolished. A new pig receiver and launcher will be installed to connect the new 42-inch OD onshore pipeline with the existing 36-inch OD onshore Stingray Mainline.
Station 701	The existing compressor Station 701 in Cameron Parish, Louisiana will be demolished. All existing natural gas equipment will be removed from the Station except for several large 10,000-barrel storage tanks. Approximately 1,000 feet of new 36-inch pipe, surge tanks, surge valves, and a new MLV will be installed. The existing 10,000-barrel tanks located at Station 701 will be converted to surge relief tanks.

BMOP Onshore Pipeline Components	
Stingray ANR Tap Removal Site	BMOP will remove the tap and install 36-inch pipe in its place.
Mainline Valves (MLV)	Six new MLVs will be installed within the permanent pipeline right-of-way (ROW) of the new build pipeline. MLVs will also be installed at the BMOP Pump Station, Station 501, and Station 701. These valves will be used for isolation and spill control purposes.
Pipeline Pig Launchers and Receivers	Pig Launchers/Receivers will be located at the BMOP Pump Station, Station 501, and the DWP. These are utilized for cleaning the pipelines and running intelligent devices to assess pipeline integrity.
Access Roads and Canals	The Project will utilize existing access roads and canals. One new temporary access road and four new permanent access roads will be required.
Pipe and Contractor Yards	BMOP will utilize existing facilities along the northern GOM coast, U.S. or international locations for manufacturing pipe and for fabricating the PLEMs, CALM Buoys, and end connectors. Pipe coating activities will be performed at existing facilities along the northern GOM coast. Selection of the marine contractor will be completed after the MARAD filing; however, the successful contractor(s) will utilize existing fabrication and logistical facilities located along the northern GOM coast.

PROJECT ENVIRONMENTAL EVALUATIOLN ASSESSMENT CRITERIA

Environmental Evaluation Assessment Criteria		
Criteria	**Values**	**Definition**
Outcome	**Direct**	***Direct effects*** are "caused by the action and occur at the same time and place" of the Project (40 CFR § 1508.8).
	Indirect	***Indirect effects*** are "caused by an action and are later in time or farther removed in distance but are still reasonably foreseeable. Indirect impacts 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" (40 CFR § 1508.8). Indirect impacts are caused by the Project, but do not occur at the same time or place as the direct impacts.
	Cumulative	***Cumulative impact*** is "the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time" (40 CFR § 1508.7).
Type	**Adverse (Negative)**	***Adverse*** would cause unfavorable or undesirable outcomes for the natural or social environment. Negative impacts result in a net loss to the resource.
	Beneficial (Positive)	***Beneficial*** impact would cause positive or desirable outcomes for the natural or social environment. Beneficial impacts result in a net benefit to the resource.
Duration	**Short-term (Temporary)**	***Short-term (or temporary)*** impacts are those that would occur only during a specific phase of the proposed Project, such as noise during construction or certain installation activities. Short-term impacts would end at the time, or shortly after, construction activities ceased. The duration of most short-term impacts would be a few hours to a few days.
	Long-term	***Long-term*** impacts would occur either continually or periodically throughout the life of the Project (e.g., operational air emissions, stormwater discharge), or would last for years after an impact-producing activity occurred (e.g., removal of wildlife habitat).
Magnitude	**Negligible**	***Negligible*** impacts are generally those that might be perceptible, but in certain cases may be undetectable.
	Minor	***Minor*** effects are those that could be perceptible but are of very low intensity and may be too small to measure.
	Moderate	***Moderate*** impacts are more perceptible, can often be quantified, and may approach the thresholds for major impacts.
	Major	***Major*** impacts, based on their context and intensity (or severity), have the potential to meet the thresholds for significance set forth in CEQ regulations (40 CFR § 1508.27). Major impacts warrant additional attention in a NEPA analysis and a review of potential mitigation measures that would fulfill the policies set forth in NEPA, which include avoiding, minimizing, or mitigating major impacts.
Likelihood	**Unlikely**	Low probability.
	Potential	Possible or probable.
	Likely	Certain.

10.0 COASTAL ZONE, RECREATION, AND AESTHETICS

10.1 PROJECT OVERVIEW

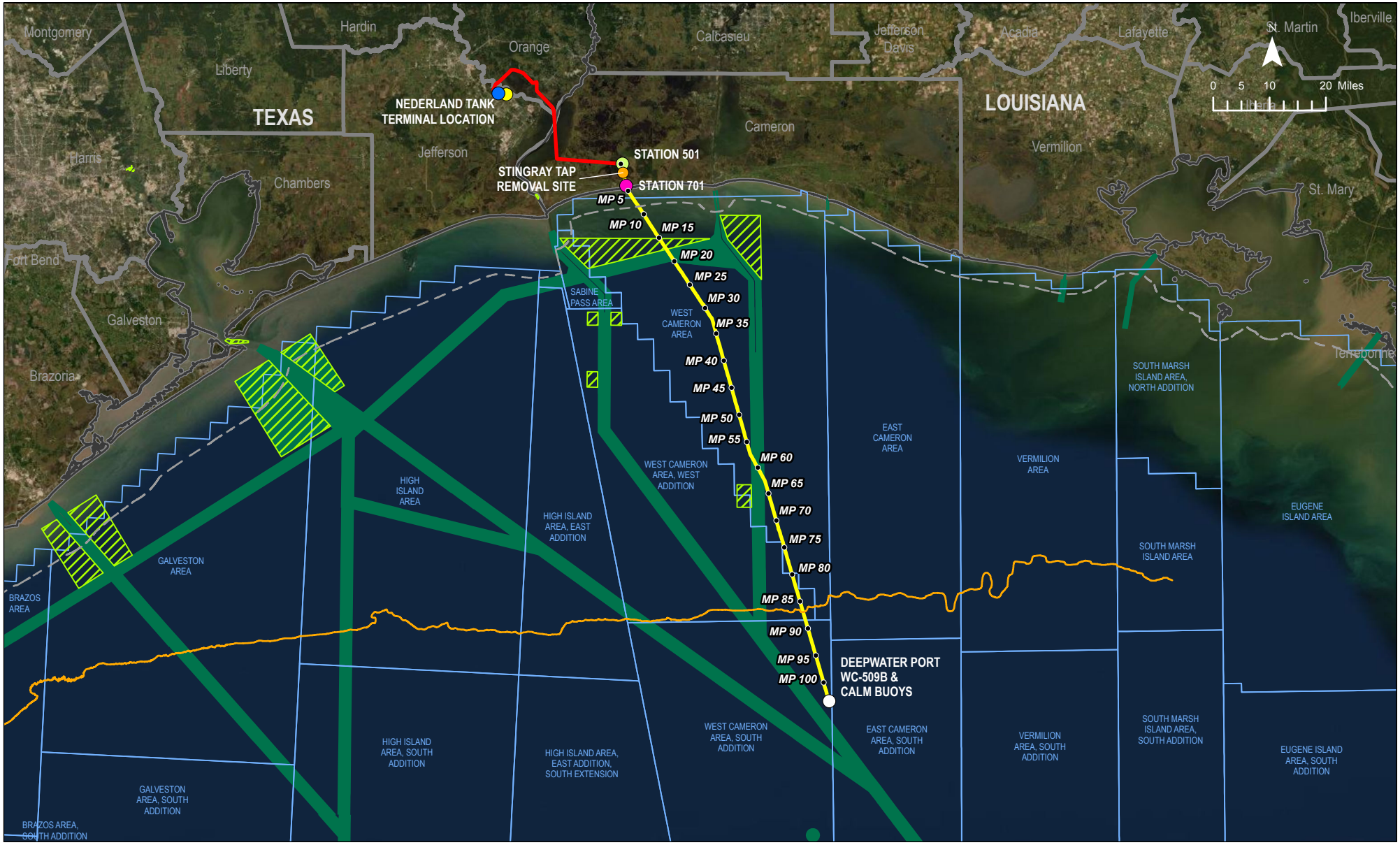
Blue Marlin Offshore Port LLC (the Applicant) is proposing to develop the Blue Marlin Offshore Port (BMOP) Project (Project) in the Gulf of Mexico (GOM) to provide crude oil transportation and loading services for crude oil produced in the continental United States (U.S.). A Project overview map is provided in **Figure 10-1**. The Deepwater Port (DWP) will be utilized to load the transported crude oil onto very large crude carriers (VLCCs) (and other crude oil carriers) for export to the global market. The Applicant is filing this application for a license to construct, own, and operate the DWP pursuant to the Deepwater Port Act (DWPA) of 1974, as amended, and in accordance with U.S. Coast Guard (USCG) and U.S. Maritime Administration (MARAD) implementing regulations.

The primary purpose of the Project will be to provide for safe and reliable long-term supply of crude oil for export to the global market. Oil for export will be transported out of the existing Sunoco Partners Marketing and Terminals, L.P. terminal and storage facility in Jefferson County, Texas (Nederland Terminal or NT). This terminal is connected to multiple crude oil pipelines connecting to production from across the U.S. In addition, an affiliate of the Applicant owns the Stingray Pipeline System and has confirmed that its subsea pipeline and offshore platforms are suitable for converting to facilitate crude oil export from a DWP in the northern GOM. The Applicant has the exclusive right to lease or purchase the Stingray Pipeline System for use in the Project.

The DWP will be located in federal waters within and adjacent to the Outer Continental Shelf (OCS) in West Cameron Lease Blocks (WC) 509 and 508 and East Cameron (EC) Block 263. Following the existing Stingray pipeline, the DWP will be approximately 99 statute miles off the coast of Cameron Parish, Louisiana, with an approximate water depth of 162 feet. Crude oil will be routed from pumps at Nederland, through a new 42-inch outer diameter (OD) onshore pipeline to the existing Stingray Mainline at Station 501, and from there through the existing Stingray Mainline to the DWP. The crude oil will be metered at the BMOP Pump Station at the NT and on the existing WC 509B Platform and routed through two Crude Oil Loading Lines to Pipeline End Manifolds (PLEMs) located on the seafloor below two Catenary Anchor Leg Mooring (CALM) Buoys located in WC 508 and in EC 263. From each PLEM, the crude oil will be routed to its respective floating CALM Buoy through submerged flexible hoses. VLCCs (or other large seafaring crude oil vessels) will moor at a CALM Buoy, retrieve and connect the floating crude oil hoses connected to the CALM Buoy and the crude oil will then route from the Buoy to the VLCC for loading. Up to 365 VLCCs (or other crude oil carriers) will load per year.

In summary, the BMOP facilities consist of the pumps and meters at NT; a new approximate 37-mile, 42-inch OD pipeline; the existing 36-inch OD Mainline; an existing fixed, manned platform complex at WC 509; an existing platform at WC 148; two new Crude Oil Loading Pipelines; and two new PLEM and CALM Buoys located in WC 508 and EC 263. A schematic of the proposed DWP is provided in **Figure 10-2**. The crude oils that would be exported range from light to heavy grade crudes from the existing the NT facility.

BMOP PROJECT - FIGURE 10-1 - PROJECT OVERVIEW MAP



LEGEND

- EXISTING OFFSHORE PIPELINE MILEPOSTS
- STINGRAY TAP REMOVAL SITE
- NEDERLAND TANK TERMINAL LOCATION
- NEDERLAND PUMP STATION
- STATION 701 (TO BE CONVERTED TO OIL SERVICE)
- STATION 501 (TO BE CONVERTED TO OIL SERVICE)
- DEEPWATER PORT WC-509B AND CALM BUOYS
- EXISTING PIPELINE TO BE CONVERTED TO OIL SERVICE
- PROPOSED ONSHORE PIPELINE (NEW BUILD)
- DEPTH CONTOUR -108'
- STATE WATERS BOUNDARY
- SAFETY ANCHORAGES
- PROTRACTION AREA
- SHIPPING FAIRWAY
- COUNTY / PARISH
- STATE BOUNDARY

BLUE MARLIN OFFSHORE PORT PROJECT

PROJECT OVERVIEW MAP

COUNTY/PARISH:	VARIOUS	DRAWN BY:	CA
STATE:	TX/LA	CHECKED BY:	CW

DATE:	2020/09/17	PROJECTION:	NAD 1983 UTM Zone 15N

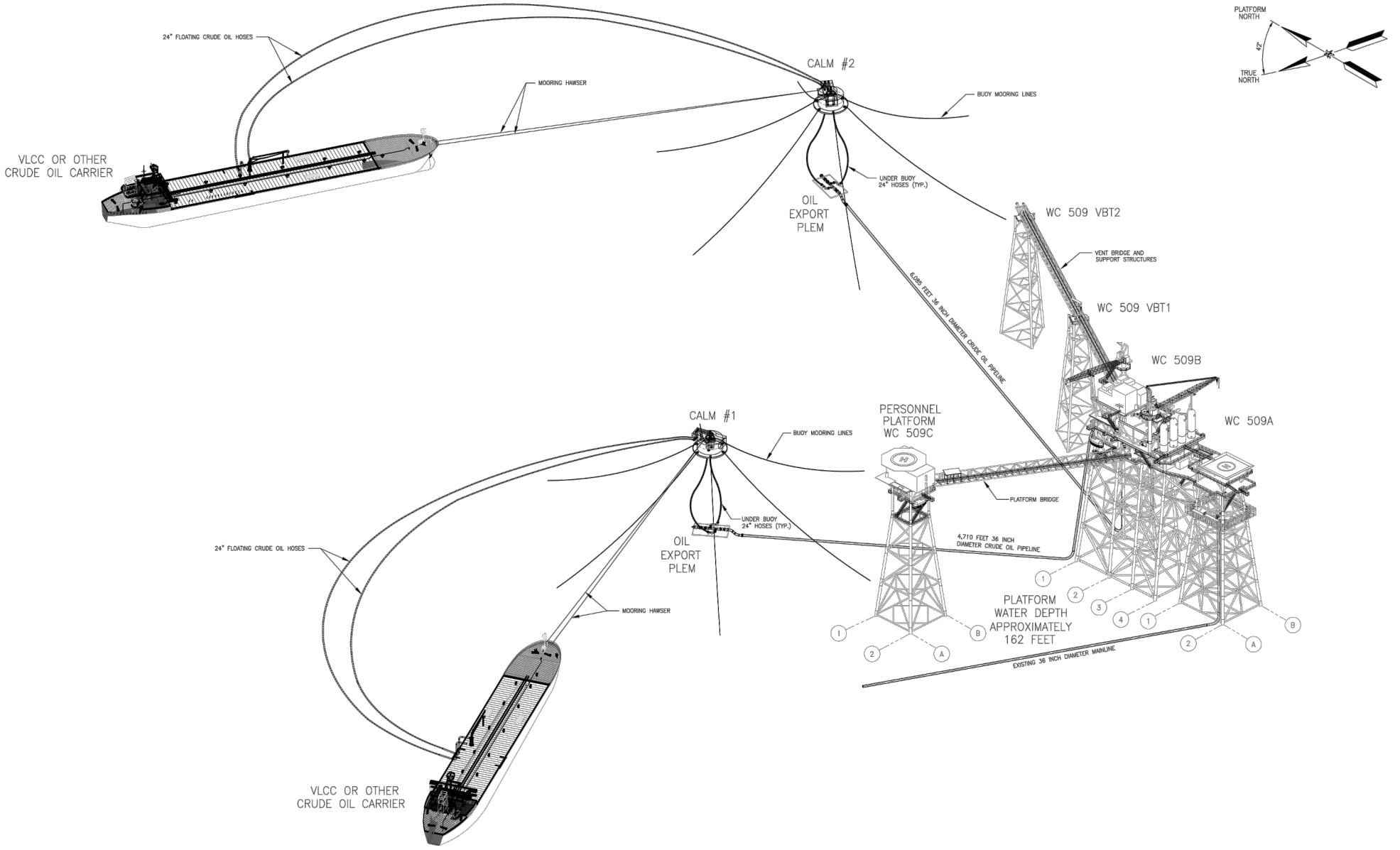
PREPARED BY

EXP Energy Services Inc.
T: +1.850.385.5441
F: +1.850.385.5523
1800 WEST LOOP SOUTH, SUITE 850
HOUSTON, TX 77027, USA

BLUE MARLIN OFFSHORE PORT PROJECT
FIGURE 10-1

DWG:	0802-01-005	SHEET:	1 OF 1

FIGURE 10-2 - BMOP DWP SCHEMATIC WITH VLCCs



10.1.1 Abandonment and Conversion of Existing Facilities

The Stingray Pipeline is currently comprised of a 36-inch pipeline (Mainline) that is fed natural gas and natural gas liquids by multiple lateral pipelines from various suppliers and producers. Stingray transports natural gas and liquids on the Mainline from the WC 509 Platform Complex to the onshore compressor station facility (Station 701) near Holly Beach in Cameron, Louisiana, and northward approximately four additional miles to the Natural Gas Pipeline Co. (NGPL)/Stingray interconnect (Station 501). The Stingray facilities from WC 509 to Station 501 will be abandoned through a FERC 7(b) Order and converted to use as DWP facilities (the filing has been made for abandonment). The Applicant intends to use all existing records and inspection data and perform additional engineering studies to obtain the appropriate agency approvals for converting all existing, reusable facilities. This includes updating the facilities to meet current regulations and guidelines, where appropriate. Abandonment under FERC 7(b) will be considered complete when the Mainline is completely isolated from all-natural gas sources and all-natural gas and produced liquids have been removed from the pipeline. This work will be completed by Stingray. Stingray will assign the existing right-of-way (ROW) Grant (and associated facilities—platforms at WC 148 and WC 509) to BMOP or another affiliate of ET for use in the BMOP Project. The Applicant intends to operate the new facilities under 49 Code of Federal Regulations (CFR) Part 195.

Conversion of the Stingray facilities involves converting service to crude oil and changing flow direction in the Mainline; converting the platform at WC 148, herein referred to as the WC 148 Platform, to crude oil service from natural gas service; and converting the platform complex at WC 509, herein referred to as the WC 509 Platform Complex, to crude oil and natural gas service.

10.1.2 Major Offshore Project Components

All facilities for the proposed BMOP Project will be designed, constructed, tested, operated, and maintained in accordance with the U.S. Department of Transportation (USDOT) regulations in 49 CFR Part 195 (Transportation of Hazardous Liquids by Pipeline) and other applicable federal and state regulations. The Project will consist of both onshore supply components and offshore/marine components. Offshore components are described below and depicted in **Figure 11-1**.

Conversion of Existing Facilities

- The existing Station 501 is located at approximate MP 37 of the new 42-inch pipeline in Cameron Parish, Louisiana. All existing natural gas-related equipment owned by BMOP will be removed from the Station and new pipeline facilities will be installed. The new 42-inch pipeline will tie into the existing 36-inch Mainline at the site. The conversion of Station 501 will be expanded to include:
    - New pig receiver for the new 42-inch pipeline termination;
    - New pig launcher for existing 36-inch Mainline; and
    - New MLV.
- The existing compressor Station 701 in Cameron Parish, Louisiana, will be demolished. All existing natural gas equipment will be removed from the Station except for two 10,000-barrel storage tanks. The new facility will maintain office space, a natural gas interconnect, and surge tanks. Approximately 1,500 feet of new pipe, surge tanks, surge valves, and a new MLV will be installed. The existing 10,000-barrel tanks located at Station 701 will be converted to surge relief tanks.
- The existing ANR Tap (Stingray Tap Removal Site) is located at approximately Stingray Mainline MP 1.61 on the Stingray Mainline in Cameron Parish, Louisiana (approximate MP 38.6 on the

BMOP pipeline system). BMOP will install a 36-inch OD pipe segment following removal of the tap.

- The existing Mainline from Station 501 to the WC 509 Platform Complex will be converted to crude oil service.
- The WC 148 Platform will be converted to crude oil service and a new mainline valve installed.
- The existing WC 509 Platform Complex will be converted from a gas transmission facility to a dual-purpose gas transmission and crude oil export facility. The existing equipment that will remain at the Platform Complex will include:
    - Existing natural gas piping and risers on WC 509A Platform;
    - Natural gas Vent Boom on WC 509 VBTs;
    - Natural gas separation facilities on WC 509B Platform;
    - and
    - Heliport and helicopter fuel tank on WC 509A Platform.

New Offshore Facilities

- Two new CALM Buoys installed, one in WC 508 (CALM Buoy No. 1) and the other in EC 263 (CALM Buoy No. 2). The CALM Buoys will be anchored to the seafloor via an engineered mooring system capable of accommodating mooring forces exerted by a VLCC or other large seafaring vessels during loading operations. Two 24-inch diameter floating hoses will be connected to each CALM Buoy. The hoses will be approximately 1,500 feet long and used for loading operations.
- Two new PLEMs installed and anchored on the seafloor under the CALM Buoys. Two 24-inch undersea flexible hoses will be connected to each PLEM and associated CALM Buoy.
- Two Crude Oil Loading Pipelines, approximately 4,710 feet long to PLEM / CALM Buoy No. 1 and 6,085 feet long to PLEM / CALM Buoy No. 2, installed from the WC 509 Platform Complex to the PLEM and CALM locations, one for each PLEM and CALM Buoy (see **Figure 11-2**). The pipelines will be installed with the top of pipe at least three feet below the natural seafloor.
- New MLV on WC 148 Platform;
- Two new 36-inch risers connected to the Crude Oil Loading Pipelines on WC 509B Platform;
- New control room on WC 509B Platform;
- Three new pig barrels, one on the WC 509A Platform and two on WC 509B Platform;
- Meter station for crude oil on the WC 509B Platform;
- New living quarters (LQ) and heliport on WC 509C Platform;
- Surge valves and tank on the WC 509B Platform; and
- New ancillary equipment for the 509 Platform Complex (e.g., power generators, instrument/utility air system, fuel tanks, ac units, freshwater makers, firewater system, seawater and freshwater system, sewage treatment unit, fuel gas system, diesel system, closed drain system, open drain system, hydraulic power unit, hypochlorite system, cranes, communications tower and system, radar) to support operation of the offshore facilities.

Offshore Support Facilities

Support facilities for the Project will include:

- Safety Zone - The Applicant is requesting that the USCG Captain of the Port establish a Safety Zone around the entire DWP operations area. The Safety Zone will only be open to entry for VLCCs or other crude oil carriers prepared for connection for loading of crude oil, and the necessary service vessels supporting that process.
- Anchorage area – Existing USCG-designated anchorage areas will be utilized for VLCCs (or other crude carriers) awaiting mooring at a CALM Buoy or if they must disconnect from the CALM Buoys for safety reasons.
- Support vessel mooring area – A designated Service Vessel Mooring Area will be established in proximity to the offshore WC 509 facilities.
- Temporary pre-fabrication yards – Component fabrication will occur at multiple existing fabrication facilities within the GOM coastal region.
- Support facilities – Facilities within the GOM coastal region providing support for offshore operations and maintenance activities (e.g., helicopters, supply vessels, work boats, equipment suppliers, and maintenance workers).

10.2 EXISTING ENVIRONMENT

10.2.1 Coastal Zone

Louisiana developed and adopted a National Oceanic and Atmospheric Administration (NOAA) approved Coastal Zone Boundary by Act 361 of the 1978 Regular Session of the Louisiana Legislature. The inland boundary of the Louisiana Coastal Zone was modified in the 2012 Regular Session of the Louisiana Legislature with the passage of House Bill 656 (Act 588) and became effective on June 7, 2012. The boundary changes are based on the recommendations of a science-based study conducted for and approved by the Coastal Protection and Restoration Authority (CPRA), in response to Senate Concurrent Resolution 60 of the 2009 Legislative Session.

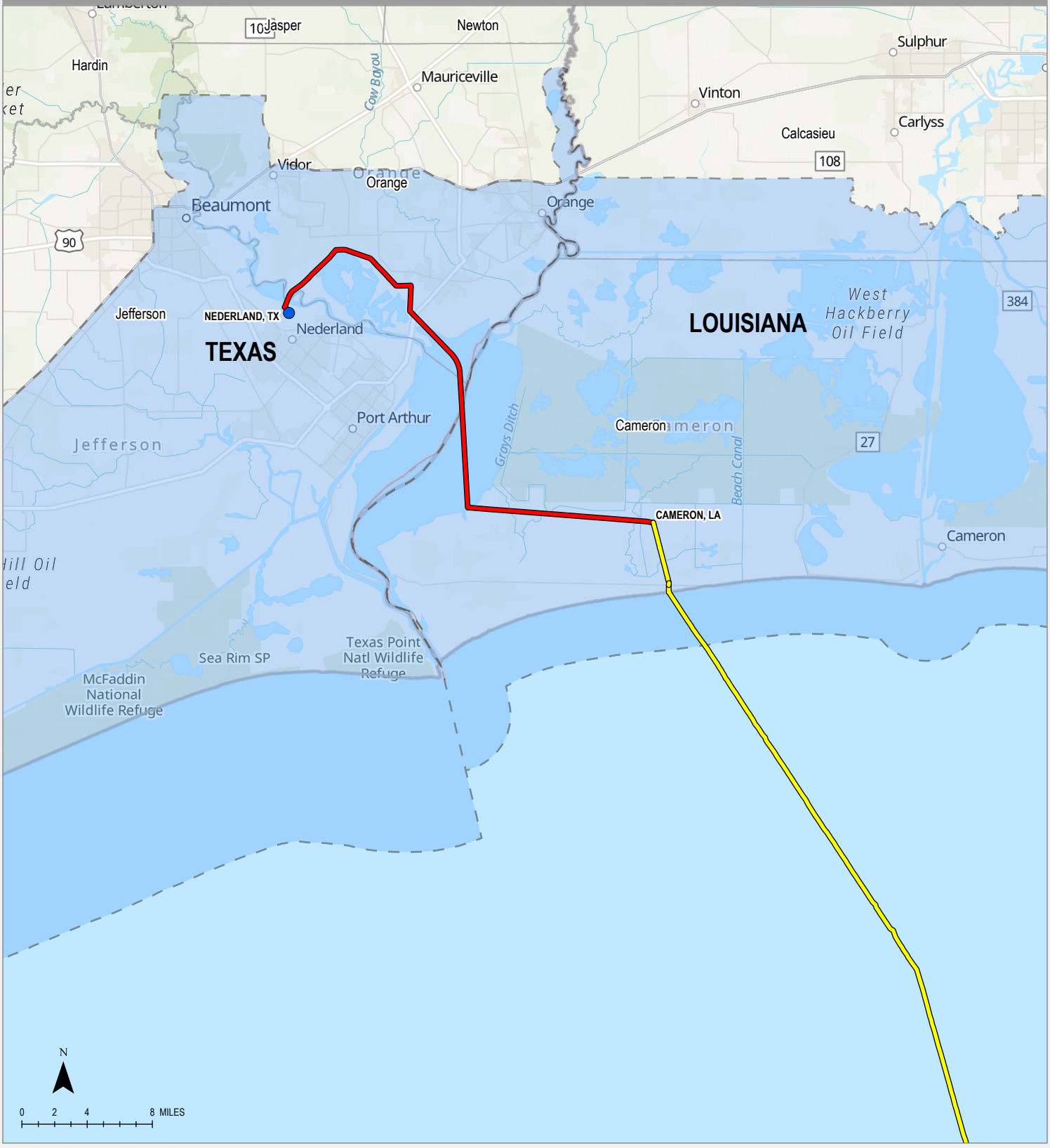
The boundary changes affect 10 of the 20 existing coastal parishes. No new parishes were added and no parishes previously in the coastal zone were removed as part of this legislative change. The Louisiana Coastal Zone now includes additional area in eight parishes (Calcasieu, Cameron, Iberia, St. Mary, St. Martin, Assumption, Terrebonne and Lafourche) and a reduction in area in two parishes (Livingston and Tangipahoa). No changes were made to the Coastal Zone boundaries in the remaining 10 parishes (Ascension, Jefferson, Orleans, Plaquemines, St. Bernard, St. Charles, St. James, St. John the Baptist, St. Tammany and Vermilion). See **Figure 10-3**.

The purpose of the Coastal Zone Management Act (CZMA) is to preserve, protect, develop, and where possible, to restore or enhance the resources of the nation's coastal zone. Section 307 of the CZMA requires federal consistency with the state's federally approved coastal management program for any federal actions within and outside the coastal zone, which could have a reasonably foreseeable effect on the program.

In Louisiana, the Louisiana Department of Natural Resources (LDNR), Office of Coastal Management, is charged with implementing the Louisiana Coastal Resources Program (LCRP) under authority of the Louisiana State and Local Coastal Resources Management Act. A Conditional Use Permit (CUP) application has been submitted to the LDNR Office of Coastal Management as part of the Joint CUP/USACE 10/404 permit application process. A copy of the joint application that was submitted to LNDR is provided in Volume I, **Appendix C-1**. LDNR will conduct their review of the application to assess Coastal Management Program Consistency.

In Texas, the Texas Railroad Commission (RRC) has oversight and review authority for oil and gas projects that occur within the Texas Coastal Zone and coordinates with the U.S. Army Corps of Engineers (USACE) during the Section 10 of the Rivers and Harbors Act (RHA) and Section 404 of the Clean Water Act (CWA) permitting process. Since BMOP is seeking USACE authorizations under Section 404 of the CWA and/or Section 10 of the RHA located within the Texas Coastal Zone, the Texas RRC will review the USACE application to assess Coastal Management Program Consistency.

BMOP TOPIC REPORT 10 - FIGURE 10-3 COASTAL ZONE BOUNDARY



VICINITY MAP

LEGEND

- NEDERLAND TANK TERMINAL LOCATION
- EXISTING PIPELINE TO BE CONVERTED TO OIL SERVICE
- PROPOSED ONSHORE PIPELINE (NEW BUILD)
- COUNTY BOUNDARY
- STATE BOUNDARY
- COASTAL ZONE BOUNDARY

DRAWING INFORMATION

DRAWN BY:	CW	**COUNTY/PARISH:**	N/A
CHECKED BY:	DH	**STATE:**	TEXAS/LOUISIANA
DATE:	9/18/2020	**SHEET:**	1 OF 1
DWG #:	0802-01-045	**SCALE:**	1:524,000

REVISIONS

PREPARED BY

EXP Energy Services Inc.
T: +1.713.439.3600
F: +1.713.963.9085
1800 WEST LOOP SOUTH, SUITE 850
HOUSTON, TX 77027, USA

BLUE MARLIN OFFSHORE PORT PROJECT
FIGURE 10-6

Coastal Zone Boundary

10.2.2 Offshore Oil and Gas Activity

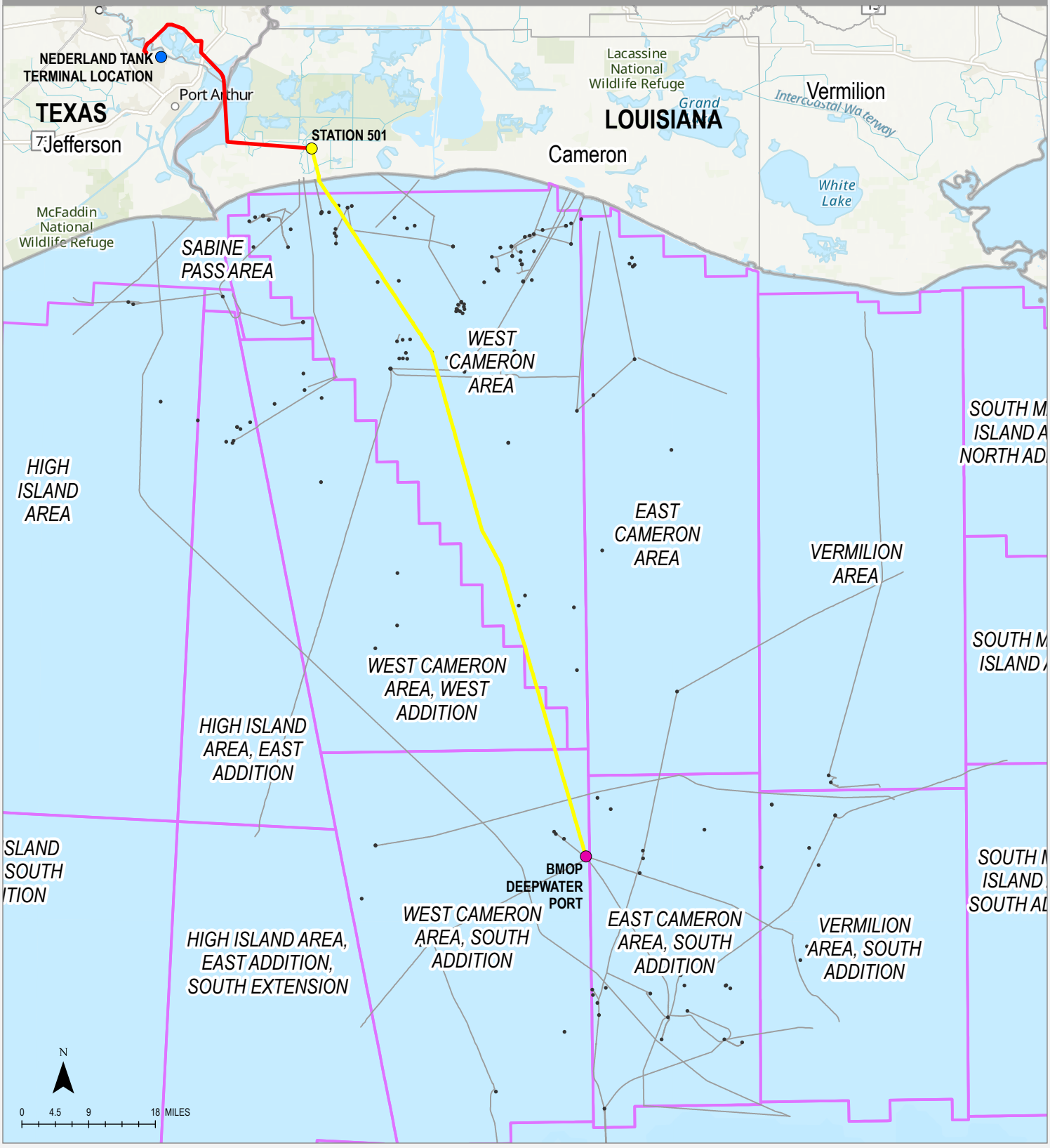
The central and western portions of the northern GOM constitute one of the world's major oil and gas producing areas and have proved a steady and reliable source of crude oil and natural gas for more than 50 years. The GOM federal offshore oil production accounts for 17 percent of the total U.S. crude oil production (U.S. Energy Information Administration, n.d.). Additionally, over 45 percent of the total U.S. petroleum refining capacity is located along the Gulf Coast (U.S. Energy Information Administration, n.d.). For planning and leasing purposes, BOEM has divided the GOM into the Western, Central, and Eastern Planning Areas. The proposed Project is in the Central Planning Area and has the largest volume of undiscovered and technically recoverable oil and gas resources within the GOM Outer Continental Shelf (OCS) (BOEM, 2016).

10.2.2.1 *Active Leases and Geographical Trends*

As of April 2020, the Central Planning Area of the GOM OCS included 2,222 active leases, compared to 327 and 18 active leases in the Western and Eastern Planning Areas, respectively (BOEM, 2018). Of the Central Planning Area's 2,222 active leases, 320 were producing.

Figure 10-4 identifies active offshore platforms within approximately 30 nautical miles of the Project Deepwater Port (DWP). Approximately 129 active platforms are located within 30 nautical miles of the DWP site. The closest offshore platform to the DWP is four miles west-northwest of the DWP. Additionally, as shown on **Figure 10-4**, a network of active offshore pipelines is located within 30 nautical miles of the Project connecting the various offshore platforms.

BMOP FIGURE 10-4 - OFFSHORE PLATFORMS AND PIPELINES WITHIN 30 NAUTICAL MILES



VICINITY MAP

LEGEND

- PLATFORM LOCATION
- CITY
- BMOP DEEPWATER PORT
- NEDERLAND TANK TERMINAL LOCATION
- STATION 501 (TO BE CONVERTED TO OIL SERVICE)
- EXISTING PIPELINE TO BE CONVERTED TO OIL SERVICE
- PROPOSED ONSHORE PIPELINE (NEW BUILD)
- OFFSHORE PIPELINE LOCATION
- BOEM OCS AREA
- COUNTY BOUNDARY
- STATE BOUNDARY

DRAWING INFORMATION

DRAWN BY:	CA	COUNTY/PARISH:	N/A
CHECKED BY:	CW	STATE:	TEXAS/LOUISIANA
DATE:	9/21/2020	SHEET:	1 OF 1
DWG #:	0802-01-038	SCALE:	1:1,152,000

REVISIONS

PREPARED BY

EXP Energy Services Inc.
T: +1.713.439.3600
F: +1.713.963.9085
1800 WEST LOOP SOUTH, SUITE 850
HOUSTON, TX 77027, USA

BLUE MARLIN OFFSHORE PORT PROJECT
FIGURE 10-4
OFFSHORE PLATFORMS AND PIPELINES WITHIN 30 NAUTICAL MILES

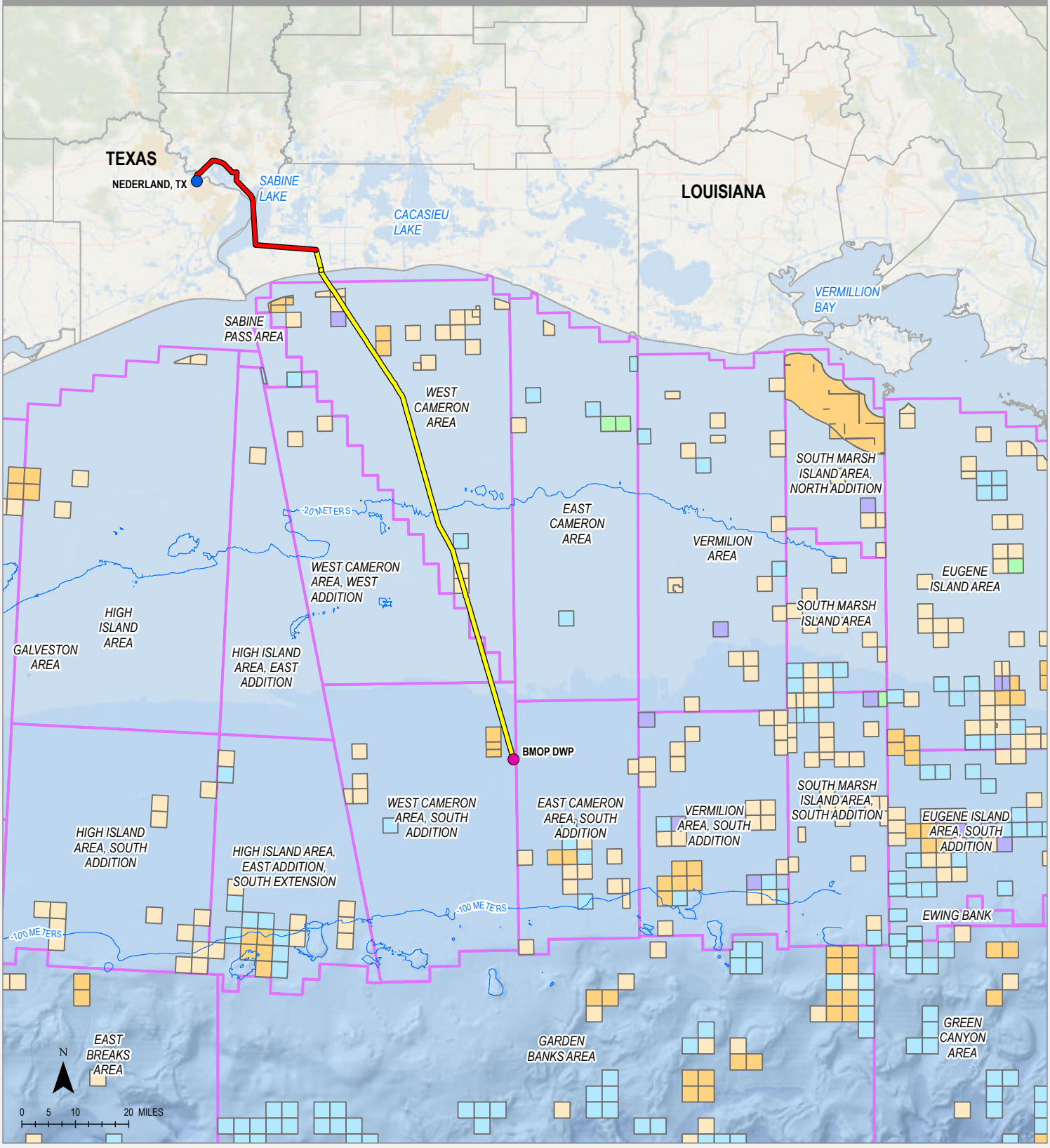
The Project traverses several lease blocks in the OCS. **Table 10-1** lists the lease blocks traversed by the existing Mainline associated with the Project. **Figure 10-5** illustrates the locations of active lease blocks within 30 nautical miles of the Project.

TABLE 10-1
Outer Continental Shelf Lease Blocks Intersected by Project Pipelines

WC 20	WC 21*
WC 44*	WC 43
WC 58	WC 79
WC 78	WC 95
WC 114	WC 113
WC 132	WC 133
WC 148	WC 169
WC 170	WC 183
WC 196	WC 205
WC 212	WC 213
WC 224	WC 230
WC 241	WC 245
WC 246	WC 255
WC 258	WC 259
WC 266*	WC 269*
WC 276	WC 275
WC 277	WC 282
WC 408	WC 431
WC 432	WC 433
WC 456	WC 459
WC 482	WC 483
WC 484	WC 508
WC 509	EC 263

Source: BOEM, 2015
* Active Lease Blocks

BMOP TOPIC REPORT 10 - FIGURE 10-5 ACTIVE OIL AND GAS LEASES CROSSED BY THE PROPOSED OFFSHORE PIPELINE



VICINITY MAP

LEGEND

- BMOP DEEPWATER PORT
- NEDERLAND TANK TERMINAL LOCATION
- EXISTING PIPELINE TO BE CONVERTED TO OIL SERVICE
- PROPOSED ONSHORE PIPELINE (NEW BUILD)
- DEPTH CONTOUR
- BOEM OCS AREA
- COUNTY BOUNDARY
- STATE BOUNDARY

OIL AND GAS LEASE STATUS

- A LEASE SEGREGATED PRIOR TO 1979; HELD BY PRODUCTION FROM OR ACTIVITY ON THE ORIGINAL LEASE
- INITIAL TERM EXTENDED BECAUSE OF ACTIVITY ON THE LEASED AREA
- A LEASE WITHIN THE INITIAL TERM OF THE CONTRACT (5, 8, OR 10 YEARS)
- A LEASE HELD BY PRODUCTION OF A MINERAL
- INITIAL TERM EXTENDED DUE TO ORDERING OR APPRO BY DIR OF SOP
- A LEASE (OR PORTION THEREOF) INCLUDED IN AN APPROVED UNIT AGREEMENT

DRAWING INFORMATION

DRAWN BY:	JRA	COUNTY/PARISH:	N/A
CHECKED BY:	CW	STATE:	TEXAS/LOUISIANA
DATE:	9/17/2020	SHEET:	1
DWG #:	0802-01-054-10-5	SCALE:	1:1,600,000

REVISIONS

PREPARED BY

EXP Energy Services Inc.
T: +1.713.439.3600
F: +1.713.963.9085
1800 WEST LOOP SOUTH, SUITE 850
HOUSTON, TX 77027, USA

BLUE MARLIN OFFSHORE PORT PROJECT
FIGURE 10-5
ACTIVE OIL AND GAS LEASES CROSSED BY THE PROPOSED OFFSHORE PIPELINE

10.2.2.2 *Decommissioning Activities Associated with Oil and Gas Activity*

U.S. federal law and international treaties require operators to remove platform and well structures within one year after lease expiration. Because offshore well structures have become widely recognized and valued as artificial reef habitat and fish attractors, various states and the federal government have implemented measures to approve variances to lease terms and regulations so that some of the underwater well structures are preserved. The practice is commonly known as "Rigs to Reefs." As of April 2018, 532 platforms had been converted to artificial reefs on the OCS in the GOM (BSEE, n.d.).

The Louisiana Artificial Reef Program was established in 1986 to take advantage of the important habitat offshore oil and gas platforms, slated to be removed from the GOM. When these platforms were decommissioned and removed, this habitat was being lost. Through the Louisiana Artificial Reef Program, oil and gas companies donate decommissioned platforms to the Louisiana Department of Wildlife and Fisheries (LDWF). Companies can also donate half of the savings they realize by reefing rather than bringing the platform to shore to the Artificial Reef Trust Fund. These funds go toward managing, enhancing, and monitoring Louisiana's inshore, nearshore, offshore, and deepwater artificial reef sites.

There are currently 33 inshore reefs dispersed among Louisiana's coastal basins, including several in Lake Pontchartrain and at Independence Island, a few miles north of Grand Isle; six nearshore artificial reef areas; 77 deepwater and offshore reefs comprised of more than 400 structures and the program has reefed 40 armored personnel carriers, 8 rig legs, 1 jack-up barge, and 1 tugboat in offshore areas (LDWF, n.d.). The nearest artificial reef is in deepwater and is approximately 17 miles from the Mainline. Other artificial reefs are more than 20 miles from the DWP.

10.2.2.3 *Offshore Pipelines*

The GOM contains an extensive network of subsea pipelines that are typically used to transport produced oil or natural gas to onshore facilities. Active offshore pipelines are more concentrated in areas of higher oil and gas activity. Generally, offshore platforms connect to gathering lines that feed into larger pipelines, called trunklines.

Numerous offshore pipelines are present in the GOM and within 30 nautical miles of the Project. **Table 10-2** lists existing pipelines that are crossed by the existing Mainline. There are no new crossings of offshore pipelines proposed by the new pipelines or facilities.

TABLE 10-2
Offshore Pipelines Intersected by the Existing Mainline

Intersecting Pipeline	Status	Diameter (inches)	Owner
Gas	Active	36	NATURAL GAS PIPELINE COMPANY O
Gas	Active	12	FIELDWOOD ENERGY OFFSHORE LLC
Gas	Abandoned	12	ENTERPRISE FIELD SERVICES LLC
Gas	Abandoned	14	EL PASO PRODUCTION COMPANY
Gas	Abandoned	30	PSI MIDSTREAM PARTNERS L P
Gas	Abandoned	16	NORTHERN NATURAL GAS COMPANY
Gas	Abandoned	12	NORTHERN NATURAL GAS COMPANY
Gas	Active	36	STINGRAY PIPELINE COMPANY LLC

TABLE 10-2 Offshore Pipelines Intersected by the Existing Mainline			
Gas	Abandoned	4	DEVON SFS OPERATING INC
Gas	Abandoned	10	El Paso Production Company
Gas	Abandoned	10	Century Exploration New Orleans
Gas	Proposed Removal	12	Enven Energy Ventures LLC
Gas	Abandoned	8	Union Oil Company of California
Gas	Proposed Abandonment	16	Texas Eastern Transmission LP
Bulk Gas	Abandoned	6	Union Oil Company of California
Gas	Abandoned	4	Louis Dreyfus Natural Gas Corp
Gas	Out of Service	12	Targa Midstream Services Limit
Oil	Active	12	M21K LLC
Gas	Abandoned	4	El Paso Production GOM Inc
Gas	Active	20	Kinetica Partners, LLC
Gas	Abandoned	6	Gryphon Exploration Company
Bulk Gas	Abandoned	4	Energy Resource Technology GOM
Gas	Abandoned	6	Hall Houston Exploration III
Gas	Abandoned	10	Energy Resource Technology GOM
Gas	Abandoned	6	Energy Resource Technology GOM
Gas	Abandoned	8	McMoRan Oil & Gas LLC
Gas	Abandoned	-	Mariner Energy Inc.
Gas	Active	8	Northstar Offshore Group LLC
Gas	Active	12	Triton Gathering LLC
Bulk Gas	Removed	-	Fieldwood Energy Offshore LLC
Gas	Abandoned	6	Dynamic Offshore Resources NS
Gas	Abandoned	6	Petroquest Energy LLC
Bulk Gas	Active	6	Northstar Offshore Group LLC
Gas	Abandoned	6	Tarpon Operating & Development
Gas	Abandoned	6	Tarpon Operating & Development
Gas	Proposed Abandonment	20	Texas Eastern Transmission LP
Gas	Abandoned	6	Shell Offshore Inc.
Service	Abandoned	2	Energy Resource Technology GOM
Gas	Active	30	Tc Offshore LLC
Service	Abandoned	2	Chevron USA Inc.
Gas	Abandoned	12	Transcontinental Gas Pipe Line
Bulk Gas	Abandoned	4	Conoco Inc.
Gas	Abandoned	8	Seneca Resources Corporation
Bulk Gas	Abandoned	4	Noble Energy Inc.
Gas	Abandoned	8	Forest Oil Corporation

TABLE 10-2 Offshore Pipelines Intersected by the Existing Mainline			
Gas	Abandoned	10	Bp Exploration & Oil Inc.
Gas	Abandoned	12	Natural Gas Pipeline Company
Gas	Abandoned	4	Chevron USA Inc.
Gas	Abandoned	6	Energy Resource Technology Inc.
Source: BOEM, 2020			

10.2.3 Other Outer Continental Shelf Non-Energy Mineral Resources

In addition to oil and gas, non-energy minerals can be obtained from the OCS, provided the operator secures a lease through BOEM. The most common non-energy minerals obtained in the GOM OCS are sand and gravel (collectively referred to as "sediment"), BOEM has identified significant sediment resource areas in the GOM; however, only the existing Mainline is found in lease blocks with significant sediment resources, see **Figure 10-6** (BOEM, n.d.)

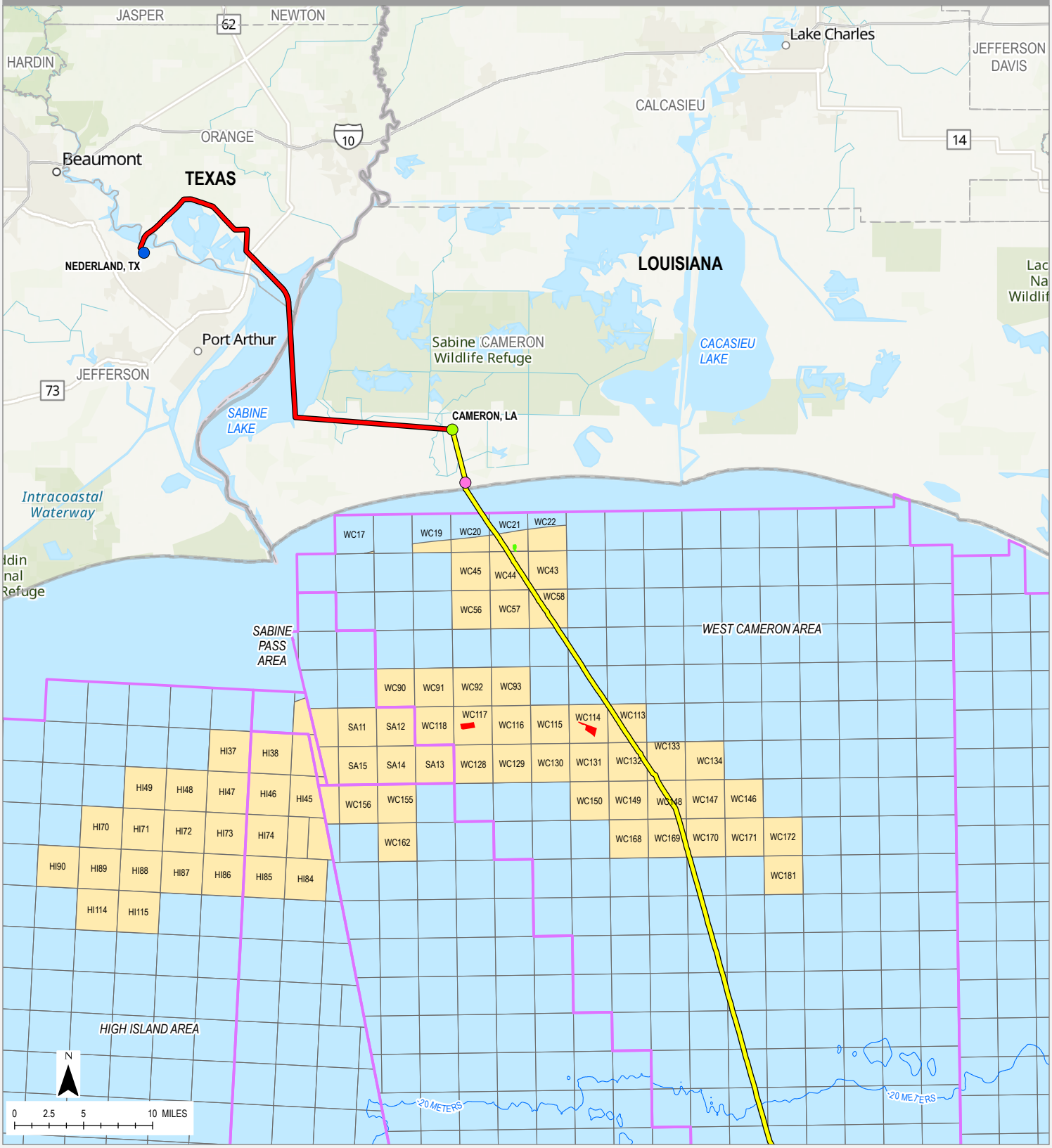
10.2.4 Marine Shipping Fairways and Commercial Ports

Cargo vessels, container ships, barges, and tankers carrying crude oil or other liquid commodities heavily transit the GOM. Seven of the top 10 commercial ports in the United States by cargo tonnage are located along the Gulf Coast (USACE, 2016). As such, the GOM has a network of designated shipping safety fairways that are the de facto marine highways of the GOM for major vessels. Defined in 33 CFR § 166.200, shipping safety fairways and anchorage areas in the GOM "are established to control the erection of structures therein to provide safe approaches through oil fields in the GOM to entrances to the major ports along the Gulf Coast." In general, permanent structures are not permitted in these shipping safety fairways, though some allowances are made for temporary anchors, attendant cables, and chains associated with floating or semisubmersible drilling rigs. In addition, some structures are permitted within shipping safety fairway anchorages, provided each new structure is located 2 or more nautical miles from an existing structure. **Figure 10-7** shows distances from the proposed DWP OCS lease blocks to the closest shipping safety fairways. The existing pipeline that will be used for the DWP crosses shipping fairways in two areas, however there is no impact since the pipeline has been built. The shipping fairway is 1.7 miles from the DWP in WC 509. See **Figure 10-7**.

Figure 10-8 illustrates vessel transit density by major vessel types during a 1-year period (2018), created using Automatic Information System (AIS) vessel position data collected by the U.S. Coast Guard (USCG) and published by BOEM and NOAA (BOEM and NOAA 2018). AIS has been broadly adopted by the maritime community, even though current regulations only require AIS carriage on large, commercial-use vessels that meet size and passenger capacity thresholds which vary according to vessel type (33 CFR Part 164).

Table 10-3 lists ports in the area that were ranked among the top 150 ports in the United States by cargo tonnage in 2018. The table also details the primary shipping fairway that vessels utilize to enter/exit the port. Additionally, as a point of reference, the table includes comparisons on total cargo between 2017 and 2018 (most recent year available).

BMOP TOPIC REPORT 10 - FIGURE 10-6 SEDIMENT RESOURCES IN THE PROJECT AREA



VICINITY MAP

LEGEND

- NEDERLAND TANK TERMINAL LOCATION
- STATION 501 (TO BE CONVERTED TO OIL SERVICE)
- STATION 701 (TO BE CONVERTED TO OIL SERVICE)
- PIPELINE PORTION CONVERTED TO OIL SERVICE
- PROPOSED ONSHORE PIPELINE (NEW BUILD)
- DEPTH CONTOUR
- BOEM OCS AREA
- **SEDIMENT LEASE AREAS**
- BORROW AREA HF, BORROW AREA JF
- PEVETO CHANNEL
- SIGNIFICANT SEDIMENT RESOURCE AREAS
- OFFSHORE BLOCK BOUNDARY
- COUNTY BOUNDARY
- STATE BOUNDARY

U.S. Department of Interior, Bureau of Ocean Energy Management, Marine Minerals Program

DRAWING INFORMATION

DRAWN BY:	CA	**COUNTY/PARISH:**	N/A
CHECKED BY:	CW	**STATE:**	TEXAS/LOUISIANA
DATE:	2020/09/18	**SHEET:**	1
DWG #:	0802-01-041	**SCALE:**	1:620,000

REVISIONS

PREPARED BY

EXP Energy Services Inc.
T: +1.713.439.3600
F: +1.713.963.9085
1800 WEST LOOP SOUTH, SUITE 850
HOUSTON, TX 77027, USA

BLUE MARLIN OFFSHORE PORT PROJECT
FIGURE 10-6

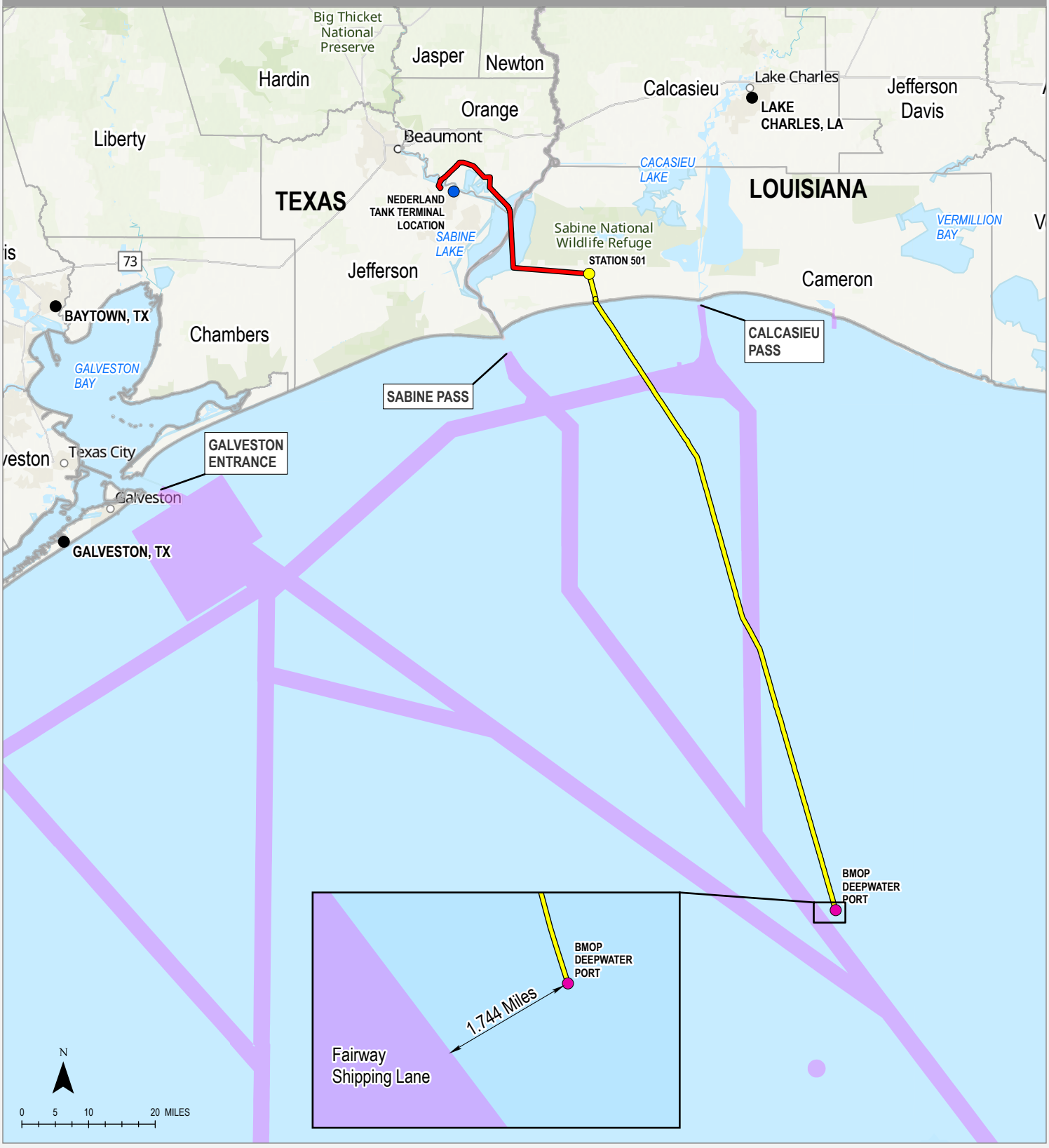
SEDIMENT RESOURCES IN THE PROJECT AREA

TABLE 10-3
Regional Ports Ranked among the Top 50 U.S. Ports by Cargo Tonnage

Rank	Port	Shipping Fairway	Total Tons 2018 (Millions)	Percent Change 2017-2018
1	Port of South Louisiana, LA	South Pass/ Southwest Pass	275.5	0.2%
2	Houston, TX	Galveston Entrance	268.9	3.4%
4	Beaumont, TX	Sabine Pass	100.2	12.1%
5	Corpus Christi, TX	Aransas Pass	93.5	7.0%
6	New Orleans, LA	South Pass / Mississippi River-Gulf Outlet Channel Safety Fairway	93.3	-3.1%
8	Baton Rouge, LA	South Pass / Mississippi River-Gulf Outlet Channel Safety Fairway	82.2	6.8%
12	Lake Charles, LA	Calcasieu Pass Safety Fairway	56.9	4.8%
13	Port of Plaquemines, LA	South Pass/ Southwest Pass	56.9	4.4%
17	Port Arthur, TX	Sabine Pass	39.9	1.7%
28	Freeport, TX	Freeport Harbor	25.4	3.9%

Source: BTS, 2018

BMOP TOPIC REPORT 10 - FIGURE 10-7 DISTANCE OF THE PROJECT TO THE NEAREST SHIPPING FAIRWAYS



VICINITY MAP

LEGEND

- CITY
- BMOP DEEPWATER PORT
- NEDERLAND TANK TERMINAL LOCATION
- STATION 501 (TO BE CONVERTED TO OIL SERVICE)
- EXISTING PIPELINE TO BE CONVERTED TO OIL SERVICE
- PROPOSED ONSHORE PIPELINE (NEW BUILD)
- SHIPPING FAIRWAY
- COUNTY BOUNDARY
- STATE BOUNDARY

DRAWING INFORMATION

DRAWN BY:	CA	COUNTY/PARISH:	N/A
CHECKED BY:	DH	STATE:	TEXAS/LOUISIANA
DATE:	2020/09/18	SHEET:	1 OF 1
DWG #:	0802-01-037	SCALE:	1:1,280,000

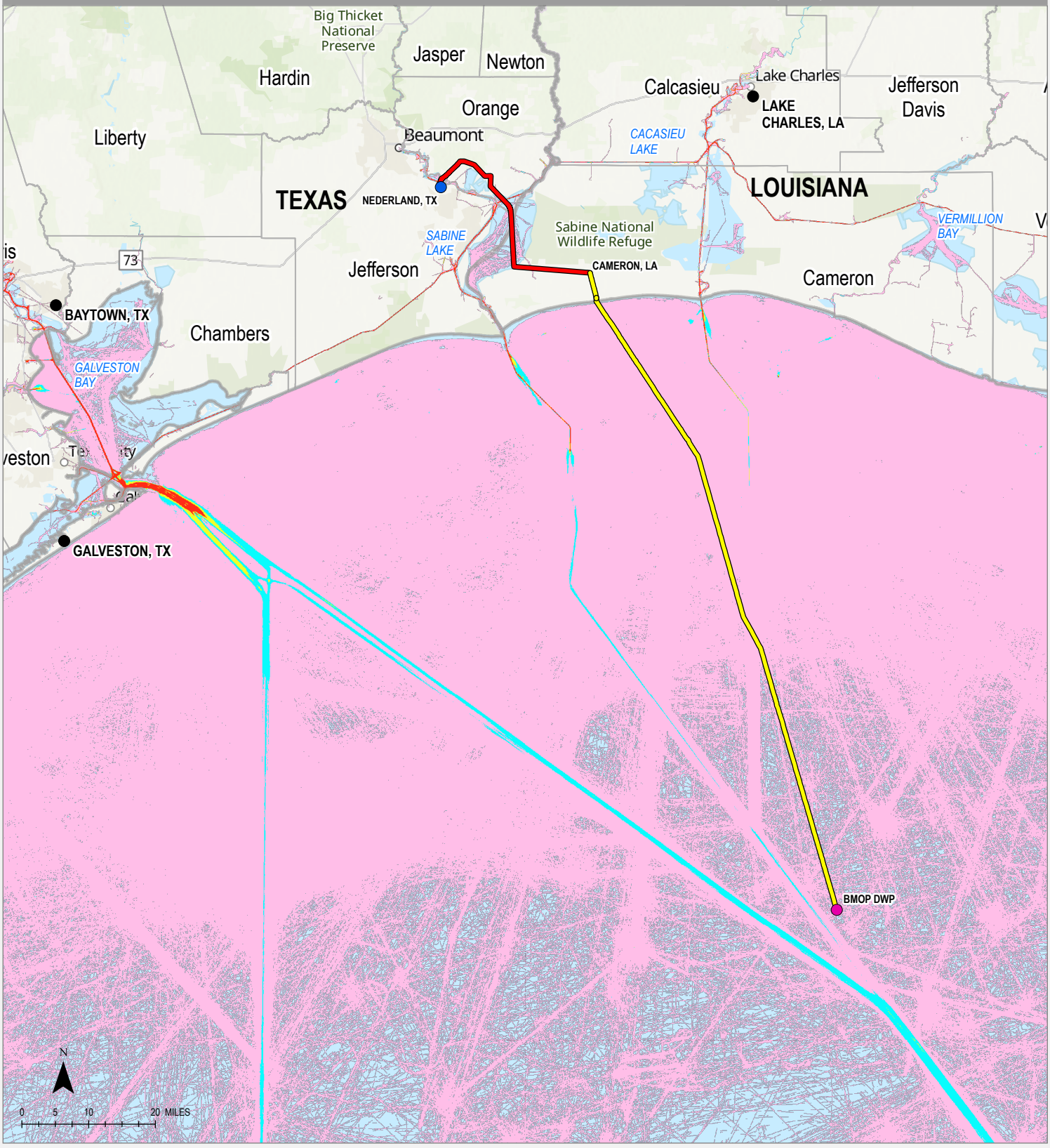
REVISIONS

PREPARED BY

EXP Energy Services Inc.
T: +1.713.439.3600
F: +1.713.963.9085
1800 WEST LOOP SOUTH, SUITE 850
HOUSTON, TX 77027, USA

BLUE MARLIN OFFSHORE PORT PROJECT
FIGURE 10-7
Distance of the Project to the Nearest Shipping Fairways

BMOP FIGURE 10-8 COMMERCIAL VESSEL TRANSIT DENSITY, ALL VESSELS, ONE YEAR (2017)



VICINITY MAP

LEGEND

- CITY
- BMOP DEEPWATER PORT
- NEDERLAND TANK TERMINAL LOCATION
- EXISTING PIPELINE TO BE CONVERTED TO OIL SERVICE
- PROPOSED ONSHORE PIPELINE (NEW BUILD)
- COUNTY BOUNDARY
- STATE BOUNDARY

TOTAL VESSEL TRANSIT COUNT

- ≤ 250
- ≤ 500
- ≤ 1000
- ≤ 1250

DRAWING INFORMATION

DRAWN BY:	CA	COUNTY/PARISH:	N/A
CHECKED BY:	DH	STATE:	TEXAS/LOUISIANA
DATE:	2020/08/05	SHEET:	1 OF 1
DWG #:	0802-01-044	SCALE:	1:1,280,000

REVISIONS

PREPARED BY

EXP Energy Services Inc.
T: +1.713.439.3600
F: +1.713.963.9085
1800 WEST LOOP SOUTH, SUITE 850
HOUSTON, TX 77027, USA

BLUE MARLIN OFFSHORE PORT PROJECT
FIGURE 10-8
Commercial Vessel Transit Density, All Vessels, One Year (2017)

10.2.5 Military Use

The U.S. Department of Defense performs various air and water training activities in the GOM, including aircraft carrier operations, rocket and missile research and testing, air-to-air gunnery, sonar buoy operations, and pilot training. **Figure 10-9** shows the locations of designated military warning areas and water testing areas in the GOM in the vicinity of the Project. According to the Federal Aviation Administration (FAA), a warning area is airspace of defined dimensions, extending from 3 nautical miles outward from the coast of the United States, that contains activity that may be hazardous to non-participating aircraft (FAA, 2011). The FAA classifies warning areas as special use airspace, though it does not have authority to restrict access. Instead, a warning area is considered the special jurisdiction of the military, and the designation is intended to warn nonparticipating pilots (i.e., non-military pilots) of potential danger (FAA, 2016). Military water testing areas are similarly defined locations that occupy water space as opposed to airspace.

BOEM, as the leasing agent for offshore blocks in the GOM, advises lessees and operators within the boundaries of military warning areas and water testing areas to contact the appropriate military representative prior to conducting any activities. In Notices to Lessees, BOEM remarks that warning areas and water testing areas are multiple use areas "where military operations and oil and gas operations have coexisted for many years" (BOEM, 2014).

The naming protocol for warning areas is "W," followed by the warning area's unique number (FAA, 2016). The Project site is located within W-147 (see **Figure 10-9**). Military activities are not solely confined to the warning and water testing areas, as vessels and aircraft must travel from shore-based facilities or other offshore areas to the designated testing area. Additionally, USCG activities include, but are not limited to, routine patrols, maintenance of aids to navigation, emergency spill response, and search and rescue missions.

10.2.6 Commercial Fishing

The GOM commercial fisheries are some of the most productive in the world. In 2018, the National Marine Fisheries Service (NMFS) GOM Region (offshore West Florida Alabama, Louisiana, Mississippi, and Texas) produced 16 percent of all U.S. commercial landings in both size (pounds) and value. Louisiana's total landings in 2018 were 1,033,126,651 pounds valued at $376,700,317, and Texas landings were 84,383,348 pounds with a value of $211,836,930 (NOAA Fisheries, 2020). These total landings include some landings in freshwater, estuarine waters, and marine waters. Texas and Louisiana landings for species representing significant portions of their commercial fisheries are provided in Topic Report 5, "Commercial and Recreational Fisheries" (Volume IIa). The Project components are present in areas of commercial fishing. Details of commercial species landings for 2018 are also provided in Topic Report 5 (Volume IIa).

10.2.7 Recreational Boating

As of 2018, Louisiana ranked thirteenth out of all of the states and territories of the United States for registered boats and third among Gulf Coast states, behind Florida and Texas with over 303,000 motorboats and sailboats registered (USCG, 2019). Compared to the rest of the states and territories of the United States, the Texas and Louisiana number of registered boats make up 4.7 and 2.6 percent of all boats registered in the U.S., respectively (USCG, 2019).

New construction for the Project in areas of recreational boating occur in the Coastal Zone in Sabine Lake and near Lower Neches WMA and the confluence of the Neches and Sabine Rivers. There are also a large selection of marinas and boat ramps for recreational boaters in the area of the Project, primarily at Sabine

Lake. Several marinas and boat ramps are also accessible in Cameron Parish, Louisiana, primarily from major rivers, Sabine and Calcasieu Lakes.

Other than fishing, private recreational boaters may also venture offshore for scuba diving. Many head to the artificial reefs for diving. Platforms that are converted as part of Rigs to Reefs must be towed to locations designated by the program in sufficient water depth. The nearest artificial reef to the DWP is located approximately 20 miles to the east of the DWP site.

In addition to private recreational boating, many cruise ships operate throughout the GOM, with cruise terminals located in Texas, Louisiana, Alabama, and Florida. The cruise terminal nearest to the Project is located at the Port of Galveston, approximately 68 nautical miles southwest of the Project area on the north side of Galveston Island. Cruises from the Port of Galveston primarily travel to the Caribbean, Mexico, and the Bahamas.

10.2.8 Recreational Fishing

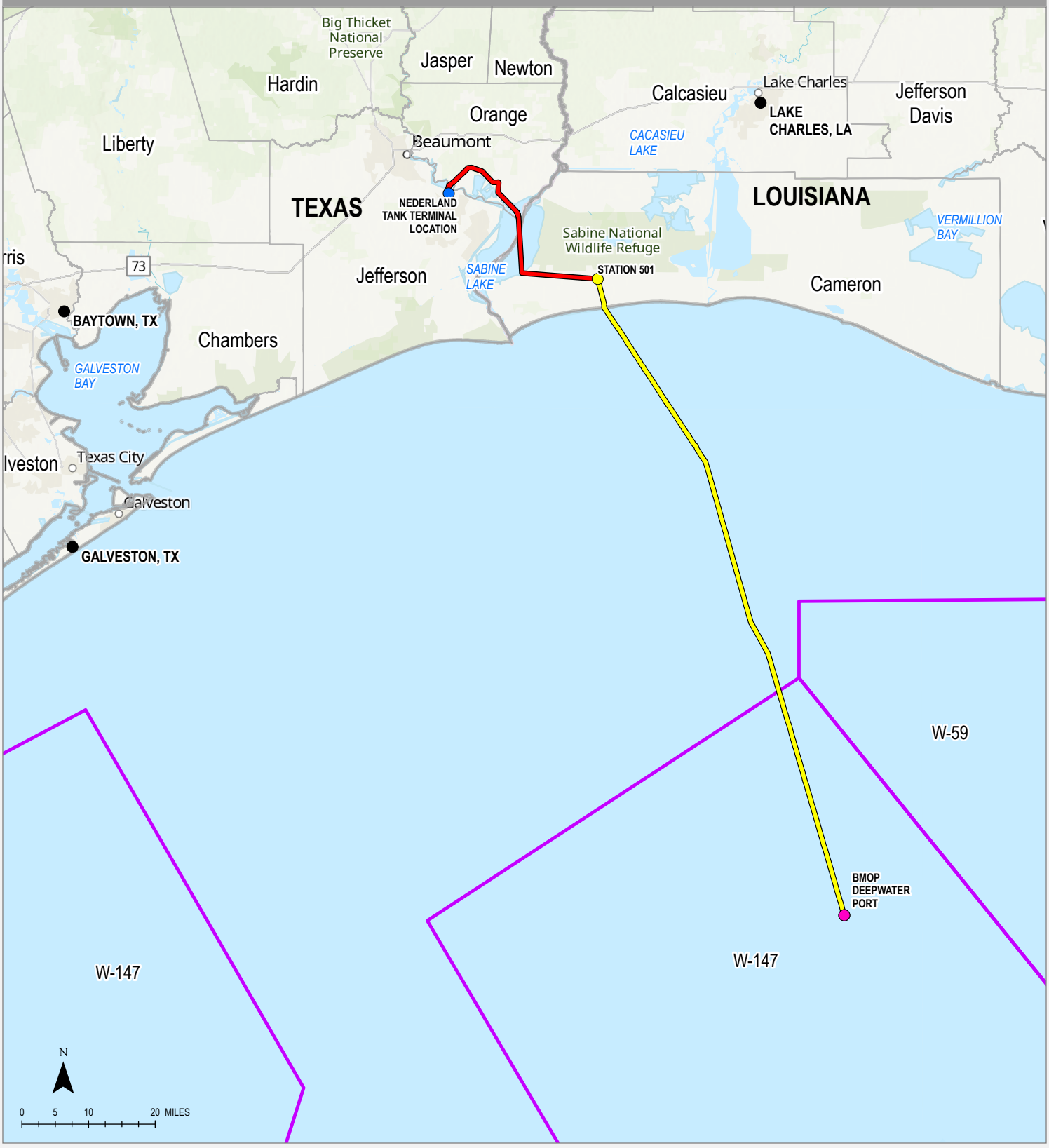
Recreational fishing is a cultural staple in GOM states. It is estimated that more than 1.2 million Louisiana anglers participate each year, with an annual revenue of $2 billion that supports the local economy (ASA, 2019). According to the most recent (2016) Fisheries Economics of the U.S. report (NMFS, 2018), there were nearly three million recreational users within the GOM who made nearly 19 million trips.

The State of Louisiana actively participated in the NOAA's Marine Recreational Information Program (MRIP); however, over time the LDWF found several issues with these surveys, namely their inability to obtain reliable landings of individual species in a timely manner and the ability to separate landings by regions of the state. On January 1, 2014, Louisiana stopped participating in the MRIP survey and began its own survey, called Louisiana Creel. Louisiana Creel is LDWF's recreational saltwater landings data collection program. Louisiana Creel uses a combination of data collected dockside and through phone and email surveys to estimate recreational saltwater fish harvests.

10.2.9 Aesthetics

The baseline visual character of the Project area is open ocean. Compared to other areas of the Gulf Coast (i.e., Texas), this area of the GOM offshore Louisiana is not as developed with offshore infrastructure. While some oil and gas platforms, drilling rigs, and aids to navigation (floating channel maker buoys) exist, they are sporadically located and dotted along the coast. Additionally, compared to other near shore areas of the Louisiana coastline, this area is relatively undeveloped in terms of oil and gas platforms. Due to the distance of the lease blocks of the Project area from the shoreline (approximately 100 miles) it is unlikely that the existing structures associated with the Project would be visible to any observers on the beaches or shorelines. In addition, the platforms that will be converted have existed at the Project site for over 40 years, and no new viewshed characteristics would be noticeable from shore.

BMOP TOPIC REPORT 10 - FIGURE 10-9 MILITARY SPECIAL USE AIRSPACE WARNING AREAS



VICINITY MAP

LEGEND

- CITY
- STATION 501 (TO BE CONVERTED TO OIL SERVICE)
- BMOP DEEPWATER PORT
- NEDERLAND TANK TERMINAL LOCATION
- EXISTING PIPELINE TO BE CONVERTED TO OIL SERVICE
- PROPOSED ONSHORE PIPELINE (NEW BUILD)
- DOD MILITARY WARNING AREAS
- COUNTY BOUNDARY
- STATE BOUNDARY

DRAWING INFORMATION

DRAWN BY:	CA	COUNTY/PARISH:	N/A
CHECKED BY:	DH	STATE:	TEXAS/LOUISIANA
DATE:	2020/09/21	SHEET:	1 OF 1
DWG #:	0802-01-036	SCALE:	1:1,280,000

REVISIONS

PREPARED BY

EXP Energy Services Inc.
T: +1.713.439.3600
F: +1.713.963.9085
1800 WEST LOOP SOUTH, SUITE 850
HOUSTON, TX 77027, USA

BLUE MARLIN OFFSHORE PORT PROJECT
FIGURE 10-9

Military Special Use Airspace Warning Areas

Recreational boats, including charter boats and private or rented boats, may pass through the area in search of offshore sportfish. Some recreational fishing vessels may fish directly in the area, while others may traverse through the area relatively quickly on their way to other offshore waters for other types of sportfishing. The most sensitive visual receptors to the Project would be recreational boaters. Offshore oil and gas activity in the GOM and off the coast of Louisiana has been occurring for decades, and the GOM is home to seven of the top 10 industrial ports in the country (USACE, 2016). Additionally, approximately 177 offshore platforms are located within 30 nautical miles of the DWP site. Therefore, it is likely that recreational boaters in the GOM are accustomed to the presence of the industrial platforms and vessels that are typical of the offshore landscape, especially the WC 509 Platform Complex, which has been in existence for over 40 years.

10.3 ENVIRONMENTAL CONSEQUENCES

This section includes a discussion of the potential impacts that could result from the construction and operation of the offshore components of the Project. The study area within which potential impacts were assessed includes the area that would be affected physically by Project activities during construction and operation. As described in Section 1.9.2 (Evaluation Criteria) of Topic Report 1, "Project Description, Purpose, and Need" (Volume IIa), the Project's potential effects on coastal zone use, recreation, and aesthetics have been evaluated based on their potential to:

Ocean and Land Use

- Alter the functional use of an area already in use;
- Conflict with the State's Coastal Zone Management Plan;
- Interfere with access to transportation routes, over the long term;
- Cause an increase in maritime traffic;
- Cause an increase in the risk of collisions or other incidents (e.g., grounding, air traffic accidents);

Recreation

- Interfere with access to coastal recreational shorelines or waterways;
- Cause the loss or displacement of an important recreational resource, such as recreational fishing sites and other water-dependent recreational activities;
- Degrade recreational value, as established in applicable public agency management plans or policies;

Visual Resources

- Alter or impair a viewshed, scenic quality, or aesthetic value not consistent with applicable laws or regulations; and/or
- Create a new source of substantial light or glare that would, over the long term, adversely affect nighttime views, especially from shoreline areas, adjacent water areas, and other locations where dark skies are an expected or protected value.

TABLE 10-4
Potential Impacts on Coastal Zone, Recreation, and Aesthetics

Activity	Details	Duration of Impact	Mitigation Measures	Anticipated Level of Impact
Construction				
Installation of the Accessory Pipelines, PLEMs, and CALM Buoys	• Interfere with access to transportation routes.	Short-term	N/A	Negligible to minor and localized
Construction Vessel Operations	• Interfere with access to coastal recreational shorelines or waterways.	Short-term	Compliance with federal regulations for vessel operations	Negligible to minor and localized
Operations				
Platform Operations; Crude Oil Carrier and Support Vessel Operations	• Interfere with access to transportation routes, over the long term. • Safety zones around the platform would impact prevent access to fishing grounds during operations.	Lifetime of Project	Compliance with MARAD and BOEM/BSEE Permit conditions	Negligible and localized
Upsets and Accidents				
Pipeline and Platform Operations; Vessel Operations	• Upsets and accidents at Project sites could cause the loss or displacement of an important recreational resource, such as recreational fishing sites and other water-dependent recreational activities.	Lifetime of Project	Continuous monitoring of pipeline operations, SCADA, early detection of abnormal operations, and remote shutdown; Adherence to Energy Transfer's Sea Robin Oil Spill Response Plan (O-726), modified to include BMOP, MARAD License conditions, and USCG requirements	Varies; see Consequence Analysis of Oil Spills

TABLE 10-4 Potential Impacts on Coastal Zone, Recreation, and Aesthetics				
Activity	**Details**	**Duration of Impact**	**Mitigation Measures**	**Anticipated Level of Impact**
Decommissioning				
Platform and Facility Removal; Facility Abandoned in Place; Support Vessel Operations	• Interfere with access to transportation routes.	Short-term	Compliance with federal regulations for vessel operations	Negligible to minor and localized

Activities associated with the construction, operation, and decommissioning of the DWP and associated pipeline that may have environmental consequences on coastal zone, recreation, and aesthetics are discussed below.

10.3.1 Offshore Oil and Gas Activity

The Project could have a negligible to minor impact on oil and gas activity in the GOM.

10.3.1.1 *Construction and Installation*

Installation of the two new Crude Oil Export Pipelines (WC 509B Platform to PLEMs), PLEMs, and CALM Buoys, and conversion of the existing Mainline would last approximately 11 months. A total of three OCS lease blocks (WC 508, WC 509, and EC 263) would be crossed by the two new offshore pipelines; these lease blocks are not currently active (see **Table 10-1** and **Figure 10-5**).

A temporary safety zone would be established around the construction area during the 11 months of activity, limiting access to Project-related vessels only. The lease blocks traversed by the pipelines would still be available for leasing for oil and gas exploration in the long term with restrictions placed over the final pipeline placements.

10.3.1.2 *Operations*

All intersected lease blocks would remain available for leasing during installation and operation of the Project, and BOEM would alert potential bidders in its lease sale notices of the presence of the Project. Active oil and gas platforms located within 30 nautical miles of the Project are shown in **Figure 10-4**.

Once constructed, the Applicant is requesting that the USCG Captain of the Port establish a Safety Zone, as defined in 33 CFR § 148.5, around the entire DWP operations area to restrict vessels or persons from specified areas around the offshore facilities. The Safety Zone will only be open to entry for VLCCs or other crude oil carriers prepared for connection for loading of crude oil, and the necessary service vessels supporting that process. The requested Safety Zone surrounding the BMOP DWP operations area is approximately 9,660 acres. Further, within the Safety Zone and in accordance with 33 CFR § 148.5, the Applicant is requesting the designation of an ATBA in the waters surrounding the WC 509B Platform (DWP Platform) and CALM Buoys. The requested ATBA has a radius of 600 meters extending out from the centroid of the Platform. CALM Buoy Nos. 1 and 2 will have a requested ATBA at a radius of 500 meters extending out from the centroid of each. Therefore, potential impacts to other oil and gas activity

in the area would be limited. No lease blocks traversed by or adjacent to the DWP safety zones are actively leased.

The large, unencumbered area available for exploration and drilling in the GOM, the lack of current activity in the immediate vicinity of the DWP, and the viable technologies that allow extraction from the seabed from locations other than the surface water above would offset any negative impacts from the Project on offshore oil and gas activities.

The Mainline pipeline of the Project crosses nine active pipelines; however, the Mainline is existing and would only be disturbed during any required maintenance. The two new pipelines from the platform to the PLEMs do not cross any active pipelines. Other active pipelines or submerged infrastructure unrelated to the Project would not be hindered by operation of the Project. Although access to surface waters inside designated safety zone would be prohibited, installation of pipelines or other submerged infrastructure would not be restricted. At this time, there are no public proposals for installing pipelines or submarine cables in the vicinity of the BMOP Project, and as indicated previously, the level of oil and gas exploration and drilling activity in the immediate vicinity is low compared with other areas of the Western Planning Area and the GOM. The potential impacts of Project operation on offshore pipelines and other submerged infrastructure would be negligible.

10.3.1.3 *Upsets and Accidents*

Unanticipated upsets or accidents, such as a vessel collision or minor hydrocarbon release, may cause temporary negligible impacts on offshore oil and gas activities. Any effects would be temporary and reversible. The potential for upsets and accidents, and all measures to maintain safety and security, are addressed in Volume IIa, Topic Report 12, "Safety and Security."

10.3.1.4 *Decommissioning*

Decommissioning would be done at the end of the operational life of the BMOP Project and would consist of the mobilization of vessels and barges, the removal of the Project components (other than pipelines), the transportation of the components for disposal or recycling, and the demobilization of the vessels and barges. A decommissioning plan would be prepared prior to any decommissioning activities taking place (see Topic Report 1 of Volume IIa for decommissioning procedures).

The presence of support vessels to decommission the Project could result in temporary, negligible effects to offshore oil and gas uses that would be similar to those described in 10.2.1.1 above. The potential impacts of decommissioning are similar to those described above for construction of the Project.

10.3.2 Other Outer Continental Shelf Non-Energy Mineral Resources

The Project could have a negligible impact on other OCS non-energy mineral resource activities. **Figure 10-5** illustrates lease blocks that have been identified as having significant sediment resources that could potentially be used for beach nourishment, shoreline restoration, or other similar actions. The existing Mainline traverses these lease blocks; however, no construction will be required for this portion of the Project. Any required re-burial to achieve the minimum 3-foot of cover would temporarily displace sediments immediately around the pipeline to allow for lowering. The remainder of the OCS block outside of the pipeline would be available for sediment extraction. Therefore, construction of the Project would have no impact on OCS non-energy mineral resources. Any maintenance required of the Mainline during operations may impact sediment collection activities immediately surrounding the pipeline; however, this would be temporary, disrupting sediment collection only during the maintenance activity.

10.3.3 Marine Shipping Fairways and Commercial Ports

The Project could have negligible impacts on marine shipping fairways and commercial ports in the immediate area.

10.3.3.1 *Construction and Installation*

Establishment of a temporary safety zone around the offshore construction activities would not cause an impact to commercial vessels transiting through the area. The main impact to vessels would be the potential to force them to re-route around the temporary safety zones when they would otherwise pass through. However, most vessels would follow the established fairways already away from the DWP location. The temporary safety zones would be issued monthly via NOAA Notice to Mariners, and weekly via USCG local notices to mariners. These would provide adequate warning for commercial vessels to avoid the temporary safety zone and choose an efficient, alternate route, if necessary. The safety zones would be temporary, though operation of the DWP would reinstate restrictions on non-Project vessel access to the site in the form of permanent safety zones.

As discussed previously, the highest concentration of vessel transits in the Project vicinity is in the shipping fairways because they are the marine highways of the Gulf and are free of obstructions like oil and gas platforms (see **Figure 10-7**). Shipping fairways that cross the existing Mainline include Sabine Pass Safety Fairway and Calcasieu Pass Safety Fairway. While many vessels traverse through the Project DWP lease blocks, they are substantially fewer than those traversing within the shipping fairway, and the existing platforms have been in existence for over 40 years. Therefore, construction of the BMOP DWP and associated temporary safety zones could have a negligible impact on overall commercial vessel transits through the area.

10.3.3.2 *Operations*

The DWP will have a Safety Zone established around it. In addition, Areas to be Avoided (ATBA) will be established around the WC 509 Platform Complex and the CALM Buoys covering approximately 166 acres. It will also be requested that the Safety Zone (9,660 acres) be designated a No Anchorage Area (NAA). The Project safety zones in place during operations could impact marine shipping by restricting access by non-Project vessels. **Figure 10-8** shows that vessels in the vicinity of the Project concentrate in the established shipping fairways, approximately 1.74 miles from the DWP. The boundaries of the safety zones would be published in nautical charts and updated on digital charts so that commercial vessels would have sufficient warning to avoid those areas and choose efficient, alternate routes, if necessary.

The Project would require vessel transits during operation that could impact marine shipping by adding to the overall marine traffic. At full operation, the Project would require regular supply vessel deliveries that would include up to twice-weekly crew boat/supply boat runs for personnel and consumables transport. If platform operations require additional transport of equipment or supplies, hires from the immediate local area would be contracted. These supply vessels would depart from local commercial ports in the area. The BMOP DWP will require, at a minimum, two support tugs during berthing, hose connection, disconnect, and departure operations of the VLCCs or other crude oil carriers. A pilot boat may also be in the vicinity to transport the pilot(s) required on board the VLCCs or other crude oil carriers during transit from the main safety fairway to the Safety Zone of the BMOP DWP during arrival and again on departure. During berthing, hose connection, disconnect, and departure operations of the VLCCs or other crude oil carriers, no additional operations will be permitted within the Safety Zone (e.g., bunkering, stores resupply, or crew changes). Additional vessel activity related to the supply and tug ships required could impact the local commercial ports by increasing commercial maritime activity.

At full operation, the DWP could experience a maximum frequency of up to 365 VLCCs or other crude oil carrier calls per year. The crude oil carrier vessels transiting to the DWP would likely use the Sabine Pass Safety Shipping Fairway, turning off the fairway to travel only a few nautical miles before reaching the DWP. The total number of unique transits in these fairways is unknown, but there are multiple parallel transit corridors as shown in **Figure 10-8** that indicate the number is over 1,000 and likely higher. The two carrier transits per day to the DWP potentially added by Project operation would not likely affect other vessel transits through the fairway. Overall, operation of the Project could have a negligible impact on marine shipping and commercial port activity, with primary impacts associated with increasing large vessel transits in the existing fairways. Additionally, the Project would eliminate the lightering trips currently used at Nederland to fill crude oil carriers moored offshore and eliminate round-trip travel of smaller lightering vessels needed to fill a crude oil carrier. The number of crude oil carriers would remain the same or slightly increase along the shipping fairways. Alternatively, operations could reduce overall vessel traffic as crude oil carriers would not have to travel to existing ports on the coast for oil loads. This potential impact would also be negligible overall, however.

10.3.4 Military Use

Because the bulk of the facilities proposed for the DWP are existing platforms, the Project would have a negligible impact on military operations in the area.

10.3.4.1 *Construction and Installation*

The DWP would be located within military special use airspace warning area W-147 (see **Figure 10-9**). The schedule for construction activities would be coordinated and communicated with area ports, the USCG, and other military branches, as directed. Military and commercial aircraft would be able to transit relatively unimpeded within the warning areas throughout the GOM. Additionally, given the accessible area of the GOM compared with the size of the temporary safety zones associated with Project construction, military aircraft are not anticipated to be significantly impacted. Therefore, construction of the Project would have negligible impacts on military uses in the area. If helicopters are used during construction, they would be unlikely to interfere with military or commercial plans transiting within W-147. Due to helicopter flight altitudes, it is not anticipated that the warning area or nearby military training routes onshore would interfere with vessel or helicopter transits from onshore to the DWP. Non-military helicopters transiting from shore-based locations to deepwater ports generally fly below 2,000 feet, and standard military flight training reservations occupy airspace above 5,000 feet. In addition, coordination of helicopter flights would be coordinated with the military.

10.3.4.2 *Operations*

Operation of the Project, including the associated pipeline and other project components, would be unlikely to affect military activities in the GOM. The DWP would be located within military special use airspace warning area W-147 (see **Figure 10-8**). The Project would not impose any significant obstructions to military aircraft attempting to transit within, or to and from, military warning areas. Additionally, helicopters used during operation would be unlikely to interfere with military or commercial aircraft in the area since they generally fly below 2,000 feet, and standard military flight training reservations occupy airspace above 5,000 feet. Helicopters service the existing WC 509 Platform Complex and that their current use does not interfere with military or commercial aircraft.

10.3.5 Commercial Fishing

The Project could have a negligible to minor impacts on commercial fishing in the area.

10.3.5.1 *Construction and Installation*

Construction of the Project offshore components would require a temporary safety zone for the 11-month period of construction; commercial fishing would be prohibited within the temporary safety zone and would potentially be forced to move to other areas that could require additional expenses on their part to maintain their harvest levels. Impacts on actual harvest levels are not anticipated since due to abundant fishing habitats in other unrestricted areas of the GOM. Construction activities are not expected to cause any impacts on fishery resource populations in the Project offshore components (see Volume IIa, Topic Report 5). Construction of the offshore pipelines could result in temporary, direct, reversible impacts on commercial fishing by temporarily displacing their access within the construction footprint and temporary safety zones. Potential impacts on commercial fishers' ability to maintain current harvest levels and fish in the surrounding region would be negligible.

Overall, construction of the Project could result in potentially minor impacts that would be temporary, lasting only through the construction period.

10.3.5.2 *Operations*

The DWP will have a Safety Zone established around it. In addition, Areas to be Avoided (ATBA) will be established around the WC 509 Platform Complex and the CALM Buoys. During operation of the Project, the ATBAs would restrict commercial fishers from accessing an area covering approximately 166 acres. It will also be requested that the Safety Zone (9,660 acres) be designated a No Anchorage Area (NAA). Since this area would otherwise be available for fishing opportunities, operation of the Project could have a negative, long-term impact on commercial fishing by excluding this small area from fishing operations. However, when compared to the fishing area available offshore, the size of the restricted areas within the safety zones would be negligible. Also, the character of the waters and seabed restricted from fishing is not unique fish habitat or uniquely productive for commercial fishing compared with adjacent areas.

10.3.6 Recreational Boating

The Project could have a negligible impact on recreational boating in the area.

10.3.6.1 *Construction and Installation*

During construction of the offshore Project components, recreational boaters, cruise ships, and other boats would be prohibited from transiting through the associated temporary safety zones. The USCG Local Notice to Mariners would publish the temporary safety zone locations and associated restrictions and should notify boaters to take alternate routes. The temporary safety zones are unlikely to significantly impact the experiences of recreational boaters offshore, particularly because there are so many other accessible areas for boaters to transit through in the immediate proximity. Additionally, the DWP is located more than 20 miles from any artificial reefs that would attract recreational boaters and divers. Therefore, potential impacts to recreational users during construction is anticipated to be negligible.

10.3.6.2 *Operations*

During operation of the Project, the safety zones associated with the DWP would restrict recreational boaters from transiting through the area. The potential impacts associated with these restrictions would be negligible because of the amount of unrestricted waters in this region of the GOM. There is no specific, identifiable character and recreational appeal of the Project site and is similar to other offshore recreation

areas in the immediate vicinity and the Project is therefore not anticipated to cause significant loss in recreational use.

In addition to the two tugboats that will be used to assist crude oil carrier maneuvering and loading and the escort tug/pilot boat, service vessels will also be required to provide personnel and supplies, maintenance, and emergency response support. These include maintenance, dive, and possible firefighting vessels for inspection, servicing, and maintenance of the DWP and a crew/supply boat. In addition, helicopter support will be needed daily and will be based at existing facilities along the GOM coastline.

During operations, supply boats from shore are anticipated to make twice-weekly deliveries to the DWP. These supply vessels would depart from local commercial ports in the area. The support vessels associated with the Project would be very similar to vessel transits already occurring throughout the GOM to other offshore facilities. The presence of these additional support vessels associated with the Project would not have a significant impact on the experience of recreational boating offshore of Louisiana. Overall, the potential impact of Project operation on recreational boating would be negligible.

10.3.7 Recreational Fishing

The Project could have a negligible impact on recreational fishing in the area.

10.3.7.1 *Construction and Installation*

During construction of the Project, offshore recreational fishing would be prohibited in the associated temporary safety zones. The USCG Local Notice to Mariners would publish the temporary safety zone locations and associated restrictions and would advise recreational fishers to avoid the area. The temporary safety zone associated with construction of the pipelines would be relatively small compared with other accessible offshore fishing locations in the GOM region.

10.3.7.2 *Operations*

During operation, offshore recreational fishing would be prohibited within the safety zones associated with the permanent facilities at the DWP. The safety zones at the DWP would unlikely cause significant direct impacts on the experience of recreational fishing offshore, particularly because there are other, additional accessible fishing areas in the immediate vicinity. Overall, operation of the Project, including the implementation of the safety zones, is anticipated to have a negligible impact on recreational fishing.

10.3.8 Aesthetics

The Project could have a negligible impact on aesthetics in the immediate area. The Project would not alter or impair a viewshed, scenic quality, or aesthetic value. The Project would not create a new source of substantial light or glare. The only additional, visible permanent facilities would be the CALM Buoys in an area near the existing offshore platforms.

10.3.8.1 *Construction and Installation*

The primary elements visible during construction would be the offshore construction vessels and associated equipment. For sensitive viewers onshore, it is unlikely that the existing structures associated with the Project would be visible from any observers on the beaches or shorelines since they would be over the horizon (>99 miles from shore).

Conversion and construction of the offshore Project components (DWP Platform, pipelines, PLEMs, and CALM Buoys) would require various types of installation vessels, including an anchor handling tug, cargo barge with tug, six crew boats, trawler, derrick barge, hydrotest boat, jet barge, lift boat, pipe haul tug, pipe lay barge, dive team vessel, and various supply vessels. As the DWP would be constructed nearly 100 nautical miles offshore, no visual impacts are expected to onshore residents or visitors. The vessels required for construction would be consistent with other vessel traffic in the offshore GOM region supporting the offshore oil and gas industry. Since the offshore oil and gas industry has had a long presence in the offshore Louisiana and Texas regions, the vessels associated with construction activities that may be visible from points outside the temporary safety zones would not stand out or be conducting unusual activity. Additionally, most vessel captains and crewmembers operating in the GOM would be accustomed to similar industrial activities associated with oil and gas exploration and production. Similarly, recreational boaters and fishers who transit in the area would be accustomed to these types of industrial activities. There are no other sensitive receptors. Any negative impact on the viewshed would be temporary and reversible once the construction activities cease and the vessels and associated equipment move out of the area.

10.3.8.2 *Operations*

During operations, visual impacts from the Project are anticipated to be negligible to nonexistent. The DWP consists of existing converted platforms and the Project pipelines would be buried and underwater; area residents and visitors would not experience any visual impacts from the pipelines. Additionally, the visual character of the Louisiana offshore, including the proposed location of the DWP, is open ocean, dotted with oil and gas platforms and other offshore industrial, commercial, and recreational vessels.

10.4 CUMULATIVE IMPACTS

A complete discussion of cumulative impacts is included in Volume IIa, **Appendix C** "Framework for Cumulative Impacts Analysis."

10.5 MITIGATION MEASURES

The Project does not present any significant impacts to offshore oil and gas, transportation, military use, fishing, recreation resources, or visual resources. Further, converting the existing Mainline, converting the existing WC 148 Platform and WC 509 Platform Complex, and adhering to all regulations and permit requirements will limit any potential impacts from construction and operation of the proposed Project. Therefore, no mitigation measures specifically directed at recreational, coastal use, and aesthetic resources are proposed.

10.6 SUMMARY OF POTENTIAL IMPACTS

The Project could have negligible impacts on oil and gas activity, non-energy mineral resource activities, marine shipping fairways and commercial ports in the immediate area, military operations in the area, and aesthetics.

The Project could also have negligible to minor impacts on commercial fishing in the area. The Project could have a negligible impact on aesthetics in the immediate area.

It is not anticipated that the Project would conflict with the Coastal Zone Management Plan or increase the risk of maritime traffic. The Project would not cause anything more than a minor loss or displacement of recreational resources, such as recreational fishing sites and other water-dependent recreational activities.

The Project would not create a new source of substantial light or glare. The only additional, visible permanent facilities would be the CALM Buoys in an area near the existing offshore platforms.

10.7 REFERENCES

American Sportfishing Association (ASA). 2019. Economic impacts of recreational fishing – Louisiana, American Sportfishing Association. Available online at: https://asafishing.org/state-reports/economic-impacts-of-recreational-fishing-louisiana/. Accessed: April 2020.

BOEM. 2014. Notice to Lessees and Operators of Federal Oil, Gas, and Sulphur Leases in the Outer Continental Shelf (OCS), GOM OCS Region. Military Warning and Water Test Areas. https://www.boem.gov/BOEM-NTL-No-2014-G04/. Accessed May 2020.

———. 2015. Geographic Mapping Data in Digital Format. Blocks. July 6, 2015. https://www.data.boem.gov/Main/Mapping.aspx. Accessed May 2020. https://www.data.boem.gov/Mapping/Files/blocks_meta.html

———. 2016. Assessment of Undiscovered Technically Recoverable Oil and Gas Resources of the Nation's Outer Continental Shelf, 2016. https://www.boem.gov/2016a-National-Assessment-Fact-Sheet/. Accessed October 4, 2018.

———. 2018. Combined Leasing Status Report, October 2018 Report. https://www.boem.gov/sites/default/files/documents/about-boem/Lease%20stats%204-1-20.pdf. Accessed April 2020.

———. 2020. Geographic Mapping Data in Digital Format. Pipelines. https://www.data.boem.gov/Main/Mapping.aspx. Accessed May 2020.

BOEM and NOAA. 2018. Vessel Traffic Data: 2018. MarineCadastre.gov. https://marinecadastre.gov/ais/. Accessed May 2020.

Bureau of Safety and Environmental Enforcement (BSEE). No date. Rigs to Reefs. https://www.bsee.gov/what-we-do/environmental-focuses/rigs-to-reefs. Accessed May 2020.

Bureau of Transportation Statistics (BTS). 2018. Tonnage of Top 50 U.S. Water Ports, Ranked by Total Tons. https://www.bts.gov/content/tonnage-top-50-us-water-ports-ranked-total-tons. Accessed May 2020.

Federal Aviation Administration (FAA). 2011. Procedures for Handling Airspace Matters. Chapter 24. Warning Areas. August 25, 2011. http://tfmlearning.faa.gov/publications/atpubs/AIR/air2401.html. Accessed May 2020.

———. 2016. Pilot's Handbook of Aeronautical Knowledge. Chapter 15. Airspace. FAA-H-808325B. https://www.faa.gov/regulations_policies/handbooks_manuals/aviation/phak/media/17_phak_ch15.pdf. Accessed May 2020.

Louisiana Department of Wildlife and Fisheries (LDWF). No date. Artificial reefs. https://www.wlf.louisiana.gov/page/artificial-reefs. Accessed May 2020.

Marine Cadastre. 2018. Marine Cadastre National Viewer. https://marinecadastre.gov/nationalviewer/. Accessed April 2020.

National Oceanic and Atmospheric Administration (NOAA). 2020. Commercial Fisheries Statistics. https://www.st.nmfs.noaa.gov/commercial-fisheries/commercial-landings/annual-landings/index. Accessed April 2020.

NOAA Fisheries. 2020. NOAA Fisheries Office of Science and Technology, Commercial Landings Query. Available online at: https://foss.nmfs.noaa.gov/apexfoss/f?p=215:200. Accessed April 2020.

National Marine Fisheries Service (NMFS). 2018. Fisheries economics of the United States 2016: Economics and sociocultural trends series. U.S. Dept. of Commerce, NOAA Tech. Memo. NMFS-F/SPO-187a, 243 p.

U.S. Army Corps of Engineers (USACE). 2017. 2017 Transportation Facts & Information. https://www.iwr.usace.army.mil/About/Technical-Centers/WCSC-Waterborne-Commerce-Statistics-Center/

U.S. Coast Guard (USCG). 2019. 2018 Recreational Boating Statistics. May 11, 2018. https://www.uscgboating.org/library/accident-statistics/Recreational-Boating-Statistics-2018.pdf Accessed May 2020.

U.S. Energy Information Administration. No date. GOM Fact Sheet. https://www.eia.gov/special/gulf_of_mexico/. Accessed April 2020.